State Route 210 Mixed Flow Lane Addition from Highland Avenue to San Bernardino Avenue ***NES***

Natural Environment Study

San Bernardino County, California

District 08 – San Bernardino/Riverside

08-SBD-210-PM R25.0/R33.2

08-12000164

November 2015

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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STATE OF CALIFORNIA
Department of Transportation

Prepared By: _____ Date: 12 Nov 2015

Greg Hoisington
Natural Resources Manager
URS Corporation
714.567.2755

Recommended
for Approval By: _____ Date: 12/09/2015

Maggi Elgeziry
Associate Environmental Planner, Biologist
Biological Sciences and Permits Branch
District 8/ Riverside & San Bernardino Counties
909.383.7560

Approved By: _____ Date: 12/10/2015

Craig Wentworth
Senior Environmental Planner, Biologist
Biological Sciences and Permits Branch
District 8/ Riverside & San Bernardino Counties
909.388.1252

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SUMMARY

The San Bernardino Associated Governments (SANBAG), in cooperation with the California Department of Transportation (Caltrans), District 8 and the City of Highland, proposes to widen State Route 210 (SR-210) from Sterling Avenue to San Bernardino Avenue in the cities of Highland, San Bernardino, and Redlands in San Bernardino County, California (herein referred to as the "Project"). The widening would occur between post miles (PM) R26.3 and R32.4, for a distance of 6.1 miles. The total length of the proposed Project limits is approximately 8.2 miles, from PM R25.0 to R33.2, which includes transition striping and signage.

The Project proposes to add one mixed flow lane in each direction within the median of SR-210, create auxiliary lanes between the Base Line and 5th Street interchanges, add an acceleration lane at the eastbound 5th Street on-ramp, and add a deceleration lane at the eastbound Highland off-ramp. The proposed improvements would include widening of the Highland Avenue undercrossing, Sand Creek bridge, Victoria Avenue undercrossing, City Creek bridge, 5th Street undercrossing, Plunge Creek bridge, Access Road undercrossing, Santa Ana River bridge, and Pioneer Avenue undercrossing. The proposed improvements would reduce congestion and improve operational efficiency by providing lane continuity with the existing segments of freeway to the west and east of the Project limits.

This Natural Environment Study (NES) has been developed in support of the preparation of an Environmental Document in compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). The results presented in this NES are based on literature searches and biological resource surveys conducted in 2012 and 2013.

In order to identify and determine direct, indirect, and cumulative effects to sensitive biological resources within, and adjacent to, the Project, a Biological Study Area (BSA) was established, which included 100-foot and 500-foot buffers from the edge of proposed permanent disturbance limits determined from preliminary engineering design. Studies and surveys conducted within the BSA included a reconnaissance biological survey and vegetation mapping, bat habitat suitability surveys, focused botanical surveys, protocol wildlife surveys, and a jurisdictional delineation of aquatic resources. Protocol surveys were conducted for least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher (*Polioptila californica californica*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), Santa Ana River woollystar

(*Eriastrum densifolium* ssp. *sanctorum*), slender-horned spineflower (*Dodecahema leptoceras*), and burrowing owl (*Athene cunicularia*).

The BSA contains 17 vegetation/land cover types: scalebroom scrub, mule fat thicket, California buckwheat scrub, arroyo willow thicket, eucalyptus grove, disturbed scalebroom scrub, disturbed mule fat thicket, disturbed California buckwheat scrub, disturbed arroyo willow thicket, agriculture, ruderal, open water, ornamental, unvegetated channel, unvegetated wash, disturbed, and developed. A total of 921.46 acres of these vegetation communities occur within the BSA, with most of the acreage consisting of disturbed, developed, ruderal, and ornamental lands associated with the existing roadway and adjacent developments.

Four Natural Communities of Special Concern were observed within the BSA, including scalebroom scrub, California buckwheat scrub, arroyo willow thicket, and mule fat thicket, as described by Sawyer et al. (2009). The species composition of these vegetation communities matches that of the riversidean alluvial fan sage scrub, coastal sage scrub, southern riparian forest, and southern riparian scrub communities, respectively, as described by Holland (1986). These vegetation communities are considered sensitive by California Department of Fish and Wildlife (CDFW). A total of 112.15 acres of these sensitive vegetation communities occur within the BSA.

Listed species observed within the BSA include San Bernardino kangaroo rat and Santa Ana River woollystar. In addition, suitable habitat for slender-horned spineflower is present within the BSA and known populations occur within two miles of the Project site. Although this species was not observed during focused botanical surveys, rainfall during the 2011-2012 wet season was below average (5.5 inches, or 41% of average) for the Project area and many species did not bloom, including the slender-horned spineflower reference population that was visited. As a result, slender-horned spineflower is assumed present within suitable habitat onsite. Designated critical habitat for the Santa Ana sucker (*Catostomus santaanae*) and San Bernardino kangaroo rat also occurs in portions of the BSA. Special status species observed within the BSA include coast horned lizard (*Phrynosoma blainvillii*), ferruginous hawk (*Buteo regalis*), yellow warbler (*Setophaga petechia brewsteri*), California horned lark (*Eremophila alpestris actia*), Cooper's hawk (*Accipiter cooperii*), black-tailed jackrabbit (*Lepus californicus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*). The Project will affect unoccupied Santa Ana sucker critical habitat, San

Bernardino kangaroo rat, San Bernardino kangaroo rat critical habitat, Santa Ana River woollystar, and slender-horned spineflower.

Federal Section 7 consultation with the United States Fish and Wildlife Service (USFWS) will be required for potential impacts to these species or their habitats. Avoidance, minimization, and mitigation measures provided in this NES will be included in a Biological Assessment (BA) for the Project and provided to USFWS for concurrence and issuance of a Biological Opinion (BO). A *May Affect, Likely To Adversely Affect* determination from the USFWS is expected for San Bernardino kangaroo rat, San Bernardino kangaroo rat critical habitat, Santa Ana River woollystar, and slender-horned spineflower. In addition, a *May Affect, Not Likely To Adversely Affect* determination is expected for Santa Ana sucker and its critical habitat.

A consistency determination from CDFW under Section 2080.1 of the California Fish and Game Code (CFG Code) for take of state endangered, threatened, or candidate species is required because the Project will result in the State definition of “take” to state listed species. Authorization from CDFW under Section 2081 is not required as there are no species that are solely state listed.

A combination of avoidance and minimization measures and compensatory mitigation would reduce the overall adverse effects to biological resources within the BSA. In addition, invasive plant species would be removed from the Project work area and controlled during construction to ensure compliance with Executive Order 13112.

A jurisdictional delineation of aquatic resources determined that there are jurisdictional wetland and other water features within the BSA potentially subject to the jurisdiction of the United States Army Corps of Engineers (ACOE), CDFW, and the Regional Water Quality Control Board (RWQCB). A total of 45.82 acres of potential ACOE jurisdictional non-wetland waters and 2.20 acres of wetlands were delineated in the BSA. RWQCB jurisdiction in the BSA includes the same potential ACOE jurisdiction (45.82 acres non-wetland and 2.20 acres wetland) as well as 0.25 acres of potential California Water Code Porter-Cologne Water Quality Control Act (Porter-Cologne) jurisdiction. Potential CDFW jurisdiction totals 59.35 acres of non-riparian channel bed and bank and 2.29 acres of riparian channel bed and bank.

The Project will require authorization from the ACOE (pursuant to Section 404 of the Clean Water Act [CWA]), the RWQCB (pursuant to Section 401 of the CWA and

Porter-Cologne), and from the CDFW (pursuant to Section 1602 of the CFG Code) as a result of impacts to jurisdictional aquatic resources. To mitigate effects to these jurisdictional areas, a compensatory mitigation plan will be developed during the permitting phase. Compensatory mitigation for temporary impacts will include onsite habitat restoration within Caltrans right-of-way. Permanent impacts to non-wetland and wetland waters will be mitigated off-site at a minimum 2:1 ratio through an approved in-lieu fee program or other agency-approved mitigation bank/in-lieu fee program.

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LIST OF ABBREVIATED TERMS

°F	degree Fahrenheit
ACOE	United States Army Corps of Engineers
BA	Biological Assessment
Basin Plan	Water Quality Control Plan
BMP	Best Management Practices
BO	Biological Opinion
BRI	Biological Resource Information
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG Code	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Environmentally Sensitive Areas
FESA	Federal Endangered Species Act
GPS	Global Positioning System
HMMP	Habitat Mitigation Monitoring Plan
I-10	Interstate 10
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
PCEs	Primary Constituent Elements
PM	Post Mile
Porter-Cologne	California Water Code Porter-Cologne Water Quality Control Act
PSFWO	Palm Springs Fish and Wildlife Office
RWQCB	Regional Water Quality Control Board
SANBAG	San Bernardino Associated Governments
SR-210	State Route 210
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
U.S.	United States
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Certification

WSPA	Woollystar Preservation Area

Chapter 1. Introduction

The San Bernardino Associated Governments (SANBAG), in cooperation with the California Department of Transportation (Caltrans), District 8 and the City of Highland, proposes to widen State Route 210 (SR-210) from Sterling Avenue to San Bernardino Avenue in the cities of Highland, San Bernardino, and Redlands in San Bernardino County, California. The widening would occur between post miles (PM) R26.3 and R32.4, for a distance of 6.1 miles. The total length of the proposed Project limits is approximately 8.2 miles, from PM R25.0 to R33.2, which includes transition striping and signage. This segment of SR-210 currently has two mixed flow lanes in each direction with three mixed flow lanes in each direction existing to the west and four mixed flow lanes in each direction existing to the east. The reduction in lanes within this segment of the freeway restricts capacity and creates poor operating conditions. Figure 1 shows the Project regional vicinity and Figure 2 shows the Project site.

1.1 Project History

1.1.1 Project Purpose and Need

Currently, SR-210 consists of a six-lane facility (three lanes in each direction) to the west of Highland Avenue. To the east of Highland Avenue the facility is four lanes (two in each direction) to approximately San Bernardino Avenue, where the existing freeway widens to four lanes in each direction at the terminus of SR-210 at Interstate 10 (I-10). This results in a lane imbalance condition and bottleneck within the corridor. In addition, capacity and operating conditions on SR-210 between Highland Avenue and San Bernardino Avenue are projected to operate at Level of Service F during the AM and PM peak hours by the year 2040 (URS 2013).

Freeway congestion has potential negative impacts such as increased air pollution, longer commuter and emergency vehicle delays, increased energy consumption, extended commute periods, increased driver frustration, and reduced safety, as well as adverse impacts on the regional and local economy.

The purpose of the Project is to:

- Provide continuity with the number of mixed flow lanes west and east of this freeway segment along SR-210 between Highland Avenue and San Bernardino Avenue.

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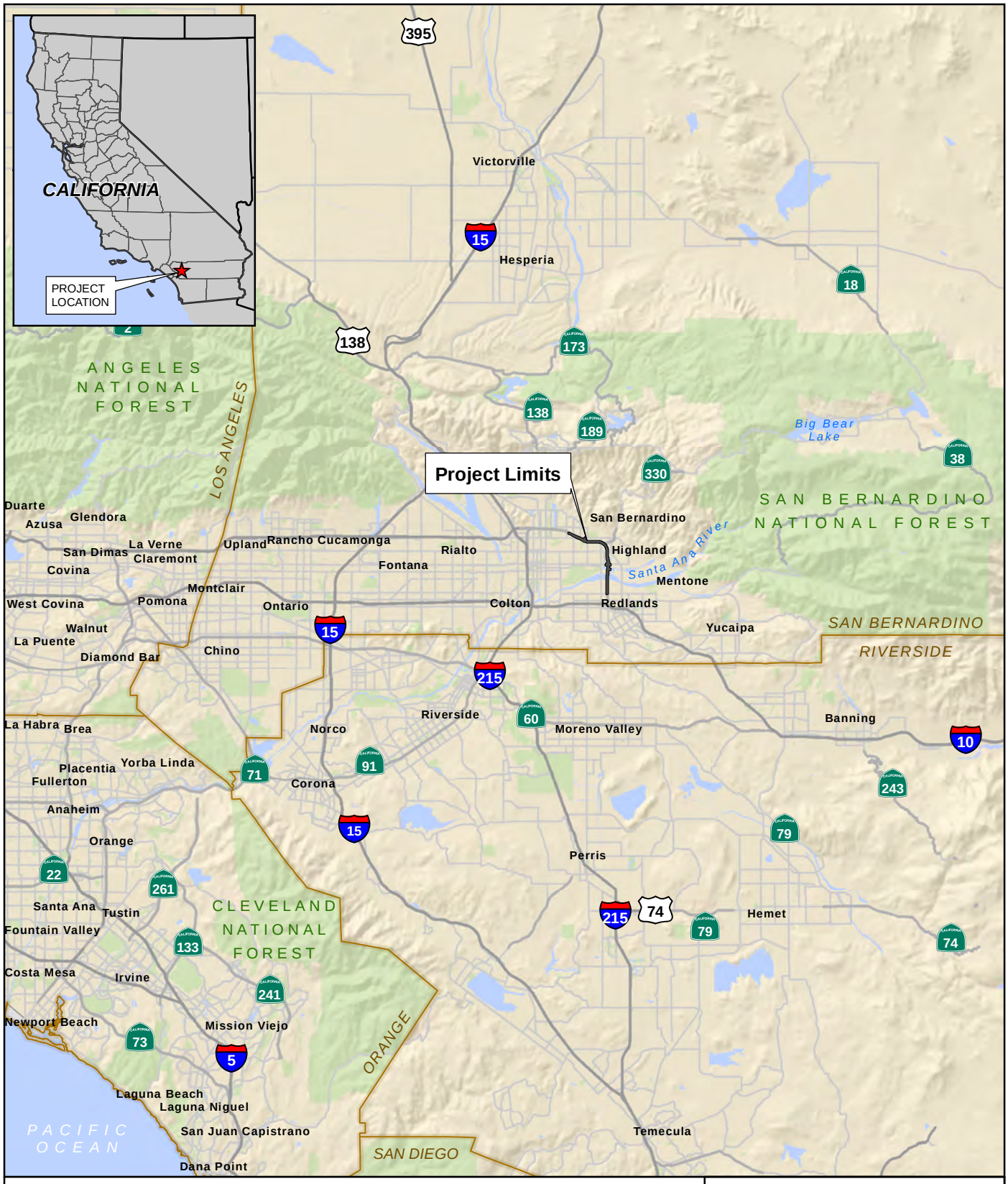

FIGURE 1
Project Regional Location

SR-210 Mixed Flow Lane Addition Project

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Biological Study Area

N

0 4,000 Feet

FIGURE 2

Project Site Vicinity

SR-210 Mixed Flow Lane Addition Project

Caltrans

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- Increase the efficiency of this segment of SR-210 by minimizing weaving conflicts at the termini of the third mixed flow lane east and west of this freeway segment.
- Reduce congestion and improve operational efficiency along SR-210 within the Project limits.

1.2 Project Location and Description

The Project is located in San Bernardino County, within the jurisdiction of Caltrans District 8. The Project occurs in the following United States Geological Survey (USGS) 7.5-Minute topographic quadrangles:

- Township 1N, Range 3W, Sections 30, 31, 32, and 33 of Harrison Mountain USGS 7.5-Minute topographic quadrangle.
- Township 1N, Range 3W, Sections 31, 32, and 33 of Redlands USGS 7.5-Minute topographic quadrangle.
- Township 1S, Range 3W, Sections 4, 9, and 21 of Redlands USGS 7.5-Minute topographic quadrangle.

The Project passes through mostly developed and disturbed areas, and to a lesser extent, open areas associated with creeks and rivers. Land use within the area includes dense residential and commercial development, disturbed open areas, mining, agriculture, and public infrastructure.

The widening of SR-210 is proposed from Sterling Avenue to San Bernardino Avenue in the cities of Highland, San Bernardino, and Redlands. The widening would occur between PM R26.3 and R32.4, for a distance of 6.1 miles. The total length of the proposed Project limits is approximately 8.2 miles, from PM R25.0 to R33.2, which includes transition striping and signage. Within the limits of the Project, SR-210 is a four-lane divided freeway with two 12-foot lanes, flanked by 10-foot left shoulders and 10-foot right shoulders.

1.2.1 Proposed Project

The Project as proposed would widen SR-210 from four mixed flow lanes (two lanes in each direction) to six mixed flow lanes (three lanes in each direction) from Sterling Avenue and to San Bernardino Avenue by adding a mixed flow lane in each direction within the existing median (Figures 3A-3I).

The proposed Project includes the following design features and elements:

1) The existing segment of SR-210 from Sterling Avenue to San Bernardino Avenue would be widened from four mixed flow lanes (two lanes in each direction) to six mixed flow lanes (three lanes in each direction) with the addition of one mixed flow lane in each direction. The third lane would be added within the existing SR-210 median. Each of the six resulting mainline lanes would be 12 feet in width. Both directions (eastbound and westbound) would have 10 foot wide left and right shoulders.

2) An auxiliary lane would be created in each direction between the Base Line and 5th Street interchanges.

3) A deceleration lane would be constructed on eastbound SR-210 from Sterling Avenue undercrossing to proposed two-lane exit at Highland Avenue. Proposed permanent striping would start from Del Rosa Avenue in the eastbound direction.

4) A new acceleration lane would be added at the 5th Street eastbound on-ramp.

5) The existing SR-210 median would be regraded and the remaining median between the new travel lanes would remain unpaved.

6) The following existing bridges and undercrossings would be widened to accommodate the new mixed flow lanes: Highland Avenue-Arden Avenue, Sand Creek, Victoria Avenue, 5th Street-Greenspot Road, City Creek, Plunge Creek, Access Road, Santa Ana River, and Pioneer Avenue. The Santa Ana River and Plunge Creek bridges will have an approximate 14.5 foot open space gap remaining between bridges following construction. City Creek will have a 31 foot gap remaining.

7) The Project would not require the acquisition of new permanent right-of-way. Temporary Construction Easements would likely be needed during the construction period for construction of sound walls and construction access.

8) Scour and pier protection features would be installed at the drainages as needed to protect bridge foundations. Existing scour protection at abutments within the Santa Ana River will be replaced in kind if disturbed as a result of bridge widening activities. No new rock slope protection is anticipated within the Santa Ana River or City Creek. Existing rock slope protection along

abutments will be replaced in kind as needed following construction. Additional rock slope protection may be added further below grade for scour protection within Plunge Creek. This additional rock scour protection will be added below 10 feet from original grade. Bridge piers within the Santa Ana River would be lengthened between 13.5 and 16.7 feet and widened approximately 1 foot (six inches on each side). Bridge piers within City Creek would be lengthened 22.5 to 23.5 feet. Bridge pier footings for the lengthened piers would be extended to a depth of 10–12 feet below grade and no scour or pier protection features will be built within 3 feet of the surface.

9) Drainage system improvements would be constructed to carry runoff away from travel lanes and into traditional drainage courses. The majority of the Project would discharge to closed drainage systems. Rock slope protection would be provided where concentrated flows discharge to unlined channels. The Project would increase the amount of impervious surface and associated volume of downstream flow, with the potential to increase velocity at spot locations. Conveyance systems, such as overside drains, ditches, rock slope protection, and treatment prior to discharge would be included to reduce the downstream impacts to the maximum extent practicable.

10) Stormwater treatment and pollution prevention best management practice (BMP) features would be included as part of the Project at select locations where identified benefits outweigh impacts. The Project would result in the disturbance of existing slopes and would generate new slopes. The areas of disturbance and constructed slopes would be protected with temporary and/or permanent erosion control, including fiber rolls, silt fencing, soil binders, rock slope protection, revegetation with erosion control seed mix, the use of 4:1 slopes or flatter, and would not pose any additional risk relative to pre-construction conditions. A seed mix approved by USFWS will be included in the construction specifications. Permanent treatment BMPs would be utilized to convey both stormwater quantity flows and peak flows to existing drainage systems and would reduce pollutants and increase detention time and the potential for infiltration for surface runoff. Permanent treatment BMPs would include biofiltration swales, strips, and basins, where feasible, and would generally be located between the mainline freeway toe of slope and right of way, within the infield areas of the interchanges, or along new slopes.

11) A new fiber optic backbone system would be constructed within the existing median, with branch connections linking the backbone system to existing traffic management system elements (e.g., wireless vehicle detection stations, ramp metering systems, a changeable message sign) along the corridor.

12) Ramp metering systems would be installed on the existing on-ramps at the 5th Street-Greenspot Road interchange.

13) An existing weigh-in-motion system, located approximately one-half mile north of San Bernardino Avenue, would be reconstructed to accommodate the additional lanes on the freeway.

14) Utilities would be relocated, as needed, to accommodate the widened facility. No utility relocations are anticipated outside of the identified work area limits and no new utilities are anticipated to be added to areas with federally-listed species or critical habitat containing Primary Constituent Elements (PCEs).

15) Retaining walls would be constructed as needed by changes in elevation that cannot be accommodated by regrading. No retaining walls are planned in areas with federally-listed species or critical habitat containing PCEs.

16) An existing sound wall between Base Line and 5th Street in the eastbound direction will be reconstructed to accommodate the proposed auxiliary lane. Additional sound walls would be constructed where noise abatement is required and where they are considered feasible and reasonable. No sound walls are planned in areas with federally-listed species or critical habitat.

17) Caltrans and/or its contractor will retain a USFWS-authorized biological monitor(s) onsite during initial ground disturbance within or adjacent to sensitive biological habitat and during construction activities within or adjacent to sensitive biological habitat at a frequency necessary to monitor habitat conditions and impacts to ensure compliance with the biological opinion and all other environmental commitments.

    a. The biological monitor will have expertise with San Bernardino kangaroo rat and its habitat.

    b. The biological monitor will ensure compliance with the Project description evaluated in this biological opinion, including all

conservation measures and terms and conditions, and will have the authority to halt/suspend all activities until appropriate corrective measures have been taken.

c. The biological monitor will report any non-compliance within 24 hours to Palm Springs Fish and Wildlife Office (PSFWO).

d. At least 30 days prior to the start of any Project-related activities, Caltrans will submit to PSFWO, in writing, the name(s), any permit numbers, and résumés of all prospective biological monitors. The PSFWO will approve the biological monitor (or monitors) before Project activities can begin.

18) Under the supervision of the approved biological monitor(s), pre-construction work will include delineation of work area boundaries with Environmentally Sensitive Areas (ESA) fencing, or San Bernardino kangaroo rat exclusionary fencing in occupied areas, to be clearly visible to all personnel, followed by conducting all required preconstruction surveys and documentation of sensitive environmental resources.

19) All construction-related activities by contractors, subcontractors or their agents, and equipment (including vegetation removal, grading, equipment lay-down and storage, and contractor parking) will be restricted to the designated limits of construction. Construction staging and equipment storage will be located within the limits of the designated construction and staging areas outside of any suitable or potentially suitable habitat areas to the maximum extent practicable. All movement of contractors, subcontractors or their agents, and equipment will be restricted to the limits of construction and staging areas.

20) Before any ground disturbance begins and under the supervision of the approved biological monitor, the contractor will delineate and mark all limits of construction to be clearly visible to all personnel. All construction-related activities by contractors, subcontractors or their agents, and equipment (including vegetation removal, grading, equipment lay-down and storage, and contractor parking) will be restricted to the designated limits of construction. Construction staging and equipment storage will be located within the limits of the designated construction and staging areas outside of any potential habitat areas to the maximum extent practicable. All movement of contractors,

subcontractors or their agents, and equipment will be restricted to the limits of construction and staging areas.

21) Prior to clearing or construction and under the supervision of the approved biological monitor, highly visible barriers (such as orange construction fencing) will be installed around scalebroom scrub communities (*Lepidospartum squamatum* Alliance, Sawyer et al. 2009) adjacent to the project footprint to designate ESAs to be protected from construction impacts. No grading or fill activity of any type will occur within these ESAs. In addition, heavy equipment, including motor vehicles, will not drive or operate within the ESAs. All construction equipment will be operated in a manner to prevent accidental damage to nearby protected areas. No structure of any kind, or incidental storage of equipment or supplies, will occur within these protected zones.

    a. In addition, black mesh silt-fencing will be installed at the edge of the grading/temporary work limits to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities. The biological monitor will inspect the fencing at the close of each business day throughout the construction phase. The contractor will implement any required repairs to the fencing within 24 hours of receiving notification of the required repair.

    b. Should any work occur beyond the fenced or demarcated limits of impact, the biological monitor will request that the resident engineer halt work until the problem has been remedied. The biological monitor will notify the PSFWO of the problem within 24 hours of its occurrence.

22) Following the installation of ESA and exclusionary fencing, vegetation clearing and grubbing will commence under the supervision of the approved biological monitor(s). Vegetation will be removed outside of the nesting bird season (i.e., February 1 – September 1) to the extent feasible; if this is not possible, then nesting bird surveys will be conducted within 72 hours of proposed vegetation removal. If nests are found, then the biological monitor will establish a buffer of up to 200 feet for song birds and 500 feet for raptors and listed species. If necessary, the buffer may be reduced depending on the

species and adjacent work activities as determined by the monitoring biologist in coordination with California Department of Fish and Wildlife (CDFW). Once the nest has fledged, the buffer will be removed.

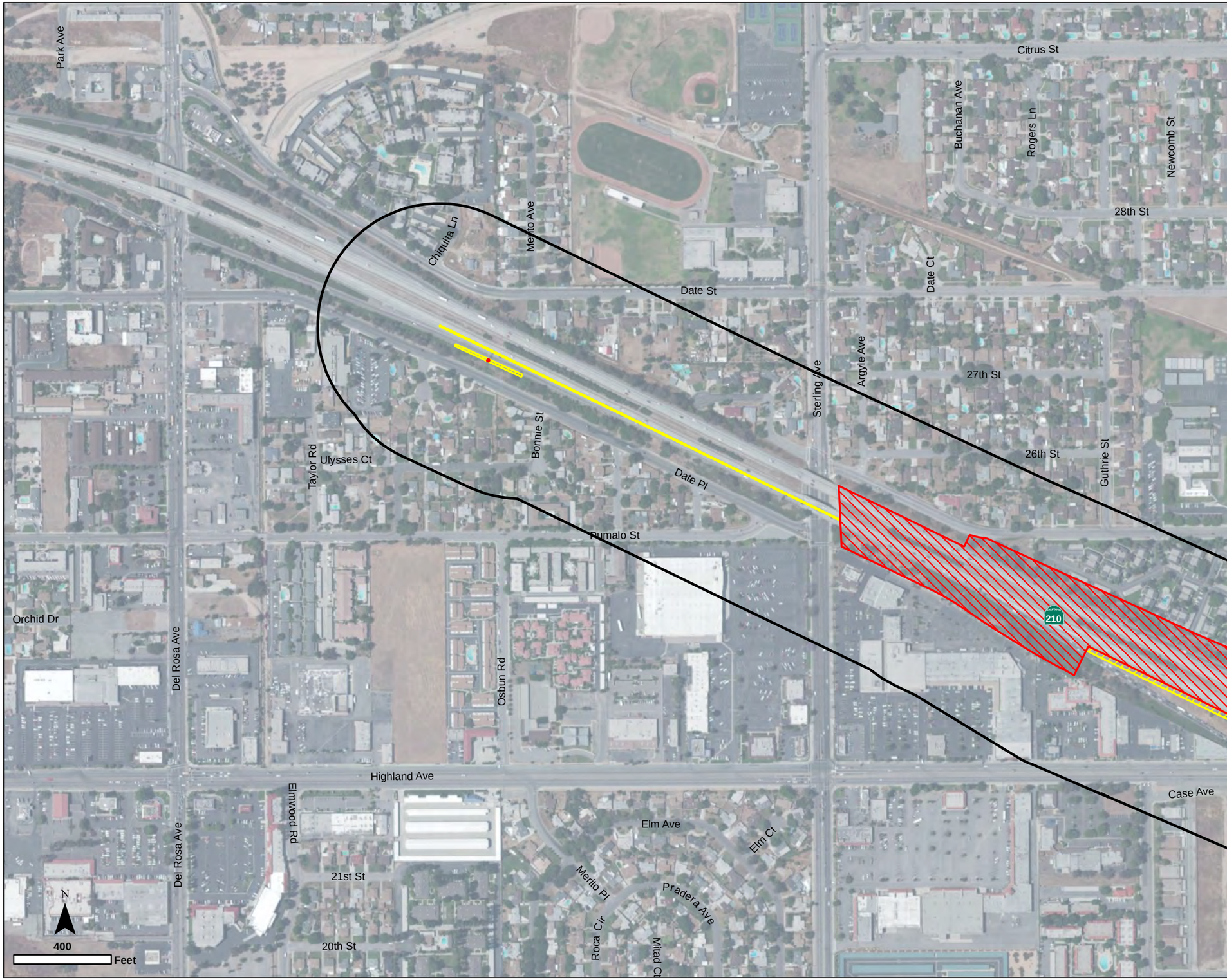
23) Construction activities will include site grading, establishment and utilization of staging areas for equipment and materials, establishment and grading of access and haul roads within the identified Project footprint, identification and utilization of borrow and stock pile locations, temporary water diversions (see Measures 25 and 27), scour protection, bank stabilization, demolition, bridge column drilling/excavation, column construction, construction of bridge false work, construction of bridge expansions, construction of additional lanes and appurtenances, landscaping, and demobilization. Major construction activities are not anticipated to occur during the night. Should night work be required on bridges or other areas where lighting could enter sensitive habitat, then shielded lighting will be utilized to avoid impacts to listed species and habitat (see Measure 26). Typical construction equipment to be used will include, but is not limited to, cranes, cement trucks, drill rigs, excavators, graders, loaders, backhoes, support trucks, and similar heavy equipment.

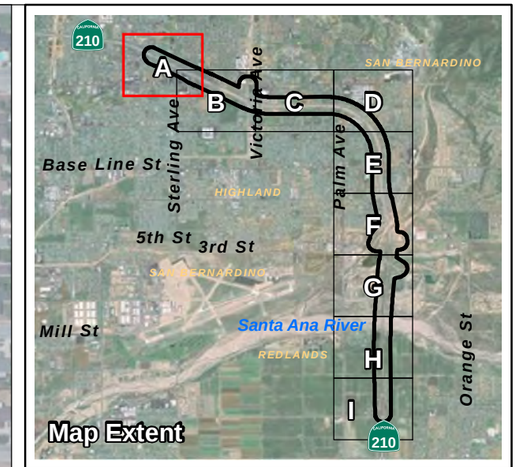
24) Post-construction activities will include standard Caltrans roadside vegetation maintenance, as well as bridge structural inspections every two years. Bridge inspections are not anticipated to require any access with heavy equipment and are not anticipated to require any significant additional effort compared to current inspection protocol.

25) The Project will require a Storm Water Pollution Prevention Plan (SWPPP) to manage runoff during construction and will employ BMPs in order to control erosion, sedimentation, and runoff from construction areas. Silt fencing and fiber rolls (or similar materials) will be used to control and contain runoff. Temporary water diversions around bridge piers will most likely be required within the Santa Ana River and City Creek during the wet season. This may be done by using inflatable dams and/or berms (or similar methods), which will funnel flow into a pipe that goes under the work area and is discharged downstream outside of the work area. Temporary flow dissipaters and erosion controls (such as temporary rip rap, soil berms, or similar methods) will be utilized at the outfall if necessary to avoid erosion from increased water velocity. The outfall will be monitored to ensure erosion is minimized. Excess site materials, debris, and vegetation will be removed from the site and properly disposed of according to all applicable regulations. Temporary impact areas will be regraded to original grade, as applicable, and revegetated.

26) Construction duration is anticipated to be approximately 2 years. Construction is currently scheduled to begin in summer, 2017, and to end in approximately fall, 2019. No major night work is expected within areas occupied by listed species or within critical habitat. Typical night work that may occur includes lane closures and restriping. Two wet seasons of impacts are anticipated within occupied areas and critical habitat.

27) Temporary water diversions will most likely be required within the Santa Ana River and City Creek during the wet season (generally October to April). Temporary water diversions will be constructed to provide a dry work area around bridge piers. Diversions would be installed around several, but not all, piers for each bridge at any given time in order to maintain hydrological connectivity within the rivers and creeks. The Plunge Creek bridge spans Plunge Creek with no intermediate piers; however, temporary water diversion may be required for the installation of additional below-grade rock scour protection at the bridge abutments should the work be scheduled within the wet season.





Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3A
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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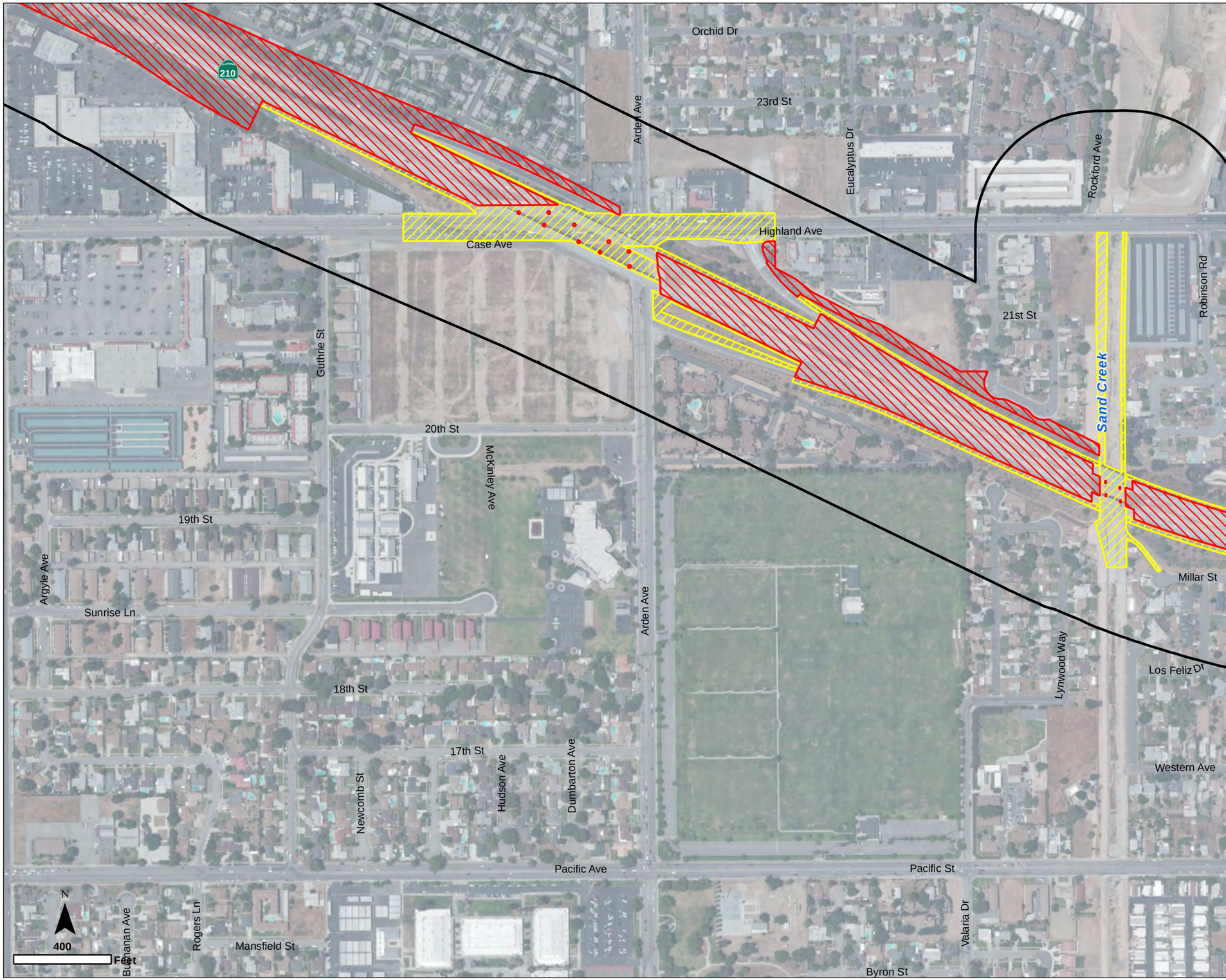

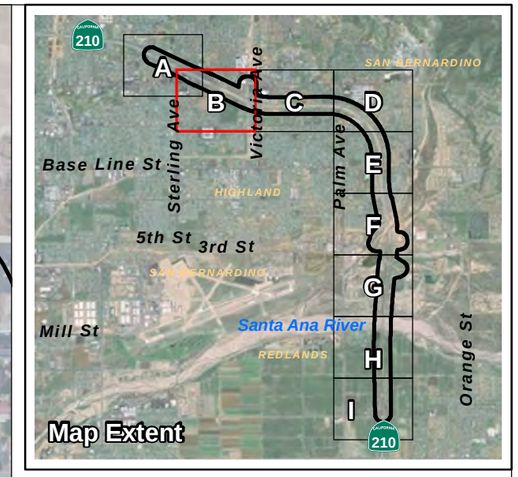

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3B
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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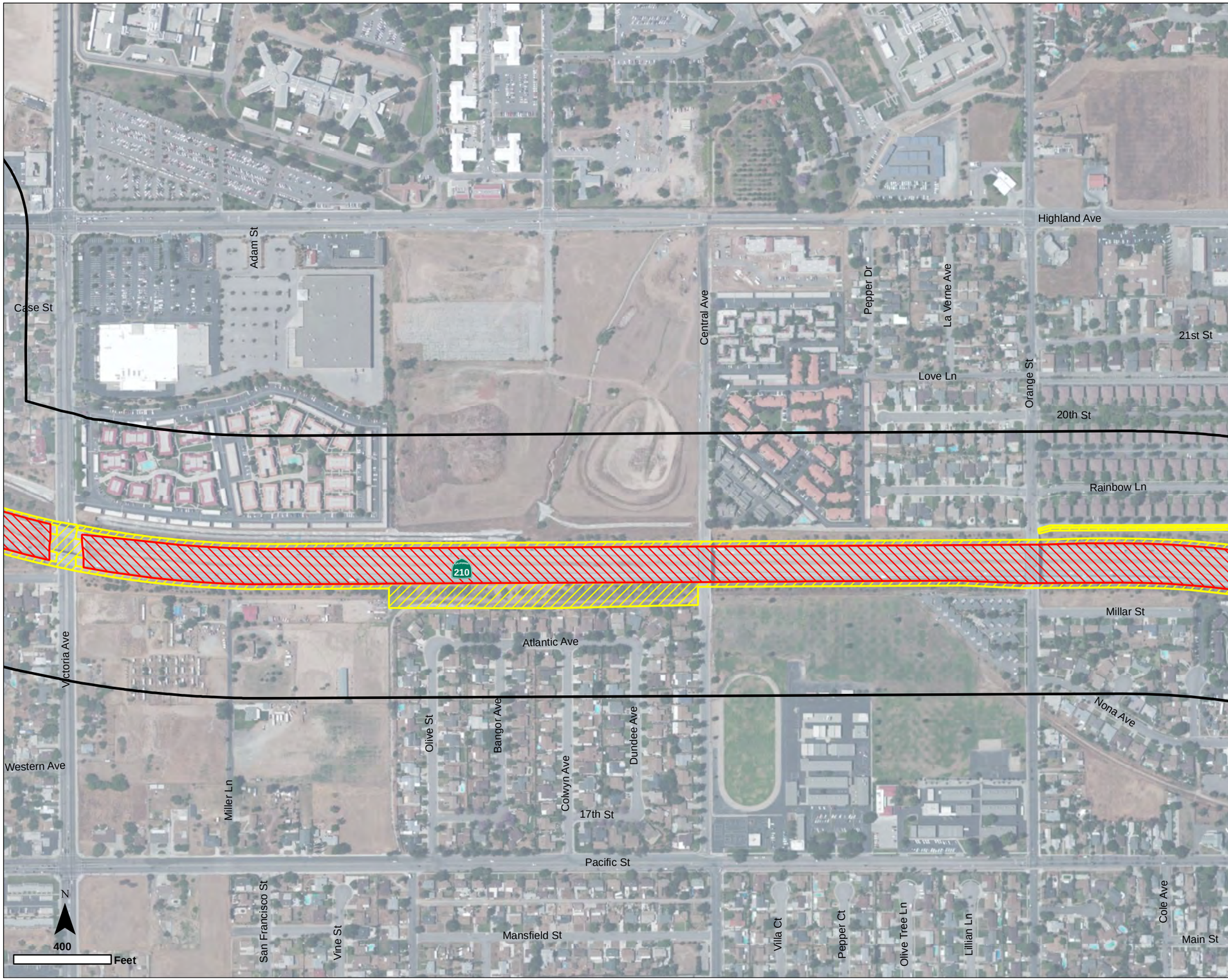

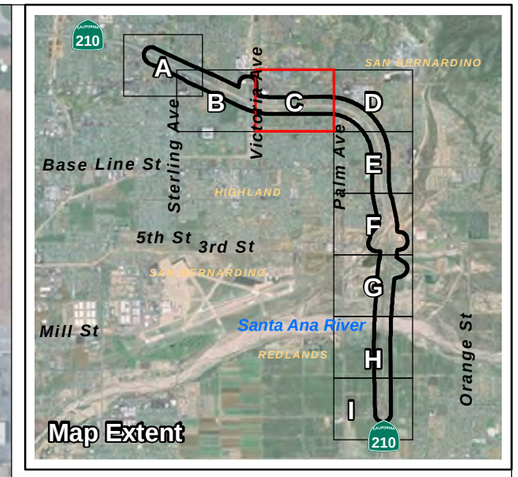

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3C
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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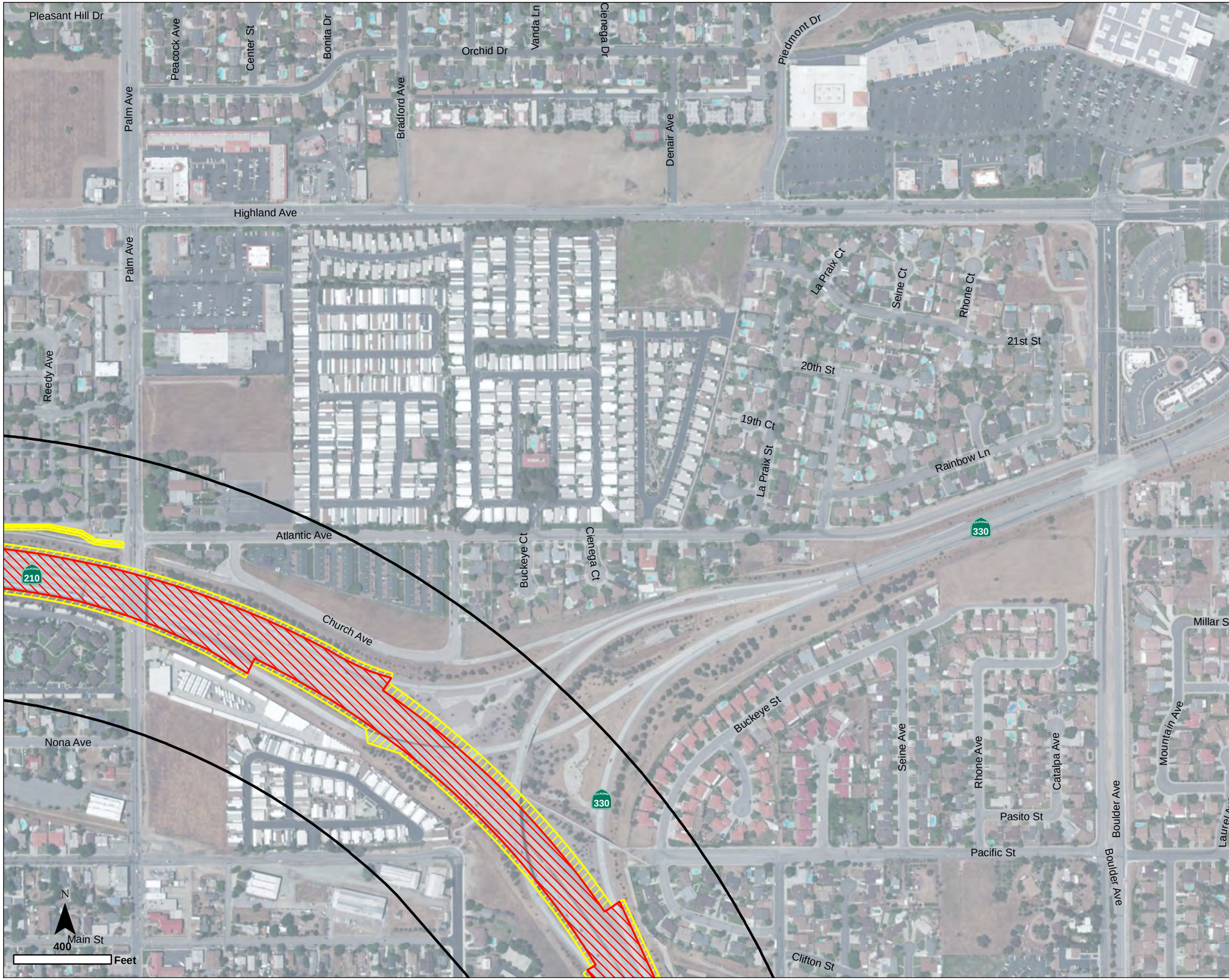

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3D
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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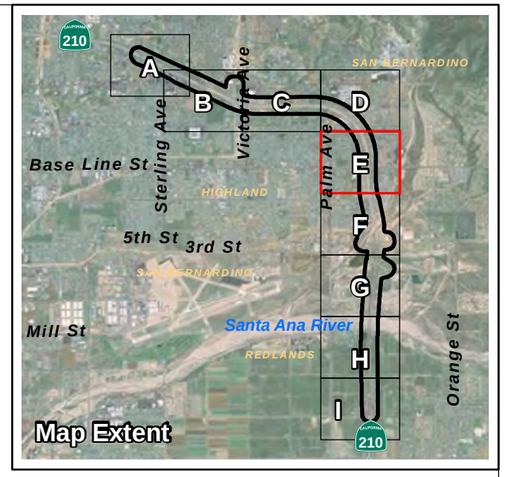

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3E
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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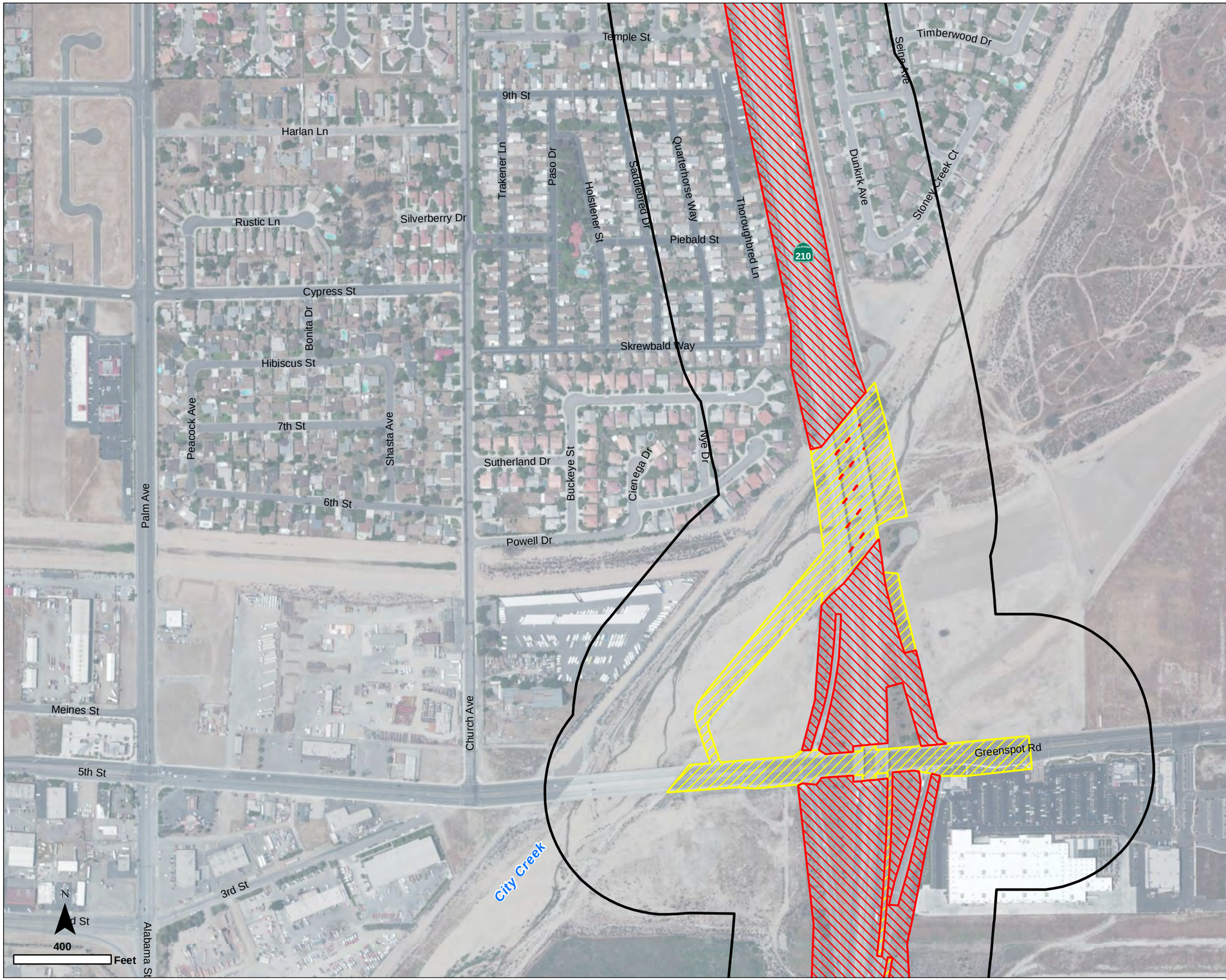

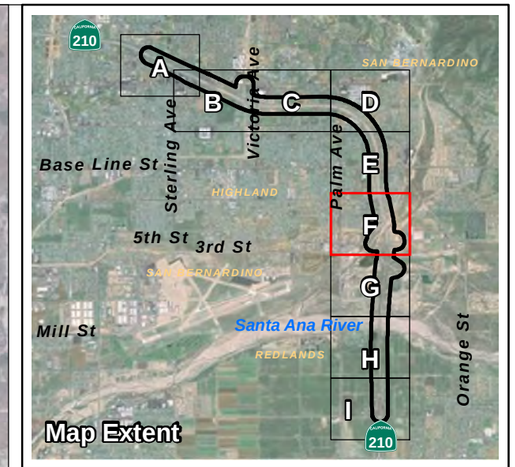

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3F
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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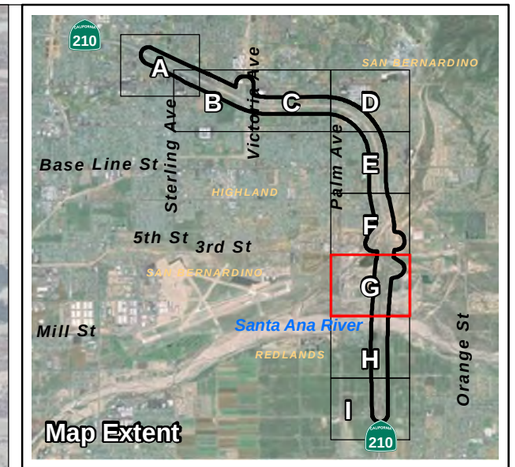

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3G
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

Caltrans

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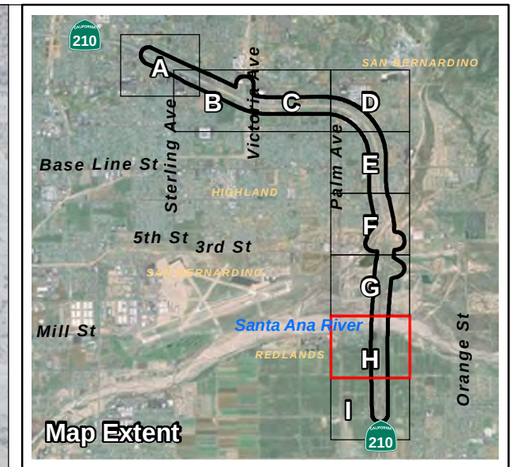

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3H
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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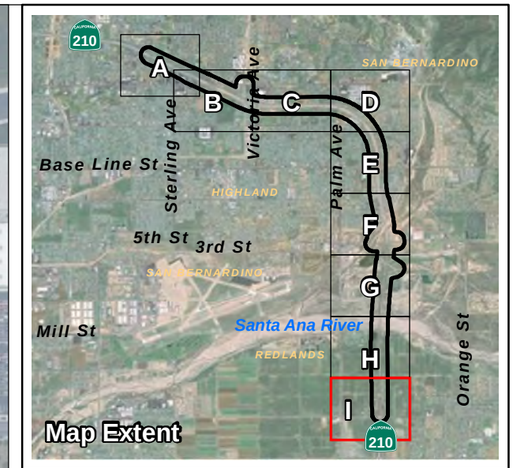

Biological Study Area

Impacts

Permanent

Temporary

FIGURE 3I
Proposed Project Improvements and Impact Areas

SR-210 Mixed Flow Lane Addition Project

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Chapter 2. Study Methods

2.1 Regulatory Requirements

2.1.1 Applicable Federal Regulations

Federal Endangered Species Act. The federal Endangered Species Act of 1973 (FESA), as amended, 16 U.S.C. 1531 et seq., provides for listing of endangered and threatened species of plants and wildlife and designation of critical habitat for listed wildlife species. The FESA also prohibits "take" of endangered species, which includes any harm or harassment. Section 7 of the FESA requires that federal agencies consult the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) prior to project approval to ensure adequate protection of listed species that may be affected by the Project. Federal Section 7 consultation will be required for potential impacts to Santa Ana sucker (*Catostomus santaanae*) critical habitat, San Bernardino kangaroo rat (*Dipodomys merriami parvus*), San Bernardino kangaroo rat critical habitat, Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), and slender-horned spineflower (*Dodecahema leptoceras*).

National Environmental Policy Act (Public Law 91-190; 42 U.S.C. 4321 et seq.). The National Environmental Policy Act (NEPA) mandates federal agencies to consider and document environmental impacts of proposed actions and legislation. The NEPA also mandates preparation of comprehensive environmental impact statements where proposed action is "major" and significantly affects the quality of the human environment.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. Bird species covered by the MBTA are listed at 50 Code of Federal Regulations (CFR) 10.13. Migratory birds include commonly occurring as well as federally-listed endangered or threatened birds under the FESA. Migratory birds also includes any part, egg, or nest of such bird (50 CFR 10.12). The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or

offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Clean Water Act Section 404. Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged and/or fill material into Waters of the United States (U.S.). The term "Waters of the U.S." is defined in 33 CFR Part 328 and currently includes: (1) all navigable waters (including all waters subject to the ebb and flow of the tide); (2) all interstate waters and wetlands; (3) all impoundments of waters mentioned above; (4) all tributaries to waters mentioned above; (5) the territorial seas; and (6) all wetlands adjacent to waters mentioned above. The discharge of dredged or fill material (temporarily or permanently) into Waters of the U.S. (including wetlands) requires authorization from the ACOE pursuant to Section 404 of the CWA. A CWA Section 404 Nationwide Permit is expected to be required for this Project.

Clean Water Act Section 401. The Regional Water Quality Control Board (RWQCB) is responsible for the administration of Section 401 of the CWA. Typically, the areas subject to RWQCB jurisdiction are equal to those of the ACOE (i.e., Waters of the U.S., including any wetlands). A CWA Section 401 Water Quality Certification (WQC) from the RWQCB is expected to be required for this Project.

Executive Order 13112. Executive Order 13112 requires federal agencies to combat the introduction or spread of invasive species in the U.S. 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." Federal Highway Administration 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 the NEPA analysis for a project.

Executive Order 11990. This order establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The Project would not permanently impact wetlands.

2.1.2 Applicable State Regulations

California Environmental Quality Act. The California Environmental Quality Act (CEQA) provides guidelines for defining impacts. Appendix G of the guidelines contains questions that local jurisdictions should evaluate when analyzing a project's

potential impacts. CEQA provides these guidelines so that local jurisdictions are able to determine what constitutes an "adverse effect" and significant impact to a biological resource.

Porter-Cologne Water Quality Control Act (California Water Code Division 7). The RWQCB asserts authority over "Waters of the State" under waste discharge requirements pursuant to the California Water Code Porter-Cologne Water Quality Control Act (Porter-Cologne), which establishes a regulatory program to protect water quality and to protect beneficial uses of State waters. Porter-Cologne empowers the RWQCB to formulate and adopt, for all areas within the regions, a Water Quality Control Plan (Basin Plan) that designates beneficial uses and establishes such water quality objectives that in its judgment will ensure reasonable protection of beneficial uses. Each RWQCB establishes water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance flows. The Porter-Cologne provides flexibility for some change in water quality, provided that beneficial uses are not adversely affected. "Waters of the State" is defined by Porter-Cologne as any surface or subsurface water or groundwater, including saline waters, within the boundaries of the State. Porter-Cologne established nine RWQCBs. These boards oversee water quality on a day-to-day basis at the local and/or regional level, and they prepare and update water quality control plans. The RWQCB also issues Section 401 WQCs. Porter-Cologne also grants ultimate authority to the State Water Resources Control Board (SWRCB) over State water rights and water quality policy.

California Endangered Species Act (Sections 2050 to 2085). The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats by protecting "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation." It mandates that state agencies do not approve a project that would jeopardize the continued existence of these species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. There are no state agency consultation procedures under CESA. For projects that would affect species that are federally- and state-listed, compliance with the FESA satisfies CESA if CDFW determines that the federal incidental take authorization is consistent with CESA under Section 2080.1. For projects that would result in take of a species that is state-listed only, the project sponsor must apply for a take permit in accordance with Section 2081(b). A consistency determination from CDFW under Section 2080.1 of

the California Fish and Game Code (CFG Code) for take of endangered, threatened, or candidate species is required because the Project will result in the State definition of “take” to state-listed species. Authorization from CDFW under Section 2081 is not required as there are no species that are solely state-listed.

California Native Plant Protection Act (Sections 1900 to 1913). The California Native Plant Protection Act (NPPA) requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. It prohibits importation, take, and sale of such plants. The CESA defers to the California Native Plant Protection Act of 1977 (CFG Code Sections 1900–1913), which ensures that state-listed plant species are protected.

Lake and Streambed Alteration Program (Section 1600 et seq.). The Lake and Streambed Alteration Program requires notifying CDFW prior to any project activity that would substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. This includes stock ponds, irrigation canals, ephemeral streams, desert washes, and watercourses with a subsurface flow. It also includes riparian vegetation associated with any of these aquatic features. A Lake and Streambed Alteration Agreement is expected to be required for this Project as a result of temporary and permanent impacts to jurisdictional Waters of the State.

Bird Nesting Protections (Sections 3503 and 3503.5). The Bird Nesting Protections state that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. To avoid violation of the take provisions, it is generally required that project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle. Avoidance and minimization measures are proposed to avoid impacts to nesting birds.

Fully Protected Species (Sections 3511, 4700, 5050, 5515). Four sections of the CFG Code lists 37 fully protected species (CFG Code Sections 3511, 4700, 5050, and 5515) and prohibit take or possession "at any time" of the species listed, with few exceptions, and state that "no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to ‘take’ the species,” and that no previously-issued permits or licenses for take of the species" shall have any

force or effect" for authorizing take or possession. One fully protected species, white-tailed kite (*Elanus leucurus*), has habitat present within the Project area although this species was not observed during surveys.

2.2 Studies Required

Biological studies conducted for the Project included initial reconnaissance surveys, vegetation community/land use mapping, general biological resources surveys, focused botanical surveys, burrowing owl (*Athene cunicularia*) habitat assessment and protocol surveys, bat habitat suitability assessment, jurisdictional delineation, and protocol level surveys for least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher (*Polioptila californica californica*), San Bernardino kangaroo rat, Santa Ana River woollystar, and slender-horned spineflower.

2.2.1 Biological Study Area

The Biological Study Area (BSA) includes 100-foot and 500-foot buffers from the edge of proposed permanent disturbance limits determined from preliminary engineering design (Figures 4A-4I). Buffers were utilized beyond the maximum extent of potential permanent disturbance limits to identify and determine direct, indirect, and cumulative effects to sensitive biological resources within, and adjacent to, the BSA. Surveys for rare plants, small mammals, and bats were conducted in suitable habitat within the 100-foot buffer, except between the Santa Ana River and City Creek where these surveys extended out to 500 feet within suitable habitat in order to accommodate potential temporary construction areas and access. Vegetation communities/land use, general biological resources, coastal California gnatcatcher, least Bell's vireo, San Bernardino kangaroo rat, Santa Ana River woollystar, and slender-horned spineflower were conducted within the 500-foot buffer within suitable habitat. The BSA was surveyed on foot where access was available, and where access was not available (i.e., no permission obtained), areas were observed from accessible property boundaries with the aid of binoculars and high-resolution aerial maps (1:200 scale).

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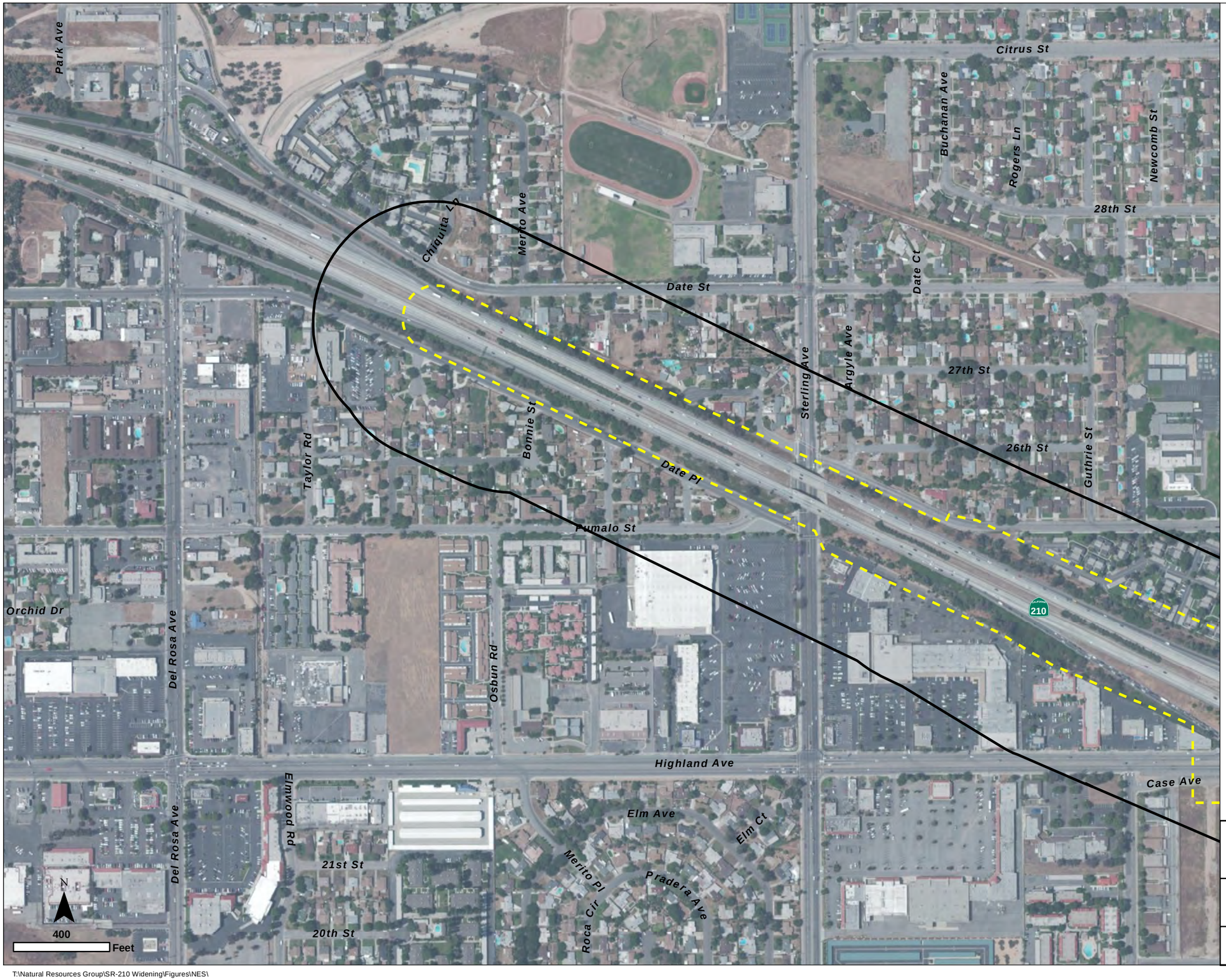

Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

**Buffers extended or reduced in some areas depending on resources and/or access/design.*

FIGURE 4A

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

*Buffers extended or reduced in some areas depending on resources and/or access/design.

FIGURE 4B

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

*Buffers extended or reduced in some areas depending on resources and/or access/design.

FIGURE 4C

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

*Buffers extended or reduced in some areas depending on resources and/or access/design.

FIGURE 4D

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

*Buffers extended or reduced in some areas depending on resources and/or access/design.

FIGURE 4E

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

*Buffers extended or reduced in some areas depending on resources and/or access/design.

FIGURE 4F

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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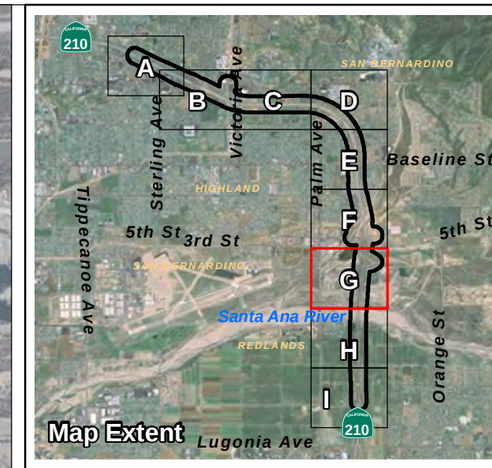

Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

**Buffers extended or reduced in some areas depending on resources and/or access/design.*

FIGURE 4G

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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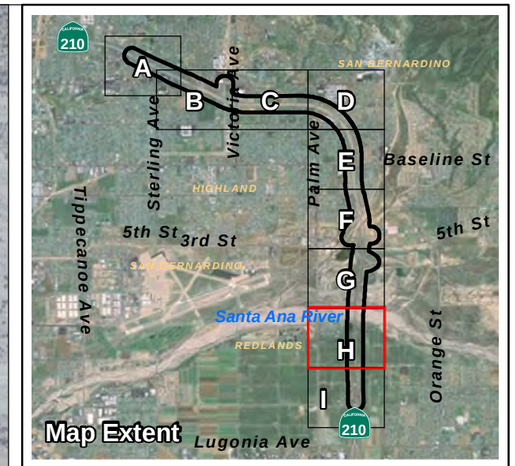

Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

**Buffers extended or reduced in some areas depending on resources and/or access/design.*

FIGURE 4H

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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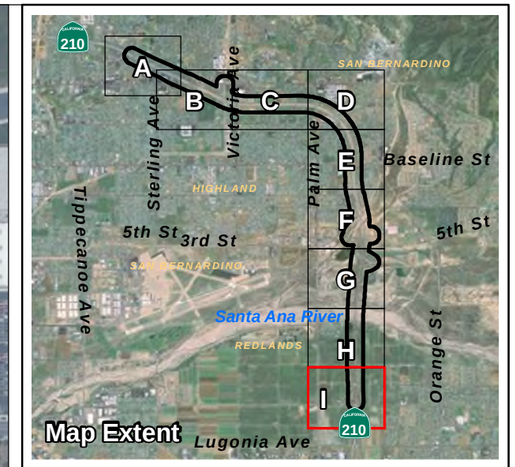

Jurisdictional Delineation Study Area (100-ft Buffer)*

Biological Study Area (500-ft Buffer)*

**Buffers extended or reduced in some areas depending on resources and/or access/design.*

FIGURE 4I

Biological Study Area

SR-210 Mixed Flow Lane Addition Project

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2.2.2 Literature and Database Review

Prior to conducting field surveys, literature and databases relevant to the BSA were reviewed. Information reviewed included:

- California Natural Diversity Database (CNDDB; CNDDB 2012).
- California Native Plant Society (CNPS) On-Line Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2012).
- Unpublished USFWS, Carlsbad Office, GIS data for federally-listed species within the Project vicinity.
- USFWS Carlsbad Field Office List of Proposed, Threatened, and Endangered Species, and Critical Habitats for the SR-210 Mixed Flow Lane Addition Project, 08ECAR00-2015-SLI-0598 (USFWS 2015).

Database queries were conducted for the USGS 7.5-Minute topographic quadrangles containing the BSA, plus the surrounding quadrangles. Quadrangles queried included Redlands, Harrison Mountain, San Bernardino North, San Bernardino South, Riverside East, Riverside West, Sunnymead, El Casco, and Yucaipa.

2.2.3 Biological Resource Surveys and Habitat Assessment

Surveys of the BSA were performed to assess biological resources and determine the potential for occurrence of common and special status species, their habitats, and aquatic resources. Reconnaissance and pedestrian-based habitat assessment surveys of the BSA were completed to assess general and dominant vegetation types, plant community sizes, habitat types, and species present. Vegetation classifications of plant communities were derived from the criteria and definitions of Holland (1986) and Sawyer et al. (2009). Plants were identified to the lowest taxonomic level sufficient to determine whether the plant species observed was non-native, native, or special status. Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded according to Baldwin et al. (2012).

The reconnaissance-level survey and vegetation mapping was conducted on May 1, 2, and 3, 2012 and October 3, 2013 by biologists Carol Thompson and Jeff Crain (see Table 1, Section 2.3). Vegetation communities/land use was mapped on aerial photographs at a 1:200 foot scale. Habitat areas that were considered too small to map

separately were included in nearby habitat types determined to be the most appropriate based on species composition.

Wildlife observations were documented within the BSA during habitat assessments. The presence of a wildlife species was determined through direct observation or wildlife sign (e.g., tracks, burrows, nests, scat, or vocalization). All plant and wildlife species observed during field surveys were noted and are included in Appendix A.

The BSA was assessed for its potential to support special status species based on reported habitat preferences and past occurrences of species within the region (CNDDB 2012; CNPS 2012; Baldwin et al. 2012; Holland 1986; Sawyer et al. 2009; USFWS 2015). The following definitions for the potential for occurrence were utilized based on Caltrans Standard Environmental Reference (Caltrans 2013):

- Absent: No habitat occurs within the BSA and no further surveys are necessary.
- Habitat Present: Habitat is present within the BSA.
- Present: Species or species sign were observed within the BSA.
- Critical Habitat: The BSA is within a designated critical habitat unit.

2.2.4 Focused Botanical Surveys

Focused botanical surveys within the BSA were conducted by Jeff Crain (URS Senior Botanist) and Carol Thompson on May 10, 15, and 23, 2012 and June 21, 2012 (see Table 1, Section 2.3). Focused survey methods were derived from the standardized guidelines issued by USFWS (USFWS 2000a), CDFW (CDFG 2000 & 2009), and CNPS (CNPS 2001). Surveys were completed by walking parallel belt transects spaced at approximately 50-foot intervals throughout suitable habitat within the BSA. The distance between transects was adjusted when necessary to ensure adequate coverage of the BSA and to account for ground surface visibility, terrain, vegetation density, and access. In certain cases, surveys were extended beyond the BSA boundaries to ensure total documentation of special status plant species (see Figures 7A-7I, Section 4.2). Surveys were targeted within unique portions of the BSA where microhabitats had an increased potential to support special status species. Determinations for whether suitable habitat was present for special status plants were based on each species natural life history requirements, which included hydrology, existing habitat, elevation range, soils, current land uses, and/or disturbances.

The flowering season for native plant species varies and is dependent on the frequency, duration, and seasonal timing of rainfall events, moisture availability, and soil and air temperatures. The potential for detection of plant species is variable from month to month and year to year. Therefore, prior to conducting the focused botanical surveys, known reference populations for special status plant species potentially occurring within the BSA were evaluated to verify that the surveys coincided with the local blooming period of the species being assessed, which ensured that they were readily identifiable at the time of the survey and to understand local variations in flower phenology prior to surveys (CDFG 2009). Reference populations of Parry's spineflower (*Chorizanthe parryi* var. *parryi*) and slender-horned spineflower within three miles of the BSA were visited. Parry's spineflower was observed blooming at the time of surveys. Slender-horned spineflower was not observed in the known reference populations during 2012.

Plant nomenclature follows that of Baldwin et al. (2012). All plant species observed during the surveys were noted and are listed in Appendix A.

2.2.5 Protocol Least Bell's Vireo Surveys

Focused protocol level surveys for least Bell's vireo were conducted by Carol Thompson (Permit 207873-0), Jeff Crain (supervised), and Greg Hoisington (supervised) between May 10 and July 27, 2012 (see Table 1, Section 2.3). Surveys were conducted pursuant to USFWS Permit TE-207873-0 (expires May 13, 2013) and were in accordance with the USFWS *Least Bell's Vireo Survey Guidelines* (USFWS 2001). Pedestrian surveys were conducted throughout suitable riparian habitat located within the BSA and included mule fat thicket, arroyo willow thicket, and disturbed arroyo willow thicket, as well as areas of pooled water runoff associated with Plunge Creek. Surveys did not exceed 5 acres per survey. Detailed survey methodology is provided in the *Least Bell's Vireo Report* in Appendix B.

2.2.6 Protocol Coastal California Gnatcatcher Surveys

Focused protocol level surveys for coastal California gnatcatcher were conducted by Carol Thompson (Permit 207873-0), Jeff Crain (supervised), and Greg Hoisington (supervised) between May 21 and June 28, 2012 (see Table 1, Section 2.3). Surveys were conducted pursuant to USFWS Permit TE-207873-0 (expires May 13, 2013) and were in accordance with the *Coastal California Gnatcatcher* (Polioptila californica californica) *Presence/Absence Survey Guidelines* (USFWS 1997). The surveys were conducted following the coastal California gnatcatcher survey guidelines for the

breeding season survey period (six site visits at least one week apart). Surveys were targeted within portions of the BSA where suitable coastal California gnatcatcher habitat was present. The survey area was associated with Plunge Creek and the Santa Ana River where they intersect SR-210 and included scalebroom scrub and California buckwheat scrub vegetation communities. A total of 64 acres were surveyed per day with approximately 15 acres per hour surveyed. Transects were walked throughout the BSA while coastal California gnatcatcher vocalizations were played approximately every 30 seconds. Detailed survey methodology is provided in the *Coastal California Gnatcatcher Report* in Appendix C.

2.2.7 Protocol San Bernardino Kangaroo Rat Surveys

Small mammal live trapping was conducted within suitable habitat in the BSA from City Creek south to the Santa Ana River between October 15 and November 7, 2012 (see Table 1, Section 2.3) in order to determine the presence or absence of San Bernardino kangaroo rat and to obtain relative abundance data and to determine habitat quality. Trapping was conducted by Steve Montgomery (USFWS Permit TE745541-10, expires July 20, 2014 and CDFW Memorandum of Understanding [MOU]), Phil Brylski (Permit TE148555-1, expires February 9, 2016 and CDFW MOU), Carol Thompson (supervised), and Kyle Myrick (supervised). Trapping was conducted within areas of suitable habitat according to USFWS and CDFW protocols stated in permits held by the investigators. In certain cases, surveys were extended beyond the BSA boundaries to ensure total documentation of San Bernardino kangaroo rat (see Figures 7A-7I, Section 4.2). Fifteen survey areas totaling 225 acres were established (see Appendix D, Figure 2) and traps were set along transects (trap lines) located within representative habitats. One to three trap lines were set in each survey area; totaling 24 trap lines (see Appendix D, Figure 3). Sherman live-traps with doors modified to prevent tail damage were used throughout the survey. Traps were opened and baited with bird seed within one hour of sunset and checked beginning at sunrise, at which time captured wildlife were identified and released unharmed immediately at the point of capture.

A habitat quality analysis for San Bernardino kangaroo rat was conducted within the 15 survey areas as well. Habitat quality was based on habitat correlates from Root (2008a & 2008b) and McKernan (1997) and followed three general habitat quality categories: low, medium, and high. These categories reflected the expected relative abundances of San Bernardino kangaroo rat that would be projected to reside in each area during a particular time period. Detailed survey methodology for the small

mammal live trapping and habitat quality analysis are provided in the *San Bernardino Kangaroo Rat Report* in Appendix D.

2.2.8 Protocol Burrowing Owl Surveys

An initial burrowing owl habitat assessment was conducted by Carol Thompson and Jeff Crain on May 2 and 3, 2012 in all portions of the BSA having potentially suitable habitat (see Table 1, Section 2.3). Suitable habitat was identified by the presence of low vegetation cover, presence of potential burrows, perch sites, and/or burrowing owl sign such as scat, tracks, pellets, or feathers (CDFW 2012). Parcels with no suitable habitat, including fully developed parcels, active agricultural parcels, highly disturbed parcels, parcels with dense, tall vegetation, and parcels directly adjacent to SR-210 were deemed unsuitable and excluded from further assessment. Many parcels adjacent to SR-210 contain a combination of ornamental trees and ruderal, non-native vegetation. The majority of the parcels are regularly maintained and are highly disturbed by vehicles, maintenance crews, and associated noise, emissions, vibration, and dust. These parcels are all considered unsuitable habitat. No burrowing owl, sign, or useable burrows were observed within parcels directly adjacent to SR-210.

Parcels that were initially identified as potentially suitable, but upon further investigation did not contain suitable habitat as defined by the protocol (i.e., low growing vegetation, suitable burrows), were systematically excluded from focused burrowing owl surveys.

Carol Thompson, Jeff Crain, and Greg Hoisington conducted four protocol surveys within the BSA from May 8 to July 12, 2012 (see Table 1, Section 2.3). Surveys were conducted in accordance with the CDFW 2012 *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Burrowing owl surveys began as soon as the Project was initiated (May 2, 2012).

Burrowing owl surveys were conducted within previously identified areas during the habitat assessment. Pedestrian survey transects were spaced at approximately 10 feet to allow for adequate visual coverage of the survey area. Where necessary, transect spacing was reduced or expanded up to approximately 66 feet to account for vegetation density, land cover, and visibility.

All potential burrows were determined by burrow size, the presence of burrowing owls, pellets, prey remains, or whitewash. The location of all potential burrows were recorded and mapped as polygons on aerial imagery rather than Global Positioning

System (GPS) point locations, due to the high number and density of burrows present (Appendix E, Figure 2). No other burrows were located outside of the mapped polygons.

The focused burrow surveys were conducted when weather conditions were conducive to observing active burrowing owls or their sign. The surveys were not performed during rain or within five days of precipitation, high winds (i.e., > 20 miles per hour), dense fog, or temperatures over 90 degree Fahrenheit (°F). Surveys were conducted between morning twilight and 10:00 AM to provide the highest detection probabilities. Detailed survey methodology and weather conditions are provided in the *Burrowing Owl Report* in Appendix E.

2.2.9 Bat Habitat Suitability Assesment Surveys

A bat habitat suitability assessment was conducted by Carol Thompson and Greg Hoisington on September 26, October 10 and 12, 2012 to ascertain the potential for bat foraging and roosting activity within the BSA (see Table 1, Section 2.3). Caltrans biologists Kyle Myrick and Adam Compton assisted on September 26, 2012. The habitat assessment was conducted at each bridge within the BSA having suitable habitat that could potentially be utilized by roosting day and/or night bats. Suitable habitat was identified by the presence of crevices and openings where bats could roost in bridges along SR-210 within the BSA. The assessment included a search for bats or their sign (e.g., guano mounds, wall staining) through inspection of crevices and openings and ground cover below these areas. Detailed survey methodology is provided in the *Bat Habitat Suitability Report* in Appendix F.

2.2.10 Jurisdictional Delineation

Jurisdictional delineation surveys for aquatic resources were conducted by Greg Hoisington on June 28, August 1 and 22, and October 11 and 12, 2012 and by Jeff Crain on October 3, 2013 (see Table 1, Section 2.3). Areas of potential jurisdiction were evaluated according to ACOE and CDFW criteria. The BSA generally consisted of a 100-foot buffer from the outside edge of proposed permanent structures (Figures 4A-4I). The buffer was extended out to 500 feet within some areas to accommodate potential temporary construction access impacts. These areas included Sand Creek and also City Creek south to the southern bank of the Santa Ana River (Appendix G, Figure 5).

Resource databases, aerial photos, historical aerial photos, USGS topographic maps, and other available and relevant data were reviewed prior to conducting fieldwork to determine watershed characteristics and the locations/types of aquatic resources that may be present within the BSA. Those portions of the BSA that were suspected of containing aquatic resources (e.g., Waters of the U.S., Waters of the State, and sensitive riparian areas) were then assessed in the field to determine the presence of any jurisdictional wetlands or waters. Determination of aquatic resources included the presence of definable channels and/or hydrophytic vegetation, riparian habitat, and hydrology within and adjacent to the BSA. Detailed survey methodology is provided in the *Jurisdictional Determination Report* in Appendix G.

2.3 Personnel and Survey Dates

Surveys for the Project included initial reconnaissance, vegetation community/land use mapping, general biological resources surveys, focused botanical surveys, burrowing owl habitat assessment and protocol surveys, bat habitat suitability assessment, jurisdictional delineation, and protocol level surveys for least Bell's vireo, coastal California gnatcatcher, and San Bernardino kangaroo rat. Surveys conducted in 2012 were based on preliminary design plans; as such, additional surveys were conducted in 2013 in areas where the design plans were updated. Table 1 details the survey dates and personnel for the above-listed surveys.

Table 1. Personnel and Survey Dates

Survey Type	Dates	Personnel
Biological reconnaissance survey, vegetation mapping	May 1, 2, 3, 2012. October 3, 2013.	Carol Thompson, Jeff Crain
Focused botanical surveys	May 10, 15, 23; June 21, 2012.	Jeff Crain, Carol Thompson
Protocol least Bell's vireo surveys	May 10, 21, 23, 29, 31; June 6, 14, 21, 28; July 5, 18, 27, 2012.	Carol Thompson, Jeff Crain, Greg Hoisington
Protocol coastal California gnatcatcher surveys	May 21, 23, 29, 31; June 6, 14, 21, 28, 2012.	Carol Thompson, Jeff Crain, Greg Hoisington
San Bernardino kangaroo rat trapping and habitat quality analysis	October 15, 16; November 1, 2, 3, 4, 5, 6, 7, 2012.	Steve Montgomery, Phil Brylski, Carol Thompson, Kyle Myrick
Burrowing owl habitat suitability and focused protocol surveys	May 2, 3, 8, 30; June 21; July 12, 2012.	Carol Thompson, Jeff Crain, Greg Hoisington
Bat habitat suitability assessment	September 26; October 10, 12, 2012.	Carol Thompson, Greg Hoisington, Kyle Myrick, Adam Compton
Jurisdictional delineation	June 28; August 1, 22; October 11, 12, 2012. October 3, 2013.	Greg Hoisington, Jeff Crain

2.4 Agency Coordination and Professional Contacts

On July 19, 2012, Caltrans obtained from USFWS a list of proposed, threatened, and endangered species and critical habitat within and adjacent to the BSA (USFWS 2012). An updated list was obtained on July 28, 2015 (USFWS 2015). The list is provided in Appendix H.

A meeting was held at the Caltrans District 8 office on August 22, 2012 to discuss the Project. Kyle Myrick (Caltrans), Scott Quinnell (Caltrans), John Taylor (USFWS), Juan Torres (CDFW), Kim Freeburn (CDFW), Greg Hoisington (Consultant Biologist), Brian Calvert (Consultant Planner), and Peter Carlson (VCS Environmental, representing SANBAG) were present. Topics discussed included ongoing protocol surveys and preliminary survey results.

2.5 Limitations That May Influence Results

All surveys were conducted during the appropriate time of year and followed standard protocols. As such, no limiting factors were encountered, with the exception of low rainfall, which may have influenced the results of the 2012 focused botanical survey, and a delayed start to the burrowing owl survey. Rainfall during the 2011-2012 wet season was below average (5.5 inches, or 41% of average) for the Project area (NWS 2012). Known populations of slender-horned spineflower were monitored prior to botanical surveys, but the species did not bloom in 2012, likely due to the low rainfall totals. Thus, it is possible that some special status plant species, including slender-horned spineflower, that have suitable habitat within the BSA were not readily visible and were not detected during surveys, but are in fact present. The dry season may have also potentially limited the compilation of a comprehensive floral list.

In addition, one burrowing owl survey was not conducted in April as is required by the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) because the Project was not initiated at that time. The first survey commenced on May 2, 2012. However, because no burrowing owls or sign were detected during the other four focused surveys, it is unlikely that the slightly delayed survey influenced the final survey results.

No other limitations were encountered that would influence the results of this Natural Environmental Study (NES).

Current conditions within the BSA have not significantly changed since surveys were conducted in 2012 and 2013. In addition, the populations of listed species that occur within the BSA are well known and documented. As such, the results presented in this NES accurately represent the current conditions that occur within the BSA, including sensitive vegetation communities and listed plant and wildlife species.

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Chapter 3. Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 Study Area

The BSA is the area that was assessed for biological resources and includes the Project permanent disturbance footprint plus a buffer. The BSA included 100-foot and 500-foot buffers from the edge of proposed permanent disturbance limits determined from preliminary engineering design (Figures 4A-4I). Buffers were used beyond the maximum extent of potential permanent effect to identify and determine the extent of direct, indirect, and cumulative effects to sensitive biological resources within, and adjacent to, the Project area.

The BSA extends approximately 8.2 linear miles along the SR-210 corridor from Highland Avenue to San Bernardino Avenue in the cities of Highland, Redlands, and San Bernardino (Figures 1 & 2). The BSA is composed primarily of developed and disturbed areas, and to a lesser extent, open areas associated with creeks and rivers. Land use within the BSA currently includes dense residential and commercial development, disturbed open areas, mining, agriculture, and public infrastructure. The BSA was historically composed mainly of agricultural areas (i.e., orchards) with very low density residential and commercial developments interspersed. Historical aerials from 1938 and 1959 show the area was comprised almost entirely of orchards; however, by 1969 roughly 75% of the orchards had been replaced with residential and commercial developments and associated public infrastructure. By 1980, all of the orchards had been replaced by dense development with the exception of a few orchards located to the south of the Santa Ana River, which still remain today. In the early 1990s, SR-210 was constructed from Highland Avenue to I-10. Since then, development in the area has continued to expand to the extent that very few open areas are present within the BSA that are outside of the creeks and rivers. These open areas consist of a few scattered undeveloped parcels that are completely surrounded by adjacent development. Photos of the BSA are provided in the *Photo Log* in Appendix I.

