Western Municipal Water District Proposed Riverside-Corona Feeder Realignment Project

EXECUTIVE SUMMARY

A. Report Date: **May 11, 2009**

B. Report Title: Results of General Biological Surveys, Habitat Assessments, and Literature Review

C. Project Site Location: Proposed Riverside-Corona Feeder Realignment Project beginning at the intersection of Cleveland Avenue and Jackson Street in the City of Riverside and terminating in the City of San Bernardino at Orange Show Road west of Waterman Avenue. The project area includes portions of the cities of Riverside, Rialto, Colton, and San Bernardino and portions of unincorporated Riverside and San Bernardino counties in portions of Sections 16, 17, 19, and 20 Township 2 South Range 5 West; Sections 6, 7, 8, 17, and 18 Township 3 South Range 5 West; and Sections 23, 24, 25, 26, 31, and 36 Township 2 South Range 6 West of United States Geological Survey (USGS), 7.5" quadrangle, topographic map Riverside West, California [dated 1967 and photorevised in 1980]; and portions of Sections 3 and 10 Township 2 South Range 5 West of United States Geological Survey (USGS), 7.5" quadrangle, topographic map Fontana, California [dated 1967 and photorevised in 1980]; and portions of Sections 15, 21, 30, and 32 Range 4 West and portions of Section 25 Range 5 West of San Bernardino South, California [dated 1967 and photorevised in 1980]).

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F. Report Summary:

The Proposed Project Alignment begins at the intersection of Cleveland Avenue and Jackson Street in the City of Riverside and extends northward to its terminus in the City of San Bernardino at Orange Show Road west of Waterman Avenue. The Monroe Street Alternative Alignment begins at the intersection of Cleveland and Irving Streets and extends northwest to its terminus at the intersection of Colorado and Jackson Streets. The project area includes portions of the cities of Riverside, Rialto, Colton, and San Bernardino and portions of unincorporated Riverside and San Bernardino counties in portions of Sections 16, 17, 19, and 20 Township 2 South Range 5 West; Sections 6, 7, 8, 17, and 18 Township 3 South Range 5 West; and Sections 23, 24, 25, 26, 31, and 36 Township 2 South Range 6 West of United States Geological Survey (USGS), 7.5" quadrangle, topographic map Riverside West, California [dated 1967 and photorevised in 1980]; and portions of Sections 3 and 10 Township 2 South Range 5 West of United States Geological Survey (USGS), 7.5" quadrangle, topographic map Fontana, California [dated 1967 and photorevised in 1980]; and portions of Sections 15, 21, 30, and 32 Range 4 West and portions of Section 25 Range 5 West of San Bernardino South, California [dated 1967 and photorevised in 1980]). [Exhibit 1: Regional Map].

Portions of the Project are located within the Jurupa Area Plan of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The Proposed Alignment traverses MSHCP Criteria Area Cell Number 617 within the Santa Ana River North Sub-unit at the Santa Ana River and Criteria Cells 22 and 55 within Sub-unit 3, the Delhi Sands Area, northeast of the intersection of Aqua Mansa Road and Wilson Street. The proposed infrastructure may be covered by the MSHCP pursuant to Section 7.3.9 if the applicant chooses to participate. The Project would not be subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process; however, it would be subject to the Joint Project Review (JPR) process. The Project would also be required to address particular biological requirements of the MSHCP, specifically pertaining to Volume 1, *Section 6.1.2* (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), *Section 6.1.3* (Protection of Narrow Endemic Plant Species), *Section 6.1.4* (Guideline Pertaining to the Urban/Wildlands Interface), and *Section 6.3.2* (Additional Survey Needs and Requirements). Additionally, the Project would have to demonstrate that it is located in the least environmentally sensitive feasible location, use existing roads, trails, and other disturbed areas to the greatest extent feasible, and commit to implementing the BMPs contained in *Appendix C* (Standard Best Management Practices) of the MSHCP document.

No special-status plant or animal species were observed within the Study Area during field studies. However, the Study Area exhibits suitable habitat for two plant species that are covered by the MSHCP, Parry's spineflower and Smooth tarplant, and two plant species that are not covered, California satintail and Robinson's pepper-grass. In addition, 25 special-status animal species have potential to occur within the Study Area. These include the federally-listed coastal California gnatcatcher, Delhi Sands flower-loving fly, least Bell's vireo, Santa Ana sucker, and southwestern willow flycatcher. Other special-status species with potential to occur include the American badger, arroyo chub, burrowing owl, San Diego horned lizard, golden eagle, loggerhead shrike, long-eared owl, Los Angeles pocket mouse, northwestern San Diego pocket mouse, orange-throated whiptail, Santa Ana speckled dace, southern grasshopper mouse,

southwestern pond turtle, two-striped garter snake, western yellow-billed cuckoo, yellow-breasted chat, white-tailed kite, northern red-diamond rattlesnake, San Diego black-tailed jackrabbit, and yellow warbler.

Additional focused surveys for burrowing owl, southwestern willow flycatcher, least Bell's vireo, Delhi Sands flower-loving fly, Santa Ana sucker surveys, and California gnatcatcher surveys will be necessary to satisfy regulatory requirements before the project is initiated if potentially suitable habitat area is proposed for direct disturbance during project construction. Additionally, focused surveys for burrowing owl, southwestern willow flycatcher, least Bell's vireo and California gnatcatcher will be necessary within suitable nesting habitat adjacent to proposed work areas if construction occurs during the nesting season.

The Study Area also encompasses features subject to U. S. Army Corps of Engineers (USACE), California Department of Fish and Game (CDFG), and Regional Water Quality Control Board (Regional Board) jurisdictions. Impacts to USACE jurisdiction will require a Section 404 Nationwide Permit from the USACE and a section 401 Water Quality Certification from the Regional Board. Impacts to CDFG jurisdiction will require a Section 1602 Streambed Alteration Agreement.

G. Individuals Conducting Fieldwork

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1.0 INTRODUCTION

1.1 Background and Scope of Work

This report provides the results of general biological surveys, habitat assessments, and a literature review for the Riverside-Corona Feeder Realignment Project (Project) located in San Bernardino and western Riverside Counties, California. The study area for the Project (Study Area) extends approximately 250 feet to either side of the proposed alignments. The Study Area was extended beyond the potential impact footprint in order to assess potential indirect impacts to special-status species occurring within the vicinity of the Project, as well as to encompass any possible modifications to the proposed pipeline alignment as planning progressed. The Study Area consists of two alignments: the Proposed Alignment and the Monroe Street Alternative Alignment. The Proposed Alignment is separated into two sub-segments: the portion north of the intersection of Van Buren Avenue and Clay Street (the Northern Reach) for which potential jurisdictional areas were identified but not delineated and the portion south of the intersection (the Central Reach) for which a jurisdictional delineation was completed.

The Riverside County portions of the Project occur within the Jurupa Area Plan of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). However, Western Municipal Water District (WMWD) is not a participating Permittee under the MSHCP. As such, the Project would not currently be eligible to receive take coverage and/or mitigation for species afforded under the MSHCP. If WMWD were to become a participant in the future, the Project would be eligible for coverage and/or mitigation provided that certain requirements are met.

This report describes the existing conditions within the Study Area and discusses the suitability of habitat for special-status species and related focused survey requirements. In addition, to the extent possible, the report discusses the potential impacts to sensitive biological resources in relation to the California Environmental Quality Act (CEQA) and applicable local, state, and federal permitting requirements.

The scope of this report includes a discussion of existing conditions for the Study Area and all methods employed regarding general surveys and habitat assessments, the documentation of botanical and wildlife resources identified or with potential to occur (including special-status species), recommendations for additional special-status species survey requirements, and analysis of potential impacts to biological resources. Methods of study include a review of relevant literature and general surveys. This report has been prepared to be consistent with accepted scientific and technical standards and survey guideline requirements issued by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), and the California Native Plant Society (CNPS).

The Study Area ranges from the Santa Ana River and its adjacent floodplain to developed or disturbed native flatlands with an average elevation of approximately 700 feet above mean sea level (msl) at the junction of the Santa Ana River and Van Buren Boulevard to approximately 850 feet above msl at the border of Riverside and San Bernardino Counties. The majority of the Study Area consists of residential/urban/exotic habitat types. The Study Area also supports non-native grasslands, freshwater wetlands, riparian habitat, orchards, and field croplands.

1.2 Project Location

The Proposed Project Alignment begins at the intersection of Cleveland Avenue and Jackson Street in the City of Riverside and extends northward to its terminus in the City of San Bernardino at Orange Show Road west of Waterman Avenue. The Monroe Street Alternative Alignment begins at the intersection of Cleveland and Irving Streets and extends northwest to its terminus at the intersection of Colorado and Jackson Streets. The project area includes portions of the cities of Riverside, Colton, and San Bernardino in portions of Sections 16, 17, 19, and 20 Township 2 South Range 5 West; Sections 6, 7, 8, 17, and 18 Township 3 South Range 5 West and Sections 23, 24, 25, 26, 31, and 36 Township 2 South Range 6 West of United States Geological Survey (USGS), 7.5" quadrangle, topographic map Riverside West, California [dated 1967 and photorevised in 1980]; and portions of Sections 3 and 10 Township 2 South Range 5 West of United States Geological Survey (USGS), 7.5" quadrangle, topographic map Fontana, California [dated 1967 and photorevised in 1980]; and portions of Sections 15, 21, 30, and 32 Range 4 West and portions of Section 25 Range 5 West of San Bernardino South, California [dated 1967 and photorevised in 1980]). [Exhibit 1: Regional Map].

1.3 Project Description

Western Municipal Water District (WMWD) was formed in 1954 in order to bring supplemental water to growing western Riverside County and currently serves wholesale customers and approximately 24,000 direct retail connections. WMWD's service area encompasses the cities of Riverside, Norco, Corona, portions of Murrieta and Temecula, and the communities of Jurupa, Rubidoux, and Elsinore Valley. The WMWD service area also includes the Lee Lake Water district, the Box Springs Mutual Water Company, and the Eagle Valley Mutual Water Company. WMWD's service area consists of 527-square miles and a population of more than 853,000 people.

As a regional water wholesaler within the County of Riverside, WMWD is obligated to address long-term water demand and meet future needs of a rapidly growing service area. An adequate potable water distribution network is critical in WMWD's ability to provide water to satisfy anticipated future demand. The Riverside-Corona Feeder Realignment Project (RCF) will be used to deliver water from the Riverside and San Bernardino County groundwater basins to communities throughout western Riverside County during drought and emergency periods (see Figure 1, Regional Location). The purpose of the RCF is to improve the reliability of WMWD's water supply; to reduce possible water shortages during dry years; to reduce dependence upon the direct delivery of imported water during dry year conditions; to improve groundwater quality; to deliver available imported water to its customers; and to contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient.

The proposed infrastructure will allow WMWD to purchase water when it is available from the State Water Project and store water in the San Bernardino Basin Area and Chino Basin and to extract the water from the basins when it is needed. The facilities may also be used to convey local water supplies pursuant to rights held by the City of Riverside and the Elsinore Valley Municipal Water District and deliver treated imported water to wholesale customers. This

project will make WMWD less dependent on the direct delivery of water from the Metropolitan Water District of Southern California (MWD) during dry hydrologic years.

The *Final Programmatic Environmental Impact Report for the Western Municipal Water District Riverside-Corona Feeder Project* (SCH: 2003031121) was certified on May 18, 2005. This document summarizes a revised alignment for a portion of the RCF identified in the Program EIR. The original alignment is shown in Exhibit 2, Proposed Project with Previous Alignment/Location. The proposed alignment totals approximately 108,000 feet of pipeline that will be routed along public streets in the cities of San Bernardino, Colton, Rialto, and unincorporated areas of Riverside County (see Exhibit 2).

The Proposed Alignment – Northern Reach falls within existing roadways including Orange Show Road, Auto Plaza Drive, Fairway Drive, Sperry Drive, Valley Boulevard, La Cadena Drive, N Street, Rancho Avenue, Agua Mansa Road, Rubidoux Boulevard, 30th Street, Avalon Street, Mission Avenue, Limonite Avenue and Clay Street.

The Proposed Alignment – Central Reach falls within existing roadways including Van Buren Boulevard, Doolittle Avenue, and Jackson Street with the exception of approximately 1,700 feet that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus of Doolittle Street. The pipeline will be extended beneath the Santa Ana River using boring and micro-tunneling techniques that will eliminate the need to disturb habitat at the ground's surface.

The Monroe Street Alternative falls within existing roadways including Colorado Avenue, Monroe Street and Cleveland Avenue.

1.4 Multiple Species Habitat Conservation Plan (MSHCP)

As noted above, all Riverside County portions of the proposed pipeline alignments occur within the area covered by the Western Riverside County MSHCP. The WMWD is not currently a Permittee under the MSHCP, however, the proposed infrastructure may be covered by the MSHCP pursuant to Section 7.3.9 if the applicant chooses to participate. The Project would not be subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process; however, it would be subject to the Joint Project Review (JPR) process. The Project would also be required to address particular biological requirements of the MSHCP, specifically pertaining to Volume 1, *Section 6.1.2* (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), *Section 6.1.3* (Protection of Narrow Endemic Plant Species), *Section 6.1.4* (Guideline Pertaining to the Urban/Wildlands Interface), and *Section 6.3.2* (Additional Survey Needs and Requirements). Additionally, the Project would have to demonstrate that it is located in the least environmentally sensitive feasible location, use existing roads, trails, and other disturbed areas to the greatest extent feasible, and commit to implementing the BMPs contained in *Appendix C* (Standard Best Management Practices) of the MSHCP document.

1.4.1 The Project Site

Specifically, portions of the Project occur within the Jurupa Area Plan of the Western Riverside County MSHCP. The Proposed Alignment traverses MSHCP Criteria Area Cell Number 617 within the Santa Ana River North Sub-unit at the Santa Ana River and Criteria Cells 22 and 55 within Sub-unit 3, the Delhi Sands Area, northeast of the intersection of Aqua Mansa Road and Wilson Street [Exhibit 3]. The Proposed Alignment also intersects the Narrow Endemic Plant Species Survey Area 7 at many locations. The target species for these survey areas include Brand's phacelia (*Phacelia stellaris*), Miguel's savory (*Satureja chandleri*), San Diego ambrosia (*Ambrosia pumila*). In addition to the Narrow Endemic Plant Species Survey Area, the Proposed Alignment traverses the MSHCP Survey Area for the western burrowing owl (*Athene cunicularia hypugaea*) in many locations.

The Monroe Street Alternative does not occur within MSHCP Criteria Area Cells or Species Survey Areas.

2.0 METHODOLOGY

In order to adequately identify biological resources to the satisfaction of California Environmental Quality Act (CEQA), GLA assembled biological data consisting of four main components:

- Performance of habitat assessments to evaluate the potential presence/absence of species;
- Performance of vegetation mapping for the Project Site;
- Delineation of aquatic resources including ephemeral and intermittent drainages, and associated wetlands/riparian habitat subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the California Department of Fish and Game (CDFG) within the Central Reach of the Proposed Alignment and within the Monroe Street Alternative Alignment; and
- Identification of aquatic features potentially subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the California Department of Fish and Game (CDFG) within the Northern Reach of the Proposed Alignment.

The focus of the biological surveys and habitat assessments was determined through initial site reconnaissance; review of the California Natural Diversity Database (CNDDB) [CDFG 2008], the 2008 California Native Plant Society (CNPS) Inventory (CNPS 2008), MSHCP species and habitat maps, MSHCP sensitive soil maps and the USDA Soil Conservation Service's (SCS) soil maps for the Fontana, Riverside West, and San Bernardino South quadrangles, and other pertinent literature; and knowledge of the region.

The Study Area was divided into three assessment areas including: (1) the Proposed Alignment north of the intersection of Clay Street and Limonite Avenue in Riverside and San Bernardino Counties (Proposed Alignment - Northern Reach), (2) the Proposed Alignment south of the same intersection (Proposed Alignment - Central Reach), and (3) the Monroe Street Alternative Alignment. All Study Areas were evaluated based upon a review of the literature resources cited above in addition to a review of aerial photographs, topographic maps, soil survey maps, and visual surveys. Visual surveys were conducted on foot and the vegetation mapped directly onto scale color aerial photographs [Exhibit 4]. The intent of this portion of the analysis was to identify areas of potentially suitable habitat for special-status species. In areas identified to have potentially suitable habitat, further assessments and/or focused surveys may be required in accordance with the survey protocols for the species in question. Locations containing suitable habitat for sensitive species are identified and mapped in Exhibit 5.

A jurisdictional delineation was conducted in the Proposed Alignment - Central Reach and the Monroe Street Alternative Alignment Study Areas to determine the presence and extent of features subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the California Department of Fish and Game (CDFG). The Proposed Alignment - Northern Reach was evaluated for the presence of aquatic features that have potential for regulation by USACE and CDFG; however, additional jurisdictional delineation is required to make a final determination regarding these features.

As previously mentioned, portions of the Proposed Alignment Study Areas occur within the planning area for the Western Riverside County MSHCP (Jurupa Area Plan) and occur within MSHCP Criteria Area Cell Numbers 22, 55, and 617. In addition, portions of the Proposed Alignment Study Areas occur within the Narrow Endemic Plant Species Survey Area, as well as the MSHCP Survey Area for the western burrowing owl (*Athene cunicularia hypugaea*). If the applicant chooses to participate, the MSHCP requires that habitat assessments be conducted for relevant species and that focused surveys be conducted within areas of potentially suitable habitat.

2.1 Summary of Surveys

Various field assessments were conducted throughout the Study Area. The assessments focused on a number of primary objectives that would comply with CEQA requirements: (1) general floristic surveys and vegetation mapping, (2) general wildlife surveys, (3) habitat assessments for special-status plants and animals, and (4) delineation of aquatic resources potentially subject to the jurisdiction of the USACE and CDFG. Appendix A provides a summary list of survey dates, survey types, and personnel. All plant and wildlife species observed during each of the survey efforts were recorded [Appendix B, Floral Compendium and Appendix C, Faunal Compendium].

2.2 Botanical Resources

A site-specific survey program was designed to accurately document the botanical resources within the Study Area and consisted of four components: (1) literature search, (2) preparation of a list of target special-status plant species and special-status vegetation communities that have the potential to occur on site, (3) general field reconnaissance surveys, (4) vegetation mapping according to the MSHCP Classification System, (5) preparation of a vegetation map including the potentially suitable habitat for special-status species.

2.2.1 Literature Search

Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. A thorough archival review was conducted using available literature and other historical records. These resources included the following:

- California Native Plant Society *Inventory of Rare and Endangered Plants of California*. (v7-08c) (CNPS 2008);
- California Native Plant Society Electronic Inventory;
- California Natural Diversity Data Base (CNDDB) for the USGS 7.5” quadrangle Corona North, Fontana, Riverside West, and San Bernardino South (CNDDB August 2008); and
- MSHCP Document; Sections 6.1.2, 6.1.3, and 6.3; Table 9.3 (County of Riverside 2003)

2.2.2 General Reconnaissance Surveys and Habitat Assessments

General reconnaissance surveys and habitat assessments were conducted on June 9, July 28, and July 30, 2008. All plant species encountered during the field surveys were identified and recorded following the guidelines adopted by CNPS (2001) and CDFG by Nelson (1984). A

complete list of the plant species observed is provided in Appendix B. Scientific nomenclature and common names used in this report follow Hickman (1993) and Reiser (1994).

2.2.3 Vegetation Mapping

Native vegetation communities within the Study Area were mapped in the field directly onto a 200-scale (1” = 200’) aerial photograph.

2.2.4 Special Status Plant Species Evaluated

The CNDDB and MSHCP were initially consulted to determine well-known occurrences of plants and habitats of special concern in the region. Other sources used to develop a list of target species for the survey program included the CNPS Inventory (CNPS 2008). Based on this information, vegetation profiles and a list of target special-status plant species and habitats that could occur within the Project Site were developed and incorporated into a mapping and survey program to achieve the following goals: (1) characterize the vegetation associations and land use, (2) prepare a detailed floristic compendium, (3) implement general reconnaissance field work to document the presence of potentially suitable habitat, and (4) prepare biological resource maps showing the distribution of potentially suitable habitat for any special-status botanical resources associated within the Study Areas.

Table 2-1 provides a list of special-status plants evaluated for the Project Site through habitat assessments. Species were evaluated based on a number of factors including: (1) species identified by the CNDDB as occurring (either currently or historically) on or in the vicinity of the property, and (2) any other special-status plants that are known to occur within the vicinity of the property or for which potentially suitable habitat occurs on site.

