

Santa Ana River Trail, Phase IV, Reaches B & C



Natural Environment Study

San Bernardino County
City of Redlands
Caltrans District 8
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Natural Environment Study

STATE OF CALIFORNIA Department of Transportation

County of San Bernardino Regional Parks Department

County of San Bernardino Department of Public Works

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The County of San Bernardino Regional Parks Department (Regional Parks) with the assistance of the County of San Bernardino Department of Public Works (Department of Public Works) proposes to construct an approximately 3.3-mile long section of the Santa Ana River Trail (SART) on the southern bank of the Santa Ana River and local streets within the City of Redlands from approximately Orange Street to Opal Avenue (Figures 1 and 2, all figures are found in Appendix A). The SART is a planned 100-mile trail within the counties of Riverside, Orange and San Bernardino, of which approximately 70 miles have been constructed. The Project being proposed is the SART Phase IV, Reaches B & C Project (Project) which will consider one “no-build” and one “build” alternative. The “build” alternative includes the construction of a 10-foot wide asphalt/concrete trail and 4-foot decomposed granite/or 2-foot graded shoulder on each side of the asphalt/concrete trail out of the floodplain along the southern bluffs of the Santa Ana River; on the public right-of-way the existing road surface would be widened where possible to accommodate a Class-2 dedicated bicycle lane and/or standard bicycle lane striping would be used to mark the alignment on the existing road surfaces (Class 3).

In general, construction activities associated with development of the trail would include: earthwork including excavation and grading; construction of embankments and/or retaining walls; construction of storm drains, drainage structures, and slope protection; construction of asphalt concrete dike, curb and gutter; installation of fencing, railing, access gates, trail delineators, and signage; painting of pavement striping and pavement markings; and, construction of appurtenant features.

The purpose of the Project is to meet the identified need for a regional non-vehicular trail for the region’s residents. The Project consists of the design and construction of a bicycle trail which may be used by pedestrians, bicyclists, skaters, wheelchair users, and joggers. The trail will provide safe contiguous use and enjoyment of open space, environmental education, and an essential transportation trail system. Currently, there are no other multi-jurisdictional trails in the three county areas and this new segment will extend the SART closer to the foothills.

The Project will have temporary impacts on one native vegetation community, Riversidean sage scrub (RSS) – *Encelia farinosa* dominant, and will avoid impacts to one sensitive vegetation community, Riversidean alluvial fan sage scrub (RAFSS). Approximately 0.36 acre of RSS – *Encelia farinosa* dominant habitat will be temporarily affected by the Project. Two federally listed wildlife species are associated with the presence of RAFSS and RSS – *Encelia farinosa* dominant habitat and have potential to be affected by the Project, including:

- Coastal California gnatcatcher (*Polioptila californica californica*)
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*)

Designated Critical Habitat is present within the Project for San Bernardino kangaroo rat, and designated Critical Habitat for Santa Ana sucker (*Catostomus santannae*) is located adjacent to the Project. The following impacts may occur to listed wildlife species and designated Critical Habitat:

- Temporary loss of habitat.

- Indirect impacts may occur through habitat degradation if the trail users do not remain on the designated trail.
- During construction, soil erosion could enter the river and temporarily affect Critical Habitat located adjacent and/or downstream of the Project.
- Indirect impacts due to construction noise, vibration, excessive dust, and increased human activity.

The following avoidance and minimization measures derived from the Wash Plan are recommended for implementation:

- Permanent barriers such as boulders, fences, and gates will be placed and maintained along the trail boundaries along the bluffs and adjacent to native RSS – *Encelia farinosa* dominant habitat to help prevent unauthorized activities potentially resulting in indirect impacts to SBKR, including dumping and off-road vehicle use.
- The limits of construction will be marked, fenced, and maintained as necessary until work is completed.
- Personnel will strictly limit their activities, vehicles, equipment, and construction materials to the designated work area.
- Ingress and egress of construction equipment and personnel will be confined to designated access points. Cross-country travel by vehicles and equipment will be prohibited.
- Prior to ground disturbance in potentially suitable Santa Ana River woolly star (*Eriastrum densifolium* ssp. *sanctorum*) habitat and/or slender-horned spineflower (*Dodecahema leptoceras*) habitat, surveys will be conducted if the area has not been surveyed within the last 5 years to determine if the plant is present. Surveys will be conducted in accordance with the CDFW protocols for surveying special-status plant populations.
- If Santa Ana woolly star and/or slender-horned spineflower is detected during the pre-Project survey, seeds will be collected at the appropriate time (usually fall) prior to ground disturbance. Seed collection and storage will be by an entity that has a Memorandum of Understanding with the USFWS to process and handle the seeds of endangered plant taxa. In areas of temporary impacts, the seed will be replanted in the temporarily disturbed area. The seed planting time and location for seeds collected from permanent impact areas will be at the discretion of the County.
- When construction activities will take place within 50 meters of known occurrences of Santa Ana woolly star and/or slender-horned spineflower, a temporary fence will be erected to protect the specimens. A qualified botanist and/or biological monitor will monitor construction activities, maintain the markers limiting construction, and maintain the fence protecting the woolly star and/or spineflower to prevent accidental disturbance.

- If construction-related activities are to occur during the nesting season (February 1 through September 15), a qualified biologist will conduct a preconstruction survey of the proposed construction area and adjacent habitat in the near vicinity. The preconstruction survey will commence no more than 72 hours prior to the onset of construction. If an active nest is observed, an appropriate buffer will be established until nesting is complete, as determined by a qualified biologist/biological monitor
- A pre-clearance sweep shall be conducted by a qualified biologist immediately prior to initial removal of native habitat to detect and flush any special-status species out of harm's way.
- Construction and maintenance activities resulting in the removal of RSS during the breeding season will be avoided if feasible during the CAGN breeding season (February 15 to August 30). If construction and maintenance activities must occur within 500 feet of potential CAGN habitat during the nesting season (February 15 to August 30), a biologist that holds a 10(a)(1)(A) permit to conduct surveys for CAGN will conduct pre-activity protocol CAGN surveys. The area to be disturbed and a 500-foot buffer will be surveyed for five (5) consecutive days to determine if CAGNs are nesting in or near the construction or operation activities. If CAGNs are nesting, a temporary ESA and 300-foot buffer will be established and maintained between the nearest activity and the nest location until nesting is completed. Noise within the buffer area will not exceed 60 dBA Leq. Daily noise monitoring reports will be prepared.
- A qualified biologist or biological monitor with SBKR expertise will be present when construction or ground-disturbing activities that could result in take of SBKR occurs in, or within 100 meters of habitat which is classified as low, medium, or high quality potential habitat for SBKR. Although the Project footprint only contains trace habitat, low and medium quality habitat for SBKR is located within 100 meters of the western portion of the Project footprint at the base of the bluffs in Santa Ana River.
- Temporary SBKR exclusion fencing shall be constructed around work areas during Project construction within the portion of the Project in Critical Habitat where there is no natural barrier (i.e., steep bluff) limiting accessibility of the river bluffs. The fencing shall be installed at least 2 feet underground and extend at least 4 feet straight above ground, reinforced with metal T posts or similar support materials. If underground installation is not possible due to extremely rocky soils, then the bottom 2 feet of the fencing shall be folded out and sandbags placed on the edges of the fencing. It is recommended that the fencing material be slick to prevent animals from climbing into the excluded areas, such as Aqua 30 coextruded polyethylene liner or Animex™ fencing. Installation of the exclusion fencing shall be overseen by a qualified biologist or biological monitor with SBKR expertise.

Avoidance and minimization measures that are recommended for implementation to offset impacts to sensitive plant communities, listed and special-status plant and wildlife species, and designated Critical Habitat include:

- A Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Department of Public Work's National Pollutant Discharge Elimination System

(NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit No. CAS000003) will be developed to eliminate potential sedimentation effects offsite, including the Santa Ana sucker Critical Habitat. BMPs within the SWPPP will minimize any potential for sedimentation resulting from the discharge of untreated stormwater from the Project entering the Santa Ana River during construction.

- Qualified biologists, botanists, and/or biological monitors will be retained to ensure compliance with protective measures for special-status species. Qualified biologists, botanists, and/or biological monitors will be required for monitoring any construction or Operations and Management (O&M) activities that may result in impacts to special-status species.
- All workers will receive environmental awareness training. The training will be developed in consultation with a qualified biologist and consist of an onsite or training center presentation for which supporting materials will be provided. Training will provide information about the special-status species potentially occurring on site and an explanation of the purpose and function of the avoidance and minimization measures and the possible penalties for not adhering to them.
- Areas impacted during construction that contain native vegetation will be restored after the Project is completed. A 1:1 ratio of areas temporarily disturbed by construction activities (onsite restoration of the disturbed area) and compensatory mitigation up to a 3:1 ratio for permanent impacts or as required by the regulatory agencies. This will include replanting with a plant palette composed of the native species found on site prior to the disturbance. Restoration will also include weed control. Restoration performance standards, and remediation measures, if necessary, will be developed by the County and reviewed and approved by the regulatory agencies. Native vegetation communities to be impacted include 0.36 acre of Riversidean Sage Scrub – *Encelia farinosa* dominant.
- Equipment (e.g., passenger vehicles, trucks, and heavy equipment) will be cleaned prior to entering the worksite and between worksites to prevent the importation and spread of exotic plant species.
- No open trenches or holes (aggregate mining activities excepted) will be left overnight without covering, fencing, or providing escape ramps with a minimum 3:1 slope. If trenches are not covered, they will be inspected for trapped wildlife by a qualified biologist or biological monitor. Animals found will be captured and moved to the nearest safe location outside the construction area.
- No firearms or pets will be allowed at the work areas. Firearms carried by authorized security and law enforcement personnel are exempt.
- Litter control measures will be implemented. Trash and food items will be contained in closed containers and removed daily to reduce the attractiveness of the area to opportunistic predators.
- Dust will be controlled. If water trucks are to be used, pooling of water will be avoided to minimize the potential of attracting opportunistic predators.

- Trail boundaries will be clearly identified to ensure that the public stays on the marked trail. Signs educating the public on the importance of staying on trails shall be posted in prominent areas.
- Temporary impact areas to native plant communities will be restored with a native species palette that matches the surrounding native vegetation communities.
- Upon Project completion, permanent barriers such as boulders, fences, and gates will be placed and maintained along the trail boundaries adjacent to native habitat to prevent unauthorized activities including dumping and off-road vehicle use.

The following compensatory mitigation measures are recommended for implementation by the County in the unlikely event that coastal California gnatcatcher or San Bernardino kangaroo rat are found to occur within the project construction limits:

- 3:1 onsite or offsite creation of habitat in addition to restoration of temporary impacts to native habitat for any impacts to occupied coastal California gnatcatcher habitat.
- Although the project will temporarily affect 2.34 acres and permanently affect 2.92 acres to designated SBKR Critical Habitat, only 0.36 acre of habitat containing the appropriate Primary Constituent Elements (PCEs), Riversidean sage scrub – *Encelia farinosa* dominant, will be temporarily affected. These impacts will be mitigated through purchase of credits from an approved mitigation bank, payment to an in-lieu fee program, or another form of mitigation approved by the regulatory agencies.

No FESA Section 7 consultation has occurred with USFWS to date. Consultation with U.S. Fish and Wildlife (USFWS) under Federal Endangered Species Act (FESA) Section 7 will be required to address potential take of federally listed species. For state-listed species, either a consistency determination (Section 2080.1 of the Fish and Game Code) for the species that are also federally listed or an Incidental Take Permit will be required (Section 2081) for the Project. Consultation with California Department of Fish and Wildlife (CDFW) will be required to address potential take of these species.

It has been determined that there will be no permanent or temporary impacts to jurisdictional features associated with the Project as the six (6) features within or directly adjacent to the Delineation Area (DA) fall outside of the jurisdiction of the United States Army Corps of Engineers (USACE) and State Water Resources Control Board (SWRCB) pursuant to Section 404 and 401 of the Clean Water Act, respectively. Even though the CDFW has broader criteria for what constitutes a jurisdictional feature, the features mentioned above are considered to be outside of CDFW jurisdiction because of their limited habitat values and artificial nature. There will be no need for regulatory permitting for the SART Project as all impacts to jurisdictional features are avoided. However, coordination with the USACE and other agencies is recommended to confirm these findings.

While there are no direct impacts to any jurisdictional features associated with the Project, recommendations for avoidance and minimization of indirect impacts to Waters of the U.S., including those listed within the Wash Plan, are outlined below:

- Construction activity and access roads will be minimized to the maximum extent practicable. If impacts to jurisdictional features associated with access roads are subsequently identified in the final design are identified, permit applications to the regulatory agencies may be required.
- Silt fencing or other sediment trapping materials will be installed at the downstream end of construction activity to minimize the transport of sediments off site. Care will be exercised when removing silt fences, as feasible, to prevent debris or sediment from discharging to the stream.
- Erodible fill material will not be deposited into water courses. Brush, loose soils, or other similar debris material will not be stockpiled within or immediately adjacent to jurisdictional features.

Thirteen exotic plants on Cal-IPC's California Invasive Plant Inventory were identified. Of these species, three have an overall high rating, five have a moderate rating, and five have a limited rating. Invasive species that have severe ecological impacts are given a high rating. Species with a high rating that were observed within the BSA include giant reed (*Ricinus communis*), black mustard (*Brassica nigra*), and foxtail brome (*Bromus madritensis*). These observations should not be considered all-inclusive. In compliance with EO 13112, and subsequent guidance from FHWA, the landscaping and erosion control included in the Project will not include species listed on either the Federal or the State of California Noxious Weed List. In areas of particular sensitivity (i.e., near or adjacent to drainages) extra precautions would be taken if invasive species are found in or adjacent to these areas. This would include the inspection and cleaning of construction equipment and eradication strategies, as required by the County's Biological Monitor, to be implemented by the contractor should an invasion occur.

CONTENTS

Chapter 1 – Introduction.....	1
1.1 Project History.....	1
1.1.1 History.....	1
1.1.2 Purpose and Need of the Proposed Action.....	2
1.2 Project Description.....	2
Chapter 2 – Study Methods.....	4
2.1 Regulatory Requirements.....	4
2.1.1 Federal Policies and Regulations.....	4
2.1.2 State Policies and Regulations.....	6
2.1.3 Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan)	7
2.2 Studies Required.....	8
2.2.1 Literature Search.....	8
2.2.2 Field Reviews.....	9
2.3 Personnel and Survey Dates.....	11
2.4 Agency Coordination and Professional Contacts.....	12
2.5 Limitations That May Influence Results.....	12
Chapter 3 – Results: Environmental Setting	13
3.1 Description of the Existing Biological and Physical Conditions	13
3.1.1 Study Area	13
3.1.2 Physical and Biological Conditions in the Biological Study Area.....	13
3.2 Regional Species and Habitats and Natural Communities of Concern	20
3.2.1 Critical Habitat.....	20
3.2.2 Sensitive Plant Communities.....	20
3.2.3 Sensitive Plant Species.....	21
3.2.4 Sensitive Wildlife Species	21
3.3 Habitat Connectivity	32
Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation	34
4.1 Habitats and Natural Communities of Special Concern	34
4.1.1 Riversidean Alluvial Fan Sage Scrub	34
4.1.2 Waters of the U.S.....	35
4.1.3 CDFW Jurisdiction	37
4.2 Special-Status Plant Species	38
4.2.1 San Diego Ambrosia	38
4.2.2 Nevin’s Barberry.....	39
4.2.3 Santa Ana River Woolly star	40
4.2.4 Slender-Horned Spineflower	42
4.2.5 Other Special-Status Plant Species.....	43

4.3	Special-Status Wildlife Species	45
4.3.1	Santa Ana Sucker	45
4.3.2	Coastal California Gnatcatcher.....	46
4.3.3	Least Bell's Vireo	48
4.3.4	San Bernardino Kangaroo Rat	50
4.3.5	Stephens' Kangaroo Rat	53
4.3.6	Other Special-Status Wildlife Species	54
Chapter 5 – Conclusions and Regulatory Determinations		58
5.1	Federal Endangered Species Act Consultation Summary	58
5.2	Essential Fish Habitat Consultation Summary	61
5.3	California Endangered Species Act Consultation Summary	61
5.4	Wetlands and Other Waters Coordination Summary	62
5.5	Invasive Species	62
5.6	Other.....	63
5.6.1	Migratory Bird Treaty Act.....	63
5.6.2	Wild and Scenic Rivers	63
Chapter 6 – References		64

LIST OF APPENDICES

Appendix A - Project Maps

Appendix B - USFWS IPaC List of Species

Appendix C - 2014 SART IV Natural Resources Assessment

Appendix D - 2018 Plant and Wildlife Species Observed Lists

LIST OF TABLES

Table 1: Types of Water Bodies within the DA.....	14
Table 2: Summary of USDA / NRCS Soil Descriptions	14
Table 3: Acreages within Project Impact Area	16
Table 4: Regional Plant and Wildlife Species of Concern	22
Table 5: Preliminary Jurisdictional Determination for the SART Project.....	36
Table 6: Federally Listed Species Effect Determination.....	58
Table 7. State-Listed Species Potential for Take	61

LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
BA	Biological Assessments
BLM	Bureau of Land Management
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CE	Candidate for State Listing as Endangered
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DA	Delineation Area
EO	Executive Order
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GIS	Geographic information systems
GPS	Global positioning system
HCP	Habitat conservation plan
IPaC	Information for Planning and Conservation
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NLAA	Not Likely to Adversely Affect
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NWI	National Wetland Inventory
O&M	Operations & Management
OHWM	Ordinary high-water mark
PCE	Primary Constituent Element
RAFSS	Riversidean alluvial fan sage scrub
RPW	Relatively Permanent Waters
RSS	Riversidean sage scrub
RWQCB	Regional Water Quality Control Boards
SAA	Streambed Alteration Agreement
SART	Santa Ana River Trail
SAWA	Santa Ana Watershed Association
SBKR	San Bernardino kangaroo rat
SKR	Stephens' kangaroo rat
SWRCB	State Water Resources Control Board
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

Chapter 1 – Introduction

The County of San Bernardino Regional Parks Department (Regional Parks) with the assistance of the County of San Bernardino Department of Public Works (Department of Public Works) proposes to construct an approximately 3.3-mile long section of the Santa Ana River Trail (SART) on the southern bank of the Santa Ana River and local streets within the City of Redlands (Figures 1 and 2, all figures are found in Appendix A). The SART is a regional recreational trail; segments of the trail within San Bernardino County have been constructed in various sections (phases) with projects named sequentially. The proposed section of the SART is SART Phase IV, Reaches B & C (Project) which will consider one “no-build” and one “build” alternative. The “build” alternative includes the construction of a 10-foot wide asphalt/concrete trail and 4-foot decomposed granite/or 2-foot graded shoulder on each side of the asphalt/concrete trail out of the floodplain along the southern bluffs of the Santa Ana River; on the public right-of-way the existing road surface would be widened where possible to accommodate a Class-2 dedicated bicycle lane and/or standard bicycle lane striping would be used to mark the alignment on the existing road surfaces (Class 3).

In general, construction activities associated with development of the trail would include: earthwork including excavation and grading; construction of embankments and/or retaining walls; construction of storm drains, drainage structures, and slope protection; construction of asphalt concrete dike, curb and gutter; installation of fencing, railing, access gates, trail delineators, and signage; painting of pavement striping and pavement markings; and, construction of appurtenant features.

1.1 Project History

1.1.1 HISTORY

The Santa Ana River corridor extends over approximately 110 miles from the Pacific Ocean inland to the San Bernardino National Forest. Upon completion, the SART would be the “Crest to Coast” regional trail link connecting an area encompassing over four million residents in three counties (Orange, Riverside and San Bernardino). The SART would provide safe use and enjoyment of open space, environmental education, and a transportation trail system. Portions of the SART, particularly in Orange County, have been developed over the past 20 years; it is now possible to travel from the Riverside/Orange County line to Huntington Beach on the SART.

The County of San Bernardino (County) is responsible for the completion of approximately 20 miles of the SART. Development of the trail in the County has been divided into four phases with several reaches in each phase to provide for construction as funding becomes available. Phase I and II extending from the Riverside/San Bernardino county line to approximately 50 feet westerly of La Cadena Drive in the City of Colton and from the terminus of Phase I to Waterman Avenue in the City of San Bernardino respectively have been constructed. It is anticipated that Phase III extending from the Phase II terminus to California Street in the City of Redlands will be constructed in 2019. The subject Phase IV is the last and longest segment of the trail extending approximately 10 miles from California Street to Garnet Street in Redlands. For planning and analysis purposes, the Phase IV Section of the SART is divided into four major reaches as follows:

Reach A – California Street to Orange Street

Reach B – Orange Street to Judson Street

Reach C – Judson Street to Opal Avenue

Reach D – Opal Avenue to Garnet Street, including the Mentone Library Leg

This NES only addresses impacts associated with the SART Phase IV B and C reaches, approximately 3.3 miles in length extending from Orange Street in Redlands to Opal Street in Mentone.

1.1.2 PURPOSE AND NEED OF THE PROPOSED ACTION

The purpose of the Project is to meet the identified need for a regional non-vehicular trail for the region's residents. The Project consists of the design and construction of bicycle trail, which may be used by pedestrians, bicyclists, skaters, wheelchair users, and joggers. The trail will provide safe contiguous use and enjoyment of open space, environmental education, and an essential transportation trail system. Currently, there are no other multi-jurisdictional trails in the three county areas and this new segment will extend the SART closer to the foothills.

Ultimately, the bikeway will enhance access to recreational opportunities in the region by: (a) providing neighborhood links to green space and natural areas; (b) providing connections with city urban trails that provide safe travel to parks, community recreation facilities, fairgrounds, urban lakes, amphitheaters, historic neighborhoods, and tourist attractions; and (c) providing direct access to San Bernardino National Forest camping and outdoor recreation areas. In conjunction with fulfilling basic non-motorized transportation purposes, the proposed Project will also meet the needs of individuals with disabilities; specifically, in an area where few trails fulfill the outdoor trail needs of these individuals. All the access ramps to the SART will be designed to comply with requirements of the Americans with Disabilities Act (ADA). The SART facilities will incorporate Caltrans Highway Design Manual, Chapter 1000, "Bikeway Planning and Design" to ensure that individual with disabilities will have both access and effective use of the SART facilities.

1.2 Project Description

Regional Parks with the assistance of the Department of Public Works proposes to construct an approximately 3.3-mile long section of the SART on the southern bank of the Santa Ana River and local streets within the City of Redlands. The SART is a regional recreational trail; segments of the trail within San Bernardino County have been constructed in various sections (phases) with Projects named sequentially. The proposed section of the SART is SART Phase IV, Reaches B & C; the trail would begin on the west side of Orange Street in the City of Redlands and terminate at Opal Avenue near the Redlands city limit.

East of Orange Street the conceptual trail alignment overlaps a local trail known as the "Bluffs Trail." At River Bend Drive the alignment departs the river bluff and transitions on to the local city streets; the trail travels south on River Bend Drive, east on Pioneer Avenue, south on Dearborn Street, and east on San Bernardino Avenue until it reaches Opal Avenue.

- Indirect impacts may occur through habitat degradation if the trail users do not remain on the designated trail.
- During construction, soil erosion could enter the river and temporarily affect Critical Habitat located adjacent and/or downstream of the Project.
- Indirect impacts due to construction noise, vibration, excessive dust, and increased human activity.

The following avoidance and minimization measures derived from the Wash Plan are recommended for implementation:

- Permanent barriers such as boulders, fences, and gates will be placed and maintained along the trail boundaries along the bluffs and adjacent to native RSS – *Encelia farinosa* dominant habitat to help prevent unauthorized activities potentially resulting in indirect impacts to SBKR, including dumping and off-road vehicle use.
- The limits of construction will be marked, fenced, and maintained as necessary until work is completed.
- Personnel will strictly limit their activities, vehicles, equipment, and construction materials to the designated work area.
- Ingress and egress of construction equipment and personnel will be confined to designated access points. Cross-country travel by vehicles and equipment will be prohibited.
- Prior to ground disturbance in potentially suitable Santa Ana River woolly star (*Eriastrum densifolium* ssp. *sanctorum*) habitat and/or slender-horned spineflower (*Dodecahema leptoceras*) habitat, surveys will be conducted if the area has not been surveyed within the last 5 years to determine if the plant is present. Surveys will be conducted in accordance with the CDFW protocols for surveying special-status plant populations.
- If Santa Ana woolly star and/or slender-horned spineflower is detected during the pre-Project survey, seeds will be collected at the appropriate time (usually fall) prior to ground disturbance. Seed collection and storage will be by an entity that has a Memorandum of Understanding with the USFWS to process and handle the seeds of endangered plant taxa. In areas of temporary impacts, the seed will be replanted in the temporarily disturbed area. The seed planting time and location for seeds collected from permanent impact areas will be at the discretion of the County.
- When construction activities will take place within 50 meters of known occurrences of Santa Ana woolly star and/or slender-horned spineflower, a temporary fence will be erected to protect the specimens. A qualified botanist and/or biological monitor will monitor construction activities, maintain the markers limiting construction, and maintain the fence protecting the woolly star and/or spineflower to prevent accidental disturbance.

The trail segments on the river bluffs would consist of a 10-foot wide asphalt/concrete trail and 4-foot decomposed granite/or 2-foot graded shoulder on each side of the asphalt/concrete trail; on the public right-of-way the existing road surface would be widened where possible to accommodate a Class-2 dedicated bicycle lane and/or standard bicycle lane striping would be used to mark the alignment on the existing road surfaces (Class 3). Under existing conditions portions of Pioneer Avenue and San Bernardino Avenue do not have curb and gutter, where possible ultimate curb and gutter or asphalt dike would be constructed as part of this project.

In general, construction activities associated with development of the trail would include: earthwork including excavation and grading; construction of embankments and/or retaining walls; construction of drainage structures, and slope protection; construction of asphalt concrete dike, curb and gutter; installation of fencing, railing, access gates, trail delineators, and signage; painting of pavement striping and pavement markings; and, construction of appurtenant features. The subject segment of the SART includes one bridge over Orange Street in the City of Redlands.

Equipment staging and borrow/disposal during project construction may potentially occur at: (1) at various locations within the disturbed vacant lands on the north side of Riverview Drive; (2) on disturbed road shoulders and/or street right-of-way on the south side of Pioneer Avenue; (3) at the Redlands Sports Park paved parking lot; (4) on disturbed road shoulders and/or street right-of-way on the south side of San Bernardino Avenue; and, (5) on paved road shoulders and/or street right-of-way on the east side of Wabash Avenue.

The term "Project impact area" is used throughout the remainder of the document to refer to the proposed boundaries of the Project as they are described in this section.

Other Responsible Agencies

As conceptualized, the alignment would require approvals from the City of Redlands to develop the trail on the city's public right-of-way and may also require acquisition of right-of-way from private property owners.

Additionally, portions of the proposed trail alignment overlap or are located in close proximity to U.S. Fish and Wildlife (USFWS) designated Critical Habitat. SART Phase IV is included in the Upper Santa Ana Wash Land Management and Habitat Conservation Plan (Wash Plan). However, the Implementation Plan for the Wash Plan is currently being developed and final approvals from the regulatory agencies have not yet been secured; the status for implementation of the Wash Plan is not definitively known. Therefore, consultation with USFWS is required to fulfill federal Endangered Species Act (FESA) requirements under National Environmental Policy Act (NEPA).

Chapter 2 – Study Methods

2.1 Regulatory Requirements

2.1.1 FEDERAL POLICIES AND REGULATIONS

2.1.1.1 Federal Clean Water Act

The federal Clean Water Act's (CWA) purpose is to “*restore and maintain the chemical, physical, and biological integrity of the nation's waters.*” Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the United States (U.S.) without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas “*that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*” (33 CFR 328.3 7b). The U.S. Environmental Protection Agency acts as a cooperating agency to set policy, guidance and criteria for use in evaluation permit applications and reviews USACE permit applications.

The USACE regulates “fill” or dredging of fill material within its jurisdictional features. “Fill material” means any material used for the primary purpose of replacing an aquatic area with dry land or changing the bottom elevation of a water body. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the State Water Resources Control Board (SWRCB), administered by each of nine Regional Water Quality Control Boards (RWQCBs).

The SWRCB regulates any “surface water or groundwater, including saline waters, within the boundaries of the state.” The SWRCB jurisdiction generally encompasses all Waters of the U.S., including wetlands, but can also include CDFW jurisdictional areas. SWRCB publishes no methodology for determining their jurisdictional boundaries. Where areas jurisdictional to the SWRCB are present, and will be impacted by a project, the project proponent must apply for permitting with the agency, which generally consists of a request for a Water Quality Certification under Section 401 of the CWA. The permitting process for this Project would be administered by the Santa Ana RWQCB.

2.1.1.2 Federal Endangered Species Act

The FESA protects plants and animals that are listed as endangered or threatened by the USFWS and the National Marine Fisheries Service. Section 9 of the FESA prohibits the taking of endangered wildlife, where taking is defined as “*harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct*” (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of the FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its Critical Habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is

incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the FESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan (HCP) is developed.

2.1.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR Part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

2.1.1.4 Executive Order 11990: Protection of Wetlands

On May 24, 1977, President Carter signed Executive Order (EO) 11990, requiring federal agencies to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The term "wetlands" is defined as those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Examples of wetlands are also provided in the EO: wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. An Individual EO 11990 "Wetlands Only Practicable Alternative Finding" is required from Federal Highway Administration (FHWA) if a state project is federally-aided and involves fill in wetlands requiring a USACE Section 404 Individual or Nationwide Permit (NWP) or a DEC/APA Article 24 Wetlands Permit. An additional requirement is to provide early public involvement in projects affecting wetlands.

2.1.1.5 Executive Order 13112: Invasive Species

On February 3, 1999, President Clinton signed EO 13112, requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "...any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999, directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of California Environmental Quality Act (CEQA) analysis for a proposed project.

2.1.2 STATE POLICIES AND REGULATIONS

2.1.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA but, unlike its federal counterpart, the CESA applies the take prohibitions to species proposed for listing (called “candidates” by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as “*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.*” The CESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat.

2.1.2.2 Fully Protected Species

The State of California first began to designate species as “fully protected” prior to the creation of the FESA and CESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under FESA and/or CESA. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

2.1.2.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900-1913) was created with the intent to “*preserve, protect and enhance rare and endangered plants in this State.*” The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as “endangered” or “rare” and to protect endangered and rare plants from take. The CESA of 1984 (California Fish and Game Code § 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

2.1.2.4 California Fish and Game Code

Streambed Alteration Agreement

Section 1602 of the California Fish and Game Code requires that a Notification of Lake or Streambed Alteration be submitted to CDFW for “*any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.*” The CDFW reviews the proposed actions and, if necessary, submits to the Applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the Applicant is the Streambed Alteration Agreement (SAA). Often, projects that require an SAA also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the SAA may overlap.

Migratory Birds

The CDFW enforces the protection of nongame native birds in §§ 3503, 3503.5, and 3800 of the California Fish and Game Code. Section 3513 of the California Fish and Game Code prohibits the possession or take of birds listed under the MBTA. These sections mandate the protection of California nongame native bird nests and make it unlawful to take these birds. All raptor species are protected from “take” pursuant to California Fish and Game Code § 3503.5 and are also protected at the federal level by the MBTA of 1918.

2.1.3 UPPER SANTA ANA RIVER WASH HABITAT CONSERVATION PLAN (WASH PLAN)

The Wash Plan is a comprehensive HCP focusing on conservation of species and their associated habitats in southwestern San Bernardino County specifically designed to comply with FESA and CESA. The goal of the Wash Plan is to balance the ground-disturbing activities of water conservation, aggregate mining, recreational activities, and other public services with the conservation of five covered species to allow for activities to proceed in an efficient way. Entities included in the Wash Plan are the City of Redlands, City of Highland, San Bernardino Valley Municipal Water District, East Valley Water District, Cemex, Inc., Robertson’s Ready-Mix, and the San Bernardino County Flood Control District.

The approximately 4,892-acre plan area will be created with existing conserved lands, lands set to be conserved as mitigation to offset the impacts of covered activities under the Wash Plan, as well as mitigation areas for future flood control infrastructure construction and maintenance activities not covered by the HCP. The Wash Plan intends to provide full mitigation under CEQA, NEPA, CESA, and FESA for impacts to the five covered species (slender-horned spineflower [*Dodecahema leptoceras*], Santa Ana River woolly star [*Eriastrum densifolium* ssp. *sanctorum*], coastal California gnatcatcher [*Polioptila californica californica*], cactus wren [*Campylorhynchus brunneicapillus*], and San Bernardino kangaroo rat [*Dipodomys merriami parvus*]) and their habitats, pursuant to agreements with USFWS, Bureau of Land Management (BLM), and/or any other appropriate participating regulatory agencies as set forth in the HCP.

The Wash Plan is currently in the public review process, with a draft that was released in January 2018. The Wash Plan is anticipated to become a final document in 2019. A previous design of the Project is included as a covered activity under the Wash Plan and was originally anticipated to be constructed entirely within the Wash Plan planning area. However, due to property acquisition constraints, the Project has been redesigned to only be partially within the Wash Plan. Although the Wash Plan has not been finalized, the information in this Natural Environment Study (NES) is intended to be consistent with the Wash Plan in the event that the Wash Plan becomes finalized and the Project is able to be managed according to the guidelines in the Wash Plan.

At the same time, in the event the Wash Plan is never finalized, this document has also been written to allow for the Project to be constructed and operated independently of the Wash Plan approval process.

2.2 Studies Required

2.2.1 LITERATURE SEARCH

Prior to performing the field survey, existing documentation relevant to the Project was reviewed. A literature search to determine the special-status species that have been documented in the Redlands, San Bernardino South, and Yucaipa USGS 7.5-minute topographic quadrangles was performed. This literature search included the CDFW California Natural Diversity Database (CNDDDB; CDFW 2018a) and the California Native Plant Society's (CNPS) Electronic Inventory (CNPSEI; CNPS 2018). Additional information was gathered from the following sources:

- CDFW CNDDDB Special Animals List (CDFW 2018b);
- California Natural Diversity Database Special Vascular Plants, Bryophytes and Lichens List (CDFW 2018c);
- The Wash Plan's special-status species database;
- CDFW's Biogeographic Information and Observation System (BIOS);
- *Focused Biological Assessment, Santa Ana River Trail Phase IV, San Bernardino County* by Natural Resources Assessment, Inc. (2014); and
- Documents published by the regulatory agencies and other scientific literature.

Using this information and observations in the field, a list of special-status plant and animal species that may have the potential to occur within the Project site was generated. For the purposes of this NES, special-status species are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the CESA or FESA;
- Are candidate species being considered or proposed for listing under these same acts;
- Are covered species under the proposed Wash Plan;
- Are fully protected by the California Fish and Wildlife Code, Sections 3511, 4700, 5050, or 5515; and/or
- Are of expressed concern to resource and regulatory agencies, or local jurisdictions.

The proposed Wash Plan was also reviewed in the context of the Project to determine consistency as well as to incorporate additional data on special-status species in the Project impacts analysis.

In addition, an official list of threatened, endangered, and proposed species, designated Critical Habitat, and candidate species was obtained from the USFWS Information for Planning and Conservation (IPaC) website on September 10, 2018. The official USFWS

species list is found in Appendix B and includes the following federally listed species and Critical Habitat:

- San Diego ambrosia (*Ambrosia pumila*)
- Nevin's barberry (*Berberis nevinii*)
- Slender-horned spineflower (*Dodecahema leptoceras*)
- Santa Ana River woolly star (*Eriastrum densifolium* ssp. *sanctorum*)
- Santa Ana sucker (*Catostomus santannae*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Coastal California gnatcatcher (*Polioptila californica californica*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*)
- San Bernardino kangaroo rat Critical Habitat
- Stephens' kangaroo rat (*Dipodomys stephensi*)

2.2.2 FIELD REVIEWS

Reconnaissance-level surveys were conducted by biologists from ECORP Consulting, Inc. on June 15 and August 9, 2018 to determine the extent of plant communities and to assess the presence of suitable habitat for special-status plant and wildlife species within a re-designed portion of the trail. Vegetation communities were mapped and a jurisdictional delineation was also conducted, the full results of which are summarized in this report. A follow-up vegetation mapping survey of a re-designed portion of the trail was conducted on September 10, 2018. The follow-up jurisdictional delineation field work occurred on September 6, 2018.

2.2.2.1 Special-Status Plant and Wildlife Species Habitat Assessment

Habitat assessments were conducted on site during the 2018 biological surveys for the special-status species that were found to have a potential to occur during the literature search. Special attention was paid to the species identified in the USFWS list (these species are listed in Section 2.2.1, above). Potential habitat areas were mapped using high-resolution aerial photography that were later digitized using geographic information systems (GIS) software. Habitat for special-status plant and wildlife species were comprised of native vegetation communities.

2.2.2.2 Vegetation Community Mapping

Plant communities were mapped during the 2018 biological surveys using high-resolution aerial photography. The vegetation communities were classified according to Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986 and 1992 update).