3.1.2 Physical Conditions

The BSA is located within the Redlands and Harrison Mountain USGS 7.5-Minute topographic quadrangles at an approximate elevation range between 1,180 and 1,260 feet. The topography within the BSA is relatively flat, with graded developed areas surrounding most of the alignment. The BSA gently slopes from northeast to southwest and occurs on alluvial fans and floodplains extending from the San Bernardino Mountains to the northeast. It bisects several creeks and rivers including Sand Creek, City Creek, Plunge Creek, and the Santa Ana River. These creeks and rivers are all within the Santa Ana River Watershed, which covers 2,800 square miles and drains through San Bernardino, Riverside, and Orange counties before emptying into the Pacific Ocean. Soils within the BSA are all generally sandy or gravelly soils associated with alluvial fan geology extending from the San Bernardino Mountains. All soils have high drainage capacity. Soil series identified within the BSA are listed in Table 2 (USDA-NRCS 2012).

Table 2. Soil Series Occurring within the BSA

Soil Series	Percent Slope
Quarries and Pits	None
Greenfield Sandy Loam	2 to 9
Hanford Coarse Sandy Loam	2 to 9
Hanford Sandy Loam	0 to 2
Psamments and Fluvents	None
Soboba Gravelly Loamy Sand	0 to 9
Soboba Stony Loamy Sand	2 to 9
Tujunga Loamy Sand	0 to 5
Tujunga Gravelly Loamy Sand	0 to 9

3.1.3 Biological Conditions in the Biological Study Area

3.1.3.1 Vegetation Communities

The majority of the BSA is developed and/or disturbed, with the exception of areas associated with City Creek, Plunge Creek, and the Santa Ana River, which contain open areas with native vegetation communities. Although these areas contain native vegetation communities, they are disturbed but have persisted despite the surrounding land use, which includes large scale mining and flood control activities. A total of 17

vegetation communities/land covers occur within the BSA (Table 3 & Figures 5A-5I) and are described below.

Table 3. Vegetation Communities/Land Covers within the BSA

Vegetation Community/Land Cover	Acres
Arroyo willow thicket	0.11
California buckwheat scrub	12.06
Mule fat thicket	1.14
Scalebroom scrub	68.09
Disturbed arroyo willow thicket	1.17
Disturbed California buckwheat scrub	19.68
Disturbed mule fat thicket	3.04
Disturbed scalebroom scrub	6.86
Agriculture	10.71
Developed	532.51
Disturbed	57.29
Eucalyptus grove	7.59
Open water	2.85
Ornamental	107.17
Ruderal	69.30
Unvegetated channel	2.70
Unvegetated wash	19.19
Total	**921.46**

ARROYO WILLOW THICKET/DISTURBED ARROYO WILLOW THICKET

Arroyo willow thicket is a riparian shrubland characterized by emergent trees dominated by arroyo willow (*Salix lasiolepis*) with an open to continuous canopy (Sawyer et al. 2009). Within the BSA, this habitat was dominated by open stands of arroyo willow and mule fat (*Baccharis salicifolia* ssp. *salicifolia*). Disturbance within this community varied throughout the BSA, with more disturbed areas being dominated by non-native species including castor bean (*Ricinus communis*) and Mexican fan palm (*Washingtonia robusta*).

CALIFORNIA BUCKWHEAT SCRUB/DISTURBED CALIFORNIA BUCKWHEAT SCRUB

California buckwheat scrub is a shrubland dominated by California buckwheat (*Eriogonum fasciculatum*) with a continuous to intermittent canopy cover and highly variable herbaceous understory (Sawyer et al. 2009). Within the BSA, this vegetation type was dominated by California buckwheat with other native shrubs filling in the canopy including California sagebrush (*Artemisia californica*) and deerweed (*Acmispon glaber*). Disturbance within the BSA varied for this vegetation type and was noted by the decreased canopy cover and understory dominated by non-native grasses.

MULE FAT THICKET/DISTURBED MULE FAT THICKET

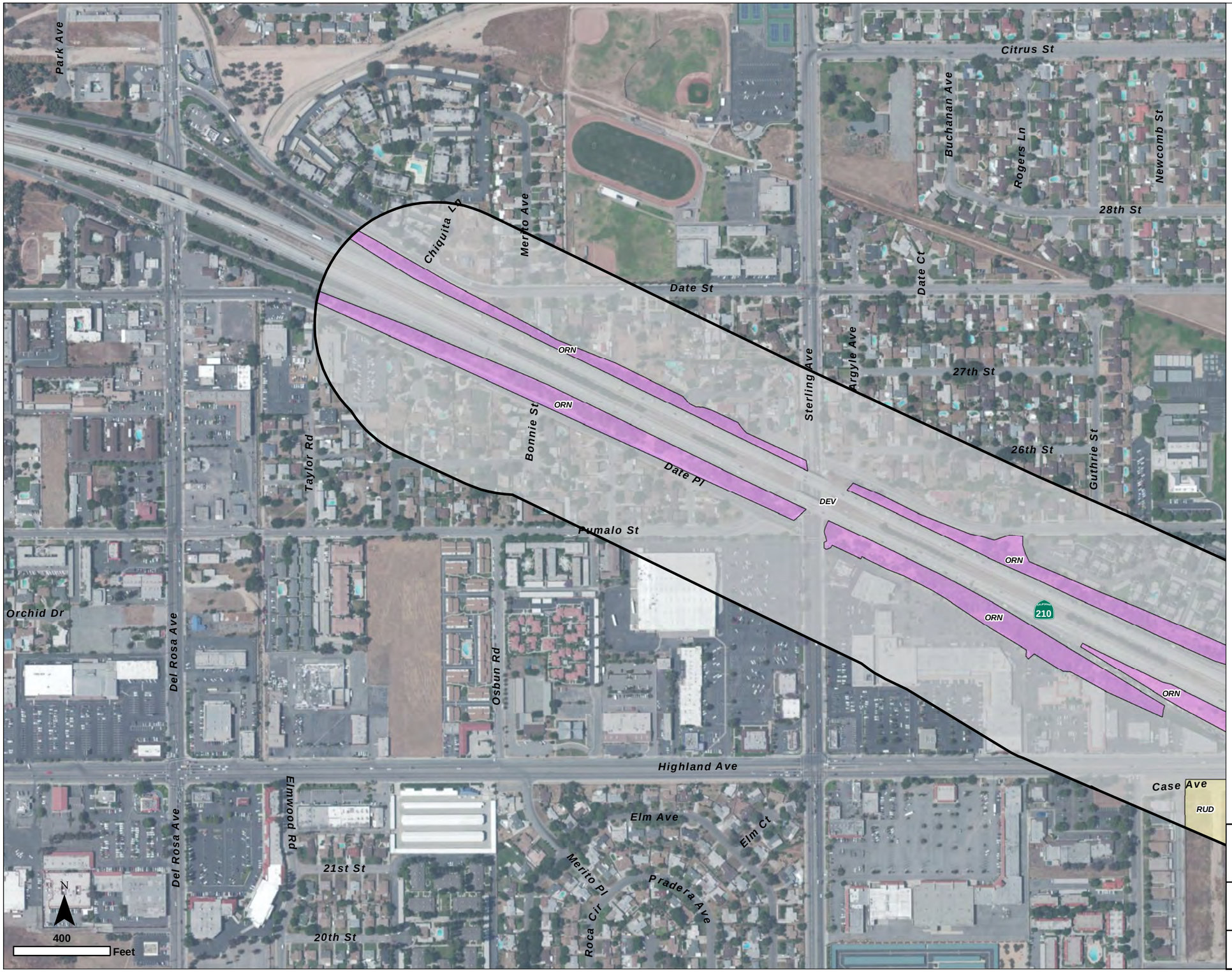
Mule fat thicket is a riparian/upland shrubland dominated by mule fat with a continuous canopy layer and sparse understory (Sawyer et al. 2009). Within the BSA, this vegetation type was dominated by continuous, nearly monotypic, stands of mule fat with occasional arroyo willow and sandbar willow (*Salix exigua*) saplings intermixed. Disturbance within the BSA was variable for this vegetation type and was noted by thinning mule fat canopy and the addition of invasive species including Mediterranean tamarisk (*Tamarix ramosissima*), castor bean, and Mexican fan palm.

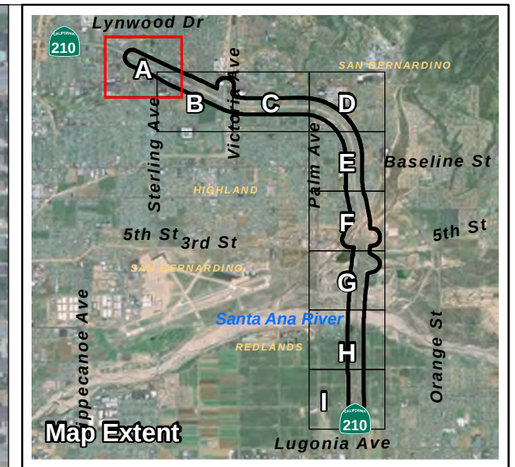
SCALEBROOM SCRUB/DISTURBED SCALEBROOM SCRUB

Scalebroom scrub is a shrubland dominated by scalebroom (*Lepidospartum squamatum*) with an open to continuous canopy and variable understory (Sawyer et al. 2009). It is most often associated with alluvial soils along benches within the flood zone of washes and rivers in arid zones. CDFW classifies this vegetation type, which is also referred to as Riversidean alluvial fan sage scrub, as a sensitive vegetation community. Within the BSA, this was the dominant vegetation type along the benches of the Santa Ana River, City Creek, and Plunge Creek. Associated species within the BSA included Our Lord's candle (*Heperoyucca whipplei*), yerba santa (*Eriodictyon trichocalyx*), and California buckwheat. As with the other vegetation types, disturbance was varied within the BSA and noted by the presence of a lower canopy cover and dominance of non-native grasses in the understory.

AGRICULTURE

Agriculture within the BSA consisted mostly of citrus orchards. These areas were regularly maintained and understory was minimal, consisting mostly of scattered, non-native weeds.





Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5A
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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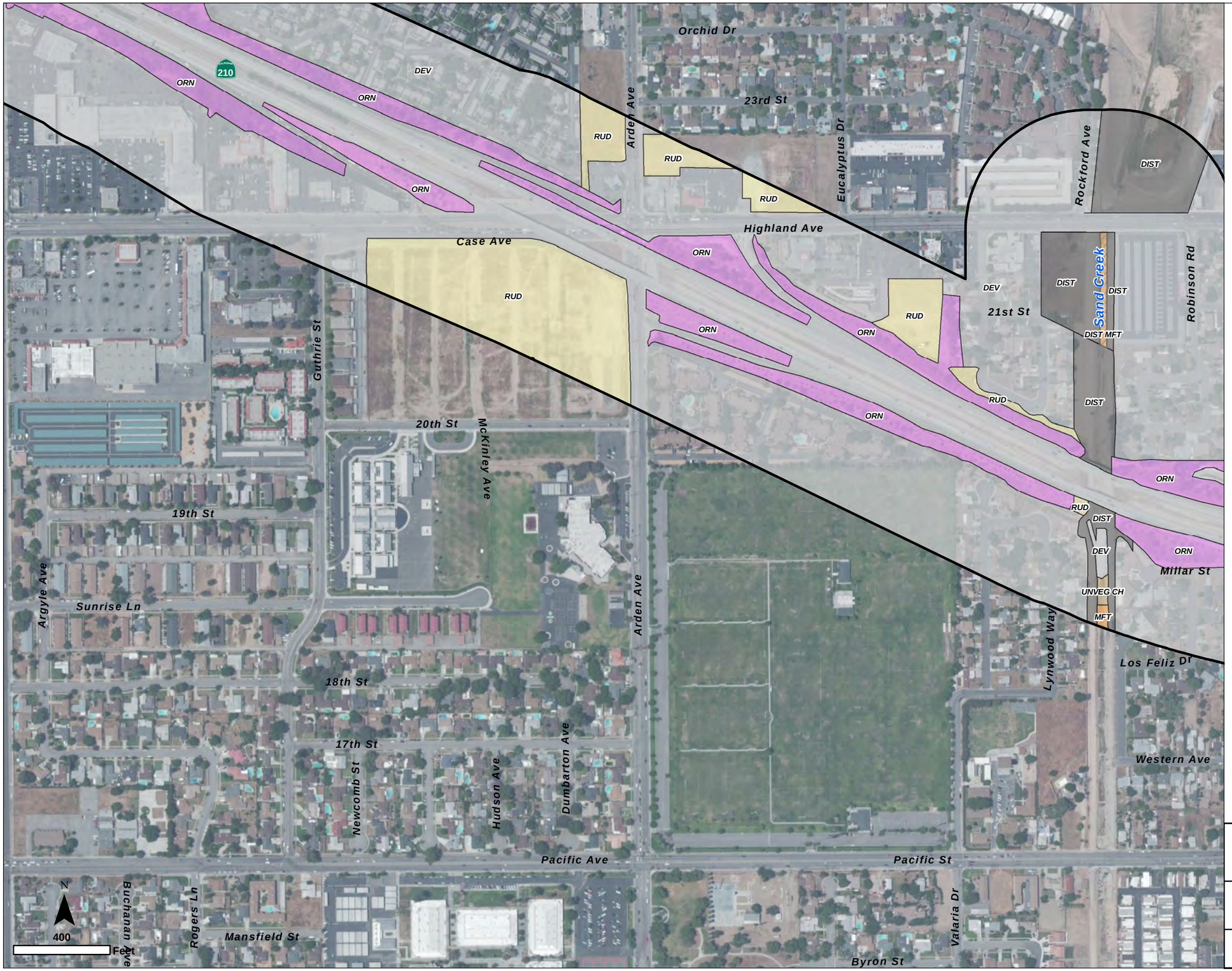

Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
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- DIST SBS - Disturbed Scalebroom Scrub
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- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5B
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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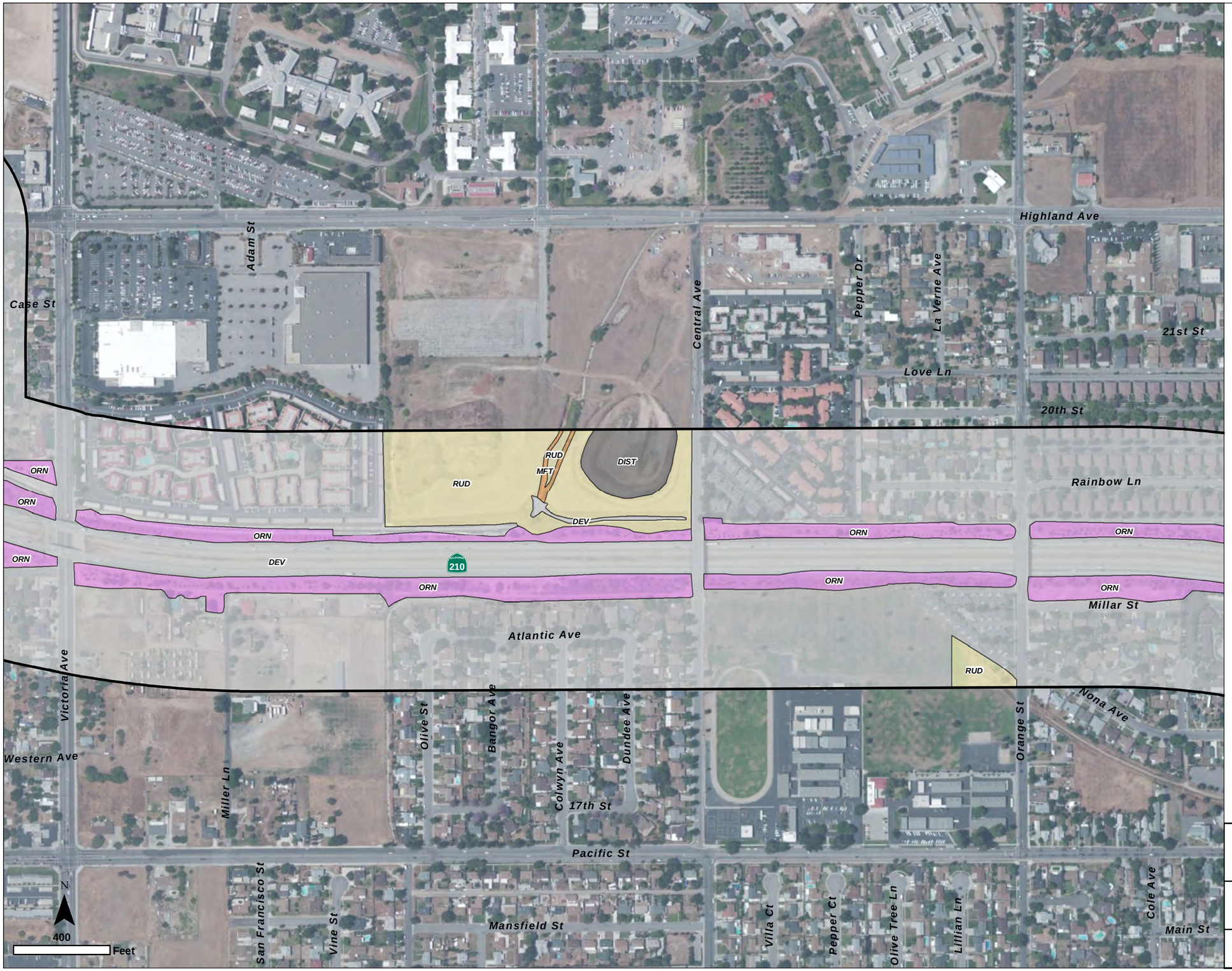

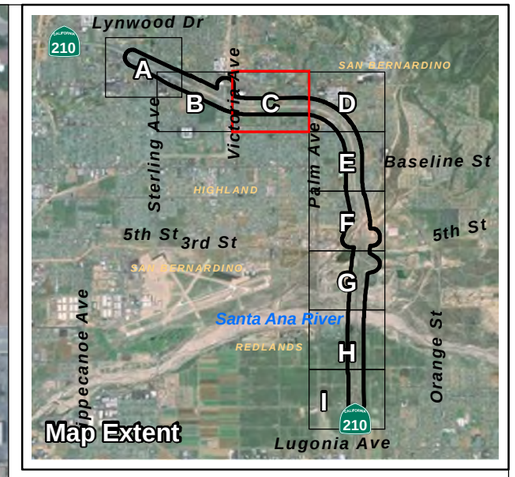

Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5C
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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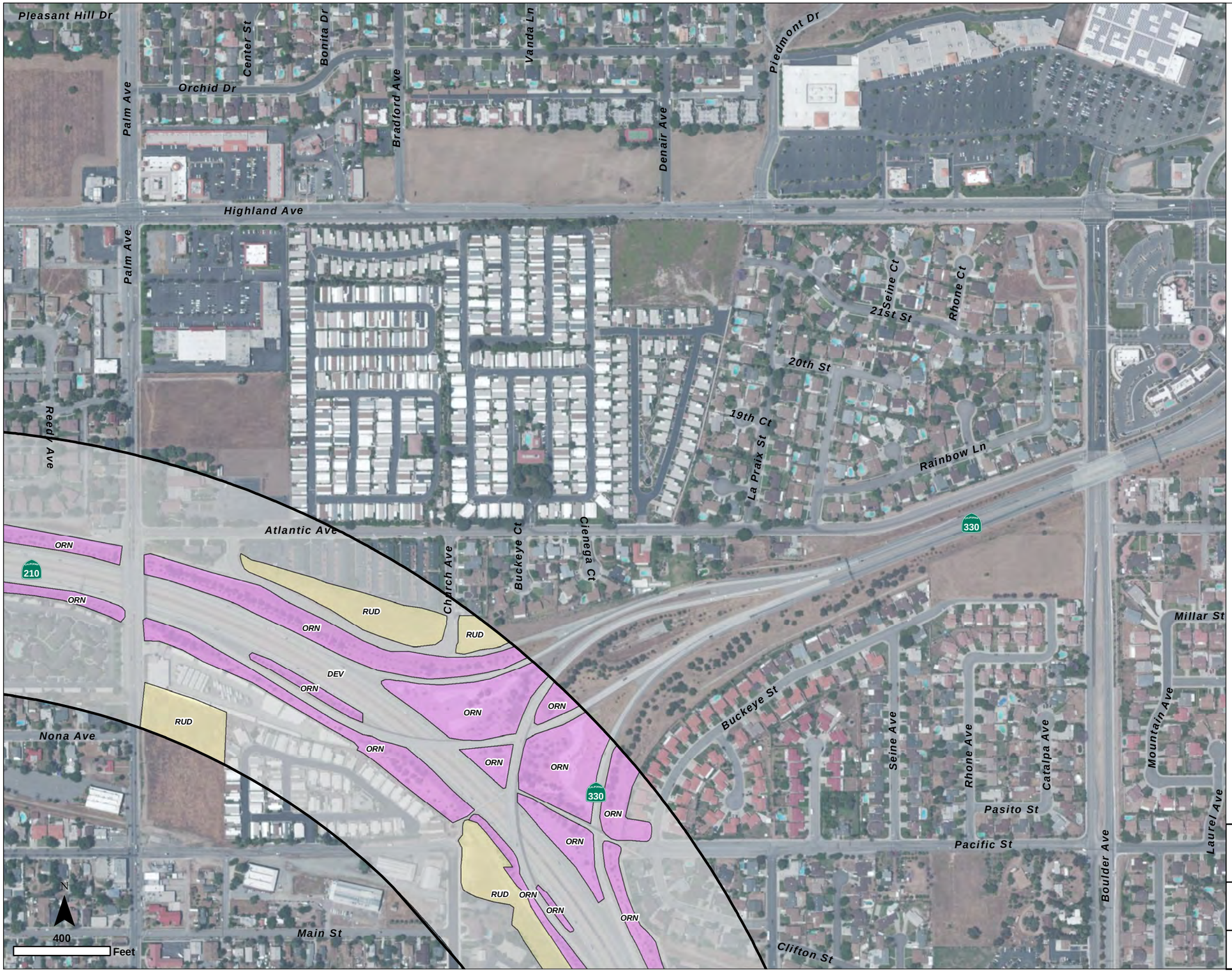

Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5D
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5E
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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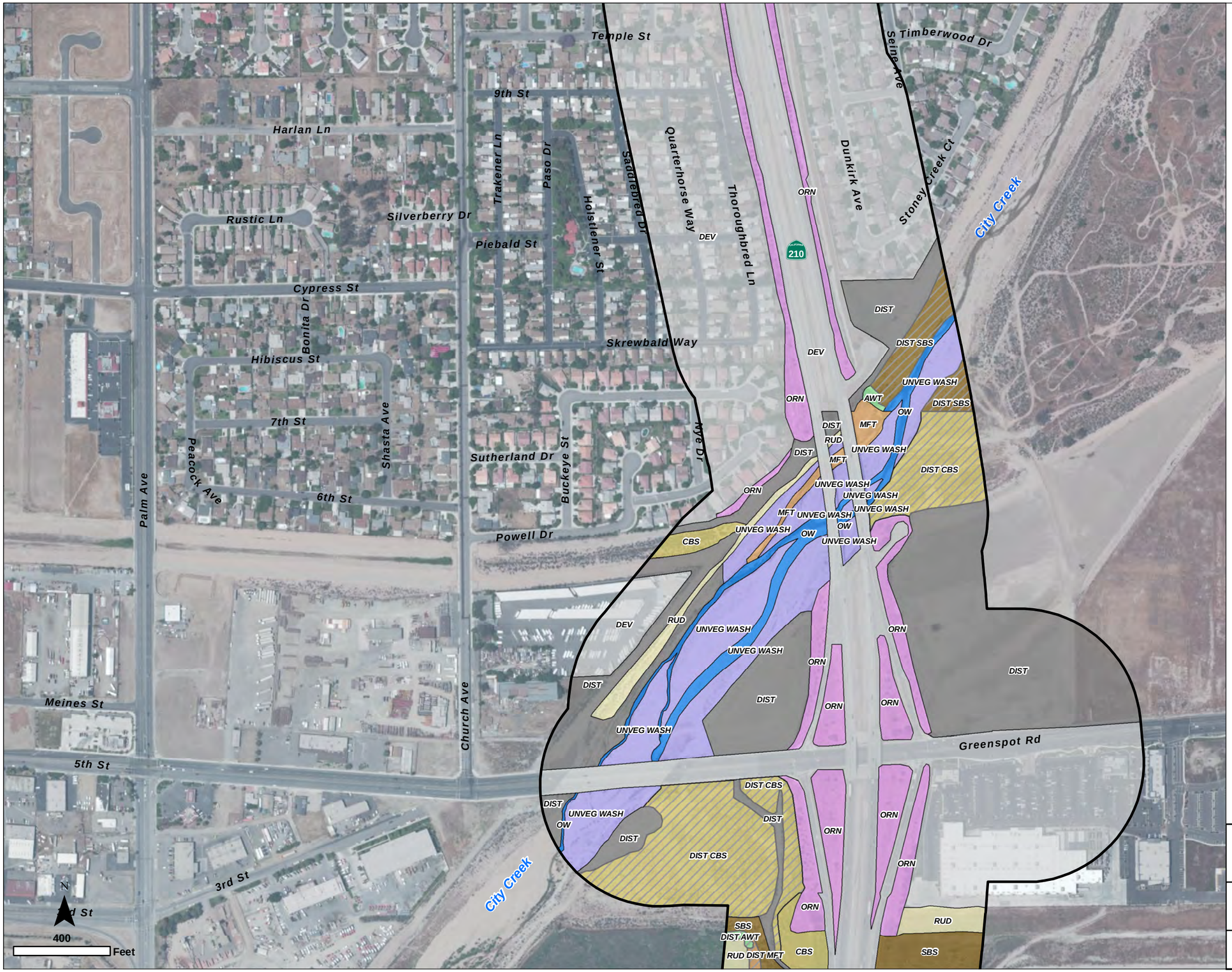

Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5F
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

Caltrans

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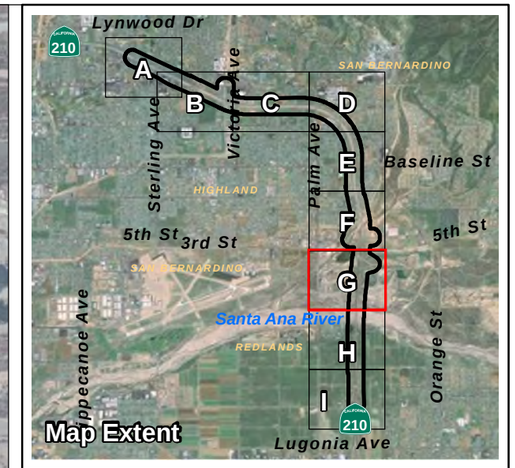

Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5G
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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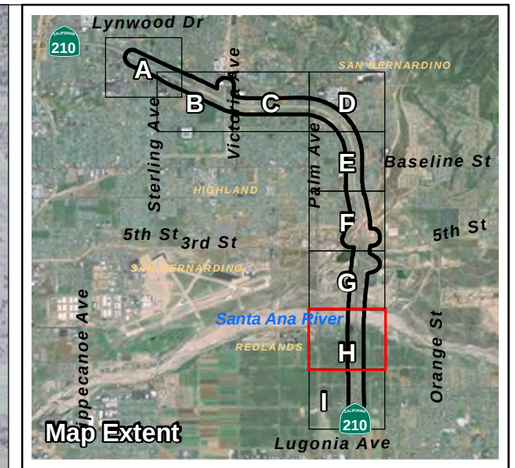

Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5H
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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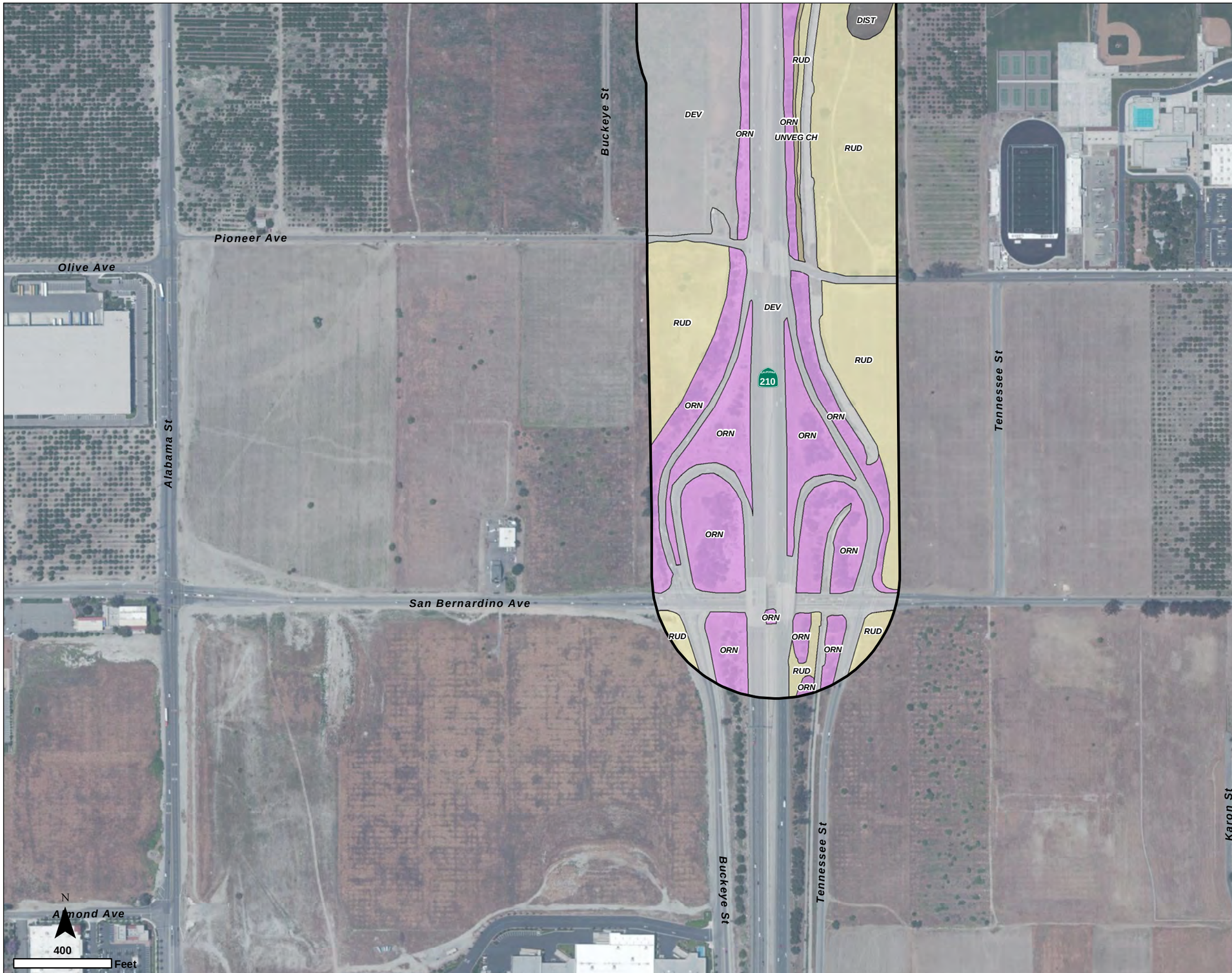

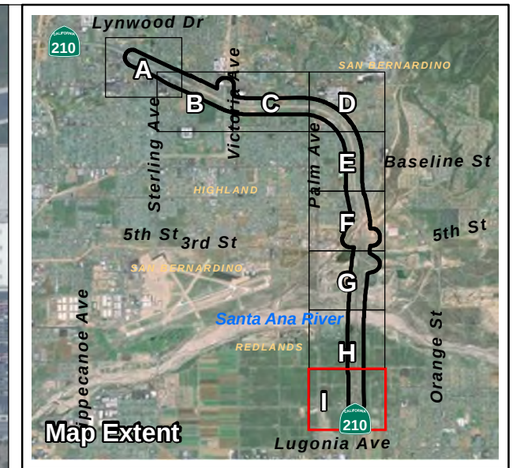

Biological Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 5I
Vegetation Communities and Land Cover Types

SR-210 Mixed Flow Lane Addition Project

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EUCALYPTUS GROVE

Eucalyptus grove is a woodland vegetation type dominated by non-native eucalyptus trees (*Eucalyptus* ssp.) that have become naturalized. The shrub and herbaceous layers are sparse (Sawyer et al. 2009). This vegetation type occurs near the southern extent of the BSA and has likely become naturalized from windbreak stands that were planted adjacent to agricultural areas.

OPEN WATER

Open water within the BSA was confined to active channels within Plunge Creek and City Creek. During the survey period, no water was observed within the Santa Ana River.

RUDERAL/DISTURBED/DEVELOPED/ORNAMENTAL

The ruderal/disturbed/developed/ornamental cover class includes areas that have been subjected to various degrees of anthropogenic impacts. Ruderal areas are usually fallow agricultural fields or heavily-disturbed areas dominated by non-native vegetation. Disturbed areas are usually unvegetated or sparsely vegetated and are disturbed on a continuous basis. Developed areas have been altered for use as roads, housing, or commercial uses. Ornamental areas contain landscaping with mostly non-native trees and shrubs that are regularly maintained. These vegetation types were found throughout the BSA.

UNVEGETATED CHANNEL/WASH

The unvegetated channel/wash cover class included areas where regular scouring from periods of high water flow within the Santa Ana River, City Creek, Plunge Creek, and other drainage channels prevented vegetation establishment. These areas were characterized by riverwashed rocks, sand, and very little available soil.

3.1.3.2 Common Plant and Wildlife Species Within the Biological Study Area

A total of 99 plant species were observed within the BSA (Appendix A). A total of 50 wildlife species, including two reptiles, 35 birds, and 13 mammals, were observed or detected during surveys (Appendix A). Sensitive species observed, or potentially occurring within the BSA, are discussed in Sections 3.2, 4.2, and 4.3 of this study.

Many of the wildlife species observed within the BSA are typical inhabitants of developed and disturbed areas with interspersed open areas in San Bernardino County. The riparian and scrub habitats associated with the Santa Ana River, City Creek, and Plunge Creek provide cover and foraging habitat for bird, amphibian, reptile, and mammal species.

3.1.3.3 Wildlife Corridors

Wildlife corridors are defined as habitat linkages that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife movement, as do engineered structures such as culverts and flood-control channels. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992).

Historically, the Santa Ana River channel within the Project area was likely to have supported substantial regional wildlife movement. In addition, the Santa Ana River watershed provided wildlife corridors among its major tributaries converging in a relatively short section of the river. In recent years, however, loss of habitat due to development on the floodplain and surrounding lowlands are likely to have greatly reduced the amount of regional movement through the Project area. The detrimental effects to wildlife movement from SR-210 and the surrounding residential and commercial development have long been in place. Nevertheless, the Santa Ana River, City Creek, Sand Creek, and Plunge Creek and their associated open space do provide a long linear stretch of habitat suitable for regional wildlife movement and migration, including many species of water birds and small- to medium-sized mammals such as coyotes (*Canis latrans*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and skunk (*Mephitis mephitis*). In addition, existing bridges provide a substantial undercrossing for any wildlife species in the area. Due to the reduction in wildlife corridors in the Project area, the remaining corridors between regional open habitats have become increasingly important.

3.1.3.4 Aquatic Resources

A total of 11 aquatic features occur within the BSA, including Sand Creek, City Creek, Plunge Creek, and the Santa Ana River, as well as three constructed drainages, two non-blue line seep features, and two unnamed intermittent blue line drainages converted into concrete trapezoidal channels. Table 4 includes a summary of potential agency jurisdiction within the BSA. A detailed description of jurisdictional waters and wetlands is provided in the *Jurisdictional Delineation Report* in Appendix G.

Table 4. Potential ACOE, RWQCB, and CDFW Jurisdiction

Feature ID	Potential ACOE Jurisdiction (acres/feet)		Potential RWQCB Jurisdiction (acres/feet)		Potential CDFW Jurisdiction (acres/feet)	
	Wetland	Non-wetland	Wetland	Non-wetland	Riparian	Non-riparian
1	--	--	0/0	0.122/ 860	0.011/ 33	0.122/ 860
2 (Sand Creek)	0.135/ 207	1.163/ 1425	0.135/ 207	1.163/ 1425	0.135/ 200	1.958/ 1634
3	0/0	0.799/ 5243	0/0	0.799/ 5243	0.030/ 103	3.384/ 5283
4	0/0	0.949/ 4872	0/0	0.949/ 4872	0/0	2.262/ 4763
5 (City Creek)	0.673/ 2376	19.898/ 2386	0.673/ 2376	19.898/ 2386	0.673/ 2376	24.669/ 2569
6	--	--	--	--	--	--
7	--	--	--	--	--	--
8 (Plunge Creek)	1.391/ 775	1.928/ 1483	1.391/ 775	1.928/ 1483	1.391/ 518	3.155/ 1531
9 (Santa Ana River)	0/0	19.312/ 1048	0/0	19.312/ 1048	0/0	19.454/ 1048
10	0/0	1.772/ 4828	0/0	1.772/ 4828	0/0	4.261/ 4828
11	--	--	0/0	0.128/ 847	0.047/ 186	0.081/ 661
Totals	**2.199/ 3358**	**45.821/ 21284**	**2.199/ 3358**	**46.071/ 22991**	**2.287/ 3416**	**59.346/ 23177**

-- no jurisdiction assumed

3.2 Regional Species and Habitats of Concern

Within the local Project area, SR-210 is surrounded by urban areas and most of the surrounding native habitat has been removed, disturbed, or replaced as a result of development. All of the drainages in the Project area are disturbed and have been modified to accommodate development. Sixty-nine special status plant species and 52 special status wildlife species are reported to occur in the Project vicinity. Information based on the literature review for the sensitive species within the BSA is presented below. Species that require additional surveys and analysis are addressed in Chapter 4.

3.2.1 Sensitive Vegetation Communities

Four Natural Communities of Special Concern described by Sawyer et al. (2009) were identified within the BSA: scalebroom scrub, California buckwheat scrub, arroyo willow thicket, and mule fat thicket. The species composition of these vegetation communities matches that of the Riversidean alluvial fan sage scrub, coastal sage scrub, southern riparian forest, and southern riparian scrub, respectively, described by Holland (1986). These communities are classified as sensitive by CDFW because they have restricted range, cumulative losses throughout the region, and potentially support a high number of endemic sensitive plant and wildlife species. Project impacts and mitigation for Natural Communities of Special Concern present within the BSA are addressed in Chapter 4, Section 4.1.

3.2.2 Special Status Plant Species

A literature review determined that 69 special status plant species may occur within the USGS quadrangles surrounding the Project area. Eleven of these are federal and/or state listed endangered, threatened, candidate or state rare species. The BSA supports suitable to marginally suitable habitat for several special status plant species generally associated with the Santa Ana River, City Creek, and Plunge Creek channels. Sixty-two of the 69 special status plants identified in the literature review were determined to be absent due to a lack of suitable habitat or absence during focused surveys conducted during the appropriate blooming period. One special status plant species, the federally and state endangered Santa Ana River woollystar, was observed within the BSA during biological reconnaissance and focused botanical surveys. The remaining six special status plant species were determined to have habitat present. Special status plant species and their habitat requirements, regulatory status, and potential for occurrence within the BSA are detailed within Table 5. Project impacts and mitigation for special status plant species present or having the potential to occur within the BSA are addressed in Chapter 4, Section 4.2.

Table 5. Listed and Special Status Plant Species Potentially Occurring or Known to Occur within the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Alvin Meadow bedstraw	***Galium californicum* ssp. *primum***	CRPR 1B.2	Perennial herb; California endemic. Occurs in granitic soils in chaparral and lower montane coniferous forest from 4,400-5,600 feet elevation. Known from only four occurrences in Riverside and San Bernardino counties. Blooms from May – July.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Bear Valley checkerbloom	***Sidalcea malviflora* ssp. *dolosa***	CRPR 1B.2	Perennial herb; California endemic. Occurs in meadows and seeps, riparian woodlands, and lower and upper montane coniferous forest (in meadows and seeps) from 4,900-8,810 feet elevation. Known only from San Bernardino County. Blooms from May – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Big Bear Valley phlox	***Phlox dolichantha***	CRPR 1B.2	Perennial herb; California endemic. Occurs in pebble (pavement) plain and openings in upper montane coniferous forest from 6,000-9,745 feet elevation. Known only from San Bernardino County. Blooms from May – July.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
black bog-rush	***Schoenus nigricans***	CRPR 2.2	Perennial herb. Occurs in marshes and swamps (often in alkali soils) at elevations from 500-7,000 feet. In California, known from Inyo and San Bernardino counties. Also occurs in Nevada, Texas, and South America. Blooms from August – September.	A	There is no suitable habitat in the BSA for this species.
bristly sedge	***Carex comosa***	CRPR 2.1	Perennial rhizomatous herb. Occurs in bogs and fens, coastal prairie, valley and foothill grassland, freshwater marshes and swamps, and lake margins below 1,400 feet. Known from Contra Costa, Lake, Mendocino, Sacramento, Santa Cruz, San Francisco, Shasta, San Joaquin, and Sonoma counties, as well as Idaho, Oregon, Texas, and Washington. Believed extirpated from San Bernardino County (last known occurrence was in 1882). Blooms from May – September.	A	There is no suitable habitat for this species within the BSA. This species is considered extirpated from San Bernardino County.
California dandelion	***Taraxacum californicum***	FE CRPR 1B.1	Perennial herb; California endemic. Occurs in mesic meadows and seeps from 5,315-9,190 feet elevation. Known only from San Bernardino County. Blooms from May – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
California muhly	***Muhlenbergia californica***	CRPR 4.3	Perennial rhizomatous herb; California endemic.	A	There is no suitable habitat in the

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			Occurs in mesic areas, seeps, and streambanks in chaparral, coastal scrub, lower montane coniferous forest, and meadow habitats from 330-6,560 feet elevation. Known from Los Angeles, Riverside, and San Bernardino counties. Blooms from June – September.		BSA for this species.
California satintail	***Imperata brevifolia***	CRPR 2.1	Perennial rhizomatous herb. Occurs in mesic areas in chaparral, coastal scrub, Mojave desert scrub, meadows and seeps (often alkali), and riparian scrub habitats. Up to 3,990 feet elevation. Occurs in Butte, Fresno, Imperial, Inyo, Kern, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, and Ventura counties. Presumed extirpated in Lake County. Blooms from September – May.	A	There is no suitable habitat in the BSA for this species.
chaparral ragwort	***Senecio aphanactis***	CRPR 2.2	Annual herb. Occurs in openings (especially alkaline flats) in cismontane woodland, coastal sage scrub, and chaparral at 50-2,625 feet elevation. Known in California from Alameda, Contra Costa, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, Santa Barbara, San Benito, Santa Clara, Santa Cruz, San Diego, San Luis Obispo, Solano, and Ventura counties. Also occurs in Baja California. Blooms from January – April.	A	There is no suitable habitat in the BSA for this species.
chaparral sand-verbena	***Abronia villosa* var. *aurita***	CRPR 1B.1	Annual herb. Occurs in sandy floodplains in inland, arid areas of coastal sage scrub, open chaparral, and desert dunes. Elevation 300-5,300 feet. In California, occurs in Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. Also occurs in Arizona and Baja California. Blooms from January – September.	HP	Habitat is present for this species within the BSA along the margins of the Santa Ana River, City Creek, and Plunge Creek. This species was not observed during the 2012 botanical surveys.
chickweed oxytheca	***Sidotheca caryophylloides***	CRPR 4.3	Annual herb; California endemic. Occurs in sandy areas in lower montane coniferous forest from 3,655-8,530 feet elevation. Known from Los Angeles, Riverside, San Bernardino, Tulare, and Ventura counties. Blooms from July – September.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Coulter's goldfields	***Lasthenia glabrata* ssp. *coulteri***	CRPR 1B.1	Annual herb. Usually occurs in alkaline soils in marshes, playas, vernal pools, and valley and foothill grassland below 4,600 feet elevation. Known from Colusa, Merced, Tulare(?), Orange,	A	This species is presumed to be extirpated in San Bernardino County. There is no suitable habitat in the BSA for this species.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			Riverside, Santa Barbara, San Diego, San Luis Obispo, Tehama, Yolo, and Ventura counties. Believed extirpated from Kern, Los Angeles, and San Bernardino counties. Also occurs in Mexico. Blooms from February – June.		
crowned muilla	***Muilla coronata***	CRPR 4.2	Perennial bulbiferous herb. Occurs in chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland habitats from 2,510-6,430 feet elevation. Known from Inyo, Kern, Los Angeles, San Bernardino, and Tulare counties. Also occurs in Nevada. Blooms from March – May.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Duran's rush	***Juncus duranii***	CRPR 4.3	Perennial rhizomatous herb; California endemic. Occurs in mesic areas in meadows and seeps and lower and upper montane coniferous forest habitats from 5,800-9,200 feet elevation. Known from Los Angeles, Riverside, and San Bernardino counties. Blooms from July – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Gambel's water cress	***Nasturtium gambelii***	FE ST CRPR 1B.1	Perennial rhizomatous herb. Found in freshwater marshes and swamps from 20-1,100 feet elevation. Currently believed to occur in California only in Santa Barbara and San Luis Obispo counties. There are historical records from Los Angeles, Orange, San Diego, and San Bernardino counties, although the San Diego County records may be based on misidentification. Also occurs in Baja California. Blooms from April – October.	A	The Project site is outside the elevation range for this species and it is presumed to be extirpated from San Bernardino County. No suitable habitat is present within the BSA.
Hall's monardella	***Monardella macrantha* ssp. *hallii***	CRPR 1B.3	Perennial rhizomatous herb; California endemic. Occurs in openings on dry slopes and ridges in broad-leaved upland forests, chaparral, cismontane woodland, lower montane coniferous forests, and valley and foothill grasslands. Known from Los Angeles, San Diego, Orange, Riverside, and San Bernardino counties from 2,395-7,200 feet elevation. Blooms from June – October.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Horn's milk-vetch	***Astragalus hornii* var. *hornii***	CRPR 1B.1	Annual herb. Occurs in alkaline playas, meadows and seeps and lake margins from 200-2,800 feet elevation. In California, known only from Inyo and Kern counties. Presumed extirpated from San Bernardino County. Also occurs in Nevada. Blooms from May – October.	A	There is no suitable habitat for this species within the BSA. This species is considered extirpated from San Bernardino County.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
hot springs fimbristylis	***Fimbristylis thermalis***	CRPR 2.2	Perennial rhizomatous herb. Occurs in meadows and seeps (alkaline, near hot springs) at elevations from 400-4,400 feet. In California, known from Inyo, Kern, Los Angeles, Mono, and San Bernardino counties. Also occurs in Arizona and Nevada. Blooms from July – September.	A	There is no suitable habitat in the BSA for this species.
Laguna Mountains jewel-flower	***Streptanthus bernardinus***	CRPR 4.3	Perennial herb. Found in chaparral and lower montane coniferous forest from 2,200-8,200 feet elevation. Transverse and Peninsular ranges of Southern California in Riverside, San Bernardino and San Diego counties; possibly in Baja California. Blooms from May – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
little mousetail	***Myosurus minimus* ssp. *apus***	CRPR 3.1	Annual herb. Occurs in association with vernal pools and within the alkali vernal pools and alkali annual grassland components of alkali vernal plains. Found in areas that have semiregular inundation from 65-2,100 feet elevation. Known in Alameda, Contra Costa, Colusa, Lake, Merced, Riverside, San Bernardino, San Diego, Solano, Tulare, and Yolo counties. Also occurs in Oregon and Mexico. Blooms from March – June.	A	There is no suitable habitat in the BSA for this species.
Los Angeles sunflower	***Helianthus nuttallii* ssp. *parishii***	CRPR 1A	Perennial rhizomatous herb; California endemic. Occurs in marshes and swamps (coastal salt and freshwater) at 30-1,600 feet elevation. This species is historically known from Los Angeles, Orange, and San Bernardino counties. Last seen in 1937. Presumed extinct. Blooms from August – October.	A	This species is presumed extinct. There is no suitable habitat for this species within the BSA.
marsh sandwort	***Arenaria paludicola***	FE SE CRPR 1B.1	Stoloniferous, perennial herb. Occurs in freshwater or brackish marshes or swamps where it grows up through dense mats of *Typha*, *Juncus*, and *Scirpus*. From 10-560 feet elevation. Known to presently occur only in San Luis Obispo County. Presumed extirpated from Los Angeles, San Francisco, Santa Cruz, and San Bernardino counties and the state of Washington. The last known record of this species in San Bernardino or Los Angeles counties is from 1900. Blooms from May – August.	A	This species is presumed extirpated from San Bernardino County. The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
mesa horkelia	***Horkelia cuneata* var. *puberula***	CRPR 1B.1	Perennial herb; California endemic. Found in sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 200-2,700 feet elevation. Occurs in San Luis Obispo, Santa	A	There is no suitable habitat in the BSA for this species.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			Barbara, Ventura, Los Angeles, Orange, and San Bernardino counties. Believed extirpated from Riverside and San Diego counties. Blooms from February – September.		
mud nama	***Nama stenocarpum***	CRPR 2.2	Annual/perennial herb. Occurs along marshes and swamps, such as at lake margins and riverbanks, and grows at elevations from 16-1,640 feet. Known from Kings, Orange, Riverside, and San Diego counties. Historical occurrences in Imperial and Los Angeles counties. Blooms from January – July.	A	There is no suitable for this species within the BSA. There are no current records of this species occurring in San Bernardino County.
narrow-petaled rein orchid	***Piperia leptopetala***	CRPR 4.3	Perennial herb; California endemic. Occurs in cismontane woodland and lower and upper montane coniferous forest habitats from 1,250-7,300 feet elevation. Known from El Dorado, Fresno, Lake, Los Angeles, Monterey, Mariposa, Nevada, Orange, Plumas, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, Shasta, Siskiyou, San Luis Obispo, Sonoma, and Tulare counties. Blooms from May – July.	A	There is no suitable habitat in the BSA for this species.
Nevin's barberry	***Berberis nevinii***	FE SE CRPR 1B.1	Perennial evergreen shrub; California endemic. Occurs in sandy or gravelly soils in chaparral, cismontane woodland, coastal and riparian scrub habitats. From 900-2,700 feet elevation. Occurs in Los Angeles, San Bernardino, Riverside, and San Diego counties. Blooms from March – June.	A	There is no suitable habitat for this species within the BSA.
Ocellated Humboldt lily	***Lilium humboldtii* ssp. *ocellatum***	CRPR 4.2	Perennial bulbiferous herb; California endemic. Occurs in openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland habitats from 100-5,900 feet elevation. Known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura counties. Blooms from March – August.	A	There is no suitable habitat in the BSA for this species.
Palmer's mariposa-lily	***Calochortus palmeri* var. *palmeri***	CRPR 1B.2	Perennial bulbiferous herb; California endemic. Occurs in mesic areas in chaparral, lower montane coniferous forest, and meadow and seep habitats from 3,280-7,840 feet elevation. Occurs in Kern, Los Angeles, Riverside, Santa Barbara, San Bernardino, San Luis Obispo, and Ventura counties. Blooms from April – July.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
paniculate tarplant	***Deinandra paniculata***	CRPR 4.2	Annual herb. Common in open grasslands, coastal scrub, and vernally mesic pools. Tolerant of disturbed sites. Occurs in Orange, Riverside, San Bernardino, and San Diego counties at elevations between 82-3,084 feet. Also occurs in Baja California. Blooms from April – November.	HP	There is suitable habitat for this species within the BSA. This species was not observed during the 2012 botanical surveys.
Parish's alumroot	***Heuchera parishii***	CRPR 1B.3	Perennial rhizomatous herb; California endemic. Occurs in rocky areas (sometimes carbonate) in alpine boulder and rock field, subalpine coniferous forest, and lower and upper montane coniferous forest from 4,920-12,470 feet elevation. Known from Riverside, San Bernardino, and Siskiyou counties. Blooms from June – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Parish's bush-mallow	***Malacothamnus parishii***	CRPR 1A	Perennial deciduous shrub; California endemic. Occurs in chaparral and coastal scrub from 1,000-1,490 feet elevation. Known from only one occurrence in 1895 in vicinity of San Bernardino. Presumed extinct. Blooms from June – July.	A	This species is presumed extinct. There is no suitable habitat for this species within the BSA.
Parish's checkerbloom	***Sidalcea hickmanii* ssp. *parishii***	SR CRPR 1B.2	Perennial herb; California endemic. Occurs in chaparral, cismontane woodland, and lower montane coniferous forest habitats from 3,280-8,200 feet elevation. Known from Santa Barbara, San Bernardino, and San Luis Obispo counties. Blooms from June – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Parish's desert-thorn	***Lycium parishii***	CRPR 2.3	Perennial shrub. Occurs in coastal scrub and Sonoran desert scrub at 1,000-3,300 feet elevation. In California, known from Imperial and San Diego counties. Report from Riverside County is based on a misidentification. Known historically from San Bernardino County (benches and/or foothills north of San Bernardino); presumed to be extirpated. Also occurs in Arizona and Mexico. Blooms from March – April.	A	There is no suitable habitat in the BSA for this species. This species is presumed extirpated in San Bernardino County.
Parish's gooseberry	***Ribes divaricatum* var. *parishii***	CRPR 1A	Perennial deciduous shrub; California endemic. Occurs in riparian woodland in willow swales. From 210-980 feet elevation. Historical collections from Los Angeles and San Bernardino counties. Presumed extinct. Blooms from February – April.	A	This species is presumed extinct. There is no suitable habitat for this species within the BSA.
Parish's oxytheca	***Acanthoscyphus parishii* var. *parishii***	CRPR 4.2	Annual herb; California endemic. Occurs in sandy or gravelly soils in chaparral and lower montane	A	The Project site is below the minimum elevation range for this

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			coniferous forest habitats. Elevation 4,000-8,530 feet. Known from Los Angeles, San Bernardino, and Ventura counties. Blooms from June – September.		species.
Parish's rupertia	***Rupertia rigida***	CRPR 4.3	Perennial herb. Occurs in chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, and valley and foothill grassland habitats from 2,295-8,200 feet elevation. Known from Los Angeles, Riverside, San Bernardino, and San Diego counties. Also occurs in Baja California. Blooms from June – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Parish's yampah	***Perideridia parishii* ssp. *parishii***	CRPR 2.2	Perennial herb. Occurs in wetlands, meadows and seeps, and margins of streambeds of lodgepole forest, red fir forest, yellow pine forest, and wetland-riparian. In California, known only from San Bernardino County from 4,800-9,810 feet elevation. Also occurs in Arizona, New Mexico, and Nevada. Blooms from June – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Parry's spineflower	***Chorizanthe parryi* var. *parryi***	CRPR 1B.1	Annual herb; California endemic. Occurs within coastal scrub and chaparral on dry slopes and flats; sometimes at the interface of two vegetation types, such as chaparral and oak woodland. Found on dry sandy or rocky soils in openings. From 130-5,590 feet elevation. Known only from Riverside and San Bernardino counties and possibly extending into Los Angeles County. Blooms from April – June.	HP	There is suitable habitat for this species within the BSA. There are also known populations of this species within one to two mi of the Project site, which were observed to be flowering during the 2012 blooming season. This species was not found during the 2012 botanical surveys within the BSA.
Parry's sunflower	***Hulsea vestita* ssp. *parryi***	CRPR 4.3	Perennial herb; California endemic. Occurs in granitic or carbonate rocky openings in pinyon and juniper and lower and upper montane coniferous forest habitats from 4,490-9,500 feet elevation. Known from Kern, Los Angeles, Mono, San Bernardino, and Ventura counties. Blooms from April – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Peruvian dodder	***Cuscuta obtusiflora* var. *glandulosa***	CRPR 2.2	Annual herb/vine. Occurs in freshwater marshes and swamps from 50-920 feet elevation. Known from Butte, Los Angeles, Merced, Sacramento, San Bernardino, Sonoma, and Sutter counties. Also occurs in Texas and Mexico. Blooms from July – October.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
pine green-gentian	***Frasera neglecta***	CRPR 4.3	Perennial herb; California endemic. Occurs in lower and montane coniferous forest and pinyon and juniper woodland habitats from 4,590-8,200 feet elevation. Known from Kern, Los Angeles, Santa Barbara, San Bernardino, and Ventura counties. Blooms from May – July.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Plummer's mariposa-lily	***Calochortus plummerae***	CRPR 4.2	Perennial bulbiferous herb; California endemic. Occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forests, and valley and foothill grasslands in sandy or rocky areas of granitic or alluvial material. Known from the Santa Monica Mountains to San Jacinto Mountains in Riverside, San Bernardino, Orange, Los Angeles, and Ventura counties at 328-5,580 feet elevation. Blooms from May – July.	HP	There is suitable habitat for this species within the BSA. This species was not observed during the 2012 botanical surveys.
prairie wedge grass	***Sphenopholis obtusata***	CRPR 2.2	Perennial herb. Occurs in mesic areas in cismontane woodland and meadow and seep habitats from 984-6,560 feet elevation. Known from Amador, Fresno, Inyo, Mono, Riverside, San Bernardino, San Diego (?), Stanislaus, and Tulare counties. Also occurs in Arizona, Colorado, Idaho, New Mexico, Nevada, Oregon, Texas, Utah, Washington, Wyoming, and Mexico. Blooms from April – July.	A	There is no suitable habitat in the BSA for this species.
Pringle's monardella	***Monardella pringlei***	CRPR 1A	Annual herb; California endemic. Occurs on sandy hills in coastal sage scrub at 980-1,300 feet elevation. Known only from two occurrences west of Colton; last seen in 1941. Historically occurred in Riverside and San Bernardino counties. Presumed extinct. Blooms from May – June.	A	This species is presumed extinct. There is no suitable habitat for this species within the BSA.
Robinson's pepper-grass	***Lepidium virginicum* var. *robinsonii***	CRPR 1B.2	Annual herb. Occurs in chaparral and coastal scrub from sea level to 2,900 feet elevation. Known from Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. Presumed extirpated from Santa Barbara County. Also occurs in Baja California. Blooms from January – July.	HP	There is limited habitat for this species within the BSA. This species was not observed during the 2012 botanical surveys.
round-leaved filaree	***California macrophylla***	CRPR 1B.1	Annual herb. Restricted to open cismontane woodland and valley and foothill grassland habitats on very friable deep clay soils at elevations between 50-6,560 feet. Occurs in 29 counties in California, including Los Angeles and Riverside.	A	There is no suitable habitat for this species within the BSA. There are no current records of this species occurring in San Bernardino

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			No occurrences are reported for San Bernardino County. Blooms from March – May.		County.
salt marsh bird's-beak	***Chloropyron maritimum* ssp. *maritimum***	FE SE CRPR 1B.2	Annual herb. Occurs in coastal dunes and coastal salt marshes and swamps from sea level to 100 feet elevation. Known from Los Angeles, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura counties. Also occurs in Baja California. Blooms from May – October.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
Salt Spring checkerbloom	***Sidalcea neomexicana***	CRPR 2.2	Perennial herb. Occurs in alkaline springs and brackish marshes below 5,000 feet elevation. In California, known only from Kern, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. Believed extirpated from Los Angeles County. Also known from Arizona, Colorado, Idaho, New Mexico, Nevada, Oregon, Texas, Utah, Wyoming, and Mexico. Blooms from March – June.	A	There is no suitable habitat in the BSA for this species.
San Bernardino aster	***Symphyotrichum defoliatum***	CRPR 1B.2	Perennial rhizomatous herb; California endemic. Occurs in vernally wet sites (such as ditches, streams, and springs) in many plant communities below 6,700 feet elevation. Known from Imperial, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego counties. May also occur in San Luis Obispo County. Blooms from July – November.	A	There is no suitable habitat in the BSA for this species.
San Bernardino Mountains owl's-clover	***Castilleja lasiorhyncha***	CRPR 1B.2	Annual herb; California endemic. Occurs in mesic to drying soils in open areas of stream and meadow margins or margins of vernally wet areas in meadows, chaparral, pebble plains, and upper montane coniferous forest at 4,300-7,900 feet elevation. Known from San Bernardino and San Diego counties, and historically from Riverside County. Blooms from May – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
San Diego ambrosia	***Ambrosia pumila***	FE CRPR 1B.1	Perennial rhizomatous herb. Occurs in open habitats in coarse substrates near drainages and in upland areas on clay slopes or on the dry margins of vernal pools. This species occurs in a variety of associations dominated by sparse grasslands or marginal wetland habitats such as river terraces, pools, and alkali playas. Known from western San Diego County, southwestern Riverside County, and	A	This species has not been documented to occur in San Bernardino County. There is only marginal habitat for this species within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			Baja California from 70-1,400 feet elevation. Blooms from April – October.		
San Gabriel ragwort	***Senecio astephanus***	CRPR 4.3	Perennial herb; California endemic. Occurs on rocky slopes in coastal bluff scrub and chaparral habitats from 1,310-4,920 feet elevation. Known from Kern, Los Angeles, Monterey, Santa Barbara, San Bernardino, San Diego, and San Luis Obispo counties. Blooms from May – July.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
San Jacinto Valley crownscale	***Atriplex coronata* var. *notatior***	FE CRPR 1B.1	Annual herb; California endemic. Occurs primarily in floodplains (seasonal wetlands) dominated by alkali scrub, alkali playas, vernal pools, and to a lesser extent alkali grasslands. Restricted to highly alkaline, silty-clay soils in association with the Traver- Domino-Willows soil association; the majority (approximately 80%) of the populations are associated with the Willows soil series. Occurs in Kern and Riverside counties from 456-1,640 feet elevation. Blooms from April – August.	A	There is no suitable alkali habitat for this species within the BSA. There are no current records of this species occurring in San Bernardino County.
Santa Ana River woollystar	***Eriastrum densifolium* ssp. *sanctorum***	FE SE CRPR 1B.1	Perennial herb; California endemic. Occurs in chaparral and coastal scrub in sandy soils of floodplains and terraced fluvial deposits of the Santa Ana River and larger tributaries (Lytle and Cajon Creeks, lower portions of City and Mill Creeks) in San Bernardino and Riverside counties. Historically occurred in Orange County. From 299-2,001 feet elevation. Blooms from April – September.	P	Observed during the 2012 botanical surveys within the BSA.
short-sepaled lewisia	***Lewisia brachycalyx***	CRPR 2.2	Perennial herb. Occurs in mesic areas in lower montane coniferous forest and meadow and seep habitats from 4,490-7,545 feet elevation. Known from San Bernardino and San Diego counties. Also occurs in Arizona, New Mexico, Utah, and Baja California. Blooms from February – July.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
silver-haired ivesia	***Ivesia argyrocoma* var. *argyrocoma***	CRPR 1B.2	Perennial herb. Occurs in pebble-plain, alkaline meadows and seeps, and upper montane coniferous forest from 4,800-9,710 feet elevation. Occurs in San Bernardino County and Baja California. Blooms from June – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
singlewhorl burrobrush	***Ambrosia monogyra***	CRPR 2.2	Perennial shrub. Sandy soils in washes and ravines in chaparral and desert scrub below 1,640 feet	A	No suitable chaparral or desert scrub habitat is present within the

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			elevation. In California, known from Riverside, San Bernardino, and San Diego counties. Also occurs in Arizona, New Mexico, Nevada, Texas, and Mexico. Blooms from August – November.		BSA.
slender-horned spineflower	***Dodecahema leptoceras***	FE SE CRPR 1B.1	Annual herb; California endemic. Occurs within chaparral and coastal scrub (alluvial fan sage scrub) in sandy, cobbly riverbed alluvium. Found on flood-deposited terraces and washes; associates include *Encelia*, *Dalea*, *Lepidospartum*, and other native annual species and is often associated with cryptogamic soil crusts composed of bryophytes, algae and/or lichens. Known only from Los Angeles, Riverside, and San Bernardino counties at 656-2,490 feet elevation. Blooms from April – June.	HP	There is suitable habitat for this species within the BSA. There are also known populations of this species within one to two mi of the Project site. This species was not found during the 2012 botanical surveys. Known populations of this species were not observed to be blooming during the 2012 blooming season, possibly due to low rainfall totals.
smooth tarplant	***Centromadia pungens* ssp. *laevis***	CRPR 1B.1	Annual herb; California endemic. Occurs in alkaline areas in chenopod scrub, meadows, playas, riparian woodland, and valley and foothill grassland below 1,600 feet elevation. Known from Riverside, San Bernardino, and San Diego counties. Blooms from April – September.	A	There is no suitable habitat for this species within the BSA.
Sonoran maiden fern	***Thelypteris puberula* var. *sonorensis***	CRPR 2.2	Perennial rhizomatous herb. Found in meadows and seeps and wetland-riparian from 170-2,000 feet elevation. Known from San Jacinto Mountains and San Gabriel Mountains west in Riverside, San Bernardino, and Los Angeles counties. Also occurs in Santa Barbara County, Arizona, and Mexico. Blooms from January – September.	A	There is no suitable habitat in the BSA for this species.
Southern California black walnut	***Juglans californica***	CRPR 4.2	Perennial deciduous tree; California endemic. Locally common below 4,500 feet elevation on slopes and in canyons in chaparral, cismontane woodlands, and coastal scrub habitats. Occurs in Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties. Blooms from March – August.	A	There is no suitable habitat in the BSA for this species.
southern jewel-flower	***Streptanthus campestris***	CRPR 1B.3	Perennial herb. Open rocky areas in chaparral, lower montane coniferous forest, and pinyon-juniper woodland at 2,950-7,545 feet elevation. In California, known from Imperial, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties. Also occurs in Mexico. Blooms from	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			April – July.		
Southern Sierra woolly sunflower	***Eriophyllum lanatum* var. *obovatum***	CRPR 4.3	Perennial herb; California endemic. Occurs in sandy loam soils in lower and upper montane coniferous forest habitats from 3,655-8,200 feet elevation. Known from Fresno, Kern, San Bernardino, and Tulare counties. Blooms from June – July.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
thread-leaved brodiaea	***Brodiaea filifolia***	FT SE CRPR 1B.1	Perennial bulbiferous herb; California endemic. Usually occurs on clay or is associated with vernal pools or alkaline flats; occasionally occurs in vernally moist sites in fine soils (clay loam, silt loam, fine sandy loam, loam, loamy fine sand). Typically associated with needlegrass or alkali grassland or vernal pools. Also occurs in chaparral openings, cismontane woodlands, coastal scrub, playas, and valley and foothill grasslands. Known from Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties below 2,800 feet elevation. Blooms from March – June.	A	There is no suitable habitat or soils for this species within the BSA.
urn-flowered alumroot	***Heuchera caespitosa***	CRPR 4.3	Perennial rhizomatous herb; California endemic. Occurs in rocky areas in cismontane woodland, montane riparian forest, and lower and upper montane coniferous forest habitats from 3,790-8,690 feet elevation. Known from Kern, Los Angeles, San Bernardino, and Ventura counties. Blooms from May – August.	A	The Project site is outside the elevation range for this species. No suitable habitat is present within the BSA.
western spleenwort	***Asplenium vespertinum***	CRPR 4.2	Perennial rhizomatous herb. Occurs in rocky areas in chaparral, coastal scrub, and cismontane woodlands habitats. Known from Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties from 590-3,280 feet elevation. Also occurs in Baja California. Blooms from February – June.	A	There is no suitable habitat for this species within the BSA. Rocky areas within the BSA consist mostly of riverwash rock, which does not provide suitable attachment points.
white-bracted spineflower	***Chorizanthe xanti* var. *leucotheca***	CRPR 1B.2	Annual herb; California endemic. Occurs in sandy or gravelly soils in Mojave desert scrub, pinyon and juniper woodland, and coastal scrub habitats from 900-4,000 feet elevation. Reported from Los Angeles, Riverside, San Bernardino, and San Diego counties. Blooms from April – June.	A	There is no suitable habitat in the BSA for this species.
woolly chaparral-pea	***Pickeringia montana* var.**	CRPR 4.3	Evergreen shrub. Occurs in gabbroic, granitic, and	A	There is no suitable habitat in the

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
	tomentosa		clay soils in chaparral habitats from sea level to 5,580 feet elevation. Known from Los Angeles, Orange, Riverside (?), San Bernardino, and San Diego counties. Also occurs in Baja California. Blooms from May – August.		BSA for this species.
Wright's trichocoronis	***Trichocoronis wrightii* var. *wrightii***	CRPR 2.1	Annual herb. Found in alkaline vernal pools, meadows and seeps, marshes and swamps, and riparian forest habitats from 16-1,430 feet elevation. Known from Merced and Riverside counties. Historical occurrences from Colusa, San Joaquin, and Sutter counties. Also occurs in Texas and Mexico. Blooms from May – September.	A	There is no suitable habitat in the BSA for this species.

Notes:

Potential for Occurrence: (Caltrans Standard Environmental Reference)
A: Absent
HP: Habitat Present
P: Present

Federal Designations: (Federal Endangered Species Act, USFWS)
FE: Federal listed, endangered
FT: Federal listed, threatened

State Designations: (California Endangered Species Act, CDFW)
SE: State listed, endangered
ST: State listed, threatened
SR: State Rare

California Rare Plant Rank (CRPR) Lists:
CRPR 1A: Are presumed extinct because they have not been seen or collected in the wild in California for many years.
CRPR 1B: Rare throughout their range with the majority of them endemic to California.
CRPR 2: Rare within California but common outside of the state.
CRPR 3: Insufficient information to assign plant to one of the other ranks or reject them.
CRPR 4: Limited distribution or infrequent throughout a broader area of California.

CRPR THREAT CODE
.1- Seriously threatened in California
.2- Fairly threatened in California
.3- Not very threatened in California

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3.2.3 Special Status Wildlife Species

A literature review determined that 53 special status wildlife species may occur within the USGS quadrangles surrounding the Project area. Twelve of these special status wildlife species are federal and/or state listed endangered, threatened, or candidate species. The BSA supports suitable to marginally suitable habitat for several special status wildlife species. Nineteen of the 53 special status wildlife species identified in the literature review were determined to be absent due to a lack of suitable habitat or absence of sign during surveys. One listed species, San Bernardino kangaroo rat, as well as eight non-listed special status wildlife species, was observed within the BSA during biological reconnaissance and focused surveys, including coast horned lizard (*Phrynosoma blainvillii*), California horned lark (*Eremophila alpestris actia*), ferruginous hawk (*Buteo regalis*), yellow warbler (*Setophaga petechia brewsteri*), Cooper's hawk (*Accipiter cooperii*), black-tailed jackrabbit (*Lepus californicus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*). The remaining 25 special status wildlife species were determined to have habitat present. Special status wildlife species and their habitat requirements, regulatory status, and potential for occurrence within the BSA are detailed within Table 6. Project impacts and mitigation for special status wildlife species that are present, or have the potential to occur within the BSA, are addressed in Chapter 4, Section 4.3.

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Table 6. Listed and Special Status Wildlife Species Potentially Occurring or Known to Occur within the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
INSECTS					
Andrew's marble butterfly	***Euchloe hyantis andrewsi***	SA	Occurs in yellow pine forest near Lake Arrowhead and Big Bear Lake in the San Bernardino Mountains at 5,000-6,000 feet elevation. Host plants are *Streptanthus bernardinus* and *Arabis holboelii* var. *pinetorum*. Larval foodplant is *Descurainia richardsonii*.	A	Suitable yellow pine forest and host plants are absent from the BSA.
Busck's gallmoth	***Carolella busckana***	SA	Species habitat information is limited. Native to California. Occurs in riparian habitat with oaks, sycamores, ferns and coastal scrub sand dunes from San Bernardino to Los Angeles county.	HP	There is a limited amount of suitable habitat for this species present within the few sycamore trees that occur within the BSA.
Delhi Sands flower-loving fly	***Rhaphiomidas terminatus abdominalis***	FE	Restricted to Delhi series sands in western Riverside and San Bernardino counties.	A	Suitable Delhi sands are absent from the BSA.
desert cuckoo wasp	***Ceratochrysis longimala***	SA	Found in juniper habitats. California endemic species that occurs in the South Coast and Central Coast Regions.	A	Suitable juniper habitat is absent from the BSA.
FISHES					
arroyo chub	***Gila orcuttii***	SSC	Occurs in perennial streams or intermittent streams with permanent pools and slow water sections of streams with mud or sand substrates. Spawning occurs in pools. Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita river systems; introduced in Santa Ynez, Santa Maria, Cuyama, and Mojave river systems and smaller coastal streams.	HP	Suitable habitat for this species is present within the BSA.
Santa Ana speckled dace	***Rhinichthys osculus* ssp. *3***	SSC	Found in the headwaters of the Santa Ana and San Gabriel river drainages. Occurs in riffles in small streams and shore areas with abundant gravel and rock. Speckled dace occupy many isolated western drainages and have diversified into numerous subspecies, with those in swift water taking on streamlined forms, while those in slower water are relatively chubby and small finned.	HP	Suitable habitat for this species is present within the BSA.
Santa Ana sucker	***Catostomus santaanae***	FT SSC	Occurs in stream channels with a mosaic of loose sand, gravel, cobble, and boulder substrates in riffles, runs, pools, and shallow sandy stream	HP CH	Suitable habitat and critical habitat for this species is present within the BSA; however, the BSA is outside

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			margins with cool, running water. Historical range included the Los Angeles, San Gabriel, and Santa Ana river drainage systems in southern California. An introduced population also occurs in the Santa Clara River drainage system.		of the known geographical distribution of Santa Ana sucker and is not currently occupied due to a drop structure located 8.5 mi downstream of the Project site.
AMPHIBIANS AND REPTILES					
California mountain kingsnake (San Bernardino population)	***Lampropeltis zonata (parvirubra)***	SSC	Inhabits a wide range of habitats, including coastal sage scrub, chaparral, coniferous forest, oak-pine woodlands, riparian woodland, and manzanita. Often found in wooded areas near a stream with rock outcrops, talus or rotting logs that have sun exposure. Found in mountain ranges from northern Baja California to southern Washington from near sea level to 9,000 feet elevation. In southern California, occurs in the San Gabriel, San Bernardino, San Jacinto, Santa Monica, and Santa Ana mountains.	A	Suitable habitat is absent from the BSA.
California red-legged frog	***Rana draytonii***	FT SSC	Inhabits streams with slow-moving water and deep pools, with dense, shrubby riparian vegetation at pool edges. Occurs in foothills surrounding the Sacramento Valley and coastal streams from Marin County to northwestern Baja California. Believed to be extirpated between Los Angeles County and the Mexican border.	HP	Limited suitable habitat is present in the BSA. Slow moving waters with deep pools are present within City Creek. The nearest CNDDB recorded observation is approximately 4.0 mi from the BSA.
coast horned lizard	***Phrynosoma blainvillii***	SSC	Occurs in coastal sage scrub, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species, primarily harvester ants (*Pogonomyrmex* spp.). Prefers open country, especially with sandy areas, washes, and floodplains. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs in Siskiyou County, in the Central Valley and adjacent foothills below 4,000 feet elevation, in coastal areas of central California, and in non-desert areas of southern California below 6,000 feet elevation, and throughout the Baja California Peninsula.	P	Suitable habitat is present within the BSA. Species was observed during 2012 coastal California gnatcatcher surveys.
coastal whiptail	***Aspidoscelis tigris stejnegeri***	SA	Occurs in a wide variety of habitats in coastal and inland valleys and foothills, including coastal sage scrub, sparse grassland, and riparian woodland.	HP	Suitable habitat for this species is present within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			Found from Ventura County to Baja California.		
orange-throated whiptail	***Aspidoscelis hyperythra***	SSC	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food source, termites. Occurs in Riverside, Orange, and San Diego counties west of the crest of the Peninsular Ranges, in extreme southern San Bernardino County near Colton, and in Baja California.	HP	Suitable habitat for this species is present within the BSA.
red-diamond rattlesnake	***Crotalus ruber***	SSC	Inhabits desert scrub, thornscrub, open chaparral, and woodland; occasionally found in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Occurs in Morongo Valley in San Bernardino and Riverside counties to the west and south into Mexico.	A	Suitable habitat is absent from the BSA. Rocky densely vegetated areas are not present within the BSA.
rosy boa	***Lichanura trivirgata***	SA	Occurs in rocky areas in chaparral or scrub habitats or immediately adjacent to oak woodlands; also found in rocky riparian areas. Occurs in Los Angeles County, southwestern San Bernardino County, south through western Riverside County, and San Diego County into Baja California.	HP	Suitable habitat for this species is present within the BSA.
San Bernardino ringneck snake	***Diadophis punctatus modestus***	SA	Found along drainage courses, in mesic chaparral and oak and walnut woodland communities. Occurs in moist habitats of southwestern California from approximately Ventura to Orange counties.	A	Suitable habitat is absent from the BSA. Oak or walnut woodlands are not present within the BSA.
San Gabriel slender salamander	***Batrachoseps gabrieli***	SA	Found under rocks, wood, fern fronds and on soil at the base of talus slopes. This salamander is most active on the surface in winter and early spring. Known only from the San Gabriel Mountains at elevations from 2,800-7,800 feet.	A	Suitable habitat for this species is absent within the BSA. The Project site is below the elevation range of this species.
Sierra Madre yellow-legged frog	***Rana muscosa***	FE SCE SSC	Endemic to California. Inhabits lakes, meadow streams, isolated pools, and sunny riverbanks in the Sierra Nevada Mountains and Transverse Ranges from 1,210-12,010 feet elevation. Occurs in open stream and lake edges; a gentle slope up to a depth of 2-3in seems to be preferred. Rarely occurs where predatory fishes have been	A	Suitable habitat is absent from the BSA. The nearest CNDDB recorded observation is approximately 3.0 mi from the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			introduced.		
silvery legless lizard	***Anniella pulchra pulchra***	SSC	Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces. Soil moisture is essential; prefers sandy or loose loamy soils with a high moisture content.	HP	Suitable habitat for this species is present within the BSA. Friable soils with moisture content are present in the southern region of the BSA in the scrub habitat surrounding the Santa Ana River.
southern rubber boa	***Charina umbratica***	ST	Occurs near rock outcrops and woody debris in montane coniferous forest. Found in the San Bernardino and San Jacinto mountains from 5,000-8,000 feet elevation.	A	Suitable habitat for this species is absent within the BSA. The Project site is below the elevation range of this species.
two-striped garter snake	***Thamnophis hammondii***	SSC	Highly aquatic. Found in or near permanent freshwater, often along streams with rocky beds and riparian growth. Occurs from Coastal California from the vicinity of Salinas to northwest Baja California from sea-level to about 7,000 feet elevation.	HP	Suitable habitat is present within City Creek in the BSA, although City Creek may not have year-round, permanent flows.
western spadefoot	***Spea hammondii***	SSC	Occurs in grasslands and occasionally hardwood woodlands. This species is largely terrestrial but requires rain pools or other ponded water persisting at least three weeks for breeding. Burrows in loose soils during the dry season. Occurs in the Central Valley and adjacent foothills, the non-desert areas of southern California, and Baja California.	HP	Limited suitable habitat is present in the BSA.
BIRDS					
Bell's sage sparrow	***Amphispiza belli belli***	WL	Occupies chaparral and coastal sage scrub from west central California to northwestern Baja California.	A	Suitable habitat is absent from the BSA. Coastal sage scrub and open chaparral habitat is not found in the BSA.
burrowing owl	***Athene cunicularia***	SSC *(Burrow sites and some wintering sites)*	Occurs in open annual grasslands or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation in open country in much of North and South America. Also found in agricultural and range lands, railroad rights-of-way, and margins of highways, golf courses, and airports. Usually occupies ground squirrel burrows but will also utilize man-made structures, such as earthen berms, cement culverts, cement, asphalt,	HP	Suitable habitat is present within the BSA. Species was not observed in the 2012 burrowing owl surveys. The nearest recorded observation is 0.66 mi from the BSA, east of the San Bernardino International Airport and north of the Santa Ana River.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			rock, or wood debris piles.		
California condor	***Gymnogyps californianus***	FE SE	Occurs in semi-arid mountainous areas in California, including the southern Sierra Nevedas, Tehachapi Mountains, Transverse Ranges, and the Coast Ranges from Santa Clara County south to Los Angeles County. Forages in open habitats, including grasslands, foothill chaparral, and savannahs, and feeds soley on carrion. Nests and roosts in cliffs on ledges and cavities and in large trees and snags.	A	Suitable habitat is absent from the BSA. Mountainous areas for roosting, wide open native habitats for foraging, and large sources of carrion are not found in the BSA.
California horned lark	***Eremophila alpestris actia***	WL	Occurs in open grasslands and fields, agricultural areas, and open montane grasslands. This subspecies is resident from northern Baja California northward throughout non-desert areas to Humboldt County, including the San Joaquin Valley and the western foothills of the Sierra Nevada (north to Calaveras County). Prefers bare ground such as plowed or fall-planted fields for nesting, but may also nest in marshy soil. During the breeding season, this is the only subspecies in non-desert southern California; however, from September through April or early May, other subspecies visit the area.	P	Suitable habitat is present within the BSA. This species was observed during surveys.
coastal California gnatcatcher	***Polioptila californica californica***	FT SSC	Inhabits coastal sage scrub vegetation on mesas, arid hillsides, and in washes. Nests almost exclusively in California sagebrush. Occurs in low-lying foothills and valleys in cismontane southwestern California and Baja California.	HP	Suitable habitat is present within the BSA. Species was not observed during the 2012 coastal California gnatcatcher surveys.
Cooper's hawk	***Accipiter cooperii***	WL *(Nesting)*	Occurs in woodland habitats, chiefly in areas that are open, interrupted or marginal, including natural areas as well as human-created habitats such as plantations and ornamental trees in urban landscapes. Nest primarily in riparian growths of tall (20-60 feet), deciduous trees in extensive forested areas, generally woodlots of 10-20 acres with canopy closure of greater than 60%. Occasionally nests in isolated trees in more open areas. Forages in a wide range of habitats, but primarily in forests and woodlands.	P	Suitable habitat is present within the Eucalyptus Grove and other large trees dispersed throughout the BSA. Species was observed during biological field surveys.
ferruginous hawk	***Buteo regalis***	WL *(Wintering)*	Forages in open fields, grasslands and agricultural areas, sagebrush flats, desert scrub, fringes of	P	Suitable habitat is present within the BSA. Species was observed

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			pinyon-juniper habitats, and other open country in western North America.		during 2012 burrowing owl surveys.
Lawrence's goldfinch	***Spinus lawrencei***	SA *(Nesting)*	Usually inhabits oak woodlands, but also uses chaparral, riparian woodlands, coastal scrub, forests, pinyon-juniper woodlands, plantings of cypress, cedars, or junipers, tall weedy and adjacent rural residential areas. A water source such as a stream, small lake, or farm pond within 0.3 mile is probably required. Nests throughout much of the non-desert portion of California and Baja California.	HP	Limited suitable habitat is present within the Eucalyptus Grove in the BSA.
least Bell's vireo	***Vireo bellii pusilus***	FE SE	Resides in low riparian areas close to water or dry river beds. Nests are usually constructed in bushes or within the branches of willows, mule fat, and mesquite (*Prosopis* spp.). The most critical structural component of this species habitat in California is a dense shrub layer 2-10 feet above ground. Generally occurs below an elevation of 2,000 feet. Nests from central California to northern Baja California. Winters in southern Baja California.	HP	Suitable habitat is present within the BSA. Species was not observed during the 2012 least Bell's vireo surveys.
loggerhead shrike	***Lanius ludovicianus***	SSC *(Nesting)*	Occurs in broken woodlands, savannah, pinyon-juniper, Joshua tree and riparian woodlands, and desert oasis scrub and washes. Prefers open country with short vegetation for hunting, with perches for scanning and fairly dense shrubs and brush for nesting. Will also inhabit human-created habitats, including pastures, old orchards, cemeteries, and golf courses.	HP	Suitable habitat is present within undeveloped areas of the BSA.
southern California rufous-crowned sparrow	***Aimophila ruficeps canescens***	WL	Inhabits steep, rocky coastal sage scrub and open chaparral habitats, particularly scrubby areas mixed with grasslands. Occurs from Santa Barbara County to northwestern Baja California.	A	Suitable habitat is absent from the BSA. Rocky coastal sage scrub and open chaparral habitat is not found in the BSA.
southwestern willow flycatcher	***Empidonax traillii extimus***	FE SE	Occurs in riparian woodlands along streams and rivers with mature, dense stands of willows, cottonwoods or smaller spring fed or boggy areas with willows or alders. Breeds in relatively dense riparian habitats from near sea level to over 8,530 feet elevation in the southwestern U.S. and (formerly?) northwestern Mexico. Winters in Central and South America.	A	Suitable habitat and structure is not present with the BSA. Limited amounts of less than marginally suitable riparian habitat are found within the Arroyo Willow Thicket vegetation communities.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
tricolored blackbird	***Agelaius tricolor***	SSC *(Nesting Colony)*	Occurs in open country in western Oregon, California, and northwestern Baja California. Breeds near freshwater, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow (*Salix* spp.), blackberry (*Rubus* spp.), wild rose (*Rosa* spp.), tall herbs and forages in grassland and cropland habitats. Seeks cover for roosting in emergent wetland vegetation, especially cattails (*Typha* spp.) and tules (*Scirpus* spp.), and also in trees and shrubs.	HP	Suitable habitat is present within riparian habitat in the BSA.
western yellow-billed cuckoo	***Coccyzus americanus occidentalis***	FC SE	Breeds and nests in extensive stands of dense cottonwood/willow riparian forest along broad, lower flood bottoms of larger river systems at scattered locales in western North America. Winters in South America.	A	Suitable habitat is absent from the BSA. The nearest CNDDB recorded observation is approximately 1.0 mi east of the BSA.
white-faced ibis	***Plegadis chihi***	WL *(Nesting/ Rookery Site)*	Occurs in freshwater wetlands in temperate and tropical North and South America. Usually nests in emergent vegetation or low trees and shrubs over shallow water.	A	Suitable habitat is not present within the BSA. No perennial freshwater wetlands occur within the BSA.
white-tailed kite	***Elanus leucurus***	FP	A strongly lowland species that is rare at elevations above 2,000 feet in California. Forages in open country and nests in trees and large shrubs near foraging areas in savannahs and at edges between open habitat and woodland or forest areas.	HP	Suitable habitat is present in the BSA within the Eucalyptus Grove and other large trees dispersed throughout the BSA.
yellow-breasted chat	***Icteria virens***	SSC *(Nesting)*	Inhabits riparian thickets of willow in brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	HP	Suitable habitat is present within the Arroyo Willow Thicket in the BSA.
yellow warbler	***Setophaga petechia brewsteri***	SSC *(Nesting)*	Occurs in wetlands and mature riparian woodlands dominated by cottonwoods (*Populus* spp.), alders (*Alnus* spp.), and willows while nesting in the western U.S. and northwestern Baja California. More widespread in brushy areas and woodlands during migration and winter, when occurring from western Mexico to northern South America. Migrants belonging to other subspecies are widespread and common.	P	Suitable habitat is present within the BSA. Species was observed during 2012 coastal California gnatcatcher surveys.
MAMMALS					

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
American badger	***Taxidea taxus***	SSC	Primary habitat requirements are believed to be sufficient food (burrowing mammals) and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert habitats. Most abundant in drier open stages of habitats. Widely distributed in North America.	HP	Suitable habitat is present within the Scalebroom Scrub in the BSA.
Los Angeles pocket mouse	***Perognathus longimembris brevinasus***	SSC	Occurs in lower elevation grasslands and coastal sage scrub communities in the Los Angeles basin. Prefers open ground with fine sandy soil for burrowing, but has been found on gravel washes and stony soils. May not dig extensive burrows but rather hide under weeds and dead leaves instead. Found in Los Angeles, Riverside, and San Bernardino counties.	HP	Suitable habitat is present within the BSA. This species was not observed during 2012 San Bernardino kangaroo rat surveys.
northwestern San Diego pocket mouse	***Chaetodipus fallax fallax***	SSC	Inhabits coastal scrub, chaparral, grassland, and sagebrush habitats in sandy, herbaceous areas, usually in association with rocks or coarse gravel. Occurs from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego counties to northern Baja California.	P	Suitable habitat is present within the BSA. Species was observed during 2012 San Bernardino kangaroo rat surveys.
pallid bat	***Antrozous pallidus***	SSC	Occurs in deserts, grasslands, shrublands, woodlands, and forests in western North America. Most common in open dry habitats with rocky areas for roosting. Roost sites must be protected from high temperatures. Day roosts include caves, crevices, mines and occasionally hollow trees and buildings. Night roosts can include more open sites, such as porches and open buildings. Hibernation sites are probably rock crevices.	HP	Suitable habitat is present within the BSA, primarily within the crevices and weep holes of the SR-210 bridges.
pocketed free-tailed bat	***Nyctinomops femorosaccus***	SSC	Occurs in a variety of arid areas in southern California, including pine-juniper woodlands, desert oasis, desert wash, and desert riparian. Roosts in high rock cliffs, crevices, and rock outcrops. Forages primarily on large moths, especially over water. Found from the southwestern United States to central Mexico.	A	Suitable habitat is absent within the BSA.
San Bernardino flying squirrel	***Glaucomys sabrinus californicus***	SSC	Inhabits a wide variety of woodland habitats primarily consisting of conifers, mixed coniferous-deciduous forest and occasionally broadleaf-deciduous forest. Commonly found in white fir	A	Suitable habitat is absent from the BSA. Coniferous-deciduous forest and broadleaf- deciduous forest are

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			(*Abies concolor*), Coulter pine (*Pinus coulteri*), Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), lodgepole pine forests, and ponderosa pine forest. May occur in hardwoods where old or dead trees have numerous woodpecker-type nesting holes. Requires nearby water. Occurs at elevations between 4,000-8,400 feet in the San Bernardino and San Jacinto mountains.		not found within the BSA and the Project site is below the elevation range of this species.
San Bernardino kangaroo rat	***Dipodomys merriami parvus***	FE SSC	Typically occurs in Riversidean alluvial fan sage scrub, alluvial fans and floodplains, braided river channels, active channels and terraces, and along washes with nearby sage scrub. Inhabits areas with gravelly and sandy loam soils. Soil texture is a primary factor in this subspecies occurrence. Sandy loam substrates allow for the necessary digging of simple, shallow burrows. Occurs in San Bernardino Valley (San Bernardino County) and San Jacinto Valley (Riverside County). In San Bernardino County, this species occurs primarily in the Santa Ana River and its tributaries north of I-10, with small remnant populations in the Etiwanda alluvial fan, the northern portion of the Jurupa Mountains in the south Bloomington area, and in Reche Canyon.	P CH	Suitable habitat and critical habitat are present within the BSA. Species was observed during 2012 San Bernardino kangaroo rat surveys.
San Diego black-tailed jackrabbit	***Lepus californicus bennettii***	SSC	Inhabits a 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.	P	Suitable habitat is present within the Scalebroom Scrub and other vegetated areas in the BSA. Species was observed during biological field surveys.
San Diego desert woodrat	***Neotoma lepida intermedia***	SSC	Found in desert scrub and coastal sage scrub habitat, especially in association with cactus patches. Builds stick nests around cacti or on rocky crevices. Occurs along the Pacific slope from San Luis Obispo County to northwest Baja California.	P	Suitable habitat is present within the BSA. Species was observed during 2012 San Bernardino kangaroo rat surveys.
southern grasshopper mouse	***Onychomys torridus ramona***	SSC	Inhabits arid habitats, particularly with friable soils, and includes coastal scrub, mixed chaparral, sagebrush, low sage, bitterbrush, and grassland habitats. Occurs in arid portions of southwestern	HP	Suitable habitat is present within the BSA. This species was not observed during 2012 San Bernardino kangaroo rat surveys.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
			California and northwestern Baja California.		
Stephen's kangaroo rat	***Dipodomys stephensi***	FE ST	Found almost exclusively in open grasslands or sparse shrublands with cover of less than 50% during the summer. Avoids dense grasses and is more likely to inhabit areas where the annual forbs disarticulate in the summer and leave more open areas. Typically found in sandy and sandy loam soils with low clay to gravel content for burrowing; will sometimes utilize the burrows of other mammals. Tends to avoid rocky soils. In general, the highest abundances of species occur on gentle slopes less than 15%.	A	Suitable habitat is absent from the BSA. Open grasslands or sparse shrublands with cover of less than 50% are not present within BSA.
western mastiff bat	***Eumops perotis californicus***	SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in the crevices in vertical cliff faces, high buildings, and tunnels and travels widely when foraging.	HP	Suitable foraging habitat is present in the BSA. No suitable roosting habitat is present within the BSA.
western yellow bat	***Lasiurus xanthinus***	SSC	Occurs in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats in southern California. Roosts in trees, particularly the dead fronds of palm trees. Forages over water and among trees.	HP	Suitable roosting and foraging habitat is present within the BSA.
white-eared pocket mouse	***Perognathus alticolus alticolus***	SSC	Found in ponderosa pine habitats and mixed chaparral and sagebrush habitats in the San Bernardino Mountains from 3,500-5,900 feet elevation. Burrows are constructed in loose sandy soils. The last reported collection of this species was in 1938 in the San Bernardino Mountains.	A	Suitable habitat is absent from the BSA. The Project site is outside the elevation range of this species.