Table 2-1. Special-Status Plant Species Evaluated for the Western Municipal Water District Proposed Riverside-Corona Feeder Realignment Project

Species Name	Status	Habitat Requirements	Potential for Occurrence on site: Proposed Alignment – Northern Reach	Potential for Occurrence on site: Proposed Alignment – Central Reach	Potential for Occurrence on site: Monroe Street Alternative
Brand's phacelia *Phacelia stellaris*	**Federal:** None **State:** None **CNPS:** List 1B.1	Coastal dunes and coastal sage scrub with sandy soils. Known to occur in open areas of sage scrub associated with the Santa Ana River floodplain.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.
California bedstraw *Galium californicum ssp. primum*	**Federal:** None **State:** None **CNPS:** List 1B.2	Chaparral, lower montane coniferous forest in granitic, sandy soils. Local occurrence limited to lower edge of pine belt in shaded areas at 1350-1700m elevation.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.
California Orcutt grass *Orcuttia californica*	**Federal:** FE **State:** SE **CNPS:** List 1B.1	Vernal pools.	Not expected to occur on site due to the lack of suitable habitat.	Not expected to occur on site due to the lack of suitable habitat.	Not expected to occur on site due to the lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence on site: Proposed Alignment – Northern Reach	Potential for Occurrence on site: Proposed Alignment – Central Reach	Potential for Occurrence on site: Monroe Street Alternative
California satintail *Imperata brevifolia*	**Federal:** None **State:** None **CNPS:** List 2.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub/mesic habitats in wet springs, meadows, streamsides, and flood plains.	Not expected to occur on site due to a lack of suitable habitat.	Limited potential to occur at Santa Ana River crossing.	Not expected to occur on site due to a lack of suitable habitat.
Chaparral sand-verbena *Abronia villosa* var. *aurita*	**Federal:** None **State:** None **CNPS:** 1B.1	Sandy soils in sage-scrub, chaparral.	Limited Potential to occur on site within areas of suitable habitat.	Limited Potential to occur on site within areas of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	**Federal:** None **State:** None **CNPS:** List 1B.1	Playas, vernal pools, marshes and swamps (coastal salt).	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
Gambel's water cress *Rorippa gambelii*	**Federal:** FE **State:** SE **CNPS:** 1B.1	Marshes and swamps (fresh and brackish).	Presumed extirpated form the region. Not expected to occur on site.	Presumed extirpated form the region. Not expected to occur on site.	Presumed extirpated form the region. Not expected to occur on site.
Horn's milk-vetch *Astragalus hornii var. hornii*	**Federal:** None **State:** None **CNPS:** List 1B.1	Meadows and seeps, salty flats, playas/lake margins, alkaline.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Marsh sandwort *Arenaria paludicola*	**Federal:** FE **State:** SE **CNPS:** List 1B.1	Bogs and fens, freshwater marshes and swamps.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.	Presumed extirpated from the region. Site also lacks suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence on site: Proposed Alignment – Northern Reach	Potential for Occurrence on site: Proposed Alignment – Central Reach	Potential for Occurrence on site: Monroe Street Alternative
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	**Federal:** None **State:** None **CNPS:** 1B.1	Occurs in chaparral, cismontane woodland, and coastal scrub.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Parish's desert-thorn *Lycium parishii*	**Federal:** None **State:** None **CNPS:** List 2.3	Sandy to rocky slopes and canyons within coastal sage scrub and Sonoran desert scrub.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Parry's spineflower *Chorizanthe parryi* var. *parryi*	**Federal:** None **State:** None **CNPS:** List 3.2	Sandy or rocky soils in open habitats of chaparral and coastal sage scrub.	Potential to occur on site within areas of suitable habitat.	Potential to occur on site within areas of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
Plummer's mariposa lily *Calochortus plummerae*	**Federal:** None **State:** None **CNPS:** List 1B.2	Granitic, rock soils within chaparral, cismontane woodland, coastal sage scrub, lower montane coniferous forest, and valley and foothill grassland.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Prairie wedge grass *Sphenopholis obtusata*	**Federal:** None **State:** None **CNPS:** List 2.2	Cismontane woodland, wet meadows, streambanks, ponds and seeps/mesic.	Not expected to occur on site due to lack of suitable habitat.	Limited potential to occur at Santa Ana River crossing.	Not expected to occur on site due to lack of suitable habitat.
Rayless ragwort *Senecio aphanactis*	**Federal:** None **State:** None **CNPS:** List 2.2	Drying alkaline flats in coastal sage scrub and cismontane woodland.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
Robinson's pepper-grass *Lepidium virginicum var. robinsonii*	**Federal:** None **State:** None **CNPS:** 1B.1	Occurs in chaparral and coastal scrub.	Low potential to occur on site in scattered coastal sage scrub areas.	Low potential to occur on site in scattered coastal sage scrub areas.	Not expected to occur on site due to a lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence on site: Proposed Alignment – Northern Reach	Potential for Occurrence on site: Proposed Alignment – Central Reach	Potential for Occurrence on site: Monroe Street Alternative
Salt marsh bird's beak *Cordylanthus maritimus ssp. maritimus*	**Federal:** FE **State:** SE **CNPS:** List 1B.2	Coastal dune, coastal salt marshes and swamps.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Salt spring checkerbloom *Sidalcea neomexicana*	**Federal:** None **State:** None **CNPS:** List 2.2	Found in alkali springs and marshes within creosote bush scrub, chaparral, yellow pine forest, coastal sage scrub and alkali sink.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.	Not expected to occur on site due to a lack of suitable habitat.
San Bernadino aster *Symphyotrichum defoliatum*	**Federal:** None **State:** None **CNPS:** 1B.2	Occurs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland (vernally mesic)/near ditches, streams springs.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
San Diego ambrosia *Ambrosia pumila*	**Federal:** FE **State:** None **CNPS:** 1B.1	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools. Often in disturbed habitats.	Not expected to occur on site. Study Area is located north of known range for the species.	Not expected to occur on site. Study Area is located north of known range for the species.	Not expected to occur on site. Study Area is located north of known range for the species.
San Miguel savory *Satureja chandleri*	**Federal**: None **State**: None **CNPS**: List 1B.2	Rocky, gabbroic, or metavolcanic soils in chaparral, cismontane woodland, coastal sage scrub, riparian woodland, valley and foothill grassland.	Not expected to occur on site. Due to lack of suitable habitats.	Not expected to occur on site. Due to lack of suitable habitats.	Not expected to occur on site. Due to lack of suitable habitats.
Santa Ana River woollystar *Eriastrum densifolium ssp. santorum*	**Federal:** FE **State:** SE **CNPS:** List 1B.1	Alluvial fan sage scrub, chaparral. Occurring on sandy or rocky soils.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for Occurrence on site: Proposed Alignment – Northern Reach	Potential for Occurrence on site: Proposed Alignment – Central Reach	Potential for Occurrence on site: Monroe Street Alternative
Slender-horned spineflower *Dodecahema leptoceras*	**Federal:** FE **State:** SE **CNPS:** List 1B.1	Sandy soils in alluvial scrub, chaparral, cismontane woodland.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.	Not expected to occur due to lack of suitable habitat.
Smooth tarplant *Centromadia pungens* ssp. *laevis*	**Federal:** None **State:** None **CNPS:** List 1B.1	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grasslands, disturbed habitats.	Low potential to occur on site.	Low potential to occur on site.	Not expected to occur on site due to a lack of suitable habitat.
Spreading navarretia *Navarretia fossalis*	**Federal:** FT **State:** None **CNPS:** List 1B.1	Vernal pools, playas, chenopod scrub, marshes and swamps (assorted shallow freshwater).	Not expected to occur on site due to the lack of suitable habitat.	Not expected to occur on site due to the lack of suitable habitat.	Not expected to occur on site due to the lack of suitable habitat.
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	**Federal**: None **State**: None **CNPS**: List 2.1	Alkaline soils in meadows and seeps, marshes and swamps, riparian scrub, vernal pools.	Not expected to occur on site due to the lack of suitable habitat.	Not expected to occur on site due to the lack of suitable habitat.	Not expected to occur on site due to the lack of suitable habitat.

Source: Glenn Lukos Associates, 2008.

Federal
FE = Federally Endangered
FT = Federally Threatened
State
SE = State Endangered
ST = State Threatened
California Native Plant Society (CNPS) Listings
1A = Plants presumed extinct in California
1B = Plants rare, threatened, or endangered in California and elsewhere
2 = Plants rare, threatened or endangered in California, but more common elsewhere
3 = Plants about which CNPS needs more information – a "review" list
4 = Plants of limited distribution – a "watch" list
CNPS Threat Code Extensions
.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

2.2.5 Sensitive Habitats Evaluated for the Project Site

A review of the CNDDB (August 2008) indicated that the following sensitive vegetation associations are known for the Corona North, Riverside West, Fontana, and San Bernardino South USGS quadrangles: southern California arroyo chub/Santa Ana sucker stream, southern cottonwood willow riparian forest, southern riparian scrub, southern sycamore alder riparian woodland, and southern willow scrub. The Study Area was evaluated for these and other special-status habitats.

2.3 Wildlife Resources

Wildlife species were evaluated and detected during field surveys by sight, call, tracks, and scat. Site reconnaissance was conducted in such a manner as to allow inspection of the Project Site by direct observation, including the use of binoculars. Observations of physical evidence and direct sightings of wildlife were recorded in field notes during each visit. A complete list of wildlife species observed (and expected to occur) within the Project Site is provided in Appendix C. Scientific nomenclature and common names for vertebrate species referred to in this report follow Collins (1997) for amphibians and reptiles, Jones, et al. (1992) for mammals, and AOU Checklist (1998) for birds. The methodology (including any applicable survey protocols) utilized to conduct the focused surveys or the habitat assessments for special-status animals are included below.

2.3.1 General Surveys

Birds

During general surveys within the Project Area, birds were identified incidentally during surveys within each habitat type. Birds were detected by both direct observation and by vocalizations and were recorded in field notes.

Mammals

During general surveys within the Project Site, mammals were identified incidentally during surveys within each habitat type. Mammals were detected both by direct observations and the presence of diagnostic sign (i.e., tracks, burrows, scat, etc.).

Reptiles and Amphibians

During general surveys within the Project Site, reptiles and amphibians were identified incidentally during surveys within each habitat type. Habitats were examined for diagnostic reptile sign, which include shed skins, scat, tracks, snake prints, and lizard tail drag marks. All reptiles and amphibian species observed, as well as diagnostic sign, were recorded in field notes.

2.3.2 Special-Status Animal Species Evaluated for the Project Site

Table 2-2 provides a list of special-status animals evaluated for the Project Site through habitat assessments, including MSHCP covered species with additional survey requirements. Species were evaluated based on a number of factors including: (1) species identified by the CNDDB as occurring (either currently or historically) on or in the vicinity of the property, and (2) any other special-status animals that are known to occur within the vicinity of the property or for which potentially suitable habitat occurs on site.

Table 2-2. Special-Status Wildlife Species Evaluated for the Western Municipal Water District Proposed Riverside-Corona Feeder Realignment Project

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
INVERTEBRATES					
Delhi-sands flower-loving fly *Raphiomidas terminatus abdominalis*	**Federal:** FE **State:** None **CDFG:** None	Fine, sandy soils, often associated with wholly or partially consolidated dunes referred to as the "Delhi" series. Vegetation consists of a sparse cover, including California buckwheat, California croton, deerweed, and evening primrose.	Potential to occur on site within areas of suitable habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Riverside fairy shrimp *Streptocephalus woottoni*	**Federal:** FE **State:** None **CDFG:** None	Restricted to deep seasonal vernal pools, vernal pool-like ephemeral ponds, and stock ponds.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Vernal pool fairy shrimp *Branchinecta lynchi*	**Federal:** FT **State:** None **CDFG:** None	Restricted to seasonal vernal pools. Prefers cool-water pools that have low to moderate dissolved solids.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
FISH					
Arroyo chub *Gila orcutti*	**Federal:** None **State:** None **CDFG:** CSC	Found in slow-moving or backwater sections of warm to cool (10-24C) streams with mud or sand substrates. Depths are typically greater than 40 cm.	Potential to occur on site within tributaries to Santa Ana River.	Potential to occur on site within the Santa Ana River.	Not expected to occur on site due to lack of habitat.
Santa Ana speckled dace *Rhinichthys osculus*	**Federal:** None **State:** None **CDFG:** CSC	Occurs in the headwaters of the Santa Ana and San Gabriel Rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temperatures of 17-20 C. Usually inhabits shallow cobble and gravel riffles.	Potential to occur on site within tributaries to Santa Ana River.	Potential to occur on site within Santa Ana River. CNDDB record at Santa Ana River crossing.	Not expected to occur on site due to lack of habitat.
Santa Ana sucker *Catostomus santaanae*	**Federal:** FT **State:** None **CDFG:** CSC	Small, shallow streams, less than 7 meters in width, with currents ranging from swift in the canyons to sluggish in the bottom lands. Preferred substrates are generally coarse and consist of gravel, rubble, and boulders with growths of filamentous algae, but occasionally they are found on sand/mud substrates.	Potential to occur on site within tributaries to the Santa Ana River. Portions of site also located within Federally-designated critical habitat.	Potential to occur on site within the Santa Ana River. CNDDB record at Santa Ana River crossing. Site also located within Federally-designated critical habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
REPTILES					
Coast (San Diego) horned Lizard *Phrynosoma coronatum* (*blainvillii* population)	**Federal:** None **State:** None **CDFG:** CSC	Chaparral and coastal sage scrub.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
Northern red-diamond rattlesnake *Crotalus exsul*	**Federal:** None **State:** None **CDFG:** CSC	Habitats with heavy brush and rock outcrops, including coastal sage scrub and chaparral.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
Orange-throated whiptail *Cnemidophorus hyperythrus*	**Federal:** None **State:** None **CDFG:** CSC	Coastal sage scrub, chaparral, non-native grassland, oak woodland, and juniper woodland.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
Southwestern pond turtle *Actinemys marmorata pallida*	**Federal:** None **State:** None **CDFG:** CSC	Prefers streams, large rivers, slow-moving sloughs, and quiet waters. Aquatic habitats with adequate vegetative cover and exposed banks are preferred, but significant time is spent on upland terrestrial habits as well. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
Two-striped garter snake *Thamnophis hammondii*	**Federal:** None **State:** None **CDFG:** CSC	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.
BIRDS					
Burrowing owl *Athene cunicularia*	**Federal:** FSC **State:** None **CDFG:** CSC	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses.	Potential to occur on site within suitable habitat.	Potential to occur on site within suitable habitat.	Potential to occur on site within suitable habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
Coastal California gnatcatcher *Polioptila californica californica*	**Federal:** FT **State:** None **CDFG:** CSC	Low elevation coastal sage scrub and coastal bluff scrub.	Low potential to occur on site within sage scrub patches.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Golden eagle *Aquila chrysaetos*	**Federal:** None **State:** None **CDFG:** FP	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	Low potential to occur on site for foraging. No nesting habitat on-site.	Low potential to occur on site for foraging. No nesting habitat on-site.	Not expected to occur on site due to lack of habitat.
Least Bell's vireo *Vireo bellii pusillus*	**Federal:** FE **State:** SE **CDFG:** None	Dense riparian shrubbery, preferably where flowing water is present.	Potential to occur on site within suitable habitat.	Potential to occur on site within suitable habitat. CNDDB record at Santa Ana River crossing. Site located within Federally-designated critical habitat.	Not expected to occur on site due to lack of habitat.
Loggerhead shrike *Lanius ludovicianus*	**Federal**: FSC **State**: None **CDFG**: CSC	Forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	Potential to occur on site.	Potential to occur on site.	Potential to occur on site.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
Long-eared owl *Asio otus*	**Federal:** None **State:** None **CDFG:** CSC	Inhabit dense vegetation close to grasslands, as well as open forests shrub lands from sea level up to 2000 m elevation. They are common in tree belts along streams of plains and even desert oases. They can also be found in shelterbelts, small tree groves, thickets surrounded by wetlands, grasslands, marshes and farmlands.	Not expected to occur on site due to lack of habitat.	Potential to occur on site within suitable habitat associated with the Santa Ana River.	Not expected to occur on site due to lack of habitat.
Northern harrier (nesting) *Circus cyaneus*	**Federal:** None **State:** None **CDFG:** CSC	Found mainly in open habitats such as fields, savannas, meadows, marshes, upland prairies, and desert steppe. Also occur in agricultural areas and riparian zones. Densest populations are found in large expanses of undisturbed, open habitats with dense, low vegetation.	Low potential to occur on site.	Low potential to occur on site.	Not expected to occur on site due to lack of habitat.
Southwestern willow flycatcher *Empidonax traillii extimus*	**Federal:** FE **State:** SE **CDFG:** None	Breeds in dense riparian habitats along rivers, streams, or other wetlands.	Not expected to occur on site due to lack of habitat.	Potential to occur on site. Site located in the vicinity of federally-designated critical habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
Tricolored blackbird (nesting colony) *Agelaius tricolor*	**Federal:** FSC **State:** None **CDFG:** CSC	Found in cattail or tule marshes; forages in fields and farms.	Potential to forage on site, but site does not support suitable nesting habitat.	Potential to forage on site, but site does not support suitable nesting habitat.	Not expected to occur on site due to lack of habitat.
Western yellow billed cuckoo *Coccyzus americanus*	**Federal:** Candidate **State:** SE **CDFG:** None	Prefers moist thickets, willows, overgrown pastures, and orchards.	Not expected to occur on site due to lack of habitat.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
White-tailed kite (nesting) *Elanus leucurus*	**Federal:** FSC **State:** None **CDFG:** CFP	Usually found in open groves, river valleys, marshes and grasslands. Preference for perching and nesting and open ground.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
Yellow-breasted chat *Icteria virens*	**Federal:** None **State:** None **CDFG:** CSC	Restricted to woodland edges and dense riparian thickets in dry, open habitats. Dense cover is important for foraging. Found frequently in farms, overgrown fields and abundant thickets.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
Yellow warbler *Dendroica petechia*	**Federal:** None **State:** None **CDFG:** CSC	Preferred habitats include edges of marshes and swamps, willow-lined streams, leafy bogs, thickets, orchards, farmlands, forest edges, and suburban yards and gardens.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
MAMMALS					
American badger *Taxidea taxus*	**Federal:** None **State:** None **CDFG:** CSC	Prefer to live in dry, open grasslands, fields, and pastures. Found from high alpine meadows to sea level.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	**Federal:** None **State:** None **CDFG:** CSC	Fine, sandy soils in coastal sage scrub and grasslands.	Potential to occur on site within suitable habitat. CNDDB record occurs within the Study Area in San Bernardino County.	Low potential to occur on site within suitable habitat near the Santa Ana River.	Not expected to occur on site due to lack of habitat.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	**Federal:** None **State:** None **CDFG:** CSC	Coastal sage scrub, sage scrub/grassland ecotones, and chaparral.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat near the Santa Ana River.	Not expected to occur on site due to lack of habitat.
Pocketed free-tailed bat *Nyctinomops femorosaccus*	**Federal:** None **State:** None **CDFG:** CSC	Occurs in a variety of arid areas in Southern California including pine-juniper woodlands, desert scrub, palm oasis, desert wash and desert riparian. Associated with rocky areas and high cliffs.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.	Not expected to occur on site due to lack of suitable habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
San Bernardino kangaroo rat *Dipodomys merriami parvus*	**Federal:** FE **State:** None **CDFG:** CSC	Typically found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and floodplains, and along washes with nearby sage scrub.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	**Federal:** None **State:** None **CDFG:** CSC	Occupies a variety of habitats, but is most common among shortgrass habitats. Also occurs in sage scrub but needs open habitats.	Potential to occur on site.	Potential to occur on site.	Not expected to occur on site due to lack of habitat.
San Diego desert woodrat *Neotoma lepida intermedia*	**Federal:** None **State:** None **CDFG:** CSC	Found in a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.
Southern grasshopper mouse *Onychomys torridus ramona*	**Federal:** None **State:** None **CDFG:** CSC	Found in low arid scrub and semi-scrub vegetation. Use open areas and microhabitats dominated by gopher mounds and burrows.	Low potential to occur on site within suitable habitat.	Low potential to occur on site within suitable habitat.	Not expected to occur on site due to lack of habitat.

Species Name	Status	Habitat Requirements	Potential for occurrence: Proposed Alignment – Northern Reach	Potential for occurrence: Proposed Alignment – Central Reach	Potential for occurrence: Monroe Street Alternative
Stephens' kangaroo rat *Dipodomys stephensi*	**Federal:** FE **State:** ST **CDFG:** None **MSHCP:** Covered	Open grasslands or sparse shrublands with less than 50% vegetation cover during the summer and sandy or sandy loam soils.	Site occurs outside of known range.	Site occurs outside of known range.	Site occurs outside of known range.
Western mastiff bat *Eumops perotis californicus*	**Federal:** None **State:** None **CDFG:** CSC **MSHCP:** Covered	Lower and upper Sonoran desert scrub near cliffs, preferring the rugged rocky canyons with abundant crevices.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.	Not expected to occur on site due to lack of habitat.

Nesting-Birds are considered special-status only when nesting.
Wintering-Birds only occur in Southern California during the winter; do not nest in Southern California.

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FSC – Federal Species of Concern
S-Sensitive (USDA Forest Service)

State
SE – State Endangered
ST – State Threatened

CDFG
CSC – California Species of Concern
CFP – California Fully-Protected Species

2.3.4 Habitat Assessments for the Western Burrowing Owl

The western burrowing owl (*Athene cunicularia hypugaea*) is designated as a Federal Species of Concern as well as a California Species of Concern.

GLA biologists conducted burrowing owl habitat assessments throughout the Study Area. The habitat assessment consisted of an evaluation of subject properties for the presence of burrowing owl habitat, including a 150-meter buffer zone around the proposed centerline. Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Burrows are the essential component of burrowing owl habitat. Both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals such as ground squirrels or badgers but also may use man-made structures such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement. All undeveloped or agricultural lands, with the exception of vacant lands smaller than six-acres and completely surrounded by developed lands, were considered potentially suitable. Exhibit 5 depicts the extent of potentially suitable habitat requiring additional focused surveys in the future.