2.2.2.3 Jurisdictional Delineation

A delineation of jurisdictional waters and wetlands was conducted in accordance with regulations set forth in 33 CFR Part 328 and the USACE guidance documents referenced below:

- USACE Wetlands Research Program Technical Report Y-87-1 (online edition), "Wetlands Delineation Manual," Environmental Laboratory, 1987 (Wetland Manual).
- USACE "Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest," 2001a (Arid Southwest Guidelines).
- USACE "Minimum Standards for Acceptance of Preliminary Wetlands Delineations," November 30, 2001b (Minimum Standards).
- USACE "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)," September 2008 (Arid West Supplement).
- USACE "Jurisdictional Determination Form Instructional Guidebook," May 30, 2007 (JD Form Guidebook).
- USACE and EPA guidance (2007) and draft guidance on jurisdictional delineations (2011).

Prior to the field visits, a 200-scale (1 inch = 200 feet) aerial photograph and applicable USGS 7.5-minute topographic quadrangle maps (Redlands and San Bernardino South) were reviewed and compared to identify potential drainage features. The National Wetland Inventory (NWI) was also reviewed to identify any documented wetlands within the Project area. In addition, the United States Department of Agriculture (USDA) Soil Survey Map was reviewed to determine soil series that occur within and adjacent to the Project area.

The unified federal method, as defined by the USACE using methodology outlined in the Corps of Engineers Wetlands Delineation Manual [Environmental Laboratory 1987] and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Arid West Region Supplement Version 2.0) [USACE 2008], was used to delineate the jurisdictional areas. The boundaries of potential Waters of the U.S. were delineated through a field determination, made in conjunction with aerial photograph interpretation. Tools used during the jurisdictional delineation fieldwork included a Trimble™ GeoXT Handheld global positioning system (GPS) unit, shovel, Munsell color chart, and digital camera.

The field surveys were conducted by walking the Project area limits (a.k.a. Delineation Area [DA]) to determine the location and extent of potential Waters of the U.S. and limits of CDFW jurisdiction. For areas suspected of being a wetland, paired sample points were taken. The total area of the potential waters within the Project area was recorded in the field using a post-processing capable GPS unit with sub-meter accuracy (Trimble™ GeoXT). All potentially jurisdictional features were systematically inspected to record existing conditions and to determine the jurisdictional limits of waters and wetlands. The apparent flow regimes and corresponding hydrogeomorphic features were subsequently identified.

Measurements were entered into GIS ArcView™ software to identify the location and dimensions of potentially jurisdictional areas. The GIS ArcView™ application was then used to compute federal and state jurisdictional acreages. Acreage computations were verified using a 200-scale aerial photograph and field data.

Where potential wetlands were identified, paired sample points were collected. One sample point was collected within the potential wetland area while the other was located within the nearby upland area.

The jurisdictional delineator based their field interpretation of the boundaries of jurisdictional areas on guidelines contained within the references cited above. Waters of the U.S. that may be regulated by the USACE under Section 404 of the CWA include traditionally navigable waters, other Waters of the U.S., and wetlands. Wetlands are a subset of Waters of the U.S. that meet specific vegetative, soil, and hydrologic criteria.

2.3 Personnel and Survey Dates

Reconnaissance-level biological surveys were conducted on June 15, and August 9, 2018 by ECORP biologists Scott Taylor, Kristen Wasz, and Phil Wasz. A follow-up vegetation mapping survey of a re-designed portion of the trail was conducted on September 10, 2018. The follow-up jurisdictional delineation field work occurred on September 6, 2018. Mr. Taylor has over 28 years of professional experience in the field of biological sciences in California, with a specialty in jurisdictional delineation, regulatory permitting, endangered species biology and conservation biology in southern California. His experience includes conducting focused survey work, preparation of Habitat Conservation Plans, Section 7 Consultations, conducting jurisdictional delineations, and monitoring construction Projects. He has prepared various technical documents including biological technical reports for CEQA, jurisdictional delineation reports, permitting packages for the USACE, CDFW and RWQCB, mitigation and monitoring plans, Environmental Assessments, and Biological Assessments (BAs).

Ms. Wasz has over 13 years of survey and project management experience in southern California. She holds a Federal 10(a)(1)(A) Recovery Permit to survey for coastal California gnatcatcher ([CAGN] TE-46552A-1) and is an authorized field investigator on a CDFW Memorandum of Understanding (MOU) to perform trapping studies for various special-status rodent species in southern California. Her experience includes leading and conducting biological surveys and habitat assessments for special-status wildlife species, designing and executing remote camera and wildlife movement studies, and biological monitoring. She regularly performs biological constraints analyses and assessments of potential project-related impacts to sensitive biological resources, in addition to authoring many large and complex documents, such as CEQA technical documents, specific documents required by the California Department of Transportation, and BAs.

Mr. Wasz is a wildlife biologist with eight years of experience surveying for wildlife throughout the Western United States. He specializes in leading and conducting biological surveys, construction monitoring, and habitat assessments for listed and sensitive wildlife species in southern California, including Mohave ground squirrel, giant kangaroo rat, burrowing owl, desert tortoise, kit fox, nesting birds, and various other small mammal, reptile, amphibian, and bird species. Mr. Wasz possesses extensive small mammal trapping experience and is permitted to conduct trapping for the federally-listed (endangered) giant kangaroo rat (TE-012973-11) and is an authorized field investigator on a CDFW Memorandum of Understanding (MOU) to perform trapping studies for various

special-status rodent species in southern California. He is well versed in all aspects of wildlife biology including survey techniques, wildlife handling, data collection, and analysis. Throughout his career, Mr. Wasz has worked with and for a variety of government, resource agency, university, and non-government organizations as well as private and public clients.

A previous biological survey was conducted in 2014 by Karen Kirtland of Natural Resources Assessment, Inc. and Lorraine Bueno of Lilburn Corporation (Appendix C).

2.4 Agency Coordination and Professional Contacts

During preparation of the Wash Plan, San Bernardino County participated as a task force member along with the City of Redlands. The stakeholders for the plan included the Bureau of Land Management, USFWS, and CDFW. Although this process was focused on the development of a conservation strategy and land management plan for the Santa Ana River, the ultimate development of the SART was considered as a part of this process.

The County of San Bernardino coordinated a pre-Project meeting that included representatives from the USFWS and CDFW on June 26, 2018. The purpose of the meeting was to discuss potential biological issues associated with the Project and to concur on a biological approach in order to meet Project deadlines.

Resource agency attendees included:

John Taylor	USFWS	(760) 322-2010 x418	john_m_taylor@fws.gov
Geary Hund	USFWS	(760) 322-2070 x409	geary_hund@fws.gov
Claire Ingel	CDFW	(909) 484-3979	claire.ingel@wildlife.ca.gov

A field meeting was held on August 31, 2018 with the County, Caltrans, and USFWS in attendance.

A subsequent field meeting was held on September 5, 2018 with the County, Caltrans, and USFWS in attendance.

2.5 Limitations That May Influence Results

The June and August reconnaissance-level surveys were conducted during the nesting bird season (typically February 1 through August 31) but outside the blooming period for most special-status plant species. The surveys were not protocol-level, nor were they focused on any one particular wildlife or plant species; however, the special-status species potentially occurring on or adjacent to the Project site were documented if detected at the time of the surveys. Protocol-level surveys were not performed at the Project site for any special-status plant or wildlife species due to contractual timing.

Fieldwork was conducted during the summer season for the region. Within the year prior to the survey, rainfall totals were below normal (6.01 inches). This may also affect the blooming of several plant species and their relative detection probabilities. However, during the previous 12-month period, the rainfall totals were well above normal (16.12 inches). Because of the 2016-2017 rainfall in the area, the jurisdictional features observed during the field visit are considered to represent at least an average condition.

Chapter 3 – Results: Environmental Setting

The Environmental Setting describes the region in which the Project will occur and helps to explain the context and intensity of impacts. The setting discussion includes brief descriptions of the area's topography, soils, habitat, watercourses, and level of human or natural disturbance.

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 STUDY AREA

The Biological Study Area (BSA) comprises the Project impact area plus a 150-foot buffer. The buffer was identified to determine potential indirect Project effects on sensitive biological resources that may not be present within the Project impact area but may be affected by Project activities. Figures 2 and 3 shows the Project impact area and BSA.

The hydrology, soils, and land use sections of this NES use the term Delineation Area (DA) in reference to the area surveyed in order to maintain consistency with the jurisdictional delineation report. The DA corresponds approximately with the Area of Potential Effect (APE) identified for the purpose of the cultural resources study. A more detailed description of the DA can be found in the jurisdictional delineation report prepared for the project (September 2018).

3.1.2 PHYSICAL AND BIOLOGICAL CONDITIONS IN THE BIOLOGICAL STUDY AREA

3.1.2.1 Topography

The Project area is located within the Santa Ana River Watershed (HUC 18070203) and on the bluffs adjacent to the south side of the river. The watershed is approximately 3,000 square miles (Santa Ana Watershed Association [SAWA] 2013), and all drainage features within the BSA drain to the Santa Ana River. Topography is generally flat to gently rolling. Just to the north of the BSA, the bluffs drop down into the floodplain proper. The elevation is approximately 1,300 feet above mean sea level (msl).

3.1.2.2 Hydrology

The jurisdictional assessment of the DA documented six (6) hydrogeomorphic features, including two (2) named features: Santa Ana River and Judson Street Channel. Four of the features are grouted riprap channels, all of which are unnamed and serve the primary purpose of directing urban runoff (irrigation, and so on) and stormwater runoff.

The engineered drainage channel features mapped within or near the DA contain little to no sediment or vegetation within their channel bottom. There are culverts present in each of the channels and ultimately each of these engineered channels empties into the Santa Ana River floodplain, with riprap at the interface between the manufactured and natural portions to provide energy dissipation. A large Fremont's cottonwood (*Populus fremontii*) occurs within Drainage 4. None of the mapped features were found to contain the necessary criteria to qualify as potential USACE wetlands.

For the purpose of complying with terminology under the Rapanos versus Carabell court decision and its associated Supreme Court direction, drainage channel features within the

BSA are described as Relatively Permanent Waters (RPWs) and non-Relatively Permanent Waters (non-RPWs). RPWs are typically considered as intermittent and perennial streams, while non-RPWs are considered to encompass all ephemeral streams. Table 1 summarizes the characteristics of all the drainages within or near the DA.

Table 1: Types of Water Bodies within the DA

Drainage Feature	Conveyance Type at SART Project	Type of Water Body	
		RPW/Intermittent/ Perennial	Non-RPW/ Ephemeral
Santa Ana River	Not applicable/outside of DA	•	
Judson Street Channel	Not applicable/outside of DA		•
Drainage 1	Engineered open grouted riprap flood control channel		•
Drainage 2	Engineered open grouted riprap flood control channel		•
Drainage 3	Engineered open grouted riprap flood control channel		•
Drainage 4	Not applicable/outside of DA		•

3.1.2.3 Soils

Six different soil series occur on or in the immediate vicinity of the DA [United States Department of Agriculture Soil Survey, San Bernardino County, 2005] (Table 2; Figure 4). A soil series is a group of soils with similar profiles. These profiles include major horizons with similar thickness, arrangement, and other important characteristics.

Table 1: Summary of USDA / NRCS Soil Descriptions

Code	Soil Series	Mapping Unit	NRCS Hydric/ Landform	Water Drainage	Material	Permeability
HaC	Hanford	Coarse sandy loam, 2 to 9% slopes	No	Well drained	Alluvium derived from granite	Moderately rapid. Runoff is slow to medium; erosion hazard is slight to

Table 1: Summary of USDA / NRCS Soil Descriptions

Code	Soil Series	Mapping Unit	NRCS Hydric/Landform	Water Drainage	Material	Permeability
						moderate. Water holding capacity is 5-7.5 inches
Ps	Psamments and Fluvents	Frequently flooded, 0 to 5% slopes	Yes	Somewhat excessively drained	Sandy alluvium	Rapid. Water holding capacity is 2-5 inches
SoC	Soboba	Gravelly loamy sand, 0 to 9 percent slopes	No	Excessively drained	Alluvium derived from granite	Very slow runoff and rapid permeability
SpC	Soboba	Stony loamy sand, 2 to 9% slopes	No	Excessively drained	Alluvium derived from granite	Very slow runoff and rapid permeability
TuB	Tujunga	Loamy sand, 0 to 5% slopes	Yes	Somewhat excessively drained	Alluvium derived from granite	Rapid. Available water holding capacity is 2-5 inches
TvC	Tujunga	Gravelly loamy sand, 0 to 9% slopes	Yes	Somewhat excessively drained	Alluvium derived from granite	Rapid. Available water holding capacity is 2-5 inches

3.1.2.4 Land Uses

As recently as 50 years ago, most of the DA was a mixture of undeveloped areas and orchards. The current land uses within the DA are predominantly composed of residential areas and city streets, along with some partially developed bluffs adjacent to the Santa Ana River floodplain. The Redlands Municipal Airport is located north of the DA in the eastern portion. Some vacant lots are also located in the vicinity of the DA near the airport. The Redlands Sports Complex occurs along Dearborn Street in the eastern portion of the DA – three parking lots within the complex are being proposed to be used as temporary

laydown areas for construction. The Santa Ana River floodplain and bluffs are located to the north of the DA, consisting of largely undeveloped and natural habitat areas.

3.1.2.5 Vegetation Communities and Land Cover Types

Seven vegetation communities and land cover types were mapped within the BSA and Project impact area (Figure 3). The vegetation communities and land cover types mapped include Riversidean alluvial fan sage scrub (RAFSS), Riversidean sage scrub (RSS) – *Encelia farinosa* dominant, agricultural, developed, disturbed, nonnative woodland, and ornamental.

The majority of the BSA is within agricultural, disturbed, or developed areas and is in close proximity to residential development. Small portions of the BSA are located in RSS–*Encelia farinosa* dominant and RAFSS. The seven vegetation communities and land cover types are presented in Table 3 and discussed individually below.

Table 2: Acreages within Project Impact Area

Vegetation Community or Land Cover Type	Temporary Impact Acreage (in acres)	Permanent Impact Acreage (in acres)	Total Acres
Riversidean Alluvial Fan Sage Scrub	0.0	0.0	0.0
Riversidean Sage Scrub – <i>Encelia farinosa</i> dominant	0.36	0.0	0.36
Agricultural	0.43	1.14	1.57
Developed	2.83	12.97	15.78
Disturbed	2.21	2.46	4.67
Nonnative Woodland	0.0	0.0	0.0
Ornamental	0.18	0.73	0.93
TOTAL	6.01	17.30	23.31

Riversidean Alluvial Fan Sage Scrub

RAFSS is a vegetation type in which scale broom (*Lepidospartum squamatum*) is dominant, co-dominant, or conspicuous in the shrub canopy. RAFSS is a community restricted to intermittently or episodically-flooded, low-gradient alluvial deposits along streams, washes, and fans, within large canyons on the coastal slopes of the San Gabriel Mountains and San Bernardino Mountains in San Bernardino County. This community is composed of a variety of drought-deciduous subshrubs and large evergreen woody

shrubs. In addition to scale broom, shrubs such as California sagebrush (*Artemisia californica*), mule fat (*Baccharis salicifolia*), bush sunflower (*Encelia californica*), California buckwheat (*Eriogonum fasciculatum*), chaparral yucca (*Hesperoyucca whipplei*), coastal prickly pear (*Opuntia littoralis*), and poison oak (*Toxicodendron diversilobum*) are present in RAFSS. Common subshrubs include deerweed (*Acmispon glaber*), matchweed (*Gutierrezia californica*), and Douglas' nightshade (*Solanum douglasii*). Common tree species include Southern California black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), Fremont's cottonwood, and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Native species found within the herbaceous understory include common fiddleneck (*Amsinckia intermedia*), croton (*Croton californicus*), and cryptantha (*Cryptantha* sp.). Due to intense, periodic flooding and erosion within the alluvial plain, a series of step-like terraces are created above wash channels, each exhibiting a different successional phase. These phases are related to the amount of time elapsed since the most recent flood and occur as a sequential gradation of terrace types with increasing distance from the active channel.

Dominant plant species noted within the RAFSS habitat that occurs within the western portion of the BSA include brittlebush (*Encelia farinosa*), California buckwheat, scalebroom, and common sagebrush (*Artemisia tridentata*). The RAFSS within the BSA is highly disturbed and is located at the base of the river bluffs within the floodplain of the Santa Ana River, outside the project impact area.

Riversidean Sage Scrub – *Encelia farinosa* dominant

RSS is composed of a collection of several distinct vegetation alliances that are dominated by low-statured, aromatic, drought-deciduous shrubs and subshrubs. RSS typically occurs on steep slopes, severely drained soils, or clays that are slow to release stored soil moisture (Holland 1986). Shrubs that typically occur within RSS include California sagebrush, California buckwheat, laurel sumac (*Malosma laurina*), bush sunflower, black sage and/or white sage. Other plant species commonly occurring in RSS include brittlebush (*Encelia farinosa*), lemonadeberry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), and several species of cactus (*Cylindropuntia* spp., *Opuntia* spp.). RSS may occur on a variety of slopes and aspects from nearly level hilltops to steep xeric slopes. Within the BSA, RSS – *Encelia farinosa* dominant habitat occurs at the top of the river bluff and consists of a small, isolated patch of fairly monotypic brittlebush scrub with an understory of nonnative grasses (*Bromus* spp., *Avena* spp.) and compacted soils. Approximately 0.36 acre of RSS – *Encelia farinosa* dominant habitat would be temporarily impacted by the Project.

Agricultural

Agricultural areas consist of any part of the BSA that is under active cultivation, either irrigated or not. It includes orchards such as orange groves. The majority of the agricultural areas are located in the central and eastern portions of the BSA along Pioneer Avenue and San Bernardino Avenue. Approximately 1.14 acres of agricultural land would be permanently impacted by the project and 0.43 acre of agricultural land would be temporarily impacted by the Project. Impacts to agricultural lands would be limited to areas where the ultimate road right of way has not been developed.

Developed

Developed areas include buildings (residential and commercial), some smaller landscaped areas, roads, and paved areas. Paved parking areas, driveways, landscaping,

and bare soils are included in the developed category. Approximately 12.97 acres of developed areas would be permanently impacted by the project and 2.83 acres of developed areas would be temporarily impacted by the Project.

Disturbed

Areas devoid or mostly devoid of vegetation and containing no buildings or other development were classified as disturbed. Areas considered disturbed include the majority of the bluffs in the western portion of the BSA and undeveloped lots throughout the remaining portions of the BSA. The disturbed designation indicates a location that may be actively maintained to be free of vegetation or that has been compacted to such a degree that vegetation is very sparse. Approximately 2.46 acres of disturbed areas would be permanently impacted by the project and 2.21 acres of disturbed areas would be temporarily impacted by the Project.

Ornamental

Ornamental areas are planted with common landscaping plants not native to the region, such as oleander (*Nerium oleander*). The parks located in the western and central portions of the BSA were classified as ornamental as well landscaping that occurs along the eastern roadside of Dearborn Street and the northern roadside of San Bernardino Avenue west of Wabash Avenue. Approximately 0.73 acre of ornamental would be permanently impacted by the project and 0.18 acre of ornamental would be temporarily impacted by the Project.

Nonnative woodland

Nonnative woodlands are planted with landscaping trees not native to the region, such as eucalyptus (*Eucalyptus* sp.). Nonnative woodland occurs on either side of Orange Street at the western end of the alignment along the north side of Riverview Drive. Dominant nonnative tree species in this area include eucalyptus and athel tamarisk (*Tamarix aphylla*). The nonnative woodland habitat within the BSA is highly disturbed and is located outside the project impact area.

3.1.2.6 Dominant Plant Species

In the majority of the BSA, the dominant plant species are associated with ornamental or disturbed areas. These species include castor bean (*Ricinus communis*), tree tobacco (*Nicotiana glauca*), nonnative grasses, athel tamarisk, and Brazilian pepper tree (*Schinus terebinthifolius*). Dominant plant species within the disturbed RAFSS and RSS – *Encelia farinosa* dominant native plant communities in the western portion of the BSA include brittlebush, California buckwheat, common sagebrush, and nonnative grasses. A complete list of plant species observed during the biological reconnaissance surveys is included in Appendix D.

3.1.2.7 Common Wildlife Species

Within the BSA, the majority of the western portion of the BSA is heavily urbanized with paved roads, commercial and industrial developments, residential developments, and ornamental landscaping. Agricultural fields, orchards, and vacant fields dominate the central and eastern portions of the BSA. The most common wildlife species detected were urban-adapted bird species including rock pigeon (*Columba livia*), black phoebe (*Sayornis nigricans*), house finch (*Carpodacus mexicanus*), yellow-rumped warbler (*Setophaga coronata*), lesser goldfinch (*Spinus psaltria*), and northern mockingbird (*Mimus*

polyglottus) along with more generalist species such as the common raven (*Corvus corax*). One common reptile species, side-blotched lizard (*Uta stansburiana*), was observed during the reconnaissance surveys. Other common reptile and amphibian species that are expected to occur within urban environments include western fence lizard (*Sceloporus occidentalis*) and alligator lizard (*Elgaria multicarinata*). There are also mammal species adapted to urban environments, such as Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*), that are expected to occur. These species can move about freely within urban environments. In addition, species such as bats and swallows that can roost or nest in urban environments, but that typically require natural or semi-natural areas nearby can reasonably be expected to be present. Some otherwise uncommon bird species, such as raptor species, will regularly migrate through urban environments.

The native RAFSS and RSS – *Encelia farinosa* dominant habitat within the BSA has a set of common species associated with these habitat types. Common reptile species expected to occur in these natural areas include sagebrush lizard (*Sceloporus graciosus*) and gopher snake (*Pituophis catenifer*). Common bird species observed in these areas included Anna's hummingbird (*Calypte annae*), California towhee (*Melospiza crissalis*), California quail (*Callipepla californica*), wrentit (*Chamaea fasciata*), and bewick's wren (*Thryomanes bewickii*). Common mammal species expected to occur include coyote (*Canis latrans*), California ground squirrel (*Otospermophilus beecheyi*), and Audubon's cottontail (*Sylvilagus audubonii*). A complete list of wildlife species observed during the biological reconnaissance surveys is included in Appendix D.

3.1.2.8 Aquatic Resources

The jurisdictional assessment of the DA documented six (6) hydrogeomorphic features, including two (2) named features: Santa Ana River and Judson Street Channel. Four of the features are grouted riprap channels, all of which are unnamed and serve the primary purpose of directing urban runoff (irrigation, and so on) and stormwater runoff.

Section 3.1.2.2 contains more details on the drainages documented within the BSA.

3.1.2.9 Invasive Species

Thirteen plant species considered exotic/invasive by the California Invasive Plant Council (Cal-IPC) were observed within the BSA. These species generally occurred in areas identified as disturbed or ornamental and include castor bean, giant reed (*Arundo donax*), black mustard (*Brassica nigra*), wild oat (*Avena fatua*), tree of heaven (*Ailanthus altissima*), tree tobacco, ripgut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis*), fountain grass (*Pennisetum setaceum*), athel tamarisk, Brazilian pepper tree, and red gum eucalyptus (*Eucalyptus camaldulensis*). See Chapter 5 for further discussion of invasive plant species.

No substantial populations of invasive wildlife have been documented in the BSA. House sparrows (*Passer domesticus*), rock pigeons, European starlings (*Sturnus vulgaris*), Virginia opossums, and feral dogs (*Canis lupus familiaris*) and cats (*Felis catus*) are known to occur in urban areas in the vicinity of the BSA.

3.2 Regional Species and Habitats and Natural Communities of Concern

3.2.1 CRITICAL HABITAT

Designated Critical Habitat for Santa Ana sucker (*Catostomus santanae*) is located adjacent to the Project impact area, and designated Critical Habitat for San Bernardino kangaroo rat (SBKR) is located within the Project impact area (Figure 5).

3.2.1.1 Santa Ana Sucker

There is no designated habitat for Santa Ana sucker within the Project site; however, the boundary of the designated Critical Habitat is located adjacent to the Project site. On December 2, 2010, USFWS issued a final rule to re-designate Critical Habitat for the Santa Ana sucker (*Catostomus santaanae*; USFWS 2010a). The rule identified three Critical Habitat units: Santa Ana River (Unit 1), San Gabriel River (Unit 2), and Big Tujunga Creek (Unit 3). Unit 1 totals 1,559 acres divided into three subunits. Subunits 1B and 1C are both occupied by the species. Subunit 1A, which is located adjacent to the Project impact area, is not occupied by the Santa Ana sucker but is essential to its conservation because the areas within Subunit 1A contain the “process of water and coarse sediment transport” that are critical to the conservation of the Santa Ana sucker (USFWS 2010a). This area was considered historically occupied based on a 1982 CNDDDB record and a 1940 University of Michigan Museum of Zoology Fish Collection database record (USFWS 2010a). This subunit has been heavily affected by urban development and threats to Santa Ana sucker and its essential features in this subunit result from impacts associated with, but not limited to: water diversion; dams; water quality impacts from non-point source and point source pollution (including untreated urban run-off and discharge of treated wastewater); and altered hydrology throughout the watershed (including alterations from in stream barriers, construction of bridges, channelization, and other flood control structures). According to the Critical Habitat final rule, special management considerations or protection may be needed in this subunit to protect its essential features.

3.2.1.2 San Bernardino Kangaroo Rat

Critical Habitat for the SBKR is present within the Project site. On October 17, 2008, USFWS issued a final rule to re-designate Critical Habitat for the SBKR (USFWS 2008). Five Critical Habitat units, totaling 7,779 acres, were re-designated within the range of SBKR. The central and western portions of the Project site overlap with Unit 1, the Santa Ana River Wash. This 3,258-acre unit is located within the Santa Ana River Wash and comprises portions of Plunge Creek, Mill Creek, Santa Ana River, and City Creek. Unit 1 contains the highest density of SBKR in the Santa Ana wash and contains all the habitat features that are necessary for SBKR survival and existence. Mining, off-road vehicle use, and water conservation activities occur within this unit and affect habitat for the species. According to the Critical Habitat final rule, special management considerations or protection may be needed in this subunit to protect its essential features.

3.2.2 SENSITIVE PLANT COMMUNITIES

One sensitive plant community, RAFSS, was identified during the literature review. This community is associated with the Santa Ana River Wash and adjacent areas and was documented in the western portion of the BSA outside the Project impact area.

3.2.3 SENSITIVE PLANT SPECIES

The literature review and database search of the Redlands, San Bernardino South, and Yucaipa USGS 7.5-minute topographic quadrangles indicated that 17 special-status plant species potentially occur within the region. Three of the 17 special-status plant species are federally and state-listed endangered species. Further information on the 17 special-status species, including habitat requirements and potential for occurrence within the BSA, is summarized in Table 4. Plant species with a CNPS Rare Plant Rank 3 or 4 were eliminated from the analysis because these rankings are considered a review list and a watch list, respectively. Furthermore, several special-status plant species only had one occurrence documented in the late 1800s or early 1900s and the populations were considered by the CNDDDB and/or the CNPS to be extirpated. These species were also eliminated from the analysis.

3.2.4 SENSITIVE WILDLIFE SPECIES

The literature review and database search of the Redlands, San Bernardino South, and Yucaipa USGS 7.5-minute topographic quadrangles indicated that 37 special-status wildlife species potentially occur within the region. Fourteen of the 37 special-status species are federally and/or state-listed as proposed, threatened, or endangered species, or are state fully protected. CDFW Watch List species were not included in this analysis. Further information on all 37 special-status species, including habitat requirements and potential for occurrence within the BSA, is summarized in Table 4.

The federally listed wildlife species identified on the Project's official USFWS list dated September 10, 2018 are discussed in more detail in Chapter 4.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Plants					
<i>Ambrosia pumila</i>	San Diego ambrosia	US: FE CA: -- CNPS 1B.1	Often found in disturbed areas in vernal pool, valley and foothill grassland, chaparral, and coastal scrub habitats with sandy loam or clay soils.	P	Not likely to occur. Potentially suitable habitat is present within the western portion of the BSA in the RAFSS habitat; however, The BSA is located outside of the known range for San Diego ambrosia and this species has not been previously documented in San Bernardino County.
<i>Berberis nevini</i>	Nevin's barberry	US: FE CA: SE CNPS 1B.1	Occurs on steep north-facing slopes or sandy washes in chaparral, coastal scrub, and riparian scrub.	P	Not likely to occur. Marginally suitable habitat is present within the western portion of the BSA in the disturbed RAFSS habitat. However, this large shrub would likely have been observed if present.
<i>Carex comosa</i>	bristly sedge	US: -- CA: -- CNPS 2B.1	Occurs in grassland, marsh, and swamp habitats.	A	Not likely to occur. No suitable habitat within the BSA. Species is considered possibly extirpated by CNPS. Most recent observation was in 1882.
<i>Centromadia pungens</i> ssp. <i>laevis</i>	smooth tarplant	US: -- CA: -- CNPS 1B.1	Occurs in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland on alkaline soils.	A	Not likely to occur. No suitable habitat within the BSA.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	salt marsh bird's-beak	US: -- CA: -- CNPS 1B.2	Occurs in coastal dunes, marshes, and swamps.	A	Not likely to occur. No suitable habitat within the BSA. Species is considered possibly extirpated by CNPS. Most recent observation was in 1888.
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	US: -- CA: -- CNPS 1B.1	Occurs in chaparral and coastal scrub in rocky/sandy openings.	P	Potential to occur. Suitable habitat is present within the western portion of the BSA in the RAFSS habitat and marginally suitable habitat is located within the disturbed RSS- <i>Encelia farinosa</i> dominant habitat.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	white-bracted spineflower	US: -- CA: -- CNPS 1B.2	Occurs in sandy or gravelly soils within juniper woodland, desert scrub, and coastal scrub habitats.	A	Potential to occur. Suitable habitat is present within the western portion of the BSA in the RAFSS habitat and marginally suitable habitat is located within the disturbed RSS- <i>Encelia farinosa</i> dominant habitat.
<i>Dodecahema leptoceras</i>	slender-horned spineflower	US: FE CA: SE CNPS 1B.1	Occurs in coastal scrub, chaparral in sandy soils on river floodplain, or terraced fluvial deposits.	A	Potential to occur. Suitable habitat is present within the western portion of the BSA in the RAFSS habitat. Focused surveys conducted in support of the Wash Plan did not identify this species within the BSA.
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woollystar	US: FE CA: SE CNPS 1B.1	Chaparral, coastal scrub, alluvial fan, sandy, or gravelly soils.	P	Potential to occur. Suitable habitat is present within the western portion of the BSA in the RAFSS habitat. This species was not detected during the 2018 biological survey that was conducted during the blooming period. Focused habitat surveys conducted in support of the Wash Plan did not identify this species within the BSA.
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin mountain bedstraw	US: -- CA: -- CNPS 1B.2	Occurs in coniferous forest and chaparral habitats containing ample shade from trees and shrubs.	A	Not likely to occur. No suitable habitat within the BSA. Most recent observation was in 1967.
<i>Horkelia cuneata</i> ssp. <i>puberula</i>	mesa horkelia	US: -- CA: -- CNPS 1B.1	Coastal strand, closed-cone pine forest, foothill woodland, northern coastal scrub, chaparral, coastal sage scrub.	P	Potential to occur. Suitable habitat is present within the RAFSS habitat and marginally suitable habitat is present within the disturbed RSS- <i>Encelia farinosa</i> dominant habitat in the western portion of the BSA.
<i>Imperata brevifolia</i>	California satintail	US: -- CA: -- CNPS 2B.1	Wet areas and floodplains below 1,600-foot elevation. Widespread in California and the western U.S. Also occurs in Mexico.	A	Not likely to occur. No suitable habitat within the BSA. Most recent observation was in 1891.
<i>Mondardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	US: -- CA: -- CNPS 1B.3	Occurs in openings on dry ridges and slopes within chaparral, forest, cismontane woodland, grassland, and coniferous forest habitats.	A	Not likely to occur. No suitable habitat within the BSA.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Senecio aphanactis</i>	chaparral ragwort	US: -- CA: -- CNPS 2B.2	Occurs in coastal scrub, chaparral, and cismontane woodland habitats.	P	Potential to occur. Suitable habitat is present within the RAFSS habitat and marginally suitable habitat is present within the disturbed RSS- <i>Encelia farinosa</i> dominant habitat in the western portion of the BSA.
<i>Sidalcea hickmanii</i> <i>ssp. parishii</i>	Parish's checkerbloom	US: -- CA: -- CNPS 1B.2	Occurs in lower montane coniferous forest, cismontane woodland, and chaparral habitats at higher elevations.	A	Not likely to occur. No suitable habitat within the BSA. Most recent observation was 1909.
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	US: -- CA: -- CNPS 2B.2	Occurs in desert scrub, coastal scrub, chaparral, lower montane coniferous forest, and playa habitats containing alkali springs and/or marshes.	A	Not likely to occur. No suitable habitat within the BSA.
<i>Sphenopholis obtusata</i>	prairie wedge grass	US: -- CA: -- CNPS 2B.2	Occurs in meadows, seeps, and cismontane woodland.	A	Not likely to occur. No suitable habitat within the BSA. Most recent observation was 1917.
<i>Streptanthus campestris</i>	southern jewelflower	US: -- CA: -- CNPS 1B.3	Occurs in rocky, open areas within pinyon and juniper woodland, chaparral, and lower montane coniferous forest habitat.	A	Not likely to occur. No suitable habitat within the BSA. Most recent observation was 1955.
Invertebrates					
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi Sands flower-loving fly	US: FE CA: --	Found only in fine, sandy soils, often with wholly or partly consolidated dunes referred to as the Delhi Sands. The fly is typically found in relatively intact, open, sparse, native habitats with less than 50 percent vegetative cover.	A	Not likely to occur. No suitable habitat within the BSA.
Fish					
<i>Catostomus santanae</i>	Santa Ana sucker	US: FT CA: --	Endemic to Los Angeles basin south coastal streams. Is a habitat generalist, but prefers sand-rubble-boulder bottoms, cool, clear water, and algae.	A CH (adjacent)	Not likely to occur. No suitable habitat within the BSA. Designated Critical Habitat occurs adjacent to the BSA to the north within the Santa Ana River. The nearest CNDDB occurrence is approximately 7 miles north of the BSA.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Gila orcuttii</i>	arroyo chub	US: -- CA: SSC	Inhabits sandy and muddy bottoms in flowing pools and runs of headwaters, creeks, and small to medium rivers.	A	Not likely to occur. No suitable habitat within the BSA.
<i>Rhinichthys osculus</i> ssp. 3	Santa Ana speckled dace	US: -- CA: SSC	Found in the headwaters of the Santa Ana and San Gabriel rivers. Requires permanent flowing streams with summer water temperatures of 17 to 20 degrees Celsius. Usually inhabits shallow cobble and gravel riffles.	A	Not likely to occur. No suitable habitat within the BSA.
Amphibians					
<i>Rana draytonii</i>	California red-legged frog	US: FT CA: SSC	Occurs in or near permanent deep water sources in foothill areas containing riparian vegetation.	A	Not likely to occur. No suitable habitat within the BSA.
<i>Rana muscosa</i>	mountain yellow-legged frog	US: FE CA: SSC	Inhabits ponds, dams, lakes, and streams at moderate to high elevations. Appears to prefer open stream and lake margins that gently slope up to a depth of 2 to 3 inches. Always encountered within a few feet of water. Tadpoles may require up to 2 years to complete their aquatic development.	A	Not likely to occur. No suitable habitat within the BSA.
<i>Spea hammondi</i>	western spadefoot	US: -- CA: SSC	Requires vernal pools in grassland and woodland habitats.	A	Not likely to occur. No suitable habitat within the BSA.
Reptiles					
<i>Arizona elegans occidentalis</i>	California glossy snake	US: -- CA: SSC	Occurs in scrub and grassland habitats containing sandy or loose soils.	P	Potential to occur. Suitable RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat is present within the western portion of the BSA.
<i>Anniella pulchra</i>	silvery legless lizard	US: -- CA: SSC	Loose organic soil or where there is plenty of leaf litter in a variety of habitats, including coastal sage scrub, chaparral, oak woodland, and pine forests.	P	Potential to occur. Marginally suitable habitat is present within the disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat in the western portion of the BSA.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	US: -- CA: SSC	Occurs in rocky areas within chaparral and coastal sage scrub.	A	Not likely to occur. No suitable habitat within the BSA. No rocky outcrops are present within the disturbed RAFSS or RSS- <i>Encelia farinosa</i> dominant habitat.
<i>Crotalus ruber</i>	red-diamond rattlesnake	US: -- CA: SSC	Associated with chaparral, woodland, grassland, and desert communities from coastal San Diego County to the eastern slopes of the mountains. Prefers rocky areas with dense vegetation. Needs rodent burrows, cracks in rocks, or surface cover objects for shelter.	P	Potential to occur. Marginally suitable habitat is present within the disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat in the western portion of the BSA.
<i>Phrynosoma blainvillii</i>	coast horned lizard	US: -- CA: SSC	May be found in coastal sage scrub and chaparral in arid and semi-arid climate; prefers friable, rocky, or shallow sandy soils. Requires harvester ants for food.	P	Present. Suitable RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat is present within the western portion of the BSA. This species was observed during a survey conducted in 2014.
<i>Salvadora hexalepis virgulata</i>	coast patch-nosed snake	US: -- CA: SSC	Uses small mammal burrows in scrub habitats.	P	Potential to occur. Suitable disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat is present within the western portion of the BSA.
Birds					
<i>Agelaius tricolor</i>	tricolored blackbird	US: -- CA: CE; SSC	Requires open water, often associated with dairies, agricultural areas, and wetlands.	A	Not likely to occur. No suitable open water habitat within the BSA.
<i>Athene cunicularia</i>	burrowing owl	US: -- CA: SSC	Uses large rodent burrows or other burrows in grasslands, prairies, and agricultural areas.	P	Potential to occur. Suitable habitat occurs within the BSA in former agricultural fields and disturbed areas.
<i>Campylorhynchus brunneicapillus</i>	cactus wren	US: -- CA: SSC	Occurs in native scrub communities with cactus species present (e.g., <i>Cylindropuntia</i> spp., <i>Opuntia</i> spp.).	P	Potential to occur. Marginally suitable habitat is present within the disturbed RAFSS habitat in the western portion of the BSA.
<i>Buteo swainsoni</i>	Swainson's hawk	US: -- CA: ST	Requires tall substrates for nesting (i.e., trees, powerlines) in desert, riparian, agricultural, and grassland habitats.	A	Not likely to occur. No suitable habitat within the BSA. Last CNDDDB occurrence in vicinity of the BSA was recorded in 1900.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	US: FT CA: SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Prefers riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	A	Not likely to occur. No suitable riparian habitat within the BSA. Last CNDDDB occurrence within the Santa Ana River reported in 1930.
<i>Elanus leucurus</i>	white-tailed kite	US: -- CA: FP	Occurs in open areas, such as grasslands, meadows, rolling foothills, with mature trees for nesting.	A	Not likely to occur. The one cottonwood location within the BSA is not large enough to support this species.
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	US: FE CA: SE	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, and usually with standing water. Winters in Central and South America.	A	Not likely to occur. No suitable riparian habitat within the BSA. The one cottonwood location within the BSA is not large enough and does not have the appropriate structural components to support this species. Nearest CNDDDB occurrence is in San Timoteo Canyon, approximately 5 mi south of the BSA, and was recorded in 2011.
<i>Icteria virens</i>	yellow-breasted chat	US:-- CA: SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses.	A	Not likely to occur. No suitable riparian habitat within the BSA. The one cottonwood location within the BSA is not large enough and does not have the appropriate structural components to support this species.
<i>Lanius ludovicianus</i>	loggerhead shrike	US: -- CA: SSC	Nests in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	P	Potential to occur. Marginally suitable RAFSS habitat is present within the western portion of the BSA.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Poliophtila californica californica</i>	coastal California gnatcatcher	US: FT CA: SSC	Inhabits coastal sage scrub in low-lying foothills and valleys in cismontane southwestern California and Baja California. May be found in coastal sage scrub below 2,500 feet; prefers low, coastal sage scrub in arid washes, mesas, and slopes.	P	Potential to occur. Marginally suitable habitat is present in the disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat in the western portion of the BSA. Due to the limited size and disturbed condition of the RSS- <i>Encelia farinosa</i> dominant habitat, it is unlikely to support nesting habitat for this species.
<i>Vireo bellii pusillus</i>	least Bell's vireo	US: FE CA: SE	Prefers dense riparian habitats, but can also be found in more open riparian habitats such as mule fat. Nests from central California to northern Baja California. Winters in southern Baja California.	A	Not likely to occur. No suitable riparian habitat within the BSA. The one cottonwood location within the BSA is not large enough and does not have the appropriate structural components to support this species. Nearest CNDDDB occurrence was documented in 1900 approximately 0.5 mi south of the BSA. The closest recent CNDDDB occurrence was documented in 2009 in Plunge Creek, approximately 2 miles north of the BSA.
Mammals					
<i>Antrozous pallidus</i>	pallid bat	US: -- CA: SSC	May be found in rocky, mountainous areas and near water. Found in a variety of habitats, from scattered desert scrub, grassland, shrub land, woodland, and forests, from sea level through mixed conifer. In addition, found over more open, sparsely vegetated grasslands, and seem to prefer to forage in the open. Commonly found roosting in bridges.	P	Potential to occur. Suitable roosting habitat is limited within the BSA; however, the habitats within the BSA may provide foraging habitat.
<i>Chaetodipus fallax fallax</i>	northwestern San Diego pocket mouse	US: -- CA: SSC	May be found in coastal scrub, chaparral, grasslands, and sagebrush; prefers sandy, herbaceous areas in rocks or coarse gravel.	P	Potential to occur. Suitable habitat exists within/near the western portion of the BSA in the disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	US: FE CA: SSC	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and floodplains. Needs early to intermediate seral stages.	P CH	Present. Although focused trapping efforts have not been conducted within the BSA, this species has been captured during focused trapping efforts on the parcel east of Judson Street and immediately south of the Redlands Municipal Airport, north of the BSA. This species is assumed to be present in the western portion of the BSA at the base of the river bluffs based on presence of suitable RAFSS habitat. Critical habitat is present within the BSA in the western and central portions of the alignment.
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	US: FE CA: ST	Occurs at elevations below 2,000 feet in flat or gently rolling, often degraded, annual grassland. Often associated with locations where grass cover and bare ground are abundant but where bush and rock are uncommon.	A	Not likely to occur. No suitable habitat within the BSA. BSA is outside the range for this species. Closest known occurrence is a historical record approximately 5 miles south of the BSA.
<i>Eumops perotis californicus</i>	western mastiff bat	US: -- CA: SSC	Primarily a cliff-dwelling species and is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, floodplains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas. Roosts in crevices in cliff faces, high buildings, trees, and tunnels. Characteristically, day roosts are located in large cracks in exfoliating slabs of granite or sandstone. Mastiff bats have great difficulty taking flight, and must drop at least 7 to 10 feet for launching.	P	Potential to occur. Species may forage in open areas within the BSA and has potential to roost in steeper portions of the river bluffs. No significant rock features are present; however, developed areas adjacent to the BSA could provide suitable roosting sites.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
<i>Lasiurus xanthinus</i>	western yellow bat	US: -- CA: SSC	Found in fan palm oases and associated riparian habitats in the Colorado Desert of California. Appears to be expanding its range northward in association with ornamental palms. Range extends into Los Angeles and southern San Bernardino counties.	A	Not likely to occur. No suitable riparian habitat within the BSA.
<i>Leptonycteris yerbabuenae</i>	lesser long-nosed bat	US: FE CA: --	Roosts in caves and mines within arid areas such as deserts. Requires cactus for foraging.	A	Not likely to occur. No suitable cave or mine habitat present within the BSA. One record of this species was documented in 1993 approximately 5 miles southeast of the BSA.
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	US: -- CA: SSC	Inhabits deserts, grasslands, and open scrub habitats.	P	Potential to occur. Suitable habitat is present within the disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat within the western portion of the BSA.
<i>Neotoma lepida intermedia</i>	San Diego desert wood rat	US: -- CA: SSC	Alluvial fan sage scrub; moderate to dense canopies preferred. They are particularly abundant in rock outcrops and rocky cliffs and slopes.	P	Potential to occur. Marginally suitable habitat is present within the RAFSS habitat within the western portion of the BSA.
<i>Nyctinomops femorosaccus</i>	pocketed free-tailed bat	US: -- CA: SSC	Found in the lower Colorado Desert and coastal areas of southern California, but are known as far north as Los Angeles and southern San Bernardino counties. Associated with arid lowland areas, particularly desert canyons, and creosote bush and chaparral habitats. Day roosts primarily in crevices in cliff faces and boulders, although has been found in caves and buildings.	A	Not likely to occur. No suitable habitat within the BSA.
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	US: -- CA: SSC	Found in grasslands and sparse coastal sage scrub habitats.	P	Potential to occur. Marginally suitable habitat is present within the disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat within the western portion of the BSA.