Notes:

Federal Designations: (Federal Endangered Species Act, USFWS)
FE: Federal listed, endangered
FT: Federal listed, threatened
CH: Critical habitat

State Designations: (California Endangered Species Act, CDFW)
SE: State listed, endangered
ST: State listed, threatened
SSC: Species of special concern
SCE: State Candidate Endangered
WL: Watch list
FP: Fully protected
SA: State special animal

Potential for Occurrence: (Caltrans Standard Environmental Reference)
A: Absent
HP: Habitat present
P: Present
CH: Critical habitat

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

4.1 Natural Communities of Special Concern

Natural Communities of Special Concern are protected vegetation communities with limited distributions that often support special status plants or wildlife. In some cases, wetlands and/or Waters of the U.S. and State are associated with these sensitive vegetation communities and are also considered sensitive. Four Natural Communities of Special Concern considered important by CDFW were identified within the BSA: scalebroom scrub, California buckwheat scrub, arroyo willow thicket, and mule fat thicket. Each of these Natural Communities of Special Concern identified within the BSA are described in detail below and are illustrated in Figures 6A-6I. Project impacts discussed below are based on preliminary engineering design. Habitats that have been designated as critical habitat under the FESA are discussed in Sections 4.3.1 and 4.3.5 and are not discussed further in this section.

4.1.1 Discussion of Scalebroom Scrub Habitat

Scalebroom scrub is a shrubland community dominated by scalebroom with an open to continuous canopy and variable understory (Sawyer et al. 2009). It is most often associated with alluvial soils along benches within the flood zone of washes and rivers in arid zones. The species composition of the scalebroom scrub located within the BSA is equivalent to the Riversidean alluvial fan sage scrub community described by Holland (1986), which is classified as a sensitive vegetation community by CDFW. It is a plant community of concern because its extent has been substantially reduced during recent decades primarily due to urbanization. Vegetation of this type is associated with a number of listed and special status species, including San Bernardino kangaroo rat and Santa Ana River woollystar.

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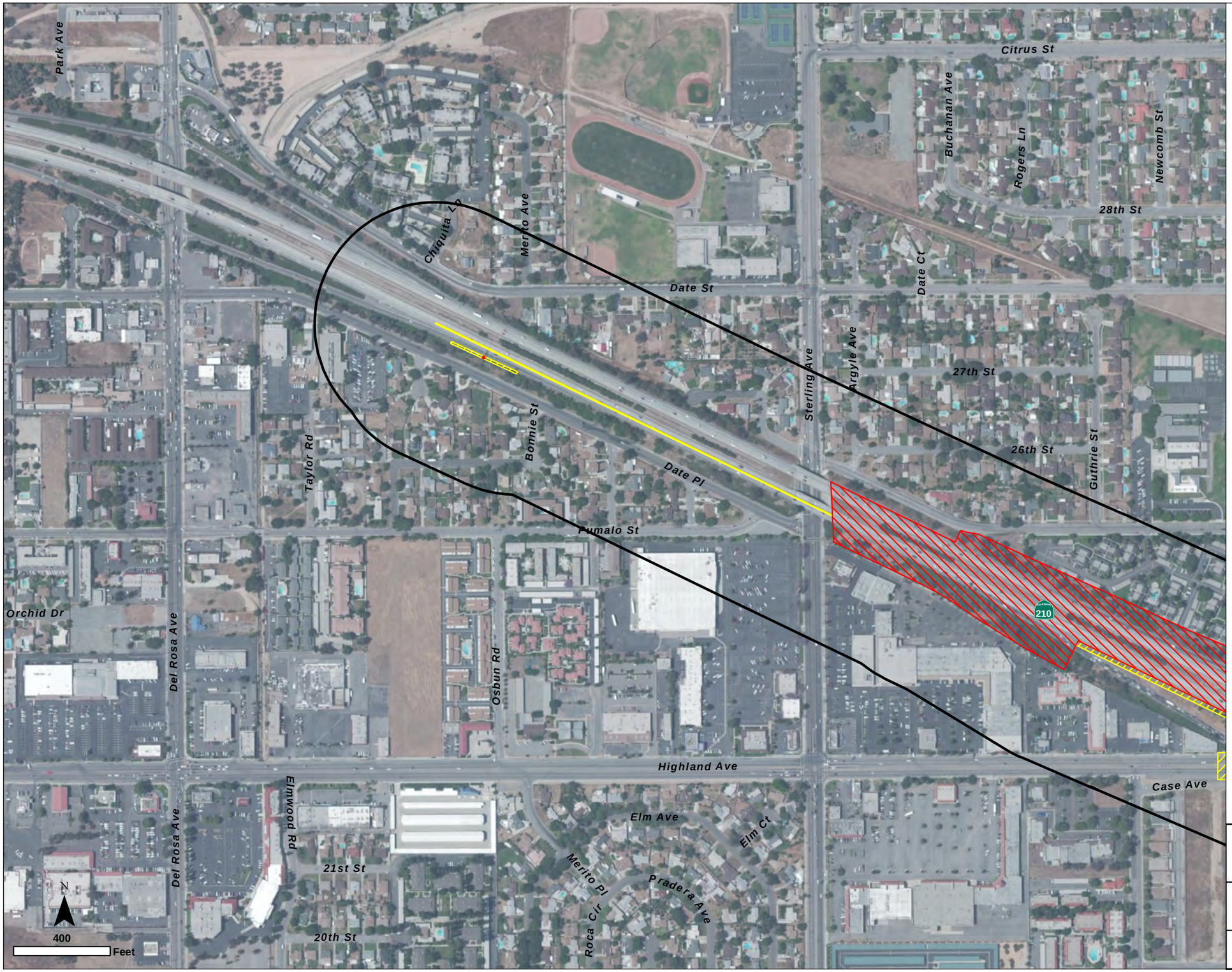

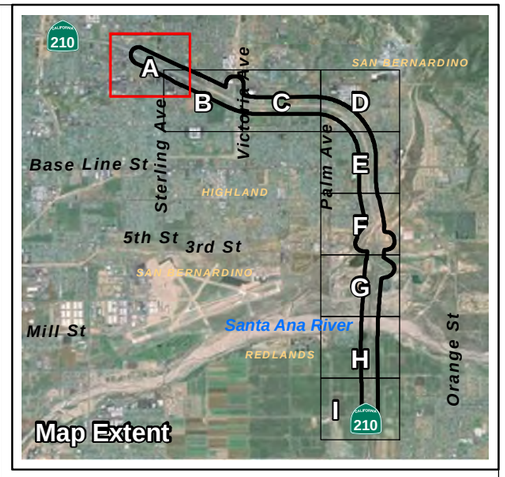

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6A
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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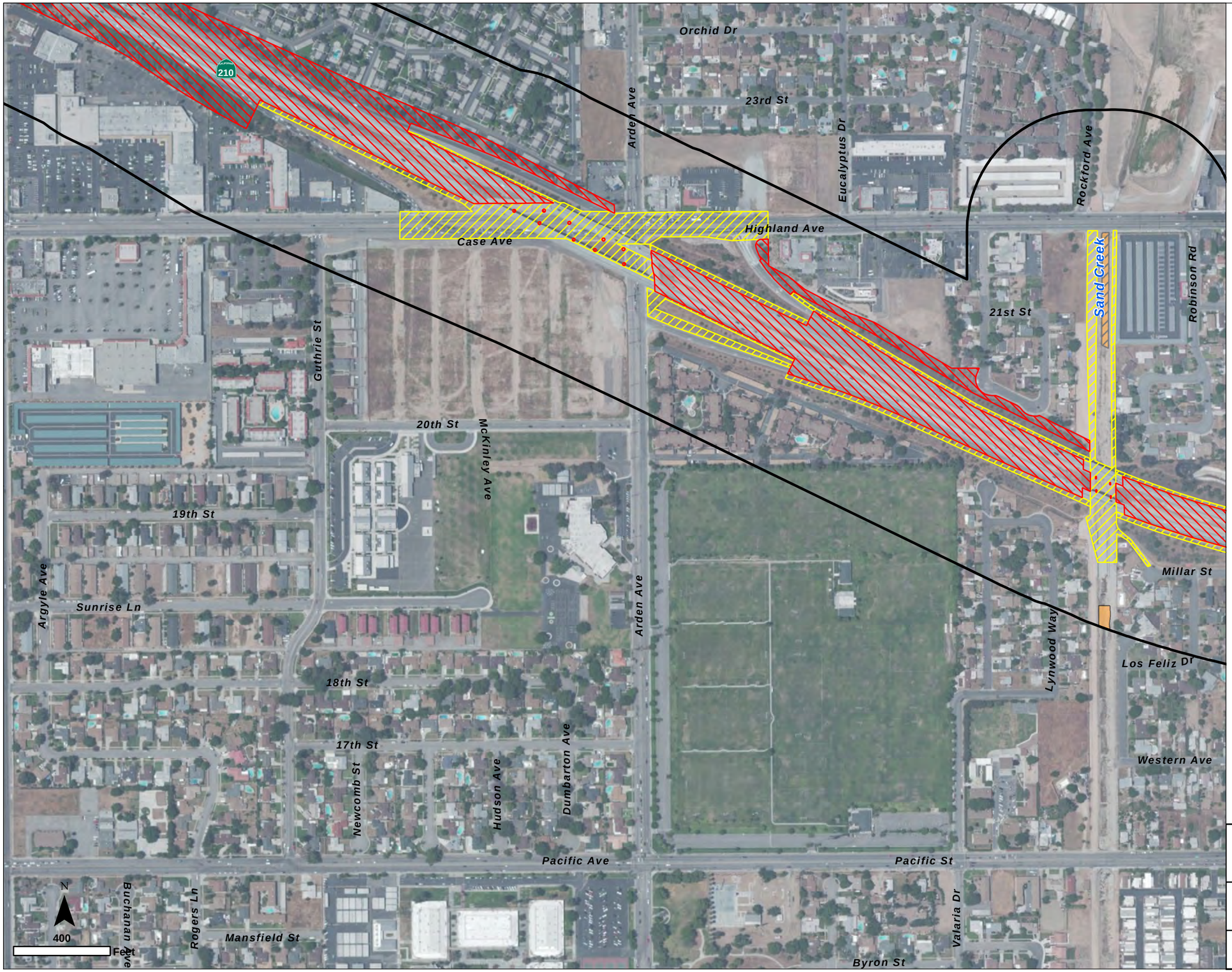

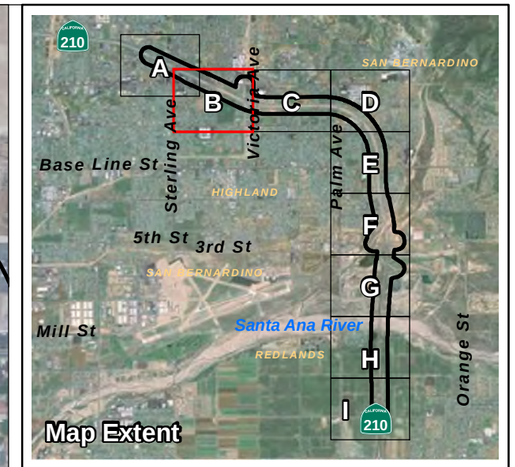

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6B
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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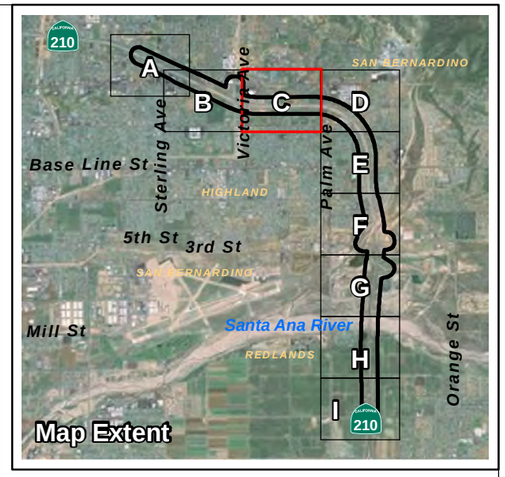

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6C
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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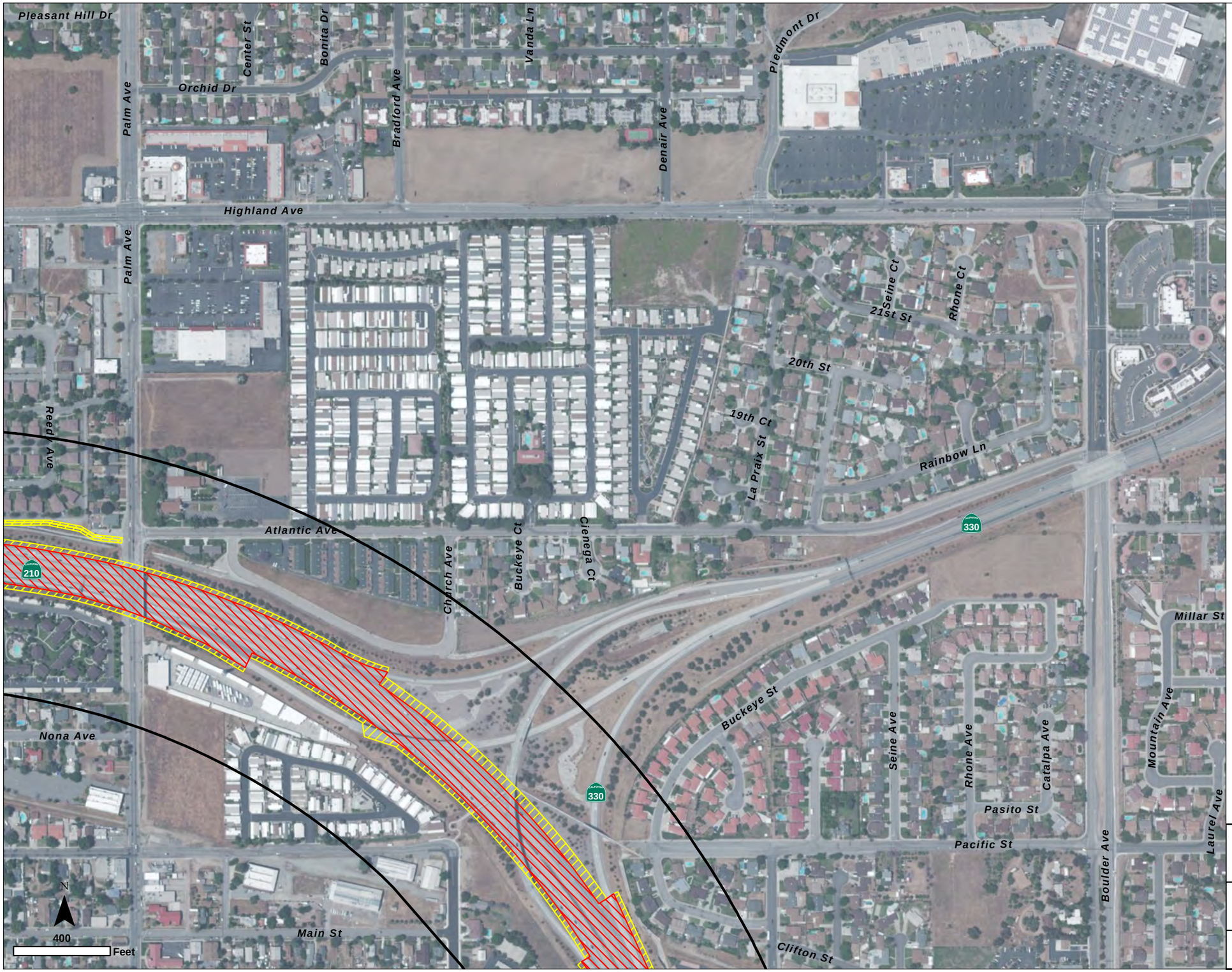

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6D
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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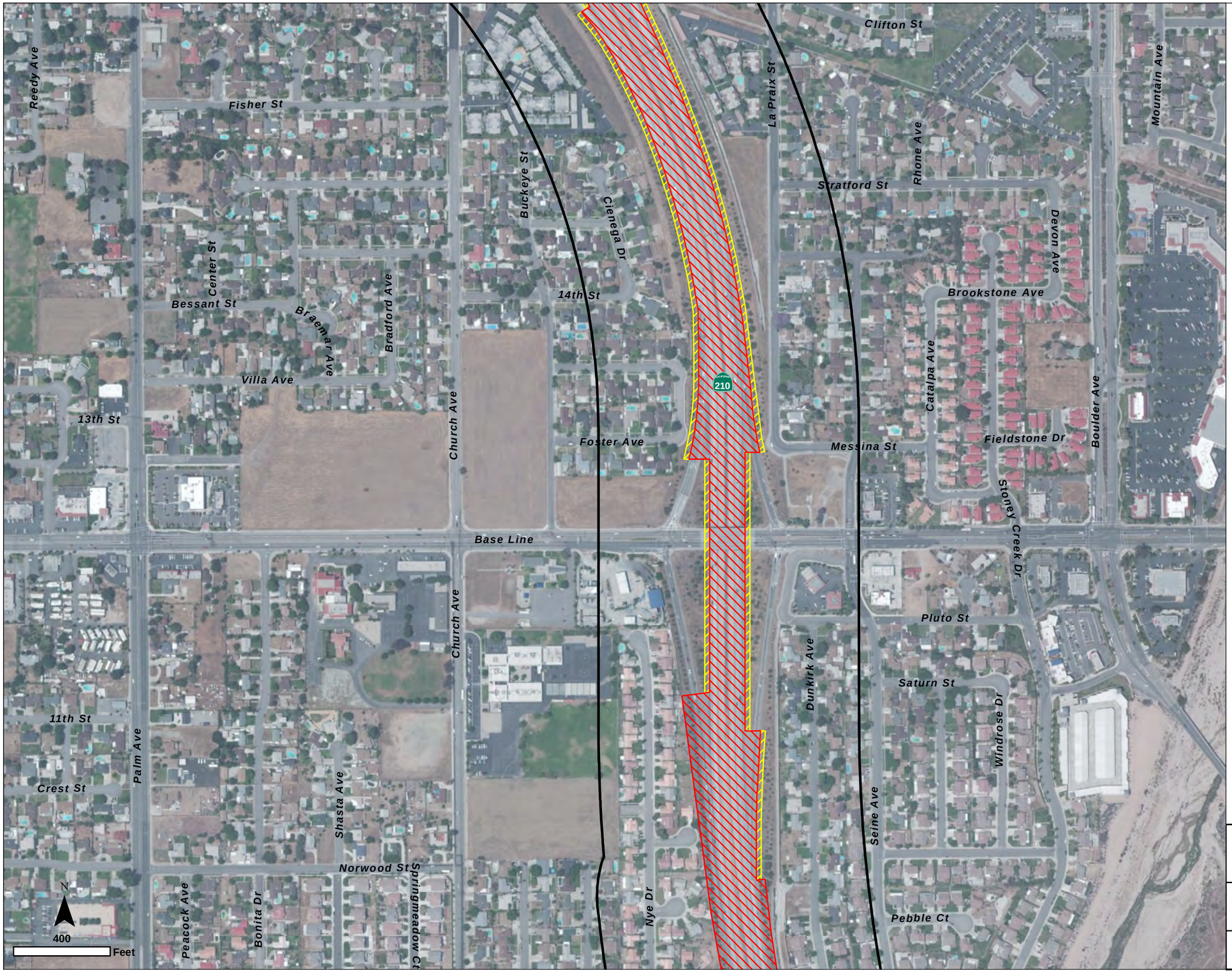

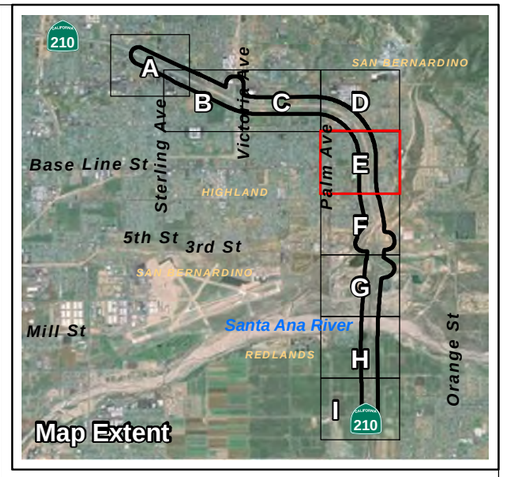

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6E
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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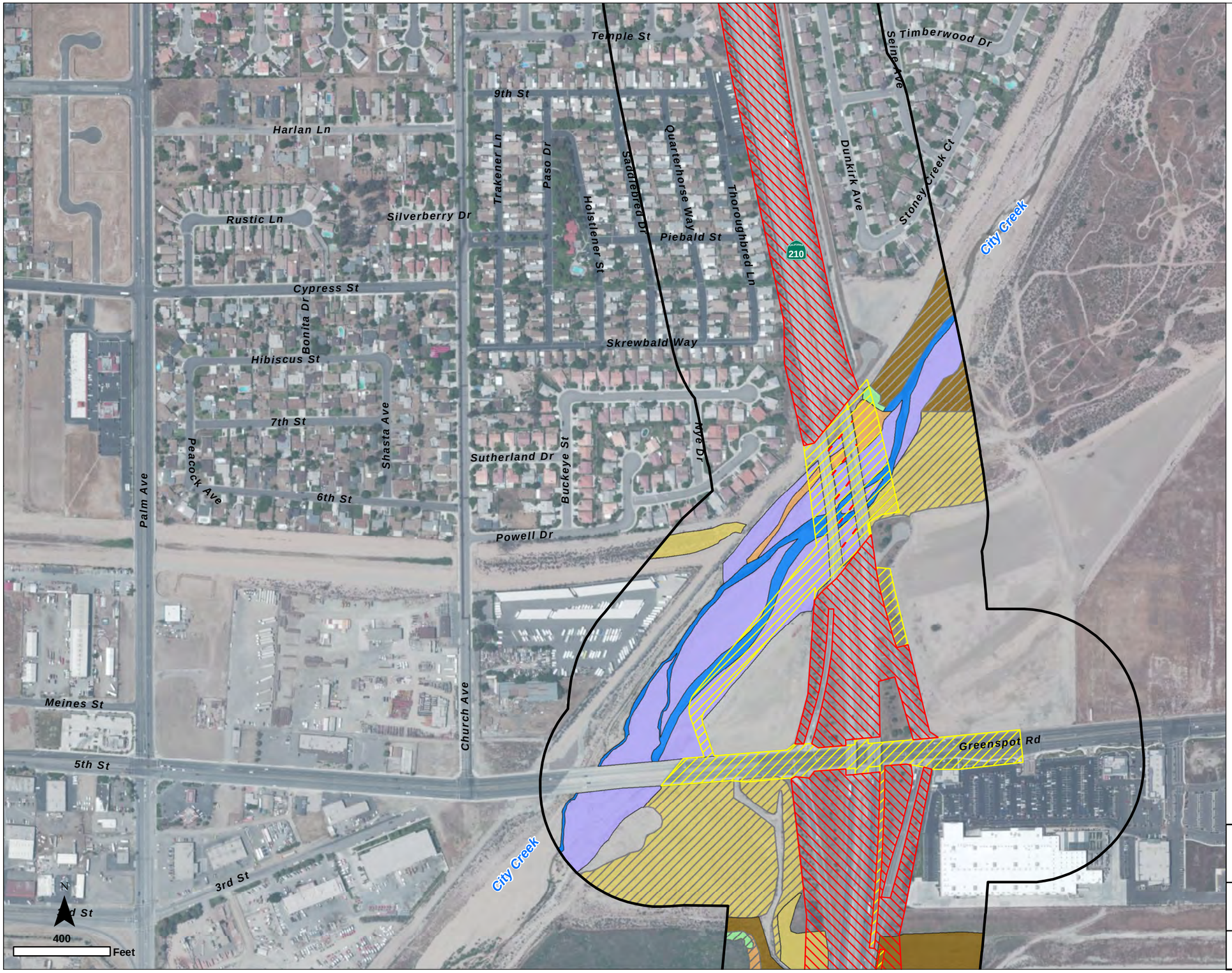

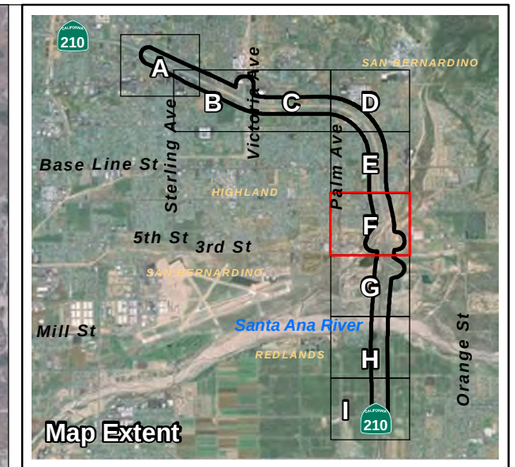

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6F
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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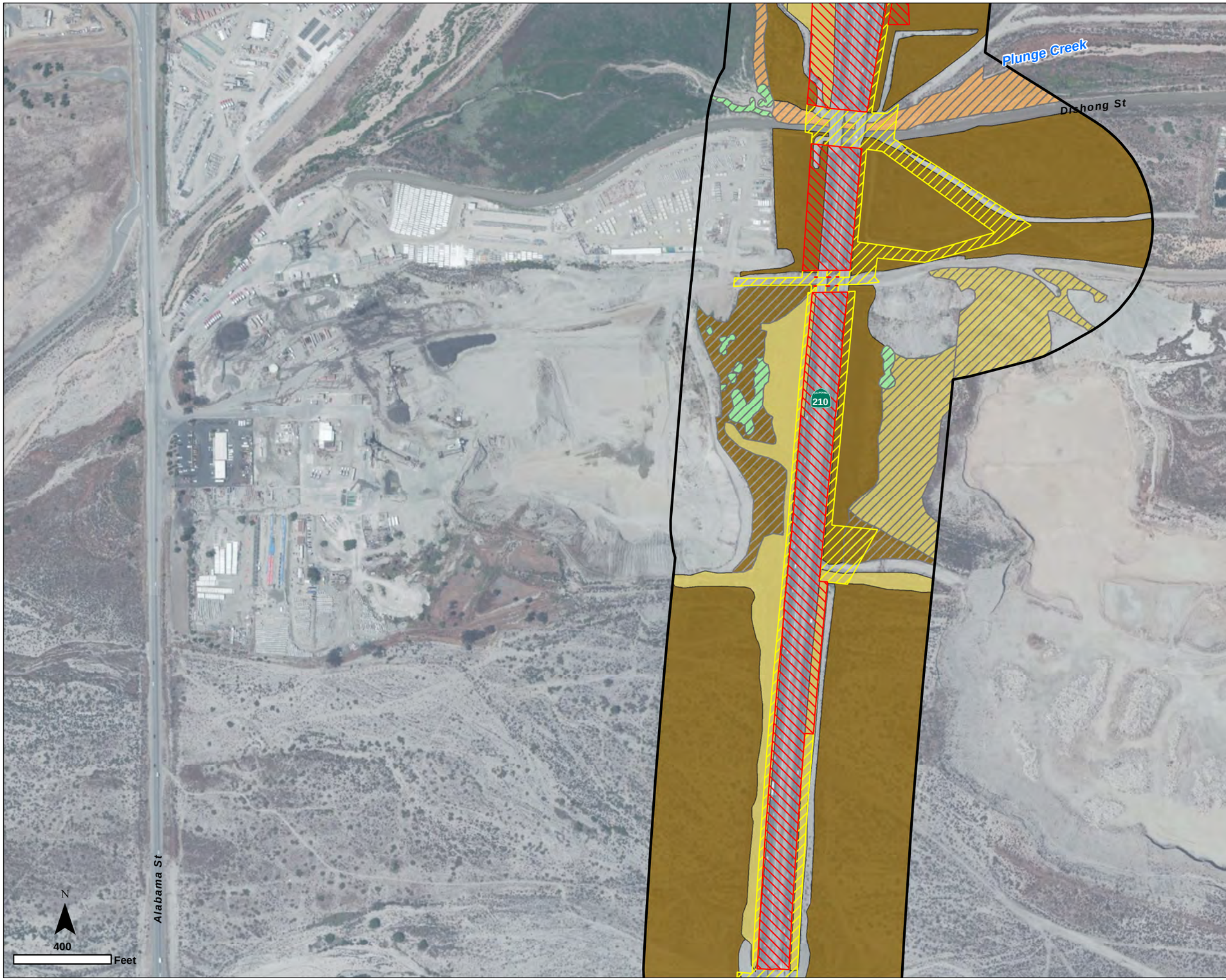

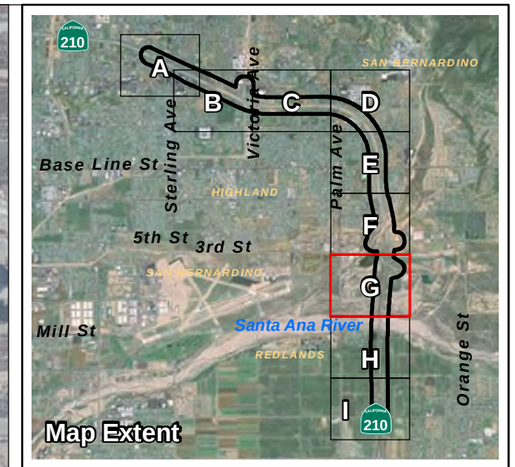

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6G
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

Caltrans

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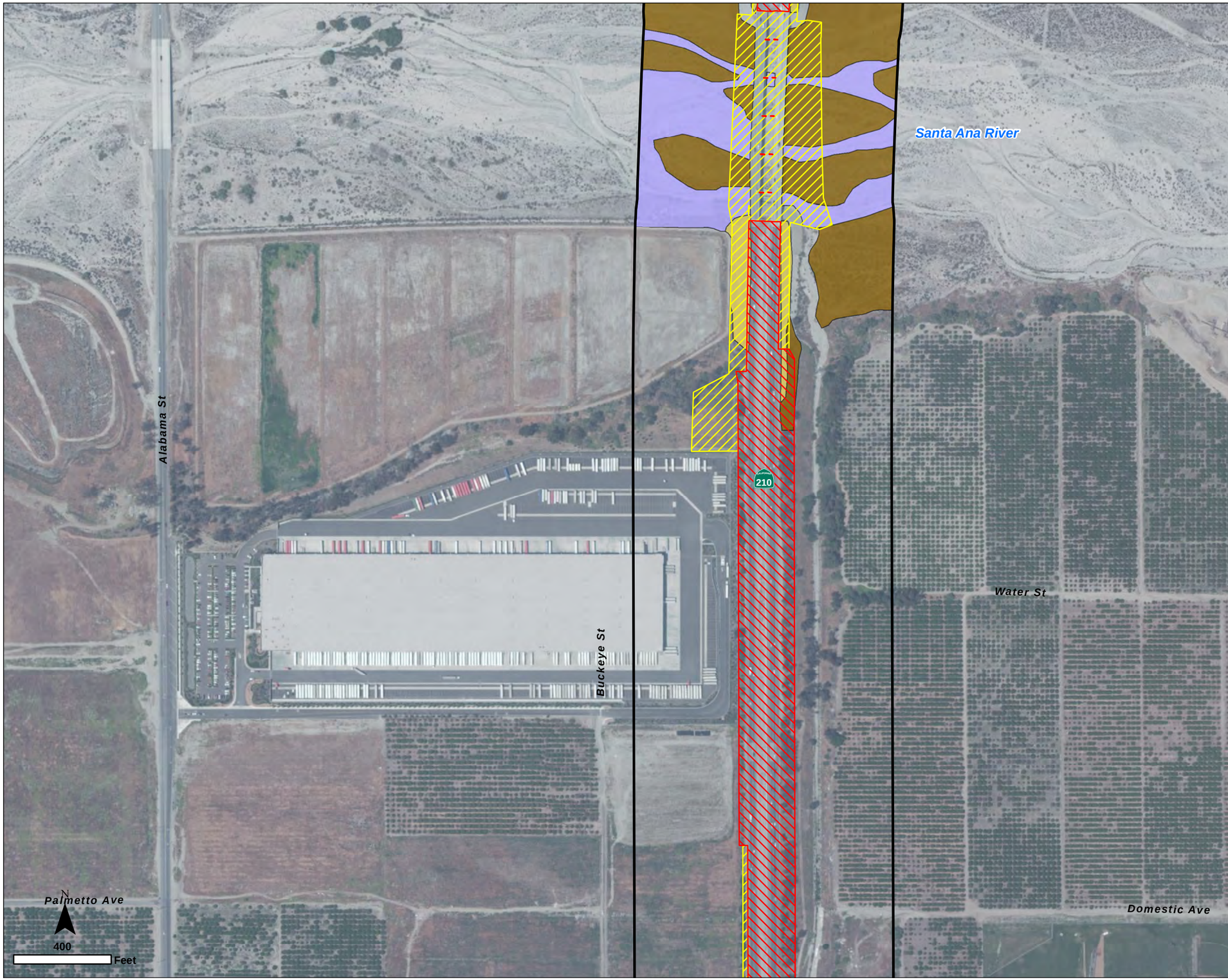

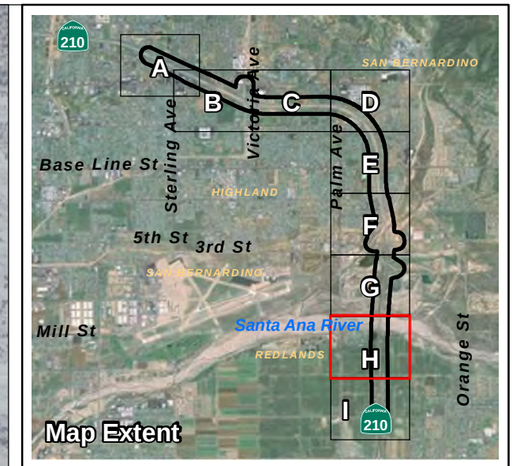

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Vegetation Communities

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thicket
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thicket
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- OW - Open Water
- UNVEG WASH - Unvegetated Wash

FIGURE 6H
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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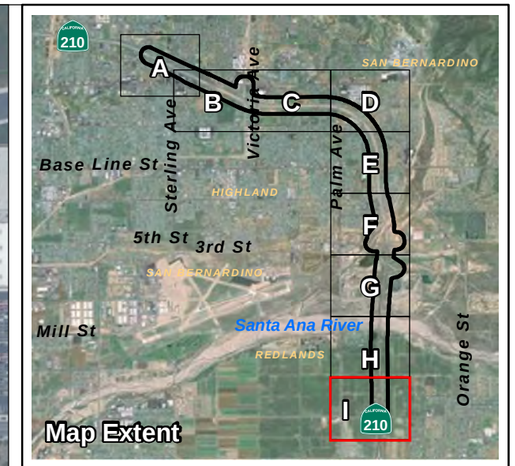

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Sensitive Vegetation Communities

SBS - Scalebroom Scrub

MFT - Mule Fat Thicket

CBS - California Buckwheat Scrub

AWT - Arroyo Willow Thicket

DIST SBS - Disturbed Scalebroom Scrub

DIST MFT - Disturbed Mule Fat Thicket

DIST CBS - Disturbed California Buckwheat Scrub

DIST AWT - Disturbed Arroyo Willow Thicket

OW - Open Water

UNVEG WASH - Unvegetated Wash

FIGURE 6I
Sensitive Biological Resources, Natural Communities

SR-210 Mixed Flow Lane Addition Project

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4.1.1.1 Survey Results

Scalebroom scrub within the BSA was the dominant vegetation type along the benches of the Santa Ana River, City Creek, and Plunge Creek. An estimated 68.09 acres of scalebroom scrub and 6.86 acres of disturbed scalebroom scrub were identified and mapped during field surveys in 2012 and 2013 (Figures 6A-6I). Associated species within the BSA included Our Lord's candle, yerba santa, and California buckwheat. Disturbance within scalebroom scrub varied within the BSA and was noted by the presence of a lower canopy cover and dominance of non-native grasses in the understory.

4.1.1.2 Project Impacts

The Project would result in permanent and temporary impacts to scalebroom scrub habitat through disturbance and/or removal of existing vegetation. The Project would directly and permanently remove scalebroom scrub and disturbed scalebroom scrub (Table 7). Permanent impacts may include the removal of existing vegetation and encroachment into the plant community that may have permanent effects. Temporary direct impacts may include incidental disturbances within construction areas, equipment staging, and temporary construction access routes. Temporary indirect effects, such as dust, increased fire risk, and littering, may be caused by construction activities to scalebroom scrub adjacent to the disturbance footprint; however, these temporary impacts are expected to be greatly reduced with implementation of the measures presented in Section 4.1.1.4. The temporary impacts to scalebroom scrub along Plunge Creek, City Creek, and the Santa Ana River are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to scalebroom scrub will likely be refined from those described in this report during the permitting phase of the Project (Table 7).

Table 7. Impacts to Scalebroom Scrub Habitat

	Permanent Impact (acre)	Temporary Impact (acre)
Scalebroom scrub	1.474	6.180
Disturbed scalebroom scrub	0.000	0.359
Total	**1.474**	**6.539**

4.1.1.3 Compensatory Mitigation

A compensatory mitigation plan for impacts to scalebroom scrub located within jurisdictional aquatic resources will be developed during the permitting phase in coordination with the ACOE, CDFW, and RWQCB. Mitigation will consist of payment into the Santa Ana Watershed Association in-lieu fee program or other approved in-lieu fee or mitigation bank program. Temporary and permanent impacts will be mitigated at a minimum 1:1 ratio. Onsite restoration of temporarily-impacted scalebroom scrub would occur upon completion of construction and will consist of returning impacted areas to original grade and preconstruction conditions. A Habitat Mitigation Monitoring Plan (HMMP) will be developed and will include a monitoring period with specific success criteria to be developed through agency consultation. In addition, impacts to scalebroom scrub occupied with San Bernardino kangaroo rat and Santa Ana River woollystar will be mitigated during Section 7 consultation with USFWS and will consist of on-site restoration of temporarily impacted areas and off-site mitigation of permanently impacted areas. Compensatory mitigation for Santa Ana River woollystar and San Bernardino kangaroo rat are discussed in Sections 4.2.1.3 and 4.3.5.3, respectively.

4.1.1.4 Avoidance and Minimization Efforts

The following scalebroom scrub habitat specific measures will be incorporated to avoid and minimize effects:

1) Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around scalebroom scrub adjacent to the Project footprint to designate ESAs to be preserved. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to nearby preserved areas. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of

fill material in areas where vegetation is immediately adjacent to planned grading activities.

2) All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located to prevent the runoff from any spills from entering Waters of the U.S.

3) A construction SWPPP and a soil erosion and sedimentation plan will be developed to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources onsite during and following the Project construction phase. The SWPPP will identify specific BMPs to be implemented during Project construction to not cause or contribute to exceeding any water quality standard. In addition, the SWPPP will contain provisions for changes to the plan such as alternative mechanisms, if necessary, during Project design and/or construction to achieve the stated goals and performance standards.

4) To avoid effects to nesting birds, any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird season (i.e., February 1–September 1). If vegetation clearing is necessary during the nesting season, then a qualified biologist will conduct a preconstruction survey to identify the locations of nests within 72 hours of proposed vegetation clearing. Should nesting birds be found, an exclusionary buffer (typically 200 feet, or 500 feet for raptors and listed species) will be established by the biologist. This buffer should be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this buffer until the biologist determines that the young have fledged or the nest is no longer active. The specific buffer size may be adjusted depending on the species and work activities under guidance of the biologist with concurrence by CDFW.

5) A biologist will monitor construction within the vicinity of scalebroom scrub areas prior to and during vegetation removal to flush any wildlife species present to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly implemented.

6) Fire suppression capability, including extinguishers, shovels, and water tankers, will be available onsite whenever construction occurs during the fire season (as determined by the San Bernardino County Fire Department). Activities that may produce sparks, including welding or grinding, will use protective gear to reduce fire risks, such as the use of shields and protective mats.

7) Dust control measures will be implemented by the contractor to reduce excessive dust emissions. Dust control measures will occur at least two times per day on all construction days, or more during windy or dry periods, and may include wetting work areas, the use of soil binders on dirt roads, and wetting or covering stockpiles.

4.1.1.5 Cumulative Impacts

Future transportation and infrastructure projects are planned in the area. Because the Project is mainly an inside widening project and has minimal permanent impacts to scalebroom scrub, no cumulative impacts to scalebroom scrub are anticipated as a result of the Project. Implementation of avoidance and minimization measures for impacts to scalebroom scrub for all future projects will ensure that impacts to this community are mitigated and no cumulative effects will occur.

4.1.2 Discussion of California Buckwheat Scrub Habitat

California buckwheat scrub is a shrubland dominated by California buckwheat with a continuous to intermittent canopy cover and highly variable herbaceous understory (Sawyer et al. 2009). The species composition of the California buckwheat scrub located within the BSA is equivalent to the coastal sage scrub community described by Holland (1986), which is classified as a sensitive vegetation community by CDFW. It is a plant community of concern because its extent has been reduced during recent decades primarily due to residential development in the coastal foothills of southern California. Vegetation of this type can provide potential habitat for a number of listed and special status species, such as coastal California gnatcatcher and coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*).

4.1.2.1 Survey Results

California buckwheat scrub within the BSA is associated with City Creek, Plunge Creek, and the Santa Ana River along upper terraces of drainages and on elevated areas along road shoulders and engineered road grades. An estimated 12.06 acres of California buckwheat scrub and 19.68 acres of disturbed California buckwheat scrub

were identified and mapped during field surveys in 2012 and 2013 (Figures 6A-6I). The California buckwheat scrub located within the BSA is dominated by California buckwheat with other native shrubs filling in the canopy, including California sagebrush and deerweed. Disturbance within the BSA varied and was noted by the decreased canopy cover and understory dominance by non-native grasses.

4.1.2.2 Project Impacts

The Project would result in permanent and temporary impacts to California buckwheat scrub habitat through disturbance and/or removal of existing vegetation (Table 8). Permanent impacts may include the removal of existing vegetation and encroachment into the plant community that may have long term permanent effects. Temporary direct impacts may include incidental disturbances within construction areas, equipment staging, and temporary construction access routes. There is potential for temporary indirect impacts caused by construction activities (e.g., dust, increased fire risk, and littering) to occur to California buckwheat scrub that is adjacent to the disturbance footprint, but these impacts are expected to be greatly reduced with implementation of the measures presented in Section 4.1.2.4. The temporary impacts to California buckwheat scrub along Plunge Creek, City Creek, and the Santa Ana River are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to California buckwheat scrub will likely be refined from those described in this report during the permitting phase of the Project (Table 8).

Although California buckwheat scrub is considered a declining vegetation community within southern California, the potential impacts to this community by the Project would not be biologically significant because of the limited amount of California buckwheat scrub proposed for permanent removal and the proposed avoidance, minimization, and mitigation measures.

Table 8. Impacts to California Buckwheat Scrub

	Permanent Impact (acre)	**Temporary Impact (acre)**
California buckwheat scrub	2.033	3.167
Disturbed California buckwheat scrub	0.010	0.313
Total	**2.043**	**3.480**

4.1.2.3 Compensatory Mitigation

California buckwheat scrub within the Project boundaries is not protected by any federal, state, or local regulations; however, portions of California buckwheat scrub are within critical habitat for San Bernardino kangaroo rat and some portions are also occupied. Impacts to California buckwheat scrub within critical habitat and/or occupied with San Bernardino kangaroo rat will be mitigated during Section 7 consultation with USFWS. Compensatory mitigation for San Bernardino kangaroo rat is discussed in Section 4.3.5.3 and includes on-site restoration of temporary impacts and off-site mitigation of permanent impacts.

4.1.2.4 Avoidance and Minimization Efforts

The following California buckwheat scrub habitat specific measures will be incorporated to avoid and minimize effects:

1) Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around California buckwheat scrub adjacent to the Project footprint to designate ESAs to be preserved. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to nearby preserved areas. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.

2) To avoid effects to nesting birds, any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird season (i.e., February 1–September 1). If vegetation clearing is necessary during the nesting season, then a qualified biologist will conduct a preconstruction survey to identify the locations of nests within 72 hours of proposed vegetation clearing. Should nesting birds be found, an exclusionary buffer (typically 200 feet, or 500 feet for raptors and listed species) will be established by the biologist. This buffer should be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active. The specific buffer size may be adjusted depending on the species and work activities under guidance of the biologist with concurrence by CDFW.

3) A biologist will monitor construction within the vicinity of California buckwheat scrub areas prior to and during vegetation removal to flush any wildlife species present to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly implemented.

4) Fire suppression capability, including extinguishers, shovels, and water tankers, will be available onsite whenever construction occurs during the fire season (as determined by the San Bernardino County Fire Department). Activities that may produce sparks, including welding or grinding, will use protective gear to reduce fire risks, such as the use of shields and protective mats.

5) Dust control measures will be implemented by the contractor to reduce excessive dust emissions. Dust control measures will occur at least two times per day on all construction days, or more during windy or dry periods, and may include wetting work areas, the use of soil binders on dirt roads, and wetting or covering stockpiles.

4.1.2.5 Cumulative Impacts

Future transportation and infrastructure projects are planned in the area. Because the Project is mainly an inside widening project and has minimal permanent impacts to California buckwheat scrub, no cumulative impacts to California buckwheat scrub are anticipated as a result of the Project.

4.1.3 Discussion of Riparian Habitat

There are two riparian Natural Communities of Special Concern designated by CDFW within the BSA: arroyo willow thicket and mule fat thicket. Arroyo willow thicket is a riparian shrubland characterized by emergent trees dominated by arroyo willow, with an open to continuous canopy. The species composition of the arroyo willow thicket located within the BSA is equivalent to the southern riparian forest community described by Holland (1986). Mule fat thicket is a riparian/upland shrubland dominated by mule fat with a continuous canopy layer and sparse understory (Sawyer et al. 2009). The species composition of the mule fat thicket located within the BSA is equivalent to the southern riparian scrub community described by Holland (1986).

Riparian habitats such as those within the BSA were formerly abundant along major rivers of coastal southern California, but are now much reduced by urban expansion, flood control, and channel improvements (Holland 1986). These habitats are

considered sensitive because they occur in limited aquatic and floodplain locations and provide the natural life history characteristics required for a variety of special status species. Riparian habitat types associated with upper flood banks of jurisdictional drainages are regulated by CFG Code, and when located within drainages, are also protected by the CWA.

4.1.3.1 Survey Results

Riparian habitat occurs in several small patches along City Creek, Plunge Creek, and topographic low points on mining lands within the BSA (Figures 6A-6I). A narrow band approximately 2-3 feet wide of arroyo willow thicket approximately 0.11 acre in size was identified and mapped along the northern portion of City Creek. Dominant vegetation consisted of open stands of arroyo willow and mule fat. Three areas of disturbed arroyo willow thicket were identified along Plunge Creek, totaling 1.17 acres. These areas have all been disturbed by mining activities and SR-210.

Mule fat thicket within the BSA is associated with City Creek and Plunge Creek. An estimated 1.14 acres of mule fat thicket occurs along City Creek and 3.04 acres of disturbed mule fat thicket occurs along Plunge Creek. Within the BSA, mule fat thicket was dominated by continuous, nearly monotypic stands of mule fat, with occasional arroyo willow and sandbar willow saplings intermixed. Disturbance within the BSA was variable for this vegetation type and was noted by thinning mule fat canopy and the addition of invasive species including tamarisk, castor bean, and Mexican fan palm.

A detailed description of each of the riparian areas is provided in the *Least Bell's Vireo Report* in Appendix B.

4.1.3.2 Project Impacts

The Project would result in permanent and temporary impacts to riparian habitats through disturbance and/or removal of existing vegetation (Table 9). Permanent impacts may include the removal of existing vegetation and encroachment into the plant community. However, the majority of the riparian habitat that occurs within the BSA is disturbed, low quality, and present as a result of human actions (e.g., alterations of drainages, mining activities, development). As such, Project impacts would be minimal. Temporary direct impacts may include incidental disturbances within construction work areas, equipment staging, and temporary construction access routes. There is potential for temporary indirect effects caused by construction activities (e.g., dust, increased fire risk, and littering) to occur to riparian habitat

adjacent to the disturbance footprint, but these impacts are expected to be greatly reduced with implementation of the measures presented in Section 4.1.3.4. The temporary impacts to riparian habitats along Plunge Creek and City Creek are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to riparian habitats will likely be refined from those described in this report during the permitting phase of the Project (Table 9).

Table 9. Impacts to Riparian Habitats

	Permanent Impact (acre)	Temporary Impact (acre)
Arroyo willow thicket	0.000	0.049
Disturbed arroyo willow thicket	0.000	0.000
Mule fat thicket	0.001	0.523
Disturbed mule fat thicket	0.000	0.270
Total	**0.001**	**0.842**

4.1.3.3 Compensatory Mitigation

A compensatory mitigation plan for impacts to riparian habitats located within jurisdictional aquatic resources will be developed during the permitting phase in coordination with the ACOE, CDFW, and RWQCB. Permanent impacts will be mitigated at a minimum 2:1 ratio through payment into the Santa Ana Watershed Association in-lieu fee program, or other approved in-lieu fee or mitigation program. Temporary impacts would be mitigated in-kind via onsite restoration within the Project area. Onsite restoration, if applicable, would occur upon completion of construction and will consist of returning impacted areas to original grade and preconstruction conditions. An HMMP will be developed and will include a monitoring period with specific success criteria to be developed through agency consultation.

4.1.3.4 Avoidance and Minimization Efforts

The following riparian habitat specific measures will be incorporated to avoid and minimize effects:

1) Hydrologic connectivity will be maintained within City Creek and Plunge Creek during the duration of construction. Mud, silt, or other pollutants from construction activities will not be placed within drainages and will not be allowed to enter a flowing stream.

2) Temporary impacts will be reduced to the maximum extent feasible to construct the Project. Permanent impacts will be minimized through Project design modifications where practicable.

3) Prior to clearing or construction, highly visible barriers (such as orange construction fencing) will be installed around all riparian habitats adjacent to the Project footprint to designate ESAs to be preserved. The riparian communities that occur along City Creek and other areas within the BSA are dynamic and likely change year to year depending on precipitation events, associated scour, and flood-control maintenance activities. As such, ESA fencing in areas to be avoided may need to be adjusted and installed just prior to construction. No grading or fill activity of any type will be permitted within these ESAs. In addition, no construction activities, materials, or equipment will be allowed within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to nearby avoided areas. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.

4) All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located to prevent the runoff from entering any drainages.

5) A SWPPP and a soil erosion and sedimentation plan will be developed prior to construction to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources onsite during and following the Project construction phase. The SWPPP will identify specific BMPs to be implemented during Project construction to not cause or contribute to exceeding any water quality standard. In addition, the SWPPP will contain provisions for changes to the plan such as alternative mechanisms, if necessary, during Project design and/or construction to achieve the stated goals and performance standards.

6) To avoid effects to nesting birds, any native vegetation removal or tree (native or exotic) trimming activities will occur outside of the nesting bird

season (i.e., February 1–September 1). If vegetation clearing is necessary during the nesting season, then a qualified biologist will conduct a preconstruction survey to identify the locations of nests within 72 hours of proposed vegetation clearing. Should nesting birds be found, an exclusionary buffer (typically 200 feet, or 500 feet for raptors and listed species) will be established by the biologist. This buffer should be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active. The specific buffer size may be adjusted depending on the species and work activities under guidance of the biologist with concurrence by CDFW.

7) A biologist will monitor construction within the vicinity of riparian areas prior to and during vegetation removal to flush any wildlife species present to ensure that vegetation removal, BMPs, ESAs, and all avoidance and minimization measures are properly constructed and followed.

4.1.3.5 Cumulative Impacts

Future transportation and infrastructure projects are planned in the area. Because the Project is mainly an inside widening project and will have no permanent impacts to riparian habitat and all temporary impacts for the Project would be mitigated for, resulting in no net loss of riparian habitats, no cumulative impacts to riparian habitat are anticipated as a result of the Project. Implementation of avoidance and minimization measures for impacts to riparian habitat during the permitting phase would ensure that this community type would be sustained within the region.

4.2 Special Status Plant Species

Of the eleven federally or state listed plant species initially reviewed, two were determined to occur or potentially occur within the BSA: Santa Ana River woollystar and slender-horned spineflower. Suitable habitat is not present within the BSA for Gambel's water cress (*Nasturtium gambelii*), marsh sandwort (*Arenaria paludicola*), Nevin's barberry (*Berberis nevinii*), salt marsh bird's beak (*Chloropyron maritimum* ssp. *maritimum*), San Diego ambrosia (*Ambrosia pumila*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), Parish's checkerbloom (*Sidalcea hickmanii* ssp. *parishii*), California dandelion (*Taraxacum californicum*), or thread-leaved brodiaea (*Brodiaea filifolia*) (see Chapter 3). These species are not discussed further. No critical habitat for listed plants occurs within the BSA. The results of

surveys, Project impacts, compensatory mitigation, avoidance and minimization measures, and cumulative effects for listed plant species with a potential to occur within the BSA are discussed in this section. In addition, other special status plant species, including those ranked by CNPS and CDFW as California Rare Plant rank (CRPR) 1B, 2, 3, and 4 with suitable habitat occurring within the BSA, are discussed in this chapter.

4.2.1 Discussion of Santa Ana River Woollystar

Santa Ana River woollystar was listed as an endangered species by CDFW in January 1987 (CDFW 2013) and by the USFWS in September 1987 (USFWS 1987). No critical habitat for this species has been designated by the USFWS. Santa Ana River woollystar is a perennial herb that occurs in chaparral and coastal scrub, usually in sandy or gravelly soils on river floodplains or terraced fluvial deposits. This species occurs at elevations ranging from 298 to 2,000 feet.

4.2.1.1 Survey Results

Botanical surveys conducted in May and June 2012 during the blooming period for this species were positive. Over 16,230 individuals of Santa Ana River woollystar were found on terraced floodplains associated with the Santa Ana River, Plunge Creek, and areas adjacent to SR-210 and mining sites (Figures 7A-7I). The survey area for Santa Ana River woollystar was based on preliminary design plans, including construction staging areas, and extended throughout the BSA in areas of suitable habitat. Subsequent modifications to the design plan resulted in additional temporary impacts to potential habitat for Santa Ana River woollystar near Plunge Creek. Because this additional suitable habitat was not included in the 2012 botanical surveys, it is assumed as occupied habitat in this impact analysis.

Santa Ana River woollystar is well-documented within the Project vicinity, especially within the Santa Ana River. A 764 acre preserve, the Woollystar Preservation Area (WSPA), occurs within 0.5 mile of the BSA to the east and west of SR-210 (SARWRA 2004; SBDPW 2007). The preserve was established in the 1990s by the ACOE to address impacts related to the construction and operation of the Seven Oaks Dam on the Santa Ana River (SARWRA 2004).

4.2.1.2 Project Impacts

The Project would permanently impact suitable habitat for Santa Ana River woollystar (Table 10). The habitat in these locations is previously disturbed from roadway and mining activities, but it is nonetheless suitable. Suitable habitat would

also be impacted by temporary construction activities required to provide adequate work space to construct the Project. Indirect impacts are considered to be minor, but may consist of dust, erosion, shading, introduction of invasive species on disturbed soils, and roadway runoff. Impacts to Santa Ana River woollystar will be avoided and minimized to the maximum extent feasible. The temporary impacts to Santa Ana River woollystar along Plunge Creek, City Creek, and the Santa Ana River are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to Santa Ana River woollystar will likely be refined from those described in this report during the permitting phase of the Project (Table 10). Temporary and permanent impacts to suitable habitat for Santa Ana River woollystar (i.e., scalebroom scrub and California buckwheat scrub habitats) and individuals of Santa Ana River woollystar are shown on Figures 6A-6I and Figures 7A-7I, respectively.

Table 10. Impacts to Santa Ana River Woollystar Habitat

	Permanent Impact (acre)	Temporary Impact (acre)
Scalebroom scrub	1.474	6.180
Disturbed scalebroom scrub	0.000	0.359
California buckwheat scrub	2.033	3.167
Disturbed California buckwheat scrub	0.010	0.313
Total	**3.517**	**10.019**

4.2.1.3 Compensatory Mitigation

Direct and indirect effects to Santa Ana River woollystar may be unavoidable by the Project. The avoidance and minimization measures outlined in Section 4.2.1.4 below will minimize some impacts to this species. However, FESA Section 7 consultation will be required for any impacts to Santa Ana River woollystar that cannot be avoided. Appropriate mitigation for Santa Ana River woollystar will be developed during Section 7 consultation in coordination with the USFWS and CDFW to ensure impacts to Santa Ana River woollystar are mitigated. Mitigation for impacts will include seed collection after the plants have flowered (up to one year in advance of construction, provided temporary construction easements have been granted to construction areas), redistribution of seeds, stockpiling and spreading of duff, and onsite restoration of impacted areas as described in an HMMP to be submitted and approved by PSFWO prior to impacts within occupied or suitable habitat. Compensation for permanent impacts to Santa Ana River woollystar may be provided

by purchasing Santa Ana River woollystar occupied lands within the Santa Ana Watershed for preservation through Wildlands, Inc. and/or through an accredited mitigation bank. Permanent impacts will be mitigated at a minimum 3:1 ratio. Temporary impacts will be mitigated at a 1:1 ratio at the site of temporary impact as described in the approved HMMP, which will address both spatial and temporal impacts.

4.2.1.4 Avoidance and Minimization Efforts

The Project has been designed to avoid and/or minimize impacts to Santa Ana River woollystar to the maximum extent practicable. Prior to construction, habitat for Santa Ana River woollystar would be delineated by a qualified botanist. ESA fencing would be used to protect any Santa Ana River woollystar that will not be impacted by the Project.

Any Santa Ana River woollystar within the BSA, work areas, access roads, and staging areas would be flagged, fenced, and monitored to protect the plants during construction, where feasible. A biological monitor would supervise installation of ESA fencing. The monitor would have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where erosion could impact Santa Ana River woollystar or its habitat.

In addition, the following Santa Ana River woollystar specific measures will be incorporated to avoid and minimize effects:

1) Prior to clearing or construction, ESA fencing would be installed around designated Santa Ana River woollystar population boundaries adjacent to the Project footprint and within the State right-of-way to designate ESAs to be avoided (see Measure 21, Section 1.2.1). No grading or fill activity of any type would be permitted within these ESAs. In addition, heavy equipment, including motor vehicles, would not be allowed to operate within the ESAs. All construction equipment would be operated in such a manner as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, would be allowed within these ESAs.

2) All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities would occur in developed or designated non-sensitive upland habitat areas. The designated upland areas would be located in areas that will

prevent runoff from any spills from entering areas with Santa Ana River woollystar.

3) A Biological Resource Information (BRI) program for all construction personnel would be developed and implemented prior to construction. At a minimum, the program would include the following topics: (1) biology, conservation, and legal status of the Santa Ana River woollystar; (2) responsibilities of the biological monitor; (3) delineation and flagging of adjacent habitat; (4) limitations on all movement of those employed onsite, including ingress and egress of equipment and personnel, to designated construction zones (personnel shall not be allowed access to adjacent sensitive habitats); (5) onsite pet prohibitions; (6) use of trash containers for disposal and removal of trash; and (7) Project features designed to reduce the impacts to listed species and habitat and promote continued successful occupation of adjacent habitat areas.

4) A preconstruction notification will be provided to PSFWO and CDFW in writing at least 5 days prior to Project initiation.

5) An authorized biologist will be present onsite during construction within or adjacent to suitable habitat to ensure that avoidance and minimization measures are in place according to specifications and monitor construction within the vicinity of the Santa Ana River woollystar populations at a frequency necessary to ensure that avoidance and minimization measures are properly followed. The biological monitor will report any non-compliance within 24 hours to PSFWO.

6) Before ground disturbance or other activities, a qualified botanist will survey all proposed construction and access areas for presence of Santa Ana River woollystar. Preconstruction surveys will occur during the appropriate season and in accordance with established protocols up to one year in advance of construction, provided temporary construction easements have been granted to construction areas. These surveys will be conducted in all construction areas that contain suitable habitat for Santa Ana River woollystar, including scalebroom scrub and California buckwheat scrub. These surveys will be for the purpose of documenting plant locations relative to the construction areas and avoidance, where feasible. If construction starts prior to the appropriate season and it is unfeasible to conduct preconstruction surveys, then plant

documentation for avoidance and ESA fencing will rely on previous survey areas of populations.

7) Populations of Santa Ana River woollystar will be clearly mapped and recorded along with the approximate numbers of individuals in each population and their respective condition. To the maximum extent feasible, construction areas and access roads will be adjusted to avoid loss of individual Santa Ana River woollystar and damage to habitats supporting this species.

8) Fire suppression capability, including extinguishers, shovels, and water tankers, will be available onsite whenever construction occurs during the fire season (as determined by the San Bernardino County Fire Department). Activities that may produce sparks, including welding or grinding, will use protective gear to reduce fire risks, such as the use of shields and protective mats.

9) Dust control measures will be implemented by the contractor to reduce excessive dust emissions. Dust control measures will occur at least two times per day on all construction days, or more during windy or dry periods, and may include wetting work areas, the use of soil binders on dirt roads, and wetting or covering stockpiles.

4.2.1.5 Cumulative Effects

Future transportation and infrastructure projects are planned in the area. Because the Project is mainly an inside widening project and has minimal permanent impacts to Santa Ana River woollystar, no cumulative impacts to Santa Ana River woollystar are anticipated as a result of the Project. Implementation of avoidance and minimization measure for impacts to Santa Ana River woollystar during Section 7 consultation with USFWS for all future projects will ensure that impacts to this species are mitigated and no cumulative effects will occur.

4.2.2 Discussion of Slender-horned Spineflower

Slender-horned spineflower was listed as an endangered species by CDFW in January 1982 (CDFW 2013) and by the USFWS in September 1987 (USFWS 1987). No critical habitat for this species has been designated by the USFWS. Slender-horned spineflower is an annual herb that occurs on sandy alluvial benches and floodplain terraces in alluvial fan scrub vegetation in Los Angeles, San Bernardino, and Riverside counties. Elevations range from 600 to 2,280 feet.

4.2.2.1 Survey Results

Botanical surveys conducted in May and June 2012 during the blooming period for this species were negative. However, rainfall during the 2011-2012 wet season was below average (5.54 inches, or 41% of average) for the Project area (NWS 2012). Known populations of slender-horned spineflower were monitored in the region prior to botanical surveys, but did not bloom in 2012, likely due to the rainfall totals. This species shares habitat requirements with Santa Ana River woollystar, which was observed in the Project area. Slender-horned spineflower has been documented in two separate populations within 2 miles of the Project site and suitable habitat (i.e., scalebroom scrub and California buckwheat scrub habitats) is present within the BSA (Figures 6A-6I). As such, this species is considered to be present within the BSA.

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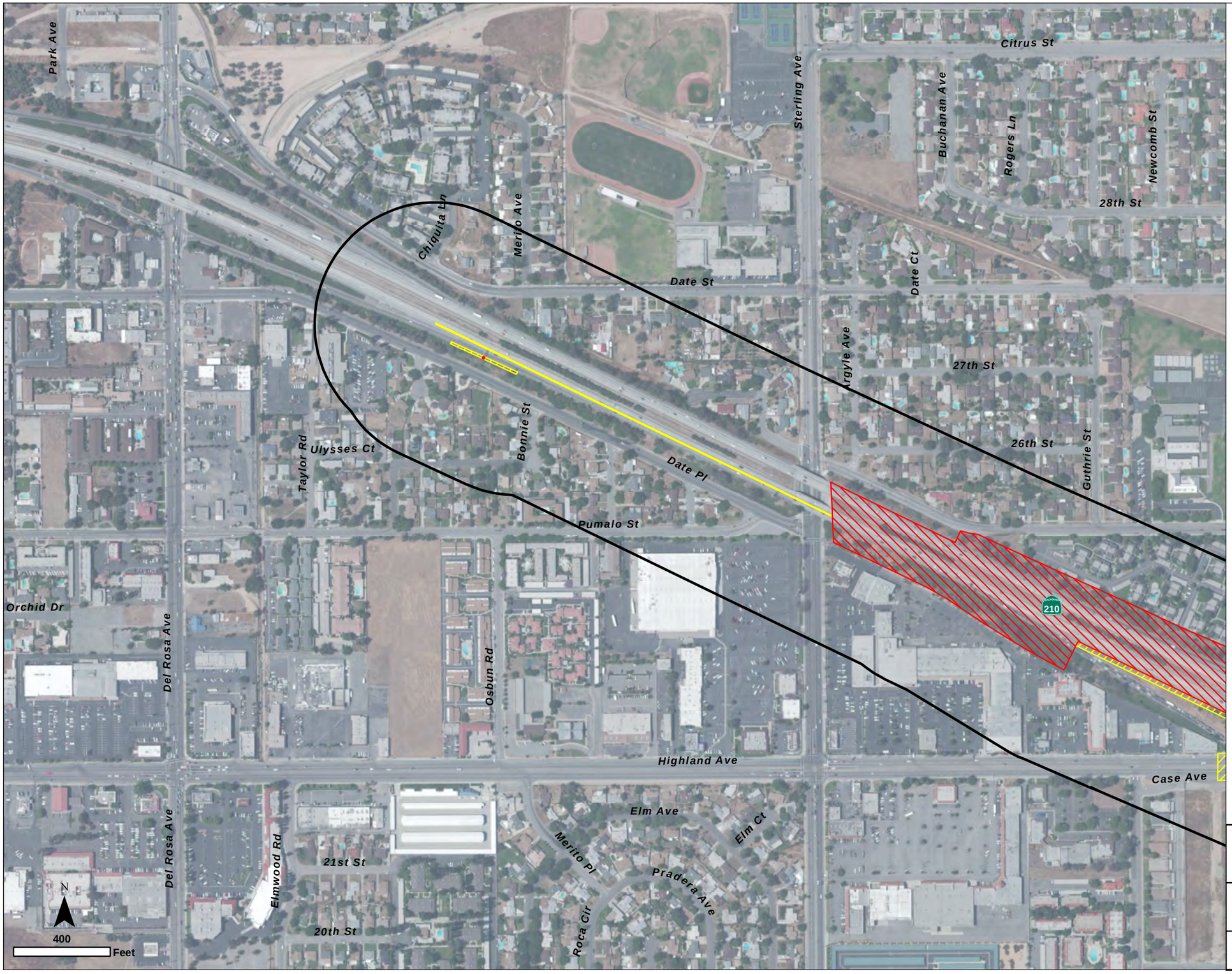

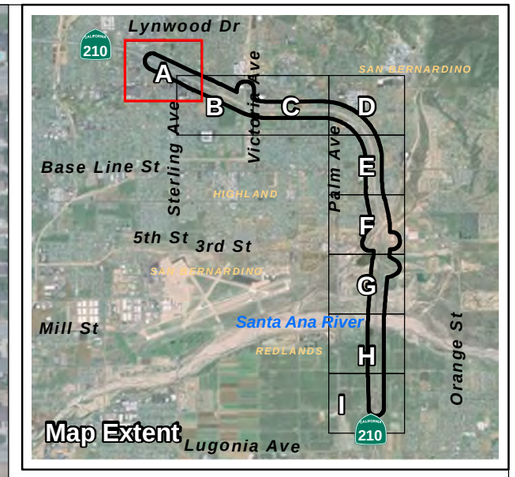

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Wildlife and Plant Observations

- San Bernardino Kangaroo Rat Capture Locations
- Bat Sign Observation
- Coast Horned Lizard Observation
- Ferruginous Hawk Observation
- San Diego Desert Woodrat Capture Locations
- Northwestern San Diego Pocket Mouse Capture Locations
- Black-tailed Jackrabbit
- Yellow Warbler Observation
- Coopers Hawk
- Horned Lark
- Santa Ana River Woollystar Observations

Critical Habitat

- Santa Ana Sucker Critical Habitat (2010F)
- San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7A
Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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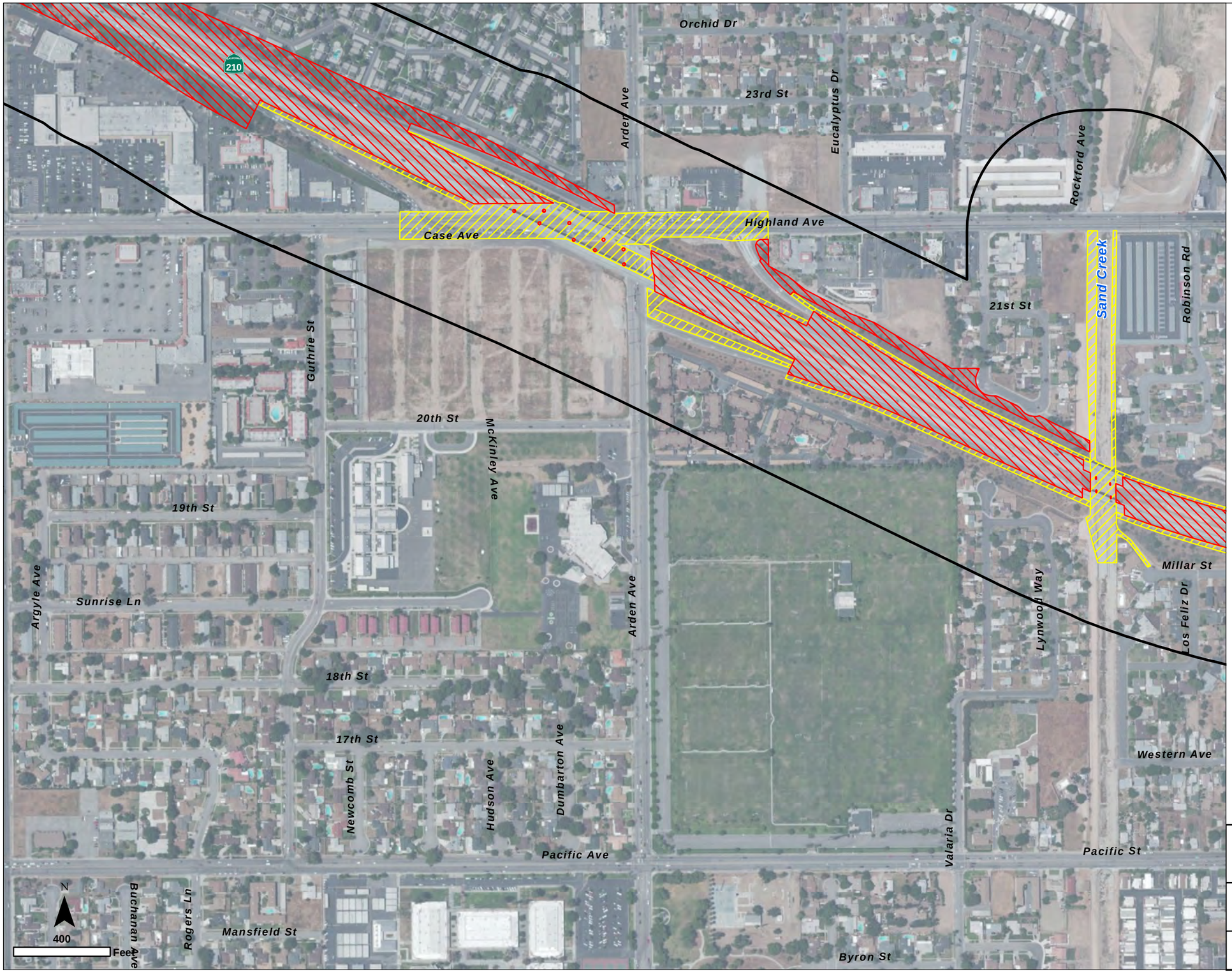

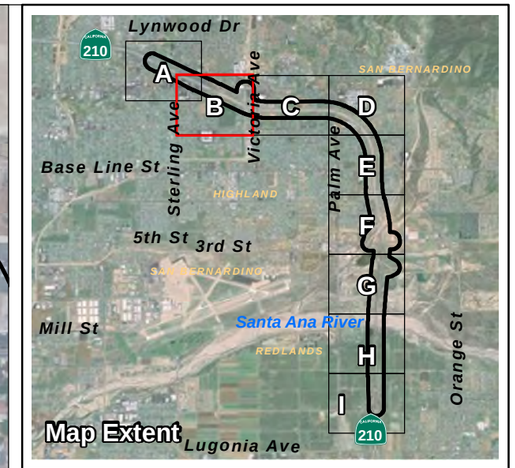

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Wildlife and Plant Observations

- San Bernardino Kangaroo Rat Capture Locations
- Bat Sign Observation
- Coast Horned Lizard Observation
- Ferruginous Hawk Observation
- San Diego Desert Woodrat Capture Locations
- Northwestern San Diego Pocket Mouse Capture Locations
- Black-tailed Jackrabbit
- Yellow Warbler Observation
- Coopers Hawk
- Horned Lark
- Santa Ana River Woollystar Observations

Critical Habitat

- Santa Ana Sucker Critical Habitat (2010F)
- San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7B
Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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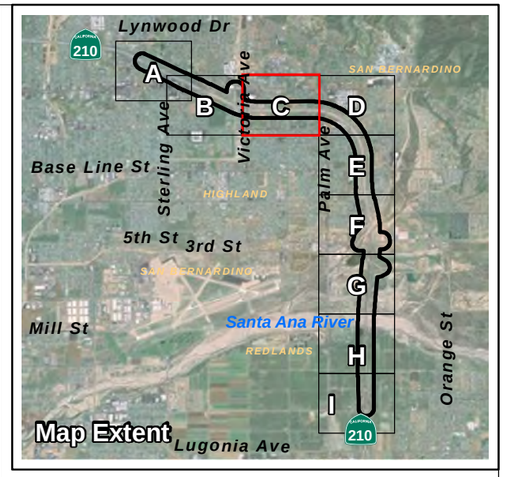

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Wildlife and Plant Observations

- San Bernardino Kangaroo Rat Capture Locations
- Bat Sign Observation
- Coast Horned Lizard Observation
- Ferruginous Hawk Observation
- San Diego Desert Woodrat Capture Locations
- Northwestern San Diego Pocket Mouse Capture Locations
- Black-tailed Jackrabbit
- Yellow Warbler Observation
- Coopers Hawk
- Horned Lark
- Santa Ana River Woollystar Observations

Critical Habitat

- Santa Ana Sucker Critical Habitat (2010F)
- San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7C
Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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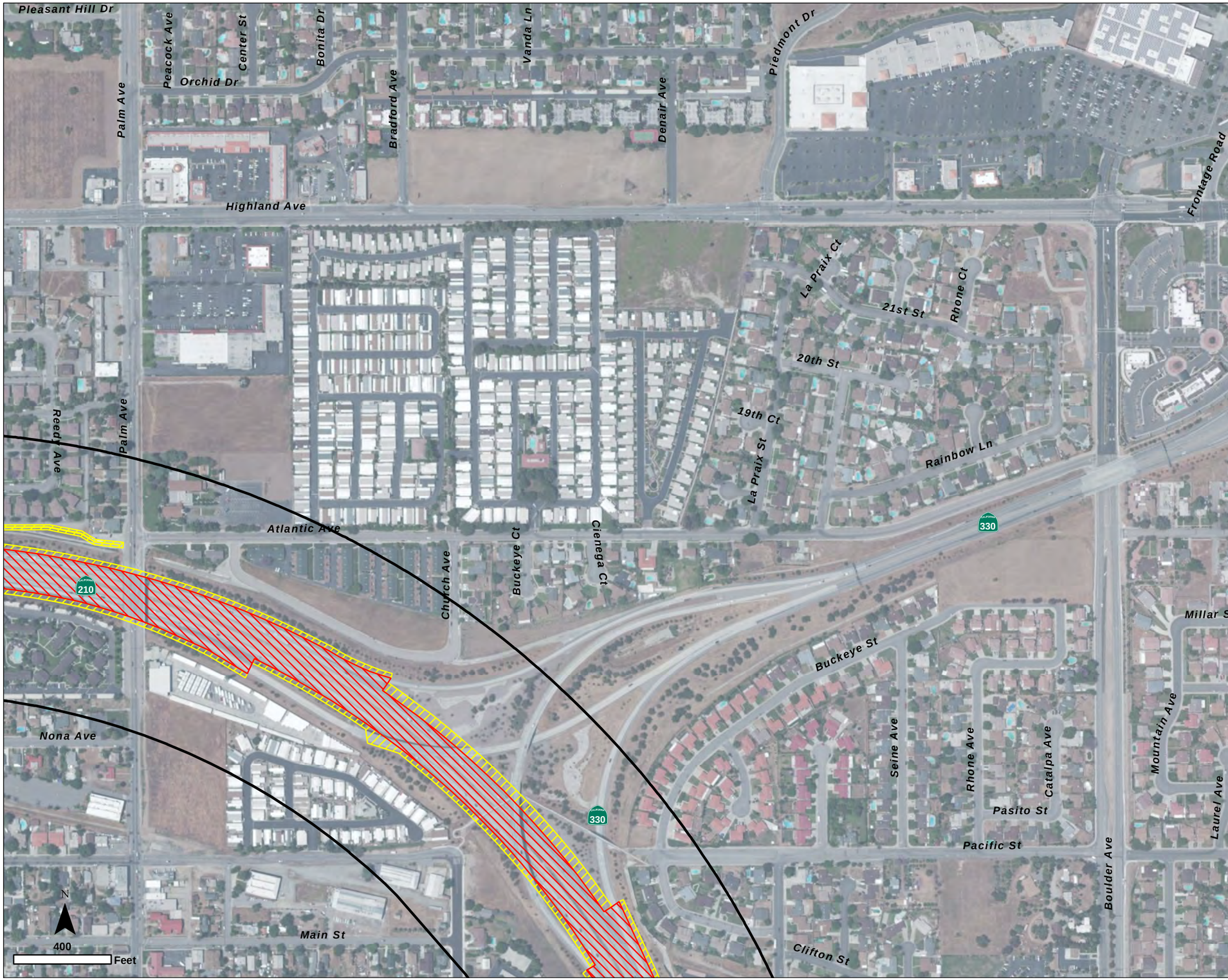

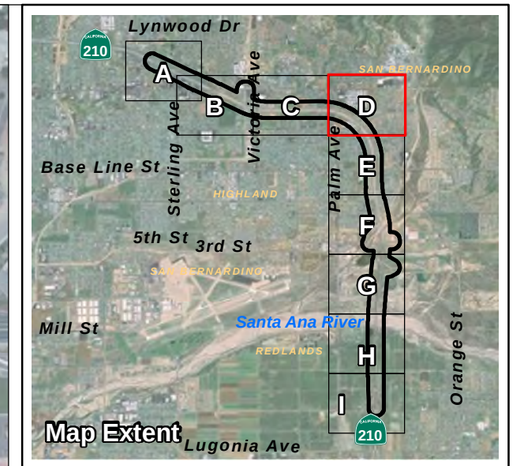

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Wildlife and Plant Observations

- San Bernardino Kangaroo Rat Capture Locations
- Bat Sign Observation
- Coast Horned Lizard Observation
- Ferruginous Hawk Observation
- San Diego Desert Woodrat Capture Locations
- Northwestern San Diego Pocket Mouse Capture Locations
- Black-tailed Jackrabbit
- Yellow Warbler Observation
- Coopers Hawk
- Horned Lark
- Santa Ana River Woollystar Observations