Wintering Season Phase II burrow surveys and Phase III focused surveys were conducted for the Central Reach and Monroe Street Alternative on December 5, 10, 11, and 12, 2008. Breeding Season Phase II burrow surveys and Phase III focused surveys were conducted for the Central Reach and Monroe Street Alternative on March 24 and 25, and April 22 and 30, 2009.

Biologists traversed the entire boundaries of the 500-foot Study Area that contained suitable habitat for the western burrowing owl to survey for owls and occupied burrows. All potential burrows (and any diagnostic sign) were mapped using a handheld Global Positioning System (GPS). Biologists used binoculars to survey for owls from fixed locations throughout the 500-foot buffer areas. Survey locations were placed at a distance from any potential burrows to minimize the affect of the presence of the surveyors, should owls be present. Burrows would be mapped as occupied if owls were observed at or near the burrows, or if the burrows exhibited diagnostic signs (i.e., whitewash, pellets, bones, feathers, etc.). Results of the wintering and breeding season focused protocol surveys for the western burrowing owl has been included in Appendix E.

2.3.5 Habitat Assessments for Federally and State Listed Species

Biologists evaluated the Project Site for the potential to support Riverside fairy shrimp (*Streptocephalus wootoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California gnatcatcher, Delhi Sands flower-loving fly (*Raphiomidas terminatus abdominalis)*, Santa Ana sucker (*Catostomus santaanae)*, Stephens' kangaroo rat

(*Dipodomys stephensi)*, and San Bernardino kangaroo rat (*Dipodomys merriami parvus).* Focused surveys were not conducted for these species.

2.4 Jurisdictional Delineation

The Northern Reach was evaluated to determine the potential presence/absence of (1) waters of the United States subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act and (2) streams subject to the jurisdiction of the California Department of Fish and Game (CDFG) pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. The Central Reach and the Monroe Street Alternative were evaluated to determine the presence/absence and limits of (1) waters of the United States subject to the jurisdiction of the USACE pursuant to Section 404 of the Clean Water Act and (2) streams subject to the jurisdiction of the CDFG pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code.

2.4.1 USACE Jurisdiction

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a) as:

> *(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
> *(2) All interstate waters including interstate wetlands;*
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
> > *(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
> > *(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
> > *(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...*
> *(4) All impoundments of waters otherwise defined as waters of the United States under the definition;*
> *(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
> *(6) The territorial seas;*
> *(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*

Waste treatment systems, including treatment ponds or lagoons designed to meet CWA requirements (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

(8) Waters of the United States do not include prior converted cropland.[1] *Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.*

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters such as intermittent streams extend to the OHWM which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as 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.*

1. Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.

Pursuant to Article I, Section 8 of the U.S. Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s the Corps interpreted the interstate commerce requirement in a manner that restricted Corps jurisdiction on isolated (intrastate) waters. On September 12, 1985, EPA asserted that Corps jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of "waters of the United States" in Corps regulations was modified as quoted above from 33 CFR 328.3(a).

On January 9, 2001, the Supreme Court of the United States issued a ruling on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.* (SWANCC). In this case the Court was asked whether use of an isolated, intrastate pond by migratory birds is a sufficient interstate commerce connection to bring the pond into federal jurisdiction of Section 404 of the Clean Water Act.

The written opinion notes that the court's previous support of the Corps' expansion of jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc.*) was for a wetland that <u>abutted</u> a navigable water and that the court did not express any

[1] The term "prior converted cropland" is defined in the Corps' Regulatory Guidance Letter 90-7 (dated September 26, 1990) as "wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is <u>inundated for no more than 14 consecutive days</u> during the growing season…." [Emphasis added.]

opinion on the question of the Corps' authority to regulate wetlands that are not adjacent to bodies of open water. The current opinion goes on to state:

> *In order to rule for the respondents here, we would have to hold that the jurisdiction of the Corps extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.*

Therefore, we believe that the court's opinion goes beyond the migratory bird issue and says that no isolated, intrastate water is subject to the provisions of Section 404(a) of the Clean Water Act (regardless of any interstate commerce connection). However, the Corps and EPA have issued a joint memorandum, which states that they are interpreting the ruling to address only the migratory bird issue and leaving the other interstate commerce clause nexuses intact.

2. Rapanos v. United States and Carabell v. United States

On June 5, 2007, the U.S. Environmental Protection Agency (EPA) and Corps issued joint guidance that addresses the scope of jurisdiction pursuant to the Clean Water Act in light of the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* ("Rapanos"). The chart below was provided in the joint EPA/Corps guidance.

For project sites that include waters other than Traditional Navigable Waters (TNWs) and/or their adjacent wetlands or Relatively Permanent Waters (RPWs) tributary to TNWs and/or their adjacent wetlands as set forth in the chart below, the Corps must apply the significant nexus standard that includes the data set forth in the *Approved Jurisdictional Determination Form* included as Appendix A.

For "isolated" waters or wetlands, the joint guidance also requires an evaluation by the Corps and EPA to determine whether other interstate commerce clause nexuses, not addressed in the SWANCC decision, are associated with isolated features on project sites for which a jurisdictional determination is being sought from the Corps. The information pertaining to isolated waters is also included on the *Approved Jurisdictional Determination Form* included as Appendix A.

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

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

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters

Significant nexus includes consideration of hydrologic and ecologic factors

3. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the United States”) is defined at 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." In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the manual and supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent 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[2]);

- 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); and

- whereas the 1987 Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with “problematic hydrophytic vegetation,” which require a minimum of 14 days of ponding to be considered a wetland.

2.4.2 CDFG Jurisdiction

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow of bed, channel, or bank of any river, stream, or lake which supports fish or wildlife.

CDFG defines a "stream" (including creeks and rivers) 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." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs."

CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFG Legal Advisor has prepared the following opinion:

- 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 [CDFG] as natural waterways...

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

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[2] Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. U.S. Fish and Wildlife Service Biological Report 88(26.10).

Thus, CDFG jurisdictional limits closely mirror those of USACE. Exceptions are CDFG's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

3.0 REGULATORY SETTING

The proposed Riverside-Corona Feeder Realignment Project is subject to state and federal regulations associated with a number of regulatory programs. These programs often overlap and were developed to protect natural resources including: state and federally listed plants and animals; aquatic resources including rivers and creeks, ephemeral streambeds, wetlands, and areas of riparian habitat; other special-status species which are not listed as threatened or endangered by the state or federal governments; and other special-status vegetation communities.

3.1 State and/or Federally Listed Plants or Animals

3.1.1 State of California Endangered Species Act

California's Endangered Species Act (CESA) defines an endangered species as "a native species or sub-species of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." The State defines a threatened species as "a native species or sub-species of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species." Candidate species are defined as "a native species or sub-species of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species or a species for which the commission has published a notice of proposed regulation to add the species to either list." Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not list invertebrate species.

Article 3, Sections 2080 through 2085, of CESA addresses the taking of threatened, endangered, or candidate species by stating "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided." Under CESA, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Exceptions authorized by the state to allow "take" require permits or memoranda of understanding and can be authorized for endangered species, threatened species, or candidate species for scientific, educational, or management purposes and for take incidental to otherwise lawful activities. Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

3.1.2 Federal Endangered Species Act

The FESA of 1973 defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of FESA it is unlawful to "take" any listed species. "Take" is defined in Section 3(18) of FESA: "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification that result in injury to, or death of species as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action that could affect a federally listed plant and animal species, the property owner and agency are required to consult with USFWS. Section 9(a)(2)(b) of FESA addresses the protections afforded to listed plants.

3.1.3 State and Federal Take Authorizations for Listed Species

Federal or state authorizations of impacts to or incidental take of a listed species by a private individual or other private entity would be granted in one of the following ways:

- Section 7 of FESA stipulates that any federal action that may affect a species listed as threatened or endangered requires a formal consultation with USFWS to ensure that the action is not likely to jeopardize the continued existence of the listed species or result in destruction or adverse modification of designated critical habitat. 16 U.S.C. 1536(a)(2).
- In 1982, FESA was amended to give private landowners the ability to develop Habitat Conservation Plans (HCP) pursuant to Section 10(a) of FESA. Upon development of an HCP, USFWS can issue incidental take permits for listed species where the HCP specifies, at minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan.
- Sections 2090-2097 of the California Endangered Species Act (CESA) require that the state lead agency consult with CDFG on projects with potential impacts on state listed species. These provisions also require CDFG to coordinate consultations with USFWS for actions involving federally listed as well as state listed species. In certain circumstances, Section 2080.1 of the California Fish and Game Code allows CDFG to adopt the federal incidental take statement or the 10(a) permit as its own based on its findings that the federal permit adequately protects the species under state law.

3.1.4 Take Authorizations Pursuant to the MSHCP

The Western Riverside County MSHCP was adopted on June 17, 2003, and an Implementing Agreement (IA) was executed between the Federal and State Wildlife Agencies (USFWS and CDFG) and participating entities. The MSHCP is a comprehensive habitat conservation-planning program for western Riverside County. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focus preservation efforts on one species at a time. As such, the MSHCP is intended to streamline review of individual projects with respect to the species and habitats addressed in the MSHCP and provide for an overall conservation area that would be of greater benefit to biological resources than would result from a piecemeal regulatory approach. Should the applicant choose to participate, the MSHCP provides coverage (including take authorization for listed species) for special-status plant and animal species, as well as mitigation for impacts to sensitive species.

Through agreements with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), the MSHCP designates approximately 146 special-status animal and plant species that receive some level of coverage under the plan. Of the 146 covered species designated under the MSHCP, the majority of these species have no additional survey/conservation requirements. In addition, the MSHCP provides mitigation for project-specific impacts to these species so that the impacts would be reduced to below a level of significance pursuant to the California Environmental Quality Act (CEQA). Beyond the fully covered species, there are species with additional survey/conservation requirements. These include fourteen (14) Narrow Endemic Plant Species, as identified by the Narrow Endemic Plant Species Survey Areas (NEPSSA); thirteen (13) Criteria Area Plant Species identified by the Criteria Area Species Survey Areas (CASSA); seven (7) animal species as identified by survey area; six (6) species associated with riparian/riverine areas and vernal pool habitats (*Section 6.1.2 of the MSHCP document*); and an additional 28 species (*Table 9.3 of the MSHCP document*) not yet adequately conserved.

3.2 <u>California Environmental Quality Act</u>

3.2.1 CEQA Guidelines Section 15380

The California Environmental Quality Act (CEQA) requires evaluation of a project's impacts on biological resources and provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts. Sections 5.1.1 and 5.2.2 below set forth these thresholds and guidelines. Furthermore, pursuant to CEQA Guidelines Section 15380, CEQA provides protection for non-listed species that could potentially meet the criteria for state listing. For plants, CDFG recognizes that plants on Lists 1A, 1B, or 2 of the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants in California* may meet the criteria for listing and should be considered under CEQA. CDFG also recommends protection of plants that are regionally important such as locally rare species, disjunct populations of more common plants, or plants on CNPS Lists 3 or 4.

3.2.2 Non-Listed Special-Status Plants and Animals Evaluated Under CEQA

Federally Designated Special-Status Species

Within recent years, USFWS instituted changes in the listing status of candidate species. Former C1 (candidate) species are now referred to simply as candidate species and represent the only candidates for listing. Former C2 species (for which USFWS had insufficient evidence to warrant listing) and C3 species (either extinct, no longer a valid taxon, or more abundant than was formerly believed) are no longer considered as candidate species. Therefore, these species are no longer maintained in list form by USFWS, nor are they formally protected. However, some USFWS field offices have issued memoranda stating that former C2 species are to be considered Federal Species of Concern (FSC). This term is employed in this document but carries no official protection. All references to federally protected species in this report (whether listed, proposed for listing, or candidate) include the most current published status or candidate category to which each species has been assigned by USFWS.

For this report the following acronyms are used for federal special-status species:

- FE Federally listed as Endangered
- FT Federally listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FC Federal candidate species (former C1 species)
- FSC Federal Species of Concern (former C2 species)

State-Designated Special-Status Species

Some mammals and birds are protected by the state as State Fully Protected (SFP) Mammals or Birds, as described in the California Fish and Game Code, Sections 4700 and 3511, respectively. California Special Concern Species (CSC) are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for CDFG's CNDDB project. Informally listed taxa are not protected but warrant consideration in the preparation of biotic assessments. For some species, CNDDB is only concerned with specific portions of life history such as roosts, rookeries, or nest sites.

For this report the following acronyms are used for State special-status species:

- SE State-listed as Endangered
- ST State-listed as Threatened
- SCE State candidate for listing as Endangered
- SCT State candidate for listing as Threatened
- SFP State Fully Protected
- SP State Protected
- CSC California Special Concern Species

California Native Plant Society

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. The California Native Plant Society's Sixth Edition of the *California Native Plant Society's Inventory of Rare and Endangered Plants of California* separates plants of interest into five categories. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California (Tibor 2001). The list serves as the candidate list for listing as threatened and endangered by CDFG. CNPS has developed five categories of rarity and three threat code extensions that are summarized in Table 3-1.

Table 3-1. CNPS Lists 1, 2, 3, & 4 and Threat Code Extensions

CNPS List	Comments
List 1A – Presumed Extinct in California	Thought to be extinct in California based on a lack of observation or detection for many years.
List 1B – Rare or Endangered in California and Elsewhere	Species, which are generally rare throughout their range that are also judged to be vulnerable to other threats such as declining habitat.
List 2 - Rare or Endangered in California, More Common Elsewhere	Species that are rare in California but more common outside of California.
List 3 – Need More Information	Species that are thought to be rare or in decline but CNPS lacks the information needed to assign to the appropriate list. In most instances, the extent of surveys for these species is not sufficient to allow CNPS to accurately assess whether these species should be assigned to a specific list. In addition, many of the List 3 species have associated taxonomic problems such that the validity of their current taxonomy is unclear.
List 4 – Plants of Limited Distribution	Species that are currently thought to be limited in distribution or range whose vulnerability or susceptibility to threat is currently low. In some cases, as noted above for List 3 species above, CNPS lacks survey data to accurately determine status in California. Many species have been placed on List 4 in previous editions of the "Inventory" and have been removed as survey data has indicated that the species are more common than previously thought. CNPS recommends that species currently included on this list should be monitored to ensure that future substantial declines are minimized.
CNPS Threat Code Extensions	
Extension	**Comments**
.1 – Seriously endangered in California	Species with over 80% of occurrences threatened and/or have a high degree and immediacy of threat.
.2 – Fairly endangered in California	Species with 20-80% of occurrences threatened.
.3 – Not very endangered in California	Species with <20% of occurrences threatened or with no current threats known.

Source: California Native Plant Society, [2008].

4.0 RESULTS

This section provides the results of habitat assessments for special-status plants and wildlife including MSHCP covered species with additional survey requirements, as well as the results of a jurisdictional delineation for waters of the United States (including wetlands) subject to the jurisdiction of USACE and streams (including riparian vegetation) subject to the jurisdiction of CDFG.

4.1 Existing Conditions

Elevations remain relatively constant throughout the proposed Riverside-Corona Feeder Realignment and Monroe Street Alternative Alignment Study Areas with a slight change of only 100 feet over the span of the proposed alignments, which extend approximately 20 miles and 3.5 miles, respectively. The majority of the Study Areas consist of urban residential and commercial development with areas of disturbed non-native grasslands, which occur in undeveloped fields or lots. The Study Area also supports patches of coastal sage scrub, freshwater wetlands, non-native grasslands, riparian forest/woodland/scrub, grove/orchard, and field croplands. Exhibit 4 - [Vegetation Map] depicts the vegetation map mapped for the Study Area. Exhibit 6 – [Site Photographs] provides representative photographs of the Study Area.

A portion of the coastal sage scrub habitats located within the Study Area have limited potential to support nesting coastal California gnatcatcher. No coastal California gnatcatchers were observed in the Study Area while conducting general habitat assessments; however, focused surveys will be required in areas containing suitable habitat.

4.2 Vegetation Mapping

The Proposed Alignment and the Monroe Street Alternative Alignment support a checkerboard of private property, commercial and residential development, orchards, disturbed habitats, and native vegetation. Specifically, six major cover types were mapped within the Study Area including scrub habitats, freshwater wetland habitats, riparian forest/woodland/scrub habitats, grassland habitats, residential/ urban/ exotic cover types, and grove/orchard cover types. The following list further divides these associations into sub-associations as described in the habitat accounts. Three of the habitat associations mapped for the Study Area are recognized as sensitive habitats by CDFG. These include Riversidean sage scrub, coastal and valley freshwater marsh, and southern willow scrub. Human use and impacts in undeveloped areas are evident by the proportion of non-native vegetation. In addition, the majority of the Study Area is immediately adjacent to existing transportation corridors and are subject to active

maintenance. Table 1 provides the total cover of each cover type by alignment. Detailed descriptions of each type are provided below[3].

TABLE 4-1. Summary of Vegetation Types By Alignment

Vegetation Type	Proposed Alignment – Northern Reach	Proposed Alignment – Central Reach	Proposed Alignment – Combined	Monroe Street Alternative Alignment
Riversidean Sage Scrub	7.2 acres	0.0 acres	7.2 acres	---
Perennial Streambed	0.0 acres	1.8 acres	1.8 acres	---
Freshwater Marsh	0.8 acres	0.0 acres	0.8 acres	---
Non-Native Grasslands	132.7 acres	16.8 acres	149.5 acres	3.0 acres
Residential/Urban/Exotic	769.2 acres	272.4 acres	1,041.6 acres	189.8 acres
Field Croplands	0.0 acres	3.0 acres	3.0 acres	3.0 acres
Grove/Orchard	0.0 acres	3.7 acres	3.7 acres	14.9 acres
Southern Willow Scrub	1.5 acres	13.1 acres	114.6 acres	---
Mulefat Scrub	0.9 acres	0.0 acres	0.9 acres	---
Total	912.3 acres	310.8 acres	1,223.1 acres	210.7 acres

4.2.1 Vegetation Descriptions

Coastal Sage Scrub

The scrub habitat noted below provides suitable habitat for several of the special-status species observed on site or with potential to occur on site including chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, coastal California gnatcatcher, northern red diamond rattlesnake, San Diego horned lizard, San Diego black-tailed jackrabbit, Stephens' kangaroo rat, San Diego desert woodrat, orange-throated whiptail, Los Angeles pocket mouse, San Diego pocket mouse, and southern grasshopper mouse.

Riversidean Sage Scrub

A portion of the Study Area consists of Riversidean sage scrub (RSS). RSS quality varies depending upon the level of disturbance with lower functioning areas that are characterized by heavy disturbance and a proportion of non-native dominance resulting from commercial disturbance, off-road vehicle use, or crushing and trash dumping. Riversidean sage scrub is designated by the Department of Fish and Game (DFG) & CNDDB with a Sensitivity 3.1 "very threatened" (S3.1) and "Occurs in 21 to 80 known locations and/or 10,000 to 50,000 acres of habitat remaining." This association tends to occur on hilly or rocky portions often located farther from the road above or behind agricultural fields, developed areas, or disturbed areas. This association occurs predominantly in xeric sites and typically in small patches, although some larger patches

[3] Ephemeral streambed habitats occur across a number of the identified vegetation associations and are further detailed in the Project-Level Delineation attached as Appendix D.

occur. RSS within the Study Area is characterized by an open growth of native, shrubby vegetation including but not limited to coastal sagebrush (*Artemisia californica*), interior flat-top buckwheat (*Eriogonum fasciculatum var. foliolosum*), brittlebush (*Encelia farinosa*), and Mexican elderberry (*Sambucus mexicana*) with an understory of both non-native grasses and herbs and native herbaceous vegetation. Within the Study Area, typical understory vegetation includes: red-stemmed filaree (*Erodium cicutarium**), coyote gourd (*Cucurbita foetidissima*), red brome (*Bromus madritensis ssp. rubens**), ripgut grass (*Bromus diandrus**), shortpod mustard (*Hirschfeldia incana**), and London rocket (*Sisymbrium irio**). The areas containing RSS also contain castor bean (*Ricinus communis**), tree tobacco (*Nicotiana glauca**), and Peruvian pepper (*Schinus molle*).

Freshwater Wetlands

The freshwater wetland habitat described below may provide suitable habitat for several special-status species with potential to occur on site including arroyo chub, Santa Ana speckled dace, Santa Ana sucker, southwestern pond turtle, and two-striped garter snake.

Perennial Streambed

The Proposed Alignment - Central Reach crosses the Santa Ana River, which includes riparian and unvegetated perennial streambed habitats. This unvegetated perennial streambed habitat is surrounded by native trees and herbaceous vegetation including, but not limited to, Fremont cottonwood (*Populus fremonti*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), and mulefat (*Baccharis salicifolia*). Approximately 250 linear feet of the Monroe Channel northwest of the intersection of Arlington Avenue and Van Buren Boulevard also supports unvegetated perennial streambed.