Table 3: Regional Plant and Wildlife Species of Concern

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	US: -- CA: SSC	May be found in lower elevation grasslands and coastal sage communities; prefers open ground with fine sandy soils.	P	Potential to occur. Marginally suitable habitat is present within the disturbed RAFSS and RSS- <i>Encelia farinosa</i> dominant habitat within the western portion of the BSA.
<i>Taxidea taxus</i>	American badger	US: -- CA: SSC	Drier open stages of shrub, forest, and herbaceous habitats, with friable soils; needs sufficient food and open, uncultivated ground; digs burrows.	A	Not likely to occur. No suitable habitat within the BSA.

US: Federal Classifications

FE Federally Listed Endangered
FT Federally Listed Threatened

CA: State Classifications

SE State Listed Endangered
ST State Listed Threatened
CE Candidate for State Listing as Endangered
SSC California Species of Concern
FP Fully Protected

CNPS: California Native Plant Society Classifications

1B Plants rare, threatened, or endangered in California and elsewhere
2B Plants rare, threatened, or endangered in California, but more common elsewhere

CNPS Extension Meanings

0.1 Seriously threatened in California
0.2 Moderately threatened in California
0.3 Not very threatened in California

Habitat Present/Absent within the BSA

P Present
A Absent
CH Critical Habitat

Seven federally and/or state-listed species were found in the literature review but have been eliminated from further analysis. Each of these species and the reason that no further analysis is warranted is listed below.

- Delhi Sands flower-loving fly (*Raphiomidas terminatus abdominalis*): A habitat specialist that requires a specific type of fine, sandy soils called Delhi Sands. Delhi Sands habitat is not present within or adjacent to the BSA; therefore, this species is not expected to occur within the BSA and Project impacts are not expected.
- California red-legged frog (*Rana draytonii*): Requires permanent deep water habitat in foothill areas. Permanent deep water sources are not present within or adjacent to the BSA; therefore this species is not expected to occur within the BSA and Project impacts are not expected.
- Mountain yellow-legged frog (*Rana muscosa*): Associated with water sources at moderate to high elevations. Water sources and moderate- to high-elevation habitat is not present within or adjacent to the BSA; therefore, this species is not expected to occur within the BSA and Project impacts are not expected.
- Tricolored blackbird (*Agelaius tricolor*): Requires open water and the species is often associated with wetlands, active agricultural areas, and dairies. Open water habitat is not present within or adjacent to the BSA; this species is not expected to occur within the BSA and Project impacts are not expected.
- Swainson's hawk (*Buteo swainsoni*): The last recorded observation of this species in the region was documented in 1900. Swainson's hawk requires tall substrates in desert, riparian, agricultural, and grassland habitats for nesting. Suitable habitat with tall nesting substrates is not present within or adjacent to the BSA. Furthermore, the validity of the record in the CNDDDB appears to be in question because the record states "this historical occurrence is outside what is generally considered to be the current breeding range in California." This species is not expected to occur within the BSA and Project impacts are not expected.
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*): Requires large riparian areas with varying structural components, such as cottonwoods with a mid-story of dense willows (*Salix* spp.), and a shrubby understory. Suitable riparian habitat is not present within the BSA; this species is not expected to occur within the BSA and Project impacts are not expected.
- Lesser long-nosed bat (*Leptonycteris yerbabuenae*): Requires cactus species in arid areas for foraging activities in proximity of caves or mines that are used for roosting. Suitable cave and mine habitat is not present within the BSA; this species is not expected to occur within the BSA and Project impacts are not expected.

3.3 Habitat Connectivity

Habitat connectivity is established when there is a wildlife movement corridor that connects two blocks of native habitat. A wildlife corridor between such habitats functions to allow for genetic interchange between populations. Movement corridors allow for dispersal of young, expanded foraging opportunities, and allow for animals to flee one patch of habitat in the event of a fire or other large-scale disturbance. Viable connections

between habitat areas effectively expand the usable areas for wildlife that utilize both the habitats and the corridors connecting them. The major regional blocks of habitat in the region of the Project include the San Gabriel Mountains, the San Bernardino Mountains, the Chino Hills, the Prado Basin, the Jurupa Hills, the San Timoteo Badlands, and the Crafton Hills. The upper Santa Ana River floodplain between Redlands and San Bernardino is also a major block of habitat. Wildlife movement connections between these features are generally limited by urbanization. Restrictions are lessened where these habitat blocks are closer to each other.

In general, residential and commercial development is present south of the western portion of the BSA, with the Santa Ana River Wash present to the north. The segment of the BSA that runs along Pioneer Avenue in the central portion of the BSA is surrounded by development, agriculture, and vacant fields on both sides. Agriculture and vacant fields occur along either side of San Bernardino Avenue in the eastern portion of the BSA as well as a residential development and a sports park. Urban developments are generally not conducive to wildlife travel between natural areas because of vehicular traffic, human presence, and the presence of too much noise and light. The vacant parcels of land may provide unrestricted movement, but are typically not utilized by wildlife due to lack of protective cover and proximity to development. However, there are some wildlife species that are well-adapted to urban environments and will thrive among residential and commercial developments, especially when in close proximity to vacant parcels. Most of the species that are commonly observed in urban environments do not have specific movement corridor requirements, instead, they use non-specific movement patterns across these urban areas.

Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation

4.1 Habitats and Natural Communities of Special Concern

The Natural Communities of Special Concern that are present within or adjacent to the BSA include designated Critical Habitat for Santa Ana sucker and SBKR, RAFSS, Waters of the U.S., and CDFW jurisdiction. Impacts to designated Critical Habitat for Santa Ana sucker and SBKR are addressed in Sections 4.3.1 and 4.3.4, respectively.

4.1.1 RIVERSIDEAN ALLUVIAL FAN SAGE SCRUB

4.1.1.1 Survey Results

RAFSS was mapped within the western portion of the BSA during the biological surveys on June 15 and August 9, 2018. The RAFSS within the BSA is located at the base of the river bluffs within the Santa Ana River floodplain.

4.1.1.2 Project Impacts

In the western portion of the Project, construction and associated staging areas will be located on top of the bluffs, well outside the RAFSS located at the bottom of the bluffs in the floodplain. In the central and eastern portions of the Project, construction and associated staging areas will occur within previously disturbed and/or developed areas where RAFSS was neither present nor in the vicinity. In summary, the RAFSS at the bottom of the bluffs would not be easily accessible during construction activities, nor would it be easily accessible during trail operation activities. Direct impacts to RAFSS are not expected as a result of the Project.

Indirect impacts may occur to RAFSS through habitat degradation should runoff contribute to erosion of adjacent river bluffs or stockpiled materials not be adequately contained.

4.1.1.3 Avoidance and Minimization Efforts

The following avoidance and minimization measures derived from the Wash Plan will be implemented to offset indirect impacts to RAFSS:

- Barriers such as boulders, fences, and gates will be placed and maintained along work area and trail boundaries to help prevent unauthorized activities, including dumping and off-road vehicle use.
- The limits of construction will be marked, fenced, and maintained as necessary until work is completed.
- Personnel will strictly limit their activities, vehicles, equipment, and construction materials to the designated work area.
- Ingress and egress of construction equipment and personnel will be confined to designated access points. Cross-country travel by vehicles and equipment will be prohibited.

4.1.1.4 Compensatory Mitigation

No effects on RAFSS are expected, and no compensatory mitigation is required.

4.1.1.5 Cumulative Impacts

The proposed Project would not have cumulative effects on RAFSS. Impacts to this sensitive community would be avoided, and the Project would not have a considerable contribution to cumulative impacts.

The proposed alignment associated with the Project reduces the overall impacts to RAFSS when compared to the alignment that was proposed in the Wash Plan. This reduces the overall cumulative impacts to RAFSS in the region.

4.1.2 WATERS OF THE U.S.

4.1.2.1 Survey Results

Within the DA, there were no features considered to be jurisdictional to the USACE. The features recorded are not jurisdictional due to being artificial stormwater conveyances excavated within upland, dry areas and not corresponding to natural stream channels. According to 33 CFR Part 328.3, these features are not considered to be jurisdictional even if they meet criteria of being tributaries otherwise defined in the regulations. A Significant Nexus determination is also not applicable to these types of features. There were no USACE-jurisdictional wetlands, isolated or otherwise, identified within the DA and no Special Aquatic Sites. Caltrans may request a jurisdictional finding for the features shown in Table 5. Note that all features show no acreage because they are located outside of the DA. These areas were included because they were close enough to the DA to potentially warrant protection via project Best Management Practices (BMPs) during construction, even though they would not be directly impacted by the Project.

Table 5. Preliminary Jurisdictional Determination for the SART Project

Site Number	Stream Flow	Cowardin Class	Class of Aquatic Resource	Approximate Linear Feet	Potential Waters (acres)
Santa Ana River	Intermittent and Perennial	Riverine	Non-Jurisdictional	0	0
Drainage 1	Ephemeral	Riverine	Non-Jurisdictional	0	0
Drainage 2	Ephemeral	Riverine	Non-Section 10 non-wetland waters	0	0
Drainage 3	Ephemeral	Riverine	Non-Section 10 non-wetland waters	0	0
Drainage 4	Intermittent	Riverine	Non-Section 10 non-wetland waters	0	0
Judson Street Channel	Ephemeral	Riverine	Non-Section 10 non-wetland waters	0	0

4.1.2.2 Project Impacts

No USACE jurisdictional features occur within the project impact footprint as defined in the current County project plans; therefore, no impacts to USACE jurisdictional waters are expected to result from the Project. There will be no need for regulatory permitting for the Project as all impacts to jurisdictional features are avoided. Coordination with the USACE and other agencies is recommended to confirm these findings.

4.1.2.3 Avoidance and Minimization Efforts

While there are no direct impacts to any jurisdictional features associated with the Project, recommendations for avoidance and minimization of indirect impacts to Waters of the U.S., including those listed within the Wash Plan, are outlined below:

- Construction activity and access roads will be minimized to the maximum extent practicable. If impacts to jurisdictional features associated with access roads are subsequently identified in the final design are identified, permit applications to the regulatory agencies may be required.
- Silt fencing or other sediment trapping materials will be installed at the downstream end of construction activity to minimize the transport of sediments off site. Care will be exercised when removing silt fences, as feasible, to prevent debris or sediment from discharging to the stream.

- Erodible fill material will not be deposited into water courses. Brush, loose soils, or other similar debris material will not be stockpiled within or immediately adjacent to jurisdictional features.

4.1.2.4 Compensatory Mitigation

There are no impacts to Waters of the U.S. as a result of this Project, therefore, compensatory mitigation will not be required.

4.1.2.5 Cumulative Impacts

There were no USACE-jurisdictional wetlands identified within the DA. The proposed Project would have no cumulative effects on non-wetland Waters of the U.S or USACE-jurisdictional wetlands. Therefore, there would be no long-term cumulative effects associated with impacts to USACE jurisdiction proposed by this Project.

4.1.3 CDFW JURISDICTION

4.1.3.1 Survey Results

CDFW 1602 jurisdiction, and SWRCB jurisdiction Pursuant to Section 401 of the CWA, was not identified within the DA. Just outside of the DA, the Santa Ana River floodplain was identified and it is considered jurisdictional to both agencies.

The Santa Ana River floodplain mapping roughly corresponds to the limits of the Federal Emergency Management Agency (FEMA) mapping of the 10-year floodplain, as modified based on conditions observed in the field. Generally, the floodplain is bordered by moderate to high bluffs that separate the floodplain from the more upland areas. The floodplain limit is either far north of the DA or is lined up roughly with the DA limits (the DA is still entirely to the south).

4.1.3.2 Project Impacts

The project impact footprint as defined in the current County project plans does not overlap the Santa Ana River floodplain; therefore, no impacts to CDFW jurisdictional features are anticipated.

4.1.3.3 Avoidance and Minimization Efforts

Implementation of the avoidance and minimization efforts outlined in Section 4.1.2.3 will also avoid and minimize any indirect impacts to CDFW jurisdictional areas located outside but adjacent to the project impact area.

4.1.3.4 Compensatory Mitigation

There are no impacts to any CDFW jurisdictional waters as a result of this Project, therefore, compensatory mitigation will not be required.

4.1.3.5 Cumulative Impacts

There are no long-term cumulative effects associated with impacts to CDFW jurisdiction resulting from this Project.

4.2 Special-Status Plant Species

The literature search identified several special-status plant species with a potential to occur within the BSA. These species are discussed in the sections below.

4.2.1 SAN DIEGO AMBROSIA

The following information is cited from the 5-Year Review for *Ambrosia pumila* (USFWS 2010b).

San Diego Ambrosia (*Ambrosia pumila*) is a federally listed endangered species occurring predominantly in upper terraces of rivers and drainages; other populations occur within the watershed of large vernal (ephemeral) pools. Inside of these areas populations are found in open grasslands and openings in coastal sage scrub. Occurrences are also found in ruderal habitat types, or disturbed communities with nonnative and native grasses and forbs. Most occurrences of San Diego ambrosia are patchy in nature, composed of a few to numerous smaller groups of aerial stems. It is a clonal herbaceous plant with its aerial stems sprouting from underground rhizomes in early spring, and flowering between May and October.

Adapted to dry conditions, suitable habitat for San Diego ambrosia is primarily in sandy loam or clay soils. Populations are generally found below elevations of 487 meters in Riverside County, and 183 meters in San Diego County. It is not known from San Bernardino County. The plant is perennial and spreads vegetatively. Associated native plants include saltgrass (*Distichlis spicata*), mule fat, broom baccharis (*Baccharis sarathroides*), California buckwheat, and turkey-mullein (*Eremocarpus setigerus*).

USFWS biologist observations suggest San Diego ambrosia may need periodic flooding for a portion of its lifecycle, immediately prior to production of its aerial stem shoots; however, success may be due to periodic flooding conditions being less amenable to nonnative and native species. There are currently 16 known occurrences of San Diego ambrosia, five of which occur in Riverside County (Barry Jones [Skunk Hollow] Wetland Mitigation Bank, Lake Elsinore, Murrieta Hot Springs, Murrieta Creek, and the Alberhill Conservation Area). No occurrences are known within San Bernardino County and the nearest reported occurrences are over 20 kilometers south of the BSA.

4.2.1.1 Survey Results

Occurrences of this species were not found in the vicinity of the BSA during the literature search, nor anywhere in San Bernardino County. During the survey conducted for this report, the BSA was examined for potential habitat for this species. The areas having best potential were within RAFSS in the western portion of the BSA. The RSS – *Encelia farinosa* dominant habitat present did not contain most of the commonly associated species found near San Diego ambrosia populations, nor was it considered to be mesic enough to support this plant. The disturbed RAFSS habitat that is located to the north that is contiguous with more mesic environments closer to the Santa Ana River channel, may provide suitable habitat for this plant species to occur. The small patch of RSS-*Encelia farinosa* dominant habitat on the bluff in the western portion of the BSA may also provide suitable habitat.

4.2.1.2 Project Impacts

Currently no impacts to this species are anticipated. Although there is potentially suitable RAFSS and RSS-*Encelia farinosa* dominant habitat present within the BSA, and there are also sandy loam soils present, San Diego ambrosia has not been documented in San Bernardino County and the closest known population occurs more than 20 kilometers north of the BSA.

4.2.1.3 Avoidance and Minimization Efforts

It is not anticipated that the species would occur within the Project footprint or be impacted by the Project. However, due to the proximity of the RSS-*Encelia farinosa* dominant and RAFSS habitat within the Santa Ana River floodplain in the western portion of the BSA, the following avoidance and minimization measures are recommended:

- Implementation of the avoidance and minimization efforts outlined in Section 4.1.1.3 would be sufficient to avoid impacts to San Diego ambrosia.

4.2.1.4 Compensatory Mitigation

No effects on the species are expected, and no compensatory mitigation is recommended.

4.2.1.5 Cumulative Impacts

Although potentially suitable habitat is present in the western portion of the BSA in the RAFSS habitat, the Project is located outside the known range for this species. Furthermore, San Diego ambrosia has not been documented in San Bernardino County. This species is not expected to occur within the Project footprint. The proposed Project would have no cumulative effects on San Diego ambrosia.

4.2.2 NEVIN'S BARBERRY

The following information is cited from the 5-Year Review for *Berberis nevinii* (USFWS 2009).

Nevin's barberry (*Berberis nevinii*) is a federally and state listed endangered rhizomatous evergreen shrub species, 1 to 4 meters tall. It is found in the two habitat types of gravelly wash margins in alluvial and coarse soils in chaparral, coastal scrub, and riparian scrub habitat. Determining habitat is difficult due to the varied soils, bedrock substrates, and topography on which this species naturally occurs. This species flowers from March through April.

Life history characteristics are greatly unknown; several occurrences consist of only single plants, existing for decades (some more than 50 years) without reproducing sexually vegetatively, suggesting a self-incompatible breeding system. *B. nevinii* occurs in varied topography from nearly flat sandy washes, terraces, benches, and canyon floors to gravelly wash margins, steeply-sloped banks of drainages, steep rocky slopes, ridges, and mountain summits. It is a fire-adapted species, where mature individuals may survive and re-sprout following a fire.

Populations occur typically between 300 and 650 meters in elevation. Its historical distribution likely consisted of fewer than 30 scattered occurrences in Los Angeles, San

Bernardino, and Riverside Counties, and possibly San Diego County. At the time of listing 24 occurrences were known, with the majority in Riverside County (Vail Lake and Oak Mountain), and Los Angeles County (San Francisquito Canyon in the Angeles National Forest).

4.2.2.1 Survey Results

Focused surveys were not conducted for Nevin's barberry within or adjacent to the BSA. However, this species is a large shrub that would have been observed if present. Three occurrences of this species were found in the literature search, all of which were located south or southwest of the City of Redlands, approximately 5 miles away in San Timoteo Canyon.

4.2.2.2 Project Impacts

Although there is some marginally suitable habitat for Nevin's barberry within the disturbed RAFSS and RSS-*Encelia farinosa* dominant habitat in the western portion of the BSA, this large shrub was not observed during the reconnaissance surveys and the Project is not anticipated to impact this species.

4.2.2.3 Avoidance and Minimization Efforts

It is not anticipated that the species would occur within the Project footprint or be impacted by the Project. However, due to the proximity of the and RSS-*Encelia farinosa* dominant RAFSS that occurs within the Santa Ana River floodplain in the western portion of the BSA, the following avoidance and minimization measures are recommended:

- Implementation of the avoidance and minimization efforts outlined in Section 4.1.1.3 would be sufficient to avoid impacts to Nevin's barberry.

4.2.2.4 Compensatory Mitigation

No effects on the species are expected, and no compensatory mitigation is recommended.

4.2.2.5 Cumulative Impacts

This species is not expected to occur within the Project footprint. The proposed Project would have no cumulative effects on Nevin's barberry.

4.2.3 SANTA ANA RIVER WOOLLY STAR

The Santa Ana River woolly star is a federally and state-listed endangered species that is found within open washes and early-successional alluvial fan scrub. It occurs on open slopes and above main watercourses on fluvial beds where flooding and scouring occur at a frequency that allows the persistence of open scrublands. It blooms between May and September.

Suitable habitat is composed of a patchy distribution of gravelly soils, sandy soils, rock mounds, and boulder fields (Zemba and Kramer 1984 and 1985; USFWS 1986a). Suitable habitat typically contains low amounts of clay, silt, and micro-organic materials (Burk et al. 1989). These areas typically maintain a perennial plant cover of less than 50 percent. Associated perennial plants include California buckwheat, California croton, yerba santa (*Eriodictyon trichocalyx*), and scalebroom (Burk et al. 1989; Zemba and Kramer 1984 and 1985).

The Santa Ana River woolly star is an early-successional species and possibly requires flood-mediated habitat rejuvenation (Wheeler and Burk 1990). Sheet flood flows probably occur in this habitat every 100 to 200 years (USFWS 1986a).

The Santa Ana River woolly star is a covered species under the Wash Plan.

4.2.3.1 Survey Results

Focused surveys for Santa Ana River woolly star were not conducted for the Project; however, the 2018 biological reconnaissance surveys were conducted during the blooming period for the species. Local populations of this species were detectable at the time of the 2018 biological surveys and if this species was present within the BSA, it would have also been detectable. The Santa Ana River woolly star was not observed on or adjacent to the BSA. Several recently documented occurrences have been recorded within 1 mile of the BSA. A detailed literature review was performed for the Wash Plan and numerous documented occurrences of this species were identified in the vicinity of the BSA, but none occurred within the BSA (ICF 2018).

4.2.3.2 Project Impacts

Although there is some suitable habitat for Santa Ana River woolly star within the RAFSS habitat in the western portion of the BSA, this species was not detected during the 2018 biological surveys conducted during the blooming period and the Project is not anticipated to impact this species.

4.2.3.3 Avoidance and Minimization Efforts

It is not anticipated that the species would occur within the Project footprint or be impacted by the Project. However, due to the proximity of the RAFSS habitat that occurs within the Santa Ana River floodplain in the western portion of the BSA, the following avoidance and minimization measures are recommended:

- Implementation of the avoidance and minimization efforts outlined in Section 4.1.1.3 would be sufficient to avoid impacts to Santa Ana River woolly star.

The following avoidance and minimization measures are adapted from the Wash Plan and are also recommended for implementation as part of the proposed project.

- Prior to ground disturbance in potentially suitable woolly star habitat, surveys will be conducted if the area has not been surveyed within the last 5 years to determine if the plant is present. Surveys will be conducted in accordance with the CDFW protocols for surveying special-status plant populations.
- If woolly star is detected during the pre-Project survey, seeds will be collected at the appropriate time (usually fall) prior to ground disturbance. Seed collection and storage will be by an entity that has a Memorandum of Understanding with the USFWS to process and handle the seeds of endangered plant taxa. In areas of temporary impacts, the seed will be replanted in the temporarily disturbed area. The seed planting time and location for seeds collected from permanent impact areas will be at the discretion of the County.
- When construction activities will take place within 50 meters of known occurrences of woolly star, a temporary fence will be erected to protect the specimens. A

qualified botanist and/or biological monitor will monitor construction activities, maintain the markers limiting construction, and maintain the fence protecting the woolly star to prevent accidental disturbance.

4.2.3.4 Compensatory Mitigation

No effects on the species are expected, and no compensatory mitigation is recommended.

4.2.3.5 Cumulative Impacts

This species is not expected to occur within the Project footprint. The proposed Project would have no cumulative effects on Santa Ana River woolly star.

4.2.4 SLENDER-HORNED SPINEFLOWER

The slender-horned spineflower is a federally and state-listed endangered species that is generally found in sandy soil in association with mature alluvial scrub (Reveal and Hardham 1989; Rey-Vizgirdas 1994). Prigge et al. (1993) found that the ideal habitat appears to be a terrace or bench that receives over bank deposits every 50 to 100 years. The blooming period is between April and June.

Cryptogamic crusts are frequently present in areas occupied by slender-horned spineflower (Boyd and Banks 1995; USFWS 1996). These crusts on the soil surface are composed of associations of bryophytes (i.e., mosses), algae, lichens, and some xerophytic liverworts (Harper and Marble 1988, as cited in USFWS 1996). Cryptogamic crusts enable soils to retain moisture and may help suppress invasion by nonnative plant species (Boyd and Banks 1995; USFWS 1996).

Slender-horned spineflower is endemic to southwestern cismontane California, ranging from central Los Angeles County east to San Bernardino County, and south to southwestern Riverside County in the foothills of the Transverse and Peninsular Ranges. Slender-horned spineflower typically occur at 656 feet to 2,296 feet in elevation (Hickman 1993). Only eight areas are still known to support slender-horned spineflower, including two localities each in Los Angeles County (Bee Canyon and Big Tujunga Wash) and two in San Bernardino County (the Santa Ana River Wash and Cajon Wash) (Reveal and Hardham 1989; Rey-Vizgirdas 1994; CDFW 2018).

The slender-horned spineflower is a covered species under the Wash Plan.

4.2.4.1 Survey Results

A detailed literature review was performed for the Wash Plan and documented occurrences of this species were identified in the vicinity of the BSA, but none occurred within the BSA (ICF 2018). The majority of the documented occurrences found in the remaining public literature were mostly historic observations (more than 20 years old); however, one occurrence was documented in 2010 less than one mile north of the BSA. During the general survey conducted for the Project, suitable habitat was identified within the RAFSS habitat located in the western portion of the BSA. This species was not detected during the 2018 biological survey conducted on site, which took place during the plant's blooming period; however, the plant is a small species and is difficult to detect during a non-focused survey effort.

4.2.4.2 Project Impacts

Although there is some suitable habitat for slender-horned spineflower within the RAFSS habitat in the western portion of the BSA, this species was not detected during the 2018 biological surveys conducted during the blooming period and the Project is not anticipated to impact this species.

4.2.4.3 Avoidance and Minimization Efforts

It is not anticipated that the species would occur within the Project footprint or be impacted by the Project. However, due to the proximity of the RAFSS habitat that occurs within the Santa Ana River floodplain in the western portion of the BSA, the following avoidance and minimization measures are recommended:

- Implementation of the avoidance and minimization efforts outlined in Section 4.1.1.3 would be sufficient to avoid impacts to slender-horned spineflower.

The following avoidance and minimization measures are adapted from the Wash Plan and are also recommended for implementation as part of the proposed project.

- Prior to ground disturbance in suitable spineflower habitat, surveys will be conducted if the area has not been surveyed within the last 5 years to determine if the plant is present. Surveys will be conducted in accordance with the CDFW protocols for surveying special-status plant populations.
- If spineflower is detected during pre-Project surveys, seeds will be collected during the appropriate time prior to ground disturbance. Seed collection and storage will be by an entity which has a Memorandum of Understanding with the USFWS to process and handle the seeds of endangered plant taxa.
- When work activities will take place within 50 meters of known occurrences of spineflower, a temporary fence will be erected to protect them. A qualified botanist and/or biological monitor will monitor construction activities, maintain the markers limiting construction, and maintain the fence protecting the spineflower to prevent accidental disturbance.

4.2.4.4 Compensatory Mitigation

No effects on the species are expected, and no compensatory mitigation is recommended.

4.2.4.5 Cumulative Impacts

This species is not expected to occur within the Project footprint. The proposed Project would have no cumulative effects on slender-horned spineflower.

4.2.5 OTHER SPECIAL-STATUS PLANT SPECIES

Four other non-listed special-status plant species were identified during the literature review and have potential to occur in the BSA:

- Parry's spineflower (*Chorizanthe parryi* var. *parryi*)

- White-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*)
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)
- Chaparral ragwort (*Senecio aphanactis*)

4.2.5.1 Survey Results

During the general biological survey, suitable habitat was identified for Parry's spineflower, white-bracted spineflower, mesa horkelia, and chaparral ragwort within the BSA in the RAFSS and/or RSS – *Encelia farinosa* dominant habitat located in the western portion of the alignment. The RSS – *Encelia farinosa* dominant habitat is a small, isolated patch of fairly monotypic brittlebush scrub with an understory of nonnative grasses and compacted soils. Although mapped as a native RSS plant community, the limited size and disturbed condition of the RSS – *Encelia farinosa* dominant habitat limits its potential to support special-status plant species. The RAFSS habitat that is located to the north and that is contiguous with more mesic environments closer to the Santa Ana River channel, provides more suitable habitat for these plant species to occur.

4.2.5.2 Project Impacts

The RAFSS within the BSA is located at the base of the river bluffs within the floodplain of the Santa Ana River, outside the Project impact area. At the top of the bluffs, the Project will temporarily disturb 0.36 acre of RSS – *Encelia farinosa* dominant habitat. This habitat provides marginally suitable habitat for special-status plant species. Direct impacts to these species may occur in the form of habitat loss and mortality if the individual is crushed or removed during ground disturbing activities. Habitat degradation could also occur immediately adjacent to the trail if the trail users do not remain on the designated trail. Indirect impacts may occur in the form of excessive dust and introduction of nonnative plant species. Although these species may be present in the BSA, the Project would not be expected to result in the loss of individuals or adversely affect local or regional populations of these species with the implementation of avoidance and minimization efforts listed below.

4.2.5.3 Avoidance and Minimization Efforts

Implementation of the avoidance and minimization efforts outlined in Sections 4.2.1.3, 4.2.2.3, 4.2.3.3, and 4.2.4.3 will avoid impacts to these special-status plant species that have potential to occur within the RAFSS habitat located in the western portion of the BSA. Salvage of topsoil and restoration of temporarily disturbed RSS – *Encelia farinosa* dominant habitat (as described in detail in Section 4.3.4.3) would offset impacts to these additional special-status species to a less than significant level.

4.2.5.4 Compensatory Mitigation

Temporary impact areas in the RSS – *Encelia farinosa* dominant community will be planted with a native species palette that matches the surrounding native vegetation community. No adverse effects on the species are expected, and no compensatory mitigation is recommended.

4.2.5.5 Cumulative Impacts

Future development is anticipated and planned in the area. These projects would be required to comply with the same local, state, and federal codes, ordinances, laws, and

other required regulations. The Project is not expected to result in the loss of individuals and would avoid or compensate for impacts to occupied habitat. Therefore, this Project's incremental contribution to cumulative effects is not considerable.

Additionally, the proposed alignment associated with the Project reduces the overall impacts to special-status species habitat when compared to the alignment that was proposed in the Wash Plan. This reduces the overall cumulative impacts to special-status species habitat in the region.

4.3 Special-Status Wildlife Species

4.3.1 SANTA ANA SUCKER

The Santa Ana sucker generally lives in small, shallow streams, less than 23 feet in width, with currents ranging from swift in the canyons to sluggish in the bottom lands. They are found in permanent streams in water ranging in depth from a few inches to 3 feet or more. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of filamentous algae (Smith 1966; Moyle 1976), but occasionally they are found on sand/mud substrates (Moyle et al. 1995). It appears to be most abundant where the water is cool, clean, and clear, although the species can tolerate seasonally turbid water.