Critical Habitat

- Santa Ana Sucker Critical Habitat (2010F)
- San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7D
Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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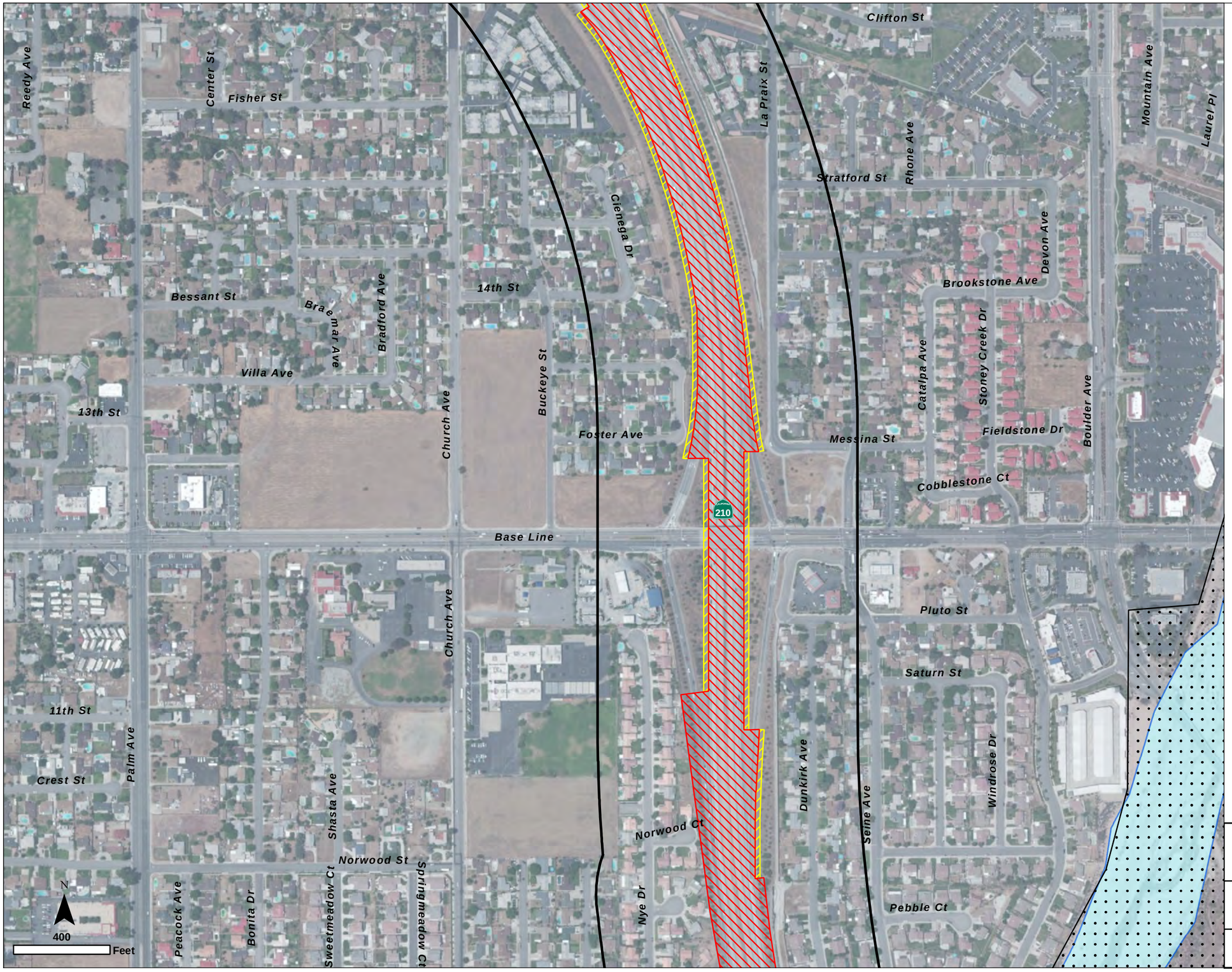

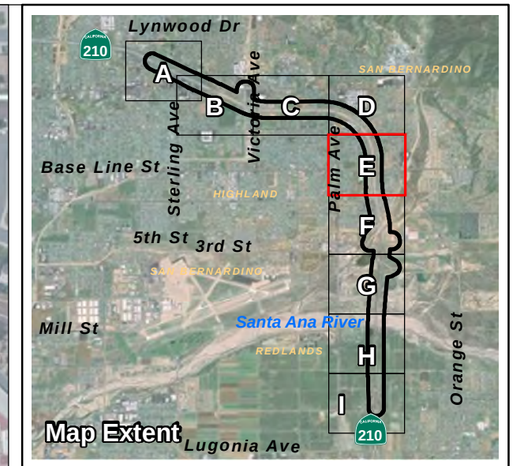

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Wildlife and Plant Observations

- San Bernardino Kangaroo Rat Capture Locations
- Bat Sign Observation
- Coast Horned Lizard Observation
- Ferruginous Hawk Observation
- San Diego Desert Woodrat Capture Locations
- Northwestern San Diego Pocket Mouse Capture Locations
- Black-tailed Jackrabbit
- Yellow Warbler Observation
- Coopers Hawk
- Horned Lark
- Santa Ana River Woollystar Observations

Critical Habitat

- Santa Ana Sucker Critical Habitat (2010F)
- San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7E
Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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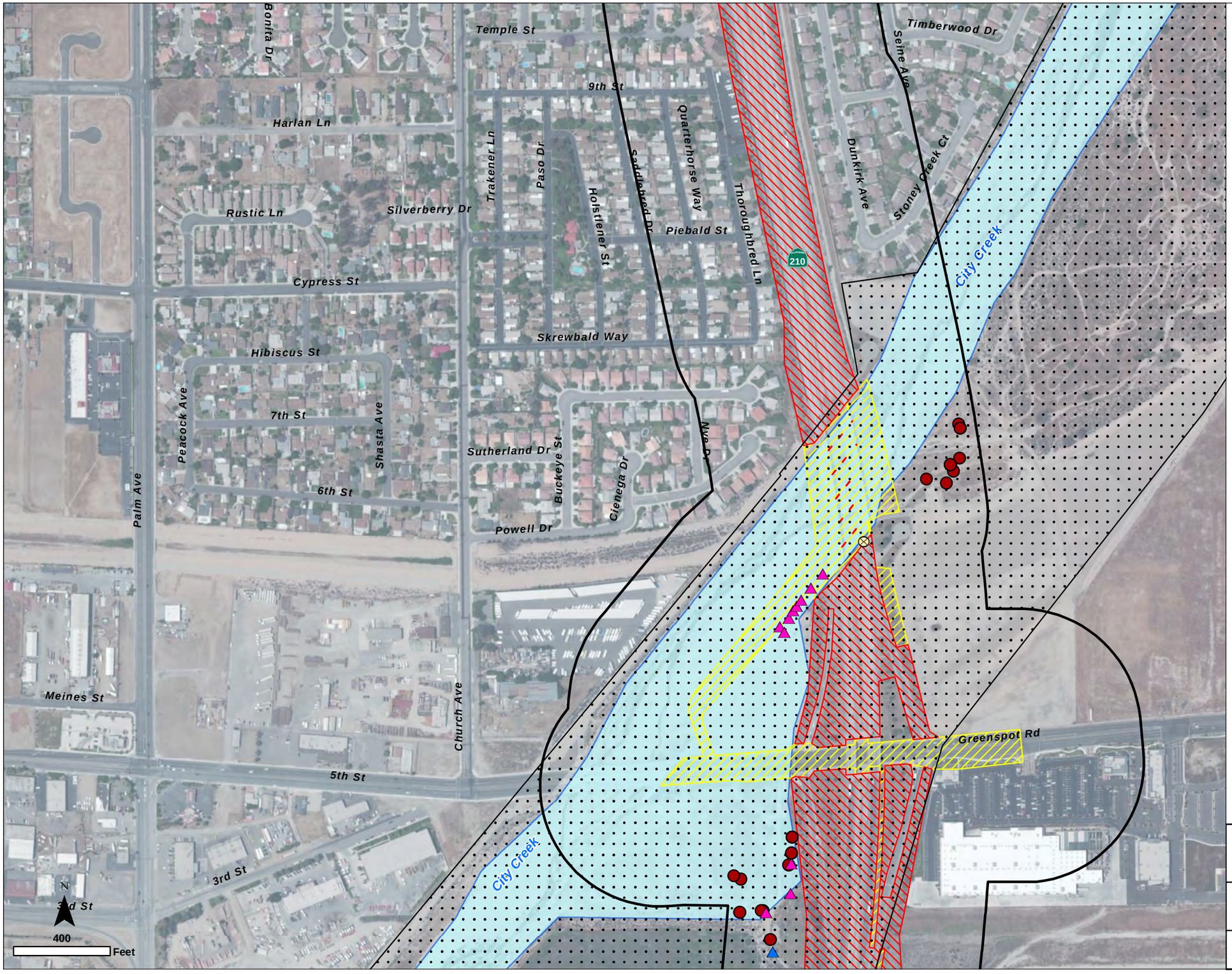

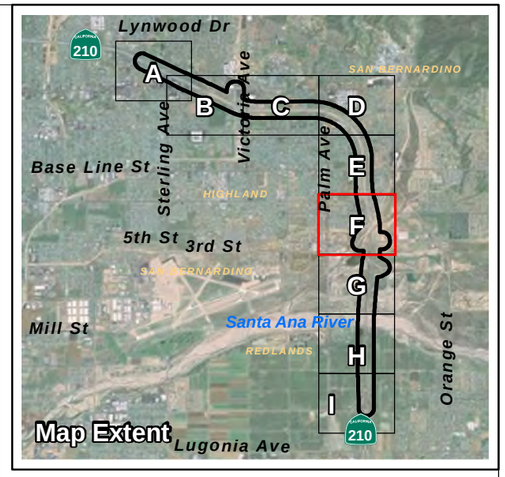

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Sensitive Wildlife and Plant Observations

- San Bernardino Kangaroo Rat Capture Locations
- Bat Sign Observation
- Coast Horned Lizard Observation
- Ferruginous Hawk Observation
- San Diego Desert Woodrat Capture Locations
- Northwestern San Diego Pocket Mouse Capture Locations
- Black-tailed Jackrabbit
- Yellow Warbler Observation
- Coopers Hawk
- Horned Lark
- Santa Ana River Woollystar Observations

Critical Habitat

- Santa Ana Sucker Critical Habitat (2010F)
- San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7F

Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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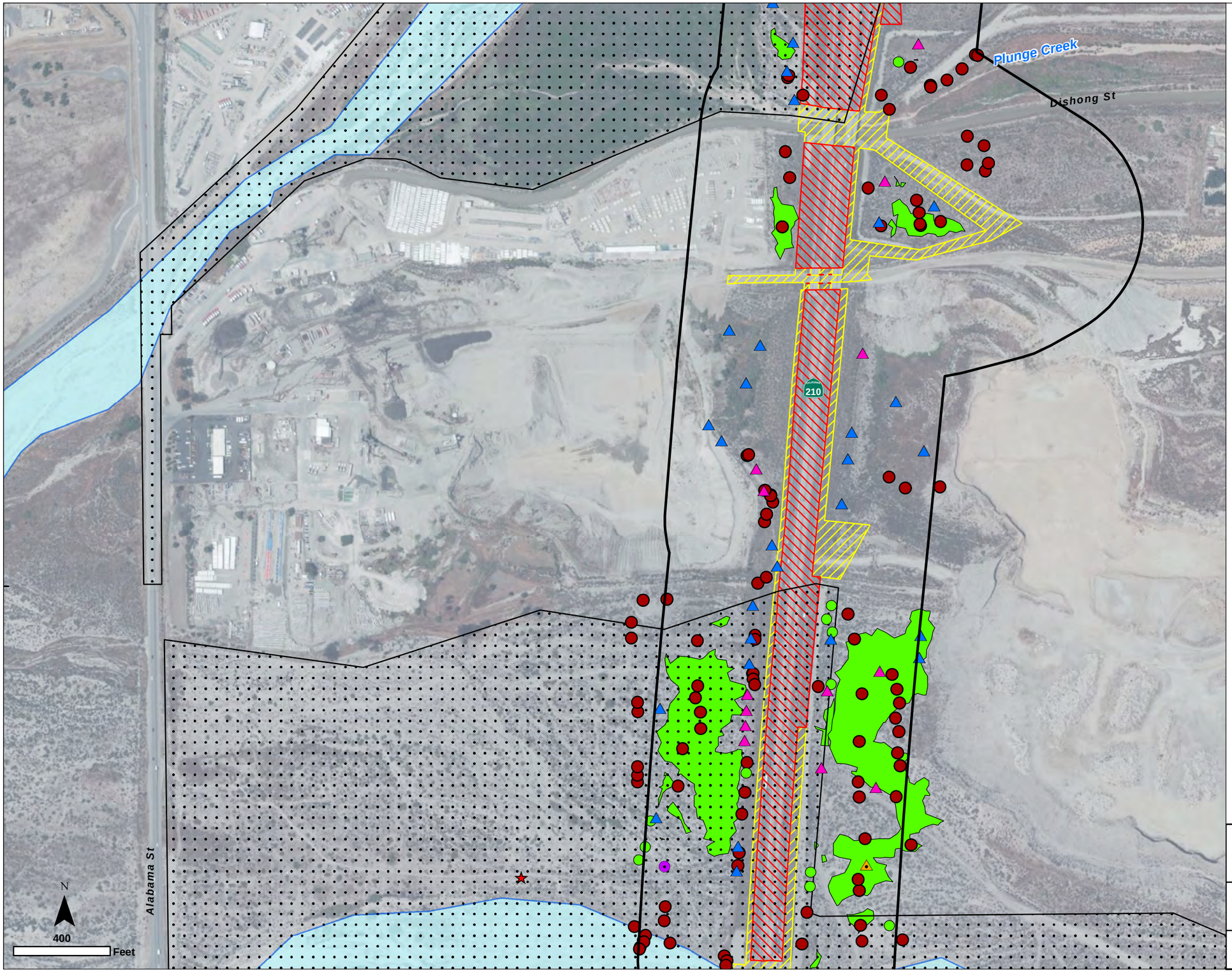

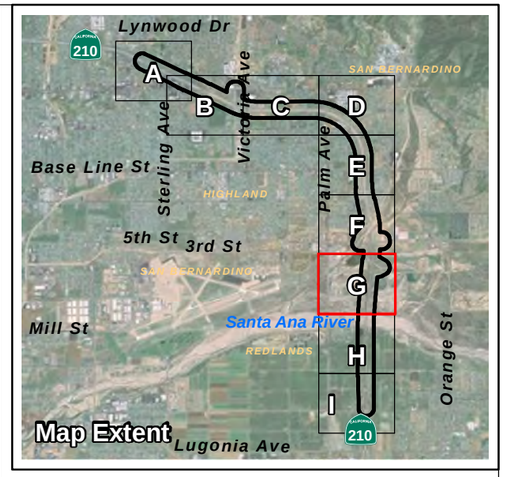

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Sensitive Wildlife and Plant Observations

San Bernardino Kangaroo Rat Capture Locations

Bat Sign Observation

Coast Horned Lizard Observation

Ferruginous Hawk Observation

San Diego Desert Woodrat Capture Locations

Northwestern San Diego Pocket Mouse Capture Locations

Black-tailed Jackrabbit

Yellow Warbler Observation

Coopers Hawk

Horned Lark

Santa Ana River Woollystar Observations

Critical Habitat

Santa Ana Sucker Critical Habitat (2010F)

San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7G
Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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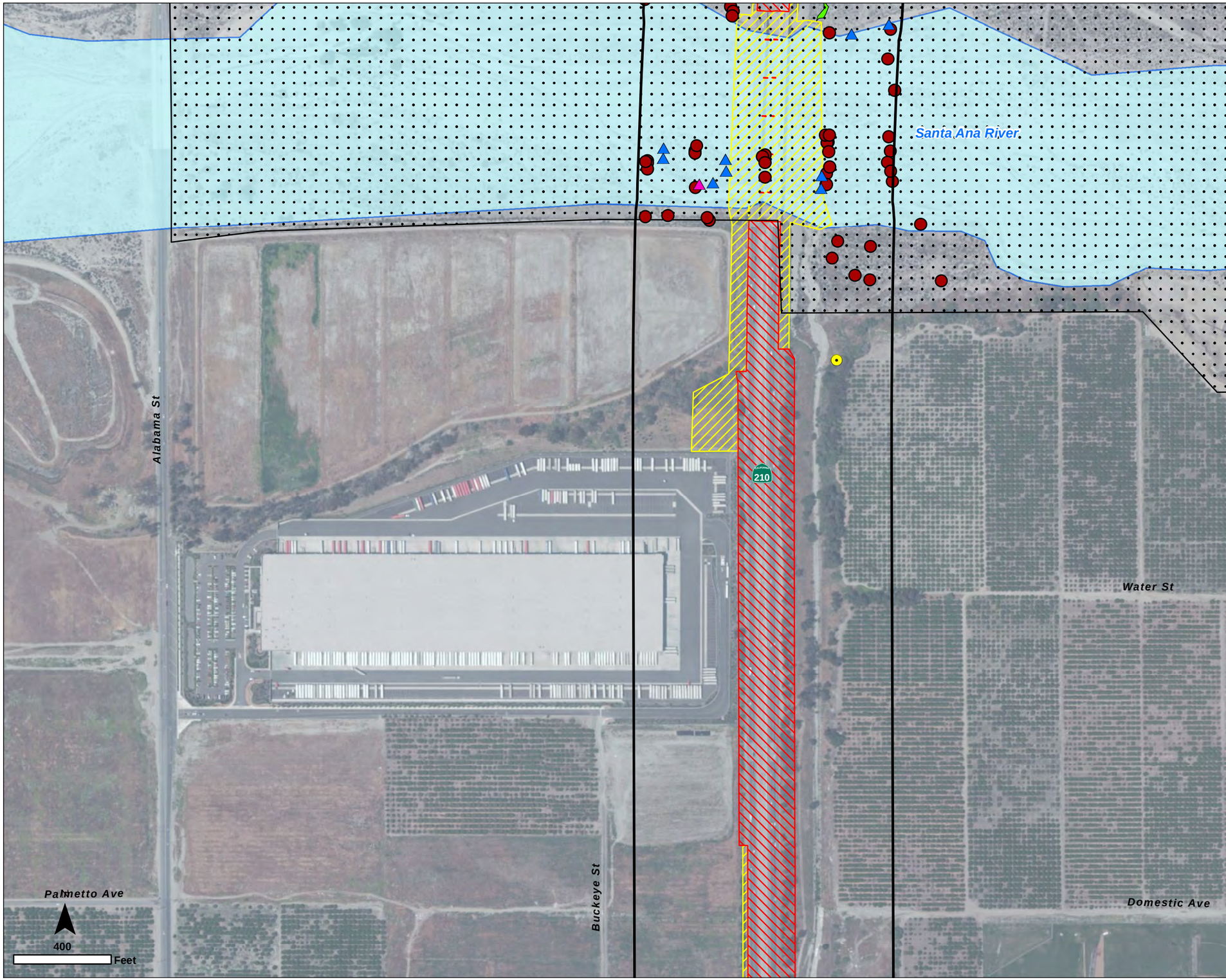

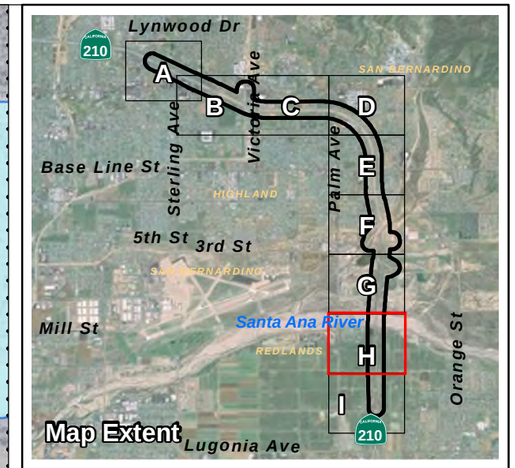

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Sensitive Wildlife and Plant Observations

San Bernardino Kangaroo Rat Capture Locations

Bat Sign Observation

Coast Horned Lizard Observation

Ferruginous Hawk Observation

San Diego Desert Woodrat Capture Locations

Northwestern San Diego Pocket Mouse Capture Locations

Black-tailed Jackrabbit

Yellow Warbler Observation

Coopers Hawk

Horned Lark

Santa Ana River Woollystar Observations

Critical Habitat

Santa Ana Sucker Critical Habitat (2010F)

San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7H

Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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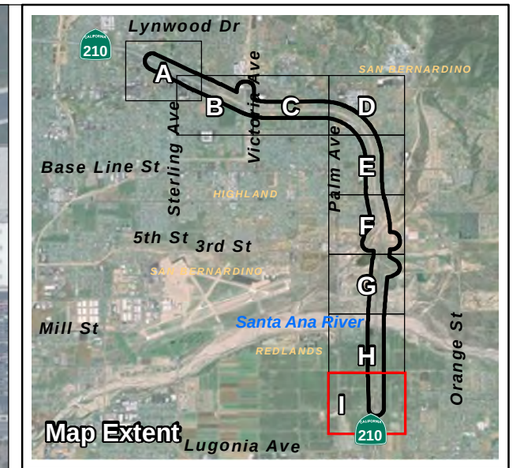

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Sensitive Wildlife and Plant Observations

San Bernardino Kangaroo Rat Capture Locations

Bat Sign Observation

Coast Horned Lizard Observation

Ferruginous Hawk Observation

San Diego Desert Woodrat Capture Locations

Northwestern San Diego Pocket Mouse Capture Locations

Black-tailed Jackrabbit

Yellow Warbler Observation

Coopers Hawk

Horned Lark

Santa Ana River Woollystar Observations

Critical Habitat

Santa Ana Sucker Critical Habitat (2010F)

San Bernardino Kangaroo Rat Critical Habitat (2008F)

FIGURE 7I
Sensitive Biological Resources, Wildlife and Plants

SR-210 Mixed Flow Lane Addition Project

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The survey area for slender-horned spineflower was based on preliminary design plans, including construction staging areas, and extended throughout the BSA in areas of suitable habitat. Subsequent modifications to the design plan resulted in additional temporary impacts to potential habitat for slender-horned spineflower near Plunge Creek. Because this additional suitable habitat was not included in the 2012 botanical surveys, it is assumed as occupied habitat in this impact analysis.

4.2.2.2 Project Impacts

The Project would permanently impact suitable habitat for slender-horned spineflower (Table 11). The habitat in these locations is previously disturbed from roadway and mining activities, but it is nonetheless suitable. In addition, suitable habitat would be impacted by temporary construction activities required to provide adequate work space to construct the Project. Indirect impacts are considered to be minor, but may consist of dust, erosion, introduction of invasive species on disturbed soils, and roadway runoff. Impacts to slender-horned spineflower will be avoided and minimized to the maximum extent feasible. The temporary impacts to slender-horned spineflower habitat along Plunge Creek, City Creek, and the Santa Ana River are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to slender-horned spineflower habitat will likely be refined from those described in this report during the permitting phase of the Project (Table 11). Temporary and permanent impacts to suitable habitat for slender-horned spineflower (i.e., scalebroom scrub and California buckwheat scrub habitats) are shown on Figures 6A-6I.

Table 11. Impacts to Slender-horned Spineflower Habitat

	Permanent Impact (acre)	Temporary Impact (acre)
Scalebroom scrub	1.474	6.180
Disturbed scalebroom scrub	0.000	0.359
California buckwheat scrub	2.033	3.167
Disturbed California buckwheat scrub	0.010	0.313
Total	**3.517**	**10.019**

4.2.2.3 Compensatory Mitigation

Some direct and indirect effects to slender-horned spineflower are unavoidable by the Project. The avoidance and minimization measures outlined in Section 4.2.2.4 below will minimize most impacts to this species. However, FESA Section 7 consultation

will be required for any impacts to slender-horned spineflower that cannot be avoided. Appropriate mitigation for slender-horned spineflower will be developed during Section 7 consultation in coordination with the USFWS and CDFW to ensure impacts to slender-horned spineflower are mitigated. Mitigation for impacts will include seed collection after the plants have flowered (up to one year in advance of construction, provided temporary construction easements have been granted to construction areas), redistribution of seeds, stockpiling and spreading of duff, and onsite restoration of impacted areas as described in an HMMP to be submitted and approved by PSFWO prior to impacts within occupied or suitable habitat. Compensation for permanent impacts to slender-horned spineflower may be provided by purchasing slender-horned spineflower occupied lands within the Santa Ana Watershed for preservation through Wildlands, Inc. and/or through an accredited mitigation bank. Permanent impacts will be mitigated at a minimum 3:1 ratio. Temporary impacts will be mitigated at a 1:1 ratio at the site of temporary impact as described in the approved HMMP, which will address both spatial and temporal impacts.

4.2.2.4 Avoidance and Minimization Efforts

The Project has been designed to avoid and/or minimize impacts to slender-horned spineflower to the maximum extent practicable. Prior to construction, habitat for slender-horned spineflower would be delineated by a qualified botanist. ESA fencing would be used to protect any slender-horned spineflower that will not be impacted by the Project.

Any slender-horned spineflower within the BSA, work areas, access roads, and staging areas would be flagged, fenced, and monitored to protect the plants during construction, where feasible. A biological monitor would supervise installation of ESA fencing. The monitor would have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where erosion could impact slender-horned spineflower or its habitat.

In addition, the following slender-horned spineflower specific measures will be incorporated to avoid and minimize effects:

1) Prior to clearing or construction, ESA fencing would be installed around designated slender-horned spineflower population boundaries adjacent to the Project footprint and within the State right-of-way to designate ESAs to be avoided (see Measure 21, Section 1.2.1). No grading or fill activity of any type would be permitted within these ESAs. In addition, heavy equipment,

including motor vehicles, would not be allowed to operate within the ESAs. All construction equipment would be operated in such a manner as to prevent accidental damage to nearby preserved areas. No structure of any kind, or incidental storage of equipment or supplies, would be allowed within these ESAs.

2) All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities would occur in developed or designated non-sensitive upland habitat areas. The designated upland areas would be located in areas that will prevent runoff from any spills from entering areas with slender-horned spineflower.

3) A BRI for all construction personnel would be developed and implemented prior to construction. At a minimum, the program would include the following topics: (1) biology, conservation, and legal status of the slender-horned spineflower; (2) responsibilities of the biological monitor; (3) delineation and flagging of adjacent habitat; (4) limitations on all movement of those employed onsite, including ingress and egress of equipment and personnel, to designated construction zones (personnel shall not be allowed access to adjacent sensitive habitats); (5) onsite pet prohibitions; (6) use of trash containers for disposal and removal of trash; and (7) Project features designed to reduce the impacts to listed species and habitat and promote continued successful occupation of adjacent habitat areas.

4) A preconstruction notification will be provided to PSFWO and CDFW in writing at least 5 days prior to Project initiation.

5) An authorized biologist will be present onsite during construction within and adjacent to suitable habitat to ensure that avoidance and minimization measures are in place according to specifications and monitor construction within the vicinity of the slender-horned spineflower populations at a frequency necessary to ensure that avoidance and minimization measures are properly followed. The biological monitor will report any non-compliance within 24 hours to PSFWO.

6) Before ground disturbance or other activities, a qualified botanist will survey all proposed construction and access areas for presence of slender-horned spineflower. Preconstruction surveys will occur during the appropriate season and in accordance with established protocols up to one year in advance of

construction, provided temporary construction easements have been granted to construction areas. These surveys will be conducted in all construction areas that contain suitable habitat for slender-horned spineflower, including scalebroom scrub and California buckwheat scrub. These surveys will be for the purpose of documenting plant locations relative to the construction areas and avoidance where feasible. If construction starts prior to the appropriate season and it is unfeasible to conduct preconstruction surveys, then plant documentation for avoidance and ESA fencing will rely on previous survey areas of populations.

7) Populations of slender-horned spineflower will be clearly mapped and recorded, along with the approximate numbers of individuals in each population and their respective condition. To the maximum extent feasible, construction areas and access roads will be adjusted to avoid loss of individual slender-horned spineflower and damage to habitats supporting this species.

8) Fire suppression capability, including extinguishers, shovels, and water tankers, will be available onsite whenever construction occurs during the fire season (as determined by the San Bernardino County Fire Department). Activities that may produce sparks, including welding or grinding, will use protective gear to reduce fire risks, such as the use of shields and protective mats.

9) Dust control measures will be implemented by the contractor to reduce excessive dust emissions. Dust control measures will occur at least two times per day on all construction days, or more during windy or dry periods, and may include wetting work areas, the use of soil binders on dirt roads, and wetting or covering stockpiles.

4.2.2.5 Cumulative Effects

Future transportation and infrastructure projects are planned in the area. Because the Project is mainly an inside widening project and has minimal permanent impacts to slender-horned spineflower, no cumulative impacts to slender-horned spineflower are anticipated as a result of the Project. Implementation of avoidance and minimization measures for impacts to slender-horned spineflower during Section 7 consultation with USFWS for all future projects will ensure that impacts to this species are mitigated and no cumulative effects will occur.

4.2.3 Discussion of Non-listed Special Status Plant Species

Of the 60 non-listed special status plant species that could potentially occur in the Project area, five were determined to have suitable habitat present within the BSA: chaparral sand-verbena (*Abronia villosa* var. *aurita*), Plummer's mariposa lily (*Calochortus plummerae*), paniculate tarplant (*Deinandra paniculata*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), and Parry's spineflower. These plant species have no listing status, but require consideration under CEQA.

4.2.3.1 Survey Results

Suitable habitat that could support these species exists within the BSA in scrub vegetation communities associated with City Creek, Plunge Creek, and the Santa Ana River; however, much of the habitat in the BSA is disturbed or degraded, but nonetheless suitable. None of these species were found in the BSA during reconnaissance-level surveys and vegetation mapping in 2012 and 2013 or during focused botanical surveys conducted during the appropriate blooming period in May and June 2012. Therefore, all of these species are considered absent from the BSA.

Rainfall during the 2011-2012 wet season was below average (5.54 inches, or 41% of average) for the Project area (NWS 2012). As a result, it is possible that some of these species did not bloom and were not detected during the 2012 botanical surveys, but are in fact present within the BSA. However, because suitable habitat for these species only occurs in the undeveloped scrub habitat portions of the BSA, Project impacts, compensatory mitigation, avoidance and minimization efforts, and cumulative effects for special status plant species would be the same as those described for the scrub habitat natural communities in Sections 4.1.1.2 – 4.1.1.5 and 4.1.2.2 – 4.1.2.5.

4.2.3.2 Project Impacts

Because these species are considered absent from the BSA, the Project is not expected to affect any non-listed special status plant species.

4.2.3.3 Compensatory Mitigation

Because these species are considered absent from the BSA, no compensatory mitigation is required.

4.2.3.4 Avoidance and Minimization Efforts

Because these species are considered absent from the BSA, no avoidance and minimization efforts are required.

4.2.3.5 Cumulative Effects

Because these species are considered absent from the BSA, the Project will not contribute to cumulative effects to non-listed special status plant species.

4.3 Special Status Wildlife Species

Of the 12 federally or state listed or proposed listed wildlife species initially reviewed, five were determined to occur or potentially occur within the BSA based on species requirements and BSA conditions: Santa Ana sucker, California red-legged frog (*Rana draytonii*), least Bell's vireo, coastal California gnatcatcher, and San Bernardino kangaroo rat. Suitable habitat is not present within the BSA for Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*), southern rubber boa (*Charina umbratica*), Sierra Madre yellow-legged frog (*Rana muscosa*), California condor (*Gymnogyps californianus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), or Stephen's kangaroo rat (*Dipodomys stephensi*) (see Chapter 3). These species are not discussed further. The results of surveys, critical habitat discussion, minimization/mitigation measures, Project effects, and cumulative effects for listed wildlife species with a potential to occur within the BSA are discussed in this section.

Of the 41 non-listed special status wildlife species, 29 were determined to occur or potentially occur within the BSA. Non-listed special status wildlife species with potential of occurring within the BSA are discussed in Subsections 4.3.6, 4.3.7, and 4.3.8 below.

4.3.1 Discussion of Santa Ana Sucker

The Santa Ana sucker was listed as a threatened species by USFWS in April 2000 (USFWS 2000b). Critical habitat for this species was originally designated in January 2005 (USFWS 2005) and was revised in December 2010 (USFWS 2010a).

The BSA is located within the 2010 final critical habitat Subunit 1A, which encompasses approximately 1,559 acres located within the cities of Highland, Mentone, and Redlands in San Bernardino County, California. This subunit includes 7 miles along City Creek (measured from its confluence with the Santa Ana River), 12 miles along Mill Creek (measured from its confluence with the Santa Ana River), and 10 miles along the Santa Ana River from below the Seven Oaks Dam to near Tippecanoe Avenue (USFWS 2010a). The BSA contains 39.24 acres of federally-designated unoccupied critical habitat for the Santa Ana sucker within the Santa Ana

River and City Creek (Figures 7A-7I). The BSA is considered unoccupied critical habitat due to an impassable barrier located approximately 8.5 miles downstream.

Santa Ana sucker was historically found throughout the Los Angeles, San Gabriel, and Santa Ana rivers. However, potential habitat destruction, natural and human-induced changes in streamflows, urban development and related land-use practices, recreation, introduction of nonnative competitors and predators, and demographics associated with small populations threatens this species (USFWS 2000b). As part of the *Revised Critical Habitat for the Santa Ana Sucker*, the USFWS has identified the following seven physical and biological features as PCEs essential for the conservation of the Santa Ana sucker (USFWS 2010a):

1) A functioning hydrological system within the historical geographic range of the Santa Ana sucker that experiences peaks and ebbs in the water volume (either naturally or regulated) that encompasses areas that provide or contain sources of water and coarse sediment necessary to maintain all life stages of the species, including adults, juveniles, larvae, and eggs, in the riverine environment.
2) Stream channel substrate consisting of a mosaic of loose sand, gravel, cobble, and boulder substrates in a series of riffles, runs, pools, and shallow sandy stream margins necessary to maintain various life stages of the species, including adults, juveniles, larvae, and eggs, in the riverine environment.
3) Water depths greater than 1.2 inches and bottom water velocities greater than 0.01 feet per second.
4) Clear or only occasionally turbid water.
5) Water temperatures less than 86° F.
6) Instream habitat that includes food sources (such as zooplankton, phytoplankton, and aquatic invertebrates), and associated vegetation such as aquatic emergent vegetation and adjacent riparian vegetation to provide: (a) shading to reduce water temperature when ambient temperatures are high; (b) shelter during periods of high water velocity; and (c) protective cover from predators.
7) Areas within perennial stream courses that may be periodically dewatered, but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.

4.3.1.1 Survey Results

Subunit 1A, which includes the entire Project area, is outside of the geographical distribution area of Santa Ana sucker and is not currently occupied by this species (USFWS 2010a). A drop structure located south of La Cadena Drive, approximately 8.5 miles downstream of the BSA, creates an impassible barrier that prohibits Santa Ana sucker from swimming upstream. As a result, it is unlikely that this species would occur within the BSA. However, this area was historically occupied and City Creek currently provides suitable habitat conditions for this species (USFWS 2010a). USFWS determined that the portions of the Santa Ana River and City Creek, which includes the BSA, as well as Mill Creek, north of Tippecanoe Avenue are essential for the conservation of Santa Ana sucker because they provide stream and storm waters that transport coarse sediment materials necessary to maintain substrate conditions in occupied areas for the species (USFWS 2010a). Therefore, Project activities in the Santa Ana River and City Creek could affect occupied habitat downstream of the BSA.

4.3.1.2 Project Impacts

Although Santa Ana sucker is not anticipated within the Project area, there is a potential for indirect effects to Santa Ana sucker and its suitable habitat downstream from a potential decrease in water quality due to erosion and road runoff resulting from Project construction. The BSA also occurs within designated critical habitat for the Santa Ana sucker. As a result, Section 7 consultation with the USFWS will be required. However, with implementation of the avoidance and minimization measures discussed in Section 4.3.1.4 below, the Project is not likely to adversely affect the Santa Ana sucker. USFWS concurrence with this determination will be addressed during Section 7 consultation.

The Project will result in permanent impacts to unoccupied Santa Ana sucker critical habitat from bridge widening construction. The Project will also result in temporary impacts due to construction work areas and access. Temporary and permanent impacts to Santa Ana sucker unoccupied critical habitat are shown in Table 12 and Figures 7A-7I. The temporary impacts to Santa Ana sucker unoccupied critical habitat along City Creek and the Santa Ana River are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to Santa Ana sucker unoccupied critical habitat will likely be refined from those described in this report during the permitting phase of the Project (Table 12). Any change in impact areas will be provided to PSFWO.

Table 12. Impacts to Santa Ana Sucker Unoccupied Critical Habitat

	Permanent Impact (acre)	Temporary Impact (acre)
Critical habitat	0.023	13.277
Total	**0.023**	**13.277**

4.3.1.3 Compensatory Mitigation

Although the Project is not expected to directly affect Santa Ana sucker, the BSA is located within designated unoccupied critical habitat. However, avoidance and minimization measures described in Section 4.3.1.4 below will minimize effects to Santa Ana sucker. As a result, no further mitigation is proposed.

4.3.1.4 Avoidance and Minimization Efforts

The Santa Ana sucker does not occur in the BSA and the Project is not expected to directly affect this species; however, because this species occurs downstream of the BSA and the BSA contributes to the downstream ecology, avoidance and minimization efforts will be implemented to reduce impacts to water quality that could affect downstream habitat. Measures implemented to comply with the Project SWPPP, as well as ACOE, CDFW, and RWQCB permit conditions for impacts to jurisdictional waters, will ensure avoidance and minimization of impacts to downstream water quality. If water diversion is required, hydrological connectivity within the Santa Ana River and City Creek will be maintained.

In addition, the following Santa Ana sucker specific measures will be incorporated to avoid and minimize effects:

1) A construction SWPPP and a soil erosion and sedimentation plan will be developed to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources onsite during and following the Project construction phase. The SWPPP will identify specific BMPs to be implemented during Project construction to not cause or contribute to exceeding any water quality standard. In addition, the SWPPP will contain provisions for changes to the plan such as alternative mechanisms, if necessary, during Project design and/or construction to achieve the stated goals and performance standards.

2) A preconstruction notification will be provided to PSFWO and CDFW in writing at least 5 days prior to Project initiation.

3) All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located to prevent the runoff from entering any drainages.

4) Mud, silt, or other pollutants from construction activities will not be placed within drainages and will not be allowed to enter a flowing stream.

5) All portable toilets will be placed on a vegetated or dirt surface away from any streams, storm drains, or drainage swales.

6) An authorized biologist will be present onsite during construction within and adjacent to critical habitat to ensure that avoidance and minimization measures are in place according to specifications and monitor construction within the vicinity of the Santa Ana sucker populations at a frequency necessary to ensure that avoidance and minimization measures are properly followed. The biological monitor will report any non-compliance within 24 hours to PSFWO.

4.3.1.5 Cumulative Effects

Future transportation and infrastructure projects are planned in the area. Because the Project is mainly an inside widening project and has minimal permanent impacts to Santa Ana sucker, no cumulative impacts to Santa Ana sucker or designated critical habitat are anticipated as a result of the Project. Implementation of avoidance and minimization measures for impacts to Santa Ana sucker critical habitat during Section 7 consultation with USFWS for all future projects will ensure that impacts to this species are mitigated and that no cumulative effects will occur.

4.3.2 Discussion of California Red-legged Frog

The California red-legged frog was listed as a threatened species by the USFWS in May 1996 (USFWS 1996). Critical habitat was originally designated in April 2006 (USFWS 2006) and was re-designated in March 2010 (USFWS 2010b). California red-legged frog inhabits streams with slow-moving water and deep pools with dense, shrubby riparian vegetation along pool edges. This species has been extirpated from 70% of its former range and currently occurs primarily in coastal drainages of central California, from Marin County south to northern Baja, Mexico from sea level to 5,200 feet in elevation (USFWS 2002a). No critical habitat for California red-legged frog occurs within the BSA.

4.3.2.1 Survey Results

Limited suitable habitat for California red-legged frog is present within the BSA along City Creek in deep pools with slow moving waters. General wildlife surveys conducted in May and June 2012 did not detect any California red-legged frog within the BSA. The survey area for general wildlife was based on preliminary design plans. Subsequent modifications to the design plan did not result in any additional impacts to potential habitat for California red-legged frog. The closest known recorded observation of California red-legged frog is from 1982 and is approximately 4 miles north of the BSA along the west fork of City Creek (CNDDB 2012). California red-legged frog is currently known from only a few locations in southern California south of the Tehachapi Mountains (USFWS 2002a). Based on the fact that the last known occurrence of this species in the region was more than 30 years ago, the lack of high quality suitable habitat present within the BSA, and negative wildlife surveys, California red-legged frog is considered absent from the BSA.

4.3.2.2 Project Impacts

Because California red-legged frog is considered absent from the BSA, the Project is not expected to impact this species.

4.3.2.3 Compensatory Mitigation

Because California red-legged frog is considered absent from the BSA, no compensatory mitigation is required.

4.3.2.4 Avoidance and Minimization Efforts

Because California red-legged frog is considered absent from the BSA, no avoidance and minimization efforts are required.

4.3.2.5 Cumulative Effects

Because California red-legged frog is considered absent from the BSA, the Project will not contribute to cumulative effects to this species.

4.3.3 Discussion of Least Bell's Vireo

Least Bell's vireo was listed as an endangered species by CDFW in 1980 (CDFW 2013) and by USFWS in May 1986 (USFWS 1986). Critical habitat for the least Bell's vireo was designated in February 1994 (USFWS 1994). Critical habitat occurs in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. No critical habitat for the least Bell's vireo occurs within the BSA.

The least Bell's vireo is a small migratory songbird that nests in southern California. This species is a summer resident of southern California and breeds in willow thickets and other dense, low riparian growths in lowlands and lower portions of canyons. Habitat for least Bell's vireo typically consists of multi-layered riparian habitat with a combination of mule fat and willows of varying heights. Least Bell's vireo typically prefers habitat with an open canopy and areas where riparian habitat boarders open water or unvegetated channels. Habitat for this species always includes a dense herbaceous understory.

4.3.3.1 Survey Results

Protocol surveys for least Bell's vireo were conducted in potentially suitable riparian habitats in the BSA between May 10 and July 27, 2012 (Table 1). The results of the surveys indicate that least Bell's vireo does not currently occupy any of the riparian habitats within the BSA. The arroyo willow and mule fat thickets present are relatively small, fragmented patches and do not contain suitable multi-layered canopy and dense understory typically utilized by least Bell's vireo. The survey area for least Bell's vireo was based on preliminary design plans. Subsequent modifications to the design plan did not result in any additional impacts to potential riparian habitat for least Bell's vireo. The nearest known occurrence of least Bell's vireo is approximately 2.1 miles west of the BSA within dense riparian vegetation in the Santa Ana River (CNDDB 2012). The *Least Bell's Vireo Report* in Appendix B provides detailed survey results.

4.3.3.2 Project Impacts

Because least Bell's vireo was not observed and is considered absent from the BSA, no direct or indirect impacts are anticipated. The Project would have no effect on least Bell's vireo.

4.3.3.3 Compensatory Mitigation

Least Bell's vireo was not observed and is considered absent from the BSA; therefore, no compensatory mitigation is proposed.

4.3.3.4 Avoidance and Minimization Efforts

Least Bell's vireo was not observed and is considered absent from the BSA. No avoidance and minimization measures are proposed.

4.3.3.5 Cumulative Effects

Least Bell's vireo was determined to be absent from the BSA, and as a result, the Project does not add any cumulative impacts, now or in the future, that contribute to the loss of least Bell's vireo in the region.

4.3.4 Discussion of Coastal California Gnatcatcher

The coastal California gnatcatcher was listed as a threatened species by the USFWS in March 1993 (USFWS 1993). Critical habitat for this species was originally designated in October 2000 (USFWS 2000c) and was re-designated in December 2007 (USFWS 2007). The coastal California gnatcatcher is a small, drab, insectivorous songbird endemic to cismontane southern California. The USFWS describes coastal California gnatcatcher as typically occurring in, or near, sage scrub habitats and is typically found in California sage scrub having a canopy cover greater than 50% (USFWS 2007).

4.3.4.1 Survey Results

No California sage scrub is present within the BSA. The BSA contains 12.06 acres of California buckwheat scrub habitat considered as potentially suitable habitat, albeit marginal, for the coastal California gnatcatcher. California buckwheat scrub is not the preferred vegetation community for the coastal California gnatcatcher, although this community is occasionally utilized by the coastal California gnatcatcher, particularly if it contains a California sage component. No critical habitat for the coastal California gnatcatcher occurs within the BSA.

Focused surveys during spring 2012 determined the coastal California gnatcatcher to be absent from the BSA. The survey area for coastal California gnatcatcher was based on preliminary design plans. Subsequent modifications to the design plan did not result in any additional impacts to potential habitat for coastal California gnatcatcher. The *Coastal California Gnatcatcher Report* in Appendix C provides detailed results of these surveys.

4.3.4.2 Project Impacts

Coastal California gnatcatcher was not observed and is considered absent from the BSA. No direct, indirect, or cumulative impacts are anticipated. The Project would have no effect on coastal California gnatcatcher.

4.3.4.3 Compensatory Mitigation

Because the coastal California gnatcatcher was not observed in the BSA, no compensatory mitigation is proposed.

4.3.4.4 Avoidance and Minimization Efforts

Because the coastal California gnatcatcher was not observed and is considered absent from the BSA, no avoidance and minimization measures are proposed.

4.3.4.5 Cumulative Effects

Coastal California gnatcatcher was determined to be absent from the BSA, and as a result, the Project does not add any cumulative impacts, now or in the future, that contribute to the loss of coastal California gnatcatcher in the region.

4.3.5 Discussion of San Bernardino Kangaroo Rat

San Bernardino kangaroo rat was listed by the USFWS as an endangered species in 1998 (USFWS 1998). It is also a CDFW state listed Species of Special Concern. 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. The subspecies known as the San Bernardino kangaroo rat, however, is confined to inland valley scrub communities, and more particularly, to scrub communities occurring along rivers, streams, and drainages. It prefers sandy and gravelly soils of alluvial fans, river channels, and terrace. San Bernardino kangaroo rat occurs primarily in the Santa Ana River and its tributaries north of I-10 within San Bernardino County.

Critical habitat for San Bernardino kangaroo rat was originally designated in 2002 (USFWS 2002b). The 2002 final rule was proposed for revision in June 2007, reducing the acreage of critical habitat from 33,290 to 7,779 acres, and a final designation was issued in 2008 (USFWS 2008). In a federal district court ruling on January 8, 2011, Center for Biological Diversity vs. USFWS, the 2008 final critical habitat designation was found to be invalid and the 2002 final critical habitat designation and acreage was reinstated. As part of the *Final Rule Designation of Critical Habitat for the San Bernardino Kangaroo Rat*, the USFWS has identified the following three PCEs as being essential for the conservation of San Bernardino kangaroo rat (USFWS 2008):

1) Alluvial fans, washes, and associated floodplain areas containing soils consisting predominately of sand, loamy sand, sandy loam, 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% canopy cover providing protection from predators, while leaving bare ground and open areas necessary for foraging and movement of this subspecies.

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% canopy cover with patches of suitable soils 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.

The BSA is located within the 2008 final critical habitat Unit 1 for San Bernardino kangaroo rat, which encompasses approximately 3,258 acres within the Santa Ana River Wash along portions of Plunge Creek, Mill Creek, City Creek, and the Santa Ana River on lands within the cities of San Bernardino, Redlands, and Highland in San Bernardino County, California (USFWS 2008). The BSA contains 108.73 acres of federally-designated critical habitat for the San Bernardino kangaroo rat within the Santa Ana River, City Creek, and portions of Plunge Creek (Figures 7A-7I).

4.3.5.1 Survey Results

A total of 175 San Bernardino kangaroo rats were captured during small mammal live trapping surveys in October and November 2012 (Figures 7A-7I). Of the 175 captures, 118 were unique individuals and 57 were recaptures. San Bernardino kangaroo rats were captured at 14 of the 15 survey areas studied, including essentially all habitats where the dominant vegetation cover was scalebroom scrub or California buckwheat scrub. The only survey areas where this species was not captured was the area that traversed the main channel of the Santa Ana River within deep sandy low-flow washes, and along City Creek wash in the associated berms west of SR-210 where the habitat was either open sandy wash or sandy/cobbly bench with mule fat thicket or ruderal vegetation. The survey area for San Bernardino kangaroo rat was based on preliminary design plans. Subsequent modifications to the design plan resulted in additional temporary impacts to potential habitat for San Bernardino kangaroo rat near City Creek. Because this additional suitable habitat was not

included in the 2012 live-trapping surveys, it is assumed as occupied habitat in this impact analysis. Detailed survey results are provided in the *San Bernardino Kangaroo Rat Report* in Appendix D.

4.3.5.2 Project Impacts

The Project will result in permanent and temporary impacts to San Bernardino kangaroo rat and critical habitat. Direct impacts to this species may occur as direct mortality and through loss or alteration of habitat. Indirect effects may result from edge effects such as exotic plant and animal infestation, litter, fire, unauthorized recreational use, erosion and sedimentation, and pollutants associated with vehicles and machinery. Additional indirect effects may result from an increase in light, glare, and noise associated with vehicles.

The Project will result in temporary and permanent impacts to San Bernardino kangaroo rat occupied habitat and critical habitat due to bridge widening construction and grading limits as well as temporary work areas and access (Figures 7A-7I). Temporary and permanent impacts to San Bernardino kangaroo rat occupied habitat are shown in Table 13 and impacts to critical habitat are shown in Table 14. The temporary impacts to San Bernardino kangaroo rat occupied habitat and critical habitat along Plunge Creek, City Creek, and the Santa Ana River are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to San Bernardino kangaroo rat occupied habitat and critical habitat will likely be refined from those described in this report during the permitting phase of the Project (Tables 13 & 14). Any change in impact areas will be provided to PSFWO.

Table 13. Impacts to San Bernardino Kangaroo Rat Suitable Habitat

Habitat Suitability Classification	Permanent Impact (acre)	Temporary Impact (acre)
High	0.000	0.004
Medium/high	0.000	0.000
Medium	0.253	0.069
Low/medium	0.000	1.175
Low	0.333	1.293
Low/Trace	0.000	0.155
Total	**0.586**	**2.696**

Table 14. Impacts to San Bernardino Kangaroo Rat Critical Habitat

	Permanent Impact (acre)	Temporary Impact (acre)
Critical habitat with PCEs	1.747	10.746
Critical habitat without PCEs*	18.668	8.394
Total	**20.415**	**19.140**

**Critical habitat not containing the Primary Constituent Elements (PCEs) for San Bernardino kangaroo rat includes developed areas, ornamental landscapes, and paved roads.*

4.3.5.3 Compensatory Mitigation

Section 7 consultation will be initiated with the USFWS for impacts to San Bernardino kangaroo rat and its critical habitat. Compensation for permanent impacts to critical habitat containing the PCEs for San Bernardino kangaroo rat and suitable habitat outside of designated critical habitat may be provided by purchasing San Bernardino kangaroo rat occupied lands within the Santa Ana Watershed for preservation through Wildlands, Inc. and/or through an accredited mitigation bank determined during Section 7 consultation with the USFWS. Temporary impacts will be mitigated at a minimum 1:1 ratio and permanent impacts will be mitigated at a minimum 3:1 ratio. Onsite restoration of temporarily-impacted scalebroom scrub would occur upon completion of construction and will consist of returning impacted areas to original grade and preconstruction conditions. An HMMP will be developed and will include a monitoring period with specific success criteria to be developed through agency consultation.

4.3.5.4 Avoidance and Minimization Efforts

The following San Bernardino kangaroo rat specific measures will be incorporated to avoid and minimize effects:

1) A USFWS authorized biologist with knowledge of San Bernardino kangaroo rat and its habitat will function as a biological monitor. Prior to initiating Project activities, the name(s) and resumes of all prospective biological monitors will be submitted to the appropriate USFWS office. The biological monitor will ensure compliance with the Project avoidance and minimizations measures, including Conservation Measures and Terms and Conditions of the biological opinion, and will have the authority to halt/suspend all activities until appropriate corrective measures have been taken. The biological monitor will report any noncompliance immediately to USFWS and CDFW.

2) The biological monitor will be present during vegetation clearing, grading and during construction to monitor construction impacts, as stated in Project environmental documents and any applicable permits.

3) A USFWS authorized biologist will be present onsite during construction within and adjacent to occupied habitat to ensure that avoidance and minimization measures are in place according to specifications and monitor construction within the vicinity of the San Bernardino kangaroo rat populations at a frequency necessary to ensure that avoidance and minimization measures are properly followed. The biological monitor will report any non-compliance within 24 hours to PSFWO.

4) A BRI for all construction personnel would be developed and implemented prior to construction. At a minimum, the program would include the following topics: (1) biology, conservation, and legal status of the San Bernardino kangaroo rat and its critical habitat; (2) responsibilities of the biological monitor; (3) delineation and flagging of adjacent habitat; (4) limitations on all movement of those employed onsite, including ingress and egress of equipment and personnel, to designated construction zones (personnel shall not be allowed access to adjacent sensitive habitats); (5) onsite pet prohibitions; (6) use of trash containers for disposal and removal of trash; and (7) Project features designed to reduce

the impacts to listed species and habitat and promote continued successful occupation of adjacent habitat areas.

5) A preconstruction notification will be provided to PSFWO and CDFW in writing at least 5 days prior to Project initiation.

6) Prior to ground disturbance in sensitive areas, limits of Project construction will be delineated and marked to be clearly visible to personnel on foot and in heavy equipment. All construction-related activities (e.g., vegetation removal, grading, equipment lay-down and storage, and contractor parking) will occur inside the limits of construction. Construction staging and equipment storage will be located outside of any potential habitat areas. All movement of contractors, subcontractors, or their agents and equipment will be restricted to the limits of construction, staging areas, and construction access routes.

7) Prior to clearing or construction, ESA fencing will be installed around all San Bernardino kangaroo rat suitable habitat areas that will be avoided and are adjacent to the Project footprint and within State right-of-way. No grading or fill activity of any type will be permitted within these ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the ESAs. All construction equipment should be operated in a manner so as to prevent accidental damage to nearby avoidance areas. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where San Bernardino kangaroo rat suitable habitat vegetation is immediately adjacent to planned grading activities and deposition could occur.

8) Exclusion fencing will be installed around all areas with suitable habitat for San Bernardino kangaroo rat that will be impacted by Project construction. Prior to clearing or construction, a fence plan will be submitted for USFWS approval. Exclusionary trapping for San Bernardino kangaroo rat will be conducted by a USFWS approved biologist within San Bernardino kangaroo rat suitable habitat areas where exclusionary fence is installed to remove all San Bernardino kangaroo rat prior to the start of any ground disturbance. San Bernardino kangaroo rat trapped in these areas will be released in suitable habitat areas, outside the construction limits, in the immediate Project vicinity.

9) The ESA fencing and San Bernardino kangaroo rat exclusionary fencing will be inspected by the biological monitor at the close of each work day to ensure that it is in place and properly maintained. ESA fencing and exclusion fencing will remain in place and be maintained until Project construction is completed.

10) During final design, exclusion fencing specifications within occupied San Bernardino kangaroo habitat will be approved by the USFWS prior to grading. The qualified biologist experienced with San Bernardino kangaroo rat will be present onsite when the fence is installed to minimize the disturbance of San Bernardino kangaroo rat burrows from the fence installation. An exclusion fence design will be submitted to the USFWS for approval at least 30 days prior to emplacement.

11) To the extent feasible, no nighttime work will be conducted within San Bernardino kangaroo rat habitat; however, nighttime construction may be allowed on the roadways above the elevation of occupied habitat or in other areas where lighting will not impact San Bernardino kangaroo rat. Any nighttime work conducted near San Bernardino kangaroo rat habitat will require shielded lighting to minimize light spillage into San Bernardino kangaroo rat habitat. Speed limits will be reduced to 5 miles per hour during any nighttime construction in areas where San Bernardino kangaroo rat may be present.

12) Any excavated, steep-walled holes or trenches more than 2 feet deep will be backfilled or covered at the close of each working day to help prevent entrapment of San Bernardino kangaroo rat during construction. This measure is not applicable to the deep excavations in sandy (unstable) soils within the Santa Ana River, City Creek, or Plunge Creek; however, these trenches will necessarily be sloped rather than steep-angled.

13) During grading activities, all unfilled holes or trenches will be inspected by the monitoring biologist for entrapped San Bernardino kangaroo rat as necessary prior to the onset of construction. Any San Bernardino kangaroo rat discovered will be removed from the trench or hole by a qualified biologist and released outside of the limits of construction.

14) Unburied pipes or conduit laid in trenches overnight will be capped. All other pipes or conduit with a bore-diameter of 1.5 inches or greater stored

overnight within the construction site for one or more nights will be thoroughly inspected for the presence of San Bernardino kangaroo rat before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If San Bernardino kangaroo rat are discovered inside a pipe, a qualified biologist will supervise movement or relocation of the pipe until the animal has been removed and released.

15) Soil stockpiles will be located outside of San Bernardino kangaroo rat suitable habitat and ESA areas, to the maximum extent feasible. ESA fencing and San Bernardino kangaroo rat exclusionary fencing will be placed around any soil stockpiles that must be located within these areas to prevent this species from entering the stockpiles. The ESA fencing and San Bernardino kangaroo rat exclusionary fencing will be inspected by the biological monitor at the close of each work day to ensure that it is in place and properly maintained and that no San Bernardino kangaroo rat are present. If sign of this species is found, then a qualified biologist will conduct trapping within these areas and release any captured individuals into suitable habitat areas, outside the construction limits, in the immediate Project vicinity.

16) A USFWS approved biological monitor and/or designated biologist will serve as the contact source for any personnel who might inadvertently kill or injure a San Bernardino kangaroo rat or who finds a dead, injured, or entrapped individual. The designated biological monitor and/or designated biologist will be identified within the BRI. The designated biological monitor’s and/or designated biologist’s name and telephone number shall be provided to USFWS and CDFW.

17) Any personnel who inadvertently kills or injures a San Bernardino kangaroo rat shall immediately report the incident to the designated biological monitor and/or designated biologist, who will notify USFWS and CDFW immediately and in writing within three working days. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal, as well as any other pertinent information.

18) Following construction, all permanent lighting installed along the new freeway alignment will be permanently shielded and directed onto the roadway.

19) Restoration plans for any temporarily-impacted areas within San Bernardino kangaroo rat suitable habitat will be developed and approved by Caltrans and USFWS. Such restoration plans will be implemented within 24 months of the completion of major construction.

20) All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated staging areas to prevent the release of hazardous substances into the Project site or drainages (i.e., Sand Creek, City Creek, Plunge Creek, Santa Ana River, or their tributaries). Any accidental spills will be immediately contained and properly disposed of.

21) No pets will be allowed in, or adjacent to, the Project site.

22) Rodenticides, herbicides, insecticides, or other chemicals that could potentially harm San Bernardino kangaroo rat will not be used.

23) Trash will be stored in closed containers so that it is not readily accessible to scavengers and will be removed from the construction site on a daily basis so as not to attract potential San Bernardino kangaroo rat predators.

24) Spoils and rubble will not be deposited outside the identified limits of construction and material waste generated by the Project will be disposed of offsite.

25) A copy of fee payment to a USFWS approved mitigation bank to satisfy mitigation for permanent impacts will be provided to USFWS prior to impacts to San Bernardino kangaroo rat suitable habitat.

4.3.5.5 Cumulative Effects

Future transportation and infrastructure projects are planned in the area. Because the Project is mainly an inside widening project and has minimal permanent impacts to San Bernardino kangaroo rat, no cumulative impacts to San Bernardino kangaroo rat or designated critical habitat are anticipated as a result of the Project. Implementation of mitigation for impacts to San Bernardino kangaroo rat during Section 7

consultation with USFWS for all future projects would ensure that impacts to this species are mitigated and no cumulative impacts would occur.

4.3.6 Discussion of Burrowing Owl

Burrowing owl is a California Species of Special Concern and is not federally or state listed. It is protected during the nesting season by the MBTA. It is also protected under Sections 3503 and 3800 of the CFG Code. Sections 2503, 3503.5, and 2800 of the CFG Code also prohibit the take, possession, or destruction of birds, their nests, or eggs.

Burrowing owl is found in a wide variety of habitats including grasslands, agricultural lands, and desert habitats. It often co-occurs with small burrowing animals such as California ground squirrel (*Spermophilus beecheyi*). Burrowing owl commonly perches on fence posts and on top of excavated earth outside a burrow. This species is known to use debris piles, rock outcrops, and other artificial burrows such as pipes and crevices.

4.3.6.1 Survey Results

All potential suitable habitats within the BSA were assessed during a habitat assessment on May 2 and 3, 2012. Following the habitat assessment, a subsequent focused burrow survey was conducted in one location (i.e., survey area) having suitable burrows and the potential to support burrowing owl. However, no burrowing owls were observed utilizing the survey area. The closest documented burrowing owls are located 0.7 miles east of the BSA, north of the Santa Ana River and east of the San Bernardino International Airport (CNDDB 2012). An undetermined number of burrowing owl utilized that burrow site from 1983 to 1999 (CNDDB 2012). Although burrowing owl have historically been observed in the Project vicinity, no evidence of burrowing owl was observed within the BSA. The survey area for burrowing owl was based on preliminary design plans. Subsequent modifications to the design plan did not result in any additional impacts to potential habitat for burrowing owl. The *Burrowing Owl Report* in Appendix E provides detailed survey results.

4.3.6.2 Project Impacts

Burrowing owl was not observed during the focused survey within the BSA. As a result, the Project is not expected to affect burrowing owl.

4.3.6.3 Compensatory Mitigation

No burrowing owls were observed within the BSA; therefore, no compensatory mitigation is required. However, if burrowing owls are detected within the BSA during pre-construction surveys, then mitigation could be required and would be developed in consultation with CDFW during the permitting phase of the Project. If temporary impacts are expected, mitigation may include habitat restoration to return the area to pre-construction conditions, including decompacting the soil and revegetation. Mitigation for permanent impacts may include preservation of suitable habitat onsite or offsite, which would satisfy the best practices outlined in the CDFW 2012 *Staff Report on Burrowing Owl Mitigation*, to the best extent feasible, including the size and quality of the land preserved, the existence of comparable habitat attributes of the impacted and conserved lands, and the proximity of the preserved land to the BSA (CDFW 2012). Mitigation would include impacts to nesting, occupied, and satellite burrows as well as suitable burrowing owl habitat.

4.3.6.4 Avoidance and Minimization Efforts

Although no burrowing owls were observed within the BSA, they could subsequently inhabit the BSA in areas that were previously determined to be unoccupied. As a result, pre-construction surveys within the BSA will be conducted within 30 days prior to the start of construction activities. Avoidance and minimization measures will also be developed in consultation with the CDFW during the permitting phase of the Project should burrowing owl be detected within the BSA. Potential measures may include establishing an avoidance buffer around active burrows, eliminating potential unoccupied burrows, and/or passive relocation.

4.3.6.5 Cumulative Effects

No burrowing owls were observed within the BSA; therefore, no cumulative effects are expected.

4.3.7 Discussion of Special Status Bats

Special status bridge- and crevice-dwelling wildlife species (i.e., bats) with the potential to occur in the BSA include western mastiff bat (*Eumops perotis*), western yellow bat (*Lasiurus xanthinus*), and pallid bat (*Antrozous pallidus*).

4.3.7.1 Survey Results

A bat habitat suitability assessment was conducted on September 26, and October 10 and 12, 2012. During the assessment, it was determined that only one bridge, City

Creek, had evidence of bat usage. The City Creek westbound bridge had very limited amounts of guano on several openings on the eastern portion of the bridge near the bridge abutment (Figures 7A-7I). The survey area for bat habitat suitability was based on preliminary design plans. Subsequent modifications to the design plan did not result in any additional impacts to potential bat habitat. The *Bat Habitat Suitability Assessment Report* in Appendix F provides detailed survey results.

Although limited guano was observed on the City Creek westbound bridge, bat roosts can change locations seasonally and there is a potential for bat species to utilize any of the bridges, culverts, and large trees in the vicinity of the Project for day and/or night roosting. As a result, prior to the start of Project construction an additional daytime assessment should be conducted by a qualified bat biologist to reexamine structures that are suitable for bat use. If bat sign is observed at that time, then nighttime bat surveys will be conducted to confirm whether the structures with suitable habitat identified during the preliminary assessment as containing roosting habitat are utilized by bats for day-roosting and/or night-roosting, to ascertain the level of bat foraging and roosting activity at each of these locations, and to perform exit counts to visually determine the approximate number of bats utilizing the roosts. Acoustic monitoring will also be used during these surveys to aid in identifying the bat species present and to determine an index of relative bat activity for that site on that specific evening.

4.3.7.2 Project Impacts

Project effects to bat species may include temporary indirect disturbance such as noise, vibration, dust, night lighting, and human encroachment from construction. In addition, construction could temporarily impede access to roost sites in the holes and crevices of bridges, culverts, and overhead structures. Only a small portion of roosting habitat may be permanently impacted by the Project. The widening and modification of bridges will increase future potential roosting habitat by providing more roosting crevices. As a result, the Project is not expected to substantially affect bat roosting habitat.

4.3.7.3 Compensatory Mitigation

With the implementation of the measures described in Section 4.3.7.4 below, the Project is not expected to affect bat species; therefore, specific compensatory mitigation is not provided. In addition, compensatory mitigation may be required during the permitting phase, which will benefit bat species by increasing roosting habitat availability.

4.3.7.4 Avoidance and Minimization Efforts

The following special status bat species specific measures will be incorporated to avoid and minimize effects:

1) A qualified bat biologist will survey the BSA prior to construction to assess the potential for maternity roosts in the BSA. The surveys may include a combination of structure and tree inspection, sampling, exit counts, and acoustic surveys.

2) All work areas on existing bridges with potential bat roosting habitat that would be affected between April 15 and August 31 will be cleared of all bats prior to construction under the guidance and observation of a qualified bat biologist. Exclusionary devices should be used to exclude bats from directly affected work areas and avoid potential direct impacts. Such exclusion efforts must be continued to keep the structures free of bats until August 31 or completion of construction. All bat exclusion techniques would be coordinated between Caltrans and the resource agencies, as applicable.

3) Prior to tree removal, large trees and snags should be examined by a qualified bat biologist prior to removal or trimming to ensure that no roosting bats are present. Palm frond trimming, if necessary, should be conducted outside the maternity season (i.e., April 15–August 31) to avoid potential mortality to flightless young.

4) If maternity sites are identified during the preconstruction bat habitat suitability assessment, then no construction activities at the location containing the maternity roost will be allowed during the maternity season (i.e., April 15–August 31), unless a qualified bat biologist has determined that the young have been weaned. If present, and it is anticipated that construction activities cannot be completed outside of the maternity season, then bat exclusion at maternity roost sites shall be completed either as soon as allowed by CDFW and the qualified bat biologist after the young have been weaned or outside of the maternity season, prior to initiating construction activities or as otherwise approved by the qualified bat biologist in coordination with CDFW.

4.3.7.5 Cumulative Effects

The bridge widening of the Highland Avenue undercrossing, Sand Creek Bridge, Victoria Avenue undercrossing, City Creek Bridge, 5th Street undercrossing, Plunge Creek Bridge, Access Road undercrossing, Santa Ana River Bridge, and Pioneer Avenue undercrossing will likely increase future potential roosting habitat. As a result, the Project is expected to incrementally benefit bat species.

4.3.8 Discussion of Non-listed Special Status Wildlife Species

Of the 41 non-listed special status wildlife species, eight were determined to be present and 21 were determined to have potential for occurrence within the BSA: Busck's gallmoth (*Carolella busckana*), arroyo chub (*Gila orcuttii*), Santa Ana speckled dace (*Rhinichthys osculus* ssp. *3*), silvery legless lizard (*Anniella pulchra pulchra*), orange-throated whiptail (*Aspidoscelis hyperythra*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), rosy boa (*Lichanura trivirgata*), western spadefoot toad (*Spea hammondii*), two-striped garter snake (*Thamnophis hammondii*), coast horned lizard, Cooper's hawk, tricolored blackbird (*Agelaius tricolor*), white-tailed kite, California horned lark, yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), Lawrence's goldfinch (*Spinus lawrencei*), burrowing owl, ferruginous hawk, yellow warbler, San Diego black-tailed jackrabbit, southern grasshopper mouse (*Onychomys torridus ramona*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), American badger (*Taxidea taxus*), northwestern San Diego pocket mouse, San Diego desert woodrat, pallid bat, western mastiff bat, and western yellow bat. Project impacts and mitigation for burrowing owl and special status bats are discussed in sections 4.3.6 and 4.3.7 above, respectively; the remaining special status wildlife species that occur or have a potential to occur within the BSA are discussed below.

4.3.8.1 Survey Results

Suitable habitat that could support these species exists primarily within the BSA in vegetation communities associated with City Creek, Plunge Creek, and the Santa Ana River. Biological reconnaissance and focused surveys conducted in May and June 2012 and October 2013 observed eight special status wildlife species within the BSA: coast horned lizard, ferruginous hawk, yellow warbler, Cooper's hawk, California horned lark, San Diego black-tailed jackrabbit, northwestern San Diego pocket mouse, and San Diego desert woodrat (Figures 7A-7I). The remaining species were not detected; however, surveys were not focused on these species and it is also possible for these species to move onto the site prior to construction. Although much

of the habitat onsite is disturbed, developed, or degraded, some suitable habitat for these species exists within the BSA. Because suitable habitat for these species only occurs in the undeveloped riparian and scrub habitat portions of the BSA, avoidance and minimization efforts for special status wildlife species are the same as those described for the riparian and scrub habitat natural communities in Sections 4.1.1.4, 4.1.2.4, and 4.1.3.4.

4.3.8.2 Project Impacts

As a result of the avoidance and minimization measures described in Section 4.3.8.4 below, the Project is not expected to affect any of these species directly; however, the Project is expected to have indirect and temporary effects to them through the alteration or loss of potential habitat. Therefore, Project effects for these species are the same as those described for the scalebroom scrub, California buckwheat scrub, and riparian habitat natural communities in Sections 4.1.1.2, 4.1.2.2, and 4.1.3.2.

4.3.8.3 Compensatory Mitigation

Due to the avoidance and minimization measures described in Sections 4.1.1.4, 4.1.2.4, and 4.1.3.4., the Project is not expected to affect these species; therefore, specific compensatory mitigation is not provided. However, compensatory mitigation described for the scalebroom scrub, California buckwheat scrub, and riparian habitat natural communities in Sections 4.1.1.3, 4.1.2.3, and 4.1.3.3 will benefit these species by enhancing native vegetation and increasing foraging opportunities.

4.3.8.4 Avoidance and Minimization Efforts

Because suitable habitat for these species only occurs in the natural vegetation community portions of the BSA, avoidance and minimization efforts for special status terrestrial wildlife species are the same as those described for the natural communities in Sections 4.1.1.4, 4.1.2.4, and 4.1.3.4. Avoidance and minimization efforts for special status fish species are the same as those described for Santa Ana sucker in Section 4.3.1.4

4.3.8.5 Cumulative Effects

Incremental cumulative effects to these species will result through the loss and degradation of available habitat. Because of this, cumulative effects to these species are the same as those described in the scalebroom scrub, California buckwheat scrub, and riparian habitat natural communities in Sections 4.1.1.5, 4.1.2.5, and 4.1.3.5.

4.3.9 Discussion of Wildlife Movement Corridors

Wildlife movement corridors are habitat linkages connecting suitable wildlife habitat areas in a region otherwise fragmented by development, disturbance, rugged terrain, and changes in vegetation communities. Many wildlife species require large areas of habitat to forage, find burrowing/denning or nesting sites, and for breeding. Corridors linking areas of suitable habitat are important because they provide access to mates, food, and water, they allow the dispersal of individuals away from high population density areas, and they facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Corridors are often used by juveniles dispersing to new territories, which avoids intraspecific competition in existing habitats and allows the recolonization of areas from which animals have become extirpated. Natural features such as canyons, drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife movement.

The SR-210 corridor and surrounding development have greatly reduced the amount of wildlife habitat in the Project area, but rivers, creeks, and other drainages within the BSA have remained relatively open and passible and function as wildlife corridors. Within the BSA, City Creek, Plunge Creek, Sand Creek, and the Santa Ana River provide wildlife movement corridors that provide water, vegetation, and connections to open space between upslope and downslope portions of these drainages. Species that typically utilize wildlife corridors in the BSA are small to medium-sized mammals such as coyote, opossum, raccoon, and skunk.

4.3.9.1 Project Impacts

The Project is not likely to permanently affect existing wildlife movement through these corridors as no new barriers to wildlife movement will be created and none will be permanently reduced or eliminated by the Project. However, the Project will widen the roadway and associated bridges over these rivers and creeks, which could temporarily impact these corridors during construction. Temporary impacts to wildlife corridors could occur during construction due to the increased presence of equipment, structures, and construction personnel. Temporary construction activities will reduce the passable area, which may deter wildlife movement; however, with the implementation of avoidance and minimization measures described in Section 4.3.9.3 below, temporary impacts to wildlife movements will be minimal.

4.3.9.2 Compensatory Mitigation

Effects to wildlife movement as a result of the Project are expected to be minimal and do not require compensatory mitigation with implementation of the avoidance and minimization measures discussed above.

4.3.9.3 Avoidance and Minimization Efforts

The Project would involve widening the existing freeway, which includes the widening of bridges over rivers and creeks (i.e., Sand Creek, City Creek, Plunge Creek, and the Santa Ana River). Avoidance of impacts within these rivers and creeks is not feasible due to the current SR-210 corridor and Project design specifications. Temporary impacts within the primary movement corridors (i.e., City Creek, Plunge Creek, and the Santa Ana River,) should be avoided as much as possible.

The following wildlife movement corridor specific measures will be incorporated to avoid and minimize effects:

1) Access and disturbance within the wildlife corridors should be kept to a minimum.

2) To the maximum extent feasible, the corridors will not be fully blocked by equipment or structures that could potentially serve as barriers to wildlife passage.

3) Equipment maintenance, lighting, and staging will occur only in designated areas, and will not block wildlife corridors.

4) Nighttime construction activities, if any, will use shielded lighting to prevent spillover into the corridor. Security lights on vehicles utilized in the Santa Ana River will not be left on overnight.

5) Speed limits will be reduced to 5 miles per hour during any nighttime construction that occurs within wildlife corridors.

6) Within wildlife corridors, structures required for bridgework would be erected in a manner so as not to completely block the underpass.

4.3.9.4 Cumulative Impacts

Because other projects in the vicinity of the current Project would create only a relatively minor permanent addition of bridge piers that cumulatively contribute to a reduction of wildlife corridors in the region, no cumulative impacts to wildlife are

anticipated with the implementation of avoidance and minimization measures discussed above.

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Chapter 5. Consultation Summaries and Regulatory Determinations

5.1 Consultation Summaries, Permits, and Technical Studies

5.1.1 Federal Endangered Species Act Consultation Summary

Based on the surveys and analysis presented in this NES, the Project will affect federally listed threatened and endangered species and their critical habitat. Caltrans will consult with the USFWS as the Federal Lead Agency for FESA Section 7 compliance. Section 7 consultation with the USFWS will occur after Caltrans's approval of the Biological Assessment (BA). The USFWS will prepare a Biological Opinion (BO) prior to initiation of the Project. A *May Affect, Likely to Adversely Affect* determination from the USFWS is expected for San Bernardino kangaroo rat, San Bernardino kangaroo rat critical habitat, Santa Ana woolystar, and slender-horned spineflower. A *May Affect, Not Likely to Adversely Affect* determination is expected to Santa Ana sucker and its critical habitat.

On July 28, 2015, the USFWS provided a list of federally listed species that, according to its records, had the potential to occur within the BSA. This correspondence is included as Appendix H.

5.1.2 California Endangered Species Act Consultation Summary

The CDFW authorizes take of endangered, threatened, or candidate species through Sections 2081 and 2080.1 of the CFG Code. Caltrans will request a consistency determination from CDFW under Section 2080.1 once the BA is approved. No plant or wildlife species that are solely state listed endangered, threatened or candidate species will be impacted by the Project; therefore, no Incidental Take Permit under Section 2081 is required.

5.1.3 Wetlands and Other Waters Coordination Summary

A delineation of Waters of U.S. and Waters of State was completed for the Project and is summarized in this NES and included in Appendix G. Figures 8A-8Q illustrate the aquatic resources present within the BSA. The jurisdictional delineation will be submitted to ACOE, RWQCB, and CDFW to support obtaining a Nationwide 404 permit, 401 water quality certification, and Lake and Streambed Alteration

Agreement, respectively. No coordination with these agencies has occurred to date; however, agency coordination will occur during the permitting phase.

Temporary and permanent impacts to potential ACOE, RWQCB, and CDFW jurisdictional aquatic resources are provided in Tables 15, 16, and 17, respectively. The temporary impacts to aquatic resources along Plunge Creek, City Creek, and the Santa Ana River are based on conservative preliminary design estimates to allow for flexibility of temporary construction work areas during the final design phase of the Project. The actual temporary impacts to aquatic resources will likely be refined from those described in this report during the permitting phase of the Project (Tables 15, 16 & 17).