Coastal and Valley Freshwater Marsh

In the Study Area, the Coastal and Valley Freshwater Marsh association consists of mainly southern cattail (*Typha domingensis*) located in a constructed detention basin associated with a gravel mining operation. Freshwater Marsh is designated by the Department of Fish and Game (DFG) & CNDDB with a Sensitivity 2.1 "very threatened" (S2.1) and "Occurs in 6 to 20 known locations and/or 2,000 to 10,000 acres of habitat remaining."

Grasslands

The non-native grassland described below may provide suitable habitat for several special-status species with potential to occur on site including smooth tarplant, American badger, San Diego black-tailed jackrabbit, burrowing owl, golden eagle, loggerhead shrike, northern harrier, and white-tailed kite.

Non-Native Grasslands

The Study Area contains non-native grasslands. This association occurs in areas not containing development or orchards. In most areas within or adjacent to the proposed Project this association has been mowed or disked as part of the roadside maintenance. This association contains an assemblage of non-native grasses with scattered native shrubs and ruderal vegetation. Some areas present almost complete dominance of non-native grasses, while other areas are heavily populated with an assemblage of ruderal herbs and shrubs including: Russian thistle (*Salsola tragus*), goosefoot (*Chenopodium californicum*), ragweed (*Ambrosia psilostachya*), horseweed (*Conyza Canadensis*), pigweed (*Amaranthus albus*), London rocket, schismus (*Schismus barbatus*), knotweed (*Polygonum arenastrum*), bindweed (*Convolvulus arvensis*), puncture vine (*Tribulus terrestris*), wild lettuce (*Lactuca serriola*), yellow sweetclover (*Melilotus indicus*), and canary grass (*Phalaris* sp.). Non-native grass species include: Bermuda grass (*Cynodon dactylon*), slender oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), and red brome (*Bromusmadritensis* ssp. rubens). Other species occasionally observed within the non-native grassland association were jimson weed (Datura stramonium), Mediterannean Tamarisk (*Tamarix ramosissima**), and common sunflower (Helianthus annus).

Residential/Urban/Exotic

The areas identified as developed or disturbed in the Study Area do not generally provide suitable habitat for special-status species. These areas include the following land uses: residential/commercial, roadways/transportation, ornamental plantings, orchard, and areas that have been cleared or graded.

Field Croplands

Agricultural areas may provide suitable habitat for several special-status species observed or with potential to occur on site including San Diego black-tailed jackrabbit, burrowing owl, horned lark, ferruginous hawk, prairie falcon, Merlin, northern harrier, Swainson's hawk, golden eagle, American badger, loggerhead shrike, white-tailed kite, and peregrine falcon.

Portions of the Study Area consist of dry-land agricultural fields, which have been subject to historic and/or recent tilling and planting. Predominant crops are hay or grain crops including cultivated barley (*Hordeum vulgare**) and cultivated oat (*Avena sativa**). Field edges and untillable areas within fields include an assemblage of ruderal and/or native species. Ditches and depressions where run-off accumulates support the mule fat scrub association, freshwater marsh, and/or ruderal assemblages. Ruderal and scattered native species occurring within or bordering the field croplands include tocalote (*Centaurea melitensis**), western verbena, dove weed (*Eremocarpus setigerus*), rattlesnake weed (*Chamaesyce albomarginata*), Russian thistle (*Salsola tragus**), California bur-clover (*Medicago polymorpha**), yellow sweet clover (*Melilotus indicus**), winter vetch (*Vicia villosa**), red-stem filaree, horehound, white nightshade

(*Solanum americanum**), finger-leaved morning glory (*Calystegia macrostegia*), pineapple weed (*Chamomilla suaveolens**), prickly lettuce (*Lactuca serriola**), milk thistle, bull thistle (*Cirsium vulgare**), California goosefoot (*Chenopodium californicum*), horseweed, rancher's fireweed, miniature lupine, radish (*Raphanus sativus**), lamb's quarters (*Chenopodum album**), jimson weed (*Datura wrightii*), red brome, ripgut brome, soft chess, and bindweed (*Convolvulus arvensis*).

Grove/Orchard

Portions of the Study Area consist of active orchards, which have been subject to historic and/or recent tilling and planting or contain mature trees. Predominant crops include citrus trees such orange, lemon, and grapefruit. Field edges and untillable areas within fields include an assemblage of ruderal and/or native species. Ditches and depressions where run-off accumulates support the freshwater marsh and/or ruderal assemblages. Grove/Orchard lands occur within suburban residential areas and are bordered by active roadways and private residences containing ornamental landscaping.

Riparian Forest/Woodland/Scrub

The riparian habitats described below provide suitable habitat for several special-status species with potential to occur on site including California satintail, white-tailed kite, long-eared owl, two-striped garter snake, least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, yellow warbler, and yellow-breasted chat.

Southern Willow Scrub

Southern willow scrub communities are designated by the Department of Fish and Game (DFG) & CNDDB with a Sensitivity 2.1 "very threatened" (S2.1) and "Occurs in 6 to 20 known locations and/or 2,000 to 10,000 acres of habitat remaining." This association is reliant upon the presence of perennial surface or subsurface flows and occurs in various drainage corridors associated with urban development and within the Santa Ana River. The vestigial stands of forest contain dense thickets of willow species dominated by black willow and red willow, in addition to mule fat, tree tobacco, giant reed (*Arundo donax*), wild grape (*Vitis californica*), and Mexican elderberry (*Sambucus mexicana*) with scattered emergent Fremont cottonwood and western sycamore (*Platanus racemosa*). This association forms a suitable habitat and nesting area for many species of avifauna. Some understory development occurs on the stream banks and other areas where the canopy cover is not as dense. Understory species include an assemblage of native and non-native grasses and riparian herbs including southern cat-tail (*Typha domingensis*), stinging nettle (*Urtica dioica*), California mugwort (*Artemesia douglasiana*), common sunflower, cocklebur (*Xanthium strumarium*), beardless wild-rye (*Leymus tritichoides*), castor bean (*Ricinus communis**), horehound (*Marrubium vulgare**), salt heliotrope (*Heliotropium curassavicum*), rabbit-foot grass, broad-leaved peppergrass (*Lepidium latifolium*), common knotweed, horseweed (*Conyza canadensis*), Mexican sprangletop, jungle rice, and nut grass (*Cyperus esculenuis*).

Mule Fat Scrub

The mule fat scrub association occurs in patches within ditches and drainages located in fields or along roadways. The largest occurrence of this association is at the Santa Ana River crossing in the central reach of the Study Area. The association is characterized by shrubby scrub including several willow species and riparian herb species and is dominated by mule fat.

4.3 Habitat Assessments: Plants

No special-status plants were observed during the site visits, although portions of the Study Area have at least a limited potential to support several special-status plant species, none of which are federally or state listed. Focused plant surveys are necessary to determine the presence/absence of these species.

Special-status plants with some potential to occur within the Proposed Alignment – Northern Reach include the following: Chaparral sand-verbena, Parry's spineflower, Robinson's pepper-grass, and smooth tarplant.

Special-status plants with some potential to occur within the Proposed Alignment – Central Reach include the following: California satintail, Chaparral sand-verbena, Parry's spineflower, prairie wedge grass, Robinson's pepper-grass, and smooth tarplant
The Monroe Street Alternative does not support suitable habitat for special-status plant species.

4.4 Habitat Assessment: State and Federally Listed Animals

No special-status animals were observed during the site visits, although portions of the Study Area have at least a limited potential to support several special-status animal species, some of which are federally or state listed. Focused surveys are necessary to determine the presence/absence of these species. Focused surveys have not been conducted. Exhibit 5 depicts the habitat assessment results.

4.4.1 Aquatic Resources

The Proposed Alignment – Northern Reach Study Area encompasses ephemeral streambed, perennial streambed, and approximately 2.4 acres of riparian habitat that have potential to support least Bell's vireo, southwestern willow flycatcher, and Santa Ana sucker. The Proposed Alignment – Northern Reach Study Area does not contain any vernal pools and, as such, does not contain suitable habitat for any of the listed fairy shrimp.

The Proposed Alignment – Central Reach Study Area encompasses ephemeral streambed, perennial streambed, and approximately 13.1 acres of riparian habitat that have potential to support least Bell's vireo, southwestern willow flycatcher, and Santa Ana sucker. The Proposed Alignment – Central Reach Study Area does not contain any vernal pools and, as such, does not contain suitable habitat for any of the listed fairy shrimp.

The Monroe Street Alternative Study Area encompasses perennial and ephemeral streambed but supports no riparian habitat that have potential to support state or federally listed species. The Monroe Street Alternative Study Area does not contain any vernal pools and, as such, does not contain suitable habitat for any of the listed fairy shrimp.

4.4.2 Delhi Sands

The Proposed Alignment – Northern Reach Study Area encompasses approximately 70 acres of mapped Delhi Sands that may have potential to support Delhi Sands flower-loving fly habitat.

4.4.3 Coastal Sage Scrub

The Proposed Alignment – Northern Reach Study Area supports approximately 7 acres of marginal coastal sage scrub habitat with some potential to support California gnatcatcher.

Neither the Proposed Alignment – Central Reach nor the Monroe Street Alternative supports coastal sage scrub.

4.4.4 Alluvial Fan Sage Scrub

The Study Area does not support alluvial fan sage scrub and, as such, the Project Site does not contain suitable habitat for San Bernardino kangaroo rat.

4.5 Habitat Assessments: Other Species with Special Survey Requirements (Burrowing Owl)

The Proposed Alignment – Northern Reach Study Area supports approximately 178 acres of habitat with some potential to support burrowing owl. Neither Phase II Burrow Surveys nor Phase III Focused Surveys have been conducted for the Proposed Alignment – Northern Reach Study Area.

The Proposed Alignment – Central Reach Study Area supports approximately 22 acres of habitat with some potential to support burrowing owl. Winter and Breeding Season Phase II Burrow Surveys and Phase III Focused Surveys have been conducted within areas of suitable habitat for the Proposed Alignment – Central Reach Study Area. No burrowing owls were observed.

The Monroe Street Alternative Study Area supports approximately six acres of habitat with some potential to support burrowing owl. Winter and Breeding Season Phase II Burrow Surveys and Phase III Focused Surveys have been conducted within areas of suitable habitat for the Monroe Street Alternative Study Area. No burrowing owls were observed.

4.6 General Wildlife Surveys

During general biological surveys for the proposed Riverside-Corona Feeder Realignment Project, no special status animals were identified within the Study Area. Although not observed during field studies, several special-status animals have some potential to occur on site based on the presence of suitable habitat and/or their known occurrence in the region. Special-status animals with potential to occur on site are summarized in Table 2-2 above.

4.7 Raptor Habitat

All three Study Areas provide potential foraging habitat for a number of raptor species including special-status raptors.

4.8 Nesting Birds

All three Study Areas support trees, shrubs, and ground cover that provide suitable habitat for nesting migratory birds. Impacts to nesting birds are prohibited under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.[4]

4.9 Jurisdictional Delineation

4.9.1 CDFG Jurisdiction

All three Study Areas contain streambeds and associated riparian habitat that support wildlife as defined by the California Department of Fish and Game (CDFG). More detailed information regarding the location and limits of CDFG jurisdiction within the Study Areas is provided in the Project-Level Delineation Report included as Appendix D. Potential jurisdictional streambeds are depicted on Exhibit 7.

[4] The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R.21). In addition, sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

4.9.2 USACE Jurisdiction

All three Study Areas contain waters of the United States as defined by the U.S. Army Corps of Engineers (USACE). More detailed information regarding the location and limits of USACE jurisdiction is provided in the Project-Level Delineation Report included as Appendix D. Potential jurisdictional waters are depicted on Exhibit 7.

4.9.3 Regional Water Quality Control Board

Regional Water Quality Control board jurisdiction extends to all of the features regulated by USACE. Potential jurisdictional waters are depicted on Exhibit 7.

5.0 DISCUSSION AND RECOMMENDATIONS

The following discussion examines the requirements for additional surveys and mitigation given various project scenarios. Project-related impacts can occur in two forms, direct and indirect. Direct impacts are considered to be those that involve the loss, modification, or disturbance of plant communities that, in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or wildlife, which may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and population stability.

Other impacts such as loss of foraging habitat can occur although these areas or habitats are not directly removed by project development (i.e., indirect impacts). Indirect impacts can also involve the effects of increases in ambient levels of noise or light, unnatural predators (i.e., domestic cats and other non-native animals), competition with exotic plants and animals, and increased human disturbance such as hiking and dumping of green waste on site. Indirect impacts may be associated with the subsequent day-to-day activities associated with project usage, such as increased traffic use, permanent concrete barrier walls or chain link fences, exotic ornamental plantings that provide a local source of seed, etc., which may be both short-term and long-term in duration. These impacts are commonly referred to as "edge effects" and may result in slow replacement of native plants by exotics, changes in the behavioral patterns of wildlife, and reduced wildlife diversity and abundances in habitats adjacent to project sites.

The potential for significant adverse effects, either directly or through habitat modifications, on any special-status plant, animal, or habitat that could occur as a result of project development is discussed below.

5.1 Vegetation Impacts

As described in Section 1.3, with the exception of approximately 1,700 feet that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus of Doolittle Street, the proposed alignments are located within existing roadways. Additionally, the pipeline will be extended beneath the Santa Ana River using boring and micro-tunneling techniques that will eliminate the need to disturb habitat at the ground's surface. Therefore, potential impacts to wildlife habitat will be limited to temporary impacts for staging.

5.2 Special-Status Plant Species

No suitable habitat for special-status plant species occurs within the Monroe Street Alternative Study Area, therefore there this alternative has no potential to impact species-status plant species.

As discussed in Section 4.3.1, several special-status plant species have limited potential to occur within the Northern or Central Reaches of the Proposed Alignment Study Area including Chaparral sand-verbena, Parry's spineflower, smooth tarplant, prairie wedge grass, California satintail, and Robinson's pepper-grass.

Prairie wedge grass and California satintail, if present, would be limited to the Santa Ana River. There is no potential for impact to these species if the pipeline is installed using boring and micro-tunneling as expected. Additionally, as described above, the proposed alignments are primarily located within existing roadways. Potential impacts to special-status plant species including chaparral sand-verbena, Parry's spineflower, smooth tarplant and Robinson's pepper-grass, would consist of temporary impacts for staging. Temporary impacts to a small number of individuals would not be considered significant.

5.3 Special-Status Animal Species

No special-status animal species were observed within the three Study Areas during field studies. However, 25 special-status animal species have potential to occur within the Study Areas.

For the Proposed Alignment – Northern Reach, potentially occurring special-status animal species include the federally listed coastal California gnatcatcher, Delhi Sands flower-loving fly, least Bell's vireo, Santa Ana sucker, and southwestern willow flycatcher. Other special-status species with potential to occur include the American badger, arroyo chub, burrowing owl, San Diego horned lizard, golden eagle, loggerhead shrike, Los Angeles pocket mouse, northwestern San Diego pocket mouse, orange-throated whiptail, Santa Ana speckled dace, southern grasshopper mouse, southwestern pond turtle, two-striped garter snake, western yellow-billed cuckoo, yellow-breasted chat, white-tailed kite, northern red-diamond rattlesnake, San Diego black-tailed jackrabbit, and yellow warbler.

For the Proposed Alignment – Central Reach, potentially occurring special-status animal species include the federally listed least Bell's vireo, Santa Ana sucker, and southwestern willow flycatcher. Other special-status species with potential to occur include the American badger, arroyo chub, burrowing owl, San Diego horned lizard, golden eagle, loggerhead shrike, long-eared owl, Los Angeles pocket mouse, northwestern San Diego pocket mouse, orange-throated whiptail, Santa Ana speckled dace, southern grasshopper mouse, southwestern pond turtle, two-striped garter snake, western yellow-billed cuckoo, yellow-breasted chat, white-tailed kite, northern red-diamond rattlesnake, San Diego black-tailed jackrabbit, and yellow warbler.

No state or federally listed species are expected for the Monroe Street Alternative. Special-status species with potential to occur include the burrowing owl and loggerhead shrike.

Potential impacts to these species are discussed below.

5.3.1 Federally Listed Species with Potential to Occur within the Study Area

5.3.1.1 Coastal California Gnatcatcher

The coastal California gnatcatcher (CAGN) is a federally listed threatened species with some potential to occur in association with approximately 7 acres of coastal sage scrub habitat scattered throughout the Proposed Alignment – Northern Reach Study Area. The project has potential to result in the temporary loss of suitable habitat or the temporary degradation of habitat resulting from noise generated during project construction. The temporary loss or degradation of occupied habitat would constitute a take of CAGN and would require authorization from USFWS. Any take of CAGN would be expected to be a significant impact prior to mitigation.

Prior to initiating construction within 500 feet of coastal sage scrub habitat, USFWS protocol surveys will be conducted to determine if CAGN are present. Exhibit 5 depicts the location of potentially suitable habitat for CAGN. Focused presence/absence surveys for CAGN consist of either 1) six surveys conducted no less than one week apart between March 15 and June 30 or 2) nine surveys conducted no less than two weeks apart during the remainder of the year. Surveys must be conducted by a biologist who holds the appropriate Section 10(a)(1)(A) permit. Surveys in which the species is not detected are considered valid for one year and should be repeated within one year of work commencing.

If surveys document the presence of California gnatcatchers, then 1) occupied coastal sage scrub will be clearly marked and direct impacts will be avoided; and 2) construction within 500 feet of occupied habitat will occur only between September 1 and February 15 to avoid indirect impacts to nesting gnatcatchers. If occupied coastal sage scrub cannot avoided, then 1) occupied habitat would be removed outside of the nesting season, between September 1 and February 15, under the supervision of a biologist who holds the appropriate Section 10(a)(1)(A) permit, and 2) an appropriate habitat mitigation and monitoring program (HMMP) would be developed in coordination with the USFWS. At a minimum, the HMMP would include re-vegetation of the temporarily impacted areas. Potential impacts to coastal California gnatcatcher would be reduced below the level of significance following implementation of the above mitigation measures.

5.3.1.2 Delhi Sands Flower-loving Fly (DSFLF)

The Delhi Sands flower-loving fly (DSFLF) is a federally listed endangered species with some potential to occur within the Proposed Alignment – Northern Reach Study Area. CNDDB includes records of DSFLF within the immediate vicinity of the proposed Project, and the Study Area supports approximately 70 acres of potentially suitable habitat. The project has potential to result in the temporary disturbance of suitable and occupied habitat. The temporary disturbance of occupied habitat would constitute a take

of DSFLF and would require authorization from USFWS. Any take of DSFLF would be expected to be a significant impact prior to mitigation.

If disturbance is necessary within potentially suitable DSFLF habitat, a biologist who holds the appropriate Section 10(a)(1)(A) permit will conduct a habitat assessment of proposed disturbance areas and coordinate with USFWS to determine if protocol surveys are necessary. Exhibit 5 depicts the location of potentially suitable DSFLF habitat. Presence/absence surveys, if necessary, consist of biweekly surveys from August 1 to September 20 for a two-year period within areas of suitable habitat.
If surveys document the presence of Delhi Sands flower-loving fly then occupied habitat will be clearly marked and direct impacts will be avoided, reducing potential impacts below the level of significance.

5.3.1.3 Least Bell's Vireo (LBV)

The least Bell's vireo (LBV) is a federally listed endangered species that is known to occur within the Santa Ana River and has some potential to occur in association with southern willow scrub scattered throughout the Proposed Alignment Northern Reach and Central Reach Study Areas. No direct impacts to potentially suitable habitat are proposed. Most significantly, potentially suitable LBV habitat and federally-designated critical habitat at the Santa Ana River will be avoided as a result of boring and micro-tunneling. Therefore, potential impacts are limited to temporary degradation of habitat resulting from noise generated during project construction. The temporary degradation of occupied habitat would constitute a take of LBV and would require authorization from USFWS. Any take of LBV would be expected to be a significant impact prior to mitigation.

Prior to initiating construction, potentially suitable LBV habitat will be clearly marked and direct impacts will be avoided. Exhibit 5 depicts the location of potentially suitable LBV habitat. Additionally, to the maximum extent feasible, construction within 500 feet of potentially suitable habitat will occur only between September 15 and March 15 to avoid potential indirect impacts to nesting LBV.

If construction within 500 feet of potentially suitable LBV habitat between March 15 and September 15 cannot be avoided, USFWS protocol surveys will be conducted to determine if LBV are present. Focused presence/absence surveys consist of eight surveys conducted no less than ten-days apart between April 10 and July 31. Surveys must be conducted by a biologist who is familiar with the species.

If LBV is present, then a qualified biologist will monitor noise levels at the nesting locations. The biologist will coordinate with contractors to reduce hourly Leq to less than 60 dBA. Measures to reduce noise levels may include, but are not limited to, selecting different equipment for construction, if feasible, installation of sounds walls or modification of work schedules such that overlapping use of noisy equipment is reduced to the maximum extent feasible.

If direct impacts to occupied habitat cannot be avoided, then 1) occupied habitat would be removed outside of the nesting season, between September 15 and March 15 and 2) an appropriate habitat mitigation and monitoring program (HMMP) would be developed in coordination with the USFWS. At a minimum, the HMMP would include re-vegetation of the temporarily impacted areas. Potential impacts to least Bell's vireo would be reduced below the level of significance following implementation of the above mitigation measures.