The native range of the Santa Ana sucker is southern California, including the east, north and west forks of the San Gabriel River, the Los Angeles River, and Santa Ana River (Smith 1966; Page and Burr 1991). Historically, Santa Ana sucker occurred from near the Pacific Ocean to its current locations. In the last 50 years, it has dramatically declined, and it is now restricted to the headwaters of the San Gabriel River system, Big Tujunga Creek in the Los Angeles River basin, and portions of the Santa Ana River that are perennial.

The Project area is located adjacent to designated Critical Habitat for Santa Ana sucker; however, Project-related impacts to this species or its Critical Habitat are not expected.

4.3.1.1 Survey Results

No habitat for this species occurs within the BSA. The closest occurrence was documented in 1982 and is approximately seven miles north of the BSA in the west fork of City Creek, north of the City of Highland. The closest occurrence in the Santa Ana River is downstream of the BSA, approximately nine miles to the west. The Santa Ana sucker is presumed absent from the Project area.

Designated Critical Habitat for Santa Ana sucker is located in the Santa Ana River, immediately adjacent to the Project area. The designation is primarily for protection of the watershed that supports Santa Ana sucker populations downstream.

4.3.1.2 Project Impacts

No direct impacts to Santa Ana sucker are expected because no habitat exists in the BSA. Because this species has been neither detected nor previously documented within the BSA, the Project would not be expected to result in the loss of individual fish or adversely affect local or regional populations of Santa Ana sucker.

The Project area is located adjacent to designated Critical Habitat for Santa Ana sucker, but will not have any permanent effects on Critical Habitat. During construction, soil

erosion could enter the river and temporarily affect Critical Habitat located adjacent and/or downstream of the BSA. Avoidance and minimization measures have been proposed for these potential effects.

4.3.1.3 Avoidance and Minimization Efforts

The Project has been engineered to avoid permanent and temporary adverse impacts to USFWS-designated Critical Habitat. The following avoidance and minimization measures are required to ensure that the species will not be affected by the proposed Project:

- A Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Department of Public Works' National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit No. CAS000003) will be developed to eliminate potential sedimentation effects offsite, including the Santa Ana sucker Critical Habitat. BMPs within the SWPPP will minimize any potential for sedimentation resulting from the discharge of untreated stormwater from the Project entering the Santa Ana River during construction.
- Implementation of the avoidance and minimization efforts outlined in Section 4.1.1.3 in combination with the implementation of the SWPPP would be sufficient to avoid impacts to adjacent critical habitat and downstream populations of Santa Ana sucker.

4.3.1.4 Compensatory Mitigation

No effects on the species or Critical Habitat are expected, and no compensatory mitigation is required.

4.3.1.5 Cumulative Impacts

The species is not expected to occur within the Project footprint. The proposed Project would not have cumulative effects on the Santa Ana sucker. Impacts to Critical Habitat would be avoided, and the Project would not have a considerable contribution to cumulative impacts.

The original alignment that was proposed in the Wash Plan had a portion overlapping with Santa Ana sucker Critical Habitat; however, the alignment associated with the Project completely avoids Santa Ana sucker Critical Habitat. This further reduces the overall cumulative impacts to Santa Ana sucker habitat in the region.

4.3.2 COASTAL CALIFORNIA GNATCATCHER

CAGN is federally listed as threatened and is designated as a CDFW SSC. This species associates strongly with California sagebrush dominated habitats and also occurs in mixed scrub habitats with lesser percentages of this favored shrub. Other plant species important for the nesting and foraging of this species include California buckwheat, white sage, black sage, and chaparral broom. Coastal California gnatcatchers are more abundant near sage scrub-grassland interface than where sage scrub grades into chaparral (Atwood and Bontrager 2001). Nest placement typically occurs in areas with less than 40 percent slope gradient (Mock 2004). Breeding season for the coastal California gnatcatcher occurs from February 15 to August 30.

CAGN is a covered species under the Wash Plan.

4.3.2.1 Survey Results

Focused surveys were not conducted for CAGN. This species has potential to occur within the sage scrub habitat that occurs within the western portion of the BSA. The RSS – *Encelia farinosa* dominant habitat is limited in size and relatively monotypic, being composed of brittlebush scrub, therefore unlikely to provide CAGN breeding habitat. However, the patch of habitat could provide foraging habitat for nearby breeding gnatcatchers and dispersing juveniles. The disturbed condition and species composition of the RAFSS located at the base of the bluffs, also provides limited nesting habitat for CAGN. The RAFSS within the BSA is located at the base of the river bluffs within the floodplain of the Santa Ana River, outside the Project impact area.

There is no designated Critical Habitat for CAGN within or adjacent to the BSA.

The detailed literature review that was performed for the Wash Plan identified one CAGN record within the BSA and several located less than one mile east of the BSA (ICF 2008). Several observations of CAGN were also documented during a survey of a previous Project design in June 2018 north of the Redlands Municipal Airport.

4.3.2.2 Project Impacts

The Project will temporarily disturb 0.36 acre of RSS – *Encelia farinosa* dominant habitat. This habitat provides marginally suitable habitat for this species. Although unlikely, if nests are present in the areas of temporary or permanent disturbance during construction or maintenance activities, direct impacts such as destruction of nests may occur. Habitat degradation could also occur immediately adjacent to the trail if the trail users do not remain on the designated trail. Indirect impacts from nest abandonment due to construction noise, vibration, excessive dust, and increased human activity could also occur if nests are present. Removal of RSS – *Encelia farinosa* dominant habitat would result in temporary loss of foraging habitat for CAGN that occur in the area and dispersing juveniles. Although the species is known to occur in the Project vicinity, the Project would not be expected to result in the loss of individuals or adversely affect local or regional populations of CAGN with the implementation of avoidance and minimization efforts listed below.

4.3.2.3 Avoidance and Minimization Efforts

The following avoidance and minimization measures are adapted from the Wash Plan and recommended for implementation as part of the proposed Project:

- Construction and maintenance activities resulting in the removal of RSS during the breeding season will be avoided if feasible during the CAGN breeding season (February 15 to August 30). If construction and maintenance activities must occur within 500 feet of potential CAGN habitat during the nesting season (February 15 to August 30), a biologist that holds a 10(a)(1)(A) permit to conduct surveys for CAGN will conduct pre-activity nesting bird surveys. The area to be disturbed and a 500-foot buffer will be surveyed for five (5) consecutive days to determine if CAGNs are nesting in or near the construction or operation activities. If CAGNs are nesting, a temporary ESA and 300-foot buffer will be established and maintained between the nearest activity and the nest location until nesting is completed. Noise within the buffer area will not exceed 60 dBA Leq. Daily noise monitoring reports will be prepared.

The following additional avoidance and minimization measures are recommended for implementation:

- Trail boundaries will be clearly identified to ensure that the public stays on the marked trail. Signs educating the public on the importance of staying on trails shall be posted in prominent areas.
- Temporary impact areas in the RSS – *Encelia farinosa* dominant community will be restored and planted with a native species palette that matches the surrounding native vegetation community.
- Upon Project completion, permanent barriers such as boulders, fences, and gates will be placed and maintained along the trail boundaries adjacent to native RSS – *Encelia farinosa* dominant habitat to help prevent unauthorized activities including dumping and off-road vehicle use.

4.3.2.4 Compensatory Mitigation

In the unlikely event that CAGN are found using the RSS – *Encelia farinosa* dominant habitat for nesting, the County would offset temporary impacts to occupied habitat through 3:1 onsite creation of habitat in addition to restoration of 0.36 acre of temporary impacts to RSS – *Encelia farinosa* dominant habitat. Planting will be conducted within the temporarily disturbed areas within the construction limits, adjacent and continuous with the RSS – *Encelia farinosa* dominant habitat that occurs within the BSA.

4.3.2.5 Cumulative Impacts

Future development is anticipated and planned in the area. These projects would be required to comply with the same local, state, and federal codes, ordinances, laws, and other required regulations. The Project is not expected to result in the loss of individuals and would avoid occupied CAGN habitat and restore temporary impacts to RSS – *Encelia farinosa* dominant foraging habitat. Therefore, this Project's incremental contribution to cumulative effects is not considerable.

Additionally, the proposed alignment associated with the Project reduces the overall impacts to CAGN habitat when compared to the alignment that was proposed in the Wash Plan. This reduces the overall cumulative impacts to CAGN habitat in the region.

4.3.3 LEAST BELL'S VIREO

The least Bell's vireo was listed as a state endangered species by CDFW Commission in 1980, and as a Federal endangered species in 1986 after it was determined that the species was reduced to only 300 pairs nationwide. Critical habitat for the species was designated in 1994. The following is an abbreviated species account by Kus (2002), Patten (1998), and Wilbur (1980).

Least Bell's vireos were historically common in lowland riparian habitats, ranging from southern California (San Diego County) to Red Bluff (Tehama County). Populations also occurred on both sides of the Sierra Nevada and Coast Ranges, in Owens and Death Valley, and the Mojave Desert. The species also had a wide elevation tolerance, from -53 meters (-175 feet) in Death Valley to 1,250 meters (4,100 feet) at Bishop, in Inyo County.

Least Bell's vireos typically occupy riparian areas with low shrubs in the vicinity of water or in dry parts of washes and canyon bottoms containing willows, mule fat, and wild blackberry (*Rubus ursinus*). They have also been associated with valley oaks (*Quercus lobata*), wild grape (*Vitis californica*), poison oak, and sumac (*Rhus* sp.) along margins of water courses. In desert areas, mesquite (*Prosopis* sp.) and arrowweed may be occupied. There have also been observations of vireos utilizing catclaw (*Acacia greggii*), tree tobacco and, to a greatly reduced extent, tamarisk (*Tamarix* sp.) stands in Baja California and the Colorado River.

The least Bell's vireo has become a rare species throughout most of its former range. Most of the population decline was due to habitat loss, and also has been correlated with increased cowbird parasitism. Today, nesting least Bell's vireos remain mainly in southern California, with a few outliers. Roughly half of the current population utilizes riparian habitat areas within Camp Pendleton Marine Corps Base in San Diego County, and they occur as far north as the Santa Clara River in Ventura County, and as far east as the Mojave River in San Bernardino County.

4.3.3.1 Survey Results

During the biological survey one large cottonwood tree was identified in the BSA; however, this does not represent suitable riparian habitat for least Bell's vireo breeding, foraging, or migratory activities because they are too small in extent (each is around 300 square feet in size). The closest suitable least Bell's vireo habitat is located approximately 2 miles north of the BSA in Plunge Creek, where this species was documented in 2009. There is no designated Critical Habitat within or in the vicinity of the BSA.

4.3.3.2 Project Impacts

Suitable habitat for least Bell's vireo is not present in the BSA, and the species is unlikely to be present. Therefore, the Project would not result in the loss of individuals and would not adversely affect local or regional populations of least Bell's vireo.

4.3.3.3 Avoidance and Minimization Efforts

This species is not expected to occur within the Project footprint and no specific avoidance and minimization measures are currently recommended for the species.

In the future it is possible that urban runoff from Redlands may increase over time, allowing for the development of suitable habitat for this species. If the Project has not been constructed within two years following the date of the survey, the area should be re-evaluated for the presence of habitat that is suitable for this species.

4.3.3.4 Compensatory Mitigation

No effects on the species are expected, and no compensatory mitigation is recommended.

4.3.3.5 Cumulative Impacts

The species is not expected to occur within the Project footprint. The proposed Project would not have cumulative effects on the least Bell's vireo.

4.3.4 SAN BERNARDINO KANGAROO RAT

The SBKR is a federally listed endangered subspecies of the Merriam's kangaroo rat (*Dipodomys merriami*). It is typically found in RAFSS on sandy loam soils, alluvial fans, and floodplains, and along washes with nearby sage scrub (McKernan 1997 as cited in USFWS 1998b). Soil texture is a primary factor in the occurrence of this subspecies. Sandy loam substrates allow for the digging of simple, shallow burrows (McKernan 1997 as cited by USFWS 1998b). SBKR and other kangaroo rat species actively avoid rocky substrates (Brown and Harney 1993). The historic range for the SBKR lies west of the desert divide of the San Jacinto and San Bernardino mountains and extends from the San Bernardino Valley in San Bernardino County to the Meniffee Valley in Riverside County (Lidicker 1960; Hall 1981). SBKR currently occupy approximately 3,247 acres of suitable habitat in approximately seven general locations (USFWS 1998b), including the Santa Ana River, Cajon Creek Wash, Lytle Creek Wash, City Creek, and upper Etiwanda Wash in San Bernardino County.

SBKR is a covered species under the Wash Plan.

4.3.4.1 Survey Results

Multiple recent occurrences of SBKR have been documented within one mile north of the BSA. It is assumed that this species is present in the RAFSS habitat in the western portion of the BSA that is contiguous with the Santa Ana River floodplain, due to the presence of suitable habitat and multiple recent records identified within and in the vicinity of the BSA. Potential upland habitat (RSS – *Encelia farinosa* dominant) in the western portion of the alignment is separated from the (presumed) occupied RAFSS habitat that occurs within the BSA by a steep bluff, likely limiting accessibility and use of the RSS – *Encelia farinosa* dominant habitat by SBKR. SBKR are known to occur in the upland habitat immediately north and south of the Redlands Municipal Airport east of Judson Street. Although the alignment east of Judson and north of Pioneer Avenue is contiguous with this area, the disturbed areas within the BSA do not provide protective cover or vegetation that provides typical foraging habitat.

The habitat within the majority of the BSA was classified as “trace” (i.e., “very low” quality) habitat for SBKR in the Wash Plan (see Figure 3-9 in the Wash Plan). The parameters in the Wash Plan define trace habitat as having an estimated annual grasses cover of greater than 70 percent and poorly suitable vegetation and geology for SBKR presence. The RSS – *Encelia farinosa* dominant habitat and areas within the BSA on top of the bluffs meet the “trace” classification.

Designated Critical Habitat for SBKR is present within the BSA in the western portion of the alignment at the top of the bluffs mostly north of Riverview Road and in the central portion of the alignment, east of Judson Street and north of Pioneer Avenue in the western portion of the Redlands Municipal Airport.

4.3.4.2 Project Impacts

The Project will temporarily disturb 0.36 acre of trace habitat (RSS – *Encelia farinosa* dominant) that has a limited potential to support SBKR due to its lack of necessary PCEs for SBKR presence in the western portion of the BSA. Suitable (RAFSS) habitat occurs at the base of the river bluffs, but impacts to this habitat in the form of degradation or habitat loss are not expected because it is outside the designated work area.

The Project will temporarily disturb 2.34 acres and permanently affect 2.92 acres of designated SBKR Critical Habitat. With the exception of the 0.36 acre of trace habitat (RSS – *Encelia farinosa* dominant), the permanent and temporary impacts are too developed and disturbed land covers that do not have the appropriate PCEs of SBKR habitat. PCEs, the required physical and biological conditions that are considered critical for SBKR survival and conservation, were identified in the Federal Register document that re-designated Critical Habitat for the species (USFWS 2008). PCEs specific for SBKR include:

“(1) Alluvial fans, washes, and associated floodplain areas containing soils consisting predominately of sand, loamy sand, and loam, which provide burrowing habitat necessary for sheltering and rearing offspring, storing food in surface caches, and movement between occupied patches;

(2) Upland areas adjacent to alluvial fans, washes, and associated floodplain areas containing alluvial sage scrub habitat and associated vegetation, such as coastal sage scrub and chamise chaparral, with up to approximately 50 percent canopy cover providing protection from predators, while leaving bare ground and open areas necessary for foraging and movement of this subspecies; and

(3) Upland areas adjacent to alluvial fans, washes, and associated floodplain areas, which may include marginal habitat such as alluvial sage scrub with greater than 50 percent canopy cover with patches of suitable soils (PCE 1) that support individuals for repopulation of wash areas following flood events. These areas may include agricultural lands, areas of inactive aggregate mining activities, and urban/wildland interfaces.”

Within Critical Habitat, the RSS – *Encelia farinosa* dominant habitat within the BSA (0.36 acre) contains PCE number 3, while the RAFSS within the BSA (but outside the project footprint) contains PCE numbers 1 and 2. As previously described in Section 4.1, no impacts to RAFSS vegetation are anticipated. The remaining portions of the BSA are either developed or disturbed and devoid of vegetation and do not contain any of the SBKR PCEs.

SBKR is not expected to occupy the areas within and immediately adjacent to the Project footprint, including the 0.36-acre of RSS – *Encelia farinosa* dominant habitat, due to the poorly suitable vegetation and geology for SBKR presence. Direct impacts to SBKR are not expected to occur because the Project footprint and adjacent areas on top of the bluff are not expected to be occupied by SBKR. However, because suitable and presumed occupied RAFSS habitat is present in the Santa Ana River at the base of the bluffs there is a potential for indirect impacts. Indirect impacts in the form of habitat degradation could occur immediately adjacent to the trail if the trail users do not remain on the designated trail. Additional indirect impacts may occur in the form of ground vibration and construction noise. Implementation of avoidance and minimization measures would reduce the

potential for indirect impacts; therefore, the Project is not likely to adversely affect local or regional populations of SBKR.

4.3.4.3 Avoidance and Minimization Efforts

The Project has been designed to reduce impacts to SBKR. There will be no nighttime work or construction activities during construction of the Project. There will also be no nighttime trail operation and maintenance activities. Project design does not propose lighting in areas adjacent to suitable SBKR habitat, in an effort to minimize indirect effects to SBKR. The Project alignment, staging areas, equipment storage locations, temporary access and egress roads have been designed to minimize adverse effects to SBKR.

To further avoid and minimize potential impacts to SBKR, the following avoidance and minimization measure is adapted from the Wash Plan and recommended for implementation as part of the proposed Project:

- A qualified biologist or biological monitor with SBKR expertise will be present when construction or ground-disturbing activities that could result in take of SBKR occurs in, or within 100 meters of habitat which is classified as low, medium, or high quality potential habitat for SBKR. Although the Project footprint only contains trace habitat, low and medium quality habitat for SBKR is located within 100 meters of the western portion of the Project footprint at the base of the bluffs in Santa Ana River.

Additionally, the following avoidance and minimization measures are recommended for implementation:

- Temporary SBKR exclusion fencing shall be constructed around work areas during Project construction within the portion of the Project in Critical Habitat where there is no natural barrier (i.e., steep bluff) limiting accessibility of the river bluffs. The fencing shall be installed at least 2 feet underground and extend at least 4 feet straight above ground, reinforced with metal T posts or similar support materials. If underground installation is not possible due to extremely rocky soils, then the bottom 2 feet of the fencing shall be folded out and sandbags placed on the edges of the fencing. It is recommended that the fencing material be slick to prevent animals from climbing into the excluded areas, such as Aqua 30 coextruded polyethylene liner or Animex™ fencing. Installation of the exclusion fencing shall be overseen by a qualified biologist or biological monitor with SBKR expertise.
- Temporary impact areas in the RSS – *Encelia farinosa* dominant community will be restored with a native species palette that matches the surrounding native vegetation community.
- Permanent barriers such as boulders, fences, and gates will be placed and maintained along the trail boundaries along the bluffs and adjacent to native RSS – *Encelia farinosa* dominant habitat to help prevent unauthorized activities potentially resulting in indirect impacts to SBKR, including dumping and off-road vehicle use.

4.3.4.4 Compensatory Mitigation

The Project would result in temporary impacts to 2.34 acres and permanent impacts to 2.92 acres of designated Critical Habitat for SBKR. However, only 0.36 acre of temporary impacts would occur to habitat that is considered suitable for SBKR, the RSS – *Encelia farinosa* dominant habitat located on the bluffs in the western portion of the BSA. The RSS habitat contains one PCE (number 3) for SBKR presence while the other areas within designated Critical Habitat are either classified as disturbed or developed and contain no PCEs.

Temporary impacts to 0.36 acre designated SBKR Critical Habitat will be offset through purchase of credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies.

4.3.4.5 Cumulative Impacts

Future development is anticipated and planned in the area. These projects would be required to comply with the same local, state, and federal codes, ordinances, laws, and other required regulations. The Project is not expected to result in the loss of SBKR individuals and would avoid or compensate for impacts to Critical Habitat. Therefore, this Project's incremental contribution to cumulative effects is not considerable.

Additionally, the proposed alignment associated with the Project reduces the overall impacts to SBKR habitat and SBKR Critical Habitat when compared to the alignment that was proposed in the Wash Plan. This reduces the overall cumulative impacts to SBKR and SBKR Critical Habitat in the region.

4.3.5 STEPHENS' KANGAROO RAT

The Stephens' kangaroo rat (SKR) is known to occur widely in Riverside County, and in a few localities in southwestern San Bernardino County. A more limited distribution of the species is historically and presently known at several localities in San Diego County (Lackey 1967; Montgomery 1991; Montgomery et al. 1996/1997; O'Farrell and Uptain 1989; O'Farrell et al. 1987, 1986; Ogden 1998; Thomas 1975, 1973; USFWS 1997, 1993).

The likelihood of occurrence of any sizable new populations in Riverside and San Bernardino Counties is limited by the extent of urban and agricultural development of most of the larger grasslands in this region, as well as the confirmation of presence and absence of the species in numerous locations in this region during widespread field surveys conducted in search of this species during the past 15 years.

General natural history features and habitat requirements of SKR are fairly well known (O'Farrell 1987, 1990). Habitats occupied by SKR characteristically occur on level to gently sloping terrain, although the species has occasionally been found on relatively steep slopes (Montgomery 1990). Soils in habitats harboring SKR are typically loamy in nature, while soils dominated by clay or sand very rarely contain this species (Price and Endo 1989; O'Farrell 1987; O'Farrell and Uptain 1989). Stephens' kangaroo rats typically occupy lands described as disturbed annual grassland and characterized by a relatively sparse cover of both shrubs and herbaceous vegetation. Occupied habitats commonly exhibit an abundance of bare soil during much of the year. Nonetheless, spring/early summer flushes of forb (e.g., *Erodium* sp.) growth often temporarily reduce the amount of visible exposed ground. Reflecting this preference for open ground, a high ratio of forbs

to grasses increases the suitability of a grassland for SKR. Stephens' kangaroo rats are capable of occupying small patches of favorable habitat amidst otherwise unsuitable (e.g. dense grassy) habitats. They also readily use narrow strips of open habitat to move between larger blocks of suitable habitat (O'Farrell 1990; Price and Kelly 1992).

4.3.5.1 Survey Results

Based on the results of the general biological survey, there is no suitable habitat within the BSA for this species. The BSA is outside of the known range for this species. The closest known occurrence is a historical record approximately 5 miles south of the BSA.

4.3.5.2 Project Impacts

The Project is not expected to have permanent impacts or temporary effects on SKR because SKR is not expected to be present in the BSA.

4.3.5.3 Avoidance and Minimization Efforts

No effects on the species are expected, and no avoidance or minimization efforts are recommended.

4.3.5.4 Compensatory Mitigation

No effects on the species are expected, and no compensatory mitigation is recommended.

4.3.5.5 Cumulative Impacts

The Project would not have effects on this species, and would not contribute to cumulative impacts.

4.3.6 OTHER SPECIAL-STATUS WILDLIFE SPECIES

Fifteen additional special-status wildlife species were identified during the literature review and have potential to occur in the BSA:

- California glossy snake (*Arizona elegans occidentalis*)
- Silvery legless lizard (*Aniella pulchra*)
- Red-diamond rattlesnake (*Crotalis ruber*)
- Cactus wren (*Campylorhynchus brunneicapillus*)
- Coast horned lizard (*Phrynosoma blainvillii*)
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*)
- Burrowing owl (*Athene cunicularia*)
- Loggerhead shrike (*Lanius ludovicianus*)
- Pallid bat (*Antrozous pallidus*)

- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
- Western mastiff bat (*Eumops perotis californicus*)
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
- San Diego desert woodrat (*Neotoma lepida intermedia*)
- Southern grasshopper mouse (*Onychomys torridus ramona*)
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)

Cactus wren is a covered species under the Wash Plan. For individual species' potential to occur, see Table 4.

4.3.6.1 Survey Results

Coast horned lizard was observed during a biological survey conducted in 2014 (Natural Resources Assessment, Inc. 2014, found in Appendix C); therefore, this species is assumed to be present in the portions of the BSA that support RAFSS and RSS – *Encelia farinosa* dominant habitat.

4.3.6.2 Project Impacts

The Project will temporarily disturb 0.36 acre of RSS – *Encelia farinosa* dominant habitat. These impacts are expected to primarily affect ground-dwelling reptiles and mammals as well as birds that inhabit the scrub habitat. Bat species (pallid bat and western mastiff bat) are not anticipated to be directly impacted by the Project because they would mainly use the site as foraging habitat, if present, and would not likely roost anywhere within the BSA.

Direct impacts to the ground-dwelling species affected may occur in the form of habitat loss and mortality due to equipment or vehicle use during construction. Shrub clearing activities have the potential to affect nesting bird species, including those listed at the beginning of this section.

Indirect impacts may occur during construction or over time once the SART has been constructed. Construction impacts may occur in the form of increased human activity, ground vibration, excessive dust, and construction noise. Over the long term, habitat degradation could occur immediately adjacent to the trail if the trail users do not remain on the designated trail. Although the species described may be present in the BSA, the Project would not be expected to result in the loss of individuals or adversely affect local or regional populations of these species with the implementation of avoidance and minimization efforts listed below.

4.3.6.3 Avoidance and Minimization Efforts

The following avoidance and minimization measure is adapted from the Wash Plan and recommended for implementation as part of the proposed Project:

- If construction-related activities are to occur during the nesting season (February 1 through September 15), a qualified biologist will conduct a preconstruction survey of the proposed construction area and adjacent habitat in the near vicinity. The preconstruction survey will commence no more than 72 hours prior to the

onset of construction. If an active nest is observed, an appropriate buffer will be established until nesting is complete, as determined by a qualified biologist/biological monitor.

Implementation of the following avoidance and minimization efforts, as well as those outlined in Sections 4.1.1.3, 4.3.1.3, 4.3.2.3, 4.3.3.3, and 4.3.4.3, will avoid impacts to these special-status wildlife species:

- A pre-clearance sweep shall be conducted by a qualified biologist immediately prior to initial removal of RSS – *Encelia farinosa* dominant habitat to detect and flush any special-status species out of harm's way.
- Qualified biologists, botanists, and/or biological monitors will be retained to ensure compliance with protective measures for special-status species. They will be required for monitoring any construction or Operations and Management (O&M) activities that may result in impacts to special-status species.
- All workers will receive environmental awareness training. The training will be developed in consultation with a qualified biologist and consist of an onsite or training center presentation for which supporting materials will be provided. Training will provide information about the special-status species potentially occurring on site and an explanation of the purpose and function of the avoidance and minimization measures and the possible penalties for not adhering to them.
- Areas impacted during construction and O&M activities that contain native vegetation will be restored after the Project is completed. This will include replanting with a plant palette composed of the native species found on site prior to the disturbance. Restoration will also include weed control. Restoration performance standards, and remediation measures, if necessary, will be developed by the County and reviewed and approved by the applicable regulatory agencies.
- Equipment (e.g., passenger vehicles, trucks, and heavy equipment) will be cleaned prior to entering the worksite and between worksites to prevent the importation and spread of exotic plant species.
- No open trenches or holes (aggregate mining activities excepted) will be left overnight without covering, fencing, or providing escape ramps with a minimum 3:1 slope. If trenches are not covered, they will be inspected for trapped wildlife by a qualified biologist or biological monitor. Animals found will be captured and moved to the nearest safe location outside the construction area.
- No firearms or pets will be allowed at the work areas. Firearms carried by authorized security and law enforcement personnel are exempt.
- Litter control measures will be implemented. Trash and food items will be contained in closed containers and removed daily to reduce the attractiveness of the area to opportunistic predators.
- Dust will be controlled. If water trucks are to be used, pooling of water will be avoided to minimize the potential of attracting opportunistic predators.

4.3.6.4 Compensatory Mitigation

Implementation of the compensatory mitigation outlined in Sections 4.3.1.4, 4.3.2.4, 4.3.3.4, and 4.3.4.4, and compliance with applicable codes, ordinances, laws, and other required regulations would offset impacts to these additional special-status species to a less than significant level.

Additionally, the proposed alignment associated with the Project reduces the overall impacts to special-status species habitat when compared to the alignment that was proposed in the Wash Plan. This reduces the overall cumulative impacts to special-status species habitat in the region.

4.3.6.5 Cumulative Impacts

Future development is anticipated and planned in the area. These projects would be required to comply with the same local, state, and federal codes, ordinances, laws, and other required regulations. The Project is not expected to result in the loss of individuals and would avoid or compensate for impacts to occupied habitat. Therefore, this Project's incremental contribution to cumulative effects is not considerable.

Chapter 5 – Conclusions and Regulatory Determinations

5.1 Federal Endangered Species Act Consultation Summary

No FESA Section 7 consultation has occurred with USFWS to date. An official species list was received from USFWS on September 10, 2018. Table 6 lists each of the species and their effect determination.

The Project is located outside of the National Marine Fisheries Service (NMFS) jurisdictional boundary. Furthermore, none of the species under the jurisdiction of NMFS were identified on the USFWS IPaC species list generated on September 10, 2018. The IPaC species list will generally include anadromous fish and sea turtles, both of which are under the jurisdiction of NMFS. For these reasons, a NMFS species was not requested for the Project.

The Project may affect but is not likely to adversely affect several federally listed species and Critical Habitat for San Bernardino kangaroo rat. Consultation with USFWS under FESA Section 7 will be required to address potential take of these species.

Table 6: Federally Listed Species Effect Determination

Species Name	Summary of Impacts	Critical Habitat Present within Project Impact Area	Effect Determination
San Diego ambrosia	None expected	No	No effect
Nevin's barberry	None expected	No	No effect
Santa Ana River Woolly Star	None expected	No	No effect
Slender-horned spineflower	None expected	No	No effect
Santa Ana sucker	None expected	No	No effect

Table 6: Federally Listed Species Effect Determination

Species Name	Summary of Impacts	Critical Habitat Present within Project Impact Area	Effect Determination
Santa Ana sucker Critical Habitat	No direct impacts expected. During construction, soil erosion could enter the river and temporarily affect Critical Habitat located adjacent and/or downstream of the BSA. Avoidance and minimization measures have been proposed for these potential effects.	No	No effect
Coastal California gnatcatcher	The Project will temporarily disturb 0.36 acre of foraging habitat for this species. Although unlikely to provide breeding habitat, if nests are present in or adjacent to the areas of temporary disturbance during construction or maintenance activities, direct impacts such as destruction of nests may occur. Habitat degradation could also occur immediately adjacent to the trail if the trail users do not remain on the designated trail. Indirect impacts from nest abandonment due to construction noise, vibration, excessive dust, and increased human activity could also occur if nests are present. Avoidance and minimization measures have been proposed for these potential effects.	No	Not Likely to Adversely Affect (NLAA)
Least Bell's vireo	None expected	No	No effect
San Bernardino kangaroo rat	Direct impacts to SBKR are not expected to occur because the Project footprint and adjacent areas on top of the bluff are not expected to be occupied by SBKR. However, because suitable and presumed occupied RAFSS habitat is present in the Santa Ana River at the base of the bluffs, there is a potential for indirect impacts. Indirect impacts in the form of habitat degradation could occur immediately	Yes	NLAA

Table 6: Federally Listed Species Effect Determination

Species Name	Summary of Impacts	Critical Habitat Present within Project Impact Area	Effect Determination
	adjacent to the trail if the trail users do not remain on the designated trail. Additional indirect impacts may occur in the form of ground vibration and construction noise. Implementation of avoidance and minimization measures would reduce the potential for indirect impacts; therefore, the Project is not likely to adversely affect local or regional populations of SBKR.		
San Bernardino kangaroo rat Critical Habitat	The Project would result in temporary impacts to 2.34 acres and permanent impacts to 2.92 acres of designated Critical Habitat for SBKR. However, only 0.36 acre of temporary impacts would occur to habitat that is considered suitable for SBKR, the RSS – <i>Encelia farinosa</i> dominant habitat located on the bluffs in the western portion of the BSA. The RSS habitat contains one PCE (number 3) for SBKR presence while the other areas within designated Critical Habitat are either classified as disturbed or developed and contain no PCEs. Avoidance and minimization measures have been proposed for these potential effects. Temporary impacts to 0.36 acre designated SBKR Critical Habitat will be offset through purchase of credits from an approved mitigation bank, payment to an in-lieu fee program, or in another form of mitigation approved by the regulatory agencies.	Yes	NLAA
Stephens' kangaroo rat	None expected	No	No effect

5.2 Essential Fish Habitat Consultation Summary

Essential fish habitat is not present in the BSA, and no consultation with NMFS is recommended.

5.3 California Endangered Species Act Consultation Summary

No CESA consultation has occurred with CDFW to date. Table 7 lists each of the state-listed species with potential to occur on the Project site and the associated potential for take.

Take may occur to state-listed species as a result of the Project and either a consistency determination (Section 2080.1 of the Fish and Game Code) for the species that are also federally listed or an Incidental Take Permit will be required (Section 2081) for the Project. Consultation with CDFW will be required to address potential take of these species.

Table 7. State-Listed Species Potential for Take

Species Name	Summary of Impacts	Potential for Take
Nevin's barberry	None expected	No
Santa Ana River Woolly Star	None expected	No
Slender-horned spineflower	None expected	No
Least Bell's vireo	None expected	No
San Bernardino kangaroo rat	Direct impacts to SBKR are not expected to occur because the Project footprint and adjacent areas on top of the bluff are not expected to be occupied by SBKR. However, because suitable and presumed occupied RAFSS habitat is present in the Santa Ana River at the base of the bluffs, there is a potential for indirect impacts. Indirect impacts in the form of habitat degradation could occur immediately adjacent to the trail if the trail users do not remain on the designated trail. Additional indirect impacts may occur in the form of ground vibration and construction noise. Implementation of avoidance and minimization measures would reduce the	Yes

Table 7. State-Listed Species Potential for Take

Species Name	Summary of Impacts	Potential for Take
	potential for indirect impacts; therefore, the Project is not likely to adversely affect local or regional populations of SBKR.	
Stephens' kangaroo rat	None expected	No

5.4 Wetlands and Other Waters Coordination Summary

According to the impact map provided by the County, there would be no impacts to jurisdictional features associated with the Project.

There will be no need for regulatory permitting for the Project as all impacts to jurisdictional features are avoided. Coordination with the USACE and other agencies is recommended to confirm these findings.

5.5 Invasive Species

Invasive, exotic plant species were documented within the BSA. Exotic species are typically more numerous adjacent to roads and developed areas and frequently border the ornamental landscape. In the past, these areas within the BSA supported native plant communities. Consequently, some native plants are often found intermixed with exotic species within the BSA.

Thirteen exotic plants on Cal-IPC's California Invasive Plant Inventory were identified. Of these species, three have an overall high rating, five have a moderate rating, and five have a limited rating. Invasive species that have severe ecological impacts are given a high rating. Species with a high rating that were observed within the BSA include giant reed, black mustard, and foxtail brome. These observations should not be considered all-inclusive.

In compliance with EO 13112, and subsequent guidance from FHWA, the landscaping and erosion control included in the Project will not include species listed on either the Federal or the State of California Noxious Weed List. In areas of particular sensitivity (i.e., near or adjacent to drainages) extra precautions would be taken if invasive species are found in or adjacent to these areas. This would include the inspection and cleaning of construction equipment and eradication strategies, as required by the County's Biological Monitor, to be implemented by the contractor should an invasion occur.

As discussed in Chapter 3, no substantial populations of invasive wildlife have been documented in the BSA. House sparrows, rock pigeons, and European starlings, as well as Virginia opossums and feral dogs and cats, are known to occur and are common in urban areas throughout southern California. Eradication of these species within the BSA would have no effect on the local or regional populations. No measures for invasive wildlife are required for the proposed Project.

5.6 Other

5.6.1 MIGRATORY BIRD TREATY ACT

Native bird species and their nests are protected under the MBTA (16 United States Code [U.S.C.] 703- 712). The MBTA states that all migratory birds and their parts, including eggs, nests, and feathers, are fully protected. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase, or barter, any migratory bird, its eggs, parts, and nests, except as authorized under a valid permit.

EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) directs Federal agencies “taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a Memorandum of Understanding with the Fish and Wildlife Service that promotes the conservation of migratory bird populations.” In accordance with EO 13186 and the provisions of the MBTA, the measures described also in Section 4.3.6.3 would be applied for this Project.

5.6.2 WILD AND SCENIC RIVERS

There are no designated Wild and Scenic Rivers within the BSA.