Table 15. Impacts to Potential ACOE Jurisdiction

Feature ID	Temporary Impacts (acres/linear feet)		Permanent Impacts (acres/linear feet)	
	Wetland	Non-wetland	Wetland	Non-wetland
1	--	--	--	--
2 (Sand Creek)	0/0	0.431/410	0/0	0.0001/4
3	0/0	0.0830/574	0/0	0/0
4	0/0	0/0	0/0	0.0001/5
5 (City Creek)	0.221/501	4.872/1287	0.0004/7	0.014/220
6	--	--	--	--
7	--	--	--	--
8 (Plunge Creek)	0/0	0.224/372	0/0	0/0
9 (Santa Ana River)	0/0	6.415/747	0/0	0.021/575
10	0/0	0.074/37	0/0	0/0
11	--	--	--	--
Total	0.221/501	12.099/3427	0.0004/7	0.0352/804

-- no jurisdiction assumed

Table 16. Impacts to Potential RWQCB Jurisdiction

Feature ID	Temporary Impacts (acres/linear feet)		Permanent Impacts (acres/linear feet)	
	Wetland	Non-wetland	Wetland	Non-wetland
1	0/0	0/0	0/0	0.097/790
2 (Sand Creek)	0/0	0.431/410	0/0	0.0001/4
3	0/0	0.083/574	0/0	0/0
4	0/0	0/0	0/0	0.0001/5
5 (City Creek)	0.221/501	4.872/1287	0.0004/7	0.014/220
6	--	--	--	--
7	--	--	--	--
8 (Plunge Creek)	0/0	0.224/372	0/0	0/0
9 (Santa Ana River)	0/0	6.415/747	0/0	0.021/575
10	0/0	0.074/37	0/0	0/0
11	0.047/198	0.053/270	0/0	0/0
Total	0.268/699	12.152/3697	0.0004/7	0.1322/1594

-- no jurisdiction assumed

Table 17. Impacts to Potential CDFW Jurisdiction

Feature ID	Temporary Impacts (acres/linear feet)		Permanent Impacts (acres/linear feet)	
	Riparian	Non-riparian	Riparian	Non-riparian
1	0/0	0/0	0/0	0.097/790
2 (Sand Creek)	0/0	0.578/608	0/0	0.003/40
3	0/0	0.101/673	0/0	0/0
4	0/0	0/0	0/0	.0004/28
5 (City Creek)	0.221/501	5.634/1287	0/0	0.014/220
6	--	--	--	--
7	--	--	--	--
8 (Plunge Creek)	0/0	0.510/368	0/0	0/0
9 (Santa Ana River)	0/0	6.415/832	0/0	0.021/575
10	0/0	0.074/37	0/0	0/0
11	0.047/198	0.053/270	0/0	0/0
Total	0.268/699	13.365/4075	0/0	0.135/1653

-- no jurisdiction assumed

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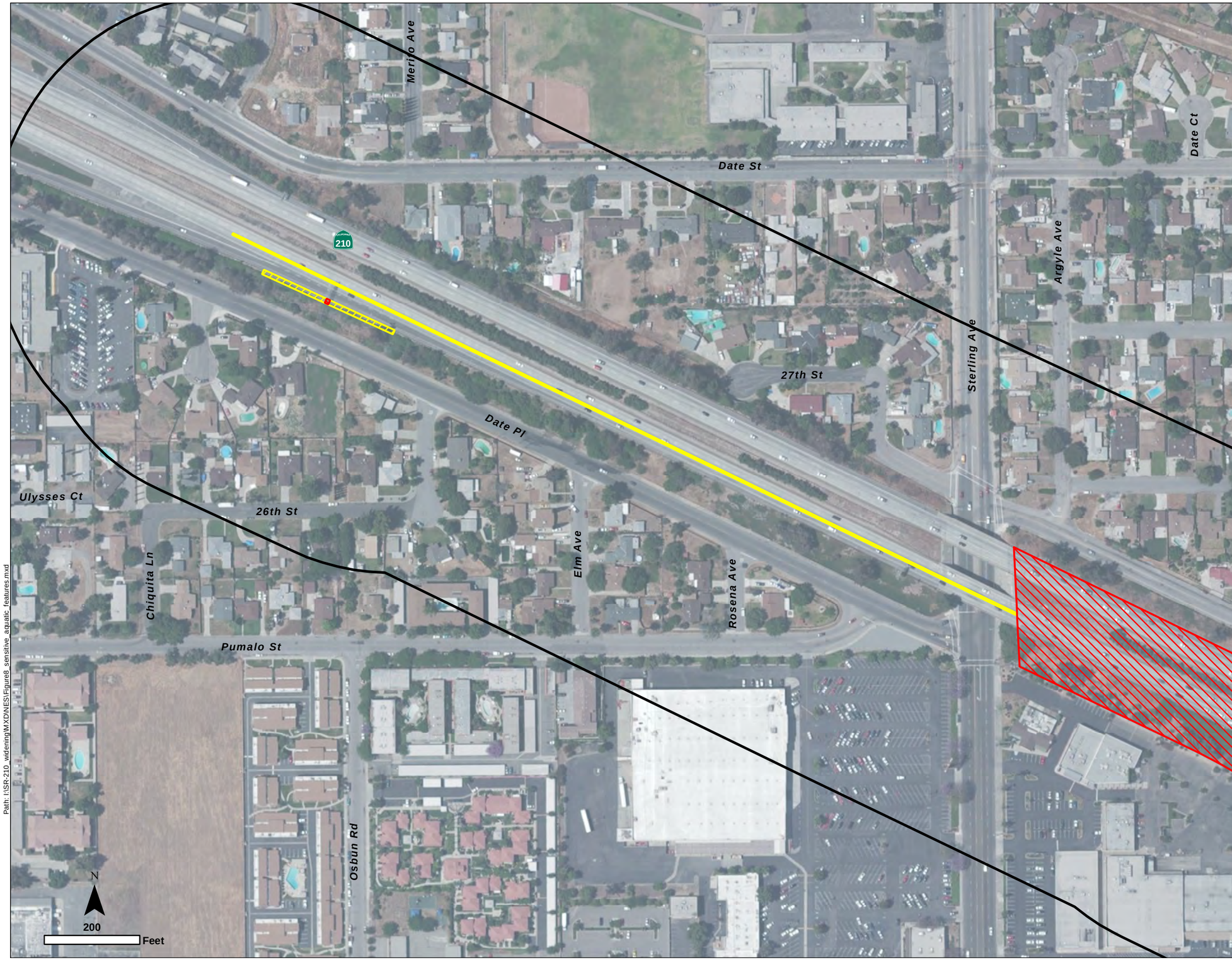

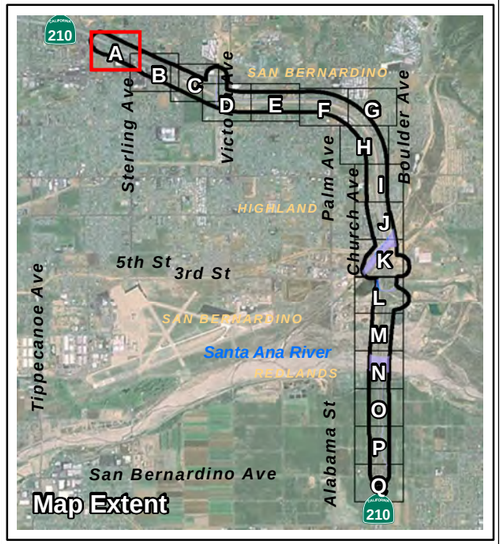

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8A

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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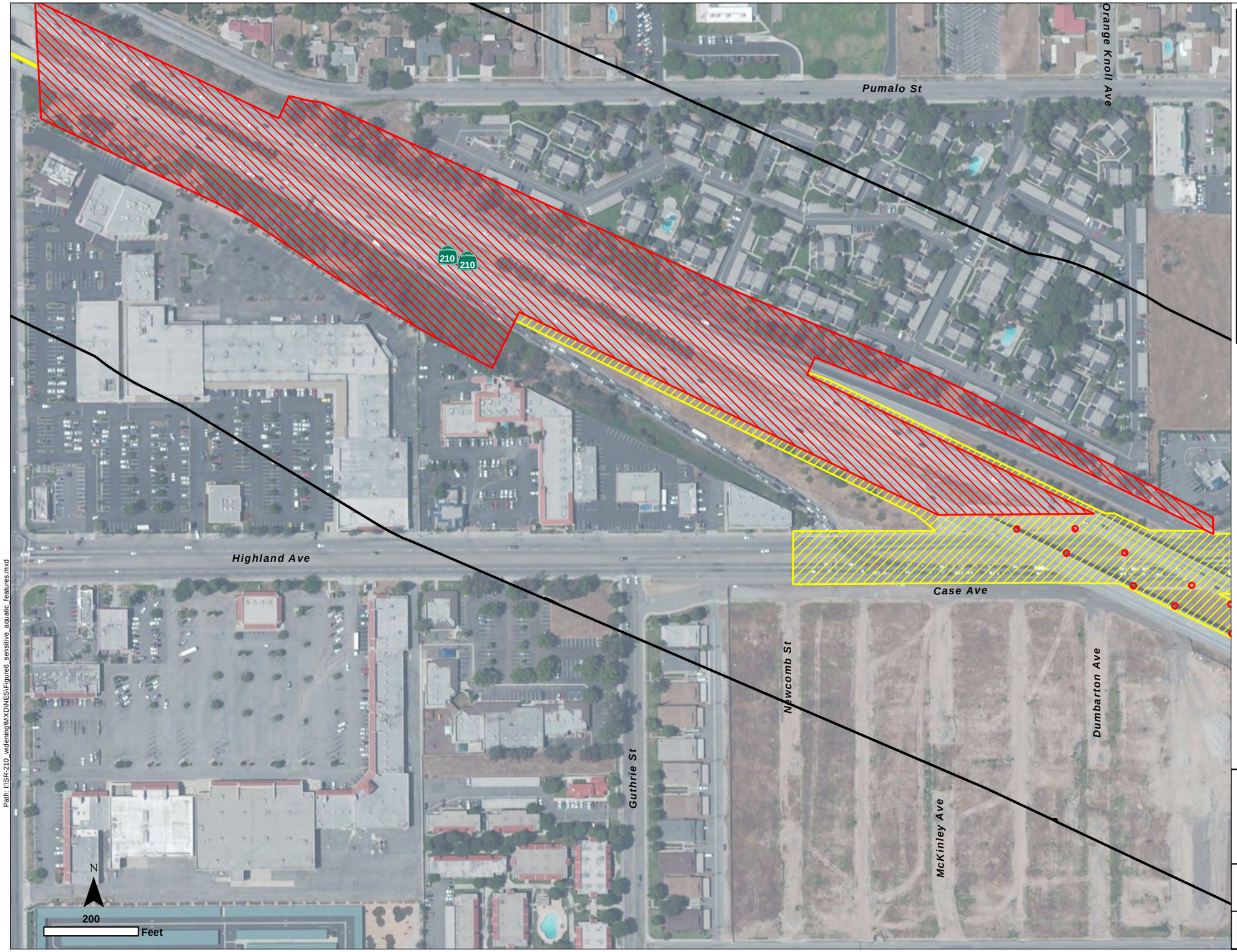

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8B

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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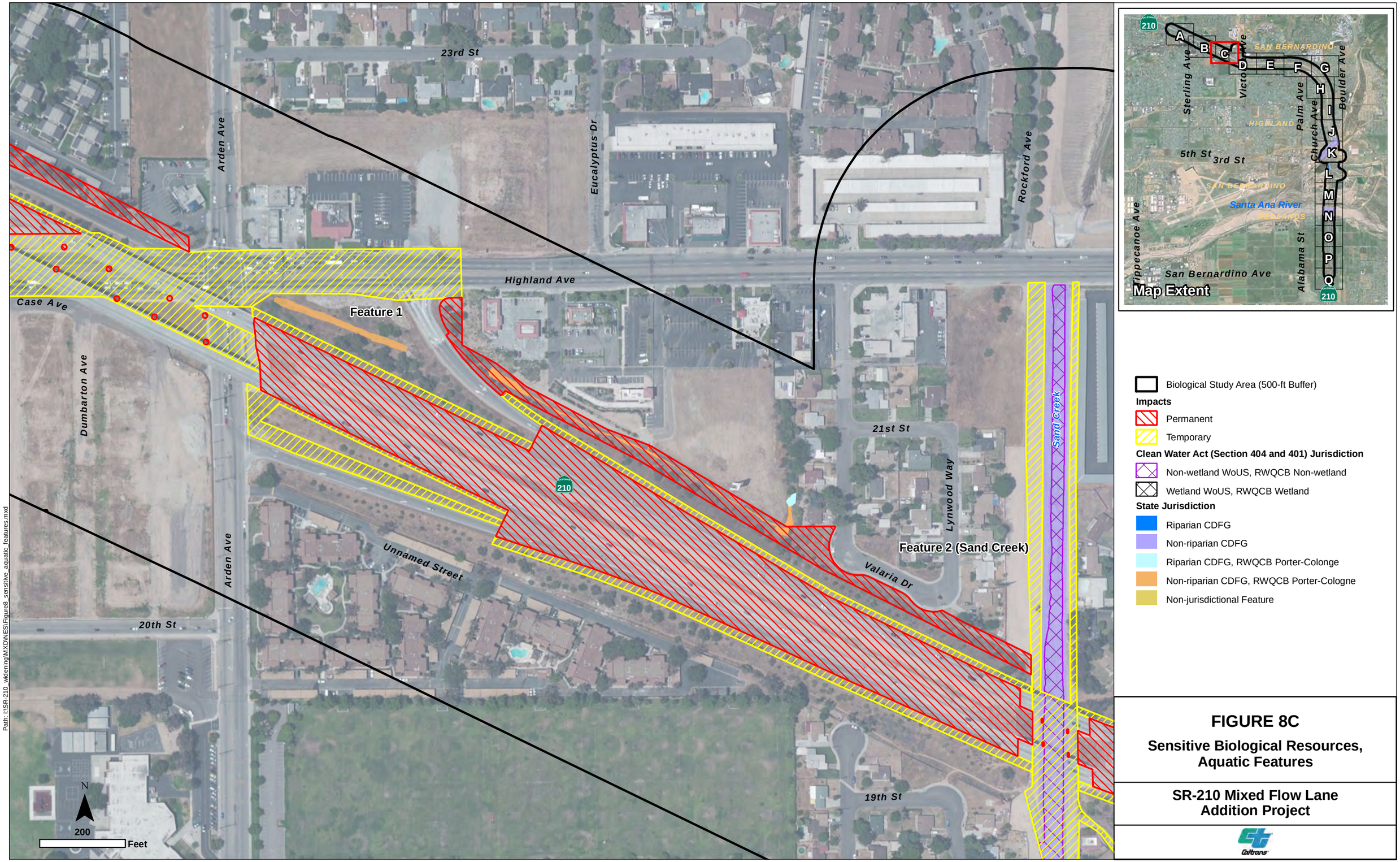

FIGURE 8C

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

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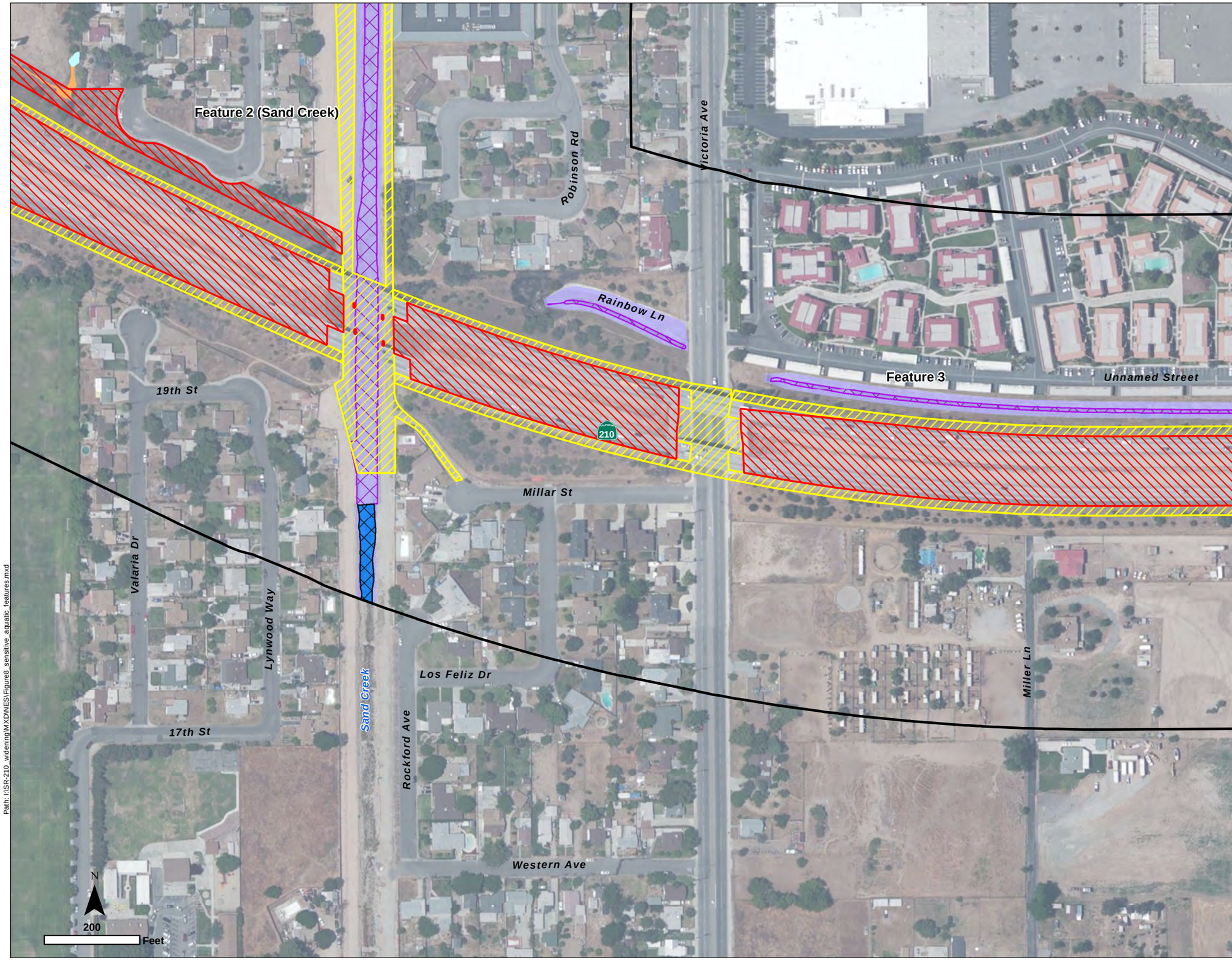

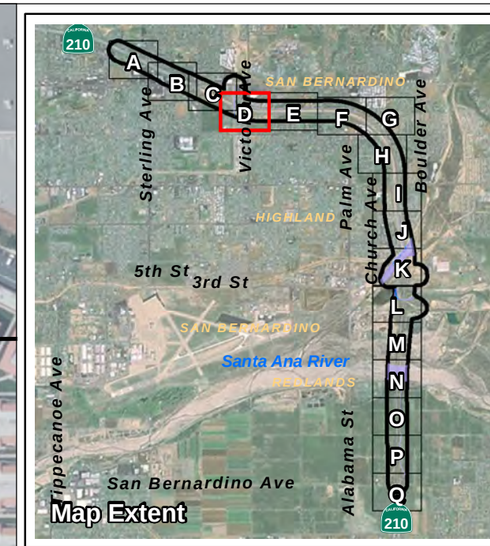

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8D

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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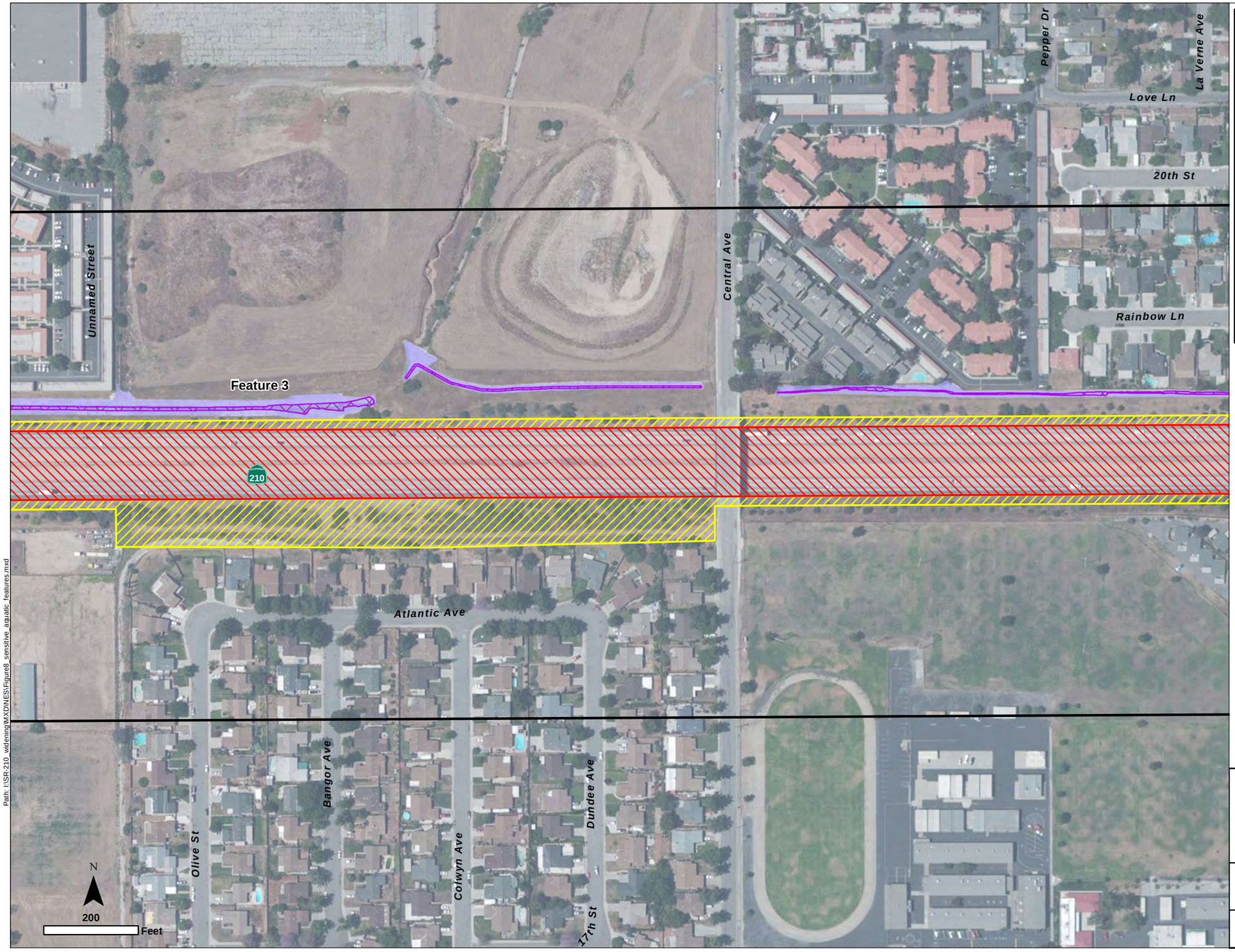

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8E

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

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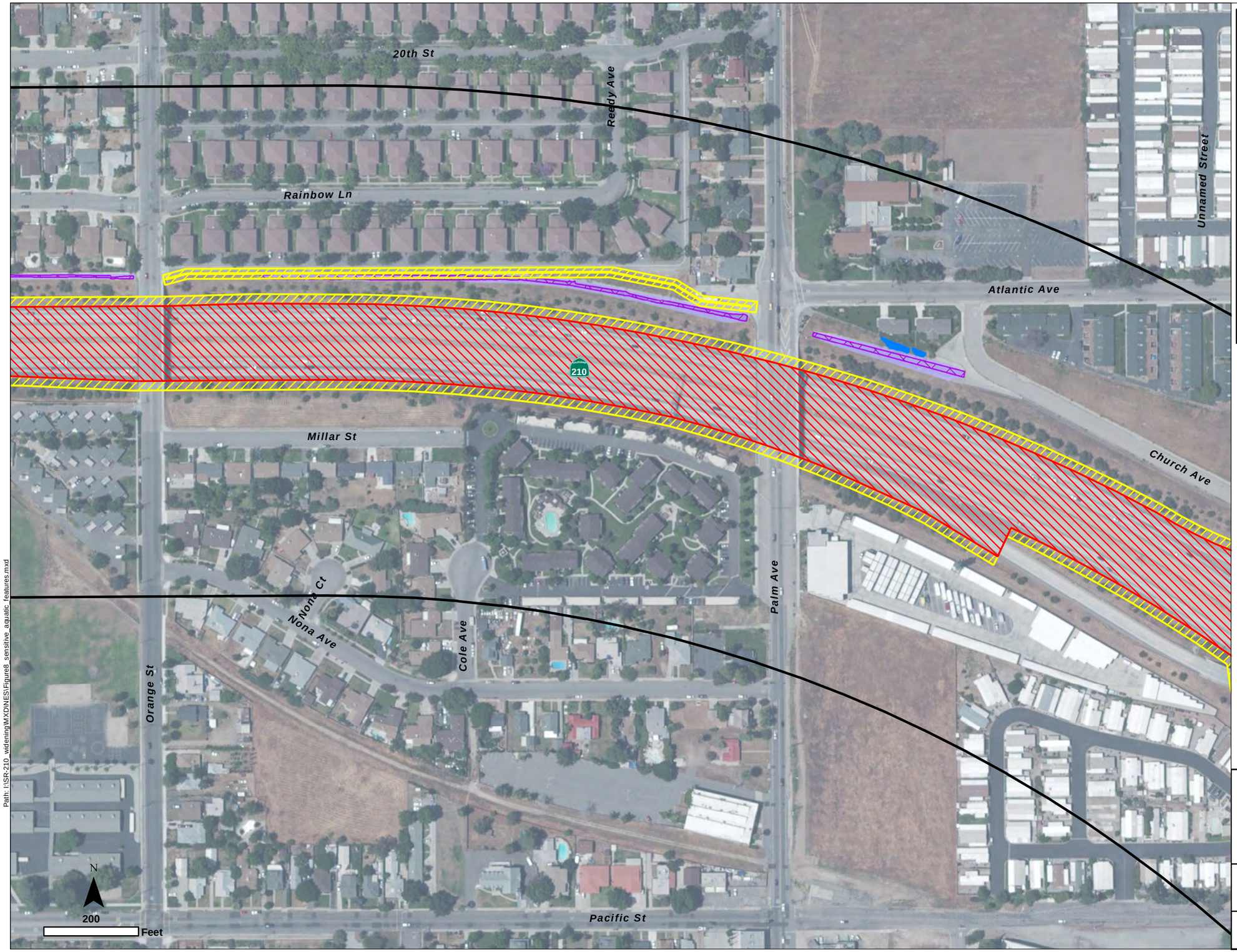

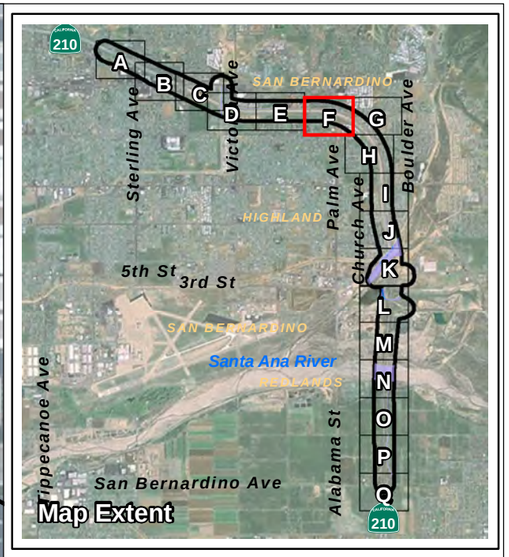

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Colonge

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 8F

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

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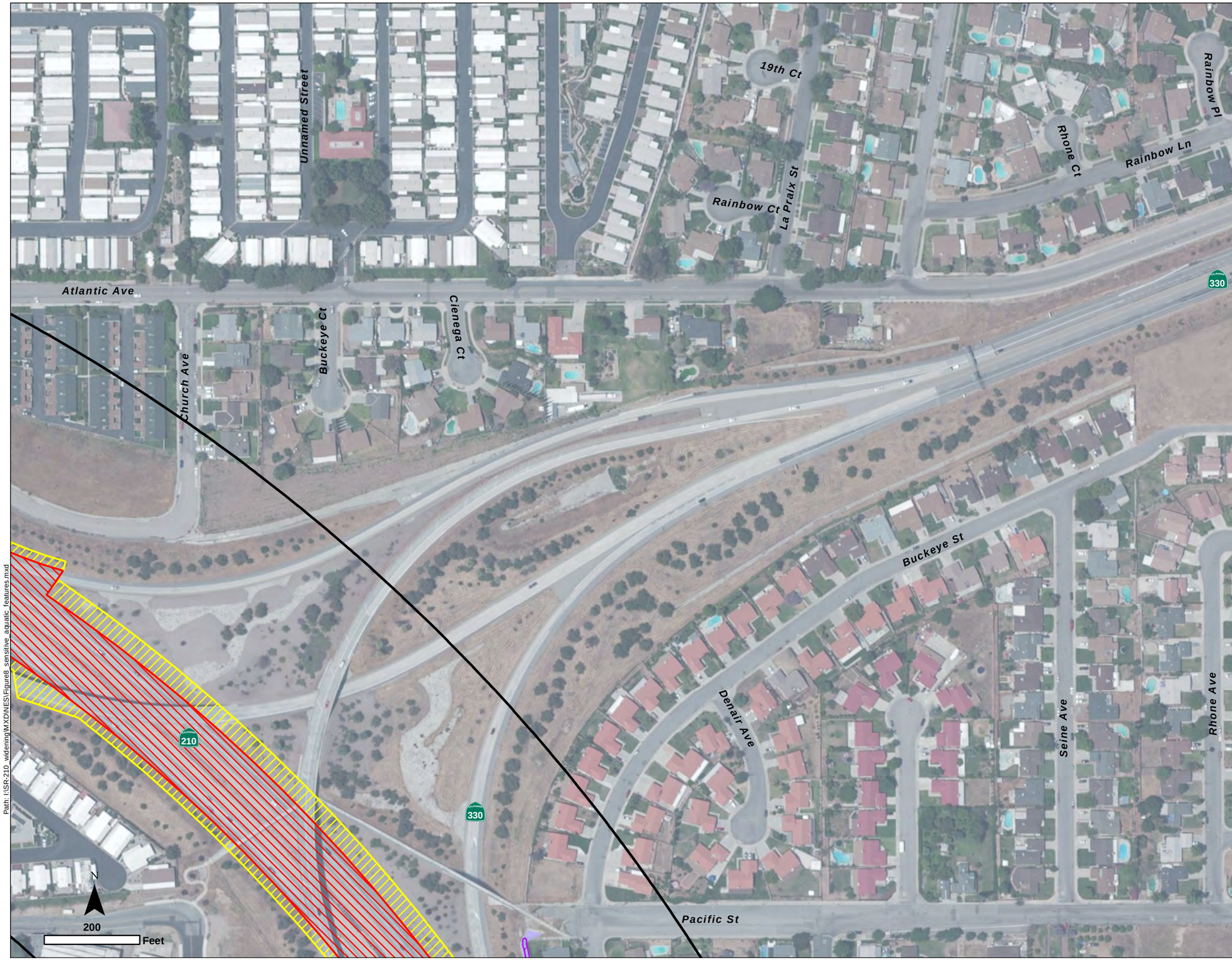

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8G

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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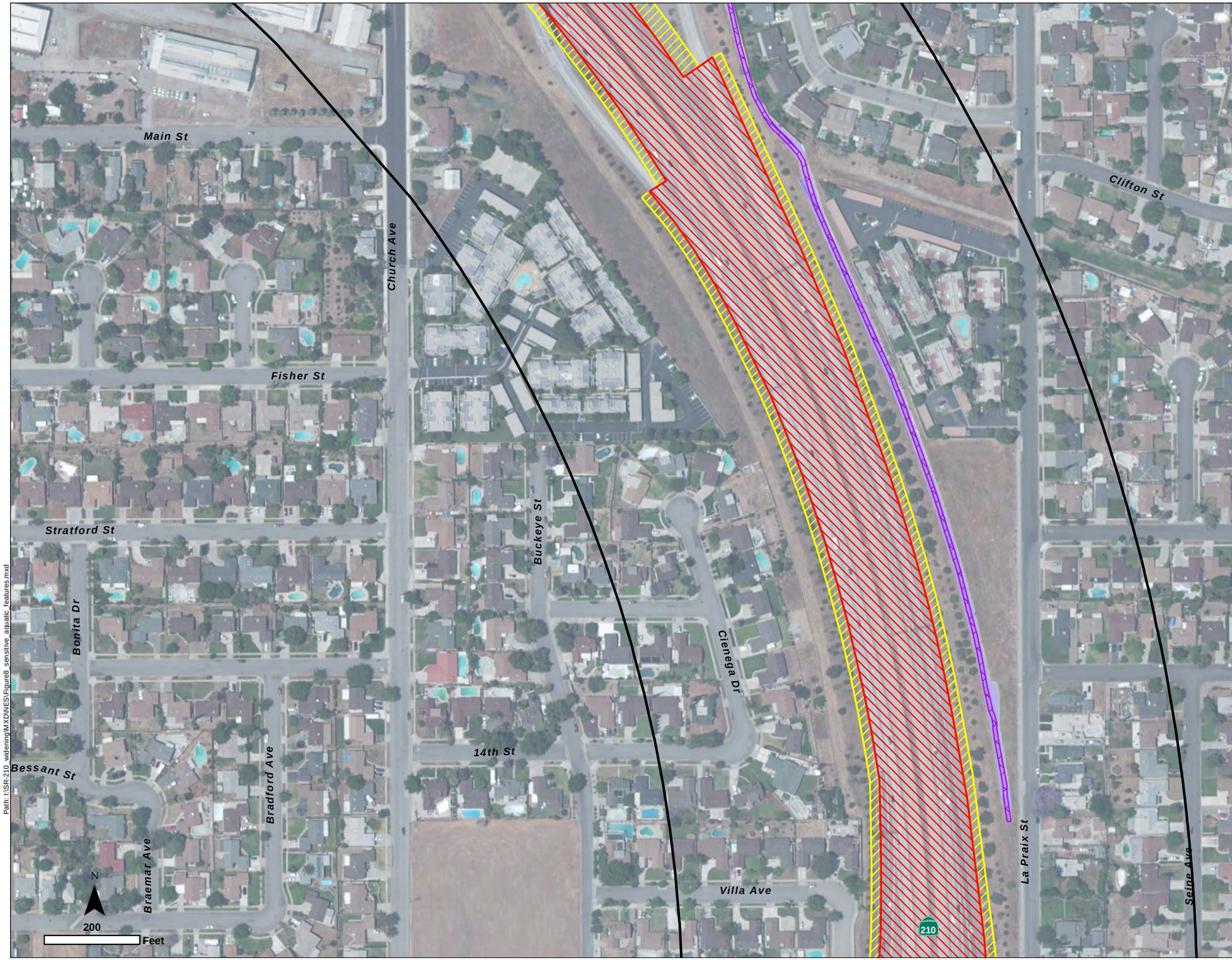

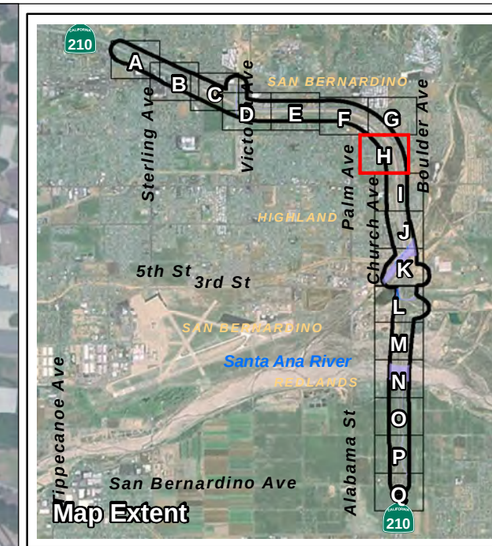

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8H

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

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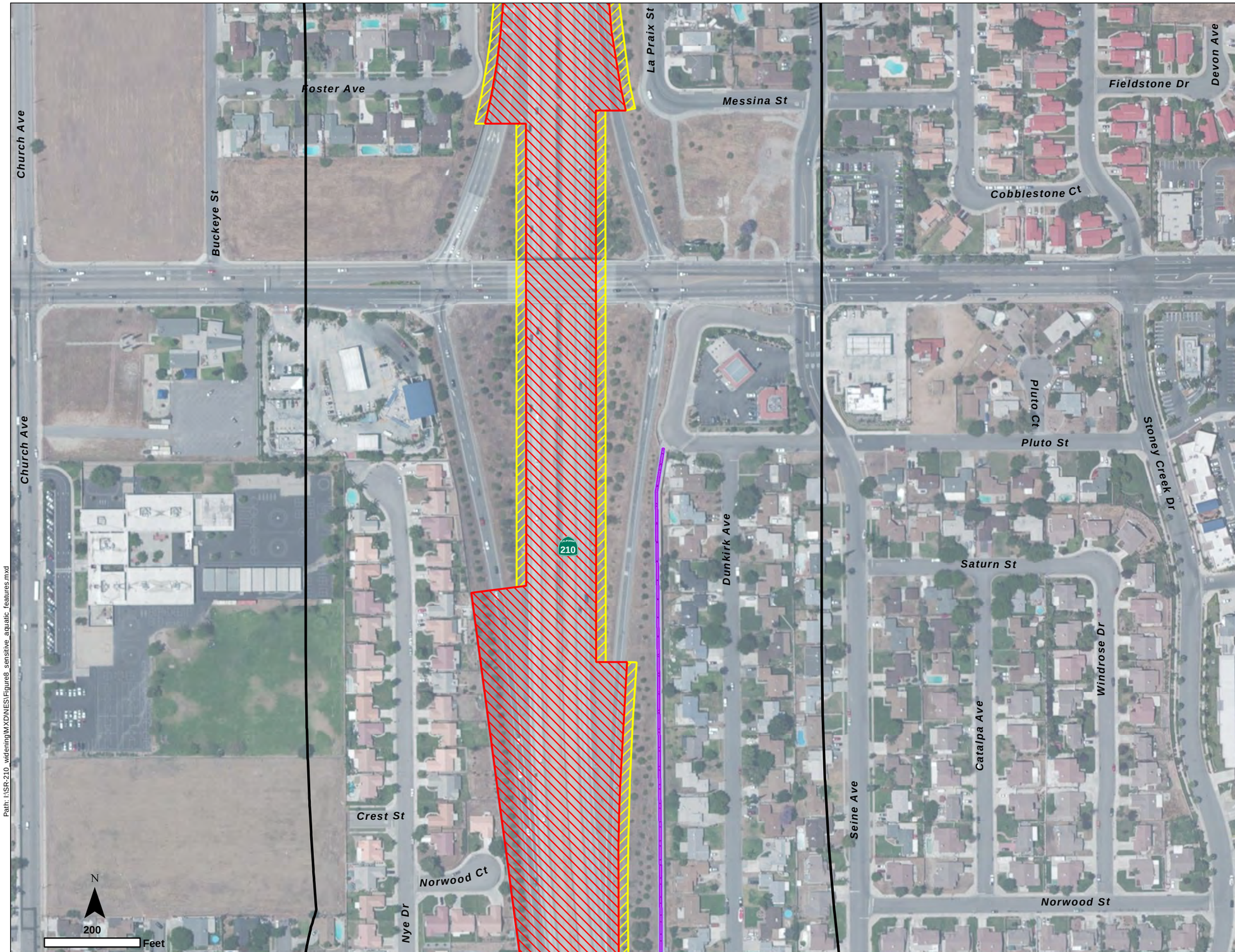

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Colonge

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 8I

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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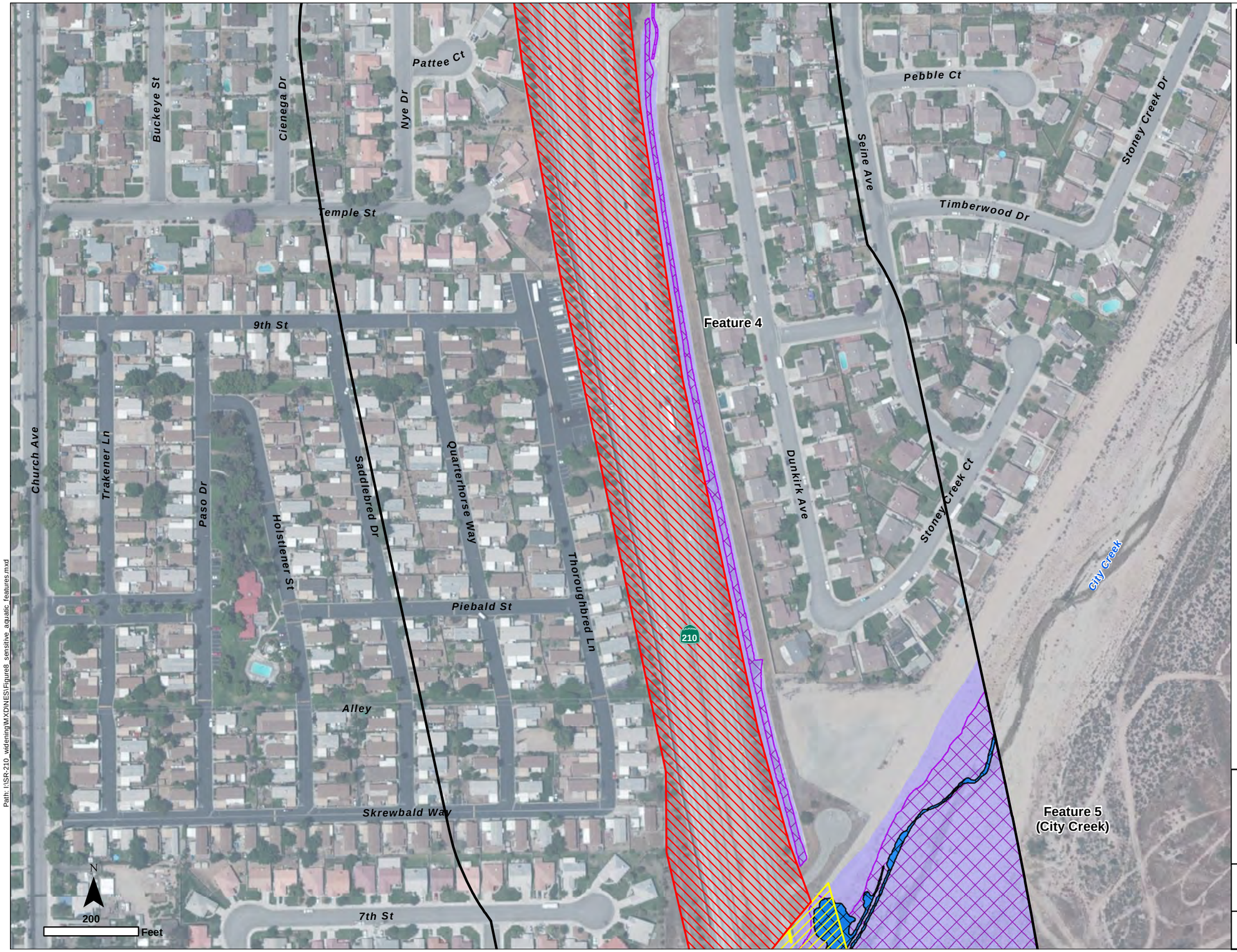

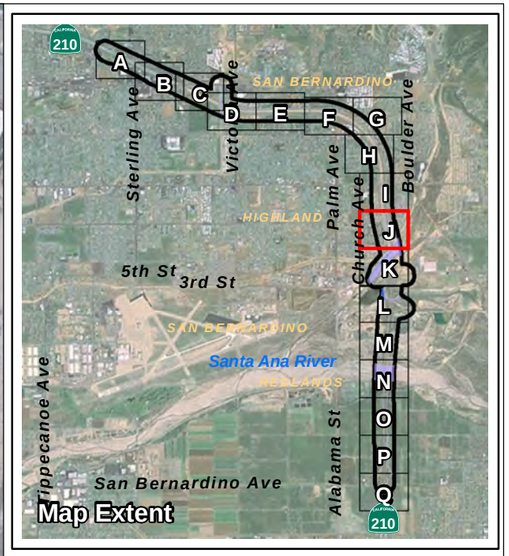

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8J

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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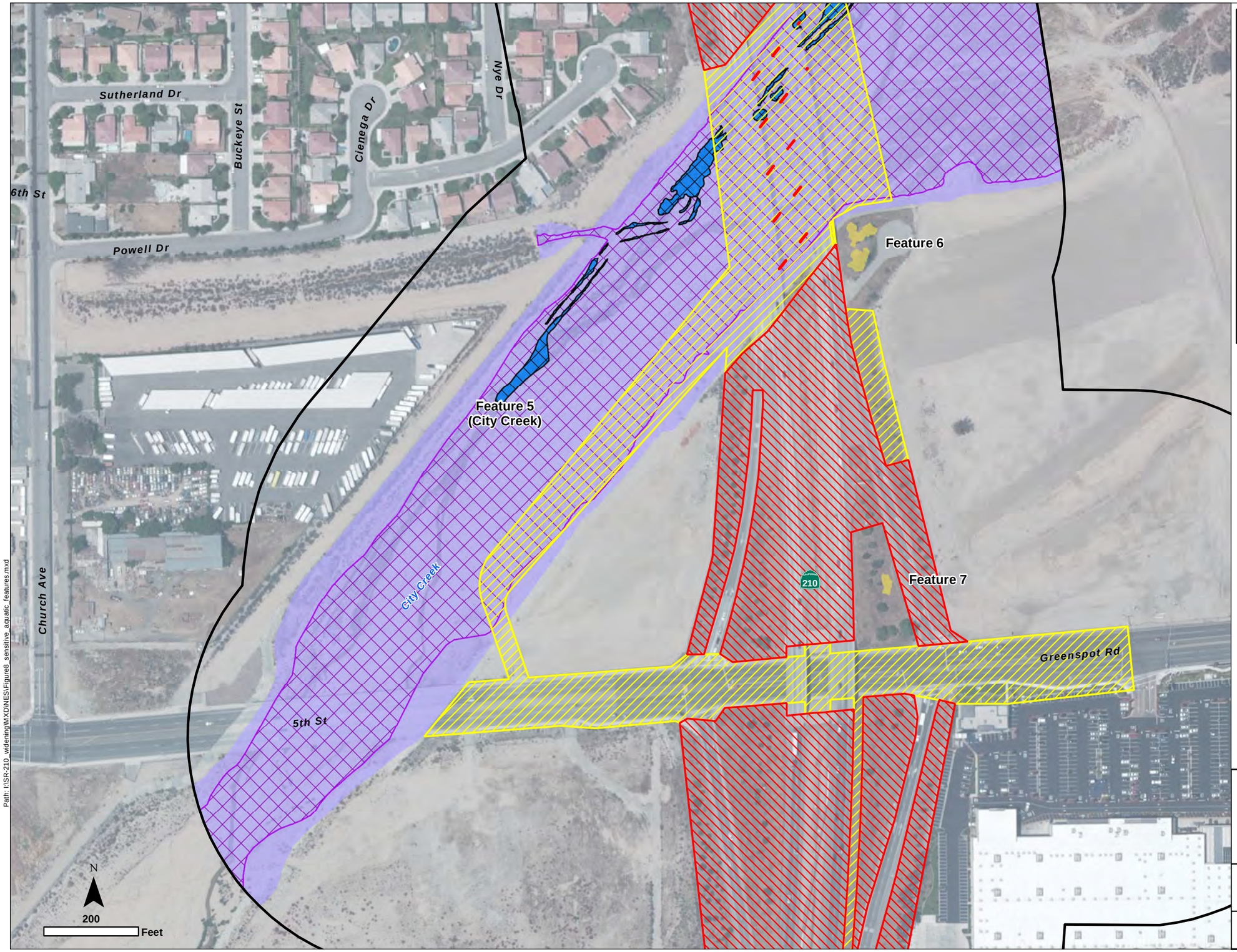

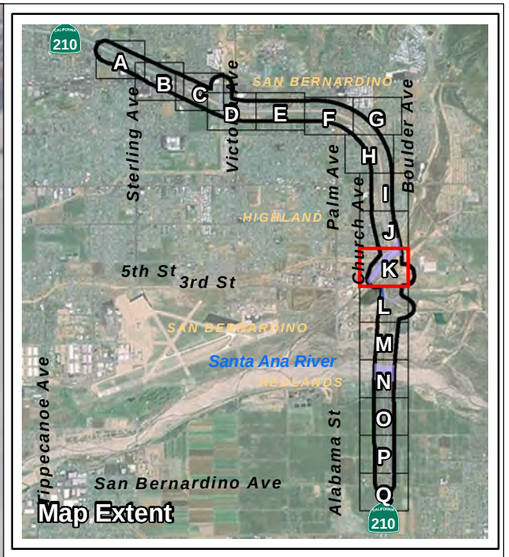

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8K

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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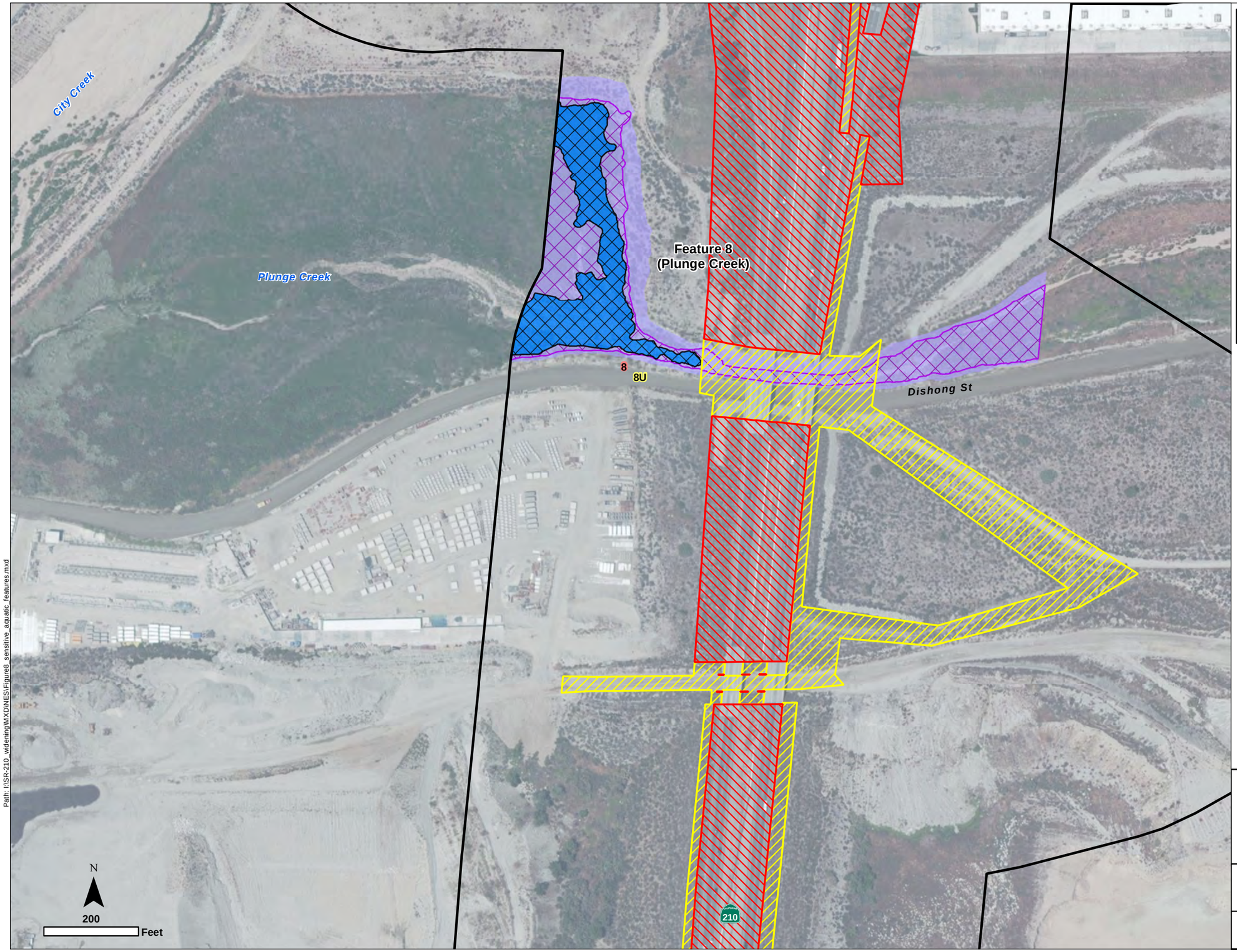

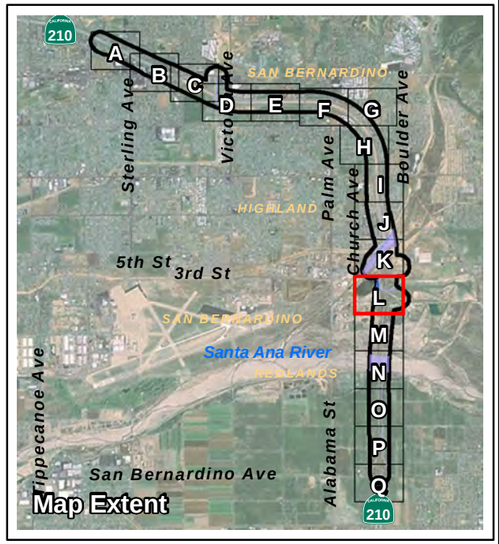

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Colonge

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 8L

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8M

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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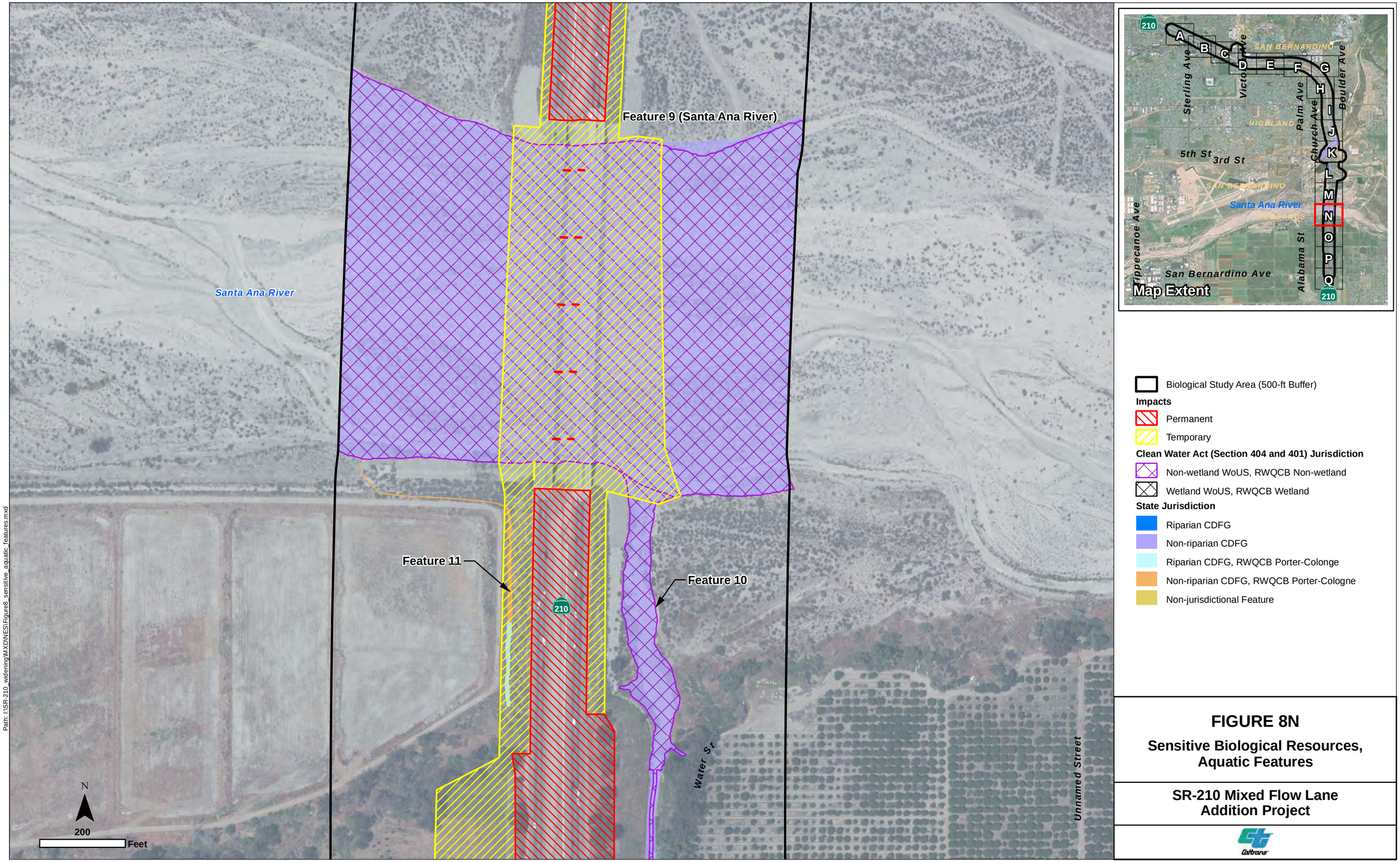

FIGURE 8N

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

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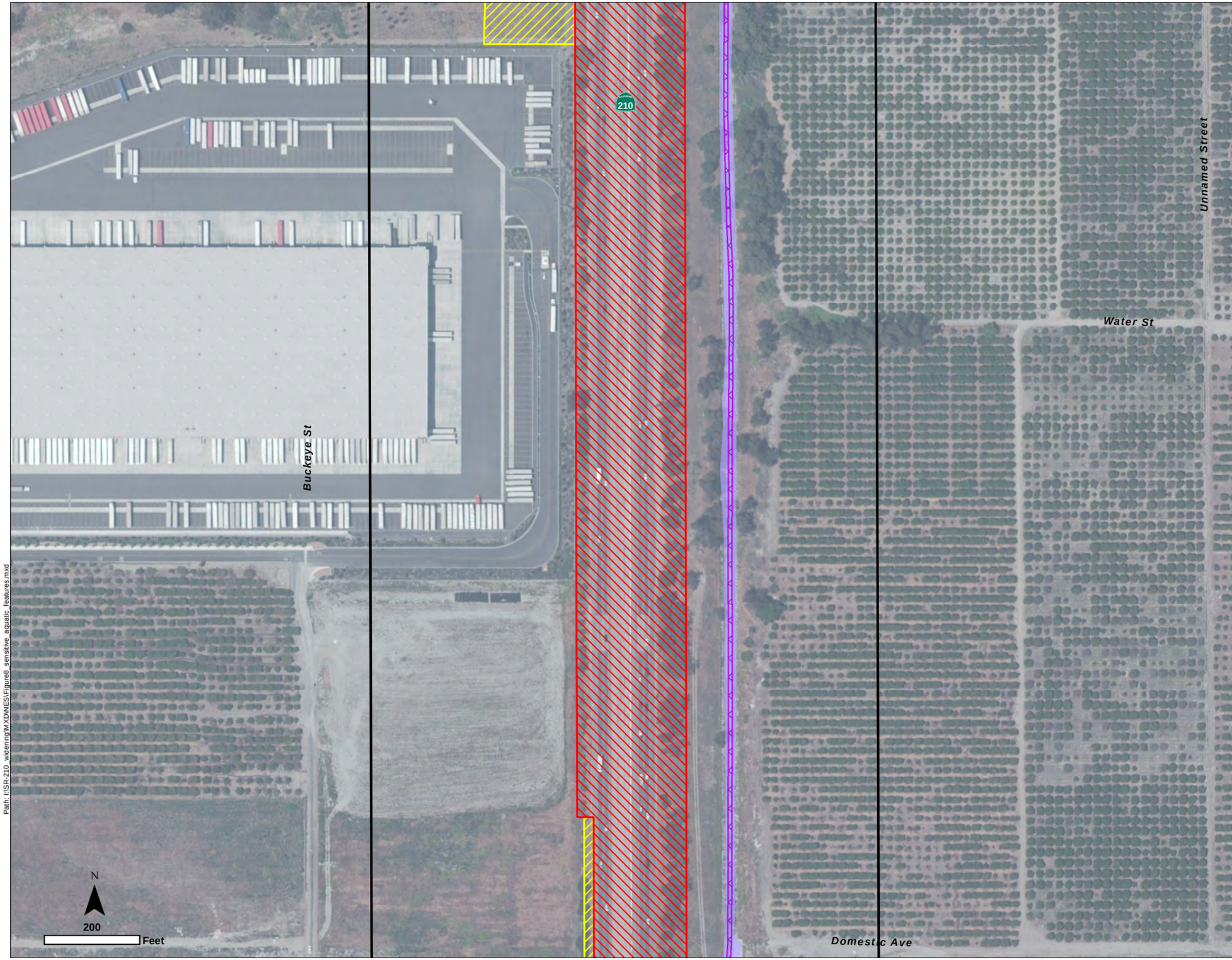

Biological Study Area (500-ft Buffer)

Impacts

- Permanent
- Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

- Non-wetland WoUS, RWQCB Non-wetland
- Wetland WoUS, RWQCB Wetland

State Jurisdiction

- Riparian CDFG
- Non-riparian CDFG
- Riparian CDFG, RWQCB Porter-Colonge
- Non-riparian CDFG, RWQCB Porter-Cologne
- Non-jurisdictional Feature

FIGURE 8O

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

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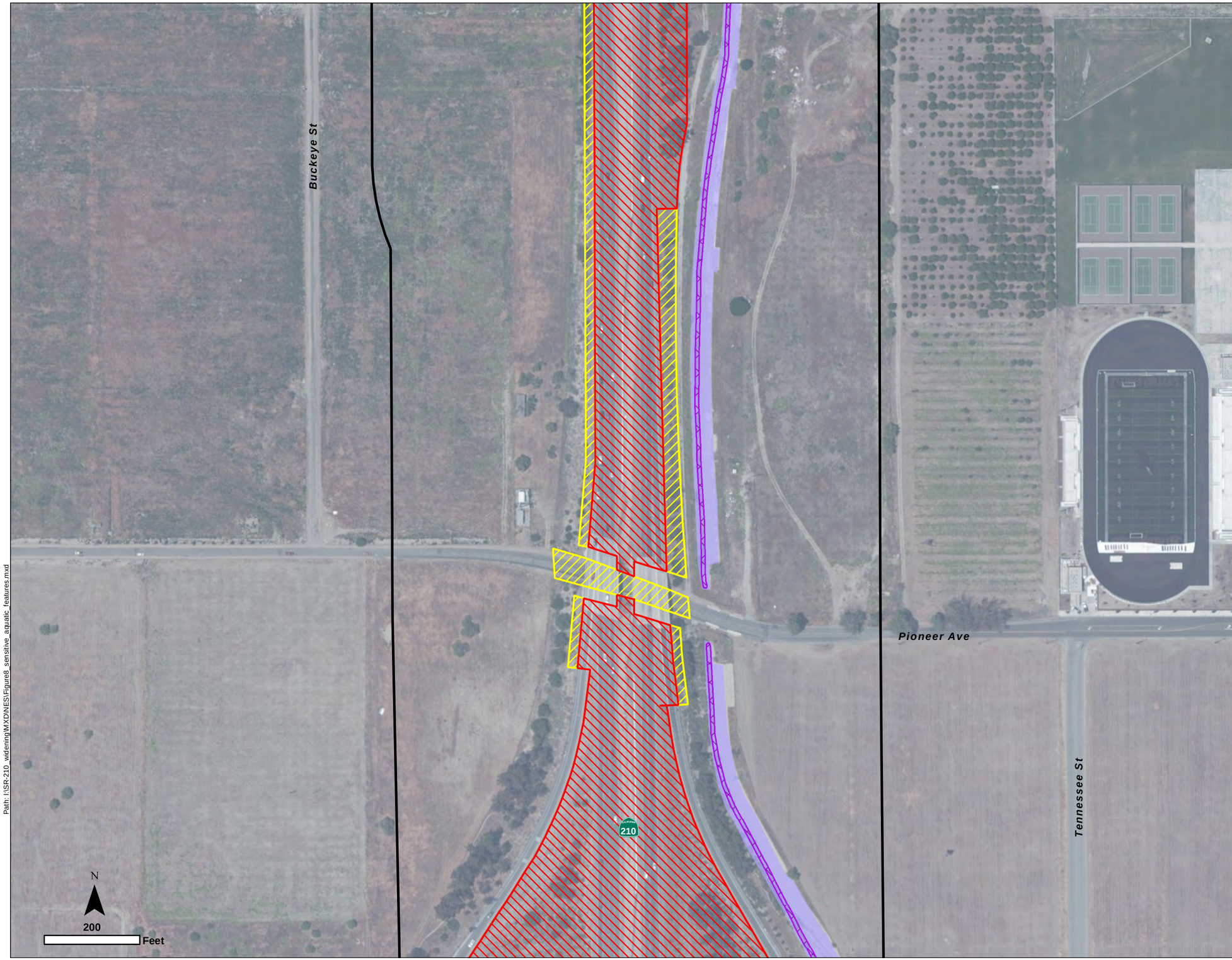

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Colonge

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 8P

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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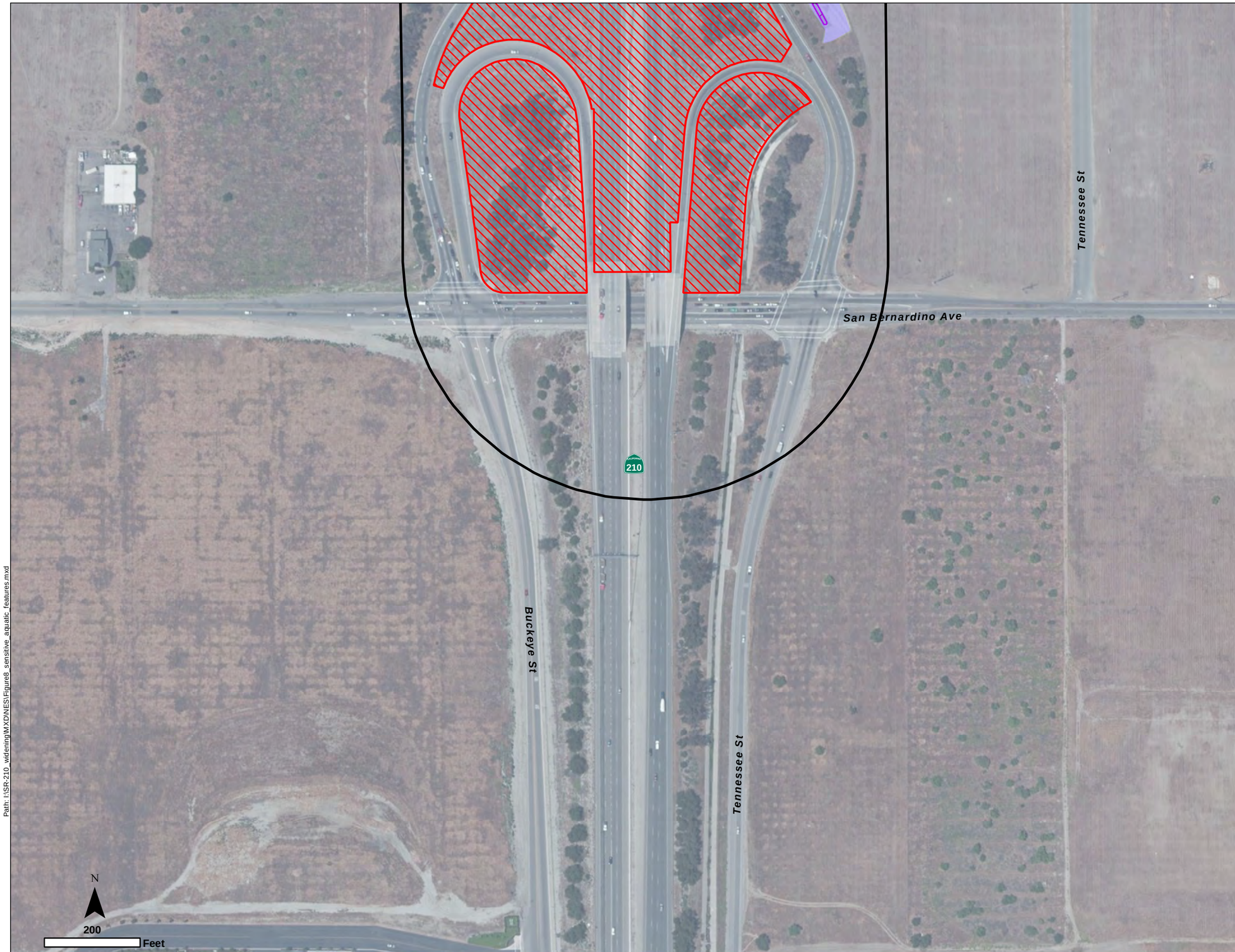

Biological Study Area (500-ft Buffer)

Impacts

Permanent

Temporary

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Colonge

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 8Q

Sensitive Biological Resources, Aquatic Features

SR-210 Mixed Flow Lane Addition Project

Caltrans

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5.1.4 Invasive Species

During the field surveys conducted for the Project, plant species were observed and a list of these species was compiled and is presented in Appendix A. Included in the floral list are species classified as invasive by the California Invasive Plant Council (Cal-IPC). These species invade natural communities throughout California and can replace native habitat needed by native plants and wildlife, increase wildfire and flood danger, and destroy productive range and timberlands. For purposes of this report, the term "invasive exotic plant" refers to all species that occur as High, Moderate, or Limited on the Cal-IPC plant inventory (Cal-IPC 2012).

Exotic plant species exist within the nonnative plant communities, within patches of native plant communities, landscaped areas, and in areas that have been disturbed by human uses throughout the BSA. Exotic species are typically more numerous adjacent to SR-210 and developed areas and frequently occur within ornamental landscape. Based on the Cal-IPC classification, 26 species of plants observed within the BSA are classified as invasive exotic plant species: pepper tree (*Schinus molle*), Italian thistle (*Carduus pycnocephalus* var. *pycnocephalus*), tocalote (*Centaurea melitensis*), smooth cat's ear (*Hypochaeris glabra*), shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), Russian thistle (*Salsola tragus*), red-stemmed filaree (*Erodium cicutarium*), curly dock (*Rumex crispus*), tree of heaven (*Ailanthus altissima*), tree tobacco (*Nicotiana glauca*), giant reed (*Arundo donax*), slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), foxtail fescue (*Festuca myuros*), hare barley (*Hordeum murinum* var. *leporinum*), crimson fountain grass (*Pennisetum setaceum*), annual beard grass (*Polypogon monspeliensis*), Mediterranean schismus (*Schismus barbatus*), Tasmanian blue gum (*Eucalyptus globulus*), red gum (*Eucalyptus camaldulensis*), castor bean, Mediterranean tamarix, and Mexican fan palm. Of these species, there are three with an overall high rating, 13 with a moderate rating, and 10 with a limited rating. Invasive species that have severe ecological effects are given a high rating. Species with a high rating identified within the BSA are Mediterranean tamarisk, giant reed, and foxtail chess.

A weed abatement plan will be developed to minimize the spread and importation of nonnative plant material during and after construction in compliance with Executive Order 13112. This plan will include the following invasive species specific measures to avoid and minimize effects:

1) Soil and vegetation disturbance will be minimized to the greatest extent feasible.

2) The construction contractor will inspect and clean construction equipment prior to transporting equipment from one Project location to another.

3) Fill material will be obtained from weed-free sources.

4) Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control.

5) Following construction, temporarily-impacted areas adjacent to native vegetation would be revegetated with native plant species approved by the District Biologist.

6) Following construction, all revegetated areas will avoid the use of species listed in Cal-IPC's California Invasive Plant Inventory.

7) Eradication procedures (e.g., spraying and/or hand weeding) will be included in the plan. If invasive plants are established, then the use of herbicides will be prohibited within, and adjacent to, native vegetation except as specifically authorized by the Caltrans Biologist.

5.1.5 Migratory Bird Treaty Act

Native bird species and their nests are protected under the MBTA. 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.

The following MBTA specific measures will be incorporated to avoid and minimize effects:

1) In the event that vegetation clearing is necessary during the breeding season (i.e., February 1–September 1), a qualified biologist will conduct a preconstruction survey of construction areas and appropriate buffer no more than 72 hours prior to construction to identify the locations of avian nests. Should nests be found an appropriate buffer will be established around each nest site (typically 200 feet, or 500 feet for raptors and listed species). To the extent feasible, no construction will take place within this buffer until the nest

is no longer active. In the event that construction must occur within the buffer, the biological monitor will take steps to ensure that construction activities are not disturbing or disrupting nesting activities. If the biological monitor determines that construction activities are disturbing or disrupting nesting activities, then the biologist shall have the authority to halt construction in order to reduce the noise and/or disturbance to the nests, as appropriate and with consultation with CDFW.

2) Existing bridges with swallow nesting habitat will be cleared of all swallow nests prior to any work conducted between February 1 and September 1. Swallow nests will be removed under the guidance of a qualified biologist prior to February 1, before swallows return to the nesting site. Removal of swallow nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed (such as netting or a similar mechanism that keeps swallows from building nests). Nest removal and exclusion device installation will be monitored by a qualified biologist. Such exclusion efforts must be continued to keep the structures free of swallows, as well as swifts utilizing bridge holes, until September 1 or completion of construction. All nest exclusion techniques would be coordinated between Caltrans and resource agencies, as applicable.

5.2 Regulatory Determination

5.2.1 Santa Ana Woollystar

Because the Project would result in the permanent loss of suitable Santa Ana River woollystar habitat, it is Caltrans determination that the Project *may affect and is likely to adversely affect* Santa Ana River woollystar.

5.2.2 Slender-horned Spineflower

Because the Project would result in the permanent loss of suitable slender-horned spineflower habitat, it is Caltrans determination that the Project *may affect and is likely to adversely affect* slender-horned spineflower.

5.2.3 Santa Ana Sucker

Based of the lack of impacts to Santa Ana sucker and minor impacts to unoccupied Santa Ana sucker critical habitat, it is Caltrans determination that the Project *may affect, but is not likely to adversely affect* Santa Ana sucker or its critical habitat.

5.2.4 California Red-legged Frog

Because California red-legged frog was not observed and is considered absent from the BSA, it is Caltrans determination that the Project would have *no effect* on California red-legged frog.

5.2.5 Least Bell's Vireo

Because least Bell's vireo was not observed and is considered absent from the BSA, it is Caltrans determination that the Project would have *no effect* on least Bell's vireo.

5.2.6 Coastal California Gnatcatcher

Because coastal California gnatcatcher was not observed and is considered absent from the BSA, it is Caltrans determination that the Project would have *no effect* on coastal California gnatcatcher.

5.2.7 San Bernardino Kangaroo Rat

Because the Project would result in the permanent loss of occupied habitat and critical habitat for San Bernardino kangaroo rat, it is Caltrans determination that the Project *may affect and is likely to adversely affect* San Bernardino kangaroo rat.

Chapter 6. References

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Appendix A Plant and Wildlife Lists

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PLANT LIST

SCIENTIFIC NAME	COMMON NAME
ANGIOSPERMAE: DICOTYLEDONAE	**DICOT FLOWERING PLANTS**
Adoxaceae	**Muskroot Family**
Sambucus nigra ssp. *caerulea*	blue elderberry
Anacardiaceae	**Sumac Family**
*Schinus molle**	Peruvian pepper tree
Asteraceae (Compositae)	**Sunflower Family**
Ambrosia acanthicarpa	annual bur-sage
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Baccharis salicifolia ssp. *salicifolia*	mule fat
Carduus pycnocephalus ssp. *pycnocephalus**	Italian thistle
*Centaurea melitensis**	tocalote/Maltese star thistle
Chaenactis glabriuscula	yellow pincushion
Encelia farinosa	brittlebush
Ericameria linearifolia	interior goldenbush
*Erigeron bonariensis [Conyza bonariensis]**	flax-leaved horseweed
Erigeron foliosus	leafy flebane
Helianthus annuus	western sunflower
Heterotheca grandiflora	telegraph weed
Heterotheca sessiliflora	sessileflower goldenaster
*Hypochaeris glabra**	smooth cat's-ear
*Lactuca serriola**	prickly lettuce
Lepidospartum squamatum	scalebroom
Logfia filaginoides [Filago californica]	California cottonrose
Malacothrix saxatilis	cliff malacothrix
Pseudognaphalium biolettii [Gnaphalium bicolor]	bicolored everlasting
Pseudognaphalium canescens [Gnaphalium canescens]	everlasting cudweed
*Senecio vulgaris**	common groundsel
Sonchus asper ssp. *asper**	prickly sow thistle
*Sonchus oleraceus**	common sow thistle
Stylocline gnaphaloides	everlasting neststraw
Xanthium strumarium	cocklebur
Boraginaceae	**Borage Family**
Cryptantha sp.	cryptantha
Eriodictyon trichocalyx	hairy yerba santa
Eucrypta chrysanthemifolia	common eucrypta
Pectocarya linearis ssp. *ferocula*	slender pectocarya
Phacelia cicutaria	caterpillar phacelia
Phacelia distans	common phacelia
Phacelia parryi	Parry's phacelia
Brassicaceae (Cruciferae)	**Mustard Family**
*Hirschfeldia incana**	shortpod mustard
*Nasturtium officinale [Rorippa nasturtium-aquaticum]**	water cress

SCIENTIFIC NAME	COMMON NAME
*Sisymbrium irio**	London rocket
Chenopodiaceae	**Goosefoot Family**
*Chenopodium album**	pigweed
*Salsola tragus**	Russian thistle
Cistaceae	**Rock-rose Family**
Helianthemum scoparium	peak rush-rose
Convolvulaceae	**Morning-glory Family**
Calystegia macrostegia	morning-glory
Crassulaceae	**Stonecrop Family**
Crassula connata	pygmy-weed
Dudleya lanceolata	lance-leaved dudleya
Euphorbiaceae	**Spurge Family**
Croton californicus	California croton
*Ricinus communis**	castor bean
Fabaceae (Leguminosae)	**Legume Family**
Acmispon glaber [Lotus scoparius]	deerweed
Acmispon strigosus [Lotus strigosus]	strigose lotus
Lupinus bicolor	miniature lupine
Geraniaceae	**Geranium Family**
*Erodium botrys**	long-beaked filaree
*Erodium cicutarium**	red-stemmed filaree
Lamiaceae (Labiatae)	**Mint Family**
*Lamium amplexicaule**	common henbit
Salvia columbariae	chia
Myrtaceae	**Myrtle Family**
*Eucalyptus globulus**	Tasmanian blue gum
*Eucalyptus camaldulensis**	red gum
Onagraceae	**Evening Primrose Family**
Camissoniopsis bistorta	California sun cup
Eulobus californicus [Camissonia californica]	mustard-like evening primrose
Phrymaceae	**Lopseed Family**
Mimulus guttatus	seep monkeyflower
Plantaginaceae	**Plantain Family**
Plantago erecta	dwarf plantain
*Veronica anagallis-aquatica**	water speedwell
Platanaceae	**Sycamore Family**
Platanus racemosa	western sycamore
Polemoniaceae	**Phlox Family**
Eriastrum densifolium ssp. *sanctorum*	Santa Ana River woollystar
Eriastrum sapphirinum	annual woollystar
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum var. *foliolosum*	leafy California buckwheat
Erigonum gracile	slender buckwheat
Eriogonum thurberi	Thurber's wild buckwheat
Lastarriaea coriacea	leather-spineflower
*Persicaria [Polygonum] hydropiper**	common smartweed

SCIENTIFIC NAME	COMMON NAME
Persicaria [Polygonum] hydropiperoides	false waterpepper
Percicaria [Polygonum] lapathifolia	willow weed
*Rumex crispus**	curly dock
Rosaceae	**Rose Family**
Adenostoma fasciculatum	chamise
Salicaceae	**Willow Family**
Populus fremontii ssp. *fremontii*	Fremont's cottonwood
Salix exigua	sandbar willow
Salix gooddingii	Goodding's black willow
Salix lasiolepis	arroyo willow
Simaroubaceae	**Quassia Family**
*Ailanthus altissima**	tree of heaven
Solanaceae	**Nightshade Family**
Datura wrightii	jimson weed
*Nicotiana glauca**	tree tobacco
Nicotiana quadrivalvis	Wallace's tobacco
Tamaricaceae	**Tamarisk Family**
*Tamarix ramosissima**	Mediterranean tamarix
Urticaceae	**Nettle Family**
Urtica dioica ssp. *holosericea*	hoary nettle
ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Agavaceae	**Century Plant Family**
Hesperoyucca whipplei [Yucca whipplei]	Our Lord's candle
Arecaceae (Palmae)	**Palm Family**
*Washingtonia robusta**	Mexican fan palm
Cyperaceae	**Sedge Family**
Cyperus eragrostis	tall umbrella-sedge
Poaceae (Gramineae)	**Grass Family**
*Arundo donax**	giant reed
*Avena barbata**	slender wild oat
*Avena fatua**	wild oat
*Bromus diandrus**	ripgut grass
*Bromus hordeaceus**	soft chess
Bromus madritensis ssp. *rubens**	foxtail chess
Cynodon dactylon	Bermuda grass
*Echinochloa crus-galli**	barnyard grass
*Festuca myuros [Vulpia myuros] **	foxtail fescue
Hordeum murinum var. *leporinum**	hare barley
Leptochloa fusca ssp. *uninervia [Leptochloa uninervia]*	Mexican sprangletop
*Lolium perenne**	perennial ryegrass
Muhlenbergia rigens	deergrass
*Pennisetum setaceum**	crimson fountain grass
*Polypogon monspeliensis**	rabbit's-foot grass
*Schismus barbatus**	Mediterranean schismus

SCIENTIFIC NAME	COMMON NAME
Typhaceae	**Cattail Family**
Typha latifolia	southern cattail

* non-native species

WILDLIFE LIST

SCIENTIFIC NAME	COMMON NAME
REPTILIA	**REPTILES**
Colubridae	**Colubrid Snake Family**
Masticophis flagellum piceus	red coachwhip
Phrynosomatidae	**Phrynosomatid Lizard Family**
Phrynosoma blainvillii	coast horned lizard
AVES	**BIRDS**
Accipitridae	**Kite, Hawk, and Eagle Family**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Buteo regalis	ferruginous hawk
Aegithalidae	**Bushtit Family**
Psaltriparus minimus minimus	bushtit
Alaudidae	**Lark Family**
Eremophila alpestris	horned lark
Apodidae	**Swift Family**
Aeronautes saxatalis	white-throated swift
Ardeidae	**Heron, Egret, and Bittern Family**
Butorides virescens	green heron
Caprimulgidae	**Nightjar Family**
Chordeiles acutipennis	lesser nighthawk
Charadriidae	**Plover and Lapwing Family**
Charadrius vociferus	killdeer
Columbidae	**Pigeon and Dove Family**
Columba livia	rock dove
Zenaida macroura	mourning dove
Corvidae	**Crow and Raven Family**
Aphelocoma californica	western scrub jay
Corvus brachyrhynchos	American crow
Emberizidae	**Sparrow Family**
Melospiza melodia	song sparrow
Pipilo crissalis	California towhee
Fringillidae	**Finch Family**
Carduelis psaltria hesperophilus	lesser goldfinch
Carpodacus mexicanus frontalis	house finch
Hirundinidae	**Swallow Family**
Petrochelidon pyrrhonota	cliff swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Icteridae	**Blackbird and Oriole Family**
Agelaius phoeniceus	red-winged blackbird
Icterus bullocki	Bullock's oriole
Mimidae	**Mockingbird and Thrasher Family**
Mimus polyglottos	northern mockingbird
Odontophoridae	**Quail Family**
Callipepla californica	California quail

SCIENTIFIC NAME	COMMON NAME
Parulidae	**Wood Warbler Family**
Setophaga petechia	yellow warbler
Passeridae	**Old World Sparrow Family**
Passer domesticus	house sparrow
Picidae	**Woodpecker Family**
Colaptes auratus	northern flicker
Sturnidae	**Starling and Myna Family**
Sturnus vulgaris	European starling
Trochilidae	**Hummingbird Family**
Calypte anna	Anna's hummingbird
Calypte costa	Costa's hummingbird
Selasphorus sasin	Allen's hummingbird
Troglodytidae	**Wren Family**
Salpinctes obsoletus	rock wren
Thryomanes bewickii	Bewick's wren
Tyrannidae	**Tyrant Flycatcher Family**
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus verticalis	western kingbird
MAMMALIA	**MAMMALS**
Cricetidae	**Mice, Rat, and Vole Family**
Peromyscus fraterculus	Baja (cactus) mouse
Peromyscus maniculatus	deer mouse
Reithrodontomys megalotis	harvest mouse
Geomyidae	**Pocket Gopher Family**
Thomomys bottae	Botta's pocket gopher
Heteromyidae	**Kangaroo Rat and Pocket Mouse Family**
Chaetodipus fallax fallax	northwestern San Diego pocket mouse
Dipodomys merriami parvus	San Bernardino kangaroo rat
Leporidae	**Rabbit and Hare Family**
Lepus californicus	black-tailed jackrabbit
Sylvilagus audubonii	desert cottontail
Muridae	**Old World Mice and Rat Family**
Mus musculus	house mouse
Neotoma bryanti intermedia	Bryant's (San Diego) desert woodrat
Rattus rattus	roof rat
Procyonidae	**Raccoon, Ringtail, and Coati Family**
Procyon lotor	raccoon
Sciuridae	**Squirrel Family**
Spermophilus beecheyi	California ground squirrel

Appendix B Least Bell's Vireo Report

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URS

Date: September 19, 2012

To: Ms. Susie Tharratt
United States Fish and Wildlife Service

From: Carol Thompson
URS Corporation

Subject: State Route-210 Mixed Flow Lane Addition Project Least Bell's Vireo Survey Results – 45 Day Report

Dear Ms. Tharratt

This letter report documents focused protocol surveys conducted for the state and federally endangered least Bell's vireo (*Vireo bellii pusillus*) conducted by URS Corporation for the State Route-210 (SR-210) Mixed Flow Lane Addition Project (Project). Surveys were conducted within suitable riparian habitat in City Creek and also within three other small disturbed riparian areas within Plunge Creek; both City and Plunge creeks are tributaries to the Santa Ana River. The survey area and three disturbed areas are located in the City of Highland, San Bernardino County, California. No least Bell's vireos were detected in the survey area or disturbed habitats.

SURVEY AREA

The survey area includes one area of suitable habitat for least Bell's vireo associated with City Creek where it passes under SR-210 (Figure 1A). The survey area is located within Township 1 South, Range 3 West, Section 9, San Bernardino Baseline and Meridian, as depicted on the United States Geological Survey (USGS) *Redlands, California* 7.5-Minute topographic quadrangle map. Vegetation communities within the survey area are moderately disturbed due to flood control efforts (i.e., grading and berming), urban development, and historical and current mining adjacent to, and within the survey area. The survey area predominantly supports a narrow band (2-3 feet wide) of 0.78 acre of Mule Fat Thicket, 0.11 acre of Arroyo Willow Thicket, and 0.10 acre of Disturbed Scalebroom Scrub along the northern portion of City Creek (Table 1). Dominant vegetation consists of black willow (*Salix nigra*), cottonwood (*Populus fremontii*), and mulefat (*Baccharis salicifolia*). The survey area is adjacent to a low flow earthen channel within City Creek that supports relatively permanent flows and has been channelized with earthen berms. It also receives flow from a

concrete flood control channel that drains south along the northbound SR-210 and empties into City Creek. Historical aerials from 2005 show that this habitat is occasionally cleared for flood-control purposes.

Three disturbed areas of Disturbed Arroyo Willow Thicket and areas of pooled water runoff associated with Plunge Creek were also surveyed and are located within Township 1 South, Range 3 West, Section 9, San Bernardino Baseline and Meridian, as depicted on the USGS *Redlands, California* 7.5-minute topographic quadrangle map. The elevation range of these areas is approximately 1,200 to 1,240 feet.

Disturbed Area 1 (DA1) is located west of SR-210 within Plunge Creek and consists of 0.35 acre of Disturbed Arroyo Willow Thicket (Figure 1B). Three small patches of habitat are present, each consisting of approximately 0.1 acre of arroyo willow (*Salix exigua*) surrounded by a large patch of homogeneous ruderal vegetation consisting primarily of black mustard (*Brassica nigra*). This area has been disturbed by mining activities and SR-210.

Disturbed Area 2 (DA2) is located west of SR-210 and consists of 0.64 acre of Disturbed Arroyo Willow Thicket (Figure 1C). One patch of roughly 0.5 acre of arroyo willow is surrounded by Disturbed Scalebroom Scrub consisting of salt cedar (*Tamarix* sp.) and scalebroom (*Lepidospartum squamatum*). This area has been disturbed by mining activities and SR-210.

Disturbed Area 3 (DA3) is located east of SR-210 and consists of 0.18 acre of Disturbed Arroyo Willow Thicket (Figure 1C). This patch of habitat contains a few individuals of arroyo willow mixed with tobacco tree (*Nicotiana glauca*) and surrounded by Scalebroom Scrub and California Buckwheat Scrub. This area has been disturbed by mining activities and SR-210.

Table 1. Vegetation Communities/Land Covers within Surveyed Areas

Vegetation Community/Land Cover (Acres)	Survey Area (SA)	Disturbed Area 1 (DA1)	Disturbed Area 2 (DA2)	Disturbed Area 3 DA3)
Arroyo Willow Thicket	0.11	0.00	0.00	0.00
Developed	0.36	0.00	0.00	0.00
Disturbed	0.10	0.00	0.00	0.00
Disturbed Arroyo Willow Thicket	0.00	0.35	0.64	0.18
Disturbed Scalebroom Scrub	0.10	0.00	0.00	0.00
Mule Fat Thicket	0.78	0.00	0.00	0.00
Open Water	0.20	0.00	0.00	0.00
Ruderal	0.03	0.00	0.00	0.00
Unvegetated Wash	0.54	0.00	0.00	0.00
Totals	**2.22**	**0.35**	**0.64**	**0.18**

METHODS

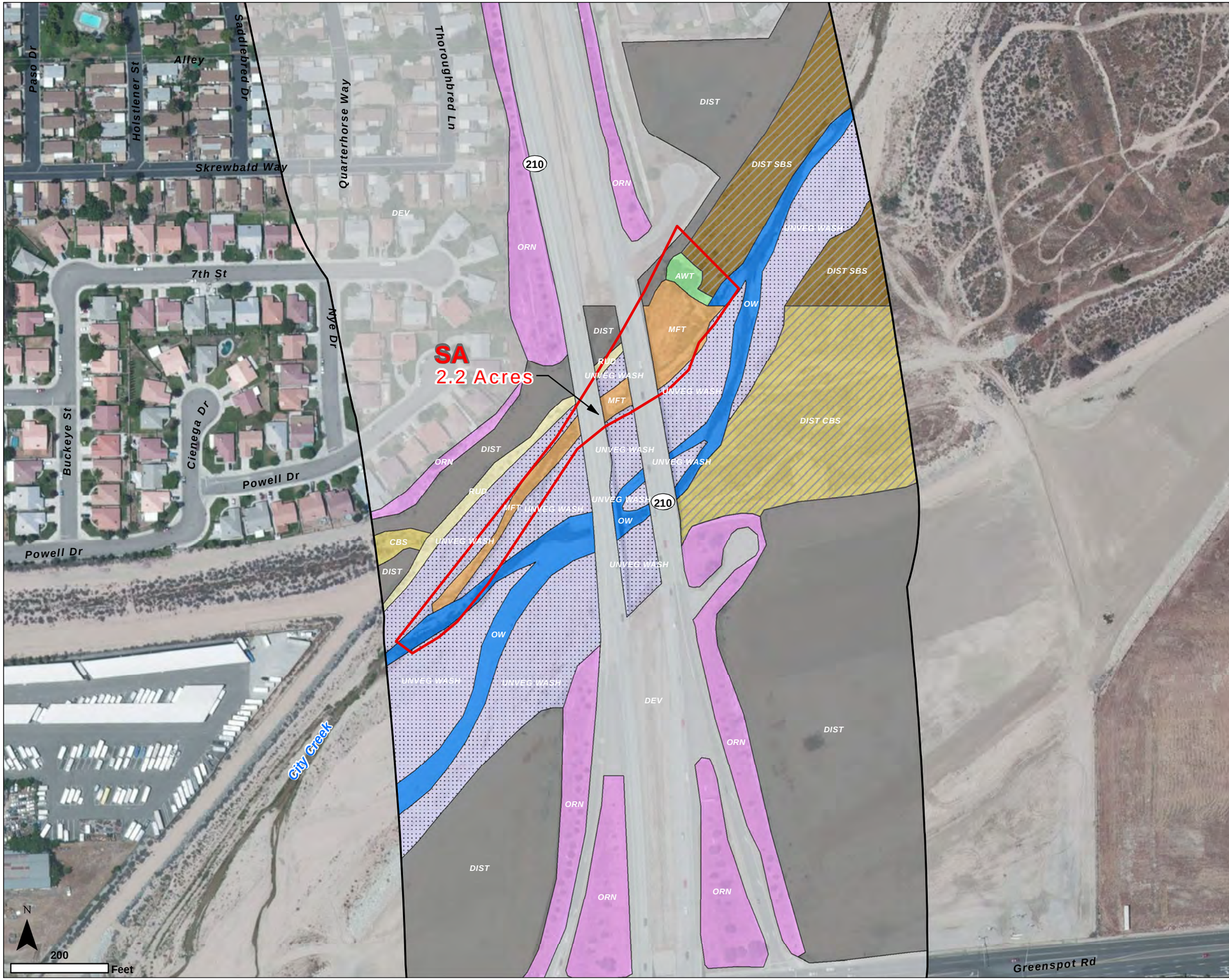
Carol Thompson (Permit 207873-0), Jeff Crain (supervised), and Greg Hoisington (supervised) conducted eight protocol surveys within the survey area, from May 10 to July 27, 2012 (Table 2). Surveys were conducted pursuant to United States Fish and Wildlife Service (USFWS) Permit TE-207873-0 (May 14, 2009 – May 13, 2013) and were in accordance with the USFWS *Least Bell's Vireo Survey Guidelines* (USFWS 2001). Pedestrian surveys were conducted through suitable riparian habitat and surveys did not exceed 5 acres per survey.

DA1 – DA3 were surveyed after each of the coastal California gnatcatcher surveys (Table 2). These areas of disturbed, low quality habitat were surrounded by potential coastal California gnatcatcher habitat. Full protocol surveys were not conducted due to lack of quality habitat likely to support an individual or breeding pair.

Table 2. Survey Schedule and Conditions

Survey Area	Survey #	Date	Personnel	Temperature (Fahrenheit)	Wind (Miles per Hour)	Time	Sky
SA DA1 DA2 DA3	1	10 May 2012	CT, JC	64 – 68	0 – 3	630 – 1030	Clear
SA DA1 DA2	2	21 May 2012	CT, JC	65 – 78	1 – 3	630 – 1000	Clear
DA3	2	23 May 2012	CT, JC	60	2 – 3	735 – 830	Overcast
DA1 DA2	3	29 May 2012	CT, JC	54 – 60	0 – 3	833 – 1000	Clear
DA3	3	31 May 2012	CT, JC	65 – 71	0 – 3	630 – 840	Clear
DA1 DA2 DA3	4	6 June 2012	CT, JC	65 – 80	1 – 3	700 – 800	Overcast
SA DA1 DA2 DA3	4; 5	14 June 2012	CT, GH	65 – 67	1 – 3	615 – 645; 745 – 845	Overcast
SA DA1 DA2 DA3	6	21 June 2012	CT, JC	66 – 71; 72 – 86	0 – 4	730 – 845; 910 – 1200	Clear
SA	5	28 June 2012	CT, GH	60 – 64	0 – 5	630 – 645	Overcast
SA	6	5 July 2012	CT	58 – 62	0 – 2	700 – 800	Overcast
SA	7	18 July 2012	CT	64 – 66	0 – 2	630 – 645	Overcast
SA	8	27 July 2012	CT	66 – 68	0 – 2	700 – 800	Clear

SA=Survey Area, DA=Disturbed Area. CT=Carol Thompson, JC= Jeff Crain, GH=Greg Hoisington.