5.3.1.4 Southwestern Willow Flycatcher (SWWF)

The southwestern willow flycatcher (SWWF) is a federally and state listed endangered species and has some potential to occur in association with riparian forest scattered throughout the Proposed Alignment Northern Reach and Central Reach Study Areas. No direct impacts to potentially suitable habitat are proposed. Most significantly, potentially suitable SWWF habitat at the Santa Ana River will be avoided as a result of boring and micro-tunneling. Therefore, potential impacts are limited to temporary degradation of habitat resulting from noise and dust generated during project construction. The temporary degradation of occupied habitat would constitute a take of SWWF and would require authorization from USFWS. Any take of SWWF would be expected to be a significant impact prior to mitigation.

Prior to initiating construction potentially suitable SWWF habitat will be fenced and direct impacts will be avoided. Exhibit 5 depicts the location of potentially suitable SWWF habitat. Additionally, to the maximum extent feasible, construction within 500 feet of potentially suitable habitat will occur only between September 15 and March 15 to avoid potential indirect impacts to nesting SWWF.

If construction within 500 feet of potentially suitable SWWF habitat between March 15 and September 15 cannot be avoided, USFWS protocol surveys will be conducted to determine if SWWF are present. Exhibit 5 depicts the location of potentially suitable SWWF habitat. Focused presence/absence surveys consist of five surveys conducted at specific intervals between May and July. Surveys must be conducted by a biologist who holds the appropriate Section 10(a)(1)(A) permit.

If SWWF is present, then a qualified biologist will monitor noise levels at the nesting locations. The biologist will coordinate with contractors to reduce hourly Leq to less than 60 dBA. Measures to reduce noise levels may include, but are not limited to, selecting different equipment for construction, if feasible, installation of sounds walls or modification of work schedules such that overlapping use of noisy equipment is reduced to the maximum extent feasible.

If direct impacts to occupied habitat cannot be avoided, then 1) occupied habitat would be removed outside of the nesting season, between September 15 and March 15 and 2) an appropriate habitat mitigation and monitoring program (HMMP) would be developed in

coordination with the USFWS. At a minimum, the HMMP would include re-vegetation of the temporarily impacted areas. Potential impacts to southwestern willow flycatcher would be reduced below the level of significance following implementation of the above mitigation measures.

5.3.1.5 Santa Ana Sucker (SAS)

The Santa Ana Sucker (SAS) is a federally listed threatened species, is known to occur within the Santa Ana River, and has some potential to occur in association with perennial streambed scattered throughout the Proposed Alignment Northern Reach and Central Reach Study Areas. The proposed Project also traverses federally designated critical habitat at several locations of which at least one occurs in San Bernardino County [Exhibit 8]. No direct impacts to potentially suitable habitat are proposed. Most significantly, potentially suitable SAS habitat and federally-designated critical habitat at the Santa Ana River will be avoided as a result of boring and micro-tunneling. Therefore, potential impacts would be limited to temporary degradation of habitat due to water quality degradation, if allowed to occur. If it occurred, temporary degradation of occupied habitat would constitute a take of SAS and would require authorization from USFWS. Any take of SAS would be expected to be a significant impact prior to mitigation.

Potential impacts to Santa Ana Sucker will be avoided by 1) clearly marking and avoiding direct impacts to potentially occupied habitat and 2) implementing Best Management Practices to ensure that no change in water quality will occur during or after construction. Potential impacts to Santa Ana sucker would be reduced below the level of significance following implementation of the above mitigation measures.

If direct impact or degradation of potentially suitable habitat cannot be avoided, then focused SAS surveys would be required within potentially suitable habitat. Surveys must be conducted by a biologist who holds the appropriate Section 10(a)(1)(A) permit. If the habitat was determined to be occupied, then an appropriate diversion plan or relocation plan would be developed in coordination with USFWS.

5.3.2 Additional Special-Status Species with Special Survey Requirements

5.3.2.1 Burrowing Owl (BUOW)

The western burrowing owl (*Athene cunicularia hypugaea*) is designated as a Federal Species of Concern as well as a California Species of Concern. As noted above, the Proposed Alignment – Northern Reach Study Area supports approximately 178 acres of habitat with some potential to support burrowing owl, the Proposed Alignment – Central Reach Study Area supports approximately 22 acres of habitat with some potential to support burrowing owl, and the Monroe Street Alternative Study Area supports approximately 6 acres of habitat with some potential to support burrowing owl. The project has the potential to result in the temporary loss or degradation of occupied habitat.

The temporary loss or degradation of occupied habitat may constitute a significant impact to BUOW and would potentially require mitigation pursuant to CEQA.

Prior to initiating construction within 300 feet of potentially suitable BUOW habitat within the Proposed Alignment – Central Reach Study Area and the Monroe Street Alternative Study Area a Breeding Season Phase III Focused Survey will be conducted by a qualified biologist.

Prior to initiating project construction within 300 feet of suitable habitat within the Proposed Alignment – Northern Reach Study Area, Phase II burrow surveys and Phase III Focused Winter Season and Breeding Season Surveys are required.

Phase II burrow surveys consist of pedestrian transects of all potentially suitable habitat. Potentially suitable burrows are mapped to identify areas requiring focused burrowing owl surveys.

Phase III focused surveys are required for all potentially suitable burrows identified during the Phase II surveys. Phase III surveys are conducted during the breeding season and the wintering season. The breeding season begins as early as February 1 and continues through August 31, with the peak breeding season occurring between April 15 and July 15. Pursuant to survey protocol, a complete burrowing owl survey consists of four site visits. During the initial survey visit, biologists examine burrows for diagnostic owl sign (i.e., whitewash, pellets, bones, features, food caches, etc.). Subsequent survey visits consist of observing burrow complexes from as many fixed points as possible to provide visual coverage of the site using binoculars. Survey visits are conducted during morning and dusk hours when owl activity is expected to be highest.

Additionally, a pre-construction burrowing owl survey, consisting of a single focused survey within 30 days of disturbance, will be conducted for areas where burrows were identified during the Phase II Burrow Surveys.

If surveys document the presence of Burrowing Owl, then 1) occupied habitat will be fenced and avoided, and 2) construction within 300 feet of occupied habitat will occur only between September 1 and March 15 to avoid indirect impacts to nesting owls. If occupied habitat cannot avoided, then 1) owls would be passively relocated and burrows would be collapsed outside of the nesting season, between September 1 and March 15, in coordination with CDFG.

5.3.3 Other Special-Status Animals with Potential Impacts

5.3.3.1 Fish

The Proposed Alignment – Northern Reach and the Proposed Alignment Central Reach have potential to support the following other special-status fish: arroyo chub and Santa Ana speckled dace. The Monroe Street Alternative has no potential to support special-

status fish species. If present, implementation of the mitigation measures for Santa Ana sucker would be expected to reduce potentially significant impacts to these species below a level of significance.

5.3.3.2 Reptiles

The Proposed Alignment – Northern Reach and the Proposed Alignment Central Reach have potential to support the following other special-status reptiles: San Diego horned lizard, orange-throated whiptail, southwestern pond turtle, two-striped garter snake, and northern red-diamond rattlesnake. The Monroe Street Alternative has no potential to support special-status reptile species.

If present, implementation of the mitigation measures for Santa Ana sucker and California gnatcatcher would be expected to reduce potentially significant impacts to these species below a level of significance.

5.3.3.3 Birds

The Proposed Alignment – Northern Reach and the Proposed Alignment Central Reach have potential to support the following other special-status birds: golden eagle, loggerhead shrike, northern harrier, western yellow-billed cuckoo, yellow-breasted chat, white-tailed kite, and yellow warbler. The Proposed Alignment – Central Reach also has potential to support the long-eared owl, and the Monroe Street Alternative has potential to support loggerhead shrike.

If western yellow-billed cuckoo, yellow breasted chat, white-tailed kite, long-eared owl, and yellow warbler are present, implementation of the mitigation measures for least Bell's vireo and southwestern willow flycatcher would be expected to reduce potentially significant impacts to these species below a level of significance.

The golden eagle, if present, would only use the site for foraging. The site would represent a very small proportion of the bird's foraging range, and the temporary loss of habitat during construction would not be considered significant.

Potential impacts to loggerhead shrike and northern harrier are limited to direct impacts to nests during the nesting season. Impacts to loggerhead shrikes will be avoided by conducting nesting birds surveys 72 hours prior to impact of suitable nesting habitat during the breeding season (March 1 through August 15). If active nests are identified, work should not proceed within 100 feet of nests until nests are abandoned or young birds fledge successfully.

5.3.3.4 Mammals

The Proposed Alignment – Northern Reach and the Proposed Alignment Central Reach have potential to support the following other special-status mammals: American badger,

Los Angeles pocket mouse, northwestern San Diego pocket mouse, southern grasshopper mouse, and San Diego black-tailed jackrabbit. The Monroe Street Alternative has no potential to support special-status mammals.

The American badger, if present, would only use the site for foraging. The site would represent a very small proportion of the badger's foraging range, and the temporary loss of habitat during construction would not be considered significant.

The black-tailed jackrabbit was not observed during site reconnaissance. If present, the species is present only in very low densities, and potential temporary impacts to occupied habitat during project implementation would not be considered significant.

If present, potential impacts to Los Angeles pocket mouse and northwestern San Diego pocket mouse may be significant prior to mitigation. If present, impacts would be reduced below the level of significance if occupied habitat is fenced and avoided.

5.4 Special-Status Habitats

The proposed Project has potential to impact three sensitive habitats as designated by CDFG. These include southern willow scrub, Riversidean sage scrub, and freshwater marsh. Potential impacts to southern willow scrub and freshwater marsh are addressed in Section 5.5 above. Potential impacts to Riversidean sage scrub are addressed in Section 5.3.1.1 above.

5.5 Raptor Habitat

Project implementation is not expected to result in permanent loss of raptor foraging habitat; therefore, the project is not expected to result in a significant impact to raptor foraging habitat.

5.6 Nesting Birds

As discussed above in Section 4.7, the Project Site has some potential to support nesting migratory birds. Impacts to such species are prohibited under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.[5] Impacts to nesting birds would be significant prior to mitigation. Impacts can be avoided by conducting surveys of suitable nesting habitat 72 hours prior to impacts during the nesting season (March 1 through August 15). If active nests are identified, work should not proceed within 100 feet of nests until nests are abandoned or young birds fledge successfully.

[5] The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R.21). In addition, sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

5.7 Indirect Impacts

Indirect impacts to natural communities that result from changes in the character of the adjacent cover type are commonly called "edge effects." These include introduction of exotic species including Argentine ant, domesticated cats and dogs, and non-native plant species that compete with or prey upon native species; increased ambient noise and light level; pesticide and fertilizer drift; permanent concrete barrier walls or chain-link fences that restrict wildlife movement; and degradation of water quality from urban runoff.

Because the proposed Project falls primarily within existing roadways, potential indirect impacts from the Project are limited to temporary soil or habitat disturbance associated with Project construction.

Indirect impacts have the potential to result in significant impact and would potentially require mitigation pursuant to CEQA. The following mitigation measures would be expected to reduce potential edge effects below a level of significance:

A) Seeding disturbed areas with native seed mixes upon project completion; and
B) Proper implementation of storm water BMP's.

5.8 Jurisdictional Waters

5.8.1 USACE

If USACE jurisdiction cannot be avoided, a Section 404 Nationwide permit will be required from USACE and a Section 401 Water Quality Certification will be required from the Regional Water Quality Control Board (Regional Board). Impacts to USACE would be significant prior to mitigation. Mitigation will be determined through coordination with USACE and will consist of a minimum of 1:1 replacement of temporary impacts. No permanent impacts are expected.

5.8.2 CDFG

If CDFG jurisdiction cannot be avoided, a Section 1602 Streambed Alteration Agreement will be required from CDFG. Impacts to CDFG would be significant prior to mitigation. Mitigation will be determined through coordination with CDFG and will consist of a minimum of 1:1 replacement of temporary impacts. No permanent impacts are expected.

5.9 Cumulative Impacts

As described in Section 1.3 above, the Proposed Alignment – Northern Reach and Monroe Street Alternatives fall entirely within existing roadways. The Proposed Alignment – Central Reach falls within existing roadways with the exception of approximately 1,700 feet that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus

of Doolittle Street. The pipeline will be extended beneath the Santa Ana River using boring and micro-tunneling techniques that will eliminate the need to disturb habitat at the ground's surface. As a result, the proposed project does not cause the permanent loss of biological resources and will not contribute to the cumulative loss of biological resources.

6.0 REFERENCES

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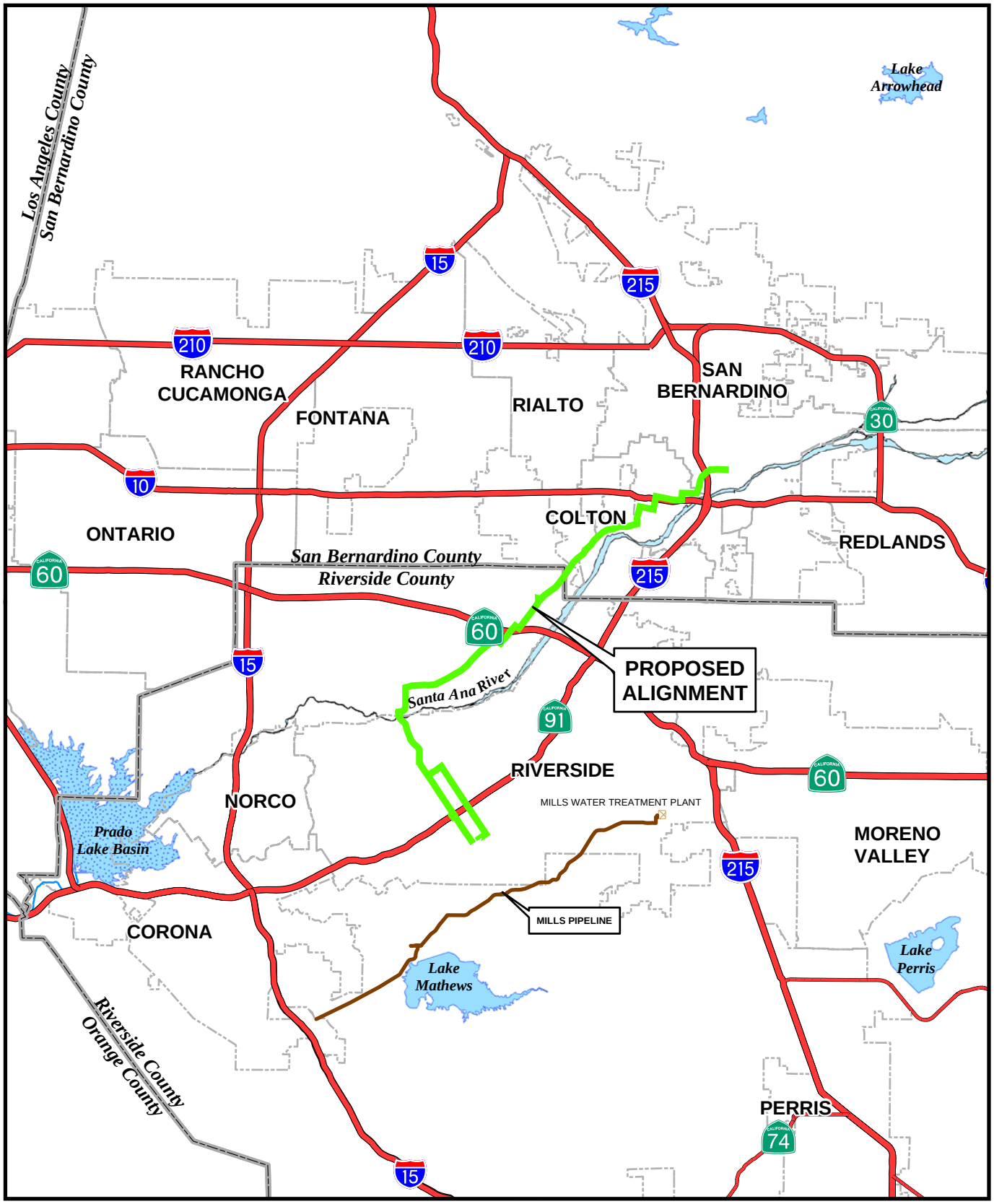
7.0 CERTIFICATION

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

Signed: Date: 05/11/09



Not to Scale

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ALBERT A. WEBB ASSOCIATES

Figure 1

Regional Location

Riverside Corona Feeder

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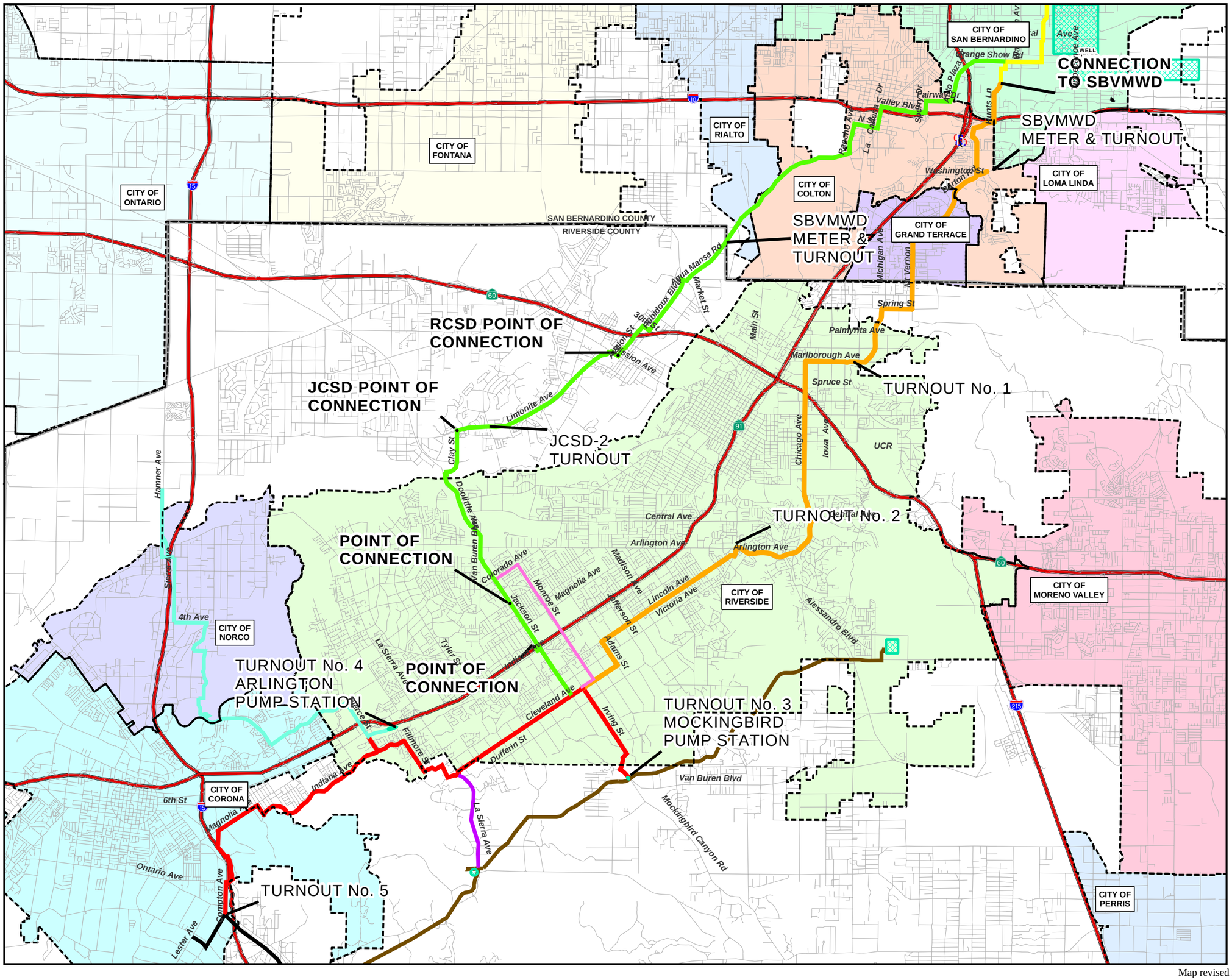