Chapter 6 – References

- Boyd, S. and D.L. Banks. 1995. A Botanical Assessment of the Agua Tibia Wilderness Area, Cleveland National Forest, CA. Prepared for United States Department of Agriculture, Forest Service, Cleveland National Forest, under contract titled: Challenge Cost Share Agreement #CSA-5-94-02-017 between the Cleveland National Forest and the Rancho Santa Ana Botanic Garden. November 30, 1995. 89 pp.
- Brown, J.H. and B.A. Harney. 1993. Population and community ecology of heteromyid rodents in temperate habitats. In H.H. Genoways and J.H. Brown (eds.) *Biology of the Heteromyidae*, Special Publication No. 10 of the American Society of Mammalogists. 618-651.
- Burk, J.H., C.E. Jones, and J. Wheeler. 1989. New information on the rare Santa Ana River woolly star. *Fremontia* 17:20-21.
- Calflora: Information on California plants for education, research and conservation. 2018. The Calflora Database, Berkely, CA. Website: <http://www.calflora.org>.
- California Department of Fish and Wildlife (CDFW). 2018a. CNDDDB (California Natural Diversity Database). Natural Heritage Division, California Department of Fish and Game, Sacramento, CA.
- California Department of Fish and Wildlife (CDFW). Natural Diversity Database. 2018b. Special Animals List. California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch, Sacramento, CA.
- California Department of Fish and Wildlife (CDFW). Natural Diversity Database. 2018c. Special Vascular Plants, Bryophytes, and Lichens List. California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch, Sacramento, CA.
- California Native Plant Society (CNPS). Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). California Native Plant Society. Sacramento, CA. Website: <http://www.rareplants.cnps.org>.
- Hall, E. Raymond. 1981. *The Mammals of North America*, vols. I and II, 2nd ed. John Wiley and Sons, Inc. New York, New York, USA. 1181.
- Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press. Berkeley, CA. 860 pp.
- ICF International (ICF). 2018. Upper Santa Ana River Wash Plan Habitat Conservation Plan. Public Review Draft, January. Prepared for San Bernardino County Valley Water Conservation District, Redlands, CA.
- Kus, B. 2002. Least Bell's Vireo (*Vireo bellii pusillus*), *In* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. Website: http://www.prbo.org/calpif/htmldocs/riparian_v-2.html.

- Lackey, J.A. 1967. Biosystematics of Heermanni group kangaroo rats in Southern California. Trans. San Diego Soc. Nat. Hist. 14:314-344.
- Lidicker, W.Z., Jr. 1960. An analysis of intraspecific variation in the kangaroo rat *Dipodomys merriami*. University of California Publications in Zoology, 67:125-218.
- Montgomery, S. 1990. Trapping and habitat mapping survey for Stephens' kangaroo rats on the 235-acre Norco Hills Specific Plan, Tentative Tract 25779. Prepared for Windward Development Co. Newport Beach, Calif.
- Montgomery, S. 1991. Unpublished results of a preliminary trapping survey for Stephens' kangaroo rats on the Guejito Ranch property east of Escondido, San Diego County, California. Prepared for Pacific Southwest Biological Services. National City, Calif.
- Montgomery, S. 1992. Search for Stephens' kangaroo rats in the Anza Valley, Riverside County, Calif. (maps, without report). Prepared for Gary Pomeroy, Select Housing Associates. Newport Beach, Calif.
- Montgomery, S.J., J. Sawasaki, and D. Mitchell. 1996/97. Survey report and addendum for Stephens' kangaroo rat on Marine Corps Base, Camp Pendleton, California. Unpublished report Prepared by Tetra Tech, Inc. San Bernardino, Calif.
- Moyle, P.B. 1976. Inland fishes of California. University of California Press, Berkeley, CA. 405 pp.
- Moyle, P.B., R.M. Yoshiyama, J.E. Williams, and E.D. Wikramanayake. 1995. Fish species of special concern in California. Second edition. California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA. iv + 272 pp.
- Natural Resources Assessment, Inc. 2014. Focused Biological Assessment Santa Ana River Trail Phase IV San Bernardino County, California. Unpublished report.
- USDA. 2005. Soil Survey: San Bernardino County, California. Department of the Interior. U.S. Government Printing Office, Washington, D.C.
- O'Farrell, M.J., S.M. Juarez, and C.E. Uptain. 1986. A new addition to the known range of Stephens' kangaroo rat (*Dipodomys stephensi*) in San Diego County. Calif. Fish and Game 72:187-189.
- O'Farrell M. J. Uptain C. E.. 1987. Distribution and aspects of the natural history of Stephens' kangaroo rat (*Dipodomys stephensi*) on the Warner Ranch, San Diego County, California. Wasmann Journal of Biology 45:34-48.
- O'Farrell and C.E. Uptain. 1989. Assessment of population and habitat status of the Stephens' kangaroo rat (*Dipodomys stephensi*). Calif. Dept. Fish and Game, Non-game Bird and Mammal Section Report (July 1989).

- O'Farrel, M.J. 1990. Stephens' kangaroo rat: natural history, distribution, and current status. Pp 78-84, In P.J. Bryant and J. Remington (eds.), Memoirs of the Natural History Foundation of Orange County; Vol. 3. Pub. by Nat. Hist. Found. of Orange County.
- Ogden (Ogden Environmental and Energy Services). 1998. Stephens' kangaroo rat study for the Ramona Airport Expansion Project, Ramona, California. Prepared for KEA Environmental and County of San Diego Dept. Public Works. San Diego, Calif.
- Page, L.M. and B.M. Burr. 1991. A field guide to freshwater fishes: North America north of Mexico. Houghton Mifflin Company, Boston, MA. 432 pp.
- Patten, M.A. 1998. Least Bell's Vireo *Vireo bellii pusillus*. Bureau of Land Management. Website: https://www.blm.gov/ca/pdfs/cdd_pdfs/leastbells1.PDF.
- Price, M.V. and P.R. Endo. 1989. Estimating the distribution and abundance of a cryptic species, *Dipodomys stephensi* (Rodentia: Heteromyidae), and implications for management. *Conserv. Biol.* 3:293-301.
- Price, M.V. and P.A. Kelly. 1992. Monthly and lifetime movement distances of Stephens' kangaroo rat (*Dipodomys stephensi* Merriam). Final Report, Submitted to Riverside County Habitat Conservation Agency (15 January 1992).
- Prigge, B.A., O. Chadwick, and C. Conel. March 16, 1993. Biological assessment for the slender-horned spineflower on the proposed Gentry Companies Bee Canyon Mobile Home Park.
- Reveal, J.L. and C.B. Hardham. 1989. A revision of the annual species of *Chorizanthe* (Polygonaceae: Eriogonoideae). *Phytologia* 66:98-198.
- Rey-Vizgirdas, E. 1994. Status and Conservation of the Endangered Slender-horned Spineflower (*Dodecahema leptoceras*) and Alluvial Scrub Habitat in Southern California. Master's Thesis, California State University, Fullerton, CA.
- Santa Ana Watershed Association (SAWA). 2013. Santa Ana Watershed Association website. <http://sawatershed.org/?q=SARwatershed>.
- Smith, G.R. 1966. Distribution and evolution of the North American catostomid fishes of the subgenus *Pantosteus*, genus *Catostomus*. Univ. Michigan Museum Zool. Miscellaneous Publication 129:1-33.
- Thomas, J.R. 1975. Distribution, population densities and home range requirements of the Stephens' kangaroo rat (*Dipodomys stephensi*). Unpubl. M.A. Thesis, Calif. State Polytechnic Univ. Pomona, Calif. 64 pp.
- Thomas, J.R. 1973. Stephens' kangaroo rat survey 1972-73. Calif. Dept. Fish and Game, Special Wildlife Investigations, Job II-54.6. (Final Report).

- United States Army Corps of Engineers Wetlands (USACE). 1987. Research Program Technical Report Y-87-1 (on-line edition), Wetlands Delineation Manual, Environmental Laboratory (Wetland Manual).
- United States Army Corps of Engineers (USACE). 2001. Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest (Arid Southwest Guidelines).
- United States Army Corps of Engineers (USACE). 2001. Minimum Standards for Acceptance of Preliminary Wetlands Delineations, November 30 (Minimum Standards).
- United States Army Corps of Engineers (USACE). 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, December 2006 (Arid West Supplement).
- United States Army Corps of Engineers (USACE). 2007. Jurisdictional Determination Form Instructional Guidebook, May 30 (JD Form Guidebook).
- United States Army Corps of Engineers (USACE). 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, September (Arid West Region Supplement Version 2.0).
- United States Fish and Wildlife Service (USFWS). 1986a. Proposed Endangered Status for *Eriastrum densifolium* ssp. *sanctorum* (Santa Ana River Woolly star) & *Centrostegia leptoceras* (Slender-Horned Spineflower). Federal Register. 51, 68: 12160-12184.
- United States Fish and Wildlife Service (USFWS). 1993. Stephens' kangaroo rat study, Naval Weapons Station, Fallbrook Annex, San Diego County, California. Prepared for U.S. Navy, Southwestern Division, Naval Facilities Engineering Command, San Diego, California. (March 1993).
- United States Fish and Wildlife Service (USFWS). 1997. DRAFT Recovery plan for the Stephens' kangaroo rat (*Dipodomys stephensi*). Prepared by Region 1, USFWS. Portland, OR.
- United States Fish and Wildlife Service (USFWS). 2008. Federal Register, Vol. 73, No. 202. Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for the San Bernardino Kangaroo Rat; Final Rule. Department of the Interior, United States Fish and Wildlife Service, Washington, DC. 61965-61980.
- United States Fish and Wildlife Service (USFWS). 2009. *Berberis nevinii* (Nevin's barberry) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Carlsbad Fish and Wildlife Office Carlsbad, California. 1-12.
- United States Fish and Wildlife Service (USFWS). 2010a. Federal Register, Vol. 75, No. 239. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the Santa Ana Sucker (*Catostomus santaanae*); Final Rule. Department of the Interior, United States Fish and Wildlife Service, Washington, DC. 77977-78009.

- United States Fish and Wildlife Service (USFWS). 2010b. *Ambrosia pumila* (San Diego ambrosia) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Carlsbad Fish and Wildlife Office Carlsbad, California. 1-11.
- United States Fish and Wildlife Service (USFWS). 1998b. Endangered and threatened wildlife and plants; emergency rule to list the San Bernardino kangaroo rat as endangered. 50 CFR Part 17. 3835-3837.
- Wheeler, J.A. and J.H. Burk. 1990. Seedling demography of a floodplain endemic in habitats with different flooding histories. *Bulletin of the Society of America* 71:365.
- Wilbur, S.R. 1980. The Least Bell's Vireo in Baja California, Mexico. *West. Birds* 11:129-133.
- Zemba, R. and K.J. Kramer. 1984. The Known Limited Distribution and Unknown Future of Santa Ana River Eriogonum. *Crossosoma* 10:1-8.
- Zemba, Richard and Karla J. Kramer. 1985. The status of the Santa Ana River woollystar. *Fremontia*. 13, 3: 19-20.

Appendix A - Project Maps



Figure 1. Vicinity

2018-114 Santa Ana River Trail Phase IV



Figure 2. Project Location

2018-114 Santa Ana River Trail Phase IV

Location: N:\2018\2018-114 Santa Ana River Trail Phase IV\MAPS\Vegetation\Vegetation\1\SART_Veg_V4.mxd (LWK/DS)JSwager 9/13/2018

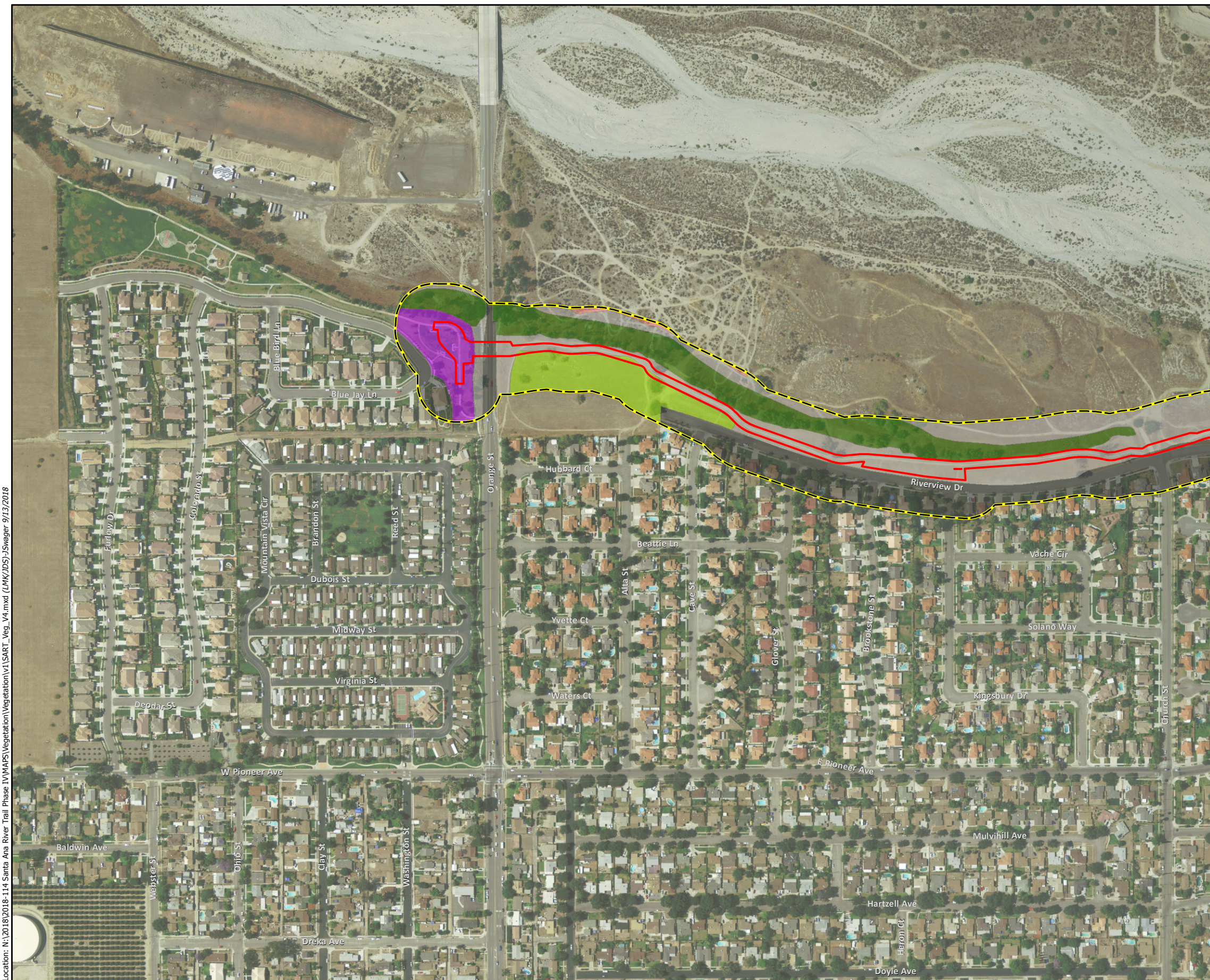


Figure 3.
Vegetation Communities
(Page 1 of 4)

Map Features

Biological Study Area

Construction Limits

Vegetation Community

Agricultural

Riversidean alluvial fan sage scrub

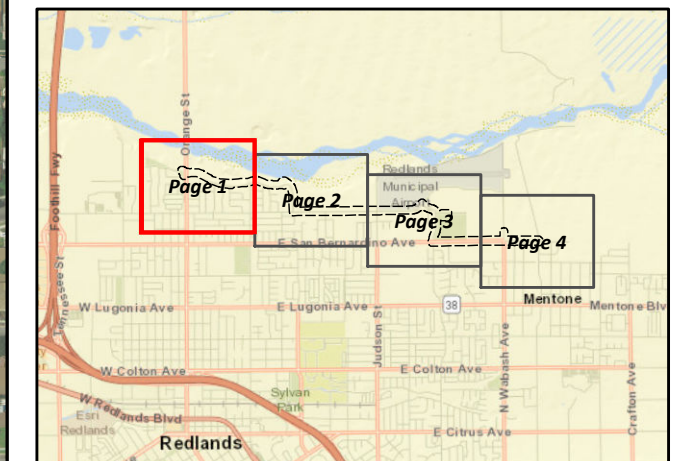
Developed

Disturbed

Nonnative woodland

Ornamental

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



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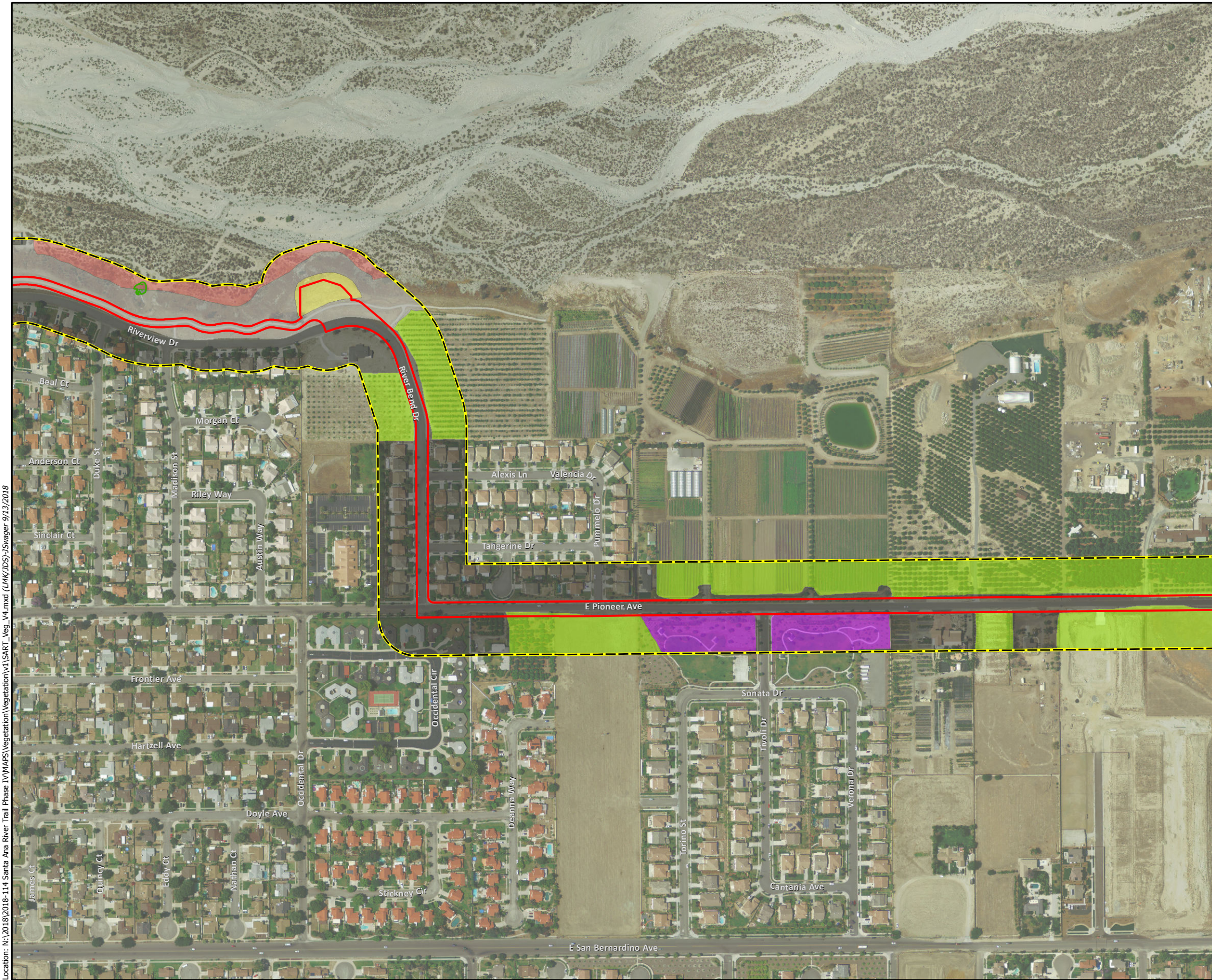
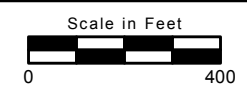
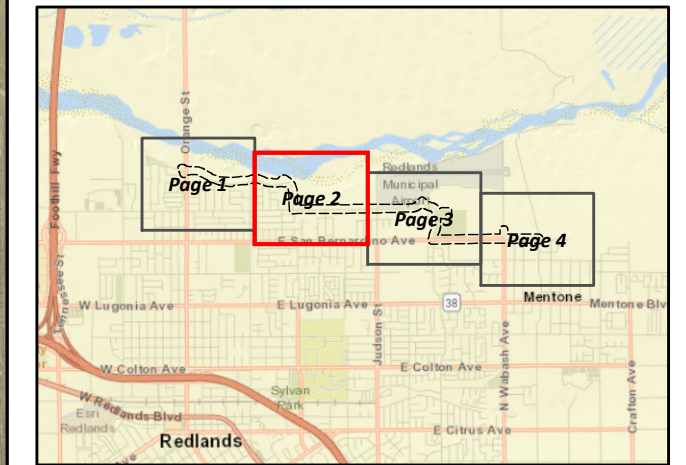


Figure 3.
Vegetation Communities
(Page 2 of 4)

Map Features

-  Biological Study Area
 -  Construction Limits
 -  Individual cottonwood tree
- Vegetation Community**
-  Agricultural
 -  Riversidean alluvial fan sage scrub
 -  Developed
 -  Disturbed
 -  Ornamental
 -  Riversidean sage scrub -
Encelia farinosa dominant

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



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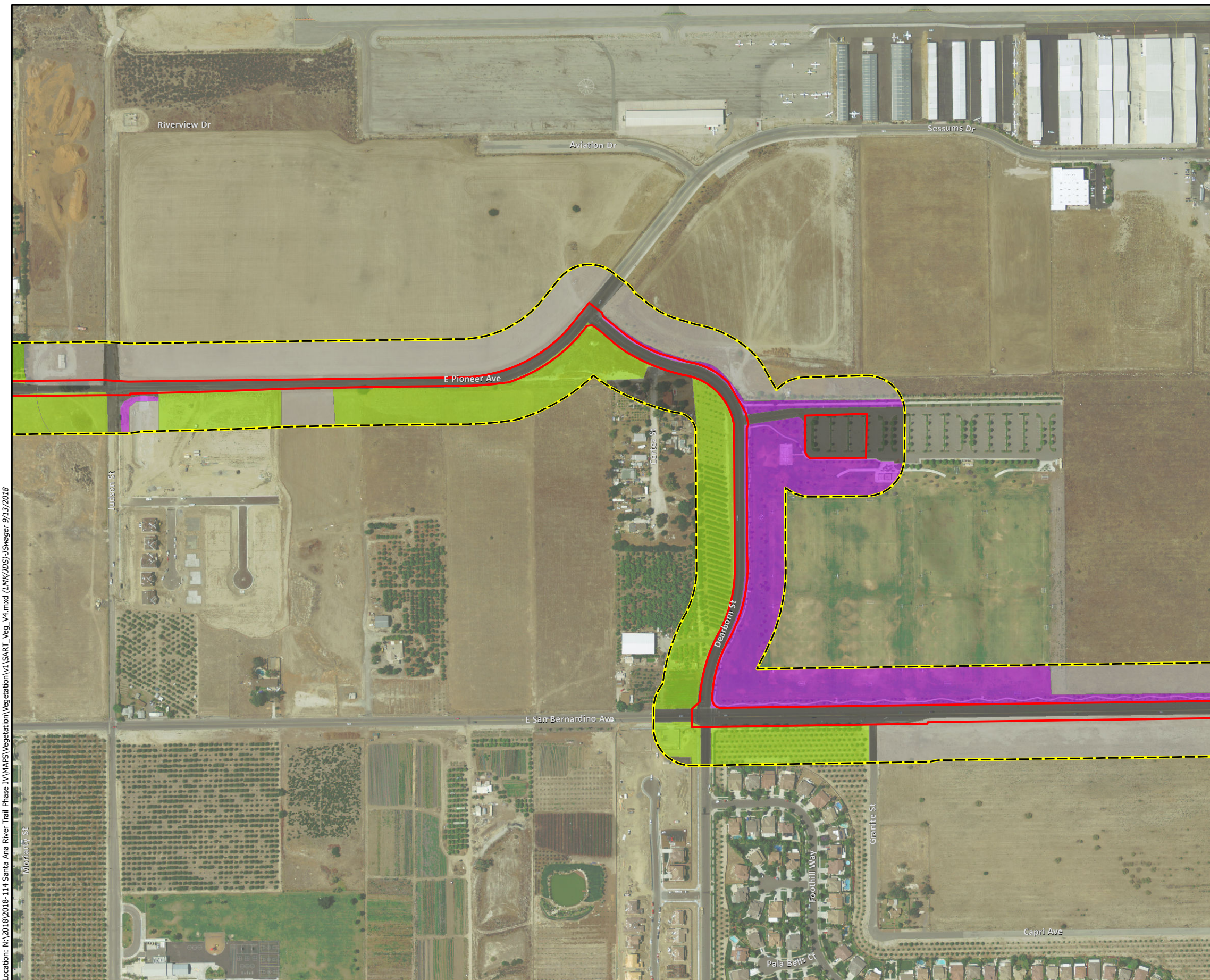
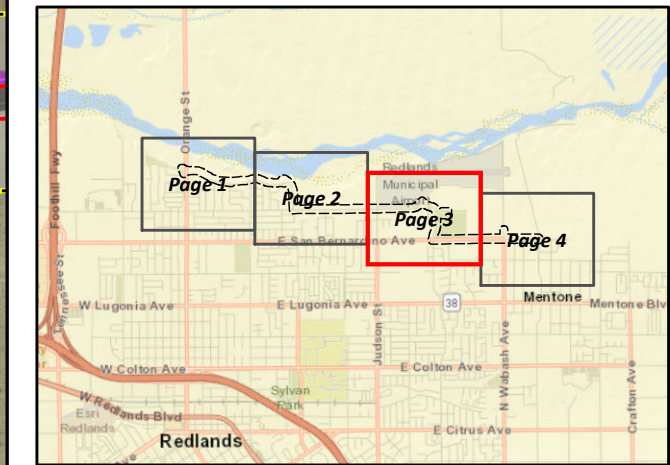


Figure 3.
Vegetation Communities
(Page 3 of 4)

Map Features

- Biological Study Area
- Construction Limits
- Vegetation Community**
- Agricultural
- Developed
- Disturbed
- Ornamental

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



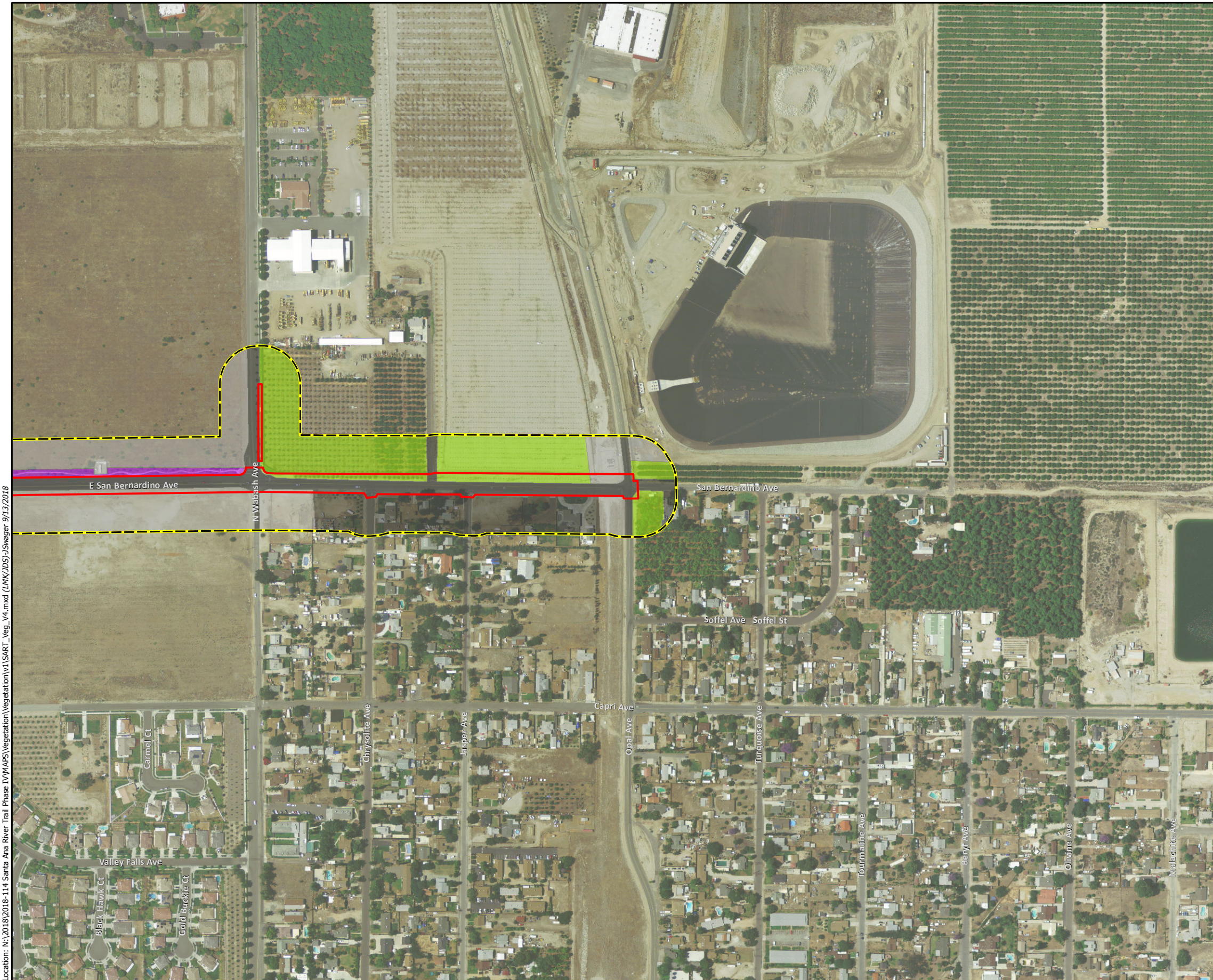


Figure 3.
Vegetation Communities
(Page 4 of 4)

Map Features

Biological Study Area

Construction Limits

Vegetation Community

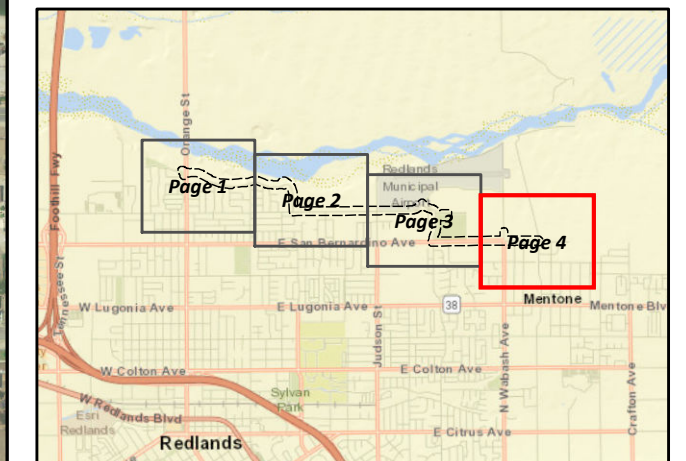
Agricultural

Developed

Disturbed

Ornamental

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



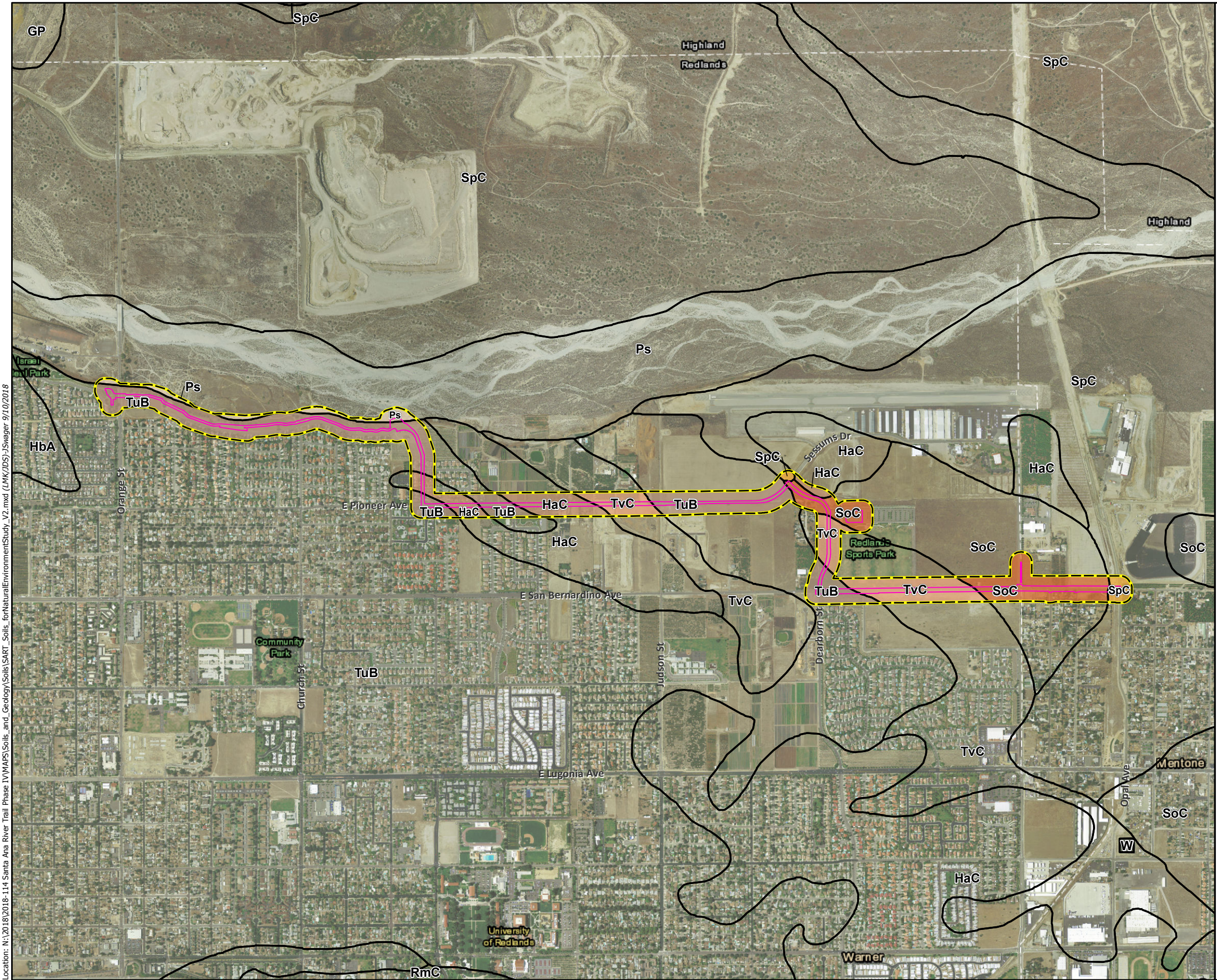


Figure 4. NRCS
Soil Types

Map Features

- Biological Study Area
- Construction Limits

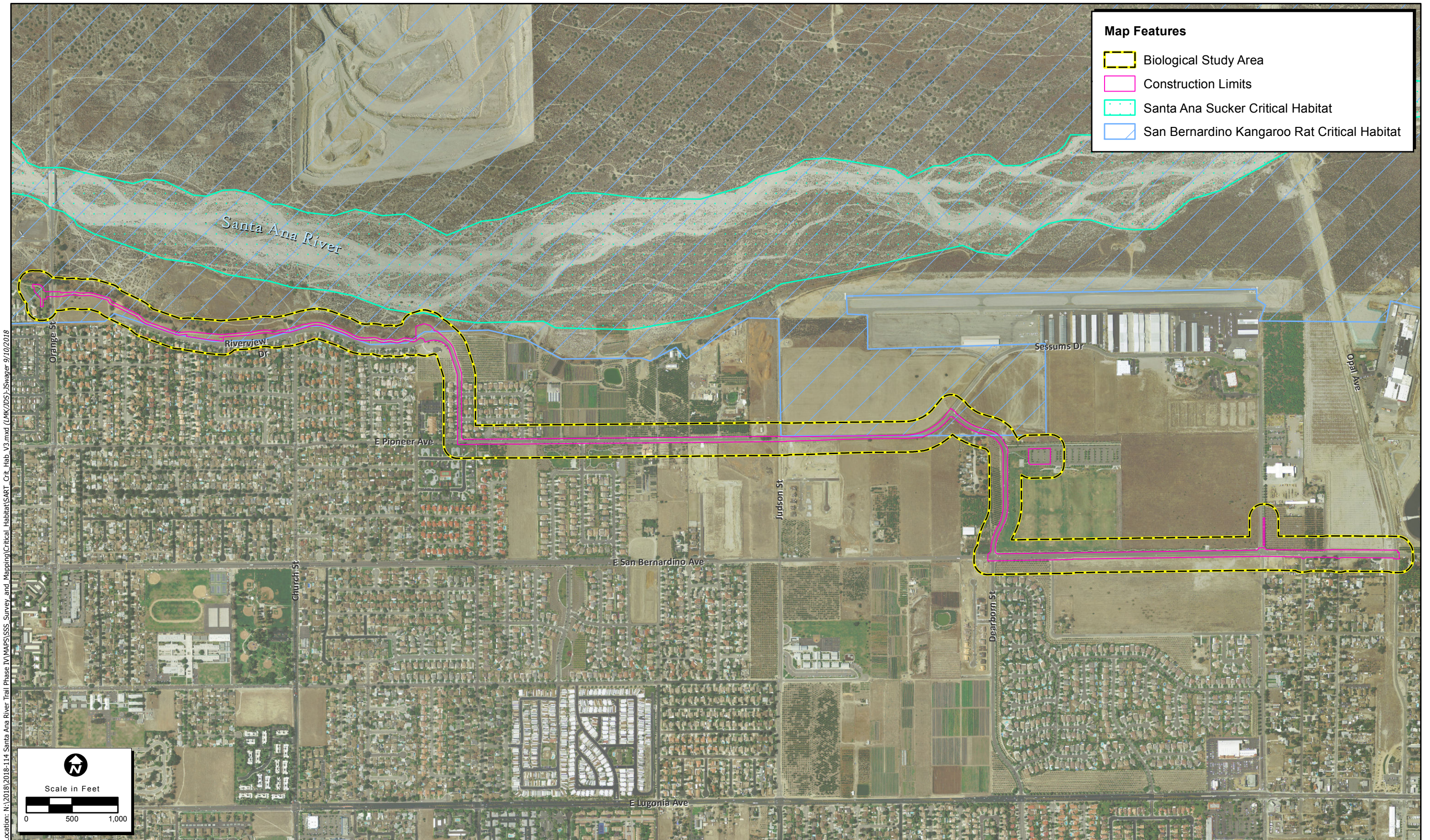
NRCS Soil Types

Series Number - Series Name

- HaC - Hanford coarse sandy loam, 2 to 9 percent slopes
- Ps - Psamments, Fluvents and Frequently flooded soils
- SoC - Soboba gravelly loamy sand, 0 to 9 percent slopes
- SpC - Soboba stony loamy sand, 2 to 9 percent slopes
- TuB - Tujunga loamy sand, 0 to 5 percent slopes
- TvC - Tujunga gravelly loamy sand, 0 to 9 percent slopes

Natural Resources Conservation Service (NRCS)
Gridded Soil Survey Geographic (gSSURGO) Database for
San Bernardino County, CA





Location: N:\2018\2018-114 Santa Ana River Trail Phase IV\MAPS\SSS_Survey_and_Mapping\Critical_Habitat\SART_Crit_Hab_V3.mxd (LMK\JDS)-Jswager 9/10/2018

Figure 5. Critical Habitat
 2018-114 Santa Ana River Trail Phase IV

Appendix B - USFWS IPaC List of Species



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
<http://www.fws.gov/carlsbad/>



In Reply Refer To:

September 10, 2018

Consultation Code: 08ECAR00-2018-SLI-1657

Event Code: 08ECAR00-2018-E-03763

Project Name: Santa Ana River Trail IV

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office

2177 Salk Avenue - Suite 250

Carlsbad, CA 92008-7385

(760) 431-9440

Project Summary

Consultation Code: 08ECAR00-2018-SLI-1657

Event Code: 08ECAR00-2018-E-03763

Project Name: Santa Ana River Trail IV

Project Type: ** OTHER **

Project Description: The County of San Bernardino Regional Parks Department (Regional Parks) with the assistance of the County of San Bernardino Department of Public Works (Department of Public Works) proposes to construct an approximately 3.2-mile long section of the Santa Ana River Trail (SART) on the southern bank of the Santa Ana River and local streets within the City of Redlands from approximately Orange Street to Opal Avenue. The SART is a planned 100-mile trail within the counties of Riverside, Orange and San Bernardino, of which approximately 70 miles have been constructed. The Project being proposed is the SART Phase IV, Reaches B & C Project (Project) which will consider one “no-build” and one “build” alternative. The “build” alternative includes the construction of a 10-foot wide asphalt/concrete trail and 4-foot decomposed granite/or 2-foot graded shoulder on each side of the asphalt/concrete trail out of the floodplain along the southern bluffs of the Santa Ana River and a striped trail within City or Redlands local streets.