Least Bell's Vireo Survey Areas

Project Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thickets
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thickets
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 1A
Least Bell's Vireo Survey Areas

SR-210 Mixed Flow Lane Addition Project

URS

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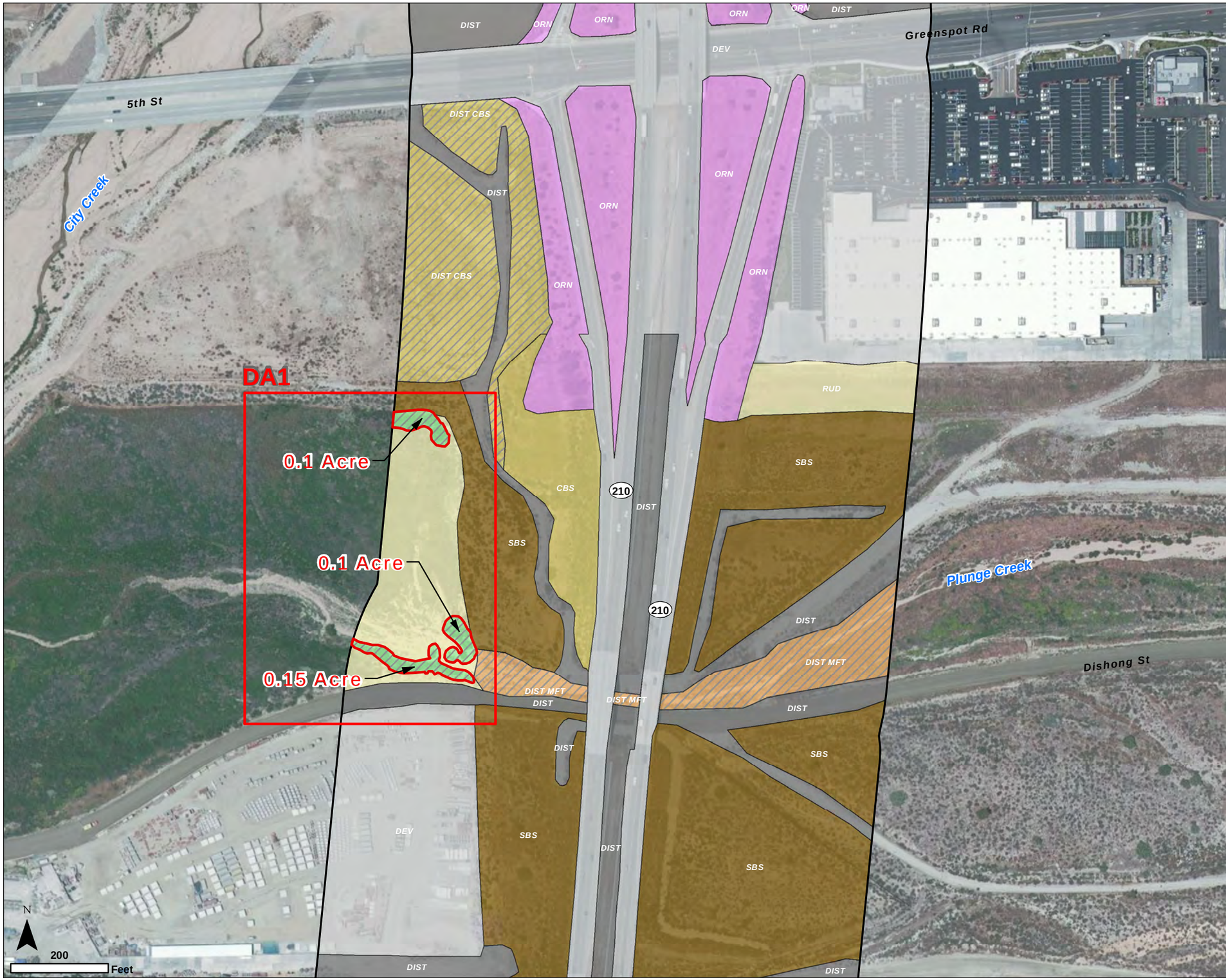

Least Bell's Vireo Survey Areas

Project Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thickets
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thickets
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 1B
Least Bell's Vireo Survey Areas

SR-210 Mixed Flow Lane Addition Project

URS

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Least Bell's Vireo Survey Areas

Project Study Area (500-ft Buffer)

Vegetation Types

- SBS - Scalebroom Scrub
- MFT - Mule Fat Thickets
- CBS - California Buckwheat Scrub
- AWT - Arroyo Willow Thicket
- EUC - Eucalyptus Grove
- DIST SBS - Disturbed Scalebroom Scrub
- DIST MFT - Disturbed Mule Fat Thickets
- DIST CBS - Disturbed California Buckwheat Scrub
- DIST AWT - Disturbed Arroyo Willow Thicket
- AG - Agriculture
- RUD - Ruderal
- OW - Open Water
- ORN - Ornamental
- UNVEG CH - Unvegetated Channel
- UNVEG WASH - Unvegetated Wash
- DIST - Disturbed
- DEV - Developed

FIGURE 1C
Least Bell's Vireo Survey Areas

SR-210 Mixed Flow Lane Addition Project

URS

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RESULTS

No least Bell's vireos were observed utilizing the Survey Area or the Disturbed Areas. The closest documented least Bell's vireo are 4.2 miles to the northwest of the survey area within dense riparian vegetation along the Harrison Canyon drainage (CNDDB 2012). A yellow warbler (*Dendroica petechia*) was observed on May 23, 2012 within a eucalyptus grove south of the Santa Ana River where it intersects the SR-210. No other special status species or brown-headed cowbirds (*Molothrus ater*) were observed during the surveys. A complete list of wildlife species detected during the surveys is provided in Table 3.

All Arroyo Willow Thicket habitats within the study area were surveyed although the potential for least Bell's vireo to occupy these areas was low. Least Bell's vireos primarily occupy riverine riparian habitats that typically have dense vegetative cover within 3.3 – 6.6 feet of the ground and a dense, stratified canopy. Least Bell's vireo inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Typically, this species is associated with arroyo willow thicket, cottonwood forest, mule fat scrub, sycamore alluvial woodland, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities. Least Bell's vireo uses habitat which is limited to the immediate vicinity of water courses below 1,500 feet elevation (USFWS 1986; Small 1994). Least Bell's vireo requires a minimum suitable habitat patch size of 0.25 acres (0.10 hectares) to support individuals. DA3 fell below this threshold and contains only 0.18 acre of low quality habitat.

The survey area contains marginal suitable habitat and has the most potential to support least Bell's vireo within the Project area. However, the survey area contains Arroyo Willow Thicket and Mulefat Thicket habitat within City Creek. These habitat types do not overlap and do not provide dense riparian growth that least Bell's vireo prefers. DA1 – DA3 contain Disturbed Arroyo Willow Thicket habitat; however, DA1 and DA3 contain patchy, isolated stands, roughly 0.1 acre in size, surrounded by ruderal vegetation and disturbed habitats. DA2 does contain a larger habitat area totaling 0.49 acre. Although a canopy and willows are present within DA2, the understory composition is poor and does not provide dense habitat structure suitable for nesting. This area is isolated from a river/creek water source and has a large tamarisk component.

Table 3. Wildlife Observed During Surveys

Common Name	Scientific Name
American crow	*Corvus brachyrhynchos*
Anna's hummingbird	*Calypte anna*
Black phoebe	*Sayornis nigricans*
Bullock's oriole	*Icterus bullocki*
Bushtit	*Psaltriparus minimus minimus*
California quail	*Callipepla californica*
California towhee	*Pipilo crissalis*
Cliff swallow	*Petrochelidon pyrrhonota*
Coopers hawk	*Accipiter cooperii*
Costa's hummingbird	*Calypte costa*
European starling	*Sturnus vulgaris*
Green heron	*Butorides virescens*
House finch	*Carpodacus mexicanus frontalis*
House sparrow	*Passer domesticus*
Killdeer	*Charadrius vociferus*
Lesser goldfinch	*Carduelis psaltria hesperophilus*
Lesser nighthawk	*Chordeiles acutipennis*
Mourning dove	*Zenaida macroura*
Northern flicker	*Colaptes auratus*
Northern mockingbird	*Mimus polyglottos*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Rock dove	*Columba livia*
Rock wren	*Salpinctes obsoletus*
Song sparrow	*Melospiza melodia*
White-throated swift	*Aeronautes saxatalis*

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Appendix C Coastal California Gnatcatcher Report

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URS

Date: August 28, 2012

To: Ms. Susie Tharratt
United States Fish and Wildlife Service
From: Carol Thompson
URS Corporation
Subject: State Route-210 Mixed Flow Lane Addition Project Coastal California Gnatcatcher Survey Results

Dear Ms. Tharratt:

This letter report documents focused protocol surveys conducted for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) conducted by URS Corporation for the State Route (SR)-210 Mixed Flow Lane Addition Project. Surveys were conducted in areas surrounding Plunge Creek and the Santa Ana River within the Cities of Redlands and Highland, San Bernardino County, California. No coastal California gnatcatchers were detected in the survey area.

SURVEY AREA

The survey area includes areas of suitable habitat for coastal California gnatcatcher associated with Plunge Creek and the Santa Ana River where they intersect SR-210 (Figure 1). The survey area is located within Township 1 South, Range 3 West, Sections 10 and 15, San Bernardino Baseline and Meridian, as depicted on the United States Geological Survey (USGS) *Redlands, California* 7.5-Minute topographic quadrangle map. The elevation of the survey area is approximately 1,200 feet above mean sea level.

Vegetation communities within the survey area are relatively undisturbed, although historical mining activity and highway improvement have affected some areas. Mining activity occurs directly adjacent to, and within, the survey area. The Santa Ana River supports relatively permanent flows and bisects the southern portion of the survey area. The survey area predominantly supports 47 acres of Scalebroom Scrub and 9 acres of California Buckwheat Scrub (Table 1); dominant species within these communities include California buckwheat (*Eriogonum fasciculatum*) and the Santa Ana River woolly star (*Eriastrum densifolium sanctorum*).

Table 1. Vegetation Communities/Land Covers within the Survey area

Vegetation Community/Land Cover	Acres
Scalebroom Scrub	46.98
California Buckwheat Scrub	9.3
Disturbed Scalebroom Scrub	3.62
Disturbed	1.08
Disturbed California Buckwheat Scrub	1.01
Disturbed Arroyo Willow Thicket	0.64
Ornamental	0.52
Developed	0.41
Disturbed Mule Fat Thicket	0.32
Eucalyptus Grove	0.09
Ruderal	0.09
Unvegetated Channel	0.03
Unvegetated Wash	0.02

METHODS

Carol Thompson (Permit 207873-0), Jeff Crain, and Greg Hoisington conducted focused protocol surveys from May 21 to July 28, 2012 (Table 2). Surveys were conducted pursuant to Federal Fish and Wildlife Permit TE-207873-0 (May 14, 2009 – May 13, 2013) and were in accordance with the *Coastal California Gnatcatcher* (Polioptila californica californica) *Presence/Absence Survey Guidelines* (USFWS 1997). A total of 64 acres were surveyed per day with approximately 15 acres per hour surveyed. Transects were walked throughout the survey area with coastal California gnatcatcher vocalizations played approximately every 30 seconds.

Table 2. Survey Schedule and Conditions

Survey Number	Date	Personnel*	Temperature (Fahrenheit)	Time	Wind (Miles per Hour)	Sky
1	21 May 2012	CT, JC	65 – 78	815 – 1000	1 – 3	Clear
	23 May 2012		72	1000 – 1100	2 – 3	
2	29 May 2012	CT, JC	54 – 60	830 – 1000	0 – 3	Clear
	31 May 2012		65 – 71	630 – 1030		
3	6 June 2012	CT, JC	65 – 80	700 – 1030	1 – 3	Overcast
4	14 June 2012	CT, GH	70 – 76	745 – 845; 910 –1130	1 – 3	Overcast
5	21 June 2012	CT, JC	66 – 71	730 – 845; 910 –1200	0 – 4	Clear
			72 – 86			
6	28 June 2012	CT, GH	65 – 69; 70 – 85	740 – 850; 915 – 1040	0 – 5	Overcast, then clear

*CT = Carol Thompson, JC = Jeff Crain, GH = Greg Hoisington

RESULTS

No coastal California gnatcatchers were encountered during the surveys. The closest documented coastal California gnatcatchers are located 2,500 feet east of the survey area (CNDDB 2012). No other special status avian species were found during the surveys. Table 3 provides a list of all avian species observed during the 2012 focused surveys.

Table 3. Avian Species Observed

Common Name	Scientific Name
Anna's hummingbird	*Calypte anna*
Bushtit	*Psaltriparus minimus minimus*
California quail	*Callipepla californica*
California towhee	*Pipilo crissalis*
Cliff swallow	*Petrochelidon pyrrhonota*
Costa's hummingbird	*Calypte costa*
European starling	*Sturnus vulgaris*
House finch	*Carpodacus mexicanus frontalis*
Lesser goldfinch	*Carduelis psaltria hesperophilus*
Lesser nighthawk	*Chordeiles acutipennis*
Mourning dove	*Zenaida macroura*
Northern flicker	*Colaptes auratus*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Rock dove	*Columba livia*
Rock wren	*Salpinctes obsoletus*
White-throated swift	*Aeronautes saxatalis*

REFRENCES

CNDDB (California Natural Diversity Data Base). 2012. *RareFind California Department of Fish and Wildlife Natural Diversity Database for Redlands, Harrison Mountain, San Bernardino North, San Bernardino South, Riverside East, Riverside West, Sunnymead, El Casco,* and *Yucaipa, California USGS 7.5-Minute Quadrangles*. Sacramento, CA: California Department of Fish and Wildlife, Biogeographic Data Branch.

USFWS. 1997. *Coastal California Gnatcatcher Presence/Absence Survey Guidelines.* Carlsbad Field Office, Carlsbad, California. February 28, 1997. 4 pp.

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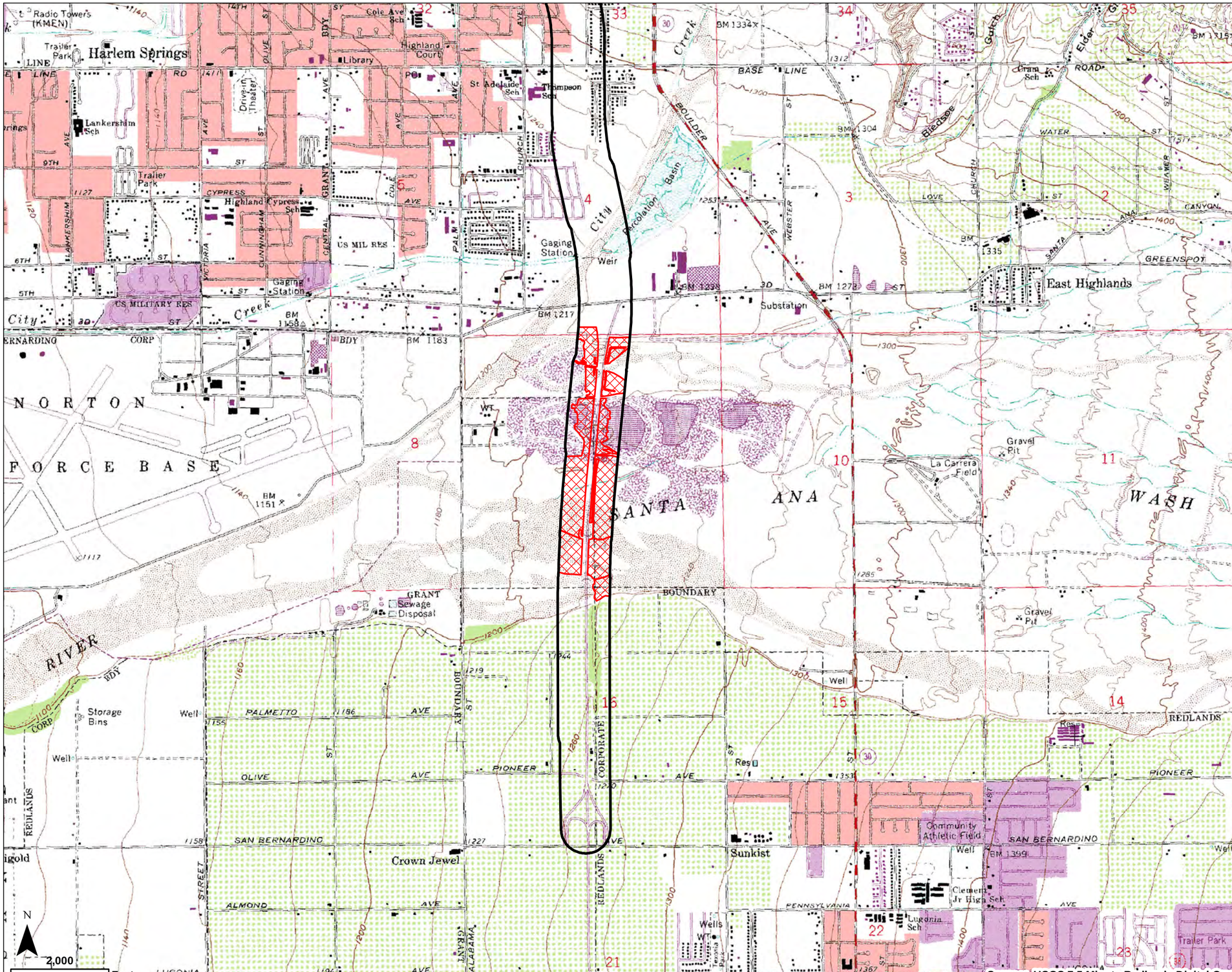

Source: USGS 7.5 Minute Redlands Digital Quad

California Gnatcatcher Survey Area

Study Area (500-ft Buffer)

FIGURE 1
USGS Quad

SR-210 Mixed Flow Lane Addition Project

August 2012

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California Gnatcatcher Survey Area

Study Area (500-ft Buffer)

FIGURE 2A

California Gnatcatcher Survey Areas

SR-210 Mixed Flow Lane Addition Project

August 2012

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California Gnatcatcher Survey Area

Study Area (500-ft Buffer)

FIGURE 2B

California Gnatcatcher Survey Areas

SR-210 Mixed Flow Lane Addition Project

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California Gnatcatcher Survey Area

Study Area (500-ft Buffer)

FIGURE 2C

California Gnatcatcher Survey Areas

SR-210 Mixed Flow Lane Addition Project

August 2012

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Appendix D San Bernardino Kangaroo Rat Report

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REPORT OF A TRAPPING SURVEY FOR THE FEDERALLY ENDANGERED SAN BERNARDINO KANGAROO RAT IN THE PROJECT AREA OF THE PROPOSED EXPANSION OF STATE HIGHWAY 210 AT CITY CREEK, PLUNGE CREEK AND SANTA ANA RIVER, SAN BERNARDINO COUNTY, CALIFORNIA

PREPARED FOR

URS Corporation

2020 East 1st Street, Suite 400
Santa Ana, CA 92705
714-648-2825

PREPARED BY

SJM Biological Consultants, Inc.
8455 Slayton Ranch Road
Flagstaff, AZ 86004

28 November 2012

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1. INTRODUCTION

This report presents the results of a focused survey for the San Bernardino kangaroo rat (SBKR, *Dipodomys merriami parvus*) on an approximately 225-acre SBKR Survey Area along the State Route (SR)-210 where it crosses City Creek, Plunge Creek, and the Santa Ana River in Highland, San Bernardino County, California. The Project area encompasses a band of land extending out 500 feet to the east and west of the existing highway edges (Figures 1 and 2).

The Survey Area occurs within several jurisdictions (County of San Bernardino and the cities of Redlands and Highland) and ranges in elevation from approximately 1,200 to 1,240 feet above mean sea level. Figure 2 shows the overall SR-210 Mixed Flow Lane Addition Project (proposed Project) area and the boundary of the more limited SBKR Survey Area on an aerial photograph. This Survey Area occurs on the USGS Redlands 7.5" quadrangle (T1S, R3W, Sections 4 [SE, SW ¼], 9 [all ¼ s], and 16 [NE, NW ¼]). The approximate UTM coordinates (NAD83) at the northern and southern ends of the Survey Area are 11S 0481602E/3774382N and 11S 0481533E/3772255N, respectively.

The purpose of the current survey was to inform the environmental review process for the proposed Project. The California Department of Transportation, in cooperation with San Bernardino Associated Governments, proposes to construct a mixed flow lane in each direction of this highway, from Highland Avenue southeast to San Bernardino Avenue in San Bernardino County. The total length of the proposed Project is 5.75 miles, but the length of the SBKR Survey Area is approximately 1.25 miles. The existing SR-210 from Highland Avenue to San Bernardino Avenue consists of two lanes in each direction and has a high rate of traffic congestion. The proposed Project would construct a new lane in each direction in order to alleviate congestion at major local street interchanges and the junction with Interstate (I)-10.

Background on the San Bernardino Kangaroo Rat

The historical range of SBKR extended from the San Bernardino Valley in San Bernardino County to the Menifee Valley in Riverside County (Lidicker 1960). The species is currently known from four localities: the Santa Ana River wash, the San Jacinto River, Cajon Wash/Lytle Creek, Etiwanda Wash, and Reche Canyon. The Santa Ana River wash contains approximately 3,861 acres of SBKR habitat, which represents approximately 34 percent of the total remaining SBKR habitat (9,797 acres) (USFWS 2009). All of the sites covered under the current survey are mapped as SBKR critical habitat by the U.S. Fish and Wildlife Service (USFWS 2002).

SBKR occur mainly on Riversidean alluvial fan sage scrub habitat (AFSS), also termed scalebroom scrub, a plant community with coastal sage scrub and chaparral elements on alluvial terraces and braided river channels in southern California (McKernan 1997). SBKR abundance is greatest in sandy substrates with low to moderate perennial vegetative cover (less than 30 to 50 percent) and **not** exhibiting a dense cover of non-native annual plants (McKernan 1997). SBKR also can occur in

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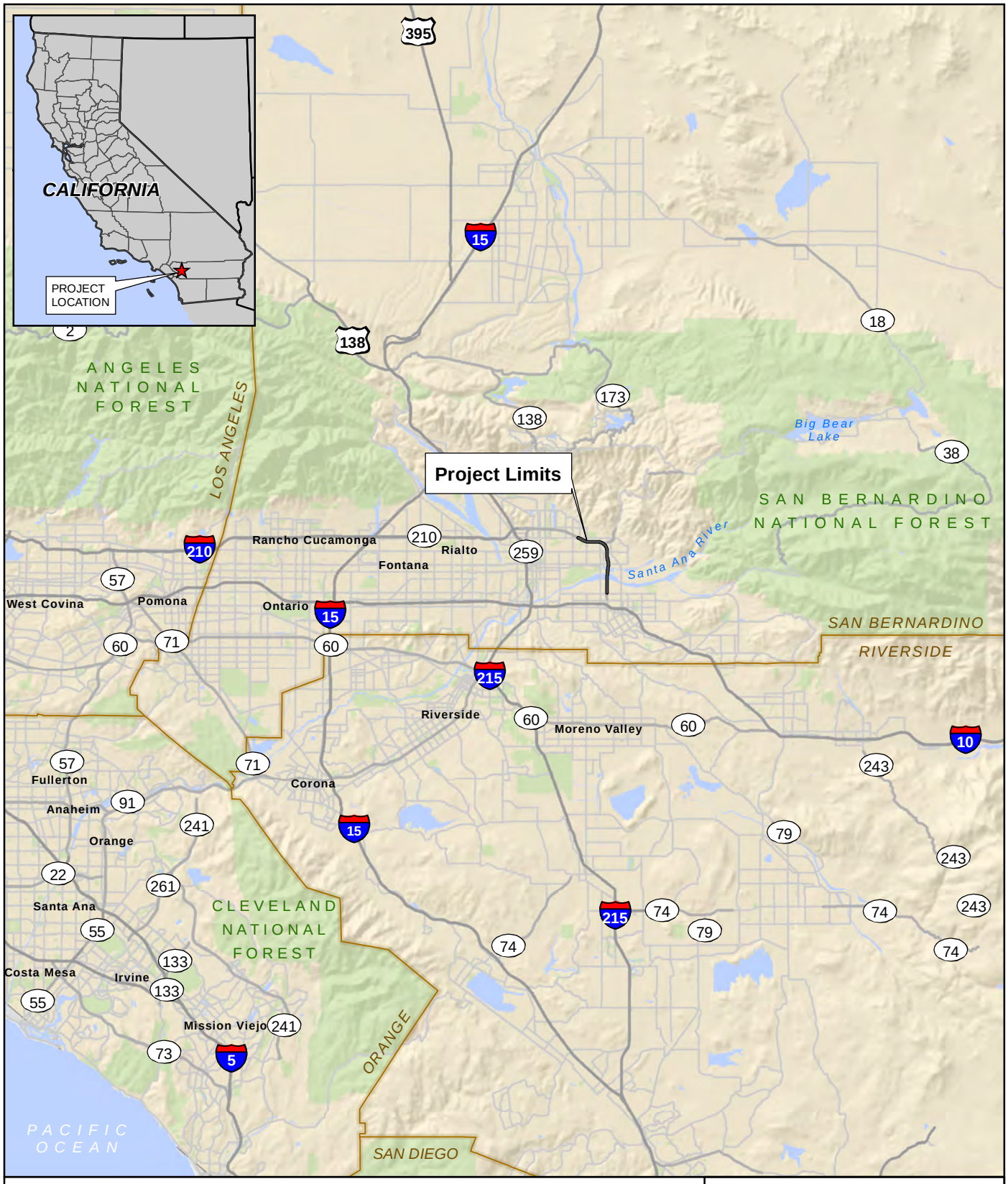

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0 5 10 Miles

FIGURE 1
Regional Location

SR-210 Widening Project

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Project Area

SBKR Survey Areas

N

0 4,000 Feet

FIGURE 2

Project Area

SR-210 Mixed Flow Lane Addition Project

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abandoned agricultural fields and orchards, but usually only when such habitats occur in proximity to occupied suitable natural habitats. The species typically is not found on steep slopes.

2. METHODS

Field Surveys

Focused surveys SBKR, as well as for Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), were carried out by Stephen J. Montgomery and Phillip Brylski according to USFWS and California Department of Fish and Game (CDFG) protocols stated in permits held by these investigators. The principal investigator for the survey was Stephen J. Montgomery, who holds permits from USFWS (TE745541-10) for SBKR live-trapping surveys, and a Memorandum of Understanding (MOU) from CDFG for trapping/handling the SBKR and LAPM. Dr. Phil Brylski also is permitted by USFWS (TE148555-2) and CDFG (MOU) for trapping/handling these species.

Live-trapping surveys for SBKR were carried out in 15 habitat areas within the Survey Area during two periods in 2012: (1) October 15-16 (two nights) and (2) November 1-7 (seven nights). As mentioned, the Survey Area extended out 500 feet to the east and west of the existing edges of the highway, as shown in Figure 2. The live-trapping survey was designed to determine presence/absence of SBKR and to obtain relative abundance information to inform the assessment of habitat quality (see below). Traps were set along transects (trap lines) located within all potentially suitable SBKR habitats in all segments of the Survey Area. Each of 15 habitat areas was sampled from one to three transects positioned in the different variations of habitat types available in that area. The number and location of transects were based on the mixture of habitats within each surveyed area and an assessment of their suitability for SBKR. Special attention was paid to surveying the open wash habitats in the Santa Ana River and City Creek. Figure 3 shows the overall Survey Area on an aerial photograph, with approximate locations of SBKR trap lines.

Large Sherman live-traps (3 x 3.75 x 12”) with doors modified to prevent tail damage were used throughout the survey. Traps were opened and baited with bird seed within one hour of sunset and checked beginning at sunrise. Traps were set in transects with the intervals between traps ranging from 8 to 15 meters. On some occasions, additional traps were placed in locations outside of transects where small-mammal sign (burrows, dusting sites, and scat) was particularly evident. Animals were identified and released immediately at the point of capture. A total of 2,255 trap-nights was expended during the field effort.

For SBKR, the following data were collected: sex, age class (adult, sub-adult, or juvenile), reproductive condition, and capture UTM coordinates. Individuals were marked using a sharpie marker on the belly in order to distinguish new captures from recaptures.

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SBKR Trapline Areas (1-15)

Study Area (500-ft Buffer)

FIGURE 3A
San Bernardino Kangaroo Rat Trapline Areas

SR-210 Mixed Flow Lane Addition Project

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SBKR Trapline Areas (1-15)

Study Area (500-ft Buffer)

FIGURE 3B
San Bernardino Kangaroo Rat Trapline Areas

SR-210 Mixed Flow Lane Addition Project

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Habitat Quality Analysis

SBKR habitat quality was mapped in the 15 areas based on habitat correlates from Root (2008a, 2008b) and McKernan (1997). Occupied habitats were mapped according to the following three quality categories: low, medium, and high. These categories reflect in turn the expected relative abundances of SBKR that would be expected to reside in each area during a particular time period. These categories reflect the potential for a particular habitat area to support SBKR, and not the number of SBKR captured there during the current live-trapping survey, because the number of individuals present in a particular area can change for reasons not related to habitat quality (e.g., variation in 1. trap density and arrangement, 2. trap response among individuals, and/or 3. abundance of seeds among seasons or years).

Root's (2008a, b) analysis of SBKR and habitat data collected during the Army Corps' Wooly Star Preserve Area SBKR monitoring effort found that SBKR occupancy of 28 x 28 meter grids located throughout the Wash Plan area was negatively correlated with high annual grass cover, shrub cover, organic litter, and boulders and cobbles. Therefore, SBKR would be expected to be abundant in level terrain with sandy soils and generally lower vegetative cover, and would typically not be expected to occur or would occur at very low densities at sites with extremely dense ground cover (primarily grasses), extremely dense shrub cover, and areas where rocks and cobbles dominate the surface.

3. RESULTS

Site Description

The Survey Area is part of the historical alluvial plain encompassing the Santa Ana River, City Creek, and Plunge Creek. Soils at the 15 habitat areas are predominantly Soboba stony loamy sands, fluvents and psamments (sands in frequently flooded areas), and quarries (NRCS 2012). Site photographs are found in Attachment D.

The dominant vegetation in the overall Survey Area is AFSS, which contains species from coastal sage scrub, chaparral, juniper woodland, and in some locations desert plant communities. Most areas contain AFSS elements, and only Areas 1a, 1b, 2, 7b, and 8b would not be considered predominantly AFSS. Areas 1a, 1b, and 2 exhibit ruderal vegetation, as well as small patches of sage scrub and riparian scrub vegetation in higher bench areas. The vegetation in Area 7b is a mosaic of grassland and tamarisk woodland in the northern part and disturbed AFSS dominated by California buckwheat (*Eriogonum fasciculatum ssp. foliolosum*) in the southern end of the basin. The vegetation in Area 8b is a mosaic of ruderal grassland, as well as stands of cottonwood (*Populus fremontii*), willow (*Salix* spp.), and tamarisk trees (*Tamarix* sp.), with a band of disturbed AFSS dominated by California buckwheat along the base of SR-210.

The dominant perennial species in the AFSS communities of the Survey Area include California buckwheat, white sage (*Salvia apiana*), scalebroom (*Lepidospartum squamatum*), hairy yerba santa (*Eriodictyon trichocalyx*), coast cholla (*Opuntia littoralis*), brittlebush (*Encelia farinosa*), and California sagebrush (*Artemisia*

californica). Additional perennials found within this plant community include California match weed (*Gutierrezia californica*), deerweed (*Lotus scoparius*), sugar bush (*Rhus ovata*), pine goldenbush (*Ericameria pinifolia*), mulefat (*Baccharis salicifolia*), and groundsel (*Senecio flaccidus*).

Common forbs in the Survey Area include common fiddleneck (*Amsinckia menziesii*), petioled primrose (*Camissonia* sp.), California croton (*Croton californicus*), tall wreath plant (*Stephanomeria virgata*), Russian thistle (*Salsola kali*), slender buckwheat (*Eriogonum gracile*), and sand bur (*Ambrosia acanthicarpa*). Common grass species include slender wild oat (*Avena barbata*), wild oat (*Avena fatua*), rat-tailed fescue (*Vulpia myuros*), red brome (*Bromus madritensis rubens*), cheat grass (*Bromus tectorum*), ripgut brome (*Bromus diandrus*), and Mediterranean grass (*Schismus barbatus*).

Common plants found in disturbed areas include hairy yerba santa, summer mustard (*Hirschfeldia incana*), Castor bean (*Ricinus communis*), deerweed, buckwheat, tree tobacco (*Nicotiana glauca*), common fiddleneck, common horse weed (*Conyza canadensis*), tocalote (*Centaurea melitensis*), curly dock (*Rumex crispus*), and lamb's quarters (*Chenopodium album*).

Habitat Associations

SBKR were captured at 14 of the 15 habitat areas, including essentially all habitats where the dominant vegetation cover was AFSS or sage scrub (see Figure 4). The only habitat area where SBKR was not captured was Area 1, which includes the City Creek wash and associated heavily disturbed berms west of SR-210. The habitat in this area was either open sandy wash or sandy/cobble bench with mulefat scrub or ruderal vegetation. The portions of Areas 11 and 12 that traversed the main channel of the Santa Ana River and exhibited deep sandy wash conditions also did not yield SBKR. Maps of SBKR habitat quality in occupied areas within the overall Survey Area are shown in Figure 4. Areas not encompassed by colored habitat polygons are considered unoccupied by SBKR. A summary of the soils, vegetation, and SBKR habitat quality in the 15 habitat areas is found in Attachment A.

Small Mammal Survey Results

Weather during the trapping surveys included mild temperatures (low 50s °F during the night to high 60s °F in the mornings), low wind speeds (0-3 miles per hour), and variable cloud cover. No precipitation was recorded during any of the trapping sessions (Table 1).

The trapping surveys yielded 613 small mammal captures belonging to the following nine species: SBKR, San Diego pocket mouse (*Chaetodipus fallax fallax*), Bryant's (San Diego) desert woodrat (*Neotoma bryanti intermedia*)[1], deer mouse (*Peromyscus maniculatus*), cactus mouse (*Peromyscus fraterculus*), harvest mouse (*Reithrodontomys*

[1] This report follows the taxonomy of Patton et al (2008), which re-names most of the populations formerly referred to as *Neotoma lepida intermedia* (including those in the Project study area) to *Neotoma bryanti intermedia*.

megalotis), Botta's pocket gopher (*Thomomys bottae*), house mouse (*Mus musculus*) and roof rat (*Rattus rattus*) (Table 2, Attachment B). The two most common species captured were the deer mouse (51 percent of all captures) and SBKR (29 percent). Interestingly, no Dulzura kangaroo rats (*D. simulans*) were captured during the trapping survey. All animals were released unharmed at the point of capture, with two exceptions: one SBKR mortality occurred when an individual was live-trapped together with a deer mouse on November 1, 2012 in Area 12 (in the Santa Ana River wash). The SBKR appeared to have been killed by the deer mouse. The specimen was not saved for museum use because the skull was largely eaten by the deer mouse. The second mortality was of the non-native roof rat; which was sacrificed and disposed of.

A total of 175 captures (new and recaptured) SBKR was recorded during the trapping survey, and included 118 unique individuals and 57 recaptures (Table 2, Attachment B). Figures 3 and 4 show the locations of the live-trapping transect and SBKR captures, respectively. Detailed data on captured SBKR (sex, reproductive condition, UTM coordinates) are found in Attachment C.

Of the nine small mammals captured, one species is listed as federally endangered and two are currently listed as California Species of Special Concern, as follows:

Federally Listed Endangered Species

- San Bernardino kangaroo rat

California Species of Special Concern

- northwestern San Diego pocket mouse
- Bryant's (San Diego) desert woodrat

Non-Status Species

- deer mouse
- Baja (cactus) mouse
- harvest mouse
- Botta's pocket gopher
- house mouse (non-native)
- roof (black) rat (non-native)

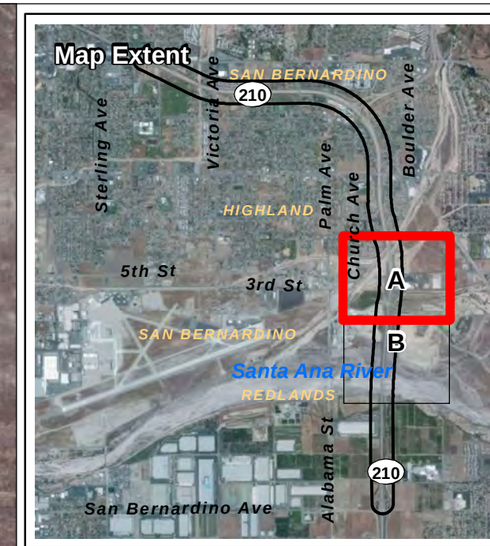
Table 1. Representative Weather Conditions During the Trapping Survey

Date	Temperature (F)	Cloud Cover (%)	Wind (miles/hour)
10/15/2012	50-61	0	1
10/16/2012	51-60	0	1
11/1/2012	50-58	5	2
11/2/2012	52-65	100	3
11/3/2012	50-65	2	1
11/4/2012	54-70	0	1-2
11/5/2012	55-75	0	3
11/6/2012	50-64	0	1-2
11/7/2012	51-67	0	1

Table 2. Summary of Small Mammal Captures*

Survey Area	SBKR		CFAL	PMAN	PFRA	NBRY	RMEG	MMUS	RRAT	TBOT
	New	Recap								
1a				13		1		1		
1b				22		8				
2	3	9		20						1
3	7	8	7	52		7				
4	7	3		12		1				
5	11	1	4	4	1	1				
6	4	0		6						
7a			7	12		3				
7b	2	1	5	8						
8a	4	6	5	25		4				
8b			9	9						
9a	10		2	6						
9b	7	2		8						
9c	12	3	9	19		5				
10a	10			1						
10b	11		1	3	1	2				
10c	3		2	3	3	3				
11a	3	7	3	12						
11b	2	3	7	18		1			1	
12a	7	2	2	25						
12b	4	7	7	9						
13	2	4	9	15		3				
14	2	1								
15	7		4	9			1			
Totals	**118**	**57**	**80**	**311**	**5**	**38**	**1**	**1**	**1**	**1**
	175									

SBKR, San Bernardino kangaroo rat (*Dipodomys merriami parvus*)
CFAL, San Diego pocket mouse (*Chaetodipus fallax fallax*)
PMAN, deer mouse (*Peromyscus maniculatus*)
PFRA, cactus mouse (*Peromyscus fraterculus*)
NBRY, Bryant's woodrat (*Neotoma bryanti intermedia*)
RMEG, harvest mouse (*Reithrodontomys megalotis*)
MMUS, house mouse (*Mus musculus*)
RRAT, roof rat (*Rattus rattus*)
TBOT, Botta's pocket gopher (*Thomomys bottae*)



SBKR Capture Locations

Study Area (500-ft Buffer)

SBKR Occupied Habitat

- High
- Medium/High
- Medium
- Low/Medium
- Low
- Low/Trace

FIGURE 4A
San Bernardino Kangaroo Rat
Habitat Suitability and Capture Locations

SR-210 Mixed Flow Lane
Addition Project

URS

Path: I:\SR-210_widening\MXD\SBKR\ex_skr_habitat.mxd

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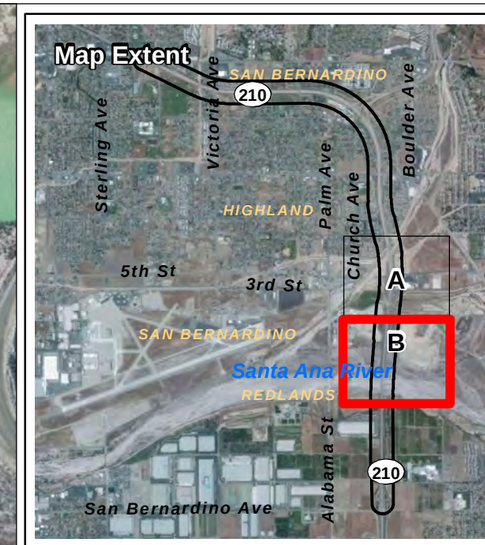

SBKR Capture Locations

Study Area (500-ft Buffer)

SBKR Occupied Habitat

- High
- Medium/High
- Medium
- Low/Medium
- Low
- Low/Trace

FIGURE 4B
San Bernardino Kangaroo Rat
Habitat Suitability and Capture Locations

SR-210 Mixed Flow Lane
Addition Project

URS

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4. CONCLUSIONS

The habitat assessment, which was informed by the trapping survey, found that suitable habitat for SBKR (low, medium, and high quality) is widely distributed in 14 of the 15 habitat areas. This habitat assessment was based on Root's (2008a, b; 2010) analysis of SBKR habitat correlates, which were based on SBKR occurrence data on grids located throughout the Wash Plan area (SJM Biological 2006a, b; 2007a, b; 2008a,b; 2009a,b) and habitat data (vegetation, soils, etc) collected from the same grids. It also was based on extensive field experience by the project biologists with this species in the habitats in and near the current Survey Area, including many years of intensive trapping experience with SBKR in the Santa Ana Wooly Star Preserve (WSPA).

Areas with deep loose sand with little or no shrub plant cover typically do not harbor SBKR, presumably because such unstructured substrates do not provide sufficient support for burrows. Thus, burrows and therefore SBKR occur primarily in areas with some shrub cover and typically where there also is some herbaceous vegetation cover. Nonetheless, since SBKR naturally will forage away from shrub cover to some degree, the species occasionally will be found (trapped) in open habitats some distance from the edges of shrub communities. Trapping results indicated that the most heavily occupied habitats in the Study Area were those exhibiting an abundance of (but not totally) unvegetated sandy ground, low to moderate shrub cover, and limited rock density. It follows that the main deep sandy channel wash zones with little or no vegetation in City Creek and the Santa Ana River are not occupied by SBKR. In general, the species occurs primarily on benches above the main flood zone of these waterways. In contrast, Plunge Creek has been heavily disturbed and its flow paths strongly altered, and heavy flooding in this waterway is rarer than the other two primary drainages within the Survey Area. As a result, both shrub cover and SBKR are present at the edge of Plunge Creek.

The current live-trapping survey found similar patterns of SBKR presence versus habitat covariates as those described by Root (2008a, b) and McKernan (1997), as follows:

- SBKR occurrence was negatively correlated with a dense cover of non-native grasses and areas where boulders and rocks dominated the surface. These habitat features occur in Area 8b and the southern part of Area 7b.

- SBKR occurrence was positively correlated with sandy soils in areas exhibiting sparse ground cover and the perennial shrubs scalebroom and California buckwheat. Areas 2, 4, 5, 9, 10, and 15 contained relatively simple scalebroom-California buckwheat dominated AFSS plant communities and SBKR were common in these.

- Scalebroom was abundant in other areas where SBKR occurrence was high, such as parts of Areas 5, 9, and 10.

- The deep sandy main wash zones of City Creek and Santa Ana River are not occupied by SBKR.

The proposed Project, including access roads, staging areas, and actual construction areas may result in disturbances to occupied SBKR habitat confirmed during the current field survey. If substrate disturbances associated with highway expansion activities are restricted to the existing area between the current north and south traffic lanes, “incidental take” of SBKR may be largely avoided. However, as shown in Figure 4, occupied habitat does occur in the area between the two lane systems in the Santa Ana River at the south end of the SBKR Survey Area. As a result, total avoidance of occupied habitat (and therefore SBKR) may not be possible. In general, incidental take of SBKR can be minimized by avoiding substrate disturbance to areas shown in Figure 4 as unoccupied by this species. In areas where construction must occur in confirmed occupied habitat, avoidance will not be possible and mitigation for this incidental take will be required.

It is assumed that any incidental take associated with the proposed Project will be temporary, and that habitats will be returned to their pre-Project condition following completion of the Project and be recolonized by SBKR over time. The USFWS will determine the allowable mitigation strategy to offset any such temporary loss of occupied SBKR habitat.

Possible mitigation and/or minimization options may include the following:

1) Fence the area to be disturbed with kangaroo rat proof fencing, trap out SBKR inside the fenced area, immediately release captured SBKR into nearby suitable habitat that currently exhibit low numbers of SBKR. Alternatively, trap out SBKR inside fencing, hold animals until construction is completed and habitats are returned to their pre-construction condition, and release held animals back into their capture locations.
2) Purchase known occupied SBKR habitat in an established SBKR Mitigation Bank within or outside of the Santa Ana River ecosystem.
3) Purchase known occupied SBKR habitat in an area not currently established as an SBKR Mitigation Bank, within or outside of the Santa Ana River ecosystem, but available for purchase and long-term maintenance as habitat for this species.
4) Any purchased mitigation land should be directly connected to (abut) known occupied habitat areas, or should be connected to known occupied habitat by a short corridor exhibiting suitable habitat that will not be degraded or eliminated over time.

If mitigation involves the purchase of off-site habitat, the ratio of acreages of habitat to be **temporarily** lost to Project activities versus acreages of mitigation land to be purchased to offset this loss should be determined during consultation with the USFWS but may range from 2(lost):1(purchased) or higher. Details of habitat restoration in occupied areas, and/or details of fencing/trapping/holding/releasing will be determined during consultation with the USFWS.

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ATTACHMENT A – Comparison of the Conditions in the 15 Habitat Areas

Trapping Area	Soils and Habitat Type*	Principal Shrub Species	Principal Forb species	Comment
1a	Main City Creek wash with deep sandy soils in most locations. Unvegetated in main wash, but generally sparse ruderal vegetation elsewhere. Scattered shrubs on benches and some riparian scrub primarily at northern edge.	*Baccharis salicifolia, Eriogonum fasciculatum*	*Salsola kali, Heterotheca grandiflora, Ambrosia acanthicarpa, Helianthus annus, Xanthium* sp.	Not occupied by SBKR. Generally heavily disturbed by flooding, construction on south bank, and berms on north bank.
1b	Same as 1a.	Same as 1a.	Same as 1a.	Same as 1a.
2	Variable. Sandy wash with deep sandy soils in most locations. Unvegetated in main wash (City Creek), but generally sparse ruderal vegetation elsewhere. Scattered shrubs on benches and some riparian scrub primarily at northern edge.	*Baccharis salicifolia, E. fasciculatum*	*Salsola kali, Heterotheca grandiflora, Ambrosia acanthicarpa, Helianthus annus, Xanthium* sp., *Nicotiana glauca, Conyza canadensis, Salvia columbariae, Schismus barbatus*	The raised sandy bench along the easterly side of main City Creek wash exhibits moderate quality habitat for SBKR, and a few SBKR were captured here. The open deep sandy wash and sandy/rocky benches on the westerly side of this area are not occupied by SBKR.
3	Soils vary, some sandy loose soils and less sandy compacted areas, with abundant open ground. Mixture of sage scrub and elements of AFSS.	*E. fasciculatum, Encelia farinosa, Eriodictyon trichocalyx, Gutierrezia californica*	*Lotus scoparius, Hemizonia sp., Erodium sp., Brassica sp., Heterotheca grandiflora, Heterotheca sessiliflora, Eriastrum densifolium sanctorum, Eriastrum sapphirinum, Salvia columbariae, Schismus barbatus*	Low/moderate quality SBKR habitat in northern part of Area 3 and low SBKR habitat in southern part. Several SBKR captured. Scraped/ disturbed in some areas. Wetland low area in southwestern part.
4	Disturbed buckwheat scrub on the sandy/gravelly flats immediately east of the freeway embankment and along the dirt access road. Open wash with ruderal and riparian vegetation along Plunge Creek.	*E. fasciculatum*	Not recorded.	SBKR were captured in the disturbed buckwheat scrub and in ruderal habitat along Plunge Creek. Habitat quality is low.
5	AFSS habitat on sandy flats immediately east of the freeway embankment and east of the concrete form storage yard.	*Lepidospartum squamatum, E. fasciculatum, E. trichocalyx, Encelia farinosa, Opuntia littoralis*	*Vulpia myuros, Bromus tectorum, Bromus diandrus*	SBKR were captured throughout the AFSS flats. Habitat quality is high in the eastern part of Area 5 and moderate in the western part.

Trapping Area	Soils and Habitat Type*	Principal Shrub Species	Principal Forb species	Comment
6	Sandy soil and abundant open ground, on elevated bench south of Plunge Creek in AFSS.	Same as Area 5, plus *Juniperus californica, Cylindropuntia californica, Opuntia littoralis, Gutierrezia californica, Yucca* sp.	Same as 5, plus *Lotus scoparius, Erodium* sp., *Brassica* sp., *Salvia columbariae, Schismus barbatus*	Several SBKR captured. Moderate SBKR habitat.
7a	Bench along SR-210, built on fill material with disturbed buckwheat scrub habitat.	*E. fasciculatum*	Not recorded.	No SBKR captured. Probably unoccupied due to low quality habitat and absence of accessible higher quality habitat (similar habitat on Transect 9c is occupied).
7b	Quarry bottom with dense grassland and tamarisk in the northern 2/3 and disturbed buckwheat scrub in the southern 1/3.	*A. californica, L. squamatum, Tamarix ramosissima*	*Centaurea melitensis, Erodium cicutarium, Bromus diandrus, Bromus madritensis* ssp. *rubens*	Several SBKR captured in disturbed buckwheat scrub in the southern 1/3 of the site. Low quality SBKR habitat and apparently isolated by steep slopes from any nearby habitats.
8a	Access road along east side of quarry pit leading to SR-210 embankment. Dominant vegetation is disturbed buckwheat scrub on sandy soils (rocky in places, with fill material along freeway).	*E. fasciculatum, Eriodictyon trichocalyx, Gutierrezia californica, Nicotiana glauca, Lepidospartum squamatum, Artemisia californica, Eucalyptus* sp.	*Heterotheca sessiliflora, Lotus scoparius, Erodium* sp., *Salvia columbariae, Vulpia myuros, Schismus barbatus*	SBKR occupy the disturbed buckwheat scrub along SR-210. Low quality habitat.
8b	Part of old quarry with mosaic of ruderal, grassland, and trees (cottonwood/willow/tamarisk) in bottom of the bowl and disturbed buckwheat scrub along the base of SR-210.	*Hirschfeldia incana, B. salicifolia, Gutierrezia californica, Populus fremontii, Salix exigua, S. gooddingii, T. ramosissima*	*Marrubium vulgare, Anthriscus caucalis*	Not suitable for SBKR due to dense ground cover. No SBKR captured.
9a, 9b	Sandy flats of natural AFSS habitat with localized alluvial washes.	*L. squamatum, E. fasciculatum, Eriodictyon trichocalyx, Encelia farinosa*	*Avena barbata, B. tectorum, B. diandrus*	This sandy bench north of the Santa Ana wash is high quality habitat for SBKR.
9c	Bench along SR-210, built on fill material at the toe of the freeway embankment. The vegetation is a disturbed buckwheat scrub.	*E. fasciculatum*	Not recorded.	SBKR captures were relatively common on the toe of the freeway embankment, probably due to the adjoining high quality SBKR habitat.
10a, 10b	Same as 9a, 9b.	Same as 9a, 9b.	Same as 9a, 9b.	Same as 9a, 9b.
10c	Same as 9c.	Same as 9c.	Same as 9c.	Low quality SBKR habitat.

Trapping Area	Soils and Habitat Type*	Principal Shrub Species	Principal Forb species	Comment
11 a, b	Santa Ana River wash with deep sandy soils in most locations. Unvegetated in main wash, but with AFSS habitat on raised benches and some riparian scrub primarily at the southern edge.	*L. squamatum, E. fasciculatum*	Not recorded.	Low quality SBKR habitat. SBKR captured mainly on benches elevated above active wash and on the banks. Several individuals captured in open wash (unvegetated) within 10 meters of raised benches.
12a, b	Same as 11a, 11b.	Same as 11a, 11b.	Same as 11a, 11b.	Same as 11a, 11b.
13	Same as 11a, 11b.	Same as 11a, 11b.	Same as 11a, 11b.	Same as 11a, 11b.
14	Bench approximately 25 feet above Santa Ana wash built with sandy fill material, now with disturbed buckwheat vegetation.	*E. fasciculatum*	Not recorded.	Several SBKR captured in disturbed buckwheat scrub. Low quality SBKR habitat.
15	Bench approximately 20 feet above Santa Ana wash with AFSS habitat.	*L. squamatum, E. fasciculatum, E. farinosa, Gutierrezia californica*	Not recorded.	This raised sandy bench along the southern bank of the Santa Ana River wash exhibits moderate quality habitat for SBKR. Several SBKR captured on first night
*AFSS = Riversidian alluvial fan sage scrub				

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ATTACHMENT B. Details of Captures for all Species for the SR-210 SBKR Trapping Survey in October-November 2012

Date Traps Checked (2012)	Transect	# traps set	SBKR		CFAL	PMAN	PFRA	NBRY	RMEG	MMUS	RRAT	TBOT
			new	recap								
15-Oct	9a	55	10		2	6						
15-Oct	9c	55	9		5	14		1				
16-Oct	9c	55	3	3	4	5		4				
16-Oct	10b	50	11		1	3	1	2				
16-Oct	10c	50	3		2	3	3	3				
1-Nov	11a	25	2	1	1	2						
1-Nov	11b	25	1		2	3						
1-Nov	12a	30	4			8						
1-Nov	12b	30	2			1						
1-Nov	13	30	1		2	2		1				
1-Nov	14	10	1									
2-Nov	11a	25	1	3		3						
2-Nov	11b	25	1	1	2	4					1	
2-Nov	12a	30	1			6						
2-Nov	12b	30		1	2	3						
2-Nov	13	30	1	1	2	4						
2-Nov	14	10	1									
3-Nov	1a	30				3		1				
3-Nov	1b	40				1						
3-Nov	2	45	2			5						
3-Nov	11a	25	0	2		3						
3-Nov	11b	25		1	2	6						
3-Nov	12a	30	1			5						
3-Nov	12b	30	1	2	2	2						
3-Nov	13	30		2	2	4						
3-Nov	14	10		1								
3-Nov	15	55	7		4	9			1			
4-Nov	1a	30				2						
4-Nov	1b	40				6		2				
4-Nov	2	45		2		3						1
4-Nov	3	40	4			17		1				
4-Nov	6	10	2			3						
4-Nov	8a	35	3		1	5						
4-Nov	9b	20	7	2		8						

Date Traps Checked (2012)	Transect	# traps set	SBKR		CFAL	PMAN	PFRA	NBRY	RMEG	MMUS	RRAT	TBOT
4-Nov	10a	20	10			1						
4-Nov	11a	25		1	1	3						
4-Nov	11b	25		1		2						
4-Nov	12a	30	1	1	1	4						
4-Nov	12b	30	1	3	2	2						
4-Nov	13	30		1	2	3		1				
5-Nov	1a	30				2				1		
5-Nov	1b	40				6		3				
5-Nov	2	45	1	2		6						
5-Nov	3	40	1	3		12		2				
5-Nov	4	30	4			6		1				
5-Nov	5	25	5		2		1	1				
5-Nov	6	10	2			3						
5-Nov	7a	25			1	3		1				
5-Nov	7b	25	1									
5-Nov	8a	35		2	1	8		1				
5-Nov	8b	20			2	2						
5-Nov	11a	20			1	1						
5-Nov	11b	20			1	3						
5-Nov	12a	25		1	1	2						
5-Nov	12b	20		1	1	1						
5-Nov	13	30			1	2		1				
6-Nov	1a	30				4						
6-Nov	1b	40				1		2				
6-Nov	2	45		3		4						
6-Nov	3	40	1	3	1	11		3				
6-Nov	4	30	2	1		6						
6-Nov	5	25	6	1	2	4						
6-Nov	7a	25			3	5		1				
6-Nov	7b	25	1		3	5						
6-Nov	8a	35	1	2	1	5		1				
6-Nov	8b	20			3	3						
7-Nov	1a	30				2						
7-Nov	1b	40				8		1				
7-Nov	2	45		2		2						

Date Traps Checked (2012)	Transect	# traps set	SBKR		CFAL	PMAN	PFRA	NBRY	RMEG	MMUS	RRAT	TBOT
7-Nov	3	40	1	2	4	12		1				
7-Nov	4	30	1	2								
7-Nov	7a	25			3	4		1				
7-Nov	7b	25		1	2	3						
7-Nov	8a	35		2	2	7		2				
7-Nov	8b	20			4	4						
	totals	2255	118	57	80	311	5	38	1	1	1	1
			175		80	311	5	38	1	1	1	1
	% of captures		0.29		0.13	0.51	0.01	0.06	0.00	0.00	0.00	0.00
			SBKR		cffal	pman	pfra	nbry	rmeg	mmus	rrat	tbot
		total caps	613									

ATTACHMENT C. SBKR Capture Details

SBKR Capture Data					
Date	Age	Sex	Reproductive Condition	UTM Coordinates	
				Northing	Easting
10/15/12	A	F	P, Ns	4813523	3772915
10/15/12	A	M	Abd	481352	3772923
10/15/12	A	M	Abd	481352	3772934
10/15/12	A	M	Abd	481353	3773003
10/15/12	A	M	Abd	481353	3773015
10/15/12	A	F	P, Ns	481346	3773096
10/15/12	A	M	Abd	481346	3773116
10/15/12	A	F	P, Ns	481361	3773144
10/15/12	A	F	P, Ns	481391	3773145
10/15/12	A	M	Abd	481506	3773164
10/15/12	A	M	Abd	481502	3773098
10/15/12	A	F	Imp, Ns	481502	3773093
10/15/12	A	F	P, Nm	481498	3773050
10/15/12	A	F	P, Nm	481490	3772938
10/15/12	A	M	Abd	481483	3772873
10/15/12	A	M	Abd	481477	3772808
10/15/12	A	F	P, Ns	481459	3772694
10/15/12	A	M	Abd	481462	3772688
10/15/12	A	F	P, Ns	481391	3772711
10/15/12	A	F	P, Ns	481346	3772732
10/15/12	A	M	Abd	481633	3772711
10/15/12	A	F	P, Ns	481631	3772731
10/15/12	A	F	P, Ns	481630	3772774.7
10/15/12	A	M	Abd	481629	3772789
10/15/12	A	F	P	481638	3772840
10/15/12	A	M	Abd	481631	3772893
10/15/12	A	F	P	481630	3772912
10/15/12	A	F	P	481632	3772963
10/15/12	A	M	Abd	481636	3773023
10/15/12	A	F	P	481627	3773092
10/15/12	A	M	Abd	481619	3773124
10/15/12	A	M	Abd	481581	3773033
10/15/12	A	escaped		481564	3772748
10/15/12	A	M	Scr	481557	3772708
10/16/12	A	M	Abd	481499	3773050
10/16/12	R			481499	3773043

SBKR Capture Data					
Date	**Age**	**Sex**	**Reproductive Condition**	**UTM Coordinates**	
				Northing	Easting
10/16/12	A	M	Abd	481501	3773036
10/16/12	A	M	Abd	481487	3772900
10/16/12	R			481479	3772824
10/16/12	R			481461	3772682
11/1/12	A	M	Abd	481655	3772626
11/1/12	A	M	Abd	481659	3772663
11/1/12	A	F	P, Ns	481655	3772529
11/1/12	A	F	Ns	481659	3772473
11/1/12	A	F	P, Ns	481577	3772484
11/1/12	A	M	Abd	481579	3772523
11/1/12	A	F	P, Ns	481500	3772508
11/1/12	A	F	P, Ns	481378	3772433
11/1/12	A	F	P, Ns	481413	3772514
11/1/12	A	F	P, Ns	481357	3772715
11/1/12	A	F	P, Ns	481353	3772706
11/1/12	A	F	P, Ns	481353	3772502
11/1/12	A	F	P, Nm	481657	3772511
11/1/12	R			481576	3772470
11/1/12	R			481497	3772506
11/1/12	A	M	Abd	481430	3772427
11/1/12	A	M	Abd	481413	3772468
11/1/12	R			481413	3772511
11/1/12	R			481360	3772721
11/1/12	R			481358	3772713
11/1/12	R			481353	3772499
11/1/12	A	M	Abd	481350	3772432
11/3/12	A	M	Abd	481653	3772497
11/3/12	R			481577	3772470
11/3/12	R			481578	3772522
11/3/12	A	F	P, Ns	481576	3772532
11/3/12	R			481500	3772480
11/3/12	R			481427	3772430
11/3/12	R			481413	3772511
11/3/12	R			481353	3772492
11/3/12	R			481352	3772704
11/3/12	A	M	Abd	481719	3772348
11/3/12	A	F		481630	3772350

SBKR Capture Data					
Date	**Age**	**Sex**	**Reproductive Condition**	**UTM Coordinates**	
				Northing	Easting
11/3/12	A	M	Abd	481611	3772356
11/3/12	A	F	Imp	481583	3772378
11/3/12	A	M		481590	3772399
11/3/12	A	F	Imp	481631	3772392
11/3/12	A	F		481694	3772419
11/3/12	A	F	Imp	481774	3774517
11/3/12	A	F	Imp		
11/4/12	R			481403	3772909
11/4/12	A	M	Abd	481409	3772956
11/4/12	A	M	Abd	481432	3773002
11/4/12	A	F	P, Ns	481426	3773020
11/4/12	A	F	P, Ns	481429	3773035
11/4/12	A	M	Abd	481429	3773092
11/4/12	R			481432	3772981
11/4/12	A	M	Abd	481385	3772757
11/4/12	A	F	P, Ns	481384	3772739
11/4/12	A	F	P, Ns	481684	3772712
11/4/12	A	M	Abd	481696	3772832
11/4/12	A	F	P, Ns	481678	3772893
11/4/12	A	M	Abd	481683	3772932
11/4/12	A		P, Ns	481680	3772948
11/4/12	A	M	Abd	481682	3772975
11/4/12	A	M	Abd	481678	3772992
11/4/12	A	F	P, Ns	481683	3773011
11/4/12	A	M	Abd	481680	3773028
11/4/12	A	F	P, Ns	481674	3773047
11/4/12	A	F	P, Ns	481663	3772587
11/4/12	R			481657	3772486
11/4/12	R			481581	3772492
11/4/12	R			481580	3772511
11/4/12	R			481581	3772532
11/4/12	A	M	Abd	481582	3772660
11/4/12	R			481500	3772498
11/4/12	R			481415	3772520
11/4/12	R			481351	3772501
11/4/12	A	M	SScr	481553	3774006
11/4/12	A	F	Imp	481520	3773949

SBKR Capture Data					
Date	**Age**	**Sex**	**Reproductive Condition**	**UTM Coordinates**	
				Northing	Easting
11/4/12	A	F	Imp	481493	3773989
11/4/12		M	Abd	481550	3773801
11/4/12	A	F	Imp	481766	3774501
11/4/12	J	F	Imp	481773	3774560
11/4/12	A	F	Imp	481551	3773675
11/4/12	A	F	Imp	481541	3773613
11/4/12	A	M	Abd	481495	3773325
11/4/12	A	M	Abd	481523	3773275
11/4/12	A	M	Abd	481526	3773266
11/5/12	A	F	P, Ns	481693	3773282
11/5/12	A	F	P, Ns	481678	3773760
11/5/12	A	M	Abd	481730	3773790
11/5/12	A	M	Abd	481787	3773828
11/5/12	A	M	Abd	481775	3773689
11/5/12	A	F	P, Ns	481776	3773725
11/5/12	A	M	Abd	481798	3773681
11/5/12	A	M	Abd	481716	3773613
11/5/12	A	F	P, Ns	481666	3773613
11/5/12	R			481757	3774486
11/5/12	R			481775	3774555
11/5/12	A	F	Imp	481762	3774509
11/5/12	R				
11/5/12	R			481518	3773949
11/5/12	A	M	SScr	481491	3773947
11/5/12	R			481484	3773993
11/5/12	A	F	Imp	481546	3773708
11/5/12	A			481541	3773613
11/5/12	R			481494	3773325
11/5/12	R			481523	3773274
11/6/12	A	F	P, Ns	481737	3773283
11/6/12	A	F	P, Ns	481797	3773713
11/6/12	R			481802	3773691
11/6/12	A	F	P, Ns	481741	3773618
11/6/12	A	M	Abd	481715	3773615
11/6/12	A	M	Abd	481714	3773629
11/6/12	A	F	P, Ns	481711	3773645
11/6/12	A	F	P, Ns	481650	3773661

SBKR Capture Data					
Date	**Age**	**Sex**	**Reproductive Condition**	**UTM Coordinates**	
				Northing	Easting
11/6/12	A	F	P, Ns	481705	3773813
11/6/12	R			481790	3773827
11/6/12	A	M	Abd	481730	3773788
11/6/12	A	M	SScr	481558	3774041
11/6/12	R			481557	3774021
11/6/12	R			481529	3773912
11/6/12	R			481569	3773779
11/6/12	R			481762	3774509
11/6/12	R			481732	3774491
11/6/12	R			481775	3774555
11/6/12	R			481496	3773326
11/6/12	R			481515	3773241
11/6/12	A	M	Abd	481517	3773171
11/6/12	R			481558	3774041
11/6/12	A	M	Abd	481557	3774021
11/6/12	R			481551	3773804
11/6/12	R			481775	3774555
11/6/12	R			481762	3774509
11/6/12	R			481516	3773281
11/6/12	R			481518	3773251
11/7/12	R			481673	3773296
11/7/12	R			481668	3773778
11/7/12	R			481770	3773810
11/7/12	A	F	P, Ns	481751	3773796
11/7/12	R			481558	3774041
11/7/12	A	M	Abd	481557	3774021
11/7/12	R			481551	3773804
11/7/12	R			481775	3774555
11/7/12	R			481762	3774509
11/7/12	R			481516	3773281
11/7/12	R			481518	3773251

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ATTACHMENT D. Photographs of the 15 Habitat Areas

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Area 1A and 1B (part)

Area 1A

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Area 1B

Area 2-1

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Area 2-2

Area 3-1

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Area 3-2

Area 3-3

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Area 4

Area 5

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Area 6

Area 7

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Area 7b

Area 8

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Area 8b

Area 11a and 11b

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Area 15

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Appendix E Burrowing Owl Report

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Burrowing Owl Survey Report

State Route-210 (SR-210) Mixed Flow Lane Addition Project

San Bernardino County, California

December 2012

URS

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INTRODUCTION

This report documents focused protocol surveys conducted for the state species of concern western burrowing owl (*Athene cunicularia hypungaea*) (BUOW), conducted by URS Corporation (URS) for the State Route-210 (SR-210) Mixed Flow Lane Addition Project (Project). The Project is located in San Bernardino County and extends from the intersection of SR-210 and San Bernardino Avenue in the city of Redlands northwest to Highland Boulevard. The Project alignment is located on the United States Geological Survey (USGS) Redlands and Harrison Mountain 7.5-minute topographic quadrangle maps. Surveys were conducted within suitable habitat in the Project study area limits. The study area includes the proposed permanent structures and a 500-foot buffer. No BUOW were detected in the survey area.

SURVEY AREA

A total of 31 areas with potentially suitable BUOW habitat were identified and evaluated along the Project alignment. One of these areas (hereafter referred to as the survey area) was identified as having suitable habitat defined by the California Department of Fish and Game (CDFG) 2012 *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) (Figures 1A-1F). The remaining areas were determined to have no suitable habitat. The survey area includes suitable habitat for BUOW located at the northern portion of the study area, north of SR-210 between Central Avenue and Victoria Avenue (Figure 1B). The survey area is located within Township 1 North, Range 3 West, Section 32 on the USGS Harrison Mountain 7.5-minute topographic quadrangle map. The elevation of the survey area is approximately 1,200 feet above mean sea level.

Vegetation communities within the survey area are disturbed due to frequent disking, weed abatement, previous development, and pedestrian traffic. The survey area is 12.72 acres in size and supports approximately nine acres of ruderal vegetation, just under one acre of ornamental vegetation, and approximately 2.5 acres of disturbed/developed areas (Table 1). Dominant vegetation in these areas consists of shortpod mustard (*Hirschfeldia incana*), longstem buckwheat *(Eriogonum elongatum*), and *Bromus* spp. A drainage channel bisects the survey area and consists of a quarter acre of mulefat (*Baccharis salicifolia*). Two large, prominent earthen mounds are located within the survey area and are bisected by the drainage channel. These mounds support large colonies of California ground squirrel (*Otospermophilus beecheyi*).

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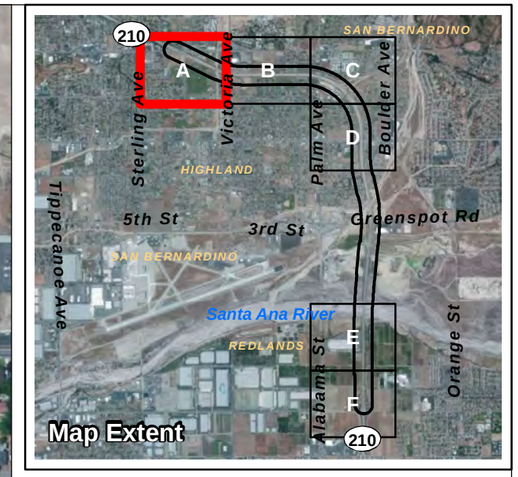

Study Area (500-ft Buffer)

Potential Burrowing Owl Habitat

Habitat Initially Identified As Potential Habitat; Focused Surveys Conducted

Habitat Initially Identified As Potential Habitat; Later Excluded

FIGURE 1A

Burrowing Owl Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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Study Area (500-ft Buffer)

Potential Burrowing Owl Habitat

Habitat Initially Identified As Potential Habitat; Focused Surveys Conducted

Habitat Initially Identified As Potential Habitat; Later Excluded

FIGURE 1B

Burrowing Owl Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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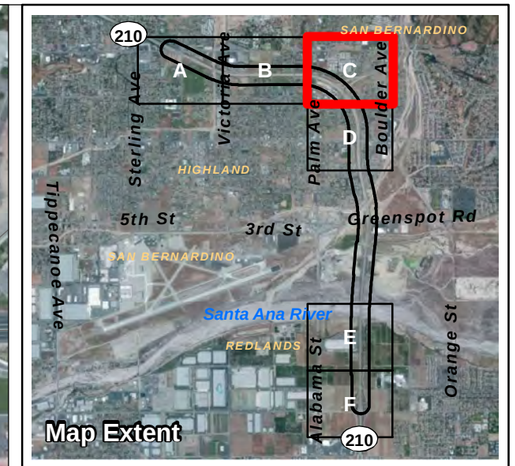

Study Area (500-ft Buffer)

Potential Burrowing Owl Habitat

Habitat Initially Identified As Potential Habitat; Focused Surveys Conducted

Habitat Initially Identified As Potential Habitat; Later Excluded

FIGURE 1C

Burrowing Owl Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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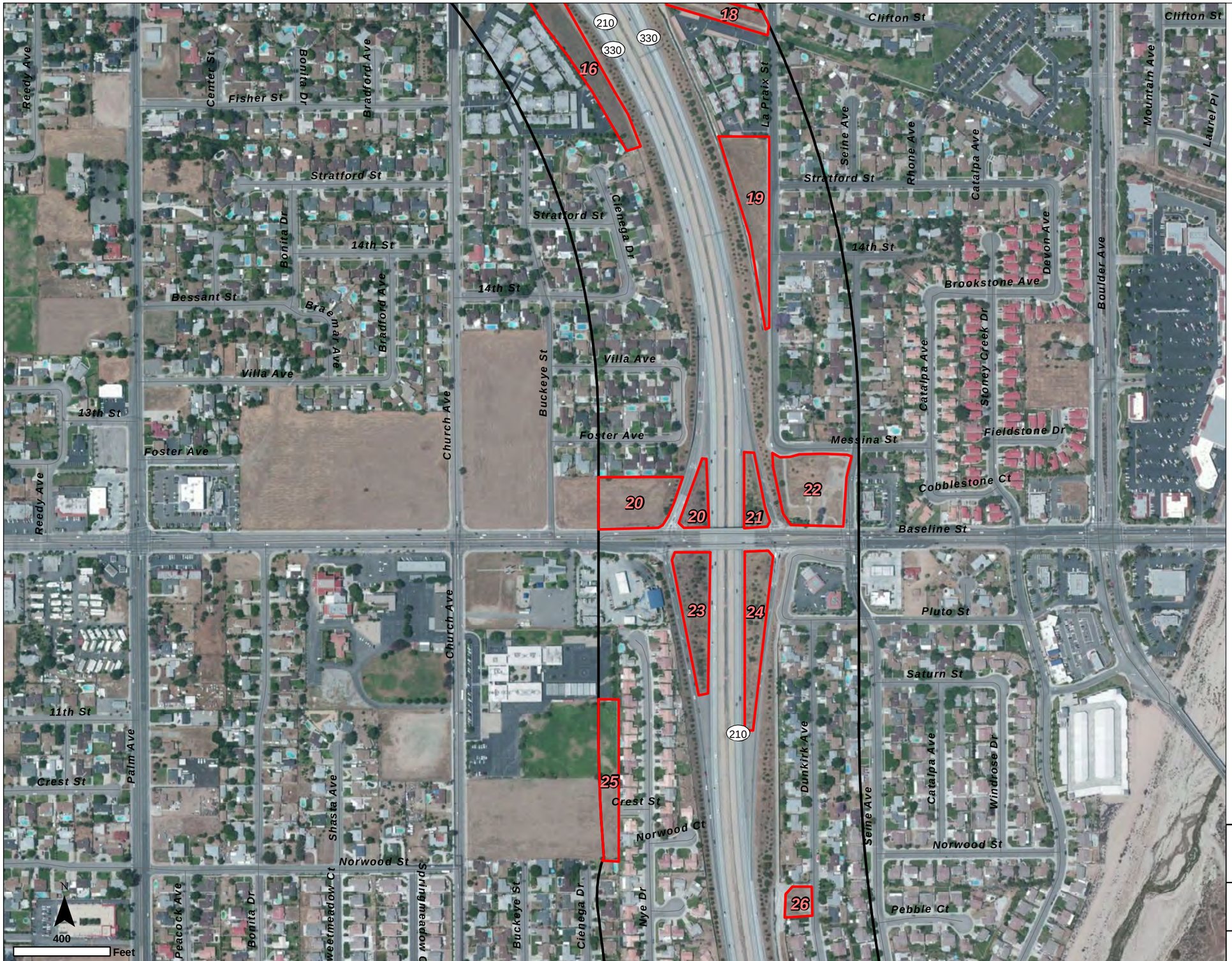

Study Area (500-ft Buffer)

Potential Burrowing Owl Habitat

Habitat Initially Identified As Potential Habitat; Focused Surveys Conducted

Habitat Initially Identified As Potential Habitat; Later Excluded

FIGURE 1D
Burrowing Owl Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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Study Area (500-ft Buffer)

Potential Burrowing Owl Habitat

Habitat Initially Identified As Potential Habitat; Focused Surveys Conducted

Habitat Initially Identified As Potential Habitat; Later Excluded

FIGURE 1E

Burrowing Owl Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

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Study Area (500-ft Buffer)

Potential Burrowing Owl Habitat

Habitat Initially Identified As Potential Habitat; Focused Surveys Conducted

Habitat Initially Identified As Potential Habitat; Later Excluded

FIGURE 1F
Burrowing Owl Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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Table 1. Vegetation Communities/Land Covers within BUOW Survey Area

Vegetation Community/Land Cover	Acres
Developed	0.40
Disturbed	2.15
Mule Fat Thicket	0.25
Ornamental	0.81
Ruderal	9.11
Total	**12.72**

METHODS

Habitat Assessment

A BUOW habitat assessment survey was conducted in the study area by URS biologists Carol Thompson and Jeff Crain on May 2 and May 3, 2012. Weather conditions at the time of the initial habitat assessment ranged from overcast and light rain, with winds ranging from 1 to 3 miles per hour and ambient air temperatures ranging from approximately 64° to 70° Fahrenheit. The habitat assessment was conducted in all portions of the biological study area having potentially suitable habitat (Figures 1A-1F). The study area consisted of a 500-foot buffer from the outside limits of proposed Project permanent disturbance (i.e., inside and/or outside lane widening). Suitable habitat was identified by the presence of low vegetation cover, presence of potential burrows, perch sites, and/or BUOW sign such as scat, tracks, pellets, or feathers (CDFG 2012). Parcels with no suitable habitat, including fully developed parcels, active agricultural parcels, highly disturbed parcels, and parcels directly adjacent to SR-210 were deemed unsuitable and excluded from further assessment. Many parcels adjacent to SR-210 contain a combination of ornamental trees and ruderal, non-native vegetation. The majority of the parcels are regularly maintained and are highly disturbed by vehicles, maintenance crews, and associated noise, emissions, vibration, and dust. These parcels are all considered unsuitable habitat. No BUOW, sign, or useable burrows were observed within parcels directly adjacent to SR-210.

Parcels that were initially identified as potentially suitable but upon further investigation did not contain suitable habitat as defined by the protocol (i.e., low growing vegetation, suitable burrows) were systematically excluded from focused BUOW surveys. The rational for exclusion of each parcel is provided in Attachment A.

Focused Survey

Carol Thompson, Jeff Crain, and Greg Hoisington conducted four protocol surveys within the survey area from May 8 to July 12, 2012 (Table 2). Surveys were conducted in accordance with the CDFG 2012 *Staff Report on Burrowing Owl Mitigation* protocol (CDFG 2012). The first survey was conducted as soon as the Project was initiated (May 2, 2012).

Table 2. Survey Schedule, Weather Conditions, and Personnel

Survey Date	Time	Temperature (Fahrenheit)	Sky	Personnel
*2 May 2012	600 – 830	64 – 68	Cloudy to Light Rain	CT, JC
*3 May 2012	1100 –1530	65 – 70	Overcast	CT, JC
8 May 2012	600 – 830	57 – 78	Clear	CT, JC
30 May 2012	630 – 830	54 – 60	Clear	CT, JC
21 June 2012	630 – 830	65 – 75	Clear	CT, GH
12 July 2012	700 – 800	71 – 75	Overcast	CT, JC

CT=Carol Thompson, JC= Jeff Crain, GH=Greg Hoisington
*Habitat assessment

BUOW surveys were conducted within previously identified areas during the habitat assessment and followed the CDFG 2012 protocol (CDFG 2012). Pedestrian survey transects were spaced at approximately 10 feet to allow for adequate visual coverage of the survey area. Where necessary, transect spacing was reduced or expanded from 7 to 20 meters to account for vegetation density, land cover, and visibility.

All potential burrows were determined by burrow size, the presence of BUOW, pellets, prey remains, whitewash, or decorations. The location of all potential burrows were recorded and mapped as polygons on aerial imagery rather than GPS point locations due to the high volume of burrows present and their close proximity to each other (Figure 2). No other burrows were located outside of these mapped polygons.

Surveys were conducted during weather that would not affect the ability to detect BUOW or their sign. The focused burrow surveys were conducted when weather conditions were conducive to observing active BUOW. The survey was not performed during rain or within five days of precipitation, high winds (> 20 miles per hour), dense fog, or temperatures over 90 °F. Surveys were conducted between morning twilight and 10:00 AM to provide the highest detection probabilities. Survey dates, personnel, and weather conditions are provided within Table 2.

Burrowing Owl Survey Area

Potential Burrowing Owl Burrows

Study Area (500-ft Buffer)

FIGURE 2

Burrowing Owl Survey Area

SR-210 Mixed Flow Lane Addition Project

URS

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Incidental observations of other wildlife species encountered during the surveys were also documented. The presence of each incidentally-observed species was based on direct observation or vocalization. Bird scientific nomenclature and common names follows Sibley (2001).

RESULTS

All potential suitable habitats within the study area were assessed during a habitat assessment. A subsequent focused burrow survey was conducted in one location (i.e., survey area) having suitable burrows and the potential to support BUOW. However, no BUOW were observed utilizing the survey area. The closest documented BUOW are located 0.7 miles east of the study area, north of the Santa Ana River and east of the San Bernardino International Airport (CNDDB 2012). An undetermined number of BUOW utilized that burrow site from 1983 to 1999 (CNDDB 2012). Although BUOW have historically been observed in the Project vicinity, no evidence of BUOW was observed within the survey area. Additionally, no other special status avian species were observed during the surveys. A complete list of avian species detected during the surveys is provided in Table 3.

Although no BUOW were observed, they could inhabit the study area in in areas that were previously determined to be unoccupied. As a result, pre-construction surveys within the study area are recommended to determine whether BUOW are subsequently occupying the study area.

Table 3. Avian Species Observed During Surveys

Common Name	Scientific Name
American crow	*Corvus brachyrhynchos*
Allen's hummingbird	*Selasphorus sasin*
black phoebe	*Sayornis nigricans*
bushtit	*Psaltriparus minimus minimus*
California towhee	*Pipilo crissalis*
European starling	*Sturnus vulgaris*
ferruginous hawk	*Buteo regalis*
house finch	*Carpodacus mexicanus frontalis*
house sparrow	*Passer domesticus*
mourning dove	*Zenaida macroura*
northern mockingbird	*Mimus polyglottos*
killdeer	*Charadrius vociferus*
red-tailed hawk	*Buteo jamaicensis*
rock dove	*Columba livia*

REFRENCES

CDFG (California Department of Fish and Game). 2012. Staff Report on Burrowing Owl Mitigation. Appendix D. Breeding and Non-breeding Season Surveys and Reports. Unpublished report. Sacramento, California, USA. March 7, 2012.

CNDDB (California Department of Fish and Wildlife Natural Diversity Database). 2012. Redlands, Harrison Mountain, San Bernardino North, San Bernardino South, Riverside East, Riverside West, Sunnymead, El Casco, and Yucaipa USGS 7.5-Minute Quadrangles. Sacramento, CA: California Department of Fish and Wildlife, Biogeograpahic Data Branch.

Sibley, D.A. 2001. The Sibley Guide To Birds. National Audubon Society. New York, NY: Alfred A. Knopf, Inc.

Attachment A.
Parcels Excluded for Focused Burrowing Owl Surveys.

(Refer to Figure 1 for corresponding parcel numbers)

1. Two biologists walked 10 meter line transects through the parcel. Patches of sparse ruderal vegetation were present with open areas of exposed ground; however, the parcel was previously graded for development and compact, gravel-embedded soils were present. Approximately 15 gopher burrows were observed in the northeast corner of the parcel, but no useable burrows larger than 11 centimeters (height and width) were located, as specified in the BUOW protocol (CDFG 2012). This parcel is also surrounded on all sides by busy roadways and contains numerous gravel roadways throughout.

2. Two biologists walked 2 meter line transects through the parcel. Ruderal vegetation was present in small amounts; however, no useable burrows or small mammal activity were observed. Disking weed abatement, disturbance from commercial business, vehicle traffic and small extent of foraging habitat make this parcel unsuitable.

3. Two biologists walked 2 meter line transects through the parcel. Low lying ruderal vegetation was present; however, no useable burrows were observed. Soils were compact and potential foraging habitat and prey was limited. This parcel is surrounded on all sides by disturbance from adjacent roads, housing, and commercial development.

4. This parcel is connected to parcel 3 and predominantly consists of compact soil unsuitable for small mammal burrows. Low lying ruderal vegetation was present with large patches of bare ground. Evidence of weed abatement (i.e., disking) of the vegetated areas was observed. A quarter of Parcel 4 was used as overflow parking from the adjacent commercial property.

5. Two biologists walked 5 meter line transects through the parcel. Dense, low growing ruderal vegetation was present; however, no useable burrows were present. Soils were compact and only occasional gopher burrows too small to be used by BUOW were observed.

6. This parcel is the San Bernardino Municipal Complex, which is a manicured, regularly-mowed sports field. Two biologists scanned the parcel and periphery with binoculars. No BUOW, sign, or useable burrows were observed.

7. Two biologists walked 2 meter line transects throughout this parcel, which is adjacent to Sand Creek. This parcel consisted of bare ground with hard compact soils. No foraging habitat was present and no small mammal burrows or burrow surrogates were observed. This parcel is surrounded by residences on the east and west and bisected by Sand Creek. A well-used pedestrian and vehicle access road occurs on both sides of the channel.

8. Two biologists walked 2 meter line transects throughout the parcel, which is also adjacent to Sand Creek. This parcel consisted of bare ground with hard compact soils. No foraging habitat was present and no small mammal burrows or burrow surrogates were observed. It is surrounded by residences on the east and west and bisected by Sand Creek. A well-used pedestrian and vehicle access road occurs on both sides of the channel.

9. This parcel consists of private residences with livestock and horses. Two biologists scanned the entire visible parcel with binoculars. No BUOW, sign, or useable burrows were observed. Soils were very compact and overworked from livestock. Foraging habitat was sparse with predominantly bare ground throughout.

10. Two biologists walked 5 meter line transects through this parcel, which consists of open areas with a riparian drainage bisecting it and two prominent, earthen mounds. Low growing ruderal vegetation was present and several useable California ground squirrel burrows larger than 11centimeters (height and width) were observed. Protocol surveys were conducted throughout this parcel.

11. This parcel is the San Andreas High School sports field. It is manicured and regularly-mowed ornamental grass. Two biologists scanned the parcel with binoculars. No BUOW, sign, or useable burrows were observed.

12. Two biologists walked 3 meter line transects through this parcel. Dense ruderal vegetation was present; however, no open areas for small mammal burrows were observed. It is surrounded by all sides with commercial, residential, and vehicle traffic disturbance.

13. One biologist walked 3 meter line transects through the parcel, which consisted of dense, ruderal vegetation, approximately 4 feet. high. No small mammal activity was observed and no useable burrows were observed.

14. One biologist walked 3 meter line transects through the parcel, which consisted of compact bare ground completely void of vegetation. No fossorial

small mammal burrows were present. This parcel abuts a residential wall and contains soils affected by water runoff.

15. One biologist walked 3 meter line transects through this parcel, which consisted of sparse, ruderal vegetation. Weed abatement (i.e., disking) was apparent. No small mammal burrows were observed. Some rock piles were present that could potentially function as burrow surrogates, although no BUOW or their sign were observed. This parcel is very small and has minimal foraging area that could support BUOW.

16. Two biologists walked 3 meter line transects through this parcel. The ground was bare; soil consistency was loose and not conducive for maintaining burrow structure. Feral house cats were observed during the survey. Evidence of canine scat and tracks was also present. No BUOW, sign, or burrows were observed.

17. One biologist walked 2 meter line transects through this very small parcel adjacent to residential housing. Short, dense ruderal vegetation was present with no open patches of bare ground for small mammal burrows. This parcel is also disturbed by vehicles on the SR-330 on-ramp. No useable burrows were observed and minimal foraging habitat or prey base was present.

18. Two biologists walked 2 meter line transects through this parcel. Dense ruderal vegetation was present, approximately 2 – 4 feet tall. Some small mammal burrows were present; however, no useable burrows were observed. This parcel lies directly adjacent to residences to the north and south.

19. This parcel consists of a regularly-disked field with bare soil and no vegetation. Access was restricted due to disking activities occurring at the time of survey. Two biologists scanned the entire visible parcel with binoculars. No BUOW, sign, or useable burrows were observed. This parcel is adjacent to residential housing and SR-210.

20. This parcel consists of ornamental trees (4 – 5 feet height) and low growing, ruderal non-native grasses. Two biologists scanned the entire visible parcel with binoculars. This parcel is surrounded by SR-210 on all sides. No BUOW, sign, or useable burrows were observed. Regular weed abatement was apparent.

21. This parcel consists of ornamental trees (4 – 5 feet height) and low growing, ruderal non-native grasses. Two biologists scanned the entire visible parcel with binoculars. This parcel is surrounded by SR-210 on all sides. No BUOW,

sign, or useable burrows were observed. Regular weed abatement was apparent.

22. Two biologists walked 2 meter line transects through the parcel. Ruderal vegetation was present; however, no useable burrows were observed. This parcel contained concrete foundations covered by low growing, ruderal vegetation. It is disturbed by vehicles parking on the areas of bare ground. Some gopher holes were present, although none were a useable size for BUOW.

23. This parcel consists of ornamental trees (4 – 5 feet height) and low growing, ruderal non-native grasses. Two biologists scanned the entire visible parcel with binoculars. This parcel is surrounded by SR-210 on all sides. No BUOW, sign, or useable burrows were observed. Regular weed abatement was apparent.