Figure 2

Proposed Project with Previous Alignment/ Location

LEGEND

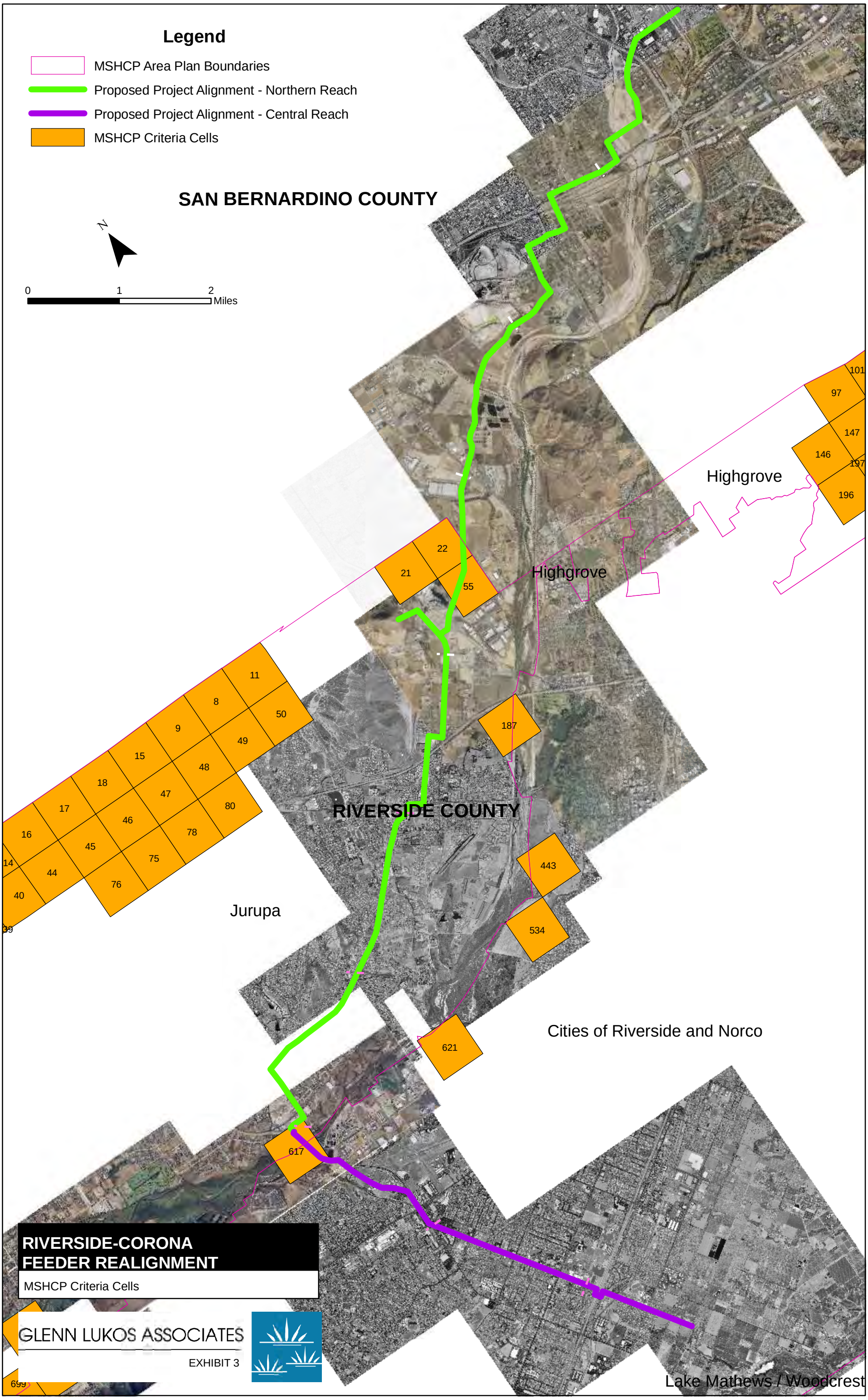
- Proposed Riverside-Corona Feeder
- RC Feeder Monroe Alternative
- R-C Feeder Alignment (to Remain)
- Original R-C Feeder Alignment
- Freeway
- Roads
- City Boundaries
- County Line

N

ALBERT A. WEBB ASSOCIATES

0 5,000 10,000 15,000 Feet

Map revised July 9, 2008. G:\2007\07-0377\Gis\prop_RCF_17x11_revised.mxd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Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
MSHCP Criteria Cells
SAN BERNARDINO COUNTY
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2
Miles
Highgrove
Highgrove
RIVERSIDE COUNTY
Jurupa
Cities of Riverside and Norco
Lake Mathews / Woodcrest
101
97
147
146
197
196
22
21
55
11
8
50
9
49
15
48
18
47
17
80
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46
78
45
14
75
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76
40
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187
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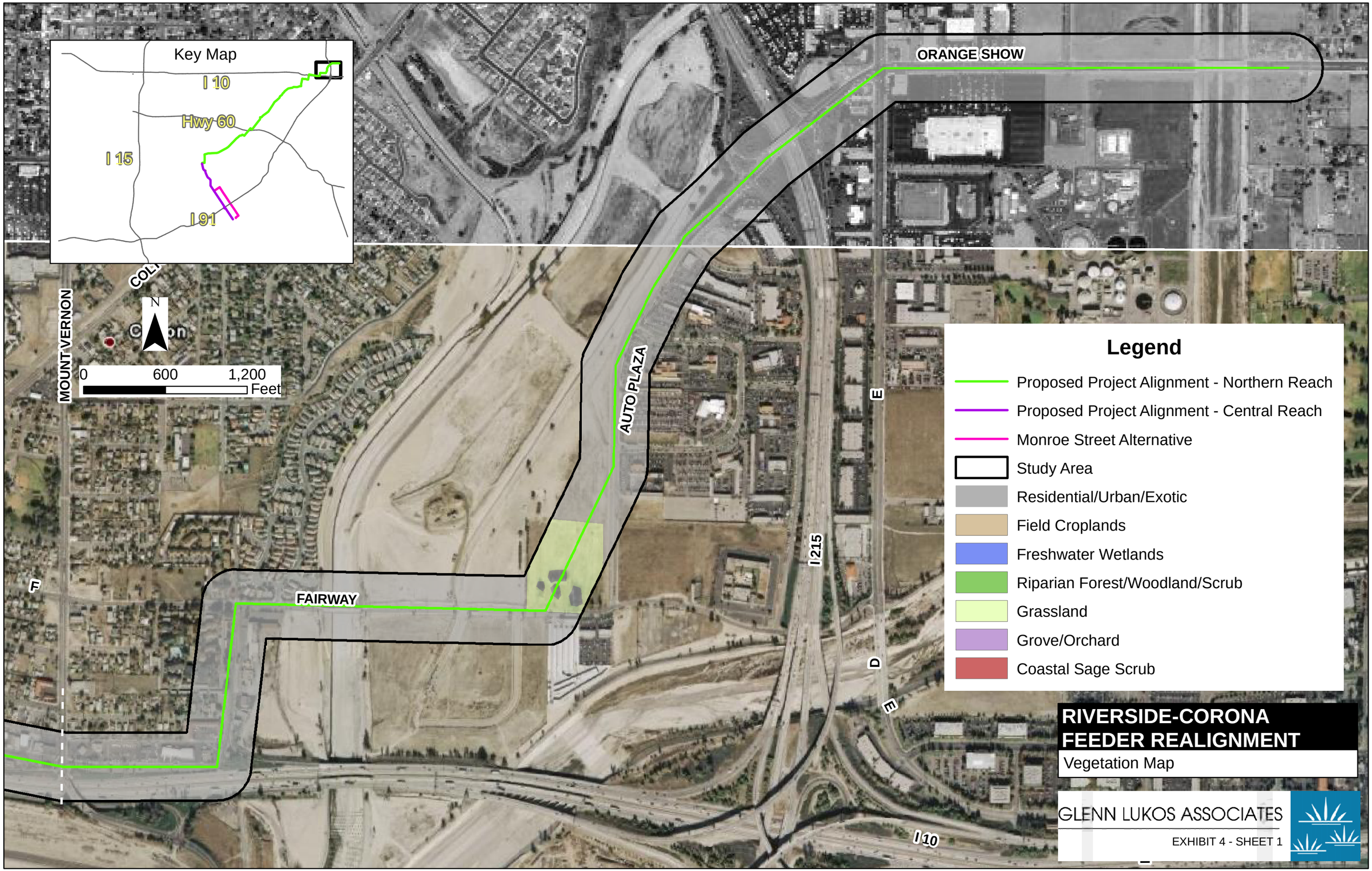
RIVERSIDE-CORONA
FEEDER REALIGNMENT
MSHCP Criteria Cells
GLENN LUKOS ASSOCIATES
EXHIBIT 3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AUTO PLAZA
FAIRWAY
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I 10
Legend
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
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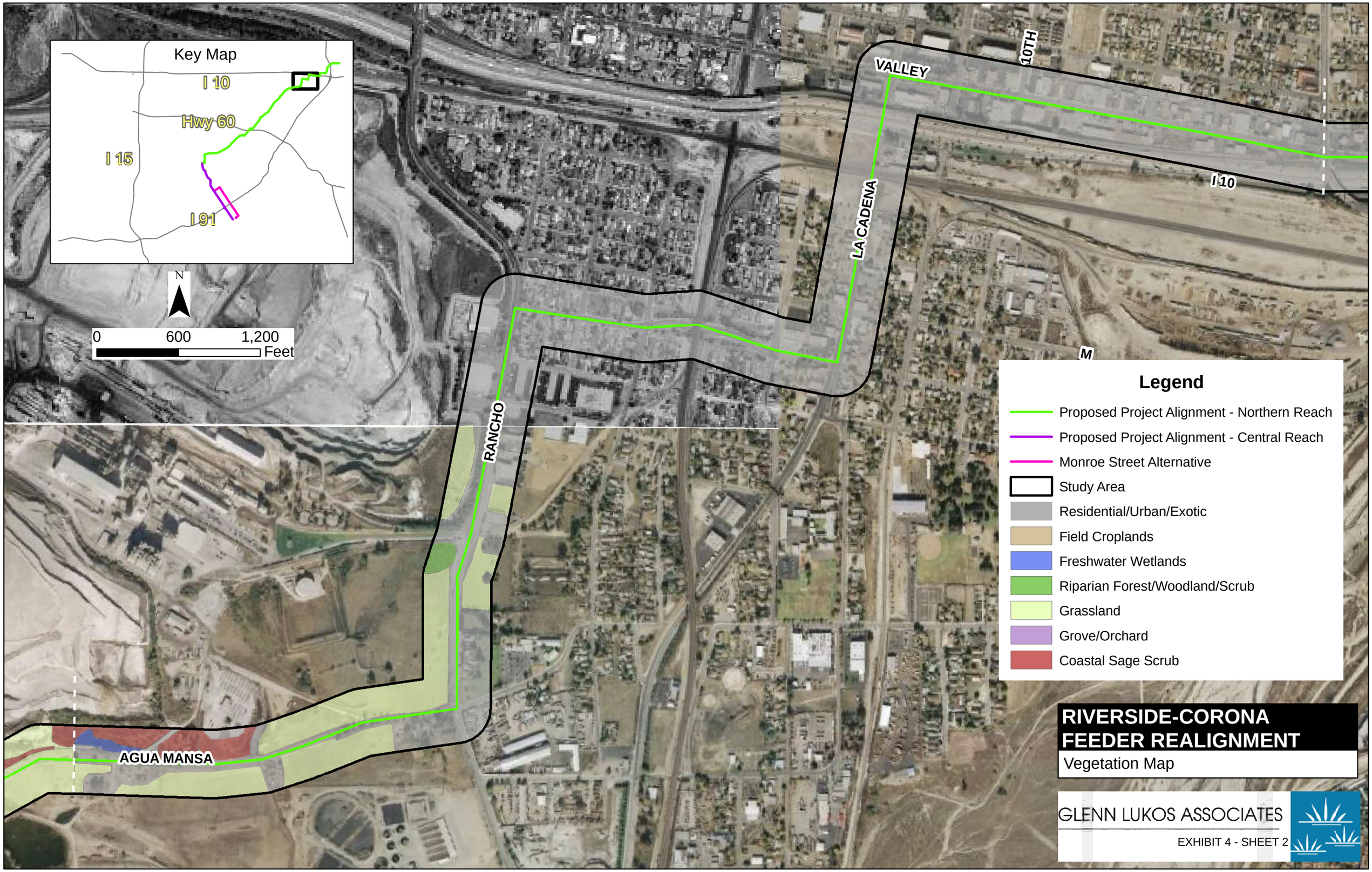
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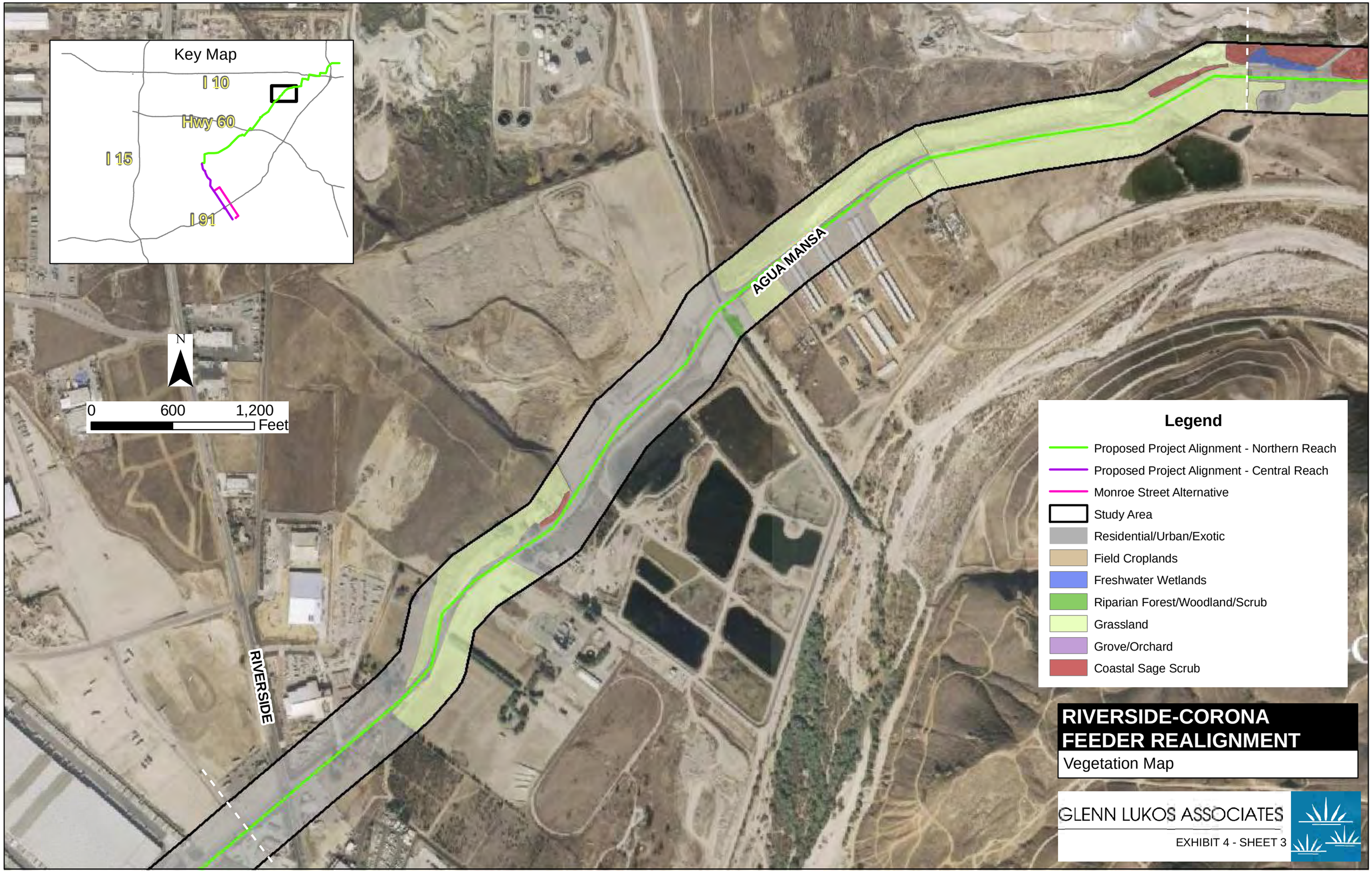
RANCHO
AGUA MANSA
Legend
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 4 - SHEET 2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RIVERSIDE
Legend
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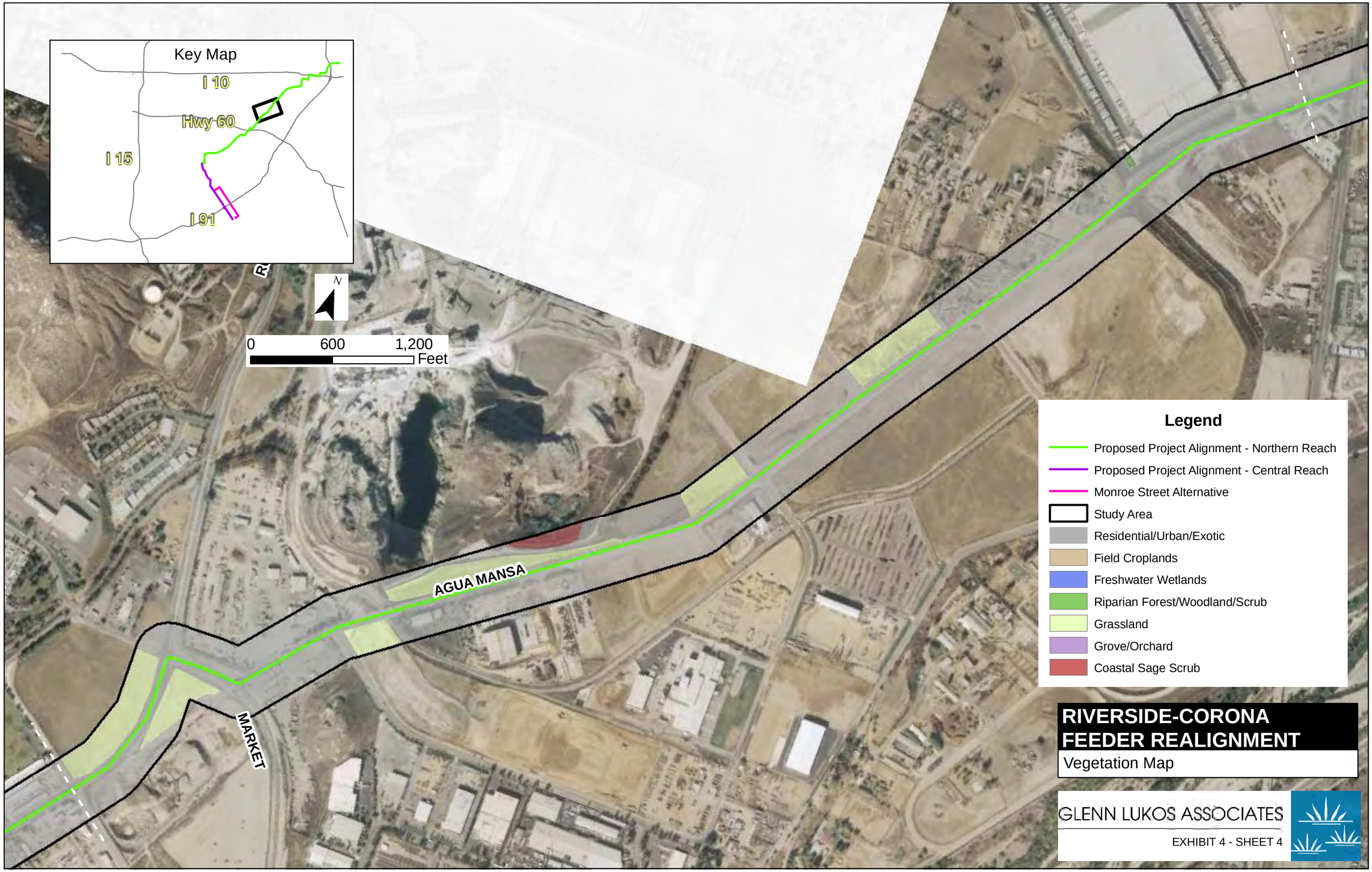
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 4 - SHEET 3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MARKET
Legend
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Proposed Project Alignment - Central Reach
Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
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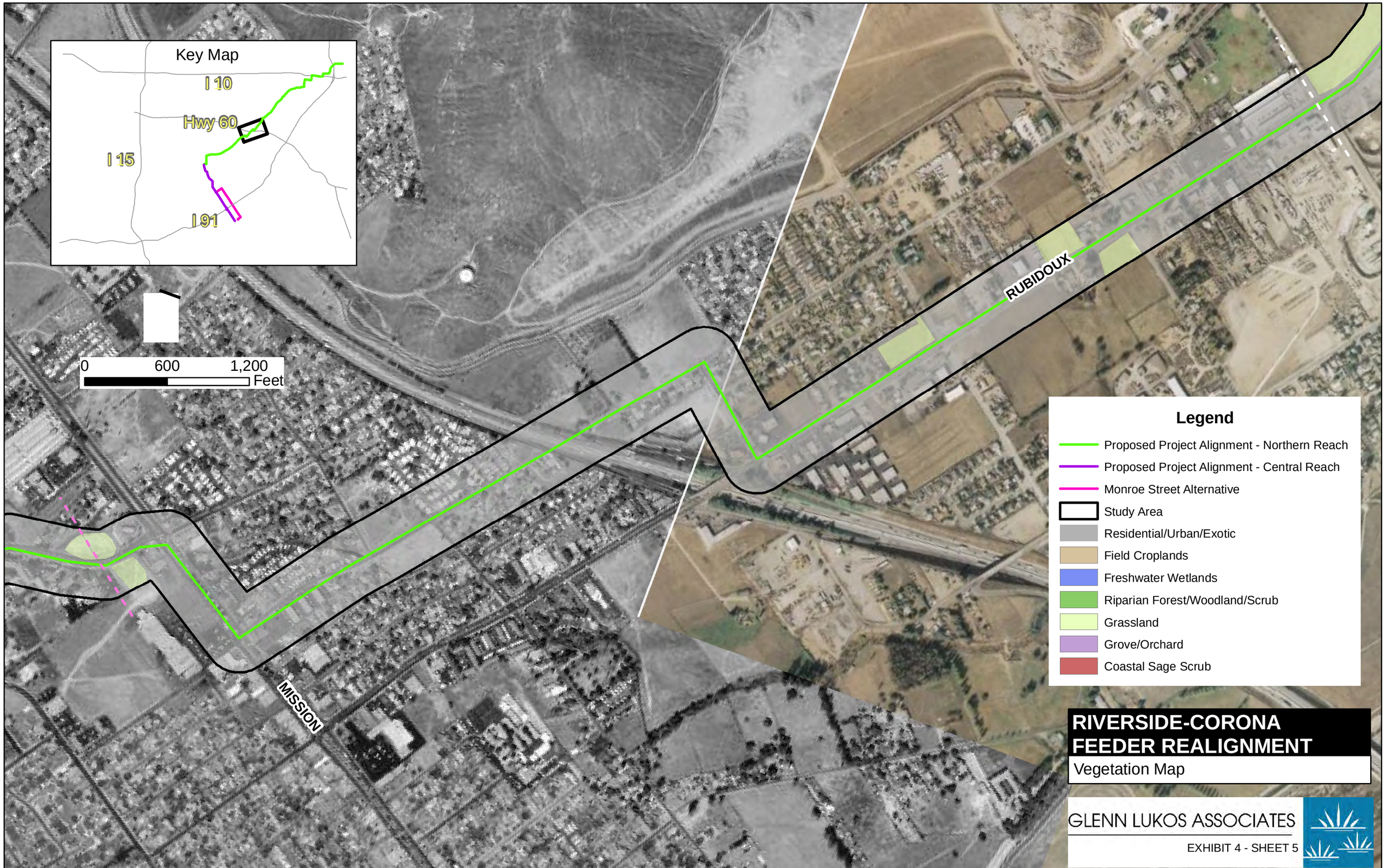
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RUBIDOUX
MISSION
Legend
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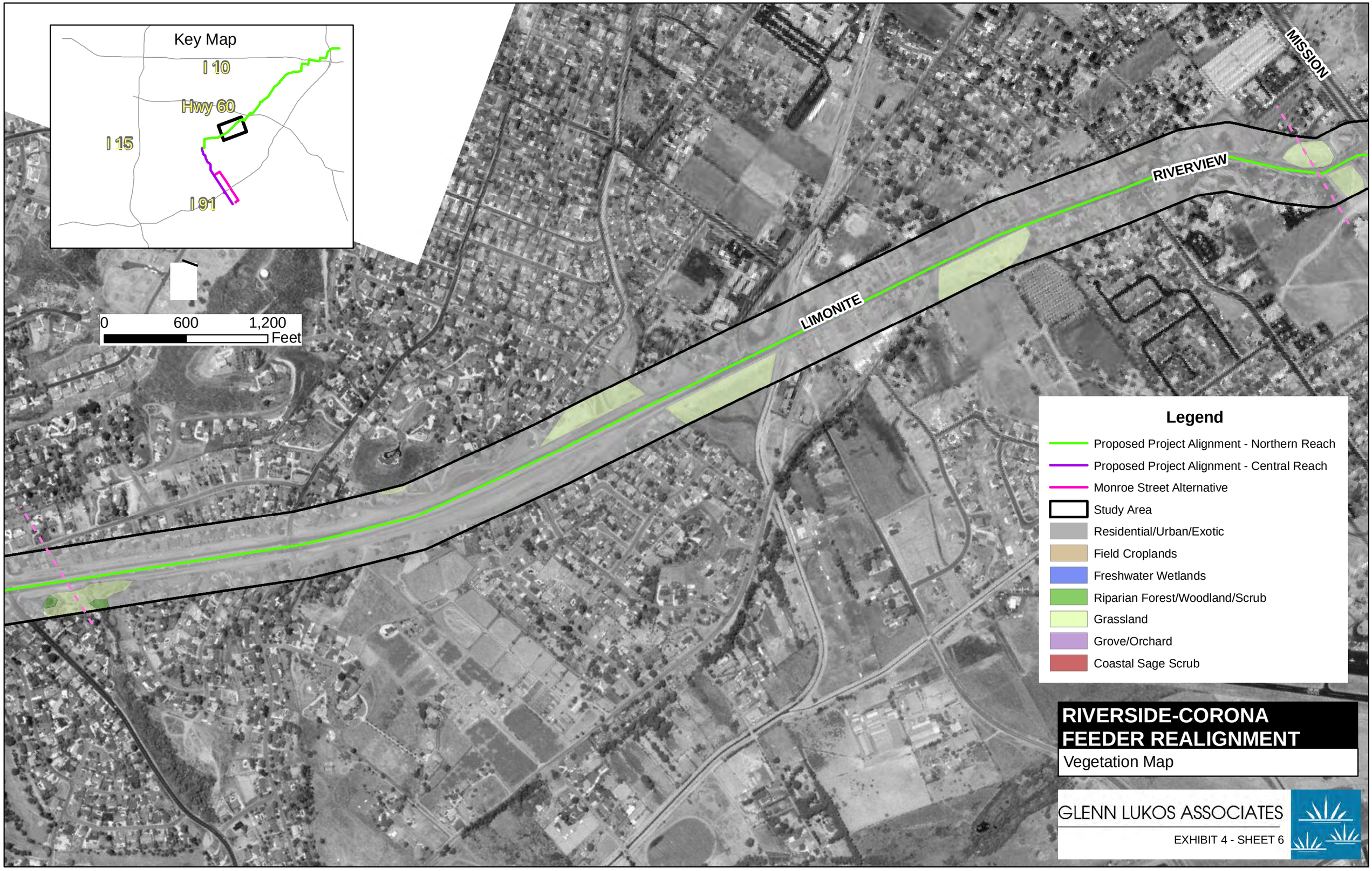
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 4 - SHEET 5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Legend
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Proposed Project Alignment - Central Reach
Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 4 - SHEET 6