In general, construction activities associated with development of the trail would include: earthwork including excavation and grading; construction of embankments and/or retaining walls; construction of storm drains, headwalls, and slope protection; construction of asphalt concrete dike, curb and gutter; installation of fencing, railing, access gates, trail delineators, and signage; painting of pavement striping and pavement markings; and, construction of appurtenant features.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/34.08035842421174N117.14685307396277W>



Counties: San Bernardino, CA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat <i>Dipodomys merriami parvus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2060	Endangered
Stephens' Kangaroo Rat <i>Dipodomys stephensi</i> (incl. <i>D. cascus</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3495	Endangered

Birds

NAME	STATUS
Coastal California Gnatcatcher <i>Polioptila californica californica</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo <i>Vireo bellii pusillus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Fishes

NAME	STATUS
Santa Ana Sucker <i>Catostomus santaanae</i> Population: 3 CA river basins There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3785	Threatened

Flowering Plants

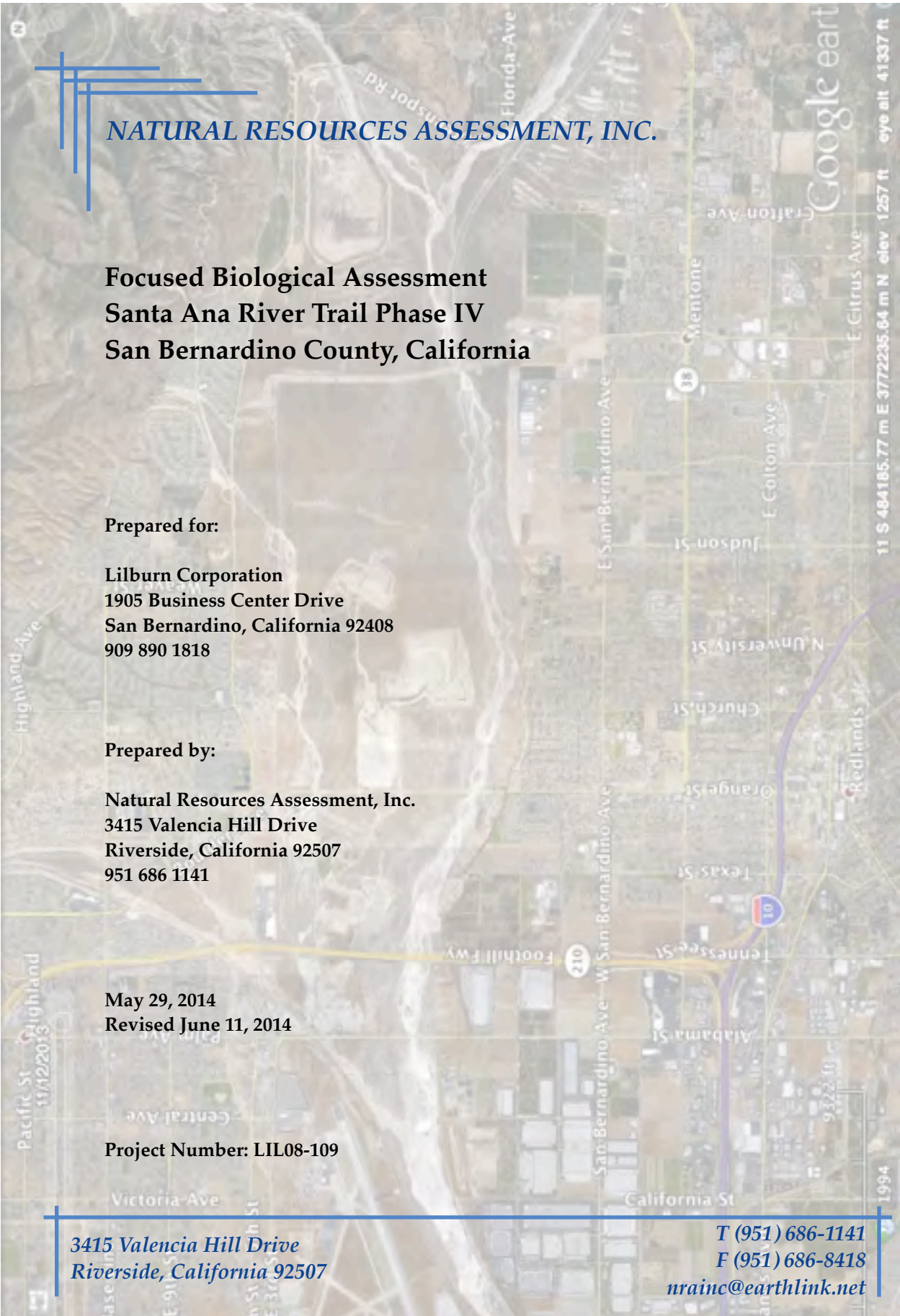
NAME	STATUS
Nevin's Barberry <i>Berberis nevinii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8025	Endangered
San Diego Ambrosia <i>Ambrosia pumila</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
Santa Ana River Woolly-star <i>Eriastrum densifolium ssp. sanctorum</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6575	Endangered
Slender-horned Spineflower <i>Dodecahema leptoceras</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4007	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat <i>Dipodomys merriami parvus</i> https://ecos.fws.gov/ecp/species/2060#crithab	Final

Appendix C - 2014 SART IV Natural Resources Assessment



NATURAL RESOURCES ASSESSMENT, INC.

**Focused Biological Assessment
Santa Ana River Trail Phase IV
San Bernardino County, California**

Prepared for:

**Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408
909 890 1818**

Prepared by:

**Natural Resources Assessment, Inc.
3415 Valencia Hill Drive
Riverside, California 92507
951 686 1141**

**May 29, 2014
Revised June 11, 2014**

Project Number: LIL08-109

**3415 Valencia Hill Drive
Riverside, California 92507**

**T (951) 686-1141
F (951) 686-8418
nrainc@earthlink.net**

CERTIFICATION

I hereby certify that the statements furnished below and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



Karen Kirtland
Natural Resources Assessment, Inc.

June 11, 2014

Date

Table of Contents	Page
Executive Summary.....	S-1
1.0 Introduction.....	1
2.0 Site Location and Project Description.....	1
3.0 Project History.....	1
4.0 Methods.....	6
4.1 Data Review	6
4.2 Field Surveys	6
4.3. Survey Limitations	6
5.0 Results	7
5.1 Research Findings.....	7
5.2 Weather	7
5.3 Soils.....	7
5.3.1 California Avenue to Alabama Street (Reach A)	7
5.3.2 Alabama Street through the Interstate 210 Crossing (Reach A).....	7
5.3.3. Interstate 210 to Riverview Park (Eastern end of Reach A).....	8
5.3.4 Riverview Park to Judson Street (Reach B)	8
5.3.5 Judson Street to Garnet Avenue (Reaches C and D)	8
5.4 Topography.....	8
5.4.1 Alabama Street Crossing (Reach A).....	8
5.4.2 Interstate 210 Crossing (Reach A).....	8
5.4.3 Redlands Airport (Reach C)	8
5.5 Plant Communities and Wildlife Habitats	8
5.5.1 California Street to Alabama Street (Reach A).....	8
5.5.2 West Side of Alabama Street (Reach A).....	12
5.5.3 Alabama Street Crossing (Reach A).....	12
5.5.4 East Side of Alabama Street (Reach A).....	12
5.5.5 Spreading Basin Facility (Reach A)	12
5.5.6 Spreading Basin to the Interstate 210 Crossing (Reach A).....	14
5.5.7 Interstate 210 Crossing to the Citrus Grove (Reach A).....	14
5.5.8 Citrus Grove to Texas Street (Reach A)	15
5.5.9 Texas Street to Riverview Park (Reach A).....	15
5.5.10 Riverview Park (Reach A).....	16
5.5.11 Orange Street Crossing (Boundary of Reaches A and B).....	16
5.5.12 Orange Street to Riverview Drive (Reach B).....	16
5.5.13 Riverview Drive (Reach B)	16
5.5.14 Bend of Riverview Drive to Judson Street (Reach B).....	16
5.5.15 Judson Street to Opal Avenue (Reach C)	19
5.5.16 Opal Avenue South (Boundaries of Reaches C and D).....	19
5.6 Sensitive Biological Resources	19
5.6.1 Slender-horned Spineflower	19
5.6.2 Santa Ana River Woolly Star	23
5.6.3 San Bernardino Kangaroo Rat.....	24
5.6.4 California Gnatcatcher	25
5.7 Raptors, Migratory Birds, and Habitat	26
5.8 Habitat Fragmentation and Wildlife Movement.....	26
5.9.1 Army Corps of Engineers	28
5.9.2 State Water Resources Control Board.....	28
5.9.3 California Department of Fish and Wildlife.....	28
6.0 Discussion.....	29
6.1 General Biological Resources	29
6.2. Sensitive Biological Resources.....	29
6.2.1 Slender-horned Spineflower and Santa Ana River Woolly Star.....	29
6.2.2 San Bernardino Kangaroo Rat.....	29

6.2.3 California Gnatcatcher	30
6.3 Raptors, Migratory Birds, and Habitat	30
6.4 Habitat Fragmentation and Wildlife Movement	30
6.5 Jurisdictional Waters	30
7.0 References.....	32
8.0 Personal Communication	33

Figures

1 Santa Ana River Trail, County Line to Garnet Street 2.....	
2 Phase IV 3.....	
3a Santa Ana River Trail Phase IV, eastern half 4.....	
3b Santa Ana River Trail Phase IV, western half 5.....	
4a Project Aerial Santa Ana River Trail Phase IV, eastern half 9.....	
4b Project Aerial Santa Ana River Trail Phase IV, western half 10.....	
5 Sightings of California Gnatcatcher in the San Bernardino Valley Area 27.....	

Site Photos

1 Dirt access road north of California Street	11
2 Access road alongside the landfill to the south	11
3 Native alluvial fan scrub habitat on the west side of Alabama Street 13.....	
4 Dirt access road extending down to Alabama Street crossing 13.....	
5 Dirt maintenance road on the north side of the spreading basin area 14.....	
6 Alluvial fan scrub habitat on the west side of Interstate 210 15.....	
7 Riverview Park landscaping 17.....	
8 Vacant lot along east side of Orange Street 17.....	
9 Dirt road through coastal sage scrub along the airport fence 18.....	
10 Coastal sage scrub mixed with chamise 18.....	
11 Trail crossing on an arm of the Santa Ana River 20.....	
12 Trail on top of flood control wall levee 20.....	

Tables

Table A. Resources of Concern by Project Reach 21.....	
--	--

Appendices

- Appendix A - Sensitive Biological Resources
- Appendix B - Plants and Animal Species Observed

Executive Summary

Natural Resources Assessment, Inc. (NRAI) was contacted by Lilburn Corporation to provide biological services for the County of San Bernardino, Public Works Department, Regional Parks. The County is proposing to construct Phase IV of the Santa Ana River Trail, part of the larger Santa Ana River Trail project to build a hiking and biking trail from the Pacific Ocean to the mountains of San Bernardino.

NRAI conducted field surveys to evaluate the soils and plant communities on site. The field team focused on identifying sensitive resources present during the surveys.

The results of the field survey in 2014 were limited by restricted access, trespass and safety issues. We have combined the results of the 2014 survey with the findings made in 2010 to provide an updated assessment.

The field surveys included observations of potential habitat for sensitive species. Signs surveyed for included nests, tracks, scat, burrows, remains, and individuals. During the surveys, notes were made on the plant and animal species observed, the surface characteristics and topography of the project area, and the suitability of the habitat on site and in surrounding areas for sensitive species.

Suitable habitat was found for the slender-horned spinyflower in Reaches A, C and D, and for the Santa Ana River woolly star in Reach D. The portion of the alignment most likely to support these species was surveyed in 2010 and no plants were found. No spinyflower was observed in Reach A in 2014.

The field team was unable to survey the section of Reach D and some sections of Reach C in 2014 due to restricted access. We recommend focused surveys for these species and appropriate mitigation, if required.

Because the San Bernardino kangaroo rat is known to be present in the area, it was assumed that the portions of the Trail that cross through native habitat, abandoned citrus groves and vacant lots may contain populations of this species. These areas include all four reaches. Mitigation will require either trail design or mitigation for impacted habitat.

The coastal sage scrub habitat along the bluffs of the river north of the Redlands Airport in Reach C as well as the alluvial fan scrub habitat along the river in Reach D, is suitable for the California gnatcatcher. At least two sightings of the gnatcatcher have been found near this area. The habitat areas extend east to Garnet Street. We recommend discussion with the agencies regarding what focused surveys and mitigation may be required if birds are found nesting along the alignment.

No significant habitat loss for raptors and migratory birds or their habitats are expected, and therefore no mitigation is required. However, construction activity may indirectly affect nesting birds, especially in areas of native habitat in all four reaches of the Trail. We recommended avoiding construction during the breeding season (February 1 through August 31). If avoidance is not possible, we recommend a breeding bird survey to ensure construction does not disturb nesting birds.

Habitat fragmentation has already occurred over most of the alignment, and wildlife movement is primarily confined to the river. The only section of the Trail that will substantially affect native habitat is east of Opal Avenue in Reach D. However, given the small area of impact, and the availability of alternative routes for wildlife, this impact is not expected to be significant.

The portions of the alignment that are within the Santa Ana River in Reach A and D, and one unnamed channel in Reach A, may come under the jurisdiction of the U.S. Army Corps, California Department of Fish and Wildlife and the Santa Ana Regional Water Quality Control Board. Permits may be required for these sections.

1.0 Introduction

Natural Resources Assessment, Inc. (NRAI) was contacted by Lilburn Corporation to provide biological services for the County of San Bernardino, Public Works Department, Regional Parks. The County is proposing to construct Phase IV of the Santa Ana River Trail (Phase IV hereinafter referred to as "Trail").

The Santa Ana River Trail is a hiking and biking trail that extends from the Pacific Ocean to the mountains of San Bernardino. Phase IV is the last segment of the trail.

2.0 Site Location and Project Description

The proposed alignment for the Phase IV section of the Trail runs generally along the south side of the Santa Ana River east from California Street in Redlands to Garnet Street in Mentone, San Bernardino County (Figures 1 and 2). There is one branch that leads south along Opal Avenue south to Mentone Boulevard.

The alignment passes through Sections 13 through 17, Township 1 south, Range 3 west and Sections 17, 18 and 21, Township 1 south, Range 2 west, Redlands and Yucaipa 7.5' USGS topographic quadrangles, San Bernardino base and meridian (Figures 3a and 3b).

For planning and analysis purposes, the 10-mile Phase IV Section of the SART is divided into four major reaches (refer to Figure 2) as follows:

- Reach A – California Street to Orange Street
- Reach B – Orange Street to Judson Street
- Reach C – Judson Street to Opal Avenue
- Reach D – Opal Avenue to Garnet Street, including the Mentone Library Leg

Because SART Phase IV construction funding sources are unknown, it is likely this 10-mile phase will be constructed in segments currently identified as Reaches A through D. It is believed Reach A may be constructed within the next 5 years; however it is unknown when funding may become available for reaches B through D. Therefore, the County intends to use this document to approve construction of Reach A, although all four reaches were surveyed and results included in this report in the event that the all four reaches could be completed by the end of 2015.

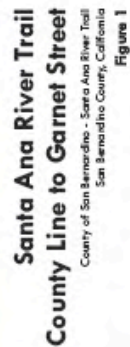
3.0 Project History

NRAI has worked with the County and Lilburn Corporation on the Phase IV section since 2009, including informal surveys with County and resources agencies staff, and formal biological assessment surveys.

We conducted a preliminary site assessment on May 20, 2009, to determine the potential issues for trail construction and possible trail redesign. The preliminary assessment was limited to checking sections of Phase IV for potentially sensitive areas.

We attended a field meeting and informal survey on August 13, 2009, with County staff and resource agencies to discuss the potential permitting issues for the Trail. The informal survey extended from Alabama Street east to Opal Avenue (Figure 3a).

We conducted a formal survey of the entire alignment on May 24 and 25, 2010. We documented the habitats and site conditions along the entire alignment, except for the flood control wall maintenance road extending from Greenspot Road down to the crossing of the Santa Ana River (Figures 2 and 3b). This section was blocked by flood control gates. Because it is a maintained road, NRAI determined that no foot survey was necessary because no new habitat would be impacted.









Our most recent site assessment was conducted on May 5 and May 28, 2014. The purpose of the survey was to document any substantial changes that may have occurred along the alignment since our 2010 survey.

4.0 Methods

4.1 Data Review

In May 2014, NRAI updated the available information on plant and wildlife species known occurrences within the vicinity of the project. This review included biological texts on general and specific biological resources, and those resources considered to be sensitive by various wildlife agencies, local governmental agencies and interest groups. It also included our work and work by other biologists on projects in the vicinity of the proposed Trail alignment.

NRAI also reviewed other available technical information on the biological resources of the site. We used the information to focus our survey efforts in the field.

Sensitive species potentially present include those listed, or candidates for listing by the U. S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS).

4.2 Field Surveys

Ms. Karen Kirtland of NRAI and Ms. Lorraine Bueno of Lilburn Corporation conducted the update survey on May 5, 2014. Ms. Kirtland conducted a second survey on May 28, 2014, of a specific section of Reach D. Both surveys were focused primarily on documenting changes along the proposed alignment that may have affected biological resources.

As part of our field work, we documented the soils, plant communities and wildlife in the various Reaches. We also included observations of potential habitat for sensitive species. Signs surveyed for included nests, tracks, scat, burrows, remains, and individuals. Our documentation included taking photographs of representative areas of the Trail.

4.3. Survey Limitations

There were a number of new limitations to accessing the Trail. Starting at the western end, they are listed below:

- California Street to Alabama Street. Access is gated and posted no trespassing.
- Alabama Street crossing. Homeless encampments under the bridge inhibited walking this area.
- Alabama Street east to Interstate 210. Access to the spreading basin road is gated and locked.
- East end of citrus groves to Texas Street. Access to private land is gated and posted no trespassing.
- Riverbend Drive to Judson Street. Except immediately at the turning of Riverbend Drive (to the south), this section is on private property, either gated or posted no trespassing.
- Opal Avenue to the connection with the levee road and floodwall road. The State Water Project, East Branch Extension, has fenced off this area as part of the pipeline construction work and denied access.

In addition to these limitations, the City of Redlands has instituted a “No Parking Off Pavement” policy that affected our ability to stop and survey certain sections of the Trail.

As a result of these difficulties the field team did not fully survey all sections of the Trail. However, based on aerial photos and what could be surveyed, the habitats along the Trail do not appear to have substantially changed since the original site surveys were conducted in 2010.

5.0 Results

5.1 Research Findings

Table 1 in Appendix A provides information on the habitat requirements and regional distribution, seasonal distribution, listing status, and probability of occurrence on the project site of the various sensitive resources of concern for this project.

5.2 Weather

At the beginning of the survey on May 8, the temperature was 56 degrees Fahrenheit, with winds approximately seven miles per hour from the west southwest and hazy skies. By the end of the survey, the temperature was 71 degrees Fahrenheit, with winds of approximately five miles per hour from the west and hazy skies.

On May 28, 2014, at the beginning of the survey the temperature was 65 degrees Fahrenheit, winds were calm and skies were hazy. By the end of the survey the temperature was 70 degrees Fahrenheit, the winds were calm winds and skies were hazy.

5.3 Soils

There are four soils that occur along the Santa Ana River Trail, Phase IV alignment. Psamments, Fluvents and Frequently Flooded soils are found primarily in the Santa Ana River and the lower slopes. Tujunga soils are found along the upland areas. Hanford soils are also found in the upland area behind the bluffs, except for the bluffs occupied by the Redlands Airport. Soboba soils are primarily along the river, except where they form the bluffs occupied by the Redlands Airport.

Hanford soils are well-drained soils found on alluvial fans. They are formed from alluvium derived from granite.

Psamments, Fluvents, and Frequently Flooded soils are somewhat excessively drained soils (Psamments) found along drainage ways. These are frequently flooded soils derived from sandy alluvium (Psamments) and alluvium (Fluvents).

Soboba stony loamy sand is an excessively drained soil found on alluvial fans. It is formed from alluvium derived from granite. The frequency of flooding is rare.

Tujunga soils are somewhat excessively drained soils found on alluvial fans. They are formed from alluvium derived from granite. The frequency of flooding is rare.

5.3.1 California Avenue to Alabama Street (Reach A)

The soils are mostly Psamments, Fluvents and Frequently Flooded soils, with the upper bluffs composed of Tujunga loamy sand.

5.3.2 Alabama Street through the Interstate 210 Crossing (Reach A)

The Trail is entirely on Psamments, Fluvents and Frequently Flooded soils.

5.3.3. Interstate 210 to Riverview Park (Eastern end of Reach A)

As the Trail turns south and crosses into the citrus grove, the soil becomes a Hanford sandy loam until Riverview Park.

5.3.4 Riverview Park to Judson Street (Reach B)

At Riverview Park, the soil becomes Tujunga loamy sand, and this soil continues to the east until Judson Street. There are small areas of Tujunga gravelly loam sand and Hanford coarse sandy loam along the edges of the bluffs in this section.

5.3.5 Judson Street to Garnet Avenue (Reaches C and D)

At Judson Street, the soils change to Soboba stony loamy sand. This soil continues until the bridge crossing over the Santa Ana River, where there is a small patch of Psammments, Fluvents and Frequently Flooded soils. After that small area, the soils remain Soboba stony loamy sand until Garnet Avenue.

5.4 Topography

For the most part, the Trail is either on bluff edges or along levee roads. Although there is a gradual rise in elevation, the topographic profile is flat, except for certain areas.

5.4.1 Alabama Street Crossing (Reach A)

The Trail comes down a bluff onto Alabama Street, and then drops down to cross under the Alabama overpass along the river.

5.4.2 Interstate 210 Crossing (Reach A)

The Trail drops down to cross Interstate 210, and then must rise up to reach the citrus grove on top of the adjacent bluffs to the east.

5.4.3 Redlands Airport (Reach C)

There may be a minor drop to reach the lower levee that runs along the river below the bluffs occupied by the Redlands Airport. The map is not clear on exactly where the Trail will run.

5.5 Plant Communities and Wildlife Habitats

The plant communities and wildlife habitats along the Trail route are described from west to east. Included in the description are areas impacted by human activity (Figures 4a and 4b).

5.5.1 California Street to Alabama Street (Reach A)

The beginning of the Phase IV section of the Trail is located at the north terminus of California Street in northwest Redlands. The first section north from California Street is along a dirt access road and passes along the east side of what appears to be a landscaped open space (Photo 1). This dirt access road extends to the bank or levee above the Santa Ana River and turns east (Photo 2).

From there, it travels along a dirt road on the bank or levee of the river. Just east of California Street, the Trail runs between the river to the north and an existing landfill site to the south. Further east, the Trail follows the dirt road past the Redlands Waste Water Treatment Facility. This facility extends to Alabama Street.

There is no native habitat directly along the Trail or on the south until just before Alabama Street. North of the Trail, below the levee or bank, there is alluvial fan scrub habitat.







Photo 1. Dirt access road north of California Street. Looking north.



Photo 2. Access road alongside the landfill to the south. Looking east.

5.5.2 West Side of Alabama Street (Reach A)

The Trail drops down from the top of the manufactured slope that is formed by the Redlands Waste Water Treatment Facility. At the bottom of the slope, it passes through a small patch of native habitat before joining an existing flood control maintenance road going down to the Santa Ana River (Photo 3). The Trail follows the maintenance road down to the Alabama Street bridge (Photo 4).

The small patch of native habitat is alluvial fan scrub. Species observed in this area included California buckwheat (*Eriogonum fasciculatum*), deerweed (*Lotus scoparius*), scale broom (*Lepidospartum squamatum*), and California croton (*Croton californica*). The plant community also supports weedy species such as Mediterranean grass (*Schismus barbatus*) and short-pod mustard (*Hirschfeldia incana*).

The plant community in the native habitat area is contiguous with habitat along the adjacent Santa Ana River.

The alluvial fan scrub provides habitat for a number of wildlife species. The only sign found belonged to a kangaroo rat species (*Dipodomys* sp. unk.). Other species observed or expected to occur include side-blotched lizard (*Uta stansburiana*) and coyote (*Canis latrans*).

The alluvial fan scrub habitat has been somewhat impacted by trash dumping and trespass. The level of disturbance increases as the Trail approaches closer to Alabama Street.

5.5.3 Alabama Street Crossing (Reach A)

As we understand the project, as the Trail crosses under the bridge, it will be constructed at the base of boulder rip-rap. This would place the Trail in the Santa Ana River.

As noted above, we were unable to safely survey this area in 2014, due to the presence of homeless encampments. However, in our past surveys we found almost no vegetation directly under the bridge. Alluvial fan scrub does exist on the other side. There is also suitable habitat for the San Bernardino kangaroo rat (*Dipodomys merriami parvus*).

NRAI has trapped for the San Bernardino kangaroo rat (SBKR) along Alabama Street as part of other projects, and have captured individuals at this location.

5.5.4 East Side of Alabama Street (Reach A)

On the east side of Alabama Street, the Trail follows an existing dirt flood control maintenance road to join with an access road for a spreading basin facility. The dirt road passes through alluvial fan scrub that is contiguous with habitat along the river, similar to that found on the west side of Alabama Street.

5.5.5 Spreading Basin Facility (Reach A)

The Trail follows a dirt road that is part of the spreading basin system (Photo 5). No native plant community exists within the alignment of the Trail; however, the adjacent habitat on the north is alluvial fan scrub along the slope and down into the river. The plant communities in the spreading basins are a mix of non-native and native weedy plant species that have been highly impacted by maintenance of the basins.

Eucalyptus trees are planted along the southern boundary and the southernmost sections of the eastern and western boundaries.

The basin habitat provides habitat for wildlife species, including some of the species found in alluvial fan scrub. Species observed in 2010 included mallard (*Anas platyrhynchos*) in the pond and red-tailed hawk (*Buteo jamaicensis*) in the eucalyptus grove.



Photo 3. Native alluvial fan scrub habitat on the west side of Alabama Street. Looking west.



Photo 4. Dirt access road extending down to Alabama Street crossing. Looking north.



Photo 5. Dirt maintenance road on the north side of the spreading basin area. Looking east. Taken 2010.

5.5.6 Spreading Basin to the Interstate 210 Crossing (Reach A)

At the east end of the spreading basin, near Interstate 21, the alluvial fan scrub along the bank continues on up onto the slope of the interstate (Figure 2a, Photo 6). The Trail leaves the dirt maintenance road and crosses through this scrub habitat to cross under the interstate bridge.

Even though alluvial fan scrub habitat exists in this area, we do not anticipate the presence of SBKR on the steep slopes of the levee. They may be in the adjacent areas below the levee.

As we understand the project, the Trail will cross along the top of the rip-rap and will not extend down into the river.

5.5.7 Interstate 210 Crossing to the Citrus Grove (Reach A)

In the original plans, the Trail would cross under the Interstate, across an existing large erosion-cut channel and up the slope into an existing citrus grove. Our 2010 survey found that the crossing would impact native riparian and wetland habitat along the channel, as well as the alluvial fan scrub habitat up the slope. In addition, this channel would be considered jurisdictional under the Corps, RWQCB and CDFW. Trail construction would require building in the jurisdictional area.

For the 2014 survey, the field team was asked to locate a crossing area that would be suitable for bridging and avoid impacts to the jurisdictional waters of the channel and the alluvial fan scrub habitat on the slope to the east. The field team investigated the upstream trace of the channel and found an area where the channel narrows considerably. This section could possibly be bridged, rather than crossing the channel, and thereby minimize or eliminate the impacts to jurisdictional waters.



Photo 6. Alluvial fan scrub habitat on the west side of Interstate 210. Taken 2010.

The east side of Interstate 210 is dominated by a grassy slope. The original crossing also passed through a stand of alluvial fan scrub. By extending the Trail along the east side of Interstate 210 and using the bridge to cross the channel, Trail construction would avoid impacting alluvial fan scrub habitat on the east side of the unnamed channel.

Depending upon where the crossing is made, there may be impacts to the channel as a result of stabilization requirements. When the field team surveyed the crossing area, the channel had eroded sides cuts that in some instances extended at least fifty feet into the existing citrus grove. Any stabilization of the banks would probably require permit approval from the three agencies.

Further upstream, there does not appear to be sufficient room on the west side of the channel (east side of Interstate 210) to extend the trail in that direction, which is why the field team chose that point for a trail crossing.

5.5.8 Citrus Grove to Texas Street (Reach A)

The Trail crosses through an existing citrus grove, and from there through what appears to be a materials processing facility. We were unable to confirm the exact route in this area, as the access had been posted against trespassing.

5.5.9 Texas Street to Riverview Park (Reach A)

The Trail crosses Texas Street, a paved road. East of Texas Street, the Trail crosses through an abandoned citrus grove, crossing a small depression and extending to Riverview Park (Figure 2a).

NRAI recently completed a general biological assessment for a proposed development of part of the citrus grove, which included trapping sections of the grove. SBKR were found within a portion of the

grove, extending from the river bluff south. At the time of the trapping, conducted in August 2013, the site had been recently graded. Since that time, the property has been allowed to remain fallow, and it is possible that the resident SBKR population has expanded along this area, including along the Trail alignment.

At the base of the bluff crossed by the Trail is a stand of willow riparian habitat, including black willow (*Salix gooddingii*), and arroyo willow (*Salix lasiolepis*) and mulefat (*Baccharis salicifolia*).

The former citrus grove is dominated by weedy species such as slender wild oats (*Avena barbata*), red brome (*Bromus madritensis* ssp. *rubens*), shortpod mustard and London rocket (*Sisymbrium irio*). There are also stumps of former citrus trees and isolated stands of eucalyptus (*Eucalyptus* spp.) and Mexican elderberry (*Sambucus mexicanus*).

5.5.10 Riverview Park (Reach A)

The Trail crosses through Riverview Park, a wholly landscaped area, with no native habitat (Photo 7).

5.5.11 Orange Street Crossing (Boundary of Reaches A and B)

Riverview Park extends to Orange Street. The Trail will cross Orange Street by bridge.

5.5.12 Orange Street to Riverview Drive (Reach B)

From Orange Street, the Trail follows a dirt road through vacant lot dominated by ruderal vegetation, to connect with Riverview Drive (Photo 8).

This area is dominated by a weedy plant community composed mostly of annual grasses such as slender wild oats, red brome, ripgut brome (*Bromus diandrus*), fiddleneck (*Amsinckia intermedia*), shortpod mustard, tree tobacco (*Nicotiana glauca*), and other non-native and native weeds. Although not the best habitat, this area may still support SBKR because of its proximity to the river.

5.5.13 Riverview Drive (Reach B)

The Trail runs parallel to Riverview Drive along a dirt road until it bends south. This section of the Trail is dominated by ruderal habitat and eucalyptus stands. Residential habitat is on the south, and a mix of alluvial sage scrub habitat, willow riparian and eucalyptus trees is present along the river basin below the bluff. No native habitat exists on the bluff top.

5.5.14 Bend of Riverview Drive to Judson Street (Reach B)

The field team was unable to access any of these areas due to trespassing issues, and this discussion is based primarily on our 2010 report and the inspection of aerial photos from 2013. The property which in our 2010 survey was planted in grass down the bank and into the river now appears to be in cultivation.

From the bend at Riverview Drive, the Trail passes through an existing citrus grove. Although this grove is in cultivation, it could still potentially support SBKR because of the proximity to the river and the fact that the understory vegetation has been left in place by the grower, unlike the citrus grove near Interstate 210.

As we understand the project, in this section the Trail continues on the top of the bluffs along the river, following a series of cleared areas and roads. No native habitat occurs along the Trail. To the south, the habitat ranges from active citrus groves to various types of storage yards.

Except for the agricultural area that extends into the river, the slopes below the top of the bluffs support coastal sage scrub, composed of species such as California buckwheat, California sagebrush (*Artemisia californica*) and desert brittlebush (*Encelia farinosa*).



Photo 7. Riverview Park landscaping. Looking east. Taken 2010.



Photo 8. Vacant lot along east side of Orange Street.



Photo 9. Dirt road through coastal sage scrub along the airport fence. Looking east.



Photo 10. Coastal sage scrub mixed with chamise. Looking west.

5.5.15 Judson Street to Opal Avenue (Reach C)

The Trail alignment is unclear, but based on our discussion with Lilburn Corporation, the Trail will drop from Judson Street to the lower levee along the river. The habitat on the top and side of the levee is dominated by a dense stand of coastal sage scrub with some elements of chaparral (Photos 9 and 10). Species in this area include California sagebrush, desert brittlebush, California buckwheat and deerweed. Although not normally found in coastal sage scrub, chamise (*Adenostoma fasciculatum*) also occurs in the scrub on the bluff top.

The habitat along the river is alluvial fan scrub.

5.5.16 Opal Avenue to Garnet Street (Reach D)

From Opal Avenue (a dirt road in this section of the Trail), the Trail runs along an existing dirt road on top of a levee. At one point, the Trail will cross a small branch of the Santa Ana River to an existing flood control wall maintenance road (Figure 3b). At the crossing is a stand of alluvial sage scrub (Photo 11).

Since our 2010 survey, construction of the State Water Project, East Branch Extension has removed native habitat along the western side of Opal Avenue and the south side of the flood control wall maintenance road. Their work has not directly impacted the trail alignment.

The remainder of the Trail runs along the flood control wall maintenance road southeast to Garnet Road. Garnet Road is a paved street.