24. This parcel consists of ornamental trees (4 – 5 feet height) and low growing, ruderal non-native grasses. Two biologists scanned the entire visible parcel with binoculars. This parcel is surrounded by SR-210 on all sides. No BUOW, sign, or useable burrows were observed. Regular weed abatement was apparent.

25. This parcel consists of Thompson Elementary School, which is a maintained ornamental grass field that is regularly mowed. Two biologists scanned the entire visible parcel with binoculars. No BUOW, sign, or useable burrows were observed. The field to the south is disked regularly. No vegetation in this portion of the field was present and no BUOW, sign, or useable burrows were observed. This parcel is surrounded by residential properties, schools, and Church Ave.

26. One biologist walked 2 meter line transects through this small parcel. Short, ruderal vegetation was present; however, no small mammal burrows were present. This parcel contained concrete foundations for housing development. Foraging habitat was minimal and residential disturbance was present on three sides.

27. Two biologists walked 5 meter line transects through this parcel. The northern quarter of the parcel consisted of hard, compact bare ground with no burrows. Irrigation runoff from an adjacent commercial development created deep erosion channels in the northeastern portion of the parcel. No BUOW, sign, or useable burrows were observed. The remaining areas consisted of dense, low growing ruderal vegetation. Remnants of historical orchard trees were present and regular disking was apparent. Very few open patches of ground were

present and only gopher holes too small for BUOW were present. Bee farming boxes and equipment were also present on the southern corner.

28. Two biologists walked 5 meter line transects through this parcel. It consisted of bare ground with hard compact soils and no small mammal burrows. Dense ruderal vegetation was present in patches; however, no useable burrows were observed. Disturbance was present from regular disking, vehicle travel that bisects the parcel, and trash dumping.

29. Two biologists walked 3 meter line transects through this parcel. Patches of dense ruderal vegetation, trees 3 – 5 feet tall, and hard compact soils were present. A few gopher burrows were observed; however, no useable burrows were present.

30. This parcel consisted of an historical agriculture field that is regularly disked and has soft, bare ground. Two biologists walked 5 meter line transects through the parcel. No small mammal burrows were observed. No BUOW, sign, or useable burrows were observed and minimal foraging habitat was present. This parcel is frequently disturbed from vehicle traffic and disking.

31. This parcel consists of regularly disked/cleared detention basins with loose, fluvial/sandy soils and low growing ruderal vegetation. It is apparently flooded following significant rainfall. Access was restricted due to fencing and private property. Two biologists scanned the entire visible parcel with binoculars on four separate occasions. No small mammals were observed during the surveys. No BUOW, sign, or useable burrows were observed, and no BUOW sign was observed.

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Appendix F Bat Habitat Suitability Report

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Bat Habitat Suitability Report

State Route-210 (SR-210) Mixed Flow Lane Addition Project

San Bernardino County, California

December 2012

URS

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INTRODUCTION

This report discusses the results of the bat habitat suitability assessment conducted on September 26, October 10 and 12, 2012 by URS Corporation (URS) for the State Route-210 (SR-210) Mixed Flow Lane Addition Project (Project). The Project is located in San Bernardino County and extends from San Bernardino Avenue in the city of Redlands northwest to Highland Boulevard, on the United States Geological Survey (USGS) Redlands and Harrison Mountain 7.5-minute topographic quadrangle maps. The bat habitat suitability assessments were conducted within bridge structures having suitable habitat in the Project study area limits. The study area includes the proposed permanent roadway structures and an approximate 500-foot buffer at 14 bridges/overpasses along the Project alignment. The study area is further divided into survey areas, with each bridge referred to as a survey area. No bats were observed; however, a limited amount of guano was detected in the survey area.

SURVEY AREA

A total of 15 survey area locations with potentially suitable bat habitat were identified and evaluated along the Project alignment (Figure 1). These survey areas are within the Harrison Mountain Township 1 North, Range 3 West, Sections 30 – 32; Redlands Township 1 North, 3 West, Sections 31, 32, 33; and Redlands Township 1 South, 3 West, Sections 4, 9, 16, 21, San Bernardino Baseline and Meridian, as depicted on the USGS 7.5-minute topographic quadrangle maps.

METHODS

A bat habitat assessment survey was conducted for the Project by URS biologists Greg Hoisington and Carol Thompson. Surveys were conducted on September 26, October 10 and 12, 2012 (Table 1). California Department of Transportation biologists Kyle Myrick and Adam Compton assisted on September 26.

The habitat assessment was conducted at each bridge within the biological study area having suitable habitat that could potentially be utilized by roosting day and/or night bats (Figure 1). Suitable habitat was identified by the presence of crevices and openings where bats could roost on bridges along SR-210 within the study area. The assessment included a search for bats or their sign (e.g., guano mounds, wall staining) through inspection of crevices and openings and ground cover below these areas.

Table 1. Assessment Schedule and Conditions

Date	Time	Temperature (Fahrenheit)	Sky	Personnel
26 September 2012	1000 – 1500	70 – 88	Sunny	GH, CT, KM, AC
10 October 2012	1100 – 1245	70 – 75	Mostly to Partly Cloudy	GH
12 October 2012	1210 – 1300	60 – 64	Overcast to Mostly Cloudy	GH

CT=Carol Thompson, GH=Greg Hoisington, KM=Kyle Myrick, AC=Adam Compton

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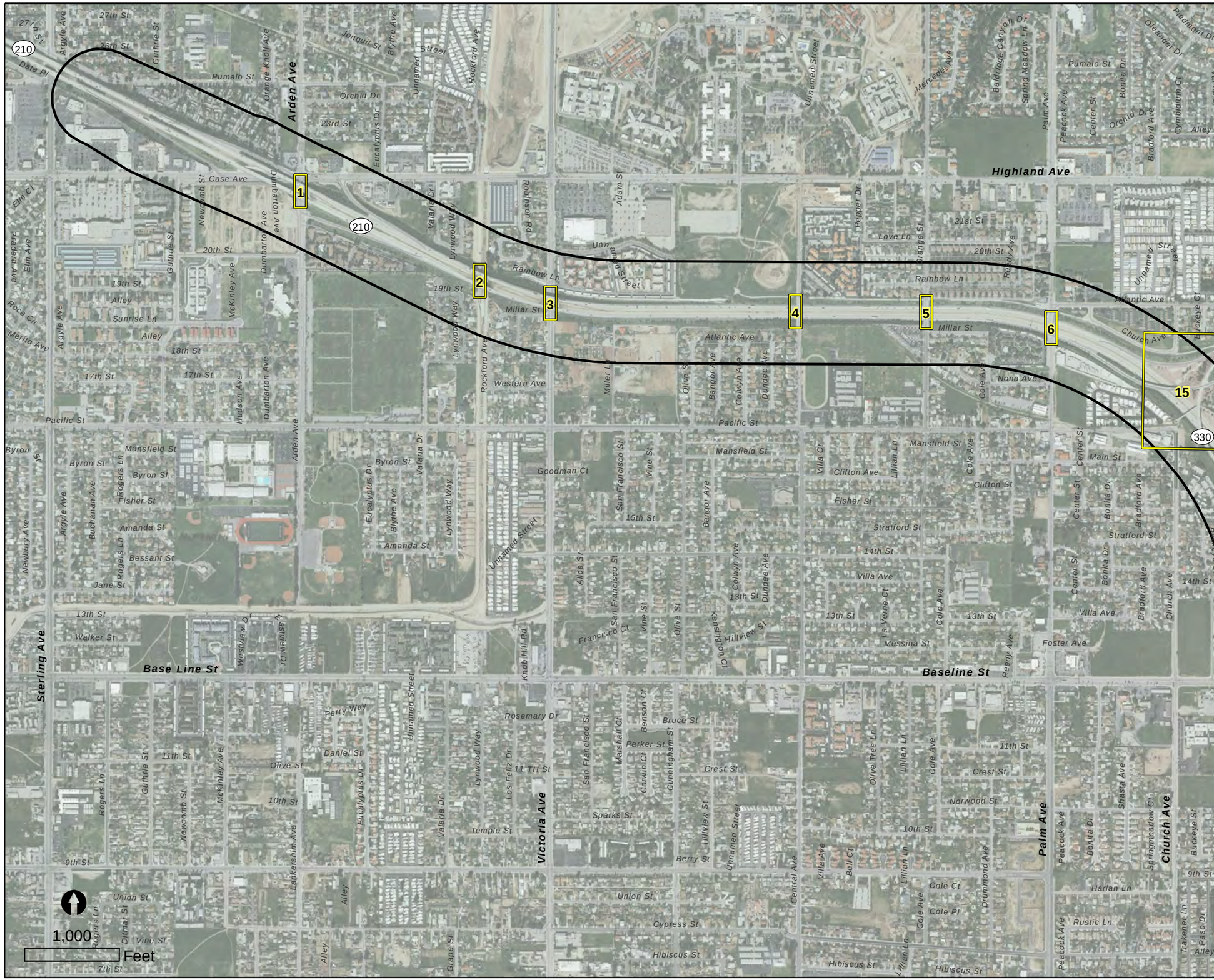

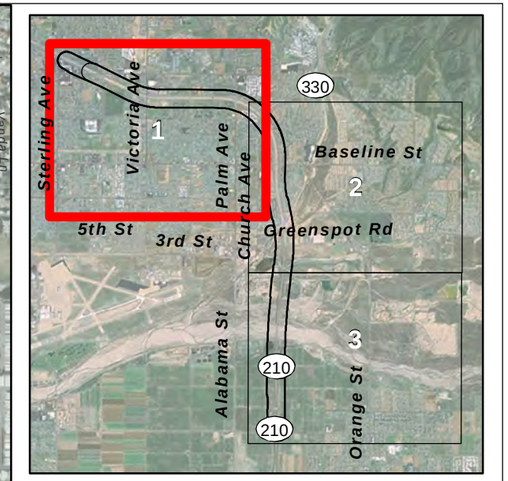

Bat Habitat Assessment Areas

Study Area (500-ft Buffer)

Sheet 1 of 3

Figure 1

Bat Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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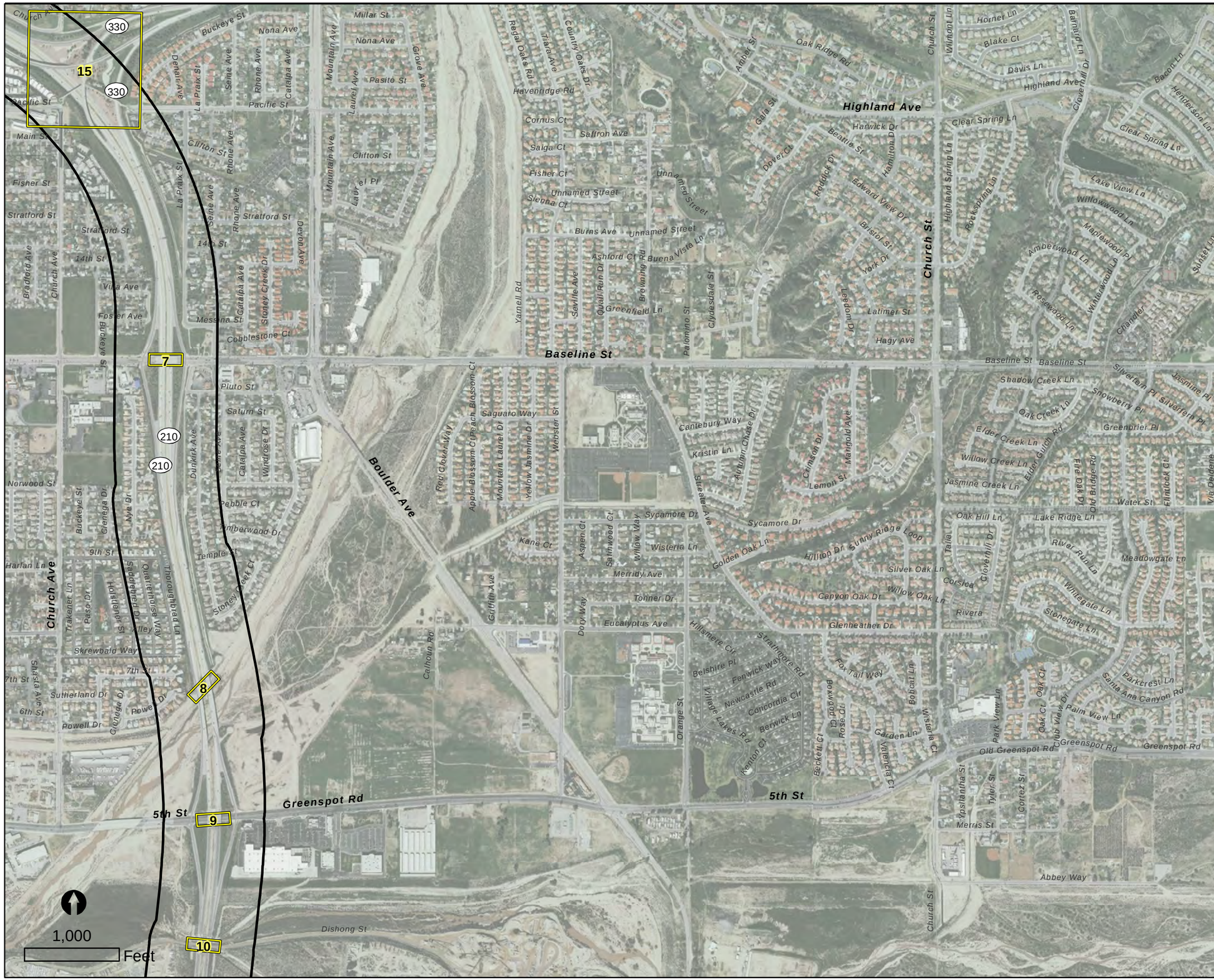

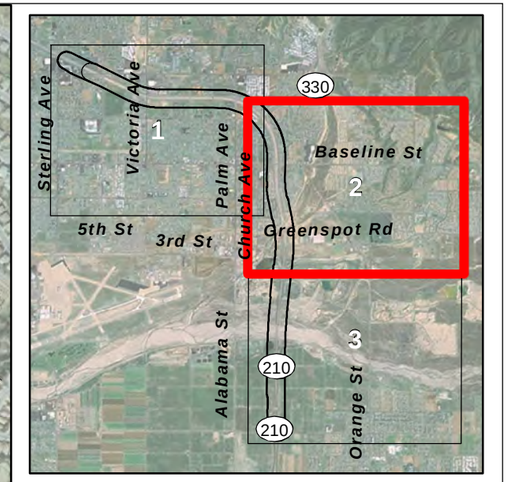

Bat Habitat Assessment Areas

Study Area (500-ft Buffer)

Sheet 2 of 3

Figure 1

Bat Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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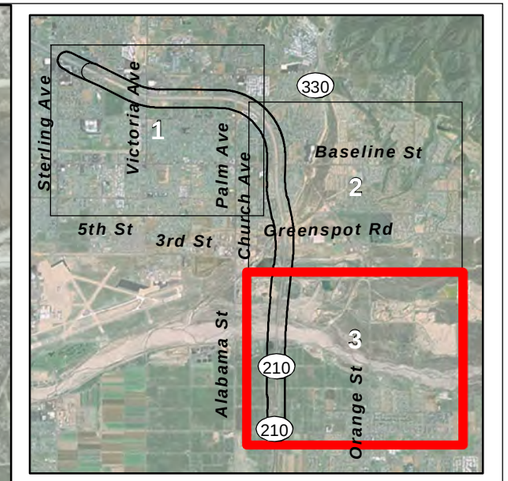

Bat Habitat Assessment Areas

Study Area (500-ft Buffer)

Sheet 3 of 3

Figure 1

Bat Habitat Assessment

SR-210 Mixed Flow Lane Addition Project

URS

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Fifteen survey areas were inspected for potential presence and roosting habitat and are listed in Table 2 (see Figure 1 for corresponding bridge locations).

Table 2. Bat Habitat Assessment Survey Area Locations

Area	Assessment Area	Township	Range	Section	Quadrangle Map
1	Arden Ave Undercrossing	01N	03W	30	Harrison Mtn
		01N	03W	31	Harrison
2	Sand Creek Bridge	01N	03W	31	Harrison
3	Victoria Ave Undercrossing	01N	03W	31	Harrison
4	Central Ave Overcrossing	01N	03W	32	Harrison
5	Orange Street Overcrossing	01N	03W	32	Harrison
6	Palm Ave Overcrossing	01N	03W	32	Harrison
7	Baseline Street Overcrossing	01S	03W	04	Redlands
		01N	03W	33	Harrison
8	City Creek Bridge	01S	03W	04	Redlands
9	5th Street Overcrossing	01S	03W	04	Redlands
10	Dishong St. (Haul Rd.) Undercrossing /Plunge Creek Bridge	01S	03W	09	Redlands
11	Southern Haul Rd. Undercrossing	01S	03W	09	Redlands
12	Santa Ana River Bridge	01S	03W	09	Redlands
13	Pioneer Avenue Undercrossing	01S	03W	16	Redlands
14	San Bernardino Avenue Undercrossing	01S	03W	16	Redlands
		01S	03W	21	Redlands
15	SR-330/SR-210 Interchange	01N	03W	33	Harrison

RESULTS

All 15 survey areas within the Project footprint had the potential to support roosting bats; however, bats were not directly observed at any location (Table 3). Limited guano was observed at the eastern bridge abutment and column on the westbound City Creek Bridge.

Table 3. Assessment Date, Weather Conditions, Habitat Presence, and Personnel

Survey Area	Date	Survey Location	Habitat Presence	Personnel
1	26 September 2012	Arden Ave Undercrossing	HP	GH, CT, KM, AC
2	26 September 2012	Sand Creek Bridge	HP	GH, CT, KM, AC
3	26 September 2012	Victoria Ave Undercrossing	HP	GH, CT, KM, AC
4	26 September 2012	Central Ave Overcrossing	HP	GH, CT, KM, AC
5	12 October 2012	Orange Street Overcrossing	HP	GH
6	26 September 2012	Palm Ave Overcrossing	HP	GH, CT, KM, AC
7	26 September 2012	Baseline Street Overcrossing	HP	GH, CT, KM, AC
8	26 September 2012	City Creek Bridge	HP, P	GH, CT, KM, AC
9	26 September 2012	5th Street Overcrossing	HP	GH, CT, KM, AC
10	10 October 2012	Dishong St. (Haul Rd.) Undercrossing/ Plunge Creek Bridge	HP	GH
11	10 October 2012	Southern Haul Rd. Undercrossing	HP	GH
12	10 October 2012	Santa Ana River Bridge	HP	GH
13	26 September 2012	Pioneer Avenue Undercrossing	HP	GH, CT
14	26 September 2012	San Bernardino Avenue Undercrossing	HP	GH, CT
15	12 October 2012	SR-330/SR-210 Interchange	HP	GH

Habitat Present (HP): Habitat is present within the study area
Present (P): The species or sign was observed within the study area

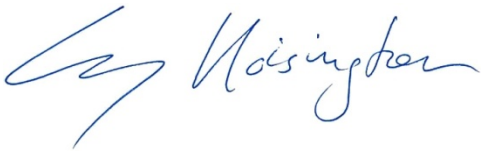
Although limited guano was observed on the City Creek westbound bridge, bat roosts can change locations seasonally and there is a potential for bat species to utilize any

of the bridges, culverts, and large trees in the vicinity of the Project for day and/or night roosting (Table 3). As a result, an additional daytime assessment should be conducted by a qualified bat biologist prior to the start of construction to reexamine structures and trees that are suitable for bat use. If bat sign is observed at that time, a nighttime emergence survey utilizing a combination of exit counts and acoustic surveys would be needed to determine the approximate number and species of bats utilizing crevices or trees for day and/or night roosting. The acoustic survey assesses the frequency of sounds emitted by the bats and is used to determine the species of bats that are present. If bats are present in structures that will be directly affected by construction activities, exclusionary devices may need to be placed to avoid potential direct impacts to bats. If bats are present in trees that will be removed or directly affected by construction activities, vegetation clearance may need to occur at a time of day that would avoid potential direct impacts to bats.

Bats present during the spring and summer months may be maternity colonies or groups. Species that commonly utilize structures such as bridges for day roosting include the Mexican free-tailed bat (*Tadarida brasiliensis*), big brown bat (*Eptesicus fuscus*), pallid bat (*Antrozous pallidus*), and Yuma myotis (*Myotis yumanensis*). Other species that may use these types of roosts for day-roosting include small-footed myotis (*Myotis ciliolabrum*), California myotis (*Myotis californicus*), western mastiff bat (*Eumops perotis*), and western pipistrelle (*Parastrellus hesperus*).

If you have any questions regarding this report, please contact Greg Hoisington at (714) 433-7678 or greg.hoisington@urs.com.

Sincerely,



Greg Hoisington
Natural Resources Division Manager
URS Corporation
2020 East 1st Street, Suite 400
Santa Ana, CA 92705

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Appendix G Jurisdictional Delineation Report

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SR-210 Mixed Flow Lane Addition Project ***JD Report***

Jurisdictional Delineation Report

San Bernardino County, California

District 08 – San Bernardino/Riverside

08-SBD-210-PM R25.0/R33.2

0C7000

November 2013

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Jurisdictional Delineation Report

SR-210 Mixed Flow Lane Addition Project

San Bernardino County, California

District 08 – San Bernardino/Riverside

08-SBD-210-PM R25.0/R33.2

0C7000

November 2013

STATE OF CALIFORNIA
Department of Transportation

Prepared By: _____ Date: _____
Greg Hoisington
Natural Resources Manager
URS Corporation
714.433.7678

Approved By: _____ Date: _____
Kyle Myrick
Environmental Planner, Biologist
Biological Sciences and Permits Branch
District 8/ Riverside & San Bernardino Counties
909.388.2070

Approved By: _____ Date: _____
Scott Quinnell
Senior Environmental Planner, Biologist
Biological Sciences and Permits Branch
District 8/ Riverside & San Bernardino Counties
909.388.6936

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CFG Code	California Fish and Game Code
CFR	Code of Federal Regulations
CWA	Clean Water Act
CWC	California Water Code
EPA	United States Environmental Protection Agency
GIS	Geographic Information System
GPS	Global Positioning System
HUC	Hydrologic Unit Code
LSAA	Lake and Streambed Alteration Agreement
NWI	National Wetlands Inventory
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	SR-210 Mixed Flow Lane Addition Project
Porter-Cologne	Porter-Cologne Water Quality Control Act
Rapanos Decision	John A. Rapanos v. United States; and June Carabell v. United States Army Corps of Engineers
RHA	Rivers and Harbor Act of 1899
RPW	Relatively Permanent Water
RWQCB	Regional Water Quality Control Board
SANBAG	San Bernardino Associated Governments
SR	State Route
SSURGO	Soil Survey Geographic Database
Study area	Permanent disturbance footprint and buffer
SWANCC	Solid Waste Agency of Northern Cook County vs. USACE
SWRCB	State Water Resources Control Board
TNW	Traditional Navigable Water
URS	URS Corporation
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WoUS	Waters of the United States
WoS	Waters of the State

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1.0 INTRODUCTION AND SUMMARY

The California Department of Transportation (Caltrans), in cooperation with San Bernardino Associated Governments (SANBAG), proposes to construct one new mixed flow lane in each direction within the median of State Route (SR) 210 from Highland Avenue to San Bernardino Avenue in the cities of San Bernardino, Highland, and Redlands, located in the County of San Bernardino, California (Figures 1 and 2).

This Jurisdictional Delineation Report summarizes: (1) U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA); (2) Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA and Section 13050(e) (et seq.) of the California Water Code (CWC) via the Porter-Cologne Water Quality Control Act (Porter-Cologne); and (3) California Department of Fish and Wildlife (CDFW) jurisdiction pursuant to Section 1602 of the California Fish and Game Code (CFG Code) for the SR-210 Mixed Flow Lane Addition Project (Project).

A total of 45.821 acres of potential USACE jurisdictional non-wetland waters and 2.199 acres of wetlands were delineated in the study area. The delineation was performed according to the 1987 USACE Wetland Delineation Manual (EL 1987).

RWQCB jurisdiction in the study area includes the same potential USACE jurisdiction (45.821 acres non-wetland, and 2.199 acres wetland) as well as 0.250 acre of potential Porter-Cologne jurisdiction.

Potential CDFW jurisdiction totals 59.346 acres of non-riparian channel bed and bank and 2.287 acres of riparian channel bed and bank.

CWA Section 404 and 401 permits and a Lake and Streambed Alteration Agreement (LSAA) will be required to implement the Project as a result of impacts to aquatic resources within the study area. Temporary and permanent impacts to jurisdictional resources will be determined and mitigated in the permitting phase.

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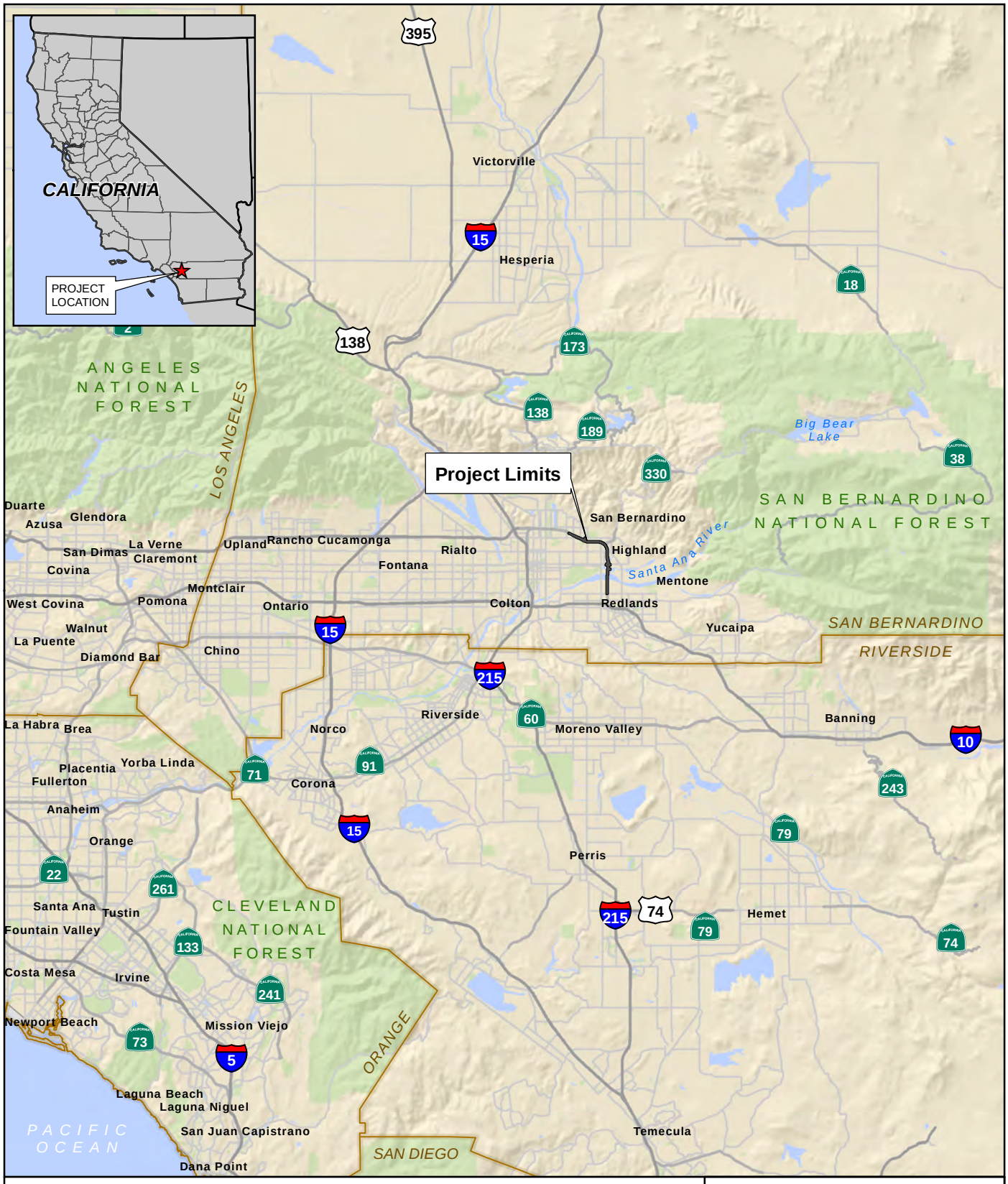

FIGURE 1
Project Regional Location

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Study Area

N

0 4,000 Feet

FIGURE 2
Project Vicinity

SR-210 Mixed Flow Lane Addition Project

Caltrans

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2.0 PROJECT DESCRIPTION AND LAND USE

2.1 PROJECT DESCRIPTION

This Draft Jurisdictional Delineation Report addresses proposed improvements to State Route 210 (SR-210) in the cities of Highland, Redlands and San Bernardino. The improvements are located within the jurisdiction of the California Department of Transportation (Caltrans) District 8, from SR-210 post mile (PM) R25.0 to R33.2. The project proposes to add one mixed flow lane in each direction within the median of SR-210 from Highland Avenue to San Bernardino Avenue. The total length of the proposed project is approximately 8.2 miles. The proposed improvements would require widening of the Highland Avenue undercrossing, Sand Creek bridge, Victoria Avenue undercrossing, City Creek bridge, 5th Street undercrossing, Plunge Creek bridge, Access Road undercrossing, Santa Ana River bridge and Pioneer Avenue undercrossing. Additional project improvements include creating auxiliary lanes between the Base Line and 5th Street interchanges, adding an acceleration lane at the eastbound 5th Street on-ramp, and adding a deceleration lane at the eastbound Highland off-ramp. The proposed improvements would serve as a gap closure to provide a continuous six-lane freeway from Interstate 215 to Interstate 10.

2.2 PROJECT LOCATION AND SURROUNDING LAND USE

The Project is located in the vicinity of the City of Highland, within the United States Geological Survey (USGS) *Redlands* and *Harrison Mountain* 7.5-Minute Topographic Quadrangles (Figures 1 and 2). It occurs at an approximate elevation range between 1,180 and 1,260 feet. The longitude and latitude coordinates near the center of the study area are 34.117021 and -117.200351. The Project is composed primarily of developed areas, and to a lesser extent, open areas mainly associated with creeks and rivers. Land use within the study area includes dense residential and commercial development, disturbed open areas, mining, agriculture, and public infrastructure.

3.0 REGULATORY OVERVIEW

3.1 REVIEW OF USACE JURISDICTION PURSUANT TO SECTION 404 OF THE CWA

3.1.1 Waters of the United States

The USACE regulates the discharge of dredged and/or fill material into Waters of the United States (WoUS) pursuant to Section 404 of the CWA. The USACE has authority to permit the discharge of dredged or fill material in WoUS under Section 404 of the CWA and to permit work and the placement of structures in navigable WoUS under the Rivers and Harbors Act of 1899 (RHA).

Ordinary High Water Mark

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, including intermittent streams, extend to the Ordinary High Water Mark (OHWM). The OHWM is defined as "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 Code of Federal Regulations [CFR] 328.3[e]). In 2005, the USACE issued a Regulatory Guidance Letter (05-05) and added the following additional indicators of an OHWM: wracking, vegetation matted down, bent, or absent, sediment sorting, leaf litter disturbed or washed away, scour, deposition, multiple observed flow events, bed and banks, water staining, and changes in plant communities (USACE 2005).

USACE-Defined Wetlands

Wetlands are defined in 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The methods in the USACE Wetland Manual generally require that in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit minimal hydric characteristics (EL 1987). Although the manual provides great detail in methods and allows for varying special conditions, a wetland should normally meet each of the following three criteria:

- 50 percent or greater of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands [Lichvar and Kartesz 2009]);

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions). Such soils (i.e., hydric soils) have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season; and

- Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year (approximately 18 days in southern California).

Note that there are some exceptions to the above wetland criteria as specified in the Arid West Regional Supplements (USACE 2006; USACE 2008a), such as areas that have problematic soils (e.g., sandy soils) that can still be classified as wetlands.

3.1.2 USACE Terminology

The following definitions are from Rapanos Guidance Memoranda (USACE 2007b, 2008b):

"Adjacent," as defined in USACE and Environmental Protection Agency (EPA) regulations, means "bordering, contiguous, or neighboring." Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are "adjacent wetlands."' Wetlands that are not separated from a tributary by upland features, such as a berm or dike, are considered "abutting."

A "tributary," as defined in the Rapanos Guidance Memoranda, means a natural, man-altered, or man-made water body that carries flow directly or indirectly into traditional navigable waters (TNW). For purposes of determining "significant nexus" with a traditional navigable water, a "tributary" is the entire reach of the stream that is of the same order (i.e., from the point of confluence, where two lower order streams meet to form the tributary, downstream to the point where the tributary enters a higher order stream).

A water body is considered to have a "significant nexus" with a TNW if its flow characteristics and functions, in combination with the ecologic and hydrologic functions performed by all wetlands adjacent to such a tributary, affect the chemical, physical, and biological integrity of a downstream TNW. A "TNW" includes all of the "navigable waters of the United States," defined in 33 C.F.R. § 329 and by numerous decisions of the Federal courts, plus all other waters that are navigable-in-fact.

In the context of CWA jurisdiction following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States (Rapanos Decision), a water body is "relatively permanent" if its flow is year round or its flow is continuous at least "seasonally," (i.e., 3 months or longer). Wetlands adjacent to a "relatively permanent" tributary are also jurisdictional if those wetlands directly abut such a tributary.

3.2 Review of RWQCB Jurisdiction Pursuant to Section 401 of the CWA and Porter-Cologne

The RWQCB regulates fills to WoUS through CWA Section 401, which in most instances, is equivalent to CWA Section 404 jurisdiction. In the absence of CWA Section 404 jurisdiction over isolated waters or other Waters of the State (WoS), RWQCB jurisdiction over WoS is extended through Porter-Cologne. WoS are defined in Section 13050(e) of the CWC and include "any surface water or groundwater, including saline waters, within the boundaries of the state". Porter-Cologne provides a comprehensive framework to protect water quality in California. It requires that any entity who plans to discharge waste where it might adversely affect WoS must first notify the RWQCB, which may impose requirements to protect water quality.

The Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (SWANCC) decision created "gaps" relating to isolated waters that are no longer subject to the CWA. In response, the State Water Resources Control Board (SWRCB) issued a 2004 Memorandum stating that RWQCBs should consider setting a higher regulatory priority on discharges to "isolated waters" than to similar discharges to federally-protected waters of similar value (SWRCB 2004). This memorandum further states that dredging, filling, or excavation of isolated waters constitutes a discharge of waste to WoS. Among the procedures recommended in the memorandum was that the RWQCB refer to the same regulatory considerations generally applied to the issuance of Section 401 permits (SWRCB 2004). According to the SWRCB, the SWANCC decision did not affect the authority of the state to regulate discharges to isolated, non-navigable waters of the state and had no impact upon the RWQCB's authority to act under state law (SWRCB 2001).

3.3 REVIEW OF CDFW JURISDICTION PURSUANT TO SECTION 1602 (ET SEQ.). OF THE CFG CODE

Sections 1602 et seq. of the CFG Code regulates any proposed activity that may substantially modify, divert, obstruct, or any activity that causes changes to the flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. According to the 14 California Code of Regulations (CCR) 1.72, a "stream" (including creeks and rivers) is defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW jurisdiction within altered or artificial waterways is generally based upon the value of those waterways to fish and wildlife. For clarification, the CDFW Legal Advisor prepared the following opinion (ESD-CDFG 1994):

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects, and riparian vegetation will be treated like natural waterways.

- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses should be treated by [CDFW] as natural waterways.

- Artificial waterways without the attributes of natural waterways should generally not be subject to CFG Code provisions.

CDFW jurisdictional limits also include artificial stock ponds and irrigation ditches constructed within uplands, and outer drip line limits of adjacent riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status or its location beyond the defined bed, bank, or channel.

4.0 METHODS

4.1 LITERATURE REVIEW

Prior to conducting fieldwork, resource databases, aerial photos, historical aerial photos, USGS topographic maps, and other available and relevant data were reviewed to determine watershed characteristics and the locations/types of aquatic resources that may be present within the study area. These resources included the following:

- *Harrison Mountain* and *Redlands* USGS topographic quadrangle maps
- Aerial photographs
- Historical aerial photographs
- Natural Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database (USDA-NRCS 2012)
- U.S. Department of Agricultural, NRCS Geographic Information Systems (GIS) Watershed data
- National Wetlands Inventory (NWI) (USFWS 2012)

The intent of the literature review was to determine the probability and locations where aquatic resources could occur within the study area.

4.2 CWA SPECIFIC PROCEDURES AND DATA COLLECTION METHODS

A routine on-site delineation of the study area was conducted by URS Corporation (URS) periodically between June and October, 2012 and also October, 2013 in order to determine the presence/absence and boundaries of potential aquatic resources within the study area. Survey dates included the following:

- June 28, 2012
- August 1, 2012
- August 22, 2012
- October 10, 2012
- October 12, 2012
- October 3rd, 2013

The study area generally consisted of a 100-foot buffer from the outside edge of proposed permanent structures. The buffer was extended within some areas to accommodate potential design changes and construction access. Areas with an extended buffer included Sand Creek and also City Creek south to the southern bank of the Santa Ana River. Total CWA jurisdictional limits were delineated within the study area for WoUS and WoS based on the presence of an OHWM and/or wetland boundaries following the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplements (USACE 2006; USACE 2008a). Aquatic resources were surveyed on foot using a Trimble unit with sub-meter accuracy; where access was not possible (e.g., no permission to enter, fences, locked gates), aquatic features were delineated on aerial maps at a 1:200 scale and subsequently digitized with GIS. Identification and location of the OHWM followed guidance provided in Lichvar and Wakely (2004), USACE Regulatory Guidance Letter 05-05 (2005), Lichvar et al. (2006), and Lichvar and McColley (2008). The dimensions (linear length and area) of each feature were then calculated with GIS analysis in order to determine total CWA jurisdiction within the study area.

The evaluation process for USACE-defined wetlands considered vegetation, soils, and hydrological parameters of suspected wetland features within the study area using the methods for routine determinations from the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplements (USACE 2006; USACE 2008a). Potential wetland and WoUS features were also evaluated using USACE and EPA CWA jurisdiction guidance documents following the Rapanos Decision (USACE 2007a; USACE 2007b; USACE 2008b).

4.2.1 Vegetation

Plant species were determined based on the *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012) and the wetland indicator status of plant species was based on Lichvar (2012). During the field delineation, plants were categorized according to their probability to occur in wetlands versus non-wetlands using the categories listed in Table 1 (EL 1987; Lichvar 2012).

Table 1. Summary of Wetland Indicator Status

Category	Probability
Obligate Wetland (OBL)	Almost always is a hydrophyte, rarely in uplands
Facultative Wetland (FACW)	Usually is a hydrophyte but occasionally found in uplands
Facultative (FAC)	Commonly occurs as either a hydrophyte or non-hydrophyte
Facultative Upland (FACU)	Occasionally is a hydrophyte but usually occurs in uplands
Obligate Upland (UPL)	Rarely is a hydrophyte, almost always in uplands

The wetland vegetation criterion was assumed to be met if the Dominance Test using the 50/20 rule was satisfied (i.e., any species or group of species that contributed to a cumulative total of 50 percent of the total dominant coverage, plus any other individual species comprising at least 20 percent coverage) (USACE 2008a). Areas supporting a dominance of hydrophytes were further examined for indicators of hydric soils.

4.2.2 Soils

Soil texture, matrix, redoximorphic features, (e.g., mottles) and the presence of subsoil layers impervious to water infiltration were documented from soil pits. Soils were examined for positive hydric soil indicators (i.e., low chroma, mottles, and iron or manganese concretions), histic epipedons, organic layers, gleization, or sulfuric odor. Soil color and characteristics were determined from moist soil samples using *Munsell Soil Color Charts* (Munsell Color 2000). Soils were evaluated by digging pits to a depth of approximately 20 inches, where feasible, and Global Positioning System (GPS) position data were collected at each soil pit. Specific pit depths, soil color and texture, and other soil data obtained at each soil sample location are provided in Appendix A. Paired upland and wetland soil pits were evaluated to determine wetland boundaries, where appropriate. Hydric soil assessments were predominately based upon the guidance provided in the *Field Indicators of Hydric Soils* (USDA-NRCS 2010).

4.2.3 Hydrology

Hydrology was evaluated in areas suspected of being seasonally inundated and/or saturated to within 12 inches of the surface during the growing season. Hydrological information for potentially jurisdictional features was determined by field indicators such as surface scour marks, vegetation matting, debris drift lines, sediment deposits, and watermarks. Recent precipitation data were reviewed to evaluate the frequency and amount of rainfall events within the study area and on surrounding lands prior to surveys (NWS 2012).

Each drainage feature was classified as a Relatively Permanent Water (RPW) (i.e., flowing for 3 months or more per year) or a non-RPW (i.e., seasonal, flowing less than 3 months). Non-RPWs include intermittent (i.e., water flows seasonally) or ephemeral (i.e., water flows only during and immediately following rain events). These flow classifications were determined based on field observations and review of recent precipitation (NWS 2012).

4.2.4 Significant Nexus with a Traditional Navigable Water

The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine if they have a significant nexus with a TNW (USACE 2008a):

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to, but that do not directly abut, a relatively permanent, non-navigable tributary.

In general, the USACE does not assert jurisdiction over the following features (USACE 2007a):

- *Ditches*. "Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water (greater than 3 months) generally are not jurisdictional under the CWA, because they are not tributaries or they do not have a significant nexus to TNWs."
- *Swales*. "Swales are generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on relatively flat slopes and typically have grass or other low-lying vegetation throughout the swale. Swales are generally not WoUS because they are not tributaries or they do not have a significant nexus to TNWs."

The USACE will apply the significant nexus standard as follows:

- A significant nexus analysis assesses the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNW. Significant nexus includes consideration of hydrologic and ecologic factors.

4.3 CDFW Specific Procedures and Data Collection Methods

Suspected CDFW jurisdictional areas were assessed in the field for the presence of definable streambeds (i.e., bed, bank, and channel) and any associated riparian habitat. Streambeds and suspected riparian habitats were evaluated based on CDFW criteria from the CFG Code (Section 1602 et seq.) and guidance described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (ESD-CDFG 1994). Aquatic resources were mapped in the field with a Trimble GeoXH sub-meter GPS based on the top-of-bank, or outer dripline of associated riparian vegetation when present. Vegetation within and adjacent to jurisdictional features were recorded based on Baldwin et al. (2012).

5.0 RESULTS

This section presents the results of the delineation of potential USACE, RWQCB, and CDFW jurisdiction within the study area. A summary of jurisdiction is listed in Table 2.

5.1 VEGETATION COMMUNITIES

Vegetation communities/land cover types within, and adjacent to, jurisdictional resources include the following:

- Arroyo Willow Thicket/Disturbed Arroyo Willow Thicket
- California Buckwheat Scrub/Disturbed California Buckwheat Scrub
- Mulefat Thicket/Disturbed Mulefat Thicket
- Scalebroom Scrub/Disturbed Scalebroom Scrub
- Eucalyptus Grove
- Ruderal/Disturbed/Developed/Ornamental
- Agriculture
- Open Water
- Unvegetated Channel/Wash

All plant species observed within the study area are provided in Appendix C.

5.1.1 Arroyo Willow Thicket/Disturbed Arroyo Willow Thicket

Arroyo Willow Thicket is a riparian shrubland characterized by emergent trees dominated by arroyo willow (*Salix lasiolepis*), with an open to continuous canopy (Sawyer et al. 2009). Within the study area, this habitat is dominated by open stands of arroyo willow and mulefat (*Baccharis salicifolia* ssp. *salicifolia*). Disturbance within this community varied throughout the study area, with more disturbed areas being dominated by non-native species including castor bean (*Ricinis communis*) and Mexican fan palm (*Washingtonia robusta*).

5.1.2 California Buckwheat Scrub/Disturbed California Buckwheat Scrub

California Buckwheat Scrub is a shrubland dominated by California buckwheat (*Eriogonum fasciculatum*) with a continuous to intermittent canopy cover and highly variable herbaceous understory (Sawyer et al. 2009). Within the study area, this vegetation type is dominated by California buckwheat with other native shrubs filling in the canopy, including California sagebrush (*Artemisia californica*) and deerweed (*Acmispon glaber*). Disturbance within the study area varied for this vegetation type and was noted by the decreased canopy cover and understory dominance by non-native grasses.

5.1.3 Mulefat Thicket/Disturbed Mulefat Thicket

Mulefat Thicket is a riparian and upland shrubland dominated by mulefat with a continuous canopy layer and sparse understory (Sawyer et al. 2009). Within the study area, this vegetation type was dominated by continuous, nearly monotypic stands of mulefat, with occasional arroyo willow and sandbar willow (*Salix exigua*) saplings intermixed. Disturbance within the study area was variable for this vegetation type and was noted by thinning mulefat canopy and the addition of invasive species including tamarisk (*Tamarix ramossisima*), castor bean, and Mexican fan palm.

5.1.4 Scalebroom Scrub/Disturbed Scalebroom Scrub

Scalebroom Scrub, also referred to as Riversidean Alluvial Fan Sage Scrub, is a shrubland dominated by scalebroom (*Lepidospartum squamatum*) with an open to continuous canopy and variable understory (Sawyer et al. 2009). It is most often associated with alluvial soils along benches within the flood zone of washes and rivers in arid zones. CDFW classifies this vegetation type as a sensitive vegetation community. Within the study area, this was the dominant vegetation type along the benches of the Santa Ana River, City Creek, and Plunge Creek. Associated species within the study area include Our Lord's candle (*Hesperoyucca whipplei*), yerba santa (*Eriodictyon trichocalyx*), and California buckwheat. As with the other vegetation types within the study area, disturbance was varied and noted by the presence of a lower density canopy cover and dominance of non-native grasses in the understory.

5.1.5 Eucalyptus Grove

Eucalyptus Grove is a woodland vegetation type dominated by non-native eucalyptus trees (*Eucalyptus* ssp.) that have become naturalized. The shrub and herbaceous layers are sparse (Sawyer et al. 2009). This vegetation type occurs near the southern extent of the study area and has likely become naturalized from windbreak stands that were planted adjacent to agricultural areas.

5.1.6 Ruderal/Disturbed/Developed/Ornamental

The Ruderal/Disturbed/Developed/Ornamental cover class includes areas that have been subjected to various degrees of anthropogenic impacts. Ruderal areas are usually fallow agricultural fields, or heavily disturbed areas dominated by non-native vegetation. Disturbed areas are usually unvegetated or sparsely vegetated areas that are disturbed on a continuous basis. Developed areas have been altered for use as roads, housing, or commercial uses. Ornamental areas contain landscaping with mostly non-native trees and shrubs that are regularly maintained. These vegetation types were found throughout the study area.

5.1.7 Agriculture

Agriculture within the study area consists mostly of citrus orchards. These areas are regularly maintained and understory was minimal, consisting mostly of scattered, non-native weeds.

5.1.8 Open Water

Open water within the study area was limited to active channels within Plunge Creek and City Creek during surveys. During the survey period, no water was observed within the Santa Ana River sections within the study area. Open water habitat fluctuates by season and by year within the study area depending on precipitation.

5.1.9 Unvegetated Channel/Wash

The Unvegetated Channel/Wash cover class includes areas where regular scouring from periods of high water flow within the Santa Ana River, City Creek, Plunge Creek, and other drainage channels throughout the study area prevented the establishment of vegetation. These areas were characterized by riverwashed rocks and very little available soil.

5.2 SOILS

Nine soil types occur within the study area, all of which are sandy and/or gravelly in texture and none of which are classified as hydric soils (Figure 3). These soils are associated with alluvial fan geology and

drainage systems extending from the San Bernardino Mountains to the north and east and all have high drainage capacity (USDA-NRCS 2012). Soil series include the following:

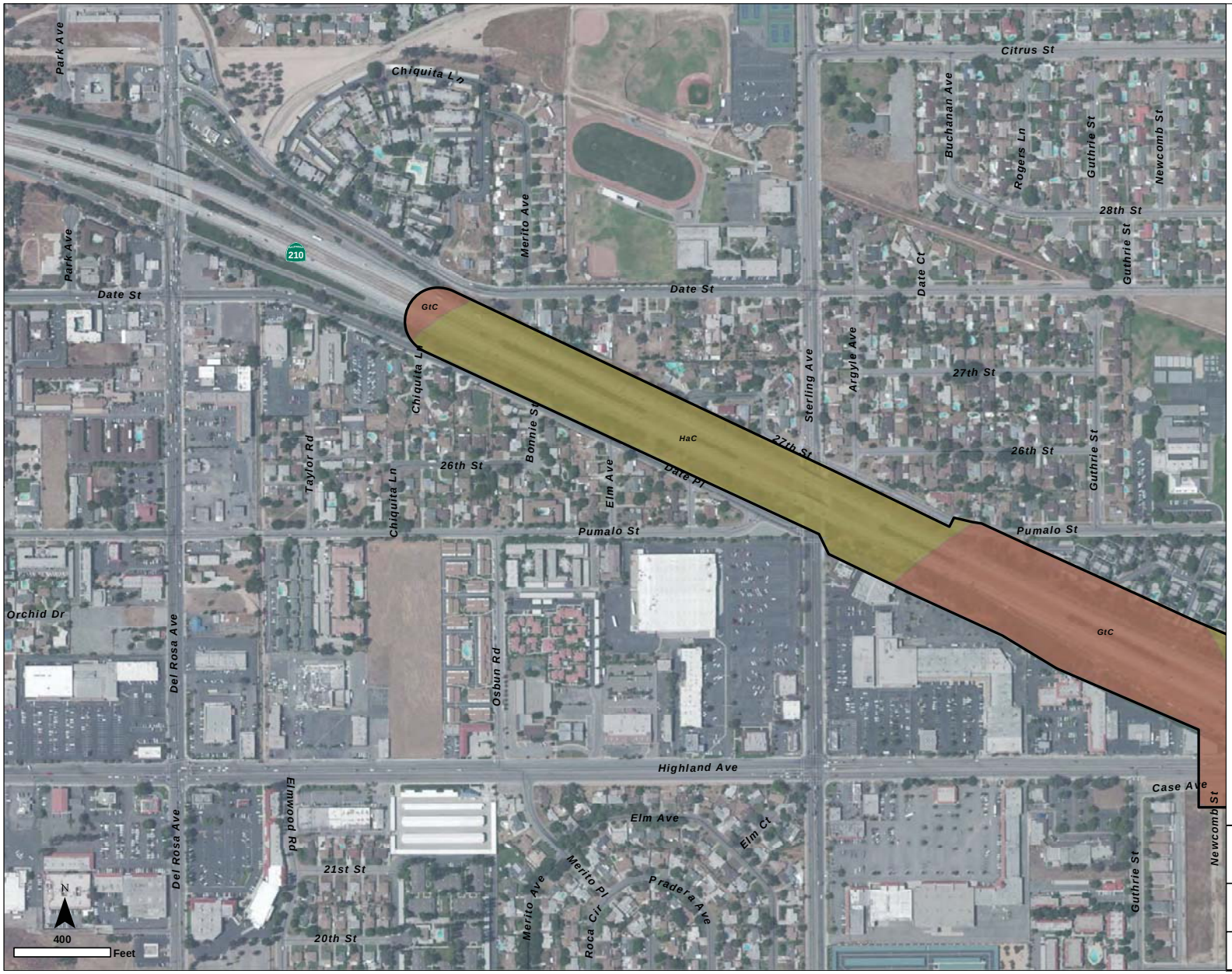
- Quarries and Pits, (GP)
- Greenfield Sandy Loam, 2-9% slopes (GtC)
- Hanford Coarse Sandy Loam, 2-9% slopes (HaC)
- Hanford Sandy Loam, 0-2% slopes (HbA)
- Psamments and Fluvents, frequently flooded
- Soboba Gravelly Loamy Sand, 0-9% slopes
- Soboba Stony Loamy Sand, 2-9% slopes
- Tujunga Loamy Sand, 0-5% slopes (TuB)
- Tujunga Gravelly Loamy Sand, 0-9% slopes (TuB)

5.3 HYDROLOGY

The study area is located within the northeastern portion of the Santa Ana watershed (8-digit Hydrologic Unit Code [HUC] 18070203), which drains an 1,084,218-acre watershed and contains the smaller Upper Santa Ana River watershed (10-digit HUC 1807020305), within which the study area is located. The Upper Santa Ana River watershed is further subdivided into the East Twin Creek watershed (12-digit HUC 180702030505), City Creek watershed (12-digit HUC 180702030504), Santa Ana Wash-Santa Ana River watershed (12-digit HUC 180702030507), and Warm Creek-Santa Ana Wash watershed (12-digit HUC 180702030508), each of which are spanned by the study area (Figure 4). The study area is located on an alluvial fan that extends from northeast to southwest from the southwestern edge of the San Bernardino Mountains. The headwaters within the upper portion of the Santa Ana Watershed drain from the San Bernardino Mountains before passing through the study area where they flow for approximately 74 miles before emptying into the Pacific Ocean.

The regional climate within the vicinity of the study area consists of hot and dry summer months with relatively cool, wetter winters. Seasonal rainfall occurs predominantly in the winter and spring months (November-April) and was below average during the fall 2011 to summer 2012 period (NWS 2012). Precipitation data for the Ontario International Airport included the following:

- Average annual precipitation is 11.72 inches (data from 1998-2010);
- Seasonal precipitation during fall 2011 to summer 2012 measured 8.83 inches;
- The last significant precipitation event (>0.1 inches) prior to field delineation occurred in April, 2011.



Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3A
Soils

SR-210 Mixed Flow Lane Addition Project

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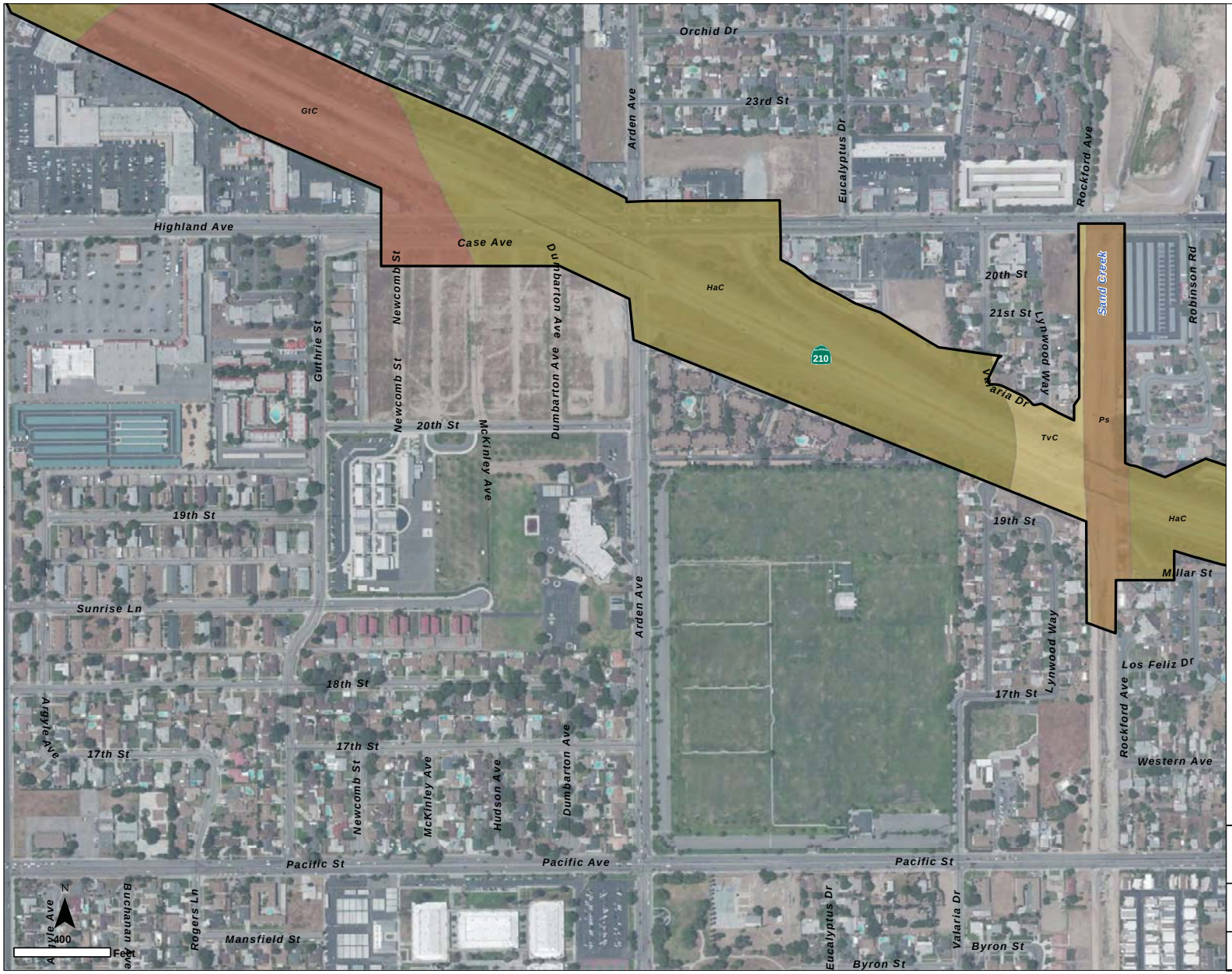

Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3B
Soils

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3C
Soils

SR-210 Mixed Flow Lane Addition Project

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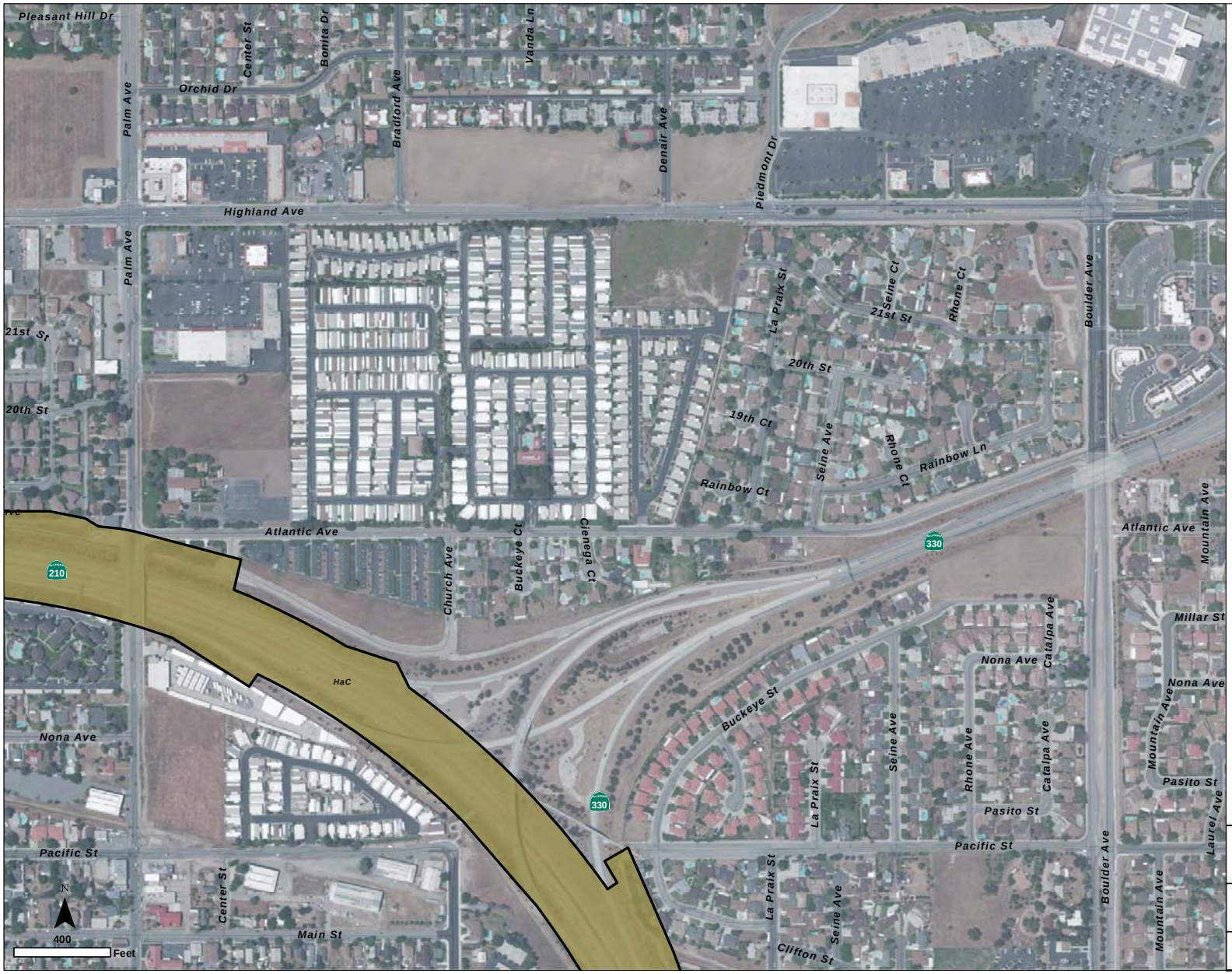

Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3D
Soils

SR-210 Mixed Flow Lane Addition Project

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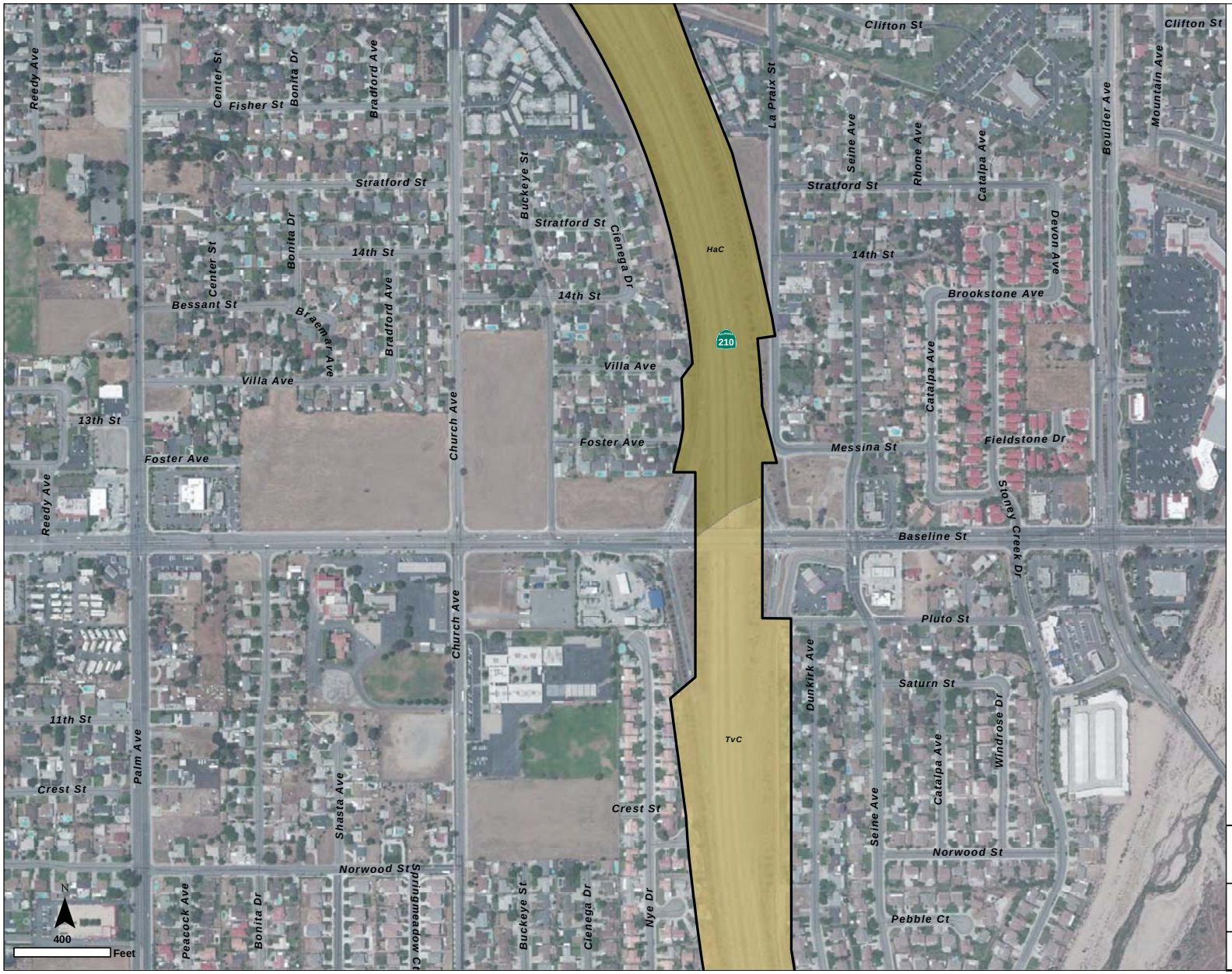

Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3E
Soils

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3F
Soils

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3G
Soils

SR-210 Mixed Flow Lane Addition Project

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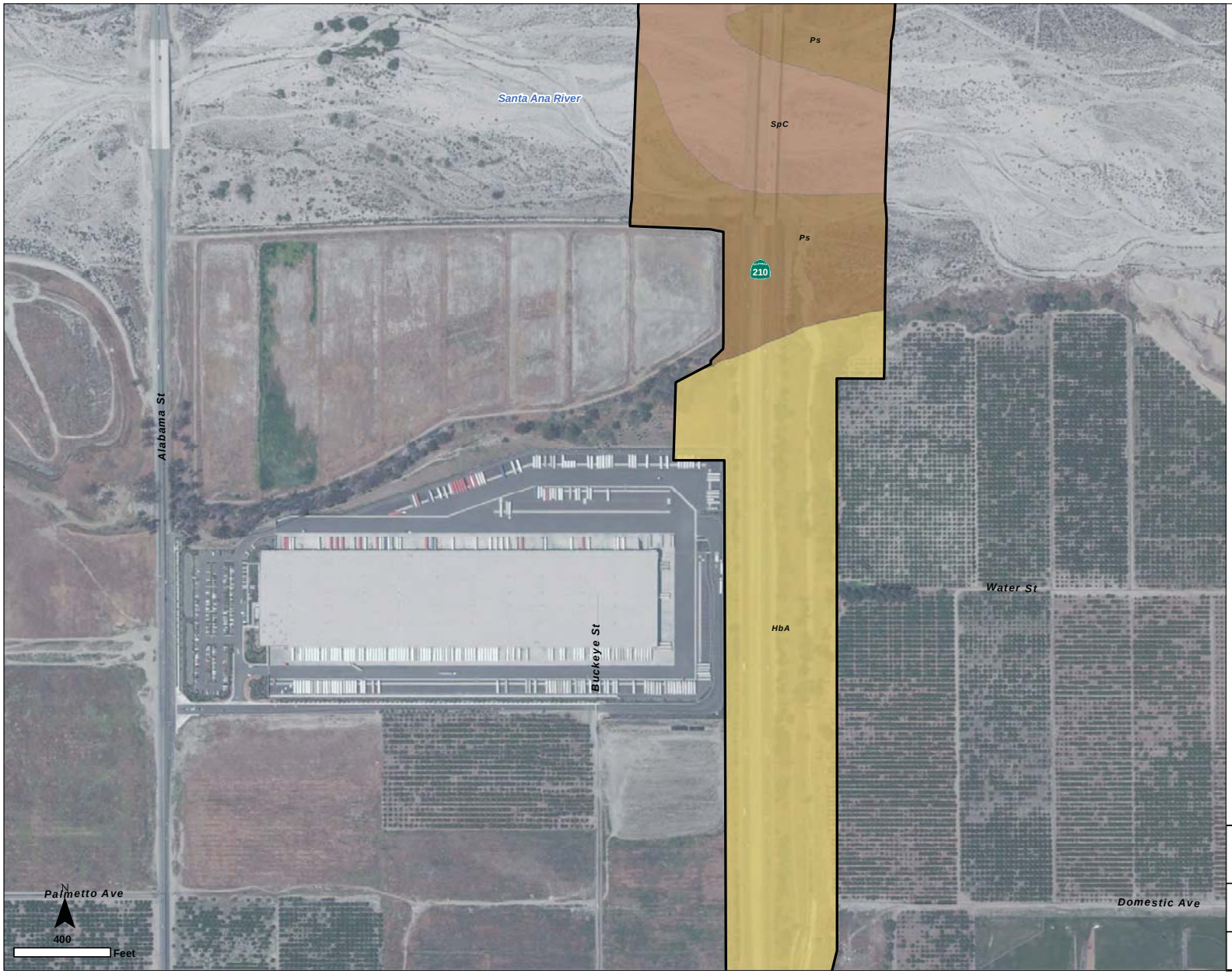

Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
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- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
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- 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

FIGURE 3H
Soils

SR-210 Mixed Flow Lane Addition Project

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Jurisdictional Delineation Survey Area

Soil Types

- GP - Quarries And Pits
- GtC - Greenfield Sandy Loam 2 To 9 Percent Slopes
- HaC - Hanford Coarse Sandy Loam 2 To 9 Percent Slopes
- HbA - Hanford Sandy Loam 0 To 2 Percent Slopes
- Ps - Psamments And Fluvents Frequently Flooded
- 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

FIGURE 3I
Soils

SR-210 Mixed Flow Lane Addition Project

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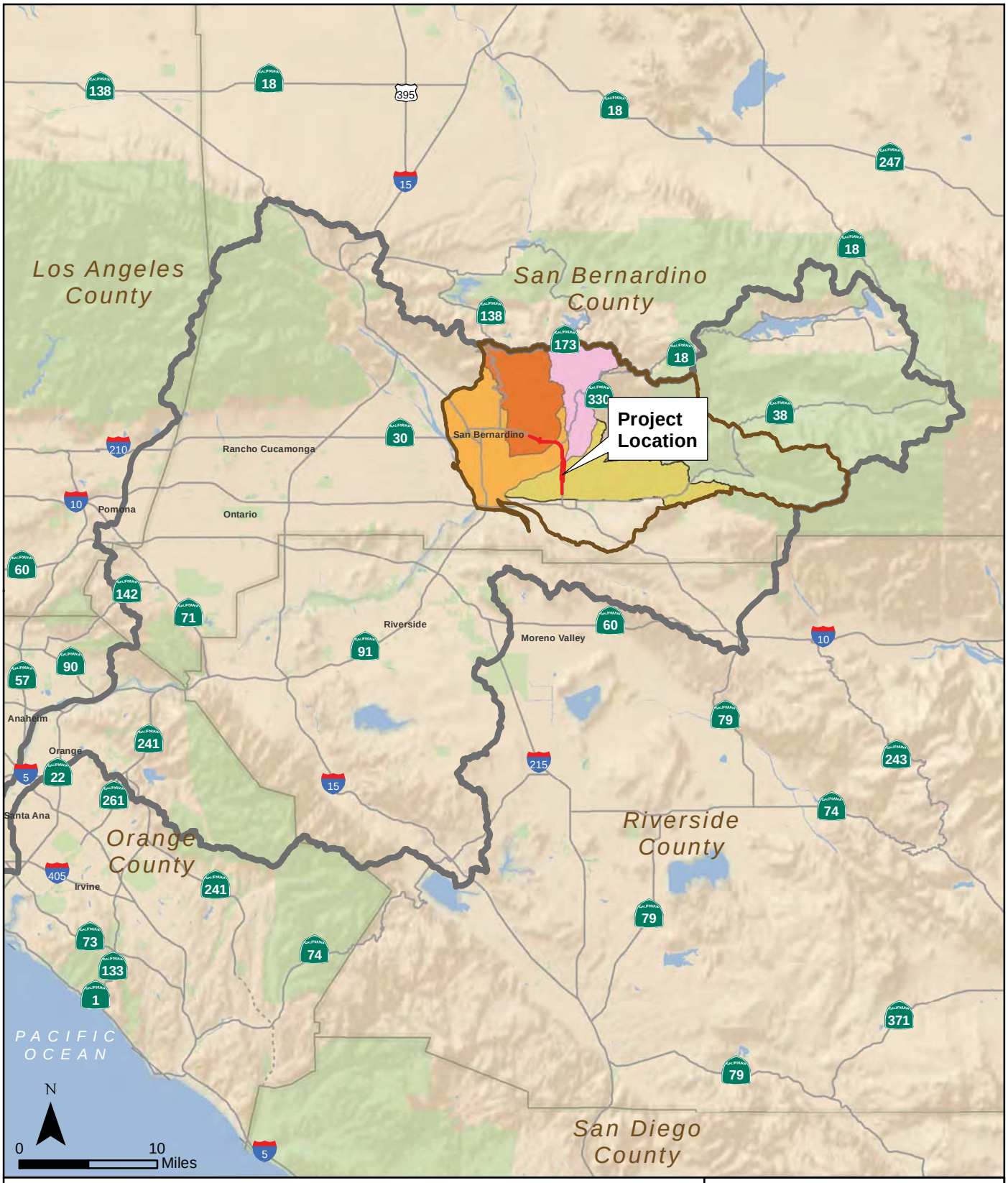

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Project Location

HUC 10

Upper Santa Ana River (1807020305)
162,409 Acres

HUC 8

Santa Ana (18070203)
1,084,218 Acres

HUC 12

City Creek (180702030504)
14,821 Acres

East Twin Creek (180702030505)
20,497 Acres

Santa Ana Wash-Santa Ana River (180702030507)
25,458 Acres

Warm Creek-Santa Ana River (180702030508)
20,497 Acres

FIGURE 4

Regional Watershed Map

SR-210 Mixed Flow Lane Addition Project

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5.4 Summary of Potential Jurisdiction

A total of 11 features occur within the study area (Figure 5). Total potential jurisdiction is provided in Table 2. Detailed descriptions of each of the features are provided in Section 5.5.