LIMONITE
CAMINO REAL
Legend
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
Key Map
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FEEDER REALIGNMENT
Vegetation Map
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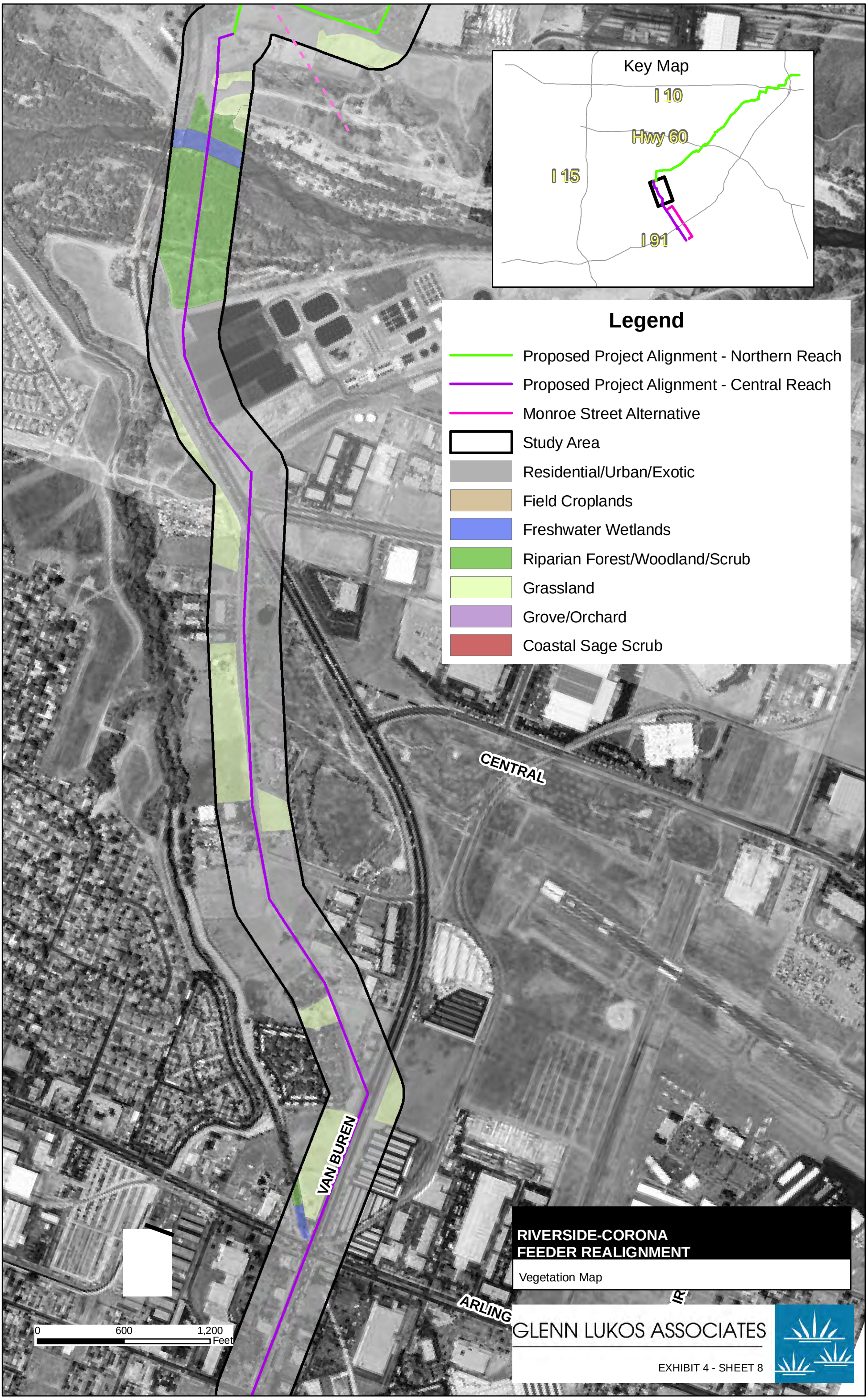
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Monroe Street Alternative
Study Area
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
CENTRAL
VAN BUREN
ARLING
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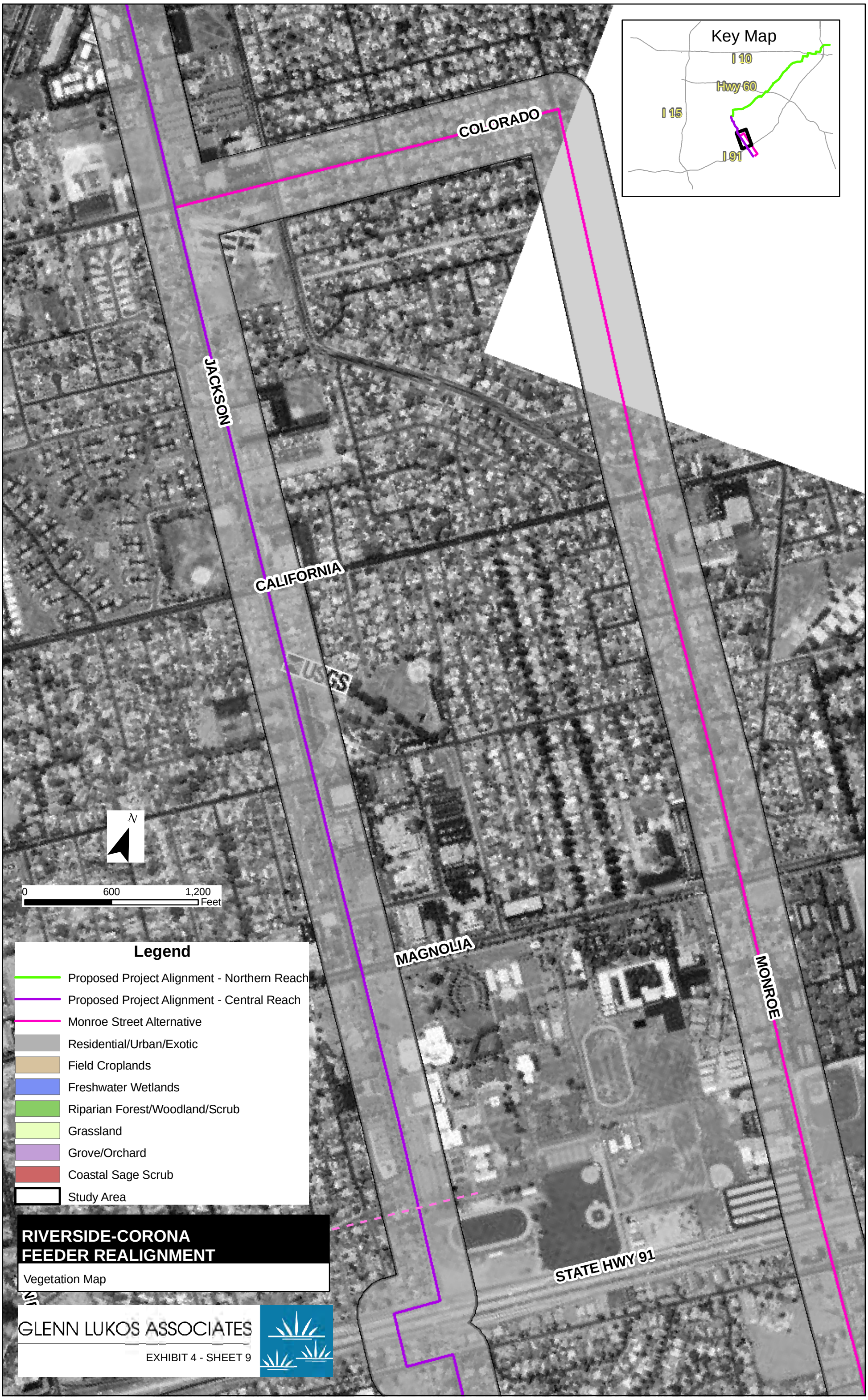
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 4 - SHEET 8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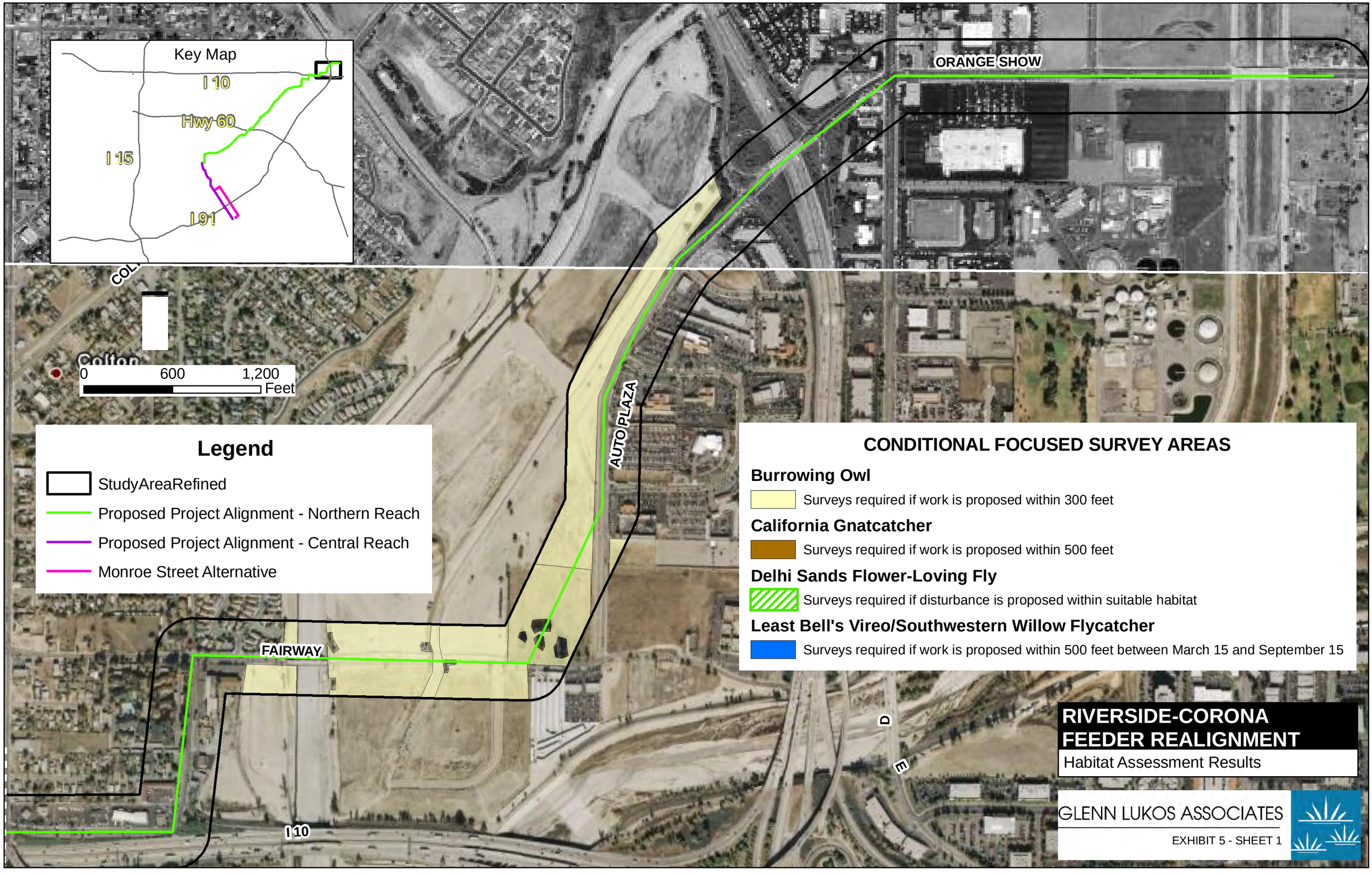
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Residential/Urban/Exotic
Field Croplands
Freshwater Wetlands
Riparian Forest/Woodland/Scrub
Grassland
Grove/Orchard
Coastal Sage Scrub
Study Area
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Vegetation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 4 - SHEET 9