While alluvial sage scrub habitat exists on either part of the maintenance road, the road itself supports no plant communities (Photo 12).

5.5.16 Opal Avenue South (Boundaries of Reaches C and D)

There is a short segment of the Trail that connects south to Opal Avenue. Coastal sage scrub occurs along either side of the dirt section of Opal Avenue, but the Trail alignment does not support native habitat.

5.6 Sensitive Biological Resources

There are four sensitive species known to be present in the general vicinity of the Trail. Table A shows for each Reach of the Trail the resource is known to be present or for which potential habitat exists.

5.6.1 Slender-horned Spineflower

The slender-horned spineflower (*Dodecahema leptoceras*) is a diminutive annual plant that is found primarily on sandy river terraces and washes below 2200 feet (670 meters). The spineflower is a delicate prostrate plant with red, spreading stems and spiny flower clusters. The flowers are white, becoming red to rose with age (California Native Plant Society 1985). A distinguishing feature for this species is the presence of six spines protruding from the top of each floral involucre and six smaller spines protruding from the base of each involucre.

Historically, the range was believed to extend from the San Fernando Valley to the San Bernardino Valley and into the area around Lake Elsinore (Munz 1974). The historical elevation range was from 500 to 2500 feet (150 to 770 meters) and included the Cajon Pass area (California Native Plant Society 1985).

This species has been extirpated from most of its historic range. The 1985 California Native Plant Society report identified 18 recorded localities, most of them from collections older than 30 or 40 years. Only four known sites were known in 1985.



Photo 11. Trail crossing on an arm of the Santa Ana River. Looking northeast. Taken 2010.



Photo 12. Trail on top of floodwall levee. Looking west. Taken 2010.

Table A. Resources of Concern by Project Reach									
Reach A - California Street to Orange Street									
AFS	SHS	SARWS	SBKR	CAGN	NH	Corps	RWQCB	CDFW	Location
x									Both sides of Alabama Street and small patch where the Trail drops down to cross under Interstate 210. Approximately 7 acres of habitat. Approximately 0.5 acres of impact.
			x						Both sides of Alabama Street and between Texas Street and Riverview Park. Approximately 50 acres of potential habitat. Approximately 1.0 acre of impact.
					x				Riparian stand of willow along the unnamed channel on the east side of Interstate 210. Willow riparian between Texas Street and Riverview Park. Approximately 5 acres of habitat. Approximately 0.1 acre of impact.
						?	?	?	Depending upon final design, the bridge crossing the unnamed channel east of Interstate 210. Approximately 5 acres of habitat. Approximately 0.1 acre of impact.
Reach B - Orange Street to Judson Street									
AFS	SHS	SARWS	SBKR	CAGN	NH	Corps	RWQCB	CDFW	Location
			x						Between Orange Street and the west end of Riverview Drive. Approximately 4 acres of habitat. Less than 0.2 acres of impact.
					x				Bend at east end of Riverview Drive through to Judson Street (patches of habitat). Approximately 20 acres of habitat. Less than 0.2 acres of impact.

Table A. Resources of Concern by Project Reach									
Reach C – Judson Street to Opal Avenue									
AFS	SHS	SARWS	SBKR	CAGN	NH	Corps	RWQCB	CDFW	Location
x	x			x					Middle section between Judson Street and Opal Avenue. Estimated habitat entire river. Approximately 2 acres of impact.
			x						Entire Reach.
					x				Entire Reach.
Reach D – Opal Avenue to Garnet Street, including the Mentone Library Leg									
AFS	SHS	SARWS	SBKR	CAGN	NH	Corps	RWQCB	CDFW	Location
x	x					x	x	x	The small section of the Trail that crosses from the end of the dirt trail coming of Opal Avenue to the beginning of the flood control wall maintenance road. Estimated habitat entire river, approximately 0.2 acres.
		x							The small section of the Trail that crosses from the end of the dirt trail coming of Opal Avenue to the beginning of the flood control wall maintenance road. Possible but not likely. Estimated habitat entire river, approximately 0.2 acres.
			x	x	x				From Opal Avenue to the flood control wall maintenance road. Estimated habitat entire river, approximately 1.5 acres

Legend

Protected Resources

AFS	Alluvial fan scrub
SHS	Slender-horned spineflower
SARWS	Santa Ana River woolly-star
SBKR	San Bernardino kangaroo rat
CAGN	California gnatcatcher
NH	Nesting habitat

Jurisdictional Waters

Corps	U.S. Army Corps of Engineers
RWQCB	Regional Water Quality Control Board
CDFW	California Department of Fish and Wildlife

The range of this species as of 1994 covers only eight locations: Bee Canyon and Big Tujunga Wash in Los Angeles County; Bautista Creek, Indian Creek, the San Jacinto River and Vail Lake in Riverside County; and Lytle Creek and the Santa Ana River in San Bernardino County (Rey-Vizgirdas 1994).

The habitat requirements of this species is poorly known. The spineflower is a floodplain endemic. Unlike some species, slender-horned flower is not restricted to any one floodplain type, and seems to occur in all stages of scrub cover provided there are open areas of sandy soils within the scrub habitats. The greatest number of individuals has been found on recent alluvial deposits, including unconsolidated sediments in streams, river channels and alluvial fan deposits. It occurs on various floodplain types, ranging from small mountain streams to large alluvial systems like the Santa Ana River (Rey-Vizgirdas 1994).

The microhabitat for this species tends to be sandy, relatively clear patches within scrub, often associated with junipers. Other species commonly found are leathery spineflower (*Chorizanthe coriacea* = *Lastarriaea coriacea*) and stonecrop (*Crassula* spp.).

The principal threats to the spineflower are the loss of upper floodplain habitat to development and agriculture, and the loss of scouring action due to the control of flood waters. For this prostrate annual, the changes in hydrology along rivers and the loss of scouring action is possibly a larger threat than other human uses. When floodplains are not scoured, annual weedy grasses such as red brome (*Bromus madritensis* ssp. *rubens*), soft chess (*Bromus mollis*) and slender wild oats (*Avena barbata*) become established and create a dense grass cover. Cheatgrass (*Bromus tectorum*) is most abundant in the Santa Ana River wash. This cover precludes colonization of a site by the spineflower (California Native Plant Society 1985).

Other activities affecting the plant and its habitat include sand and gravel mining, groundwater recharge facilities and grazing (Rey-Vizgirdas 1994).

The spineflower was listed as endangered species in 1987 by the U. S. Fish and Wildlife Service (1987). The determination was based on the modification of existing habitat from increasing human use of the drainages occupied by the species, the inadequacy of existing regulatory mechanisms (the listing as endangered by the California Fish and Game Commission did not confer protection against habitat loss) and the loss of habitat from the invasion of exotic weeds.

Project Site Findings

In 2010, the sections of the Trail that cross through native habitat include the Alabama Street area and Interstate 210 area in Reach A, the section along the bluffs along the north side of the Redlands Airport (Reach C) and the section between Opal Avenue and the flood control wall maintenance road in Reach D within the Santa Ana River. Our surveys were conducted at a time of year when this species should have been present. We did not identify this species within any reach of the footprint of the Santa Ana River Trail Phase IV alignment.

We did not find this species in the Alabama Street area in 2010 and 2014, and the Interstate 210 section, if aligned as suggested, will not cross through suitable habitat.

We were unable to survey area along the bluffs in Reach C and Opal Avenue and the flood control wall maintenance road in Reach D in 2014, and could not confirm the presence or absence of this species in this area.

5.6.2 Santa Ana River Woolly Star

The Santa Ana River woolly star is a short-lived perennial subspecies that only occurs along the Santa Ana River drainage in San Bernardino County (Wheeler 1988). It is a shrub with many branches rising from its base, and averages 5 to 75 centimeters in height. The leaves are woolly with age, the woolly hairs

giving the plant an overall silvery appearance. Flowers are salverform (a slender tube opening abruptly into a flat top), powder blue in color and clustered in groups at the top of the branches (Munz 1974).

Historically, the range was believed to include the Santa Ana River, its tributaries and the bordering river plain from Rancho Santa Ana in Orange County to Highland in San Bernardino County (Zemba and Kramer 1984). The historical elevation range was from 152 meters (500 feet) to approximately 457 meters (1500 feet).

The species apparently has been extirpated in Orange and Riverside counties, and persists only in San Bernardino County. In the original study by Zemba and Kramer (1984), known populations in San Bernardino County extended from the mouth of the Santa Ana Canyon off Greenspot Road (elevation 579 meters, 1900 feet), west to Lytle Creek, just south of Highland Avenue, at an elevation of 381 to 396 meters (1250 - 1300 feet). An update by Wheeler in 1988 found no populations west of the former Norton Air Force Base. As a result of his findings, the historical range of this species has been reduced from 60 miles to approximately eight linear miles (Wheeler 1988). One individual was found in 1997 west of the former Norton Air Force Base, between Tippecanoe and Waterman Avenues by Kirtland Biological Services.

The woolly star prefers recently scoured areas above main watercourses, in areas that are infrequently flooded, allowing for the establishment of shrubs (Zemba and Kramer 1984, Wheeler 1988), but may also occupy sandy patches on older benches. Soil types include sandy soils on the floodplains and fluvial terraces (California Native Plant Society 1985b). Shrub cover in these areas is typically very open; woolly star generally occurs where there are few or no shrubs and little herbaceous cover. As terraces begin to age, increased numbers of shrubs become established. The resulting competition prevents the establishment of woolly star seedlings, with the result that the resident population senesces and dies out (Zemba and Kramer 1984).

The principal threats to the woolly star include the loss of upper floodplain habitat to development and agriculture, and the loss of scouring action due to the control of flood waters. Other activities affecting the plant and its habitat include sand and gravel mining, groundwater recharge facilities and grazing (Zemba and Kramer 1984). Additional threats that are relatively recent, but becoming commonplace are off-road vehicle use, camping and dumping (Wheeler 1988; Kirtland Biological Services, personal observation).

The woolly star was listed as endangered species in 1987 by the U.S. Fish and Wildlife Service. The determination was based on the modification of existing habitat from increasing human use of the Santa Ana River, the inadequacy of existing regulatory mechanisms (the listing as endangered by the California Fish and Game Commission did not confer protection against habitat loss), and the loss of habitat from the invasion of exotic weeds.

Project Site Findings

The Santa Ana River woolly star is a perennial shrub that is present year round. Our 2010 survey included searching for this species. No woolly star were observed within any reach of the footprint of the Santa Ana River Trail Phase IV alignment.

We were unable to survey the section extending from Opal Avenue to the flood control wall maintenance road in Reach D in 2014 to determine whether woolly star had become established in this area.

5.6.3 San Bernardino Kangaroo Rat

The San Bernardino kangaroo rat (*Dipodomys merriami parvus*) is described as being confined to primary and secondary alluvial fan scrub habitats, with sandy soils deposited by fluvial (water) rather than aeolian (wind) processes (McKernan 1997, U.S. Fish and Wildlife Service 1998a and 1998b). Burrows are dug in loose soil, usually near or beneath shrubs. In recent years, they have been found in highly

disturbed habitats adjacent to otherwise suitable habitat (P. Vergne, personal communication). Burrows are dug in loose soil, usually near or beneath shrubs.

The San Bernardino kangaroo rat is one of three subspecies of the Merriam kangaroo rat (*Dipodomys merriami*). The Merriam kangaroo rat is a widespread species that can be found from the inland valleys to the deserts (Hall 1981 and Ingles 1965). The subspecies known as the San Bernardino kangaroo, however, is confined to inland valley scrub communities, and more particularly, to scrub communities occurring along rivers, streams and drainage.

Most of these drainage have been historically altered as a result of flood control efforts and the resulting increased use of river resources, including mining, off road vehicle use and road and housing development. This increased use of river resources has resulted in a reduction in both the amount and quality of habitat available for the San Bernardino kangaroo rat. The past habitat losses and potential future losses prompted the emergency listing of the San Bernardino kangaroo rat as an endangered species (U.S. Fish and Wildlife Service, 1998a).

Project Site Findings

During 2010 surveys, suitable habitat was identified for those areas of the trail that cross through alluvial fan scrub habitat, including around Alabama Street in Reach A and the Opal Avenue section in Reach D. One burrow belonging to a kangaroo rat was found at the Alabama Street site.

The recontouring of the bluffs north of the Redlands Municipal Airport may impact suitable habitat for the SBKR along the river bottom.

Although no sign was observed in the abandoned citrus orchard east of Texas Street, SBKR may colonize this area over time. SBKR have been known to occupy such areas if left unmaintained.

During our 2014 surveys, suitable or known occupied habitat for SBKR was found along the Alabama Street section, along the spreading basins and around Interstate 210, and the abandoned citrus grove east of Texas Street in Reach A, the vacant lot east of Orange Street and the existing citrus grove east of Riverview Drive in Reach B, the undeveloped sections of the bluffs occupied by the Redlands Airport in Reach C and at the crossing of the Santa Ana River between Opal Avenue and the flood control wall maintenance road in Reach D.

SBKR can be expected wherever the trail runs through alluvial fan scrub habitat.

5.6.4 California Gnatcatcher

The California gnatcatcher is a small songbird that is a year round resident of sage scrub communities. Sage scrub communities preferred by this species are typically dominated by low-growing, drought deciduous and succulent shrubs, as well as sub-shrub species including California sage (*Artemisia Californica*), California buckwheat (*Eriogonum fasciculatum*), brittlebush (*Encelia farinosa*), sage species (*Salvia* spp.), and cacti (*Opuntia* spp.).

California gnatcatchers begin nesting in mid to late February. Re-nesting attempts may be made into August. Territory size ranges from 2 to 40 acres. They have a repetitive, kitten-like mewing call and appear to be most vocal in the early morning and evening. Detection is exceedingly difficult if the birds are not vocalizing.

The original range for this species included all of the coastal sage scrub communities of southern California, from Ventura County south to San Diego and on into Mexico. This species also occurred in extensive coastal sage scrub habitat in Riverside County. Fragmentation or removal of sage scrub plant communities has reduced the known populations to scattered localities in Los Angeles, Orange, Riverside

and San Diego counties. Even these populations are generally found only in the larger open space areas in and around development.

On March 25, 1993, the California gnatcatcher was listed by the Service as a threatened species pursuant to the Federal Endangered Species Act (ESA). The ESA prohibits anyone from "taking" a listed species. Take includes, but is not limited to, harming, harassing or killing individuals of a listed species as well as destruction of habitat occupied by listed species.

Project Site Findings

In 2010, we identified suitable habitat in Reach D, based on the presence of suitable habitat. No known sightings of CAGN were known at time.

As of our 2014 surveys, there are three recent records for the upper Santa Ana River, two very close to the Trail alignment near the flood control wall maintenance road (Figure 5).

Based on these recent findings, the alluvial fan scrub and coastal sage scrub habitats in Reach D of the Trail from Judson Street to Garnet Avenue all provide suitable habitat for the California gnatcatcher.

5.7 Raptors, Migratory Birds, and Habitat

Most of the raptor species (eagles, hawks, falcons and owls) are experiencing population declines as a result of habitat loss. Some, such as the peregrine falcon, have also experienced population losses as a result of environmental toxins affecting reproductive success, animals destroyed as pests or collected for falconry, and other direct impacts on individuals. Only a few species, such as the red-tailed hawk and barn owl, have expanded their range in spite of or a result of human modifications to the environment. As a group, raptors are of concern to state and federal agencies.

Raptors and all migratory bird species, whether listed or not, also receive protection under the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA prohibits individuals to kill, take, possess or sell any migratory bird, bird parts (including nests and eggs) except in accordance with regulations prescribed by the Secretary of the Interior Department (16 U. S. Code 703).

Additional protection is provided to all bald and golden eagles under the Bald and Golden Eagle Protection Act of 1940, as amended. State protection is extended to all birds of prey by the CDFG Code, Section 2503.5. No take is allowed under these provisions except through the approval of the agencies or their designated representatives.

Project Site Findings

Table A shows for each Reach of the Trail where potential habitat exists.

In both 2010 and 2014, suitable raptor nesting habitat occurs in the eucalyptus trees around the spreading basins east of Alabama Street in Reach A. All Reaches of the alignment near native and landscape trees may provide nesting habitat for raptors.

All native scrub habitat, non-native landscaping and citrus groves in all Reaches may also provide suitable nesting habitat for some migratory bird species.

5.8 Habitat Fragmentation and Wildlife Movement

Wildlife movement and the fragmentation of wildlife habitat are recognized as important issues that must be considered in assessing impacts to wildlife. In summary, habitat fragmentation is the division or breaking up of larger habitat areas into smaller areas that may or may not be capable of independently sustaining wildlife and plant populations. Wildlife movement (more properly recognized as species movement) is the temporal movement of species along various types of corridors. Wildlife corridors are especially important for connecting fragmented wildlife habitat areas.



Provided by Lilburn Corporation.
 Drawn from California Diversity Data Base records (2014)



● California Gnatcatcher Sighting

Figure 5. Sightings of California Gnatcatcher in the San Bernardino Valley Area

Focused Biological Assessment
 County of San Bernardino
 Public Works Department, Regional Parks
 San Bernardino, California

Project Site Findings

In both 2010 and 2014, habitat fragmentation had already occurred along much of the Trail alignment. The only area that was not fragmented in 2010 or 2014 that will be fragmented by the Trail is the small section east of Opal where it crosses through native habitat in the Santa Ana River in Reach D.

Wildlife movement north to south along all reaches of the Trail alignment has already been substantially reduced by due to residential housing, commercial and industrial development and agriculture. Movement from east to west is generally confined along the Santa Ana River Basin.

5.9 Jurisdictional Drainages and Wetlands

5.9.1 Army Corps of Engineers

The Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the United States. These waters include wetlands and non-wetland bodies of water that meet specific criteria. Corps regulatory jurisdiction pursuant to Section 404 of the Clean Water Act is founded on a connection or nexus between the water body in question and interstate (waterway) commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations.

5.9.2 State Water Resources Control Board

The Corps has delegated the authority for use of 404 permits to each individual state. The use of a 404 permit in California is regulated by the State Water Resources Board (RWQCB) under Section 401 of the Clean Water Act. The Board has authority to issue a 401 permit that allows the use of a 404 permit in the state, with the authority in the state being vested in regional offices referred to as Regional Water Quality Control Boards.

5.9.3 California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), through provisions of the State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFW.

Determining the limits of wetlands is not typically done in obtaining CDFW Agreements. The reason for this is that CDFW generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, mulefat and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas.

Project Site Findings

Table A shows for each Reach of the Trail the areas where jurisdictional waters may occur.

The Santa Ana River comes under the jurisdiction of the Corps, RWQCB and CDFW, as does the unnamed channel in Reach A because it is a tributary to the river.

During both our 2010 and 2014 surveys, we identified the crossing under Alabama Street in Reach A as potentially coming under the jurisdictional limits of the Santa Ana River.

There may be impacts to riparian and wetland habitat in the unnamed channel in Reach A if the crossing east of Interstate 210 remains as originally designed in 2010. There may be impacts as result of slope stabilization measures for the alternative bridge crossing identified by the field team in 2014.

In 2010, the crossing of the Santa Ana River in Reach D will impact jurisdictional waters. In 2014, depending upon the work required, the bridge crossing the Santa Ana River east of Opal Avenue in Reach D may also extend into the Santa Ana River jurisdictional limits.

No other waters were identified in the other Reaches in either 2010 or 2014.

6.0 Discussion

6.1 General Biological Resources

The impacts to general biological resources include the loss of ruderal, grassland, alluvial fan scrub and coastal sage scrub habitats. These impacts are minimal and are not considered to be significant.

6.2. Sensitive Biological Resources

Overall impacts to sensitive biological resources are primarily concerned with the loss of habitat. For most of the Trail alignment, the Trail, while in close proximity to habitats, follows an existing dirt road or otherwise disturbed surface, and is not expected to have significant impacts on sensitive resources. However, any construction in native habitats in any of the four reaches may have significant impacts to the four main species of concern, as described below.

6.2.1 Slender-horned Spineflower and Santa Ana River Woolly Star

No individuals of slender-horned spineflower or Santa Ana River woolly star were found Reaches C or D of the Trail during of the 2010 survey. However, because the field team could not access most of these areas in 2014, it is unknown whether new plants have become established in Reaches C and D. We recommend follow up surveys to determine if these species are present and will be impacted by trail construction.

If species are present, suitable mitigation would have to be adopted. Past mitigation measures have included the collection of plants and seeds for reestablishment elsewhere, or the purchase of replacement habitat. NRAI suggests the County contact the resources agencies to determine what mitigation measures may be acceptable.

6.2.2 San Bernardino Kangaroo Rat

The Santa Ana River is known to support the SBKR. Construction of the Trail will impact suitable and occupied habitat for the SBKR in the following areas:

- At the Alabama Street crossing (Reach A)
- On both sides of the Interstate 210 bridge (unless the crossing on the east side, recommended by the field team, is adopted) (Reach A)
- The abandoned citrus grove east of Texas Street (Reach A)
- The vacant lot east of Orange Street (Border of Reach A and B)
- The citrus grove east of Riverview Drive (Reach B)
- Along the bluffs north of the Redlands Municipal Airport (Reach C)

- Where the Trail crosses the branch of the Santa Ana River east of Opal (Reach D)

Direct impacts to the SBKR and its habitat would be considered significant and will require mitigation. Mitigation will require either redesign of the Trail around these areas, or, if that is not possible, habitat replacement for lost occupied habitat and relocation of animals. The ratio and location of habitat replacement will have to be determined in consultation with the U.S. Fish and Wildlife Service.

The section between Opal Avenue and the flood control wall maintenance road is within Critical Habitat for the SBKR. Any direct loss of habitat will have to be included in the discussion with the agencies.

6.2.3 California Gnatcatcher

Based on the recent California Natural Diversity Data Base (CNDDB) results, all the scrub plant communities along the river and from Judson Street to Garnet Avenue (Reaches C and D) provide potential habitat for the California gnatcatcher. Where the Trail follows dirt roads, there is no direct impact to the species; however construction activity may result in an indirect impact during the breeding season.

If habitat will be removed (such as along the bluffs north of Redlands Airport), a protocol survey will need to be conducted to determine if the species is nesting in the area. If it is nesting, any potential habitat loss will have to be mitigated. NRAI recommends that the County contact the U.S. Fish and Wildlife Service to determine suitable mitigation for this species.

6.3 Raptors, Migratory Birds, and Habitat

No significant loss to raptors and migratory birds or their habitats are expected, and therefore no mitigation is required. However, construction activity may indirectly affect nesting birds, in any of the four reaches, especially in areas of native habitat. As a Best Management Practice (BMP) we recommend the following measures:

- Grading or construction should not be conducted in the breeding season between February 1 and August 31.
- If grading or construction must occur between February 1 and August 31, the area should be monitored on a regular basis for 30 days prior to any disturbance to ensure that no nesting is occurring. Monitoring would require a short period of observation (approximately one hour) to ensure that no birds were coming and leaving the nest on a regular basis. If birds are using the nest, then we recommend either that construction be rescheduled to after the breeding season or that a qualified biological monitor be present during construction to ensure that nesting birds do not abandon the nest until the young are fully fledged.
- The monitoring should be conducted on a weekly basis to determine when nesting is completed.

6.4 Habitat Fragmentation and Wildlife Movement

Habitat fragmentation has already occurred over most of the alignment, and wildlife movement is primarily confined to the river. The only section of the Trail that will substantially affect native habitat is east of Opal Avenue (Reach D). However, given the small area of impact, and the availability of alternative routes for wildlife, this impact is not expected to be significant.

6.5 Jurisdictional Waters

The crossing under Alabama Street in Reach A is proposed to be placed at the bottom of the rip-rap buttressing the bridge. This crossing is within the jurisdictional limits of the Santa Ana River and may be

considered to be a significant impact to jurisdictional waters. Construction of this segment of the Trail may require permit approval from the resource agencies.

There may be impacts to riparian and wetland habitat if the crossing east of Interstate 210 in Reach A remains as originally designed. Construction in this area may require permit approvals from the resource agencies.

There may also be permits required for the suggested bridge crossing east of Interstate 210 in Reach A if slope stabilization is necessary.

Depending upon the work required, the bridge crossing the Santa Ana River east of Opal Avenue in Reach D may also extend into the Santa Ana River and require permit approvals.

7.0 References

- Atwood, J.L. 1990. *Status Review of the California Gnatcatcher (Poliophtila californica)*. Unpublished technical report, Manomet Bird Observatory, Manomet, MA. 79 pp.
- Burt, W. H., 1986. *A Field Guide to the Mammals in North American North of Mexico*. Houghton Mifflin Company, Boston, Massachusetts.
- California Department of Fish and Game, 1984. *Guidelines for Assessing Effects of Proposed Developments on Rare Plants and Plant Communities*. Natural Heritage Division, California Department of Fish and Game.
- California Department of Fish and Game, 2010. *Special Animals List*.
- California Native Plant Society, California Native Plant Status Report, 1985. *Centrostegia leptoceras*.
- California Native Plant Society, California Native Plant Status Report, 1985. *Eriastrum densifolium* var. *sanctorum*.
- Clark, O.F., D. Svehla, G. Ballmer, A. Montalvo, 2007. *Flora of the Santa Ana River and Environs, with References to World Botany*, Heydey Books, Berkely, California
- Garrett, K. and J. Dunn, 1981. *Birds of Southern California*. Los Angeles Audubon Society. The Artisan Press, Los Angeles, California.
- Grenfell, W. E., M. D. Parisi, and D. McGriff, 2003. *A Check-list of the Amphibians, Reptiles, Birds and Mammals of California*. California Wildlife Habitat Relationship System, California Department of Fish and Game, Sacramento, California.
- Grinnell, J., 1933. *Review of the Recent Mammal Fauna of California*. University of California Publications in Zoology, 40:71-234.
- Hall, E. R., 1981. *The Mammals of North America, Volumes I and II*. John Wiley and Sons, New York, New York.
- Hickman, J. C., ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press.
- Ingles, L. G., 1965. *Mammals of the Pacific States*. Stanford University Press, Stanford, California.
- Jameson, jr., E. W. and H. J. Peters. *California Mammals*. University of California Press, Berkeley, Los Angeles, London. 403 pp.
- Lackey, J. 1996. *Chaetodipus fallax*. Mammalian Species No. 517. American Society of Mammalogists.
- McKernan, R. L., 1997. *The Status and Known Distribution of the San Bernardino Kangaroo Rat (Dipodomys merriami parvus): Field surveys conducted between 1987 and 1996*. Report prepared for the U. S. Fish and Wildlife Service, Carlsbad Field Office.
- Meserve, P. 1976. *Food relationships of a rodent fauna in a California coastal sage scrub community*. Journal of Mammalogy, 57: 300-319.
- Munz, P.A., 1974. *A Flora of Southern California*. University of California Press, Berkeley, California.
- Reichman, O. and M. Price. 1993. *Ecological Aspects of Heteromyid Foraging*. In: *Biology of the Heteromyidae*. H. Genoways and J. Brown, eds. American Society of Mammalogists.
- Rey-Vizgirdas, E.M., 1994. *Status and Conservation of the Endangered Slender-horned spineflower (Dodecahema leptoceras (Gray) Rev. & Hardham) and Alluvial Fan Scrub Habitat in Southern California*. Master Thesis, California State University, Fullerton.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed May 29, 2014.

Stebbins, R. C., 1985. *A Field Guide to Western Reptiles and Amphibians*. Houghton Mifflin Company, Boston.

U.S. Fish and Wildlife Service, 1987. *Endangered and threatened wildlife and plants; Endangered status for Eriastrum densifolium ssp. sanctorum (Santa Ana River woolly-star) and Centrostegia leptoceras (Slender-horned spineflower), Final Rule*. Federal Register Vol 52, No. 187, pp. 36265 - 36270.

U.S. Fish and Wildlife Service, 1998a. *Emergency Rule to List the San Bernardino Kangaroo Rat, San Bernardino and Riverside Counties in Southern California, as Endangered*. Vol. 63, No. 17, pp. 3835 - 3843.

U. S. Fish and Wildlife Service, 1998b. *Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino Kangaroo Rat as Endangered*. Vol. 63, No. 185, pp. 51005 - 51017.

U. S. Fish and Wildlife Service, 2008. Graphic showing final San Bernardino Kangaroo Rat Critical Habitat Units.

Wheeler, J., 1988. *Recent Ecological Investigations and Present Status of the Endangered Santa Ana River Woolly-Star, Eriastrum densifolium spp. sanctorum (Milliken) Mason*. Crossosoma, Vol 14, No. 3. pp. 1 -17.

Williams, D. F., 1986. *Mammalian Species of Special Concern in California*. Wildlife Management Division Administrative Report 86-1. Prepared for The Resources Agency, California Department of Fish and Game.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer and M. White, 1990. *California's Wildlife, Volume III Mammals*. The Resources Agency, Department of Fish and Game, Sacramento, California.

Zemba, R. and K.J. Kramer, 1984. *The known distribution and unknown future of Santa Ana River woolly-star (Eriastrum)*. Crossosoma, Vol. 10, No. 5.

8.0 Personal Communication

Mr Philippe Vergne, ENVIRA, Ramona, California

Appendix A - Sensitive Biological Resources

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Plants				
Chaparral sand-verbena <i>Abronia villosa</i> var. <i>aurita</i>	Annual. Coastal sage scrub, chaparral. From the head of the Coachella Valley to interior Riverside, Orange and San Diego counties. Sandy places below 5000 feet.	March - August	FED: ND STATE: ND CNPS: 1B	Low. Suitable sandy habitat limited to the Santa Ana River bottom.
Marsh sandwort <i>Arenaria paludicola</i>	Perennial plant. Occasionally in boggy meadows, swamps and freshwater marshes. Less than 900 feet elevation. San Bernardino, Los Angeles, Santa Barbara counties. To Washington State. In San Bernardino, mostly along Santa Ana River.	May - Aug flowering period	FED: END STATE: END CNPS: 1B	None. Boggy meadow, swamp and freshwater marsh habitat absent along the Trail alignment.
Jaeger's milk-vetch <i>Astragalus pachypus</i> var. <i>jaegeri</i>	Perennial from woody caudex. On open sandy slopes, dry ridges and valleys. Often in valley and foothill grassland and oak chaparral. Also in coastal sage scrub, chaparral, cismontane woodland. Below 2500 feet. Banning to Aguanga and Temecula.	March to July Flowering period	FED: ND STATE: ND CNPS: 1B	None. This species was not observed during the field surveys.
Coulter's saltbush <i>Atriplex coulteri</i>	Perennial. Somewhat alkaline low places, open sites, Los Angeles County to western San Bernardino County and Baja California.	March – October	FED: ND STATE: ND CNPS: 1B	None. This species was not observed during the field surveys.
Parish's brittlescale <i>Atriplex parishii</i>	Annual. Alkali flats largely in valley or annual grassland. From cismontane California to the edge of the desert, extending into the Central Valley.	June - Oct	FED: C2* STATE: ND CNPS: 1B	None. Alkali flats habitat not present.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Nevin's barberry <i>Berberis nevinii</i>	Perennial. Sandy and gravelly places below 2000 feet. Coastal sage scrub and chaparral. Hills south of Loma Linda, San Bernardino. Co. and in the area around Vail Lake, Riverside Co.	Year round	FED: END STATE: END CNPS: 1B	None. This species was not observed during the field surveys.
Orcutt's brodiaea <i>Brodiaea orcutti</i>	Near streams, in vernal pools and seeps, up to 5500 feet elevation. Chaparral, yellow pine forest, primarily San Diego Co.	April - July	FED: C2* STATE: ND CNPS: 1B.1	None. suitable habitat not present.
Bristly sedge <i>Carex comosa</i>	Perennial. Swampy places, San Bernardino Valley. Central California to Washington.	Year round	FED: ND STATE: ND CNPS: 2.1	None. Swampy places are not present along the alignment.
Southern tarplant <i>Centromadia parryi</i> ssp. <i>australis</i>	Often in disturbed sites near the coast. Also found on alkaline soils at the edges of marshes and swamps. Found in valley and foothill grasslands, and sometimes vernal pools margins. Southern California and Baja California.	June - September	FED: ND STATE: ND CNPS: 1B	None. Suitable habitat not present.
Smooth tarplant <i>Centromadia pungens</i> ssp. <i>laevis</i>	Often in disturbed sites near the coast. Also found on alkaline soils at the edges of marshes, swamps, playas and chenopod scrub. Found in riparian areas, valley and foothill grasslands, and sometimes vernal pool margins. Southern California and Baja California.	April - September	FED: C2* STATE: ND CNPS: 1B.1	None. Suitable alkaline soils not present.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Parry's spineflower <i>Chorizanthe parryi</i> var. <i>parryi</i>	Found on dry sandy soils and dry slopes and flats. Sometimes at the interface of two vegetation types such as chaparral and oak woodland. Sandy openings in coastal sage scrub and chaparral, 130 to 5600 ft. Elevation, east Los Angeles Co. to San Geronio Pass and west Riverside Co.	April - June flowering period	FED: C2* STATE: ND CNPS: 3.2	None. Species was not observed during the surveys.
Summer holly <i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	Shrub. Mixed chaparral, often following a burn. Southern California to northern Baja California.	May - June	FED: ND STATE: ND CNPS: 1B	None. Species was not observed during the surveys.
Slender-horned spineflower <i>Dodecahema leptoceras</i>	Sandy and gravelly soils on alluvial fans and old floodplains; 500 to 2000 ft. elevation. Los Angeles, Riverside, and San Bernardino Counties.	Apr - Jun	FED: END STATE: END CNPS: 1B.1	None. Species was not observed during the surveys.
Many-stemmed dudleya <i>Dudleya multicaulis</i>	Annual. In heavy, often clayey soils on grassy slopes in chaparral, coastal sage scrub, valley and foothill grassland. Riverside, San Bernardino, and Orange counties. 15 to 790 m (50 - 2600 ft.) elevation.	April - July	FED: C2* STATE: ND CNPS: 1B.2	None. Species was not observed during the surveys.
Santa Ana River woolly star <i>Eriastrum densifolium</i> var. <i>sanctorum</i>	Perennial subshrub found in alluvial fan scrub, coastal sage scrub on alluvial deposits along the Santa Ana River, San Bernardino Co.	June - August flowering period	FED: END STATE: END CNPS: 1B.1	None. Species was not observed during the surveys.
Pious daisy <i>Erigeron breweri</i> var. <i>bisanctus</i>	Perennial from woody roots and slender branched caudex. Open dry slopes and washes. 300 to 1600 meters (900 to 4800 feet). San Bernardino and San Gabriel Mts.	? July - August flowering period	FED: ND STATE: ND CNPS: 1B	None. As a perennial, it should have been observable during the field surveys.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Palmer's grapplinghook <i>Harpagonella palmeri</i>	Chaparral, coastal scrub, valley & foothill grassland in clay soils on dry slopes & mesas below 1500 ft. elevation. Cismontane s. Calif. from Los Angeles Co. to NW Baja Calif., including Santa Catalina Island. One population at Dana Point Headlands.	March - April	FED: C2* STATE: ND CNPS: 2	None. Species was not observed during the surveys.
Los Angeles sunflower <i>Helianthus annuus</i>	Rhizomatous herb. Found in marshes and swamps. Both coastal salt marshes and freshwater marshes. Found at elevations from 10 - 1675 meters (33 to 5500 feet).	August - October	FED: ND STATE: ND CNPS: 1A	None. Species was not observed during the surveys.
Mesa horkelia <i>Horkelia cuneata</i> spp. <i>Puberula</i>	Perennial herb. Found in chaparral, cismontane woodland, and coastal scrub. Grows on sandy or gravelly soils. From 70 - 810 meters (230 - 2700 feet) elevation.	February - July (occasionally September)	FED: ND STATE: ND CNPS: 1B.1	None. Species was not observed during the surveys.
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coastal salt marshes, alkali playas, valley & foothill grasslands, and vernal pools below 4000 ft. elevation. inland so. Calif. and along coast from San Luis Obispo Co. to Baja Calif.	Feb - Jun	FED: C2* STATE: ND CNPS: 1B.1	None. Site lacks suitable alkaine soils.
Robinson's pepper-grass <i>Lepidium virginicum</i> ssp. <i>robinsonii</i>	Annual. Chaparral, coastal sage scrub habitats, primarily on dry soils. From Los Angeles County south to Baja California.	Jan - April	FED: ND STATE: ND CNPS: 1B.2	High. This species may be present.
Pringle's monardella <i>Monardella pringlei</i>	Sandy places, coastal sage scrub near Colton. 900 - 1200 feet.	May - June	FED: C2* STATE: ND CNPS: 1A	None. This species was not observed. NOTE: This species is presumed extinct.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
California muhly <i>Muhlenbergia californica</i>	Perennial. Occasional in wet places up to 7000 feet. Coastal sage scrub, chaparral, yellow pine forest. Cismontane especially around the San Bernardino Valley to the edge of the desert.	July - Sept flowering period	FED: ND STATE: ND CNPS: 4.3	None. Species was not observed during the surveys.
San Diego goldenstar <i>Muilla clevelandii</i>	Perennial, annual growth from corm. Mesa grasslands scrub edges on clay soils. Also found on raised mounds between vernal pools. Chaparral, coastal sage scrub, valley and foothill grasslands. San Diego and Baja California.	May	FED: ND STATE: ND CNPS: 1B	None. Species was not observed during the surveys.
Little mouseltail <i>Mysosurus minimus</i>	Vernal pools and alkaline marshes below 1500 feet. San Diego to west Riverside County.	April - May	FED: C2* STATE: ND CNPS: 3.1	None. Species was not observed during the surveys. Suitable habitat not present.
Mud nama <i>Nama stenocarpum</i>	Annual. Occasional muddy places below 1000 feet. Los Angeles to San Diego counties and into Baja California. Extends across the Colorado Desert to Texas.	Mar - May	FED: ND STATE: ND CNPS: 2	Unknown. Temporary muddy areas may develop on bluff tops after rain.
Prostrate navarretia <i>Navarretia fossalis</i>	Annual herb. Saltbush scrub, various shallow freshwater marshes and swamps, and in vernal pools. Elevation 30 to 1300 meters (100 to 4300 ft).	April - June	FED: THR STATE: ND CNPS: 1B.1	None. Suitable marsh, swamp and vernal pool habitat not present.
California Orcutt grass <i>Orcuttia californica</i>	Vernal pools. Ventura Co. south to northern Baja California, including west Riverside Co. 15 – 660 m (50 – 2200 ft.)	April - August	FED: END STATE: END CNPS: 1B	None. Vernal pools not present.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Lyon's pentachaeta <i>Pentachaeta lyonii</i>	Annual herb. Chaparral, valley and foothill grassland. Edges of clearings in chap., usually at the ecotone between grassland and chaparral or edges of firebreaks. Elevations 30-630 meters.	March – August	FED: END STATE: END CNPS: 1B.1	None. Species was not observed during the surveys.
Nuttall's scrub oak <i>Quercus dumosa</i>	Perennial. Coastal slopes and hills, canyons and bluffs in coastal sage scrub, chaparral and closed cone pine forests. Disjunct distribution from Santa Barbara County to Baja California.	February – April	FED: END STATE: ND CNPS: 1B	None. Species was not observed during the surveys.
Parish's gooseberry <i>Ribes divaricatum</i> var. <i>parishii</i>	Perennial. Willow thickets, swamps, similar moist and damp sites. Coastal sage scrub. San Bernardino region and Los Angeles County.	March - April flowering period	FED: C2* STATE: ND CNPS: 1B.1	None. Species was not observed during the surveys.
Gambel's water cress <i>Rorippa gambelii</i>	Perennial. Marshes, streambanks and lake margins. Ventura to San Diego counties, including Riverside and San Bernardino counties.	Unknown	FED: END STATE: THR CNPS: 1B.1	None. Suitable marsh and stream habitats not present.
San Miguel savory <i>Satureja chandleri</i>	Rocky canyons below 2500 feet elevation; chaparral. Santa Ana Mountains near Murrieta and San Miguel and San Jamul Mtns. in San Diego County.	March - May	FED: ND STATE: ND CNPS: 4	None. Species was not observed during the surveys.
Rayless ragwort <i>Senecio aphanactis</i>	Annual wildflower. On drying alkaline flats. Cismontane woodland, coastal scrub. Elevations of 20 to 575 meters (60 to 2000 feet).	February – March	FED: ND STATE: ND CNPS: 2	None. Suitable alkaline soils not present.
Hammitt's clay-cress <i>Sibaropsis hammittii</i>	Annual herb. Clay soils in openings in chaparral, valley and foothill grassland. 2400 to 3500 feet.	March – April	FED: ND STATE: ND CNPS: 1B	None. No suitable clay soils present.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Salt spring checkerbloom <i>Sidalcea neomexicana</i>	Alkaline, usually wet places. Coastal sage scrub, chaparral, creosote bush scrub. Los Angeles, Orange, San Bernardino, Riverside Counties.	April to June	FED: ND STATE: ND CNPS: 2.2	None. Suitable alkaline soils not present.
Tetracoccus dioicus Parry's tetracoccus	Shrub. Coastal sage scrub and chaparral. 540 to 3300 feet.	April – May flowering period	FED: END STATE: ND CNPS: 1B	None. Species was not observed during the surveys.
Sonoran maiden fern <i>Thelypteris puberula</i> var. <i>sonorensis</i>	Occasional in wet shaded canyons below 3000 feet; chaparral, creosote bush scrub. Lower slopes of Peninsular and Transverse mountains to Baja California.	Year round	FED: ND STATE: ND CNPS: 2.2	None. Suitable wet habitat not present.
Crownbeard <i>Verbesina dissita</i>	Mill Creek, San Bernardino County and Arch Beach, Orange County to northern Baja California.	May	FED: THR STATE: THR CNPS: 1B	None. This species was not observed during the field surveys.
Fish				
Santa Ana speckled dace <i>Rhinichthys osculus</i> ssp. 3	Headwaters of the Santa Ana and San Gabriel rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temperatures of 17 - 20 degrees centigrade. Usually inhabits shallow cobble and gravel riffles.	Year round	FED: ND STATE: CSC	Unknown. The species may be present in the river but will not be affected by the Trail.
Santa Ana sucker <i>Catostomus santaanae</i>	Santa Ana, Santa Clara, San Gabriel and Los Angeles rivers.	Year round	FED: THR STATE: CSC	Unknown. The species may be present in the river but will not be affected by the Trail.
Unarmored threespine stickleback <i>Gasterosteus aculeatus williamsoni</i>	Coastal streams and rivers including Santa Ana, San Gabriel and other major rivers along the coastal slopes. Most of these rivers are dammed and unsuitable for this species.	Year round	FED: END STATE: END. CFP	Unknown. The species may be present in the river but will not be affected by the Trail.
Amphibians				