Table 2. Potential USACE, RWQCB, and CDFW Jurisdiction

Feature ID	Potential USACE Jurisdiction (acres/feet)		Potential RWQCB Jurisdiction (acres/feet)		Potential CDFW Jurisdiction (acres/feet)	
	Wetland	Non-wetland	Wetland	Non-wetland	Riparian	Non-riparian
1	--	--	0/0	0.122/860	0.011/33	0.122/860
2 (Sand Creek)	0.135/207	1.163/1425	0.135/207	1.163/1425	0.135/200	1.958/1634
3	0/0	0.799/5243	0/0	0.799/5243	0.030/103	3.384/5283
4	0/0	0.949/4872	0/0	0.949/4872	0/0	2.262/4763
5 (City Creek)	0.673/2376	19.898/2386	0.673/2376	19.898/2386	0.673/2376	24.669/2569
6	--	--	--	--	--	--
7	--	--	--	--	--	--
8 (Plunge Creek)	1.391/775	1.928/1483	1.391/775	1.928/1483	1.391/518	3.155/1531
9 (Santa Ana River)	0/0	19.312/1047	0/0	19.312/1048	0/0	19.454/1048
10	0/0	1.772/4828	0/0	1.772/4828	0/0	4.261/4828
11	--	--	0/0	0.128/847	0.047/186	0.081/661
Totals	2.199/3358	45.821/21284	2.199/3358	46.071/22991	2.287/3416	59.346/23177

-- no jurisdiction assumed

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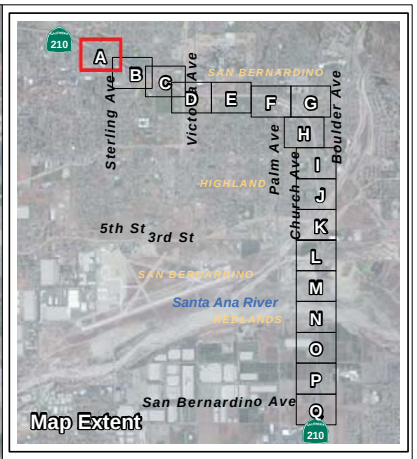

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5A
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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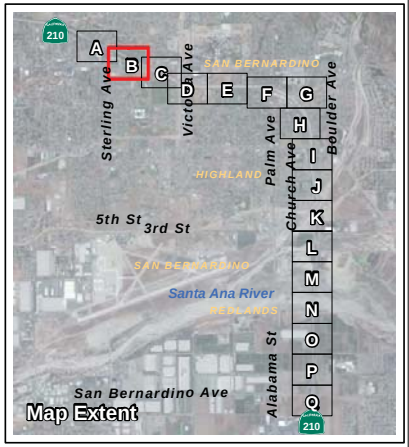

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5B
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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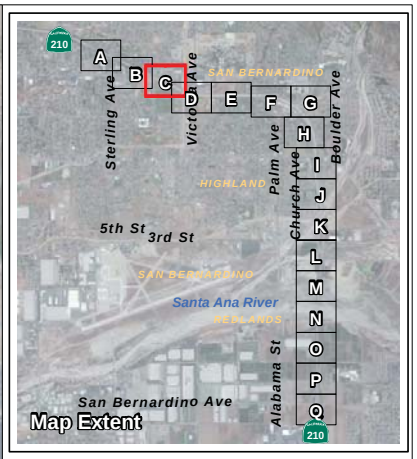

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5C
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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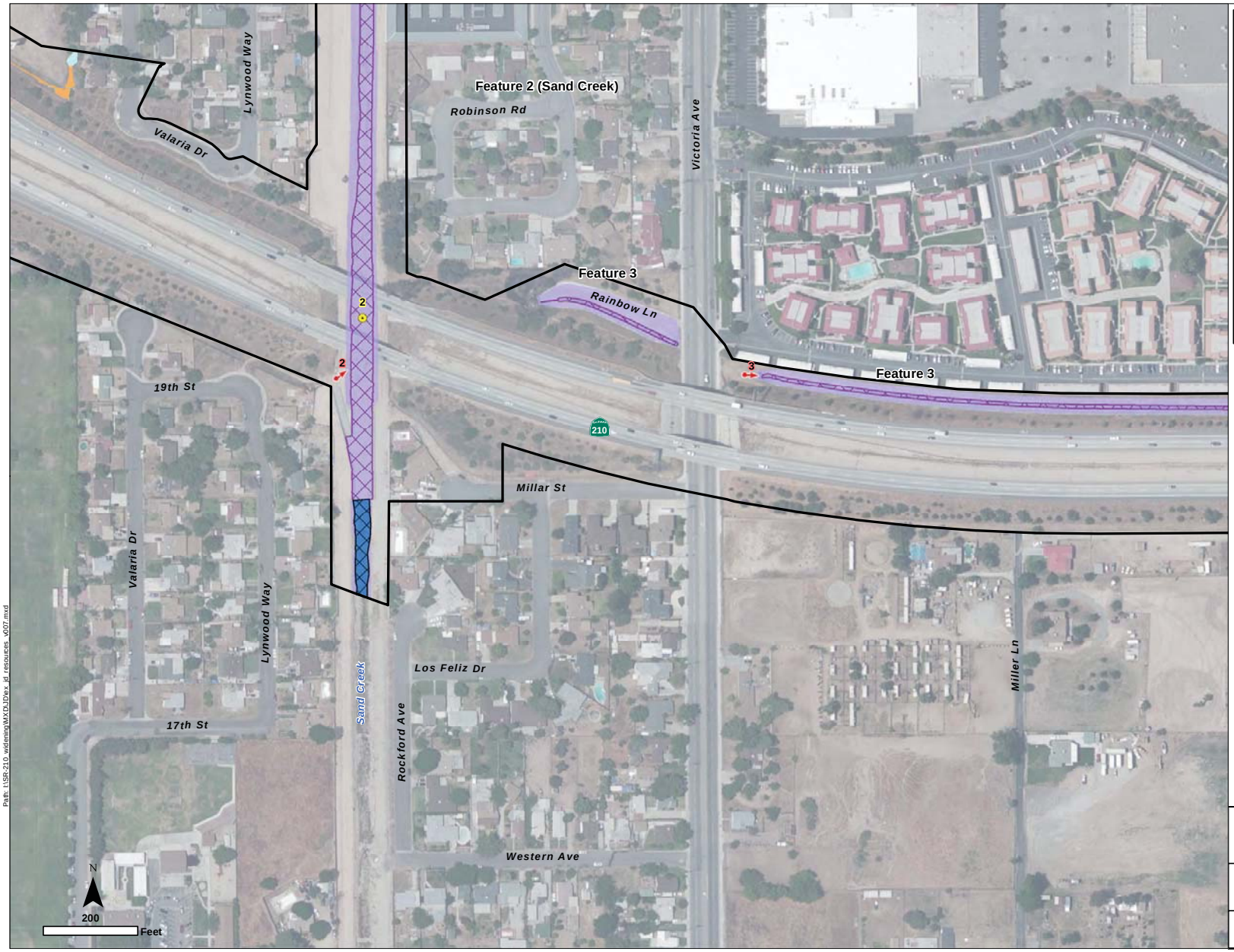

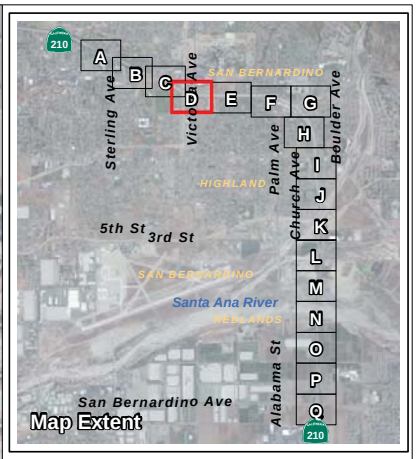

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5D
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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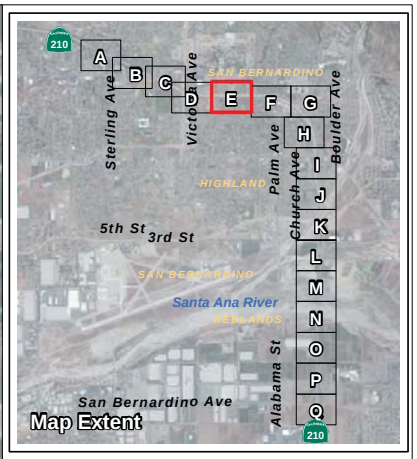

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5E
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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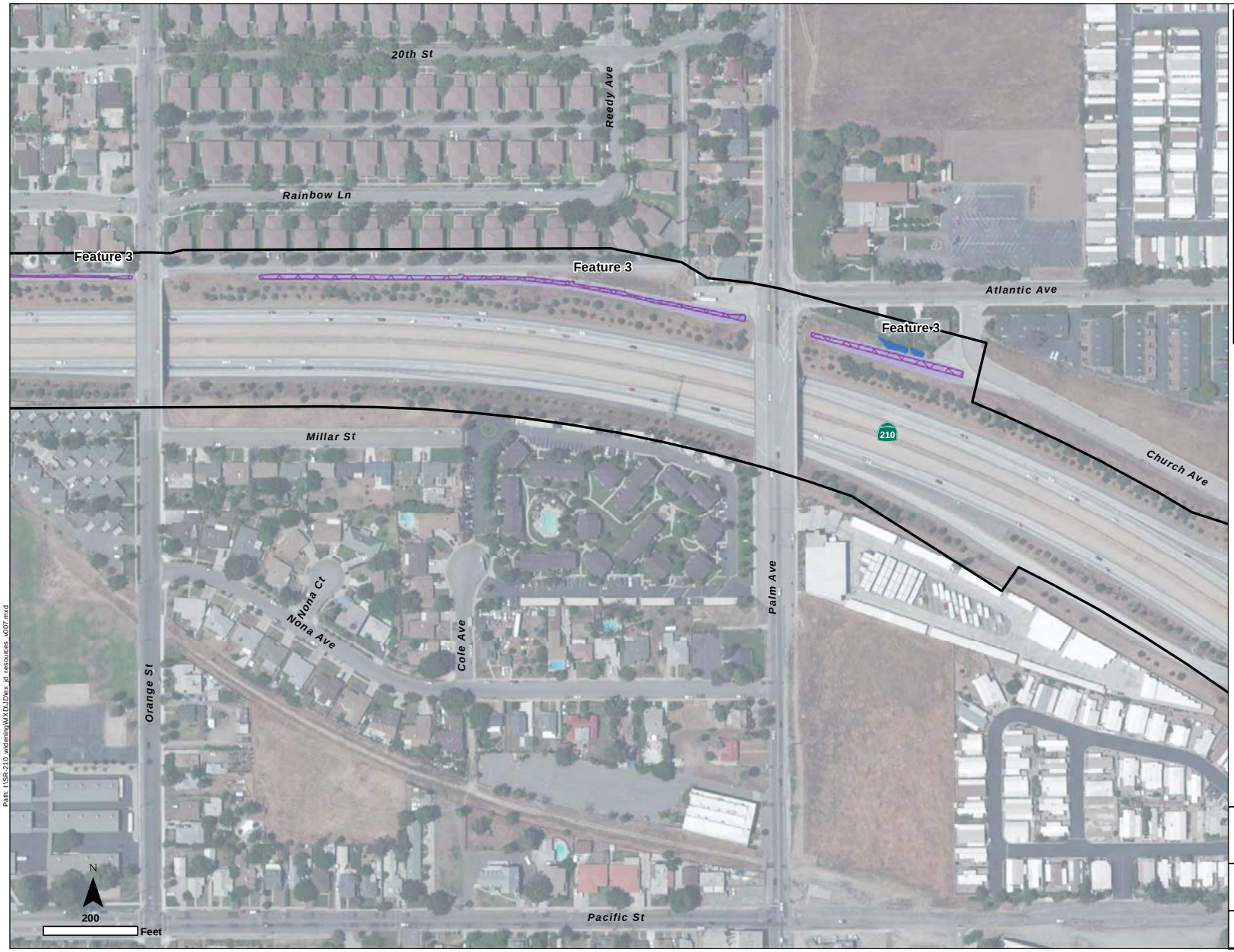

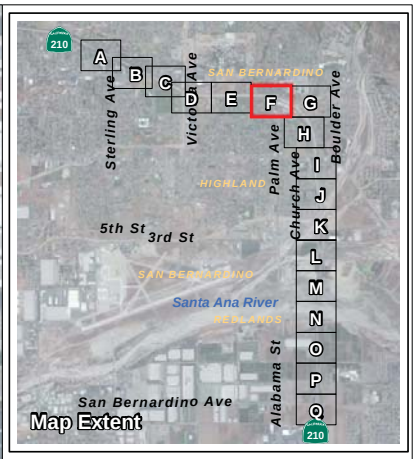

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5F
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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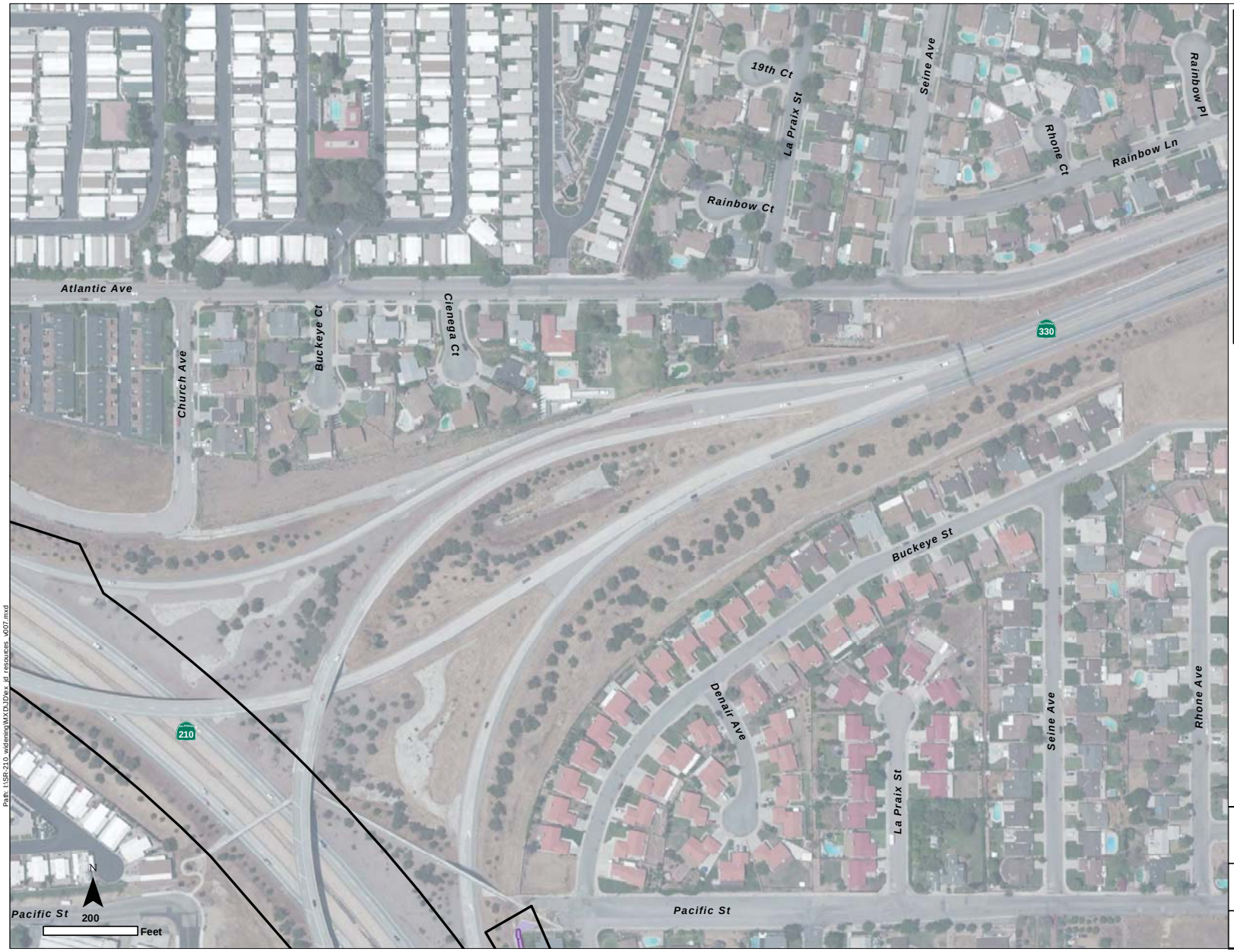

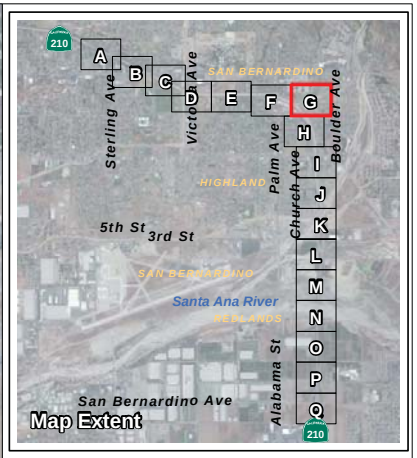

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5G
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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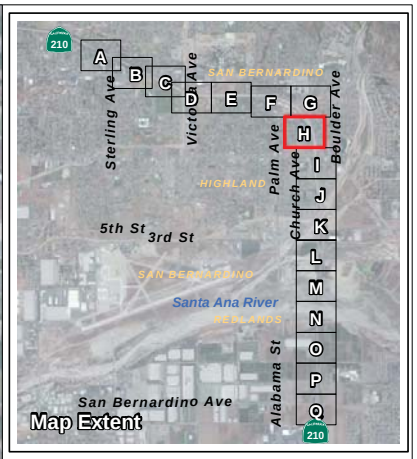

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5H
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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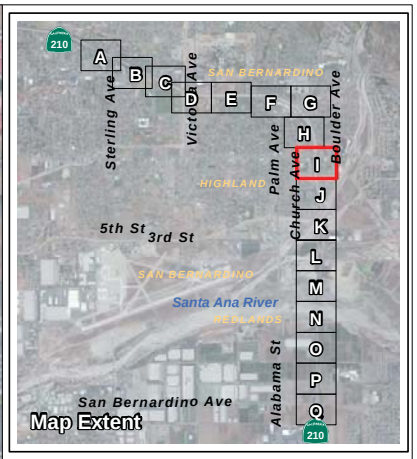

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5I
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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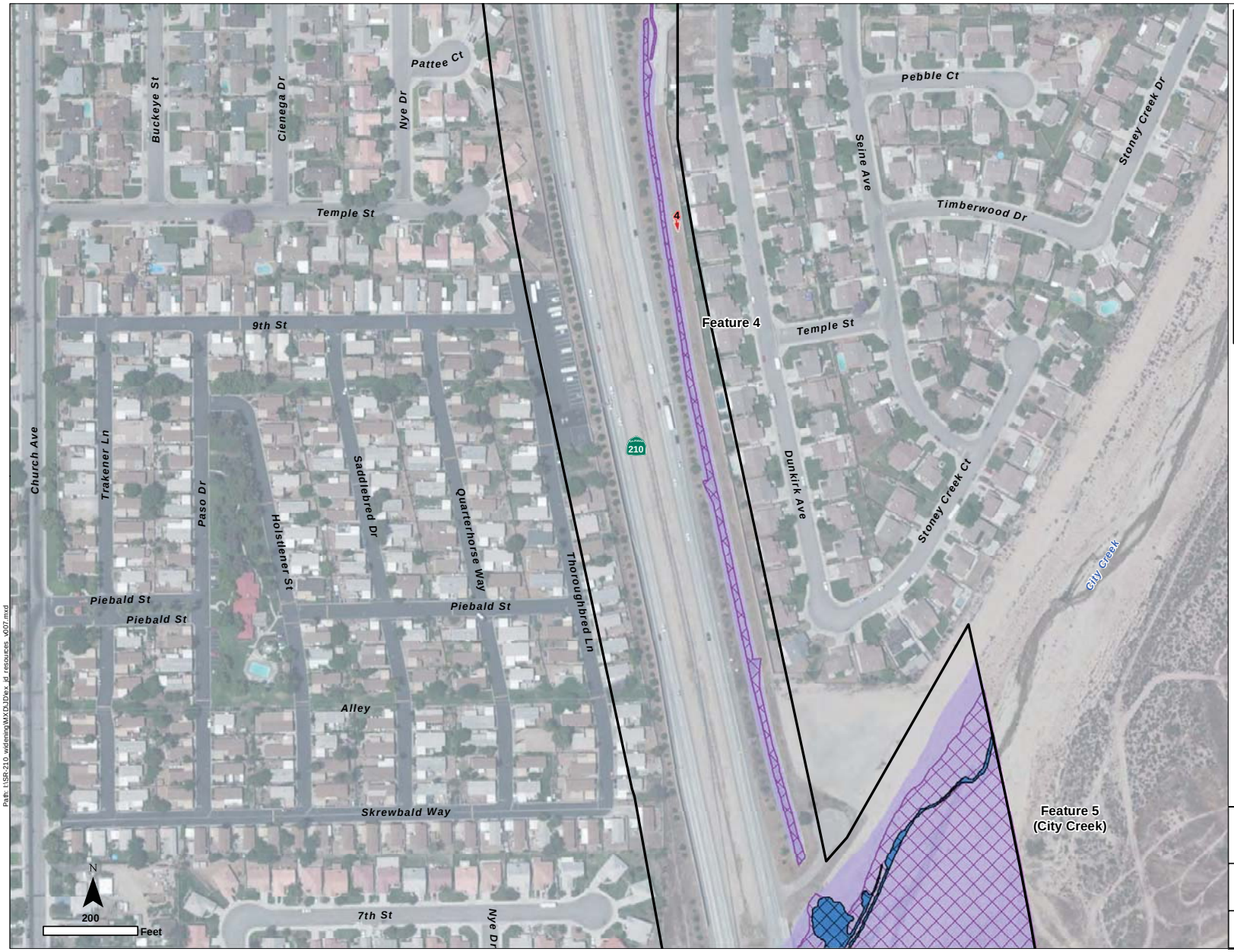

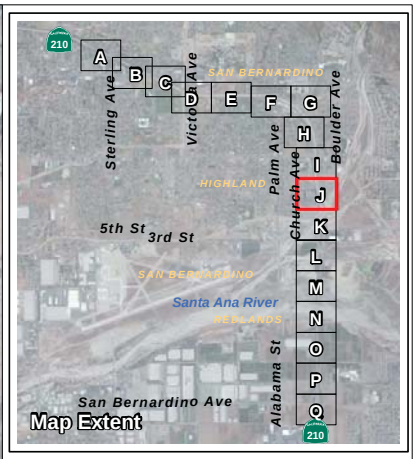

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5J
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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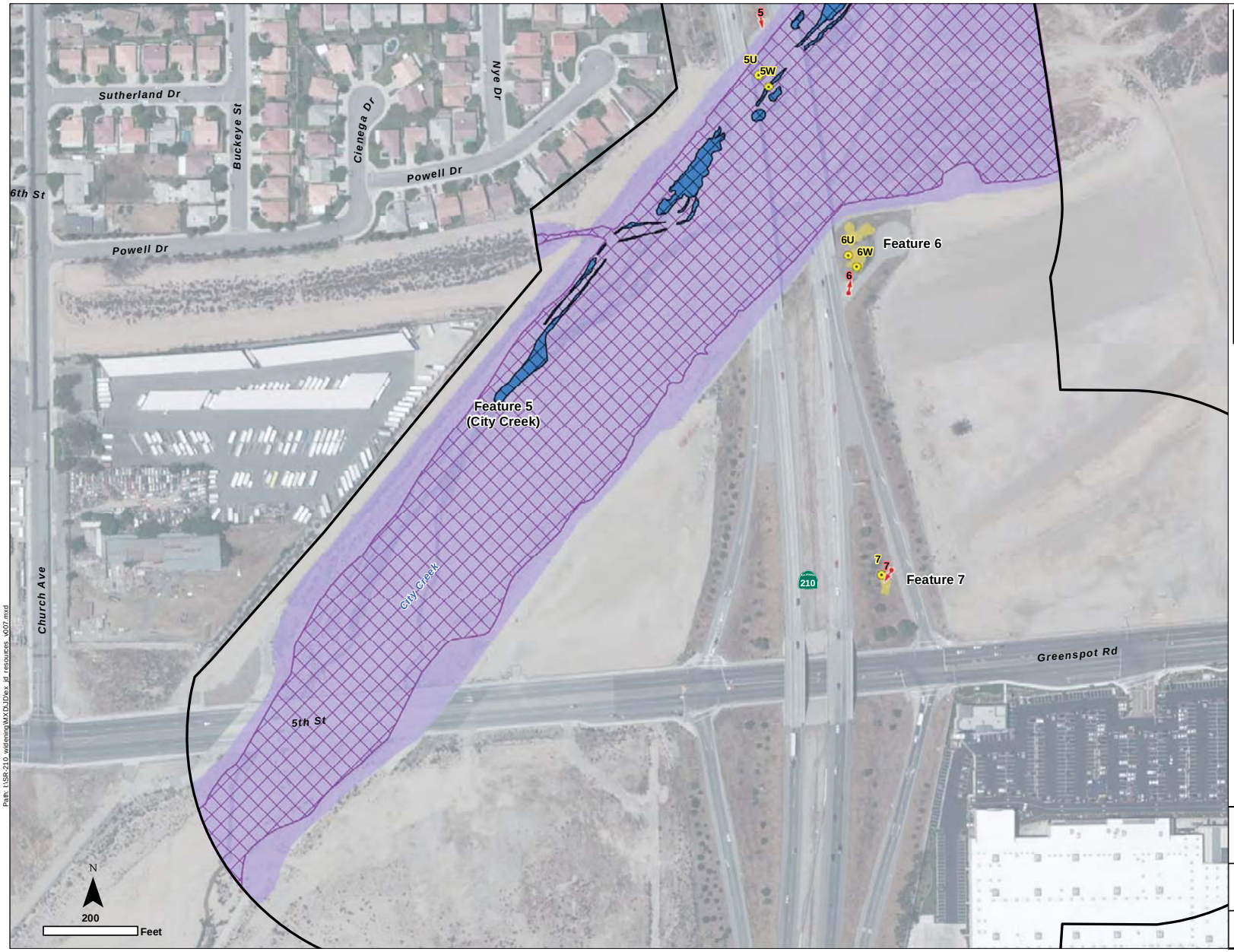

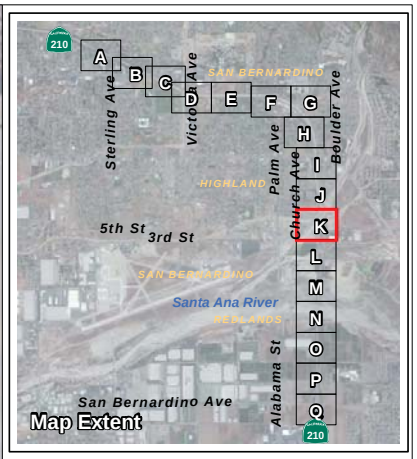

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5K
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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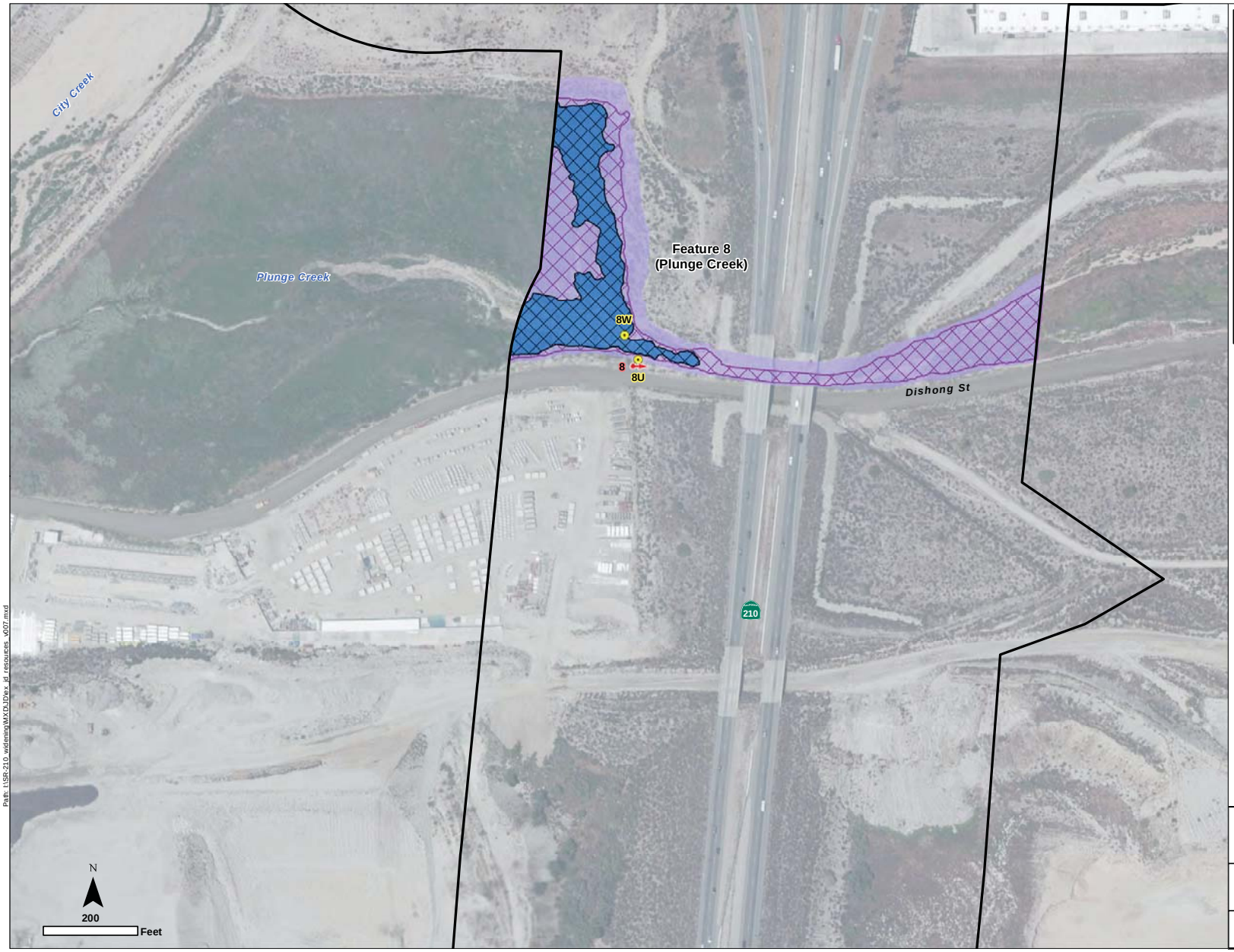

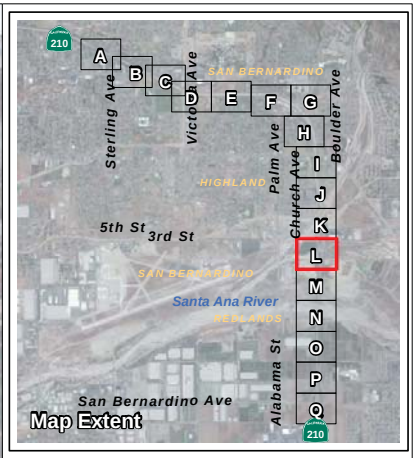

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5L
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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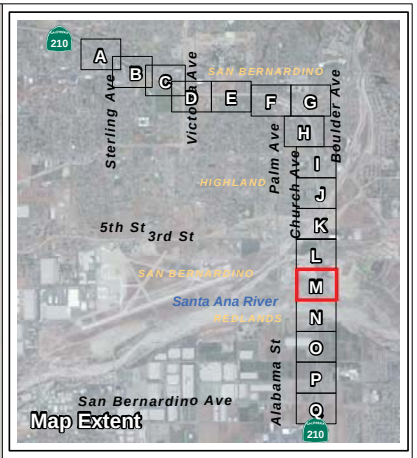

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5M
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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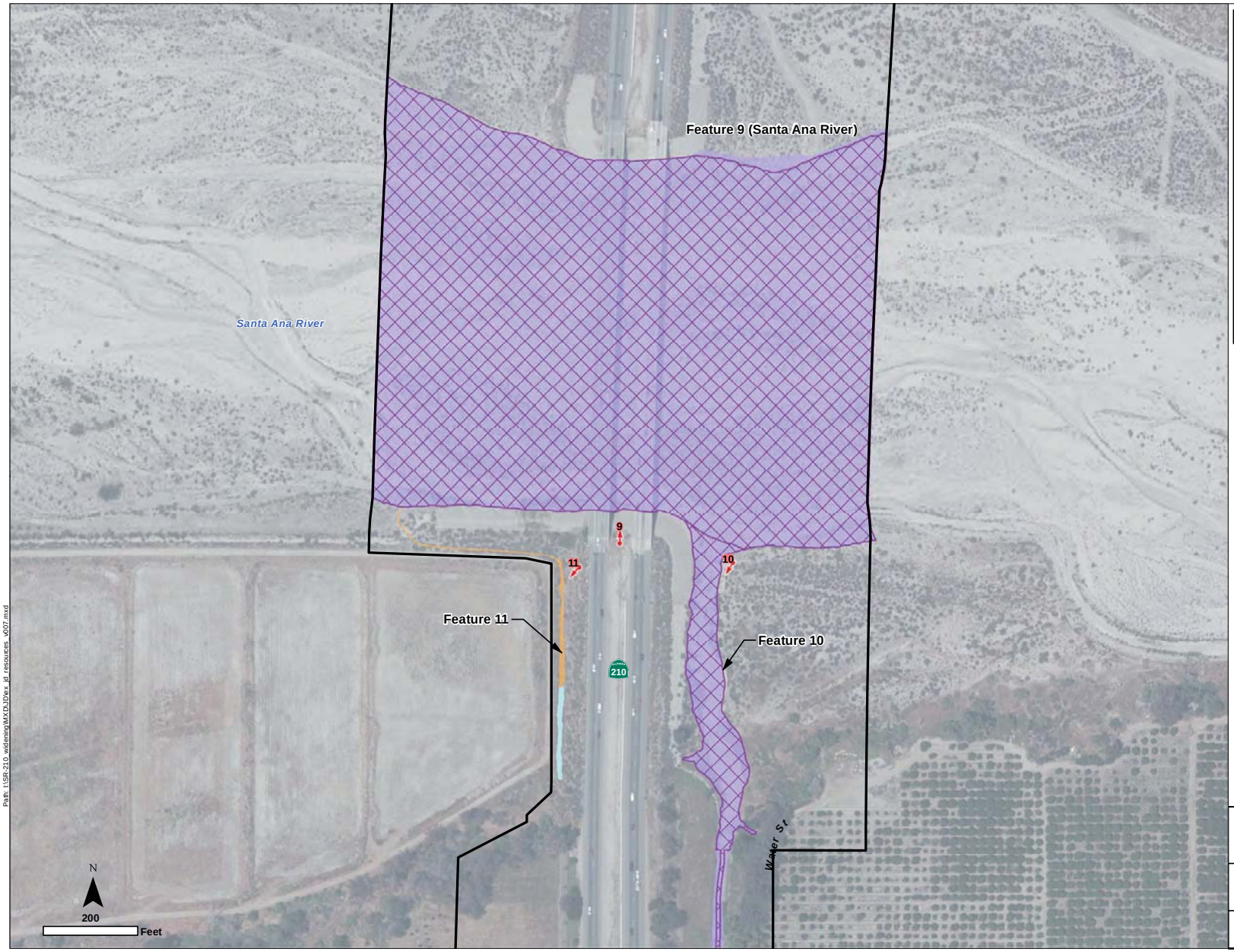

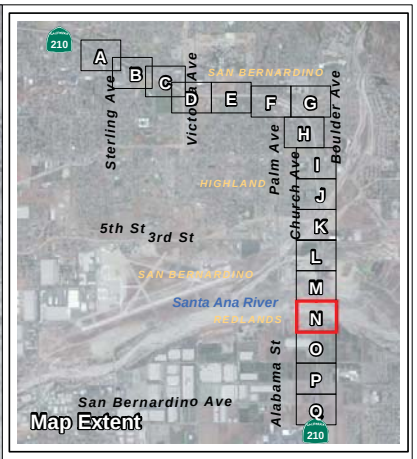

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5N
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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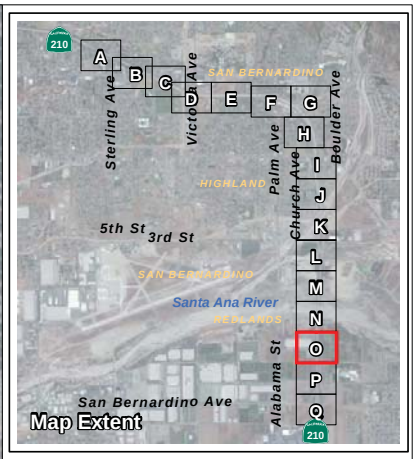

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5O
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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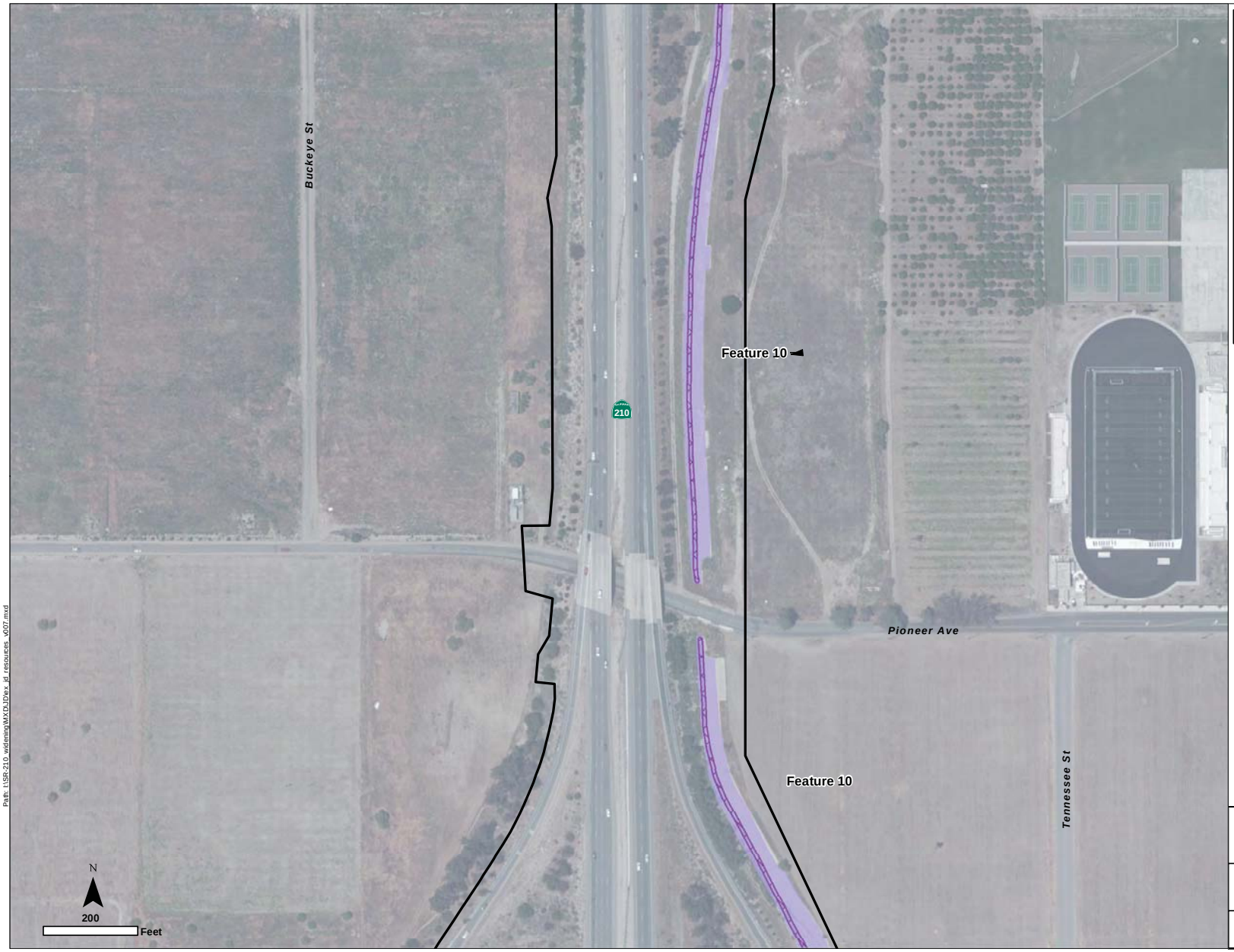

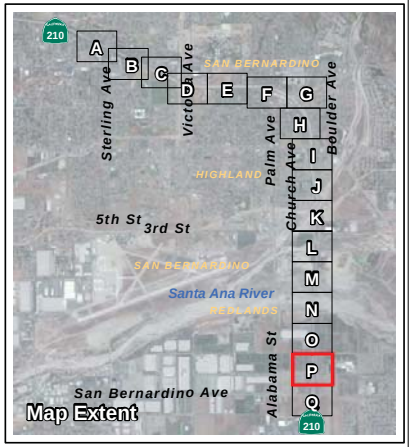

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5P
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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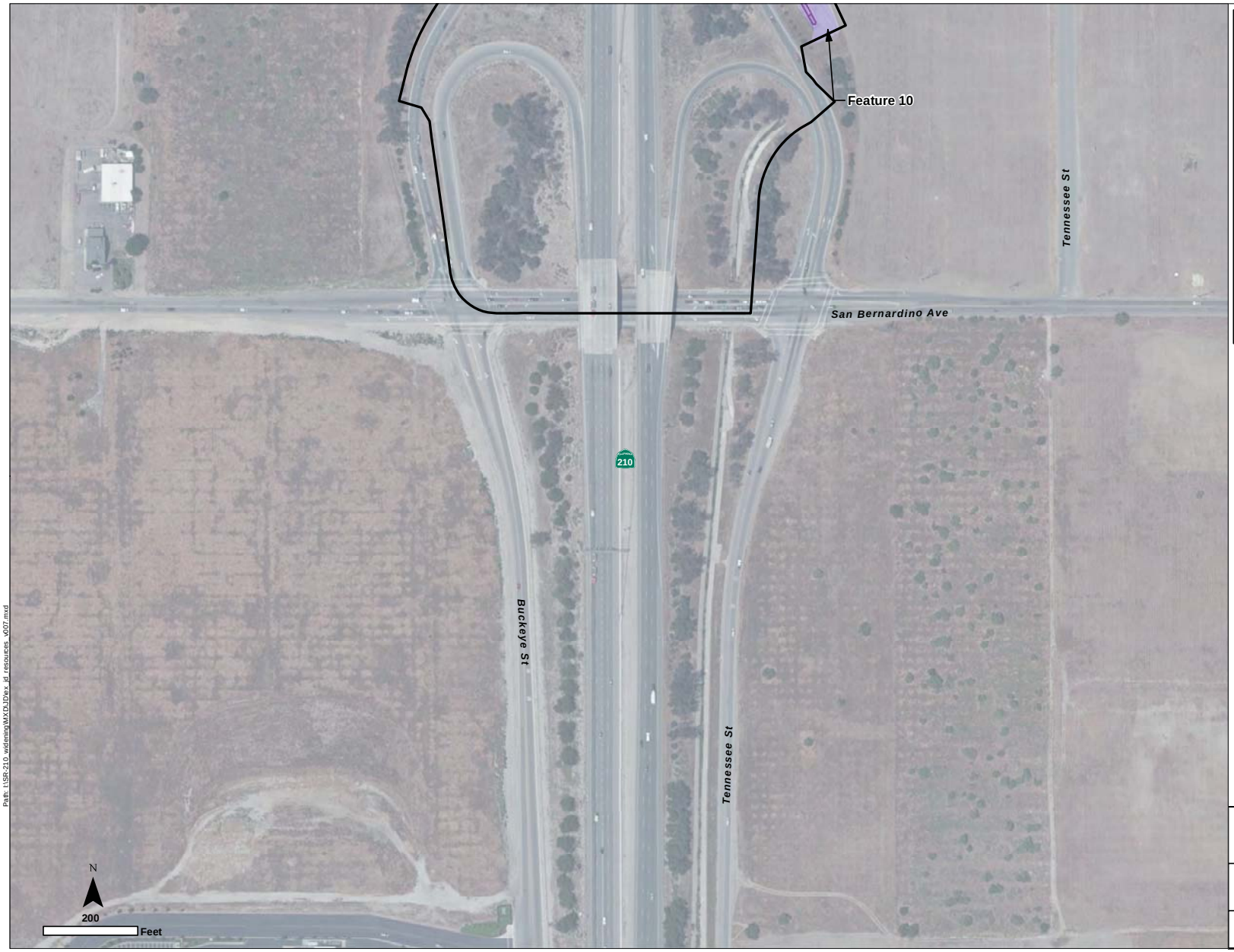

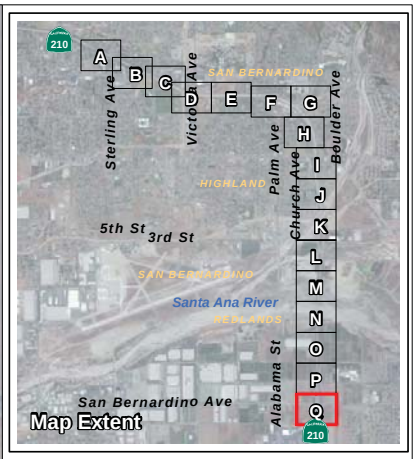

Photo Locations and Photo ID

Soil Pits

Jurisdictional Delineation Study Area

Clean Water Act (Section 404 and 401) Jurisdiction

Non-wetland WoUS, RWQCB Non-wetland

Wetland WoUS, RWQCB Wetland

State Jurisdiction

Riparian CDFG

Non-riparian CDFG

Riparian CDFG, RWQCB Porter-Cologne

Non-riparian CDFG, RWQCB Porter-Cologne

Non-jurisdictional Feature

FIGURE 5Q
Aquatic Resource Jurisdiction Map

SR-210 Mixed Flow Lane Addition Project

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5.5 USACE CWA SECTION 404 JURISDICTION

5.5.1 Feature 1 (Highland Channel)

Feature 1 is not identified as a blue line drainage on the *Harrison Mountain* USGS topographic quadrangle map and was constructed in uplands to drain flows and excess irrigation from SR-210, Highland Avenue, and surrounding residential and commercial developments. Historical aerials from 1980, prior to construction of SR-210 within this portion of the study area do not have this feature present; the location was a cleared lot adjacent to Highland Avenue. Orchards were present in aerials from 1968. Feature 1 is a vegetated earthen ditch that drains southeast along westbound SR-210 and the westbound SR-210 Highland Avenue off-ramp (Figure 5; Appendix B, photo 1). Portions of the drainage pass underground through culverts.

Feature 1 is vegetated with a dominance of hydrophytic vegetation including sprangletop (*Leptocloa uninervia* [FACW]) and pigweed (*Chenopodium album* [FACU]) (Appendix A, Wetland Determination Data Form 1).

A soil pit sampled within Feature 1 contained sandy loam soils with a 10YR 3/3 matrix with no mottles. No hydric soil indicators were present. Soils are mapped within the feature as Hanford Coarse Sandy Loam, 2 to 9 Percent Slopes, which is not an hydric soil (USDA-NRCS 2012).

Feature 1 within the study area contains an OHWM consisting of debris deposits and vegetation matting. Hydrology within Feature 1 results from ephemeral seasonal storm flows and excess landscape irrigation runoff from SR-210. Feature 1 begins at the intersection of Highland Avenue and Arden Avenue where flows from the street are directed through street gutters that outfall into Feature 1. Flows are directed southeast for approximately 0.3 mile through developed lands before draining into Sand Creek, which drains to the Santa Ana River and ultimately the Pacific Ocean. The total relevant reach of Feature 1 is approximately 0.3 mile. Feature 1 is ephemeral and does not appear be a RPW. Because this feature is not a natural drainage and was constructed in uplands to drain upland flows, it is not likely that the USACE will assert jurisdiction.

5.5.2 Feature 2 (Sand Creek)

Sand Creek is identified as an intermittent blue line drainage on the Harrison Mountain USGS topographic quadrangle map and drains from north to south through the western portion of the study area (Figure 5; Appendix B, photo 2). It is classified as a modified natural drainage that has been channelized within the study area. It contains bank stabilization (cobble, rock, and metal walls) and erosion control measures including drop structures and concrete, rock rip rap, and cobble, which has been positioned throughout the channel.

The majority of Sand Creek within the study area is sparsely vegetated and contains approximately 40% cover with a dominance of upland species including telegraph weed (*Heterotheca grandiflora*; UPL), wild oats (*Avena fatua*; UPL), and Bermuda grass (*Cynodon dactylon*; FACU) (Appendix A, Wetland Determination Data Form 2). Vegetation within the channel appears to be routinely scoured based upon the presence of early succession herbaceous vegetation and lack of established, mature shrubs. However, the downslope portion of Sand Creek south of the concrete portion of the channel approximately 200 feet south of the eastbound SR-210 bridge, contains a dominance of hydrophytic vegetation and is assumed to be a USACE-defined wetland. A wetland determination data form was not completed in this portion of the channel because this area is out of proposed work areas.

A soil pit sampled within Sand Creek below the SR-210 bridges where work will occur contained sandy soils with a 5Y 6/6 matrix with no mottles. Soils are mapped regionally within the study area as Psamments and Fluvents, frequently flooded, which is not considered an hydric soil (USDA-NRCS 2012). Sandy soils and frequent scouring within Sand Creek prevent hydric soil formation.

Sand Creek within the study area contains an OHWM consisting of sediment and debris deposits, watermarks, and drainage patterns. Limited surface water was present in the downslope portion of the channel where several concrete flood control channels converge. Hydrology results from ephemeral seasonal storm flows from the San Bernardino Mountains as well as intermittent surface water runoff from adjacent, developed lands. The headwaters of Sand Creek begin within the San Bernardino Mountains located to the northeast of the study area. Flows drain south through the mountains for approximately 3.4 miles before passing through 1.3 miles of densely-developed lands and a detention basin just north of SR-210 prior to entering the study area. Flows then exit the study area and drain south and west for approximately 6.6 miles before draining into the Santa Ana River to the northeast of the intersection of Interstate 215 and Interstate 10. The total relevant reach of Sand Creek is approximately 11.3 miles. From the confluence of Sand Creek and the Santa Ana River, flows drain southwest for approximately 57 miles before entering the Pacific Ocean. The lower reach of the Santa Ana River at the Pacific Ocean is considered the first TNW. Sand Creek appears be a non-RPW due to it having flows present for less than 3 months per year. It is assumed that USACE will assert jurisdiction over Sand Creek due to its historical natural drainage status, its long relative reach, its second order stream status, and its chemical, physical, and biological contribution to the receiving waters draining directly to a TNW (i.e., the Santa Ana River).

5.5.3 Feature 3

Feature 3 appears to be identified as an unnamed intermittent blue line drainage on the Harrison Mountain USGS topographic quadrangle map that drains from east to west along westbound SR-210 from the intersection of SR-330 west to Sand Creek (Figure 5; Appendix B, photo 3). Several blue line drainages that drain from the San Bernardino Mountains and through the study area appear to have been rerouted into the present channel configuration as a result of development. Within the study area, this feature is classified as a modified natural drainage that has been channelized into a concrete trapezoidal channel. The channel consists of an open air channel with several underground portions.

Feature 3 is unvegetated, with the exception of a few small patches of annual hydrophytic vegetation growing in the cracks of the channel and where small areas of sediment has built up (i.e., less than a few square feet of vegetation and less than 0.5 inch of sediment accumulation). These patches contain barnyard grass (*Echinocloa crus-galli* [FAC]) and rabbit's-foot grass (*Polypogon monspeliensis* [FACW]); however, because these vegetated patches occur over very small areas within an otherwise concrete channel and are routinely scoured out following rainfall, they are not considered significant enough to warrant wetland status. This channel also appears to be periodically maintained with vegetation removal. Therefore, Feature 3 is considered unvegetated.

Feature 3 within the study area contains an OHWM consisting of surface water, watermarks, and sediment and debris deposits. Approximately 0.5 inch of water was flowing at the time of the survey (June 28, 2012). Hydrology within Feature 3 results from seasonal storm runoff within the San Bernardino Mountains and surface water runoff from developed lands. The headwaters of Feature 3 begin within the San Bernardino Mountains located to the northeast of the study area. Flows drain south through the mountains for approximately 0.5 mile before passing through 1.4 miles of developed lands prior to entering the study area and draining into Sand Creek. Sand Creek then drains to the Santa Ana River and the Pacific Ocean. The

total relevant reach of Feature 3 is approximately 2.7 miles. Feature 3 appears be a RPW based on the presence of low volume flows during August 2012, which is the middle of the dry season during a below-average rainfall year. It is assumed to flow for greater than 3 months per year. The USACE will likely assert jurisdiction over Feature 3 because it is an historical natural drainage with RPW status tributary to Sand Creek and the Santa Ana River.

5.5.4 Feature 4

Feature 4 appears to be a blue line drainage on the Harrison Mountain and Redlands USGS topographic quadrangle maps that was rerouted as a result of SR-210 construction. The USGS quadrangle maps from 1988 show an intermittent blue line stream that branches off of City Creek at the vicinity of Highland Street and Boulder Street where it passes southwest across Atlantic Avenue then Grant Street before heading south along the eastern side of Church Avenue. An historic aerial map from 1980 shows this feature present, then following construction of SR-210 in the early 1990's, this stream appears to have been culverted into its present configuration with some flows directed west along the westbound side of SR-210 and some flows directed within the current Feature 4. Feature 4 is a concrete trapezoidal channel that drains from north to south adjacent to westbound SR-210 (Figure 5; Appendix B, photo 4). It is classified as a modified natural drainage that has been realigned to drain sheet flow from SR-210 and runoff from adjacent residential and commercial developments.

Feature 4 is unvegetated, with the exception of a few small, emergent patches of hydrophytic vegetation present within cracks in the channel. Because there was no significant sediment buildup within the channel and no significant vegetation present, this feature is considered unvegetated. Evidence of recent channel maintenance (i.e., vegetation and sediment removal) was observed during the survey.

Feature 4 within the study area contains an OHWM consisting of low volume, dry-season surface water, watermarks, sediment deposits, and debris deposits. Approximately 0.25 inch of slowly flowing water was present within the feature at the time of the survey (August 22, 2012). Hydrology within Feature 4 results from seasonal storm flows and excess landscape runoff from adjacent developed lands. Feature 4 drains southeast for approximately 1.3 miles through developed lands before draining into City Creek, which drains to the Santa Ana River and ultimately the Pacific Ocean. The total relevant reach of Feature 4 is approximately 1.3 miles. Feature 4 appears be a RPW based on the presence of flowing water observed in early May (first site visit) through August 2012. The USACE will likely assert jurisdiction over Feature 4 because it appears to be a modified historical natural drainage and is a RPW tributary to Sand Creek and the Santa Ana River.

5.5.5 Feature 5 (City Creek)

City Creek is identified as an intermittent blue line drainage on the Harrison Mountain USGS topographic quadrangle map that drains from northeast to southwest through the central portion of the study area (Figure 5; Appendix B, photo 5). It contains an earthen bottom and is classified as a modified natural drainage that has been channelized within the study area. It has modified banks (cobble and rock rip rap) and the channel bed is frequently disturbed by grading and berming operations for flood control purposes. At the time of the survey, a low flow channel with earthen berms approximately 3 feet high was constructed along the western portion of the channel to contain low-volume flows.

City Creek contains patchy vegetation generally limited to the western portion of the channel where hydrophytic vegetation is dominant. Vegetation in this portion of City Creek is dominated by mulefat

(FACW), sandbar willow (FACW), rabbit's-foot grass (FACW), and common smartweed (*Persicaria [Polygonum] hydropiper* [OBL]) (Appendix A, Wetland Determination Data Form 5W). Mature wetland/riparian vegetation is also present at the culvert outfall from Feature 4 that drains into City Creek from a concrete channel along westbound SR-210. This area contains Fremont's cottonwood (*Populus fremontii* ssp. *fremontii* [FACW]) and black willow (*Salix gooddingii* [OBL]). Historical aerials from 2005 show this wetland/riparian vegetation currently present at the culvert outfall into City Creek is periodically cleared for flood-control purposes; no vegetation was present in this location in the 2005 aerial.

A soil pit sampled within City Creek contained sandy soils with a 10YR 4/3 matrix and no mottles. Soils are mapped within the study area as Psamments and Fluvents, frequently flooded, which is not classified as an hydric soil (USDA-NRCS 2012). Sandy soils and frequent scouring within City Creek prevent hydric soil formation, and as a result, the sandy soils are considered problematic soils and are treated as hydric soils despite the lack of hydric indicators. Therefore, areas where a dominance of hydric vegetation and positive indicators of hydrology are present within City Creek are classified as wetlands. It should be noted that because these wetland areas are located in the low flow channel, they are dynamic and most likely change position and composition from year to year, depending on the frequency and magnitude of precipitation events, as well as the level of flood-control maintenance within this portion of the channel.

City Creek contains an OHWM consisting of surface water, sediment and debris deposits, watermarks, and drainage patterns within the study area. Hydrology results from seasonal storm flows from the San Bernardino Mountains and surface water runoff from adjacent developed lands. The headwaters of City Creek begin within the San Bernardino Mountains located to the northeast of the study area. Flows drain south through the mountains for approximately 8.6 miles before passing through 1.7 miles of densely-developed lands and entering the study area. Flows then exit the study area and drain southwest for approximately 1.6 miles before draining into the Santa Ana River. The total relevant reach of City Creek is approximately 11.9 miles. From the confluence with the Santa Ana River, flows drain southwest for approximately 62 miles before entering the Pacific Ocean. The lower reach of the Santa Ana River at the Pacific Ocean is considered the first TNW. City Creek is classified as a RPW based on observations of flowing water in early May (first site visit) through August 2012. Because City Creek is a RPW tributary to a TNW, USACE will likely assert jurisdiction.

5.5.6 Feature 6

Feature 6 is a wetland seep feature that is not identified as a blue line drainage on the Redlands USGS topographic quadrangle map (Figure 5; Appendix B, photo 6). It is an earthen feature directly adjacent to, and roughly the same elevation as, westbound SR-210. It is also located above City Creek Channel. It is classified as a human-caused seep that occurs as a result of a leaking landscape irrigation line. This feature is regularly maintained based on evidence of cattail piles with cut stems. There is no defined channel associated with this feature.

Feature 6 is vegetated with a dominance of hydrophytic vegetation within the study area. Dominant species include Fremont's cottonwood (FAC), southern cattail (*Typha latifolia* [OBL]), and mulefat (FACW) (Appendix A, Wetland Determination Data Form 6W).

A soil pit sampled within Feature 6 contained sandy loam soils with a 10YR 2/2 matrix and no mottles. Approximately 50% of the soil sample was large gravel, which prevented soil sampling below 2 inches. Hydric soils are inferred for this feature based on perennial hydrology observed between May and October, 2012, and a dominance of hydric vegetation.

Feature 6 contains an OHWM consisting of saturation and surface soil cracks. Hydrology results solely from an irrigation line leak. There is no apparent outlet to adjacent City Creek. Excess water drains northwest along a paved access road before percolating into a sandy bermed area above City Creek. Because this feature contains a dominance of hydrophytic vegetation, inferred hydric soils, and perennial hydrology, it meets the three criteria of an USACE-defined wetland. However, this feature is an isolated feature that results solely from irrigation leakage, which if discontinued, would revert back to uplands. This feature is not a natural or historic feature, it has artificial hydrology, and it is not hydrologically connected to City Creek. As a result, it is assumed that USACE will not assert jurisdiction over this feature. This feature also has no defined bed, bank, or channel, and the riparian vegetation is not associated with City Creek, but rather was planted or is opportunistic with the leaking irrigation line.

5.5.7 Feature 7

Feature 7 is a seep feature that is not identified as a blue line drainage on the Redlands USGS topographic quadrangle map (Figure 5; Appendix B, photo 7). It is an earthen feature directly adjacent to westbound SR-210 and the westbound on-ramp from Greenspot Road. It is classified as a seep drainage that occurs as a result of a leaking irrigation line. This feature is regularly maintained based on observations of vegetation removal. There is no defined channel or banks and the feature occurs on slightly sloping grade south towards Greenspot Road.

Feature 7 is vegetated with a dominance of hydrophytic vegetation within the study area. Dominant species include southern cattail (OBL) and barnyard grass (*Echinocloa crus-galli* [FAC]) (Appendix A, Wetland Determination Data Form 7).

A soil pit sampled within Feature 7 contained sandy loam soils with a 10YR 3/3 matrix and no mottles. Although the soil was saturated, it did not contain hydric soil indicators, perhaps due to insufficient duration of soil saturation from the irrigation leak.

Feature 7 contains an OHWM consisting of saturation and standing water at the leak location. Hydrology results solely from a landscape irrigation line leak and there is no outlet to any other feature. Although this feature contains a dominance of hydrophytic vegetation and hydrology, it does not contain hydric soils and does not meet the criteria of an USACE-defined wetland. In addition, this feature is an isolated feature that results solely from a leaking irrigation pipe, which if repaired, would cause the vegetation to revert back to uplands. This feature is not a natural feature, it has artificial hydrology, and it is not hydrologically connected to any downslope receiving waters. As a result, it is not likely that the USACE will assert jurisdiction over this feature.

5.5.8 Feature 8 (Plunge Creek)

Plunge Creek is identified as an intermittent blue line drainage on the Redlands USGS topographic quadrangle map that drains from east to west through the central portion of the study area (Figure 5; Appendix B, photo 8). It contains an earthen bottom with two sections containing concrete riprap erosion protection to the east of the westbound SR-210 bridge. It is classified as a modified natural drainage that has been modified as a result of mining activities and construction of SR-210. The SR-210 bridge abutments within the feature limits are composed of concrete and rock riprap and the remaining banks are earthen and/or cobble/boulder.

Plunge Creek is mainly sparsely vegetated within the study area, with the exception of the downslope portion west of SR-210 where the channel widens and a dominance of hydrophytic vegetation is present.

Dominant species include black willow (FACW) and mulefat (FACW) (Appendix A, Wetland Determination Data Form 8W).

A soil pit sampled within Plunge Creek contained sandy soils with a 10Y/R 5/4 matrix and no mottles. Soils are mapped within the study area as Soboba Stony Loamy Sand, 2-9% slopes, which are not classified as hydric soils (USDA-NRCS 2012). However, sandy soils are considered problematic, and when combined with frequent scouring, hydric soils are prevented from forming. Therefore, areas where a dominance of hydric vegetation and hydrological indicators are present are classified as wetlands.

Plunge Creek contains an OHWM consisting of sediment and debris deposits, shelving, and drainage patterns within the study area. Hydrology results from intermittent seasonal storm flows. The headwaters of Plunge Creek begin within the southern San Bernardino Mountains where flows drain southwest for approximately 8.7 miles before entering the study area. Flows then exit the study area and drain southwest for approximately 0.3 mile before draining into City Creek. Flows then drain southwest for 1.0 mile before entering the Santa Ana River. The total relevant reach of Plunge Creek is approximately 9.0 miles. Plunge Creek appears be a non-RPW having flows for less than 3 months per year. It is assumed that USACE will assert jurisdiction over Plunge Creek because of its status as an historic natural drainage and its potential chemical, physical, and biological contribution to the receiving waters draining to a TNW (i.e., the Santa Ana River).

5.5.9 Feature 9 (Santa Ana River)

The Santa Ana River is identified as an intermittent blue line drainage on the Redlands USGS topographic quadrangle map that drains from east to west through the central portion of the study area (Figure 5; Appendix B, photo 9). It contains an earthen bottom and is classified as a modified natural drainage that has been modified as a result of mining activities, construction of SR-210, bank armoring, and other local development. The SR-210 bridge abutments within the river are composed of concrete and rock riprap and the remaining banks are earthen within the study area.

The Santa Ana River is sparsely vegetated within the study area, and where vegetated, the cover is dominated by alluvial fan sage scrub containing upland species such as scalebroom (FACU) and California buckwheat (UPL), with a few mulefat (FACW). No dominance of wetland vegetation was observed within the study area; therefore, no wetland sample point was performed.

Soils are mapped within the study area as Psamments and Fluvents, frequently flooded, and Soboba Stony Loamy Sand, 2-9% slopes, neither of which are classified as an hydric soil (USDA-NRCS 2012). Sandy soils and frequent scouring in the Santa Ana River prevent hydric soil formation and hydrophytic vegetation establishment.

The Santa Ana River contains an OHWM consisting of sediment and debris deposits, shelving, and drainage patterns within the study area. It contains several braided low flow channels interspersed with upland berm areas within the study area. Hydrology results from seasonal storm flows from the San Bernardino Mountains and surface water runoff from adjacent, developed lands. The headwaters of the Santa Ana River begin within the southern San Bernardino Mountains in the vicinity of San Gorgonio Mountain located to the northeast of the study area. Flows drain south west for approximately 96 miles before entering the Pacific Ocean. The lower reach of the Santa Ana River at the Pacific Ocean is considered the first TNW. The Santa Ana River is classified as a RPW, although no flow was observed within the study area during the initial reconnaissance surveys (May and June 2012) and during the

delineation (October 12, 2012). However, the lower reaches of the river do contain flows greater than 3 months per year. Because the Santa Ana River is a RPW with a lower relevant reach that is a TNW, USACE will assert jurisdiction within the study area.

5.5.10 Feature 10

Feature 10 drains from south to north through the southern portion of the study area along westbound SR-210 before emptying into the Santa Ana River (Figure 5; Appendix B, photo 10). It is not identified as a blue line drainage on the 1988 *Redlands* USGS topographic quadrangle map. It contains an earthen bottom within the study area and is concrete for the remaining portion of the channel upslope of the study area. It drains surface flows from SR-210 and surrounding residential and commercial developments and adjacent orchards. Historical aerials from 1980, 1968, and 1959 show what appears to be a disturbed, vegetated area between orchards although no indications of a drainage are present.

Feature 10 is sparsely vegetated within the study area, and where vegetated, the cover is dominated by alluvial fan sage scrub containing upland species such as scalebroom (FACU) and California buckwheat (UPL), with a few mulefat (FACW). No dominance of wetland vegetation was observed within the study area; therefore, no wetland sample point was performed.

Soils are mapped within the study area as Psamments and Fluvents, frequently flooded, which is not classified as an hydric soil (USDA-NRCS 2012). Sandy soils and frequent scouring prevent hydric soil formation and hydrophytic vegetation establishment.

Feature 10 contains an OHWM consisting of sediment and debris deposits, shelving, and drainage patterns within the study area. Hydrology results from seasonal storm flows from SR-210, surrounding residential and commercial developments, and agricultural irrigation runoff from adjacent orchards. Flows appear to originate at a culvert that daylights north of Interstate 10 at the intersection of West Colton Avenue and New York Street. Flows drain north for approximately 2.1 miles before entering the Santa Ana River. Feature 10 is ephemeral and does not appear be a RPW based on observations in May, June, and August of 2012. It is assumed that USACE will assert jurisdiction over Feature 10 due to its long relative reach, its second order stream status, and its chemical, physical, and biological contribution to the receiving waters draining directly to a TNW (i.e., the Santa Ana River).

5.5.11 Feature 11

Feature 11 drains from south to north through the southern portion of the study area along eastbound SR-210 before emptying into the Santa Ana River (Figure 5; Appendix B, photo 11). It is not identified as a blue line drainage on the 1988 *Redlands* USGS topographic quadrangle map. It contains an earthen bottom within the study area. It is classified as a constructed drainage that was constructed in uplands to drain surface flows from SR-210. Historical aerials from 1980 prior to construction of SR-210 do not show this feature present.

Feature 11 is sparsely vegetated within the study area, and where vegetated, the cover is dominated by alluvial fan sage scrub containing upland species such as scalebroom (FACU) and California buckwheat (UPL), with a few mulefat (FACW) and one small Fremont's cottonwood (FACW). No dominance of wetland vegetation was observed within the study area.

Soils are mapped within the study area as Psamments and Fluvents, frequently flooded, which is not classified as an hydric soil (USDA-NRCS 2012).

Feature 11 contains an OHWM consisting of sediment and debris deposits, shelving, and drainage patterns within the study area. Hydrology results from seasonal storm flows from SR-210. Sheet flows originate along the eastbound SR-210 shoulder and pass north through a culvert before daylighting into an open, earthen channel that drains north to the Santa Ana River. Feature 11 is ephemeral and does not appear to be a RPW based on observations in May, June, and August of 2012. Because the feature is not a natural drainage and was constructed in uplands to drain upland flows, it is not likely that the USACE will assert jurisdiction.

5.6 RWQCB Jurisdiction Pursuant to Section 401 of the CWA and Porter-Cologne

RWQCB CWA Section 401 jurisdiction is equivalent to USACE CWA Section 404 jurisdiction. Detailed descriptions of each of the drainage features subject to CWA Section 401 jurisdiction are provided in Section 5.5. In addition, those features that are not likely within the jurisdiction of the USACE, but are potentially within the jurisdiction of CDFW (excluding associated riparian areas beyond the top of bank), are likely jurisdictional to the RWQCB through Porter-Cologne on a case-by-case basis. This includes Features 1 and 11. Total potential RWQCB jurisdiction is provided in Table 2.

5.7 CDFW Section 1602 (et seq.) Jurisdiction

Detailed descriptions of each of the drainage features subject to CDFW jurisdiction are provided in Section 5.5. All of the features within the jurisdiction of USACE are also subject to CDFW jurisdiction pursuant to Section 1602 of the CFG Code. In addition, those features that are not included within USACE jurisdiction (i.e., Features 1 and 11), and also the surface area from the OHWM to the top of bank in each feature and adjacent riparian areas to the outer drip line, if present, are also included as CDFW 1602 jurisdiction. Those features that are likely not jurisdictional to the USACE, but have at least minimal functions and values to aquatic or terrestrial wildlife are likely subject to CDFW jurisdiction. Total potential CDFW jurisdiction within the study area is provided in Table 2.

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Appendix A.
Wetland Determination Data Forms

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Highland/San Bernardino Sampling Date: 12Oct2012
Applicant/Owner: Caltrans State: CA Sampling Point: 1-Highland
Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W
Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 1-2
Subregion (LRR): C Lat: 34.135628 Long: -117.234495 Datum: WGS84
Soil Map Unit Name: Hanford Coarse Sandy Loam, 2 To 9 Percent Slopes NWI classification: non-wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: **No dominance/prevelance of hydrophytic vegetation and no hydric soils present; therefore, feature is a non-wetland.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
50% = _____, 20% = _____	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5' x 10')			
1. *N/A*			
2.			
3.			
4.			
5.			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size: 5' x 10')			
1. *Leptocloa uninervia*	25	yes	FACW
2. *Chenopodium alba*	60	yes	FACU
3. *Conyzia canadensis*	5	no	FACU
4.			
5.			
6.			
7.			
8.			
50% = 45, 20% = 18	90	= Total Cover	
Woody Vine Stratum (Plot size: 5' x 10')			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	0	x1 =	0
FACW species	25	x2 =	50
FAC species	0	x3 =	0
FACU species	65	x4 =	260
UPL species	0	x5 =	0
Column Totals:	90 (A)		310 (B)

Prevalence Index = B/A = 3.44

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks:

Project Site: SR-210

SOIL

Sampling Point: 1-Highland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 3/3	100	none				sandy loam	some gravel present

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (Inches): _____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: No hydric soil indicators were present. Features remains damp, but not saturated from irrigation runoff.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☒ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	_____
Water Table Present?	Yes	☐	No	☒	Depth (inches):	_____
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	2

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Irrigation runoff from adjacent ornamental landscaping along SR-210 keeps feature damp, but possibly not saturated for long durations. Vegetation matting present from rainfall 2 days prior to survey. Drift deposits evident from recent rainfall.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 1Aug2012
Applicant/Owner: Caltrans State: CA Sampling Point: 2-Sand Creek
Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 2-3
Subregion (LRR): C Lat: 34.132813 Long: -117.228588 Datum: WGS84
Soil Map Unit Name: Psamment and Fluvents, Frequently Flooded NWI classification: non-wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: **No dominance or prevalence of hydrophytic vegetation present and only a few inches of soils (sand/gravel) present on top of a restrictive cobble/concrete layer.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:30 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
50% = _____, 20% = _____	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:30 ft diameter)			
1. *N/A*			
2.			
3.			
4.			
5.			
50% = _____, 20% = _____	0	= Total Cover	
Herb Stratum (Plot size:30 ft diameter)			
1. *Heterotheca grandiflora*	20	yes	FACU
2. *Avena fatua*	10	yes	NL (UPL)
3. *Cynodon dactylon*	3	no	FACU
4. *Lactuca serriola*	2	no	FACU
5. *Bromus diandrus*	2	no	NL (UPL)
6. *Ricinus communis*	2	no	FACU
7. *Helianthus annuus*	1	no	FACU
8.			
50% = 20, 20% = 8	40	= Total Cover	
Woody Vine Stratum (Plot size:30 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	
% Bare Ground in Herb Stratum 60	% Cover of Biotic Crust 0		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	0	x3 =	0
FACU species	5	x4 =	20
UPL species	2	x5 =	10
Column Totals:	7 (A)		30 (B)

Prevalence Index = B/A = 4.28

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks:

Vegetation likely gets routinely scoured following rainfall based on early sucession herbaceous plants observed.

Project Site: _____

SOIL

Sampling Point: 2-Sand Creek

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	5Y 6/6	100	none				sand	course sand

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: cobble

Depth (Inches): 4+

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: Restrictive cobble layer present prevented soil pit sampling below 4 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) **(Riverine)**
- ☒ Sediment Deposits (B2) **(Riverine)**
- ☒ Drift Deposits (B3) **(Riverine)**
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches): _____
Water Table Present?	Yes	☐	No	☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Large debris depostis have accumulated on channel walls and on large cobble.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 22Aug2012

Applicant/Owner: Caltrans State: CA Sampling Point: 5W (City Creek)

Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): C Lat: 34.111418 Long: -117.199348 Datum: WGS84

Soil Map Unit Name: Psamment and Fluvents, Frequently Flooded NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?** **Yes ☒ No ☐**
Hydric Soil Present?	Yes ☒	No ☐	
Wetland Hydrology Present?	Yes ☒	No ☐	

Remarks: **Paired wetland point. Plot located adjacent to low flow channel.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
50% = _____, 20% = _____	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 ft diameter)			
1. *Baccharis salicifolia*	15	yes	FACW
2. *Salix exigua*	10	yes	FACW
3. *S. gooddingii*	5	no	FACW
4. *Tamarix ramosissima*	5	no	FACW
5.			
50% = 18, 20% = 7	35	= Total Cover	
Herb Stratum (Plot size: 10 ft diameter)			
1. *Polypogon monspeliensis*	20	yes	FACW
2. *Cyperus eragrostis*	15	yes	FACW
3. *Persicaria (Polygonum) hydropiper*	25	yes	OBL
4. *Conyzia canadensis*	5	no	FACU
5.			
6.			
7.			
8.			
50% = 33, 20% = 13	65	= Total Cover	
Woody Vine Stratum (Plot size: 10 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	25	x1 =	25
FACW species	55	x2 =	110
FAC species	15	x3 =	45
FACU species	5	x4 =	20
UPL species	0	x5 =	0
Column Totals:	75 (A)		200 (B)

Prevalence Index = B/A = 2.66

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

Project Site: SR-210

SOIL

Sampling Point: 5W (City Creek)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	100	none				sand	course sand

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: cobble

Depth (Inches): 4+

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Restrictive cobble layer present prevented soil pit sampling below 4 inches. Frequent scour and sand present prevent hydric soil formation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) **(Riverine)**
- ☒ Sediment Deposits (B2) **(Riverine)**
- ☒ Drift Deposits (B3) **(Riverine)**
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☒	No	☐	Depth (inches):	1
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	8

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Low flow channel has been artificially bermed to contain the low flow.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 22Aug2012
Applicant/Owner: Caltrans State: CA Sampling Point: 5U (City Creek)
Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W
Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 2-3
Subregion (LRR): C Lat: 34.111455 Long: -117.199367 Datum: WGS84
Soil Map Unit Name: Psamment and Fluvents, Frequently Flooded NWI classification: non-wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: **Paired point. Plot located on top of a topographic high point on a channel braid adjacent to low flow channel. No dominance or prevalence of hydrophytic vegetation present.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
50% = _____, 20% = _____	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 ft diameter)			
1. *Nicotiana glauca*	30	yes	FAC
2.			
3.			
4.			
5.			
50% = 15, 20% = 6	30	= Total Cover	
Herb Stratum (Plot size: 10 ft diameter)			
1. *Salsola tragus*	10	no	FACU
2. *Phacelia sp.*	10	no	FACU
3. *Datura wrightii*	25	yes	NL (UPL)
4. *Bromus diandrus*	15	yes	FACU
5.			
6.			
7.			
8.			
50% = 30, 20% = 12	60	= Total Cover	
Woody Vine Stratum (Plot size: 10 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	
% Bare Ground in Herb Stratum 40	% Cover of Biotic Crust 0		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33	(A/B)

Prevalence Index worksheet:

	Total % Cover of :	Multiply by:	
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	30	x3 =	90
FACU species	20	x4 =	80
UPL species	25	x5 =	125
Column Totals:	75 (A)		303 (B)

Prevalence Index = B/A = 4.04

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks:
Phacelia sp FACU status assumed based on vegetation community present and lack of hydric soils.

Project Site: SR-210

SOIL

Sampling Point: 5U (City Creek)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 5/4	90	none				sand	course sand
	10R 8/2	10					Rock/cobble	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: cobble

Depth (Inches): 5+

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: Restrictive cobble layer present prevented soil pit sampling below 5 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☒ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):
Water Table Present?	Yes	☐	No	☒	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Debris depostis have accumulated at sample point, which is on top of a large braid within the channel. high flows flow over the top of the braid.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 10Oct2012
Applicant/Owner: Caltrans State: CA Sampling Point: 6W
Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W
Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): convex Slope (%): 1
Subregion (LRR): C Lat: 34.110334 Long: 117.198691 Datum: WGS84
Soil Map Unit Name: Soboba Stony Loamy Sand, 2 To 9 Percent Slopes NWI classification: non-wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?** **Yes** ☒ **No** ☐
Hydric Soil Present?	Yes ☒	No ☐	
Wetland Hydrology Present?	Yes ☒	No ☐	

Remarks: **Paired point. Feature located directly adjacent to SR-210 in uplands at the road grade; hydrology provided solely by broken irrigation line.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus freemontii var freemontii*	30	yes	FAC
2.			
3.			
4.			
50% = 15, 20% = 6	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft diameter)			
1. *Baccharis salicifolia*	15	yes	FACW
2. *Tamarix ramosissima*	5	yes	FACW
3.			
4.			
5.			
50% = 10, 20% = 4	20	= Total Cover	
Herb Stratum (Plot size: 30 ft diameter)			
1. *Typha latifolia*	80	yes	OBL
2. *Cyperus eragrostis*	1	no	FACW
3. *Brassica nigra*	1	no	NL (UPL)
4.			
5.			
6.			
7.			
8.			
50% = 41, 20% = 16	82	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	
% Bare Ground in Herb Stratum 18	% Cover of Biotic Crust 0		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	80	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	80	x1 =	80
FACW species	21	x2 =	42
FAC species	30	x3 =	90
FACU species	0	x4 =	0
UPL species	1	x5 =	5
Column Totals:	132 (A)		217 (B)

Prevalence Index = B/A = 1.64

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks:

Project Site: SR-210

SOIL

Sampling Point: 6W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	50	none				sandy loam	
	varies	50					gravel	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: gravel

Depth (Inches): 2+

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Hydric soils inferred based on observation of saturation for 6 months. Restrictive gravel layer present prevented soil pit sampling below 2 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	surface

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology provided solely from broken irrigation line.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 10Oct2012
Applicant/Owner: Caltrans State: CA Sampling Point: 6U
Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W
Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRR): C Lat: 34.110402 Long: -117.198746 Datum: WGS84
Soil Map Unit Name: Soboba Stony Loamy Sand, 2 To 9 Percent Slopes NWI classification: non-wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks: **Paired point. Feature located directly adjacent to SR-210 in uplands at the road grade; hydrology provided soley by broken irrigation line.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
50% = _____, 20% = _____	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft diameter)			
1. *N/A*			
2.			
3.			
4.			
5.			
50% = _____, 20% = _____	0	= Total Cover	
Herb Stratum (Plot size: 30 ft diameter)			
1. *Salsola tragus*	40	yes	FACU
2. *Brassica nigra*	20	yes	NL (UPL)
3. *Bromus madritensis*	5	no	NL (UPL)
4. *Ambrosia psilostachya*	5	no	FACU
5.			
6.			
7.			
8.			
50% = 35, 20% = 14	70	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	
% Bare Ground in Herb Stratum 30	% Cover of Biotic Crust 0		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	0	x3 =	0
FACU species	45	x4 =	180
UPL species	25	x5 =	125
Column Totals:	70 (A)		305 (B)

Prevalence Index = B/A = 4.36

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

Project Site: SR-210

SOIL

Sampling Point: 6U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 5/3	70	none				sandy loam	
	varies	30	none				gravel	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: gravel

Depth (Inches): 4+

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):
Water Table Present?	Yes	☐	No	☒	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrological indicators were present

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 10Oct2012
Applicant/Owner: Caltrans State: CA Sampling Point: 7
Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W
Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRR): C Lat: 34.108499 Long: -117.198515 Datum: WGS84
Soil Map Unit Name: Soboba Gravelly Loamy Sand, 0 To 9 Percent Slopes NWI classification: non-wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: **Feature located directly adjacent to SR-210 in uplands; hydrology provided soley by broken irrigation line.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
50% = _____, 20% = _____	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 ft diameter)			
1. *N/A*			
2.			
3.			
4.			
5.			
50% = _____, 20% = _____	0	= Total Cover	
Herb Stratum (Plot size: 10 ft diameter)			
1. *Typha latifolia*	50	yes	OBL
2. *Echinocloa crus-galii*	40	yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
50% = 45, 20% = 18	90	= Total Cover	
Woody Vine Stratum (Plot size: 10 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	
% Bare Ground in Herb Stratum 10	% Cover of Biotic Crust 0		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	50	x1 =	50
FACW species	0	x2 =	0
FAC species	40	x3 =	120
FACU species	0	x4 =	0
UPL species	0	x5 =	0
Column Totals:	90 (A)		170 (B)

Prevalence Index = B/A = 1.89

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Feature was observed prior on Aug 10, 2012 and all vegetation was cleared.

Project Site: SR-210

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3	100	none				sandy loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: gravel

Depth (Inches): 8+

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: Soils appear to be saturated, but this may not be for a duration that would cause hydric soil formation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	2

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology provided by broken irrigation pipe

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 22Aug2012

Applicant/Owner: Caltrans State: CA Sampling Point: 8W (Plunge Creek)

Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): C Lat: 34.104599 Long: -117.200413 Datum: WGS84

Soil Map Unit Name: Soboba Stony Loamy Sand, 2 To 9 Percent Slopes NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: **Paired wetland point. Soils are problematic sandy soils considered to be hydric due to sandy composition and frequent scour, both of which prevent hydric soil formation.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:30 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *S. gooddingii*	45	yes	FACW
2.			
3.			
4.			
50% = 23, 20% = 9	45	= Total Cover	
Sapling/Shrub Stratum (Plot size:30 ft diameter)			
1. *Baccharis salicifolia*	10	yes	FACW
2.			
3.			
4.			
5.			
50% = 5, 20% = 2	10	= Total Cover	
Herb Stratum (Plot size:30 ft diameter)			
1. *Xanthium strumarium*	2	no	FAC
2. *Hirschfeldia incana*	3	yes	NL (UPL)
3.			
4.			
5.			
6.			
7.			
8.			
50% = 3, 20% = 1	5	= Total Cover	
Woody Vine Stratum (Plot size:30 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66	(A/B)

Prevalence Index worksheet:

	Total % Cover of :	Multiply by:
OBL species	0	x1 = 0
FACW species	55	x2 = 110
FAC species	2	x3 = 6
FACU species	0	x4 = 0
UPL species	3	x5 = 15
Column Totals:	60 (A)	131 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

Frequent scour likely prevents herbaceus layer from forming.

Project Site: SR-210

SOIL

Sampling Point: 8W (Plunge Creek)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100	none				sand	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (Inches): _____

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Soils are sandy and considered problematic; frequent scouring and sandy sois prevent hydric soil formation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) **(Riverine)**
- ☒ Sediment Deposits (B2) **(Riverine)**
- ☒ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches): _____
Water Table Present?	Yes	☐	No	☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches): _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: SR-210 City/County: Redlands/San Bernardino Sampling Date: 10Oct2012

Applicant/Owner: Caltrans State: CA Sampling Point: 8U (Plunge Creek)

Investigator(s): G. Hoisington Section, Township, Range: S31, T1N, R3W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): C Lat: 34.104456 Long: -117.200319 Datum: WGS84

Soil Map Unit Name: Soboba Stony Loamy Sand, 2 To 9 Percent Slopes NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks: **Paired upland point. Sample location on bermed area outside of channel.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = _____, 20% = _____	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft diameter)			
1. *Baccharis salicifolia*	5	yes	FACW
2.			
3.			
4.			
5.			
50% = 3, 20% = 1	5	= Total Cover	
Herb Stratum (Plot size: 30 ft diameter)			
1. *Nicotiana glauca*	7	no	FAC
2. *Hirschfeldia incana*	10	yes	NL (UPL)
3. *Eriogonum fasciculatum*	6	no	NL (UPL)
4. *Conyza canadensis*	14	yes	FACU
5. *Xanthium strumarium*	3	no	FAC
6.			
7.			
8.			
50% = 20, 20% = 8	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft diameter)			
1. *N/A*			
2.			
50% = _____, 20% = _____	0	= Total Cover	

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	7	x3 =	21
FACU species	14	x4 =	56
UPL species	16	x5 =	80
Column Totals:	37 (A)		157 (B)

Prevalence Index = B/A = 4.24

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

Project Site: SR-210

SOIL

Sampling Point: 8U (Plunge Creek)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/4	100	none				sand	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
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- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: cobble

Depth (Inches): 10+

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches): _____
Water Table Present?	Yes	☐	No	☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix B.
Site Photographs

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	Photograph: 1 **Date:** 12 Oct, 2012 **Feature:** 1 **Direction:** Northwest towards Highland Avenue. **Description**: Representative photograph of Feature 1 along westbound SR-210 and just south of Highland Avenue. Vegetation outside of the drainage is irrigated ornamental landscape.
	Photograph: 2 **Date:** 28 June, 2012 **Feature:** 2 (Sand Creek) **Direction:** Northeast **Description**: Representative photograph of Sand Creek downslope of eastbound SR-210.

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	Photograph: 3 **Date:** 28 June, 2012 **Feature:** 3 **Direction:** Facing east from approximately Victoria Avenue **Description**: Representative photograph of Feature 3.
	Photograph: 4 **Date:** 22 Aug, 2012 **Feature:** 4 **Direction:** South **Description**: Typical section of Feature 4 within the study area.

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	Photograph: 5 **Date:** 28 June, 2012 **Feature:** Feature 5 (City Creek) **Direction:** Northwest **Description**: Representative channel conditions between the SR-210 eastbound and westbound bridges in City Creek.
	Photograph: 6 **Date:** 12 Oct, 2012 **Feature:** Feature 6 **Direction:** North **Description**: This photograph shows the wetland seep feature adjacent to westbound SR-210, south of City Creek.

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	Photograph: 7 **Date:** 10 Oct, 2012 **Feature:** Feature 7 **Direction:** Southwest **Description**: This photograph shows the seep feature adjacent to westbound SR-210, north of Greenspot Road. The traffic cone marks the irrigation leak location.
	Photograph: 8 **Date:** 12 Oct, 2012 **Feature:** 8 (Plunge Creek) **Direction:** West **Description**: Plunge Creek facing upslope (east).

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	Photograph: 9 **Date:** 12 Oct, 2012 **Feature:** 9 (Santa Ana River) **Direction:** South **Description**: This photo shows the Santa Ana River where the inside bridge widening will occur.
	Photograph: 10 **Date:** 28 June, 2012 **Feature:** 10 **Direction:** South **Description**: Photo of Feature 10 just prior to emptying into the Santa Ana River.

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	Photograph: 11 **Date:** 10 Oct, 2012 **Feature:** 11 **Direction:** Southwest **Description**: This photo shows Feature 11 at the bottom of the photo along the edge of the fence and parallel to, and on the opposite side of, the dirt access road.

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Appendix C. Plant Species Observed

ANGIOSPERMAE: DICOTYLEDONAE	DICOT FLOWERING PLANTS
Adoxaceae	Muskroot Family
Sambucus nigra ssp. *caerulea*	blue elderberry
Anacardiaceae	Sumac Family
*Schinus molle**	Peruvian pepper tree
Asteraceae (Compositae)	Sunflower Family
Ambrosia acanthicarpa	annual bur-sage
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Baccharis salicifolia ssp. *salicifolia [Baccharis salicifolia]*	mule fat
Carduus pycnocephalus ssp. *pycnocephalus**	Italian thistle
*Centaurea melitensis**	tocalote/Maltese star thistle
Chaenactis glabriuscula	yellow pincushion
Encelia farinosa	brittlebush
Ericameria linearifolia	interior goldenbush
*Erigeron bonariensis [Conyza bonariensis]**	flax-leaved horseweed
Erigeron foliosus	leafy flebane
Helianthus annuus	western sunflower
Heterotheca grandiflora	telegraph weed
Heterotheca sessiliflora	sessileflower goldenaster
*Hypochaeris glabra**	smooth cat's-ear
*Lactuca serriola**	prickly lettuce
Lepidospartum squamatum	scalebroom
Logfia filaginoides [Filago californica]	California cottonrose
Malacothrix saxatilis	cliff malacothrix
Pseudognaphalium biolettii [Gnaphalium bicolor]	bicolored everlasting/Bioletti's cudweed
Pseudognaphalium canescens [Gnaphalium canescens]	everlasting cudweed
*Senecio vulgaris**	common groundsel
Sonchus asper ssp. *asper**	prickly sow thistle
*Sonchus oleraceus**	common sow thistle
Stylocline gnaphaloides	everlasting neststraw
Xanthium strumarium	cocklebur
Boraginaceae	Borage Family
Cryptantha sp.	cryptantha
Eriodictyon trichocalyx	hairy yerba santa
Eucrypta chrysanthemifolia	common eucrypta
Pectocarya linearis ssp. *ferocula*	slender pectocarya
Phacelia cicutaria	caterpillar phacelia
Phacelia distans	common phacelia
Phacelia parryi	Parry's phacelia
Brassicaceae (Cruciferae)	Mustard Family
*Hirschfeldia incana**	shortpod mustard
*Nasturtium officinale [Rorippa nasturtium-aquaticum]**	water cress
*Sisymbrium irio**	London rocket
Chenopodiaceae	Goosefoot Family

*Chenopodium album**	pigweed
*Salsola tragus**	Russian thistle
Cistaceae	Rock-rose Family
Helianthemum scoparium	peak rush-rose
Convolvulaceae	Morning-glory Family
Calystegia macrostegia	morning-glory
Crassulaceae	Stonecrop Family
Crassula connata	pygmy-weed
Dudleya lanceolata	lance-leaved dudleya
Euphorbiaceae	Spurge Family
Croton californicus	California croton
*Ricinus communis**	castor bean
Fabaceae (Leguminosae)	Legume Family
Acmispon glaber [Lotus scoparius]	deerweed
Acmispon strigosus [Lotus strigosus]	strigose lotus
Lupinus bicolor	miniature lupine
Geraniaceae	Geranium Family
*Erodium botrys**	long-beaked filaree
*Erodium cicutarium**	red-stemmed filaree
Lamiaceae (Labiatae)	Mint Family
*Lamium amplexicaule**	common henbit
Salvia columbariae	chia
Myrtaceae	Myrtle Family
Eucalyptus spp.*	gum
Onagraceae	Evening Primrose Family
Camissoniopsis bistorta	California sun cup
Eulobus californicus [Camissonia californica]	mustard-like evening primrose
Phrymaceae	Lopseed Family
Mimulus guttatus	seep monkeyflower
Plantaginaceae	Plantain Family
Plantago erecta	dwarf plantain / California plantain
*Veronica anagallis-aquatica**	water speedwell
Platanaceae	Sycamore Family
Platanus racemosa	western sycamore
Polemoniaceae	Phlox Family
Eriastrum densifolium ssp. *sanctorum*	Santa Ana River woollystar
Eriastrum sapphirinum	annual woollystar / sapphire woollystar
Polygonaceae	Buckwheat Family
Eriogonum fasciculatum var. *foliolosum*	leafy California buckwheat
Erigonum gracile	slender buckwheat
Eriogonum thurberi	Thurber's wild buckwheat
Lastarriaea coriacea	leather-spineflower
*Persicaria [Polygonum] hydropiper**	common smartweed
*Rumex crispus**	curly dock
Rosaceae	Rose Family
Adenostoma fasciculatum	chamise
Salicaceae	Willow Family
Populus fremontii ssp. *fremontii*	Fremont's cottonwood

Salix exigua	sandbar willow
Salix gooddingii	Goodding's black willow
Salix lasiolepis	arroyo willow
Simaroubaceae	Quassia Family
*Ailanthus altissima**	tree of heaven
Solanaceae	Nightshade Family
Datura wrightii	jimson weed
*Nicotiana glauca**	tree tobacco
Nicotiana quadrivalvis	Wallace's tobacco
Tamaricaceae	Tamarisk Family
*Tamarix ramosissima**	Mediterranean tamarix
Urticaceae	Nettle Family
Urtica dioica ssp. *holosericea*	hoary nettle
ANGIOSPERMAE: MONOCOTYLEDONAE	MONOCOT FLOWERING PLANTS
Agavaceae	Century Plant Family
Hesperoyucca whipplei [Yucca whipplei]	Our Lord's candle
Arecaceae (Palmae)	Palm Family
*Washingtonia robusta**	Mexican fan palm
Cyperaceae	Sedge Family
Cyperus eragrostis	tall umbrella-sedge
Poaceae (Gramineae)	Grass Family
*Arundo donax**	giant reed
*Avena barbata**	slender wild oat
*Avena fatua**	wild oat
*Bromus diandrus**	ripgut grass
*Bromus hordeaceus**	soft chess
Bromus madritensis ssp. *rubens**	foxtail chess
*Cynodon dactylon**	Bermuda grass
*Echinochloa crus-galli**	barnyard grass
*Festuca myuros [Vulpia myuros] **	foxtail fescue
Hordeum murinum var. *leporinum**	hare barley
Leptochloa fusca ssp. *uninervia [Leptochloa uninervia]*	Mexican sprangletop
*Lolium perenne**	perennial ryegrass
Muhlenbergia rigens	deergrass
*Pennisetum setaceum**	crimson fountain grass
*Polypogon monspeliensis**	rabbit's-foot grass
*Schismus barbatus**	Mediterranean schismus
Typhaceae	Cattail Family
Typha latifolia	southern cattail

* non-native species

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Appendix H Agency Coordination

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish and Wildlife Office
2177 SALK AVENUE - SUITE 250
CARLSBAD, CA 92008
PHONE: (760)431-9440 FAX: (760)431-5901
URL: www.fws.gov/carlsbad/

Consultation Code: 08ECAR00-2015-SLI-0598 July 28, 2015
Event Code: 08ECAR00-2015-E-01129
Project Name: SR-210 Mixed Flow Lane Addition Project

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

United States Department of Interior
Fish and Wildlife Service

Project name: SR-210 Mixed Flow Lane Addition Project

Official Species List

Provided by:

Carlsbad Fish and Wildlife Office
2177 SALK AVENUE - SUITE 250
CARLSBAD, CA 92008
(760) 431-9440
http://www.fws.gov/carlsbad/

Consultation Code: 08ECAR00-2015-SLI-0598
Event Code: 08ECAR00-2015-E-01129

Project Type: TRANSPORTATION

Project Name: SR-210 Mixed Flow Lane Addition Project
Project Description: The project will consist of widening SR-210 from Highland Avenue to San Bernardino Avenue. The project is located in San Bernardino County. The project is an inside widening project where the median is turned into traffic lanes.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:

Project Coordinates: The coordinates are too numerous to display here.

Project Counties: San Bernardino, CA

Endangered Species Act Species List

There are a total of 13 threatened or endangered species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
California red-legged frog *(Rana draytonii)* Population: Entire	Threatened	Final designated	
Mountain Yellow-Legged frog *(Rana muscosa)* Population: Southern California DPS	Endangered		
Birds			
California condor *(Gymnogyps californianus)* Population: Entire, except where listed as an experimental population	Endangered	Final designated	
Coastal California gnatcatcher *(Polioptila californica californica)* Population: Entire	Threatened	Final designated	
Least Bell's vireo *(Vireo bellii pusillus)* Population: Entire	Endangered	Final designated	
Southwestern Willow flycatcher *(Empidonax traillii extimus)*	Endangered	Final designated	

Population: Entire			
Fishes			
Santa Ana sucker *(Catostomus santaanae)* Population: 3 CA river basins	Threatened	Final designated	
Flowering Plants			
Nevin's barberry *(Berberis nevinii)*	Endangered	Final designated	
San Diego ambrosia *(Ambrosia pumila)*	Endangered	Final designated	
Santa Ana River woolly-star *(Eriastrum densifolium ssp. sanctorum)*	Endangered		
Slender-Horned spineflower *(Dodecahema leptoceras)*	Endangered		
Mammals			
San Bernardino Merriam's kangaroo rat *(Dipodomys merriami parvus)* Population: Entire	Endangered	Final designated	
Stephens' kangaroo rat *(Dipodomys stephensi)* Population: Entire	Endangered		

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Fishes	**Critical Habitat Type**
Santa Ana sucker *(Catostomus santaanae)* Population: 3 CA river basins	Final designated
Mammals	
San Bernardino Merriam's kangaroo rat *(Dipodomys merriami parvus)* Population: Entire	Final designated

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Appendix I Photo Log

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	Photograph: 1 **Date:** 14 June, 2012 **Direction:** North **Description**: Representative photograph of California Buckwheat Scrub vegetation community.
	Photograph: 2 **Date:** 14 June, 2012 **Direction:** North **Description**: Representative photograph of California Buckwheat Scrub, Riparian Habitat, and Disturbed Area vegetation communities/land cover types.

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	Photograph: 3 **Date:** 14 June, 2012 **Direction:** North **Description**: Representative photograph of San Bernardino kangaroo rat habitat (Scalebroom Scrub and California Buckwheat Scrub vegetation communities).
	Photograph: 4 **Date:** 28 June, 2012 **Direction:** Northwest **Description**: Representative photograph of Arroyo Willow Thicket vegetation community along City Creek.

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Photograph: 5

Date: 28 June, 2012

Direction: Northeast

Description: Representative Mule Fat Thicket vegetation community along City Creek.

Photograph: 6

Date: 28 June, 2012

Direction: Northwest

Description: Typical Riparian Habitat between the SR-210 northbound and southbound bridges at City Creek.

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Photograph: 7

Date: 28 June, 2012

Direction: South

Description: This photo shows channel conditions where the inside bridge widening will occur within the Santa Ana River.

Photograph: 8

Date: 28 June, 2012

Direction: East

Description: Plunge Creek under the SR-210 bridge, facing upslope (east).

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Photograph: 9

Date: 28 June, 2012

Direction: Northeast

Description:
Representative photograph of Sand Creek downslope of southbound SR-210.

Photograph: 10

Date: 28 June, 2012

Direction: Facing east from approximately Victoria Avenue

Description:
Representative photograph of an Unvegetated Channel.

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