RIVERSIDE-CORONA FEEDER REALIGNMENT

Vegetation Map

GLENN LUKOS ASSOCIATES

EXHIBIT 4 - SHEET 10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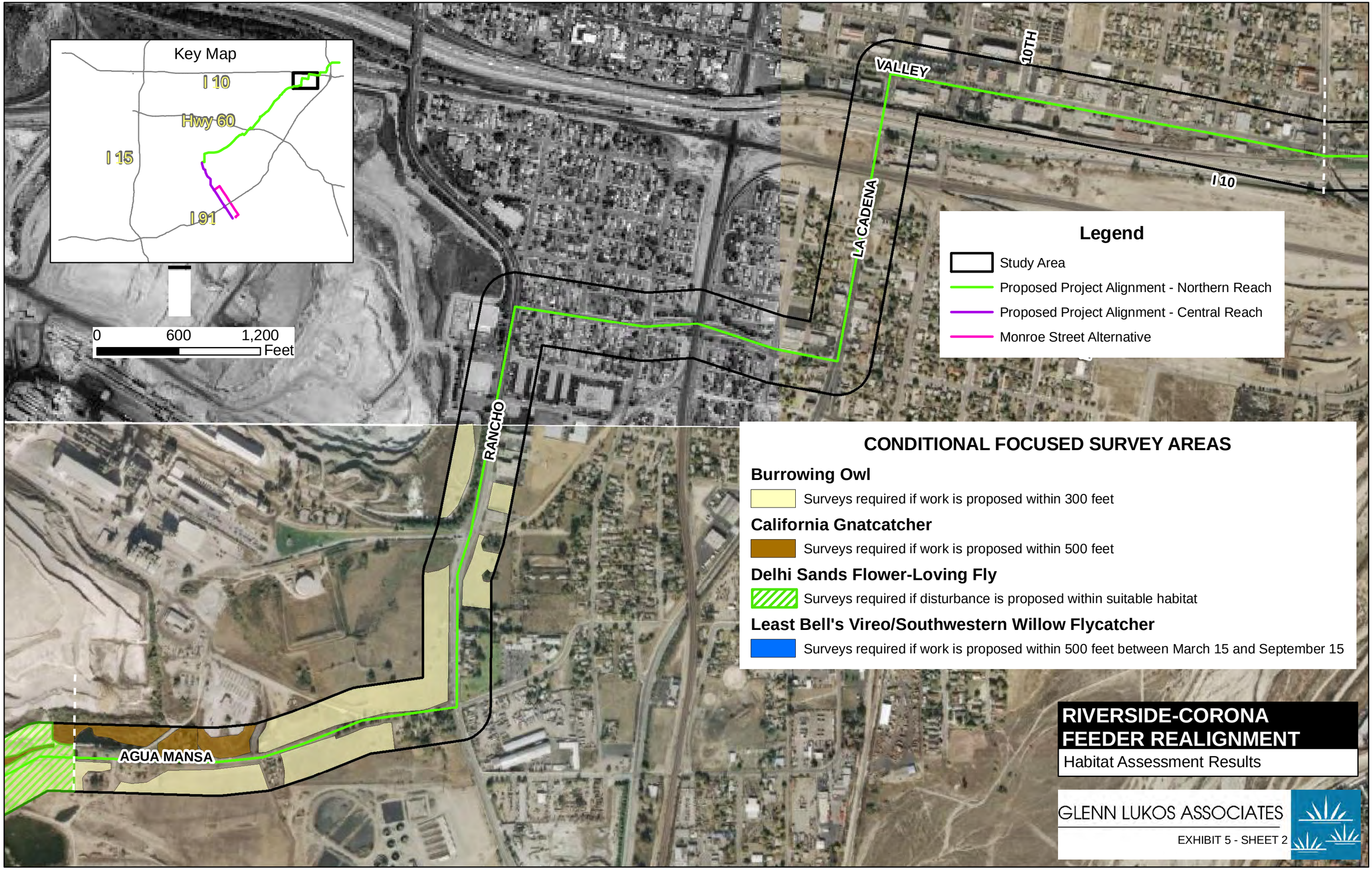
StudyAreaRefined
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
RIVERSIDE-CORONA FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 1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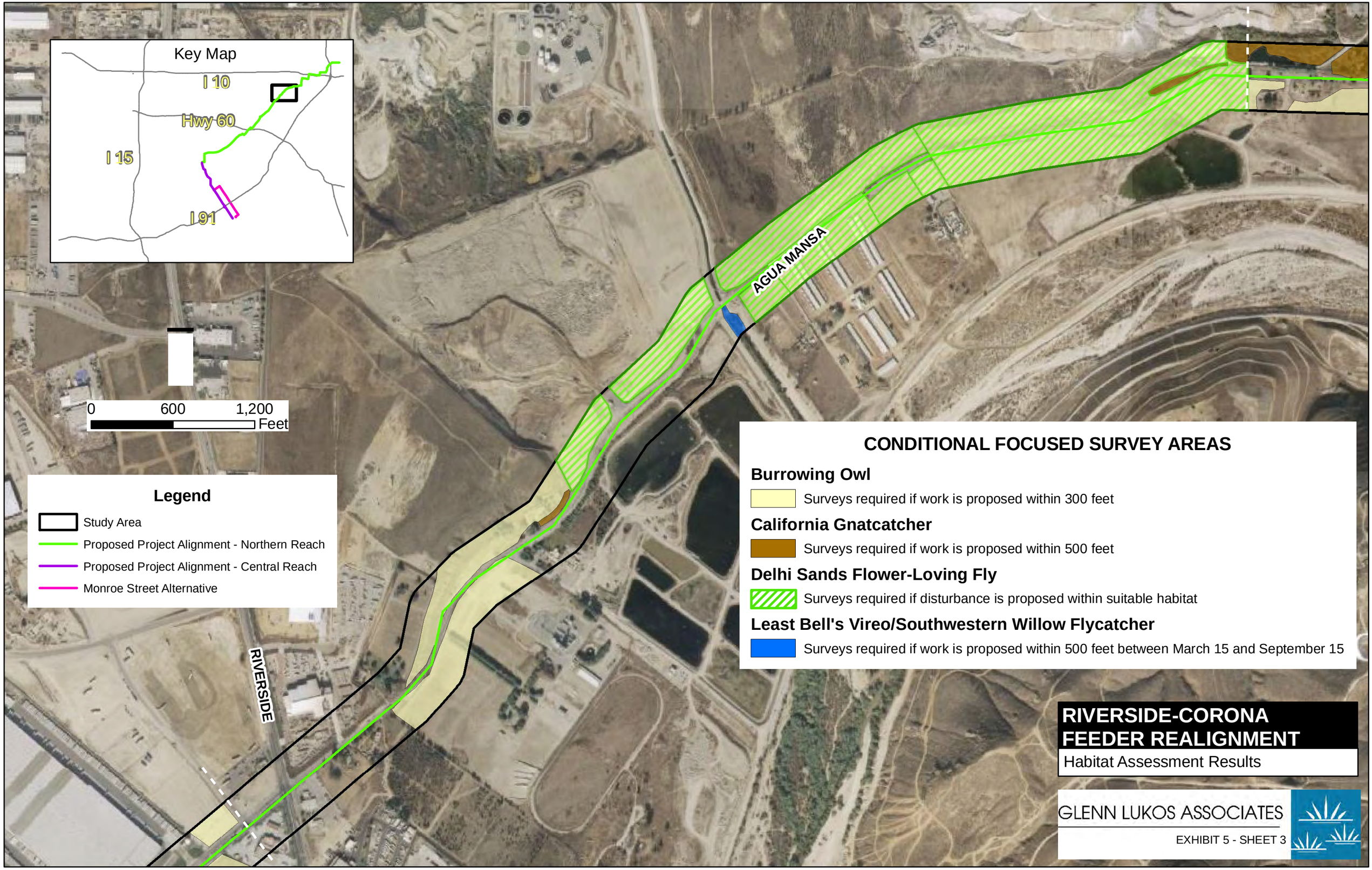
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
RIVERSIDE-CORONA FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 2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Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
AGUA MANSA
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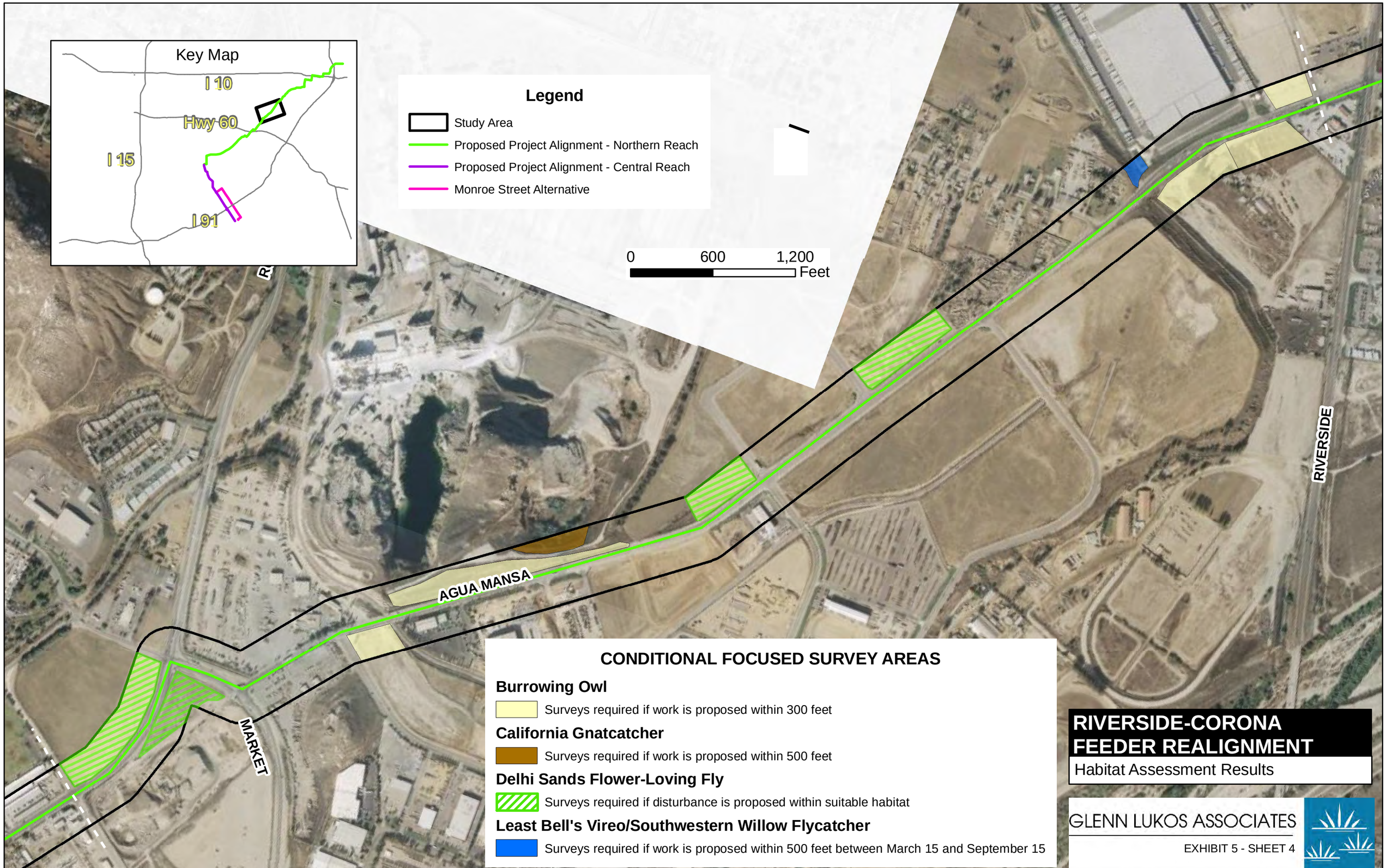
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
RIVERSIDE-CORONA FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 3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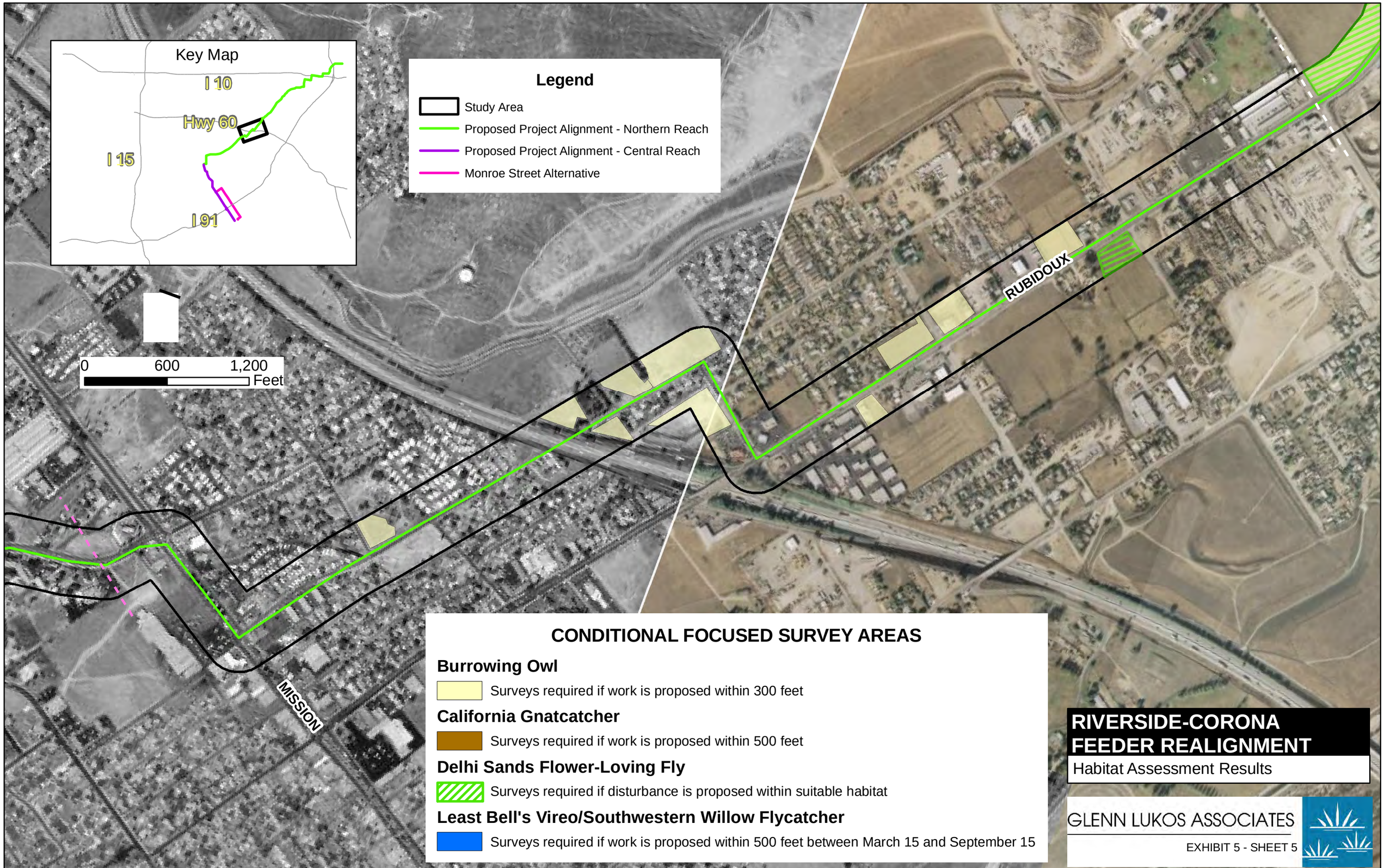
RIVERSIDE
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
RIVERSIDE-CORONA FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 4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MISSION
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
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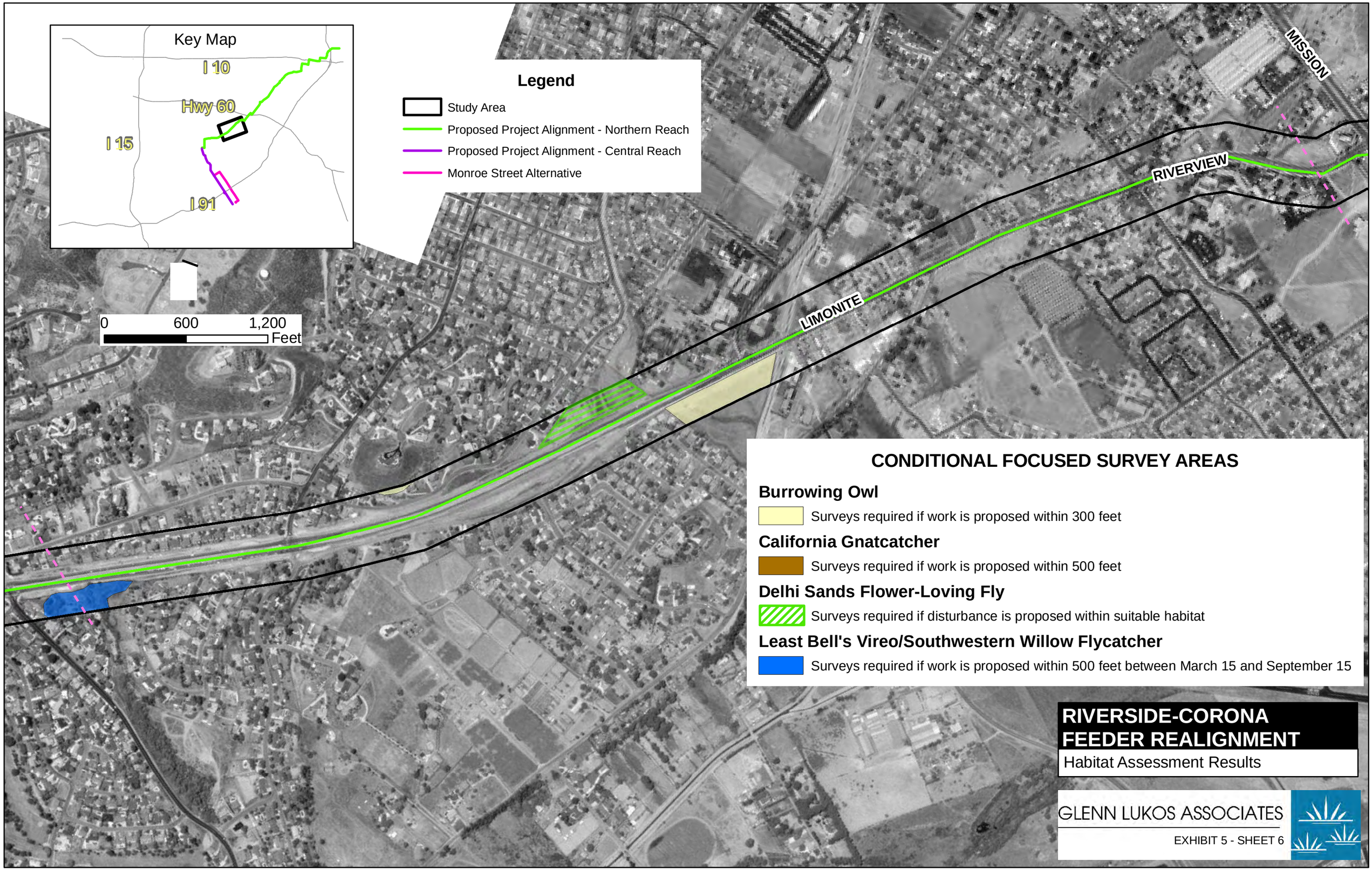
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 5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Proposed Project Alignment - Central Reach
Monroe Street Alternative
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Feet
MISSION
RIVERVIEW
LIMONITE
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
RIVERSIDE-CORONA FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 6

LIMONITE
CAMINO REAL
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
Key Map
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Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
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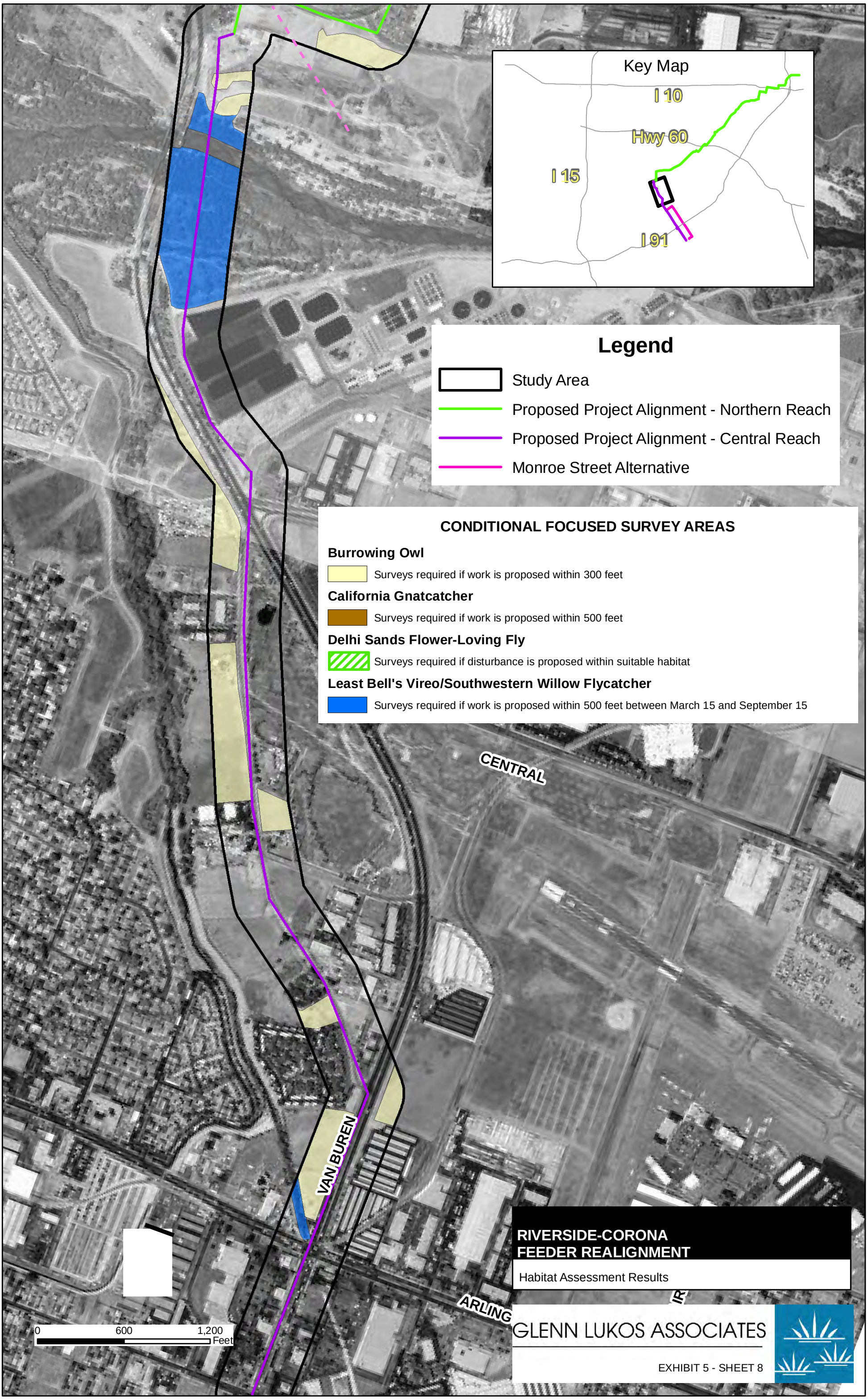
RIVERSIDE-CORONA FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 7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Monroe Street Alternative
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
CENTRAL
VAN BUREN
ARLING
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RIVERSIDE-CORONA
FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 8

Key Map
I 10
Hwy 60
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COLORADO
JACKSON
CALIFORNIA
USGS
MAGNOLIA
MONROE
STATE HWY 91
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
CONDITIONAL FOCUSED SURVEY AREAS
Burrowing Owl
Surveys required if work is proposed within 300 feet
California Gnatcatcher
Surveys required if work is proposed within 500 feet
Delhi Sands Flower-Loving Fly
Surveys required if disturbance is proposed within suitable habitat
Least Bell's Vireo/Southwestern Willow Flycatcher
Surveys required if work is proposed within 500 feet between March 15 and September 15
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Habitat Assessment Results
GLENN LUKOS ASSOCIATES
EXHIBIT 5 - SHEET 9

RIVERSIDE-CORONA FEEDER REALIGNMENT

Habitat Assessment Results

GLENN LUKOS ASSOCIATES

EXHIBIT 5 - SHEET 10

PHOTOGRAPH 1: Santa Ana River

PHOTOGRAPH 2: Freshwater Wetland

GLENN LUKOS ASSOCIATES

Exhibit 6

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 3: Coastal Sage Scrub

PHOTOGRAPH 4: Non-Native Grassland

GLENN LUKOS ASSOCIATES

Exhibit 6

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 5: Southern Willow Scrub