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Western spadefoot <i>Spea hammondi</i>	Grasslands and occasionally hardwood woodlands; largely terrestrial but for breeding, requires rain pools or other ponded water for 3+ weeks; burrows in loose soils during dry season; Central Valley and foothills, coast ranges, inland valleys, to Baja Calif.	October - April (following onset of winter rains)	FED: ND STATE: CSC	Unknown. The species may be present in the river but will not be affected by the Trail.
Reptiles				
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	Permanent or nearly permanent water in a wide variety of habitats; requires basking sites such as partially submerged logs, rocks, or open mud banks. Central California to northwestern Baja California.	Year-round with reduced activity Nov. - Mar.	FED: ND STATE: CSC	Unknown. The species may be present in the river but will not be affected by the Trail.
San Diego banded gecko <i>Coleonyx variegatus abbotti</i>	Occurs in coastal and cismontane southern California. Found in granite or rocky outcrops in coastal scrub and chaparral habitats.	Year round	FED: ND STATE: ND	Unknown. May be present along the Trail alignment.
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i>	Wide variety of habitats including coastal sage scrub, grassland, riparian woodland; typically on or near loose sandy soils; coastal and inland areas from Ventura Co. to Baja Calif.	April - July (with reduced activity Aug. - Oct.)	FED: ND STATE: CSC	Present. Species observed.
Coronado skink <i>Plestiodon skiltonianus interparietalis</i>	Early successional stages or open areas in grassland, chaparral, pinyon-juniper and juniper sage woodland, pine oak and pine forests in the coastal ranges of southern California. Also found in rocky areas close to streams, and on dry hillsides.	Active year round	FED: ND STATE: CSC	Unknown. Suitable habitat is limited to the Santa Ana River bottom.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Orange-throated whiptail <i>Aspidoscelis tigris stejnegeri</i>	Floodplains and terraces with perennial plants and open areas nearby; sea level to 3000 feet elevation; inland and coastal valleys of Riverside, Orange, and San Diego Counties. to Baja Calif.	March - July (with reduced activity Aug. - Feb.)	FED: ND STATE: CSC	High. May be present in areas where the Trail runs through suitable scrub habitat.
Coastal western whiptail <i>Aspidoscelis tigris stejnegeri</i>	Firm, sandy or rocky soils in deserts and semiarid areas with sparse vegetation and open areas. Also found in woodland and riparian areas.	Year round	FED: ND STATE: ND	High. May be present in areas where the Trail runs through suitable scrub habitat.
Silvery legless lizard <i>Anniella pulchra pulchra</i>	Found predominantly in the Coast Ranges, Transverse Mountains, and Peninsular Ranges and in northwest Baja California. Also found in scattered occurrences on the floor of the San Joaquin Valley, in the southern Sierra, Walker Basin and in the Piute, Scodie and Tehachapi Mountains. Desert-edge localities are recorded at the eastern end of Walker Pass in Kern County, Morongo Pass, in San Bernardino County, in the Little San Bernardino Mountains at Whitewater, Riverside County, and on the eastern slopes of the Peninsular Ranges. Prefers areas with sandy or loose organic soils or with abundant leaf litter.	Active year round - some winter activity	FED: ND STATE: CSC	None. Although sandy soils occur along the alignment, abundant leaf litter (providing a humid microclimate) does not exist along the alignment.
Rosy boa <i>Lichanura trivirgata</i>	Mix brushy cover and rocky soils. Desert and chaparral, found from the coast to the Mojave and Colorado deserts. Prefers moderate to dense vegetation.	Year round	FED: ND STATE: ND	High. May be present in areas where the Trail runs through suitable scrub habitat.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	Widely distributed from the lowlands up to 7000 feet. Found in grasslands, coastal sage scrub, and chaparral. On both rocky and sandy substrate. The coastal race is largely confined to coastal sage scrub and alluvial sage scrub habitats.	Year round	FED: ND STATE: CSC	High. May be present in areas where the Trail runs through suitable scrub habitat.
Northern red-diamond rattlesnake <i>Crotalus exsul</i>	Occurs in rocky areas & dense vegetation. Needs rodent burrows cracks in rocks or other surface material. Chaparral, woodland, grassland and desert areas. Coastal San Diego County to the eastern slopes of the mountains.	Year round	FED: C2* STATE: CSC	High. May be present in areas where the Trail runs through suitable scrub habitat.
Birds				
Great blue heron <i>Ardea herodias</i>	Fairly common resident in most of southern California, becoming more numerous in warmer areas in winter. Found in a variety of aquatic habitats. Peak abundance in coastal estuaries. In the desert, mostly seen during migrations; winters locally in suitable habitats.	Year round	FED: ND STATE: ND	Low. May forage along the river.
Great egret <i>Casmerodius albus</i>	Fairly common winter visitor along the coast, commonly resident and a breeder at the Salton Sea and the Colorado River. An uncommon transient in the rest of southern California.	Year round in the desert; seasonal in other areas.	FED: ND STATE: ND	Low. May forage along the river.
Snowy egret <i>Egretta thula</i>	Common winter visitor along the coast, occasionally remaining throughout the summer. Common resident at the Salton Sea and the Colorado River. Uncommon transient elsewhere in southern California.	Year round in the desert; seasonal in other areas	FED: ND STATE: ND	Low. May forage along the river.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Black-crowned night heron <i>Nycticorax nycticorax</i>	Common but local resident along the coastal and the Salton Sea. Uncommon transient and rare winter visitor in the desert.	Year round in the coast and along the Salton Sea. Winters in the desert.	FED: ND STATE: ND	Low. May forage along the river.
White-faced ibis <i>Plegadis chihi</i>	Fairly common transient and summer visitor at the Salton Sea. Irregular and local breeder. Uncommon in winter. Primarily transient throughout the rest of southern California, as well as a local visitor along the coast.	Most spring and summer in the desert; winter along the coast		Low. May forage along the river.
White-tailed kite <i>Elanus leucurus</i>	Open country in South America and southern North America.	Year-round	FED: ND STATE: ND (nesting) CFP	Low. May forage along the river.
Northern harrier <i>Circus cyaneus</i>	Grassland and marshy habitats in Southern California. Uncommonly in open desert and brushlands.	Year round	FED: ND STATE: CSC	Low. Not observed during the surveys. Forages over a wide range of open habitat and can be expected to occur throughout most of Southern California. Although no nesting habitat was found, foraging habitat exists along the alignment.
Sharp-shinned hawk <i>Accipiter striatus</i>	Nests in woodland, coniferous deciduous forest. Winter visitor and migrant to coastal Southern California. Forages over a variety of habitats.	Fall & winter; scarce in summers	FED: ND STATE: CSC	Low. Not observed during the surveys, but are expected to forage infrequently over the property during migration and in winter.
Cooper's hawk <i>Accipiter cooperi</i>	Woodland and semi-open habitats, riparian groves and mountain canyons. Uncommon permanent resident in coastal, mountains, and deserts of Southern California. Transients fairly common on coast in fall.	Year round; predominant in summer	FED: ND STATE: CSC	Low. Not observed during the surveys, but are expected to forage infrequently over the property during migration and in winter.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Golden eagle <i>Aquila chrysaetos</i>	Grasslands, brushlands, deserts, oak savannas, open coniferous forests and montane valleys. Nesting primarily in rugged mountainous country. Uncommon resident in Southern California.	Year round diurnal	FED: ND STATE: CSC (nesting and wintering). CFP	Low. Not observed during the surveys. Foraging habitat for this species exists over the entire property No suitable nesting habitat occurs along the alignment.
Ferruginous hawk <i>Buteo regalis</i>	Fairly common in winter in open grassland and agricultural regions in the interior, as well as some valleys along the coast. Rare and uncommon along the coast and in the desert.	Winter	FED: C2* STATE: CSC	Low. Not observed during the surveys. Poor quality foraging habitat for this species exists along the alignment. No suitable nesting habitat occurs along the alignment.
Merlin <i>Falco columbarius</i>	Frequents several habitats including coastal sage scrub and annual grassland. Forages along the coast, and in montane valleys and open deserts with scattered clumps of trees. Rare fall migrant and winter visitor to Southern California.	Fall & winter	FED: ND STATE: CSC	Low. Not observed during the surveys. Can be expected to forage over the site during migration and in winter. They are expected to use the area very infrequently.
American peregrine falcon <i>Falco peregrinus anatum</i>	Wetlands near high cliffs; few known to nest in urban settings on tall buildings. Scattered locations in North America; in California coastal areas and inland mountains.	Fall & Winter (in migration and as winter visitor)	FED: ND STATE: END. CFP	Low. Species passes through region during migration and may winter in region; during migration or winter, could fly over site, perch in riparian woodland, and/or forage in surrounding habitats.
Prairie falcon <i>Falco mexicanus</i>	Nest in cliffs or rocky outcrops; forage in open arid valleys, agricultural fields. Throughout the desert and arid interior portions of coastal counties. Uncommon resident in Southern California.	Year round diurnal	FED: ND STATE: CSC	Low. Not observed during the surveys. Foraging habitat exists for this species over the property, but there is no suitable nesting habitat.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Burrowing owl <i>Athene cunicularia hypugea</i>	Grasslands and rangelands, usually occupying ground squirrel burrows. Resident over most of Southern California. Found in agricultural areas.	Year round	FED: ND STATE: CSC	None. Suitable habitat is not present.
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	Breeds and nests in willow riparian forest. Rare and local in So. Calif.	May - Sept.	FED: END STATE: END (nesting)	None. Suitable riparian habitat is not present.
California horned lark <i>Eremophila alpestris actia</i>	Found in coastal regions, chiefly from Sonoma County to San Diego County. Also found in the main part of the San Joaquin Valley and east to the foothills. Prefers short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats.	Variable, year round	FED: ND STATE: CSC	Low. Foraging habitat may be present in the weedy grasslands along the bluff.
Bank swallow <i>Riparia riparia</i>	Nesting habitat is vertical banks of fine textured soils, most commonly along streams and rivers. In Southern California, fairly common spring and fall transient in interior; very uncommon spring transient and rare fall transient along coast. Casual in winter.	Variable year round	FED: ND STATE:THR (Nesting sites)	Low. The river bluffs are heavily vegetated and not suitable for this species. Surface area of the alignment does not provide actual foraging habitat. May be transient in migration.
Coastal cactus wren <i>Campylorhynchus brunneicapillus couesi</i>	Tall <i>Opuntia</i> required for nesting and roosting. Coastal sage scrub. Southern California.	Year round	FED: ND STATE: CSC	None. No suitable tall <i>Opuntia</i> observed
California gnatcatcher <i>Poliophtila californica</i>	Coastal sage scrub; occurs only in cismontane Southern California and northwestern Baja California in low-lying foothills and valleys.	Year-round	FED: THR STATE: ND	High. Suitable habitat exists.
Loggerhead shrike <i>Lanius ludovicianus</i>	Open fields with scattered trees, open woodland, scrub. Fairly common resident throughout southern California.	Year round	FED: ND STATE: CSC	Moderate. This species may nest within the and may forage in this area in winter.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Least Bell's vireo <i>Vireo bellii pusillus</i>	Riparian forests and willow thickets. Breeds and nests only in southwestern California; winters in Baja Calif.	Apr - Sept	FED: END STATE: END	None. Suitable riparian habitat is not present.
Yellow-breasted chat <i>Icteria virens</i>	Riparian thickets of willow, brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	Year round. Nocturnal migrant	FED: ND STATE: CSC	None. Suitable riparian habitat is not present.
Yellow warbler <i>Dendroica petechia brewsteri</i>	Nesting habitat is protected. Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging. Also found in montane shrubbery in open conifer forests.	Spring and summer for breeding	FED: ND STATE: CSC	None. Suitable riparian habitat is not present.
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	Fairly common resident along the coast of California; breeds very locally on desert mountain ranges. Preferred habitat is slopes with sparse shrubs and open grassy areas intermixed. Coastal sage scrub is the most common plant community used.	Year round	FED: ND STATE: CSC	Unknown. Suitable habitat is present.
Bell's sage sparrow <i>Amphispiza belli belli</i>	Uncommon to common resident. Nests in chaparral dominated by fairly dense stands of chamise. Fairly common in coastal sage scrub in the south portion of its range. Nests are located on the ground beneath a shrub or in a shrub six to eight inches above the ground. Individual territories are about 50 yards apart.	Year round	FED: ND STATE: CSC	Unknown. Suitable habitat is present.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Grasshopper sparrow <i>Ammodramus</i> <i>savannarum</i>	Occupies grassland habitats across North America. They are found in a variety of tall- and mixed-grass habitats including native prairies, hayfields, pastures, and grassy fallow fields.	Year round	FED: ND STATE: CSC	None. Suitable grassland habitat is not present.
Tri-colored blackbird <i>Aeglaia tricolor</i>	Resident year round in the coast and eastern edge of the desert. Occurs in all coastal counties including interior areas west of the deserts. Breeds in dense colonies in reed beds.	Year round	FED: ND STATE: CSC	None. No suitable nesting habitat present.
Mammals				
California leaf-nosed bat <i>Macrotus californicus</i>	In California, these bats primarily occupy low-lying desert areas, where they roost in caves, mines, and old buildings. Historic records extend west to near Chatsworth, Los Angeles County, but most populations from the California coastal basins are believed to have disappeared. Occurs from northern Nevada, Southern California, and western Arizona south to southern Baja California and Sonora.	Year round nocturnal	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Townsend's western big-eared bat <i>Corynorhinus townsendii</i>	Requires caves, mines, tunnels, buildings or other similar structures for roosting. May use separate sites for night, day, hibernation or maternity roosts. Found in all but subalpine and alpine habitats throughout California.	Year round Nocturnal	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Pallid bat <i>Antrozous pallidus</i>	Day roost in caves, crevices, mines and occasionally hollow trees and buildings. Night roosts may be more open sites, such as porches and open buildings. Hibernation sites are probably rock crevices. Grasslands, shrublands, woodlands and forest from sea level through to mixed conifer. Throughout Southern California.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Spotted bat <i>Euderma maculatum</i>	Found in the western North America from southern British Columbia to the Mexican border, at a small number of widely scattered localities. Habitats range from arid deserts and grasslands through mixed conifer forest up to 10,600 foot elevation. Prefers rock crevices in cliffs, also uses caves and buildings.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Western yellow bat <i>Lasiurus xanthinus</i>	Found in valley foothill riparian, desert riparian, desert palm oasis and desert wash. Roosts in trees, particularly palms. This species forages over water and among trees.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: ND	Unknown. There are trees along the alignment, and they may roost in these trees.
California mastiff bat <i>Eumops perotis californicus</i>	Historically from north-central California south to northern Baja California, eastward across the southwestern United States, and northwestern Mexico to west Texas and Coahuila (Hall, 1981; Williams, 1986). In California, most records are from rocky areas at low elevations where roosting occurs primarily in crevices.		FED: ND STATE: CSC	Moderate. There may be suitable crevices in the more rocky areas of the site. This species may also forage along the alignment.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Big free-tailed bat <i>Nyctinomops macrotis</i>	Found from northern South America and the Caribbean Islands northward to the western United States (Williams, 1986). In the southwestern U.S., populations appear to be scattered. Known breeding localities are in parts of Arizona, New Mexico, and Texas. Prefers rocky, rugged terrain. Roosts in crevices in high cliffs or rocky outcrops. Ranges up to 8000 foot elevation.	Nocturnal spring - fall Hibernates in Winters	FED: ND STATE: CSC	Moderate. There may be suitable crevices in the more rocky areas of the site. This species may also forage along the alignment.
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino and Santa Rosa mountain ranges.	Year round, diurnal and Crepuscular activity	FED: ND STATE: CSC	Expected. Suitable habitat is present.
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	Prefers sandy soil for burrowing, but has been found on gravel washes and stony soils. Found in coastal scrub. Los Angeles, Riverside, and San Bernardino Counties.	Nocturnal; active late spring to early fall.	FED: ND STATE: CSC	Expected. Suitable habitat is present.
Northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	Sandy herbaceous areas, usually with rocks or coarse gravel. Arid coastal areas in grassland, coastal scrub and chaparral. San Diego, San Bernardino, Los Angeles, and Riverside Counties.	Nocturnal; active year round.	FED: ND STATE: CSC	Expected. Suitable habitat is present.

Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
San Bernardino kangaroo rat <i>Dipodomys merriami parvus</i>	Primary and secondary alluvial fan scrub habitats, with sandy soils deposited by fluvial (water) rather than aeolian (wind) processes. The preferred substrate appears to be sandy and sandy loam soils and very little herbaceous ground cover. In isolated populations along the Santa Ana and San Jacinto drainage systems.	Nocturnal; active year round	FED: END STATE: ND	Expected. Suitable habitat is present.
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	Moderate to dense canopies, particularly in rocky areas. Coastal sage scrub and chaparral. Coastal southern California.	Nocturnal; active year round	FED: ND STATE: CSC	Expected. Suitable habitat is present.
Delhi sands flower-loving fly <i>Rhaphiomidas terminatus abdominalis</i>	Limited information suggests this species is found on "fine, sandy soils, often with wholly or partially consolidated dunes. These soil types are generally classified as the "Delhi" series (primarily Delhi fine sand)" (U.S. Fish and Wildlife Service, 1992). Restricted to western Riverside and San Bernardino Counties.	Above ground emergence August and Sep. Not visible during the rest of the year.	FED: END STATE:ND	None. Suitable soils not present.

Sensitive Habitats

Southern California arroyo chub / Santa Ana sucker stream	From Mount Rubidoux downstream to northeastern Anaheim, including tributaries, Chino, Aliso and Sunnyslope Creeks. Best habitat found below Riverside Narrows where groundwater is forced to the surface & flows become more perennial and stable, Santa Ana sucker and arroyo chub are the only native fish that still occur.	Year round	Protected by the presence of listed species.	Suitable habitat may exist in the river, but will not be affected by the Trail alignment.
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Table 1. Sensitive Biological Resources

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Riversidian alluvial fan scrub	Creeks, rivers, canyons and drainages in Peninsular and Transverse Ranges. Riverside, San Bernardino Counties.	Year round	Declining plant community	Suitable habitat exists in the river, but will not be affected by the Trail alignment.

Legend

Federal Classifications

END	Taxa listed as endangered
THR	Taxa listed as threatened
PE	Taxa proposed to be listed as endangered
PT	Taxa proposed to be listed as threatened
C2*	The U.S. Fish and Wildlife Service (USFWS) revised its classifications of candidate taxa (species, subspecies, and other taxonomic designations). The former designation of "Category 2 Candidate for listing" has been discontinued. The USFWS will continue to assess the need for protection of these taxa and may, in the future, designate such taxa as Candidates. NRAI has noted the change in species status by marking with an asterisk (*) those C2 candidates that were removed from the list.
C	Candidate for listing. Refers to taxa for which the USFWS has sufficient information to support a proposal to list as Endangered or Threatened and issuance of the proposal is anticipated but precluded at this time.
ND	Not designated as a sensitive species

State Classifications

END	Taxa listed as endangered
THR	Taxa listed as threatened
CE	Candidate for endangered listing
CT	Candidate for threatened listing
CFP	California Fully Protected. Species legally protected under special legislation enacted prior to the California Endangered Species Act.
SSC	California Species of Special Concern. Taxa with populations declining seriously or that are otherwise highly vulnerable to human development.
SA	Special Animal. Taxa of concern to the California Natural Diversity Data Base regardless of their current legal or protected status.
ND	Not designated as a sensitive species

California Native Plant Society Classifications

1A	Plants presumed by CNPS to be extinct in California
1B	Plants considered by CNPS to be rare or endangered in California and elsewhere
2	Plants considered by CNPS to be rare, threatened or endangered in California, but which are more common elsewhere
3	Review list of plants suggested by CNPS for consideration as endangered but about which more information is needed.
4	Watch list of plants of limited distribution whose status should be monitored.

Occurrence Probabilities

Occurs	Observed on the site during this study or recorded on site by other qualified biologists.
Expected	Not observed or recorded on site, but likely to be present at least during a portion of the year.
High	Known to occur in the vicinity of the project site. Suitable habitat exists on site.
Moderate	Known to occur in the vicinity of the project site. Small areas or marginally suitable habitat exist on site.
Low	No reported sightings within the vicinity of the project. Available habitat limited and rarely used.
None	Focused surveys did not locate the species, or suitable habitat does not exist on site.
Unknown	No data is available on whether species is on or in the vicinity of the site, and information about the species is insufficient to make an accurate assessment of probability occurrence to make an accurate assessment of probability occurrence.

Appendix B - Plant and Animal Species Observed

*denotes non-native plants

GYMNOSPERMAE

Cupressaceae

Juniperus californica

ANGIOSPERMAE: DICOTYLEDONES

Adoxaceae

Sambucus mexicana

Anacardiaceae

**Schinus molle*

Asteraceae

Ambrosia psilostachya

Artemisia californica

Artemisia dracunculus

Baccharis salicifolia

Chaenactis glabriuscula

**Cnicus benedictus*

Encelia californica

Helianthus annuus

Lepidospartum squamatum

**Sisymbrium irio*

Boraginaceae

Amsinckia menziesii

Cryptantha intermedia

Plagiobothrys canescens

Brassicaceae

**Hirschfeldia incana*

Cactaceae

Opuntia californica

Euphorbiaceae

Croton californica

Fabaceae

Lotus scoparius

Lupinus succulentus

Vicia americana

Geraniaceae

**Erodium cicutarium*

Hydrophyllaceae

Eriodictyon trichocalyx

Phacelia ramosissima

NAKED SEED PLANTS

Cypress family

California juniper

DICOT FLOWERING PLANTS

Elderberry family

Mexican elderberry

Sumac family

Peruvian pepper tree

Sunflower family

Western ragweed

California sagebrush

Tarragon

Mulefat

Yellow pincushion

Blessed thistle

Coastal brittlebush

Annual sunflower

Scale-broom

London rocket

Borage family

Fiddleneck

Popcorn flower

Valley popcorn flower

Mustard family

Short-podded mustard

Cactus family

Snake cholla

Spurge family

Croton

Pea family

Deer weed

Arroyo lupine

American vetch

Geranium family

Red-stemmed filaree

Waterleaf family

Hairy yerba santa

Branching phacelia

Lamiaceae
Salvia apiana
Salvia columbariae Chia

Mint family
White sage

Myrtaceae
**Eucalyptus* sp.

Myrtle family
Eucalyptus

Nyctaginaceae
Mirabilis laevis

Four O'clock family
California wishbone bush

Onagraceae
Camissonias bistorta

Evening primrose family
Suncups

Polemoniaceae
Eriastrum sappharinum

Phlox family
Sapphire phlox

Polygonaceae
Eriogonum fasciculatum var. *foliolosum*
Eriogonum thurberi

Buckwheat family
California buckwheat
Thurber's buckwheat

Rosaceae
Adenostoma fasciculatum

Rose family
Chamise

Solanaceae
Nicotiana glauca

Nightshade family
Indian tobacco

Tamaricaceae
**Tamarix* sp.

Tamarisk family
Tamarisk

ANGIOSPERMAE: MONOCOTYLEDONAE

MONOCOT FLOWERING PLANTS

Agavaceae
Yucca whipplei

Agave family
Whipple's yucca

Poaceae
**Avena barbata*
**Bromus diandrus*
**Bromus madritensis* ssp. *rubens*
Pennisetum setaceum
**Schismus barbatus*
**Vulpia octoflora*

Grass family
Slender wild oats
Ripgut brome
Red brome
Fountain grass
Mediterranean grass
Eight-flowered foxtail

Taxonomy and nomenclature follow Clarke, et al. (2007), Hickman 1993 and Munz 1974.

Animals

REPTILIA

Iguanidae

Uta stansburiana

Phrynosomatidae

Sceloporus occidentalis

Phrynosoma coronatum blainvillei

AVES

Charadriidae

Charadrius vociferus

Accipitridae

Buteo jamaicensis

Phasianidae

Callipepla californica

Tyrannidae

Sayornis saya

Tyrannus verticillatus

Corvidae

Aphelocoma californica

Corvus brachyrhynchos

Emberizidae

Pipilo crissalis

Fringillidae

Carpodacus neomexicanus

Carduelis psaltria

MAMMALIA

Leporidae

Sylvilagus audubonii

Sciuridae

Spermophilus beecheyi

Geomyidae

Thomomys bottae

Heteromyidae

Dipodomys sp.

Canidae

Canis latrans

REPTILES

Iguanas and their allies

Side-blotched lizard

Spiny lizards and their allies

Western fence lizard

San Diego horned lizard

BIRDS

Plovers and relatives

Killdeer

Kites, hawks and eagles

Red-tailed hawk

Quails and pheasants

California quail

Tyrant flycatchers

Say's phoebe

Western kingbird

Crows and ravens

Western scrub jay

American crow

Sparrows

California towhee

Finches

House finch

Lesser goldfinch

MAMMALS

Rabbits and hares

Audubon's cottontail

Squirrels, chipmunks and marmots

California ground squirrel

Pocket gophers

Botta's pocket gopher

Pocket mice and kangaroo rats

Kangaroo rat

Foxes, wolves and relatives

Coyote

Nomenclature follows Garth & Tilden 1986, Hall 1981, Laudenslayer et al. 1991, and Stebbins 1966.

Appendix D - 2018 Plant and Wildlife Species Observed Lists

SART Plant Species Observed

SCIENTIFIC NAME	COMMON NAME
VASCULAR PLANTS	
GYMNOSPERMS	
PINACEAE	PINE FAMILY
<i>Pinus coulteri</i>	Coulter pine
ANGIOSPERMS (DICOTYLEDONS)	
ADOXACEAE	MUSKROOT FAMILY
<i>Sambucus nigra</i>	Black elderberry
AGAVACEAE	CENTURY PLANT FAMILY
<i>Hesperoyucca whipplei</i>	Chaparral yucca
AMARANTHACEAE	AMARANTH FAMILY
<i>Amaranthus albus*</i>	Tumbleweed
ANACARDIACEAE	SUMAC/CASHEW FAMILY
<i>Schinus terebinthifolius*</i>	Brazilian pepper tree
APOCYNACEAE	DOGBANE FAMILY
<i>Nerium oleander</i>	Oleander
ARECACEAE	PALM FAMILY
<i>Washingtonia robusta</i>	Mexican fan palm
ASTERACEAE	SUNFLOWER FAMILY
<i>Ambrosia psilostachya</i>	Ragweed
<i>Artemisia tridentata</i>	Common sagebrush
<i>Baccharis salicifolia</i>	Mule fat
<i>Encelia farinosa</i>	Brittlebush
<i>Erigeron canadensis</i>	Canada horseweed
<i>Helianthus annuus</i>	Common sunflower
<i>Heterotheca grandiflora</i>	Telegraph weed
<i>Lepidospartum squamatum</i>	Scalebroom
BORAGINACEAE	BORAGE FAMILY
<i>Amsinckia intermedia</i>	Common fiddleneck
BRASSICACEAE	MUSTARD FAMILY
<i>Brassica nigra*</i>	Black mustard
CACTACEAE	CACTUS FAMILY
<i>Cylindropuntia californica</i>	California cholla
<i>Opuntia basilaris</i>	Beavertail pricklypear
CHENOPODIACEAE	GOOSEFOOT FAMILY
<i>Salsola australis*</i>	Russian thistle
EUPHORBIACEAE	SPURGE FAMILY
<i>Ricinus communis*</i>	Castor bean
FAGACEAE	OAK FAMILY
<i>Quercus agrifolia</i>	California live oak
JUGLANDACEAE	WALNUT FAMILY
<i>Juglans californica</i>	Southern California black walnut
LAMIACEAE	MINT FAMILY
<i>Rosmarinus officinalis*</i>	Rosemary
MYRTACEAE	MYRTLE FAMILY
<i>Eucalyptus camaldulensis*</i>	Red gum
PLATANACEAE	SYCAMORE FAMILY
<i>Platanus racemosa</i>	California sycamore
POLYGONACEAE	BUCKWHEAT FAMILY
<i>Eriogonum fasciculatum</i>	California buckwheat
RUTACEAE	RUE/CITRUS FAMILY
<i>Citrus sp.*</i>	Cirtus trees (cultivated)

SCIENTIFIC NAME	COMMON NAME
SALICACEAE	WILLOW FAMILY
<i>Populus fremontii</i>	Fremont cottonwood
<i>Salix gooddingii</i>	Black willow
SIMAROUBACEAE	QUASSIA/SIMAROUBA FAMILY
<i>Ailanthus altissima</i> *	Tree of heaven
SOLANACEAE	NIGHTSHADE FAMILY
<i>Datura stramonium</i>	Jimsonweed
<i>Nicotiana glauca</i> *	Tree tobacco
TAMARICACEAE	TAMARISK FAMILY
<i>Tamarix aphylla</i> *	Athel tamarisk
ANGIOSPERMS (MONOCOTYLEDONS)	
POACEAE	GRASS FAMILY
<i>Arundo donax</i> *	Giant reed
<i>Bromus diandrus</i> *	Ripgut brome
<i>Bromus inermis</i> *	Smooth brome
<i>Bromus madritensis</i> *	Foxtail brome
<i>Pennisetum setaceum</i> *	Fountain grass
<i>Avena fatua</i> *	Wild oat
* nonnative plant species	

SART Wildlife Species Observed

SCIENTIFIC NAME		COMMON NAME	
REPTILIA		REPTILES	
Iguanidae		Iguanids	
	<i>Uta stansburiana</i>		Side-blotched lizard
AVES		BIRDS	
Accipitridae		Hawks, Kites, & Eagles	
**	<i>Accipiter cooperii</i>		Cooper's hawk
	<i>Buteo jamaicensis</i>		Red-tailed hawk
	<i>Buteo lineatus</i>		Red-shouldered hawk
Falconidae		Falcons	
	<i>Falco sparverius</i>		American kestrel
Odontophoridae		New world Quail	
	<i>Callipepla californica</i>		California quail
Columbidae		Pigeons and Doves	
*	<i>Columba livia</i>		Rock pigeon (rock dove)
	<i>Zenaida macroura</i>		Mourning dove
Trochilidae		Hummingbirds	
	<i>Calypte anna</i>		Anna's hummingbird
Picidae		Woodpeckers & Allies	
	<i>Picoides villosus</i>		Hairy woodpecker
Tyrannidae		Tyrant flycatchers	
	<i>Sayornis nigricans</i>		Black phoebe
	<i>Sayornis saya</i>		Say's phoebe
	<i>Tyrannus verticalis</i>		Western kingbird
Corvidae		Jays and Crows	
	<i>Corvus corax</i>		Common raven
	<i>Stelgidopteryx serripennis</i>		Northern rough-winged swallow
Aegithalidae		Bushtits	
	<i>Psaltiriparus minimus</i>		Bushtit
Troglodytidae		Wrens	
	<i>Thryomanes bewickii</i>		Bewick's wren
Sylviidae (Previously Timaliidae)		Wrentits	
	<i>Chamaea fasciata</i>		Wrentit
Mimidae		Mockingbirds and Thrashers	
	<i>Mimus polyglottos</i>		Northern mockingbird
Ptilonotidae		Silky flycatchers	
	<i>Phainopepla nitens</i>		Phainopepla
	<i>Setophaga coronata (Previously Dendroica coronata)</i>		Yellow-rumped warbler
Emberizidae		Towhees and Sparrows	
	<i>Melospiza crissalis</i>		California towhee
Fringillidae		Finches	
	<i>Spinus psaltria (Previously Carduelis psaltria)</i>		Lesser goldfinch
	<i>Haemorhous mexicanus (Previously Carpodacus mexicanus)</i>		House finch
MAMMALIA		MAMMALS	
Geomyidae		Pocket gophers	
	<i>Thomomys bottae</i>		Botta's pocket gopher
* nonnative species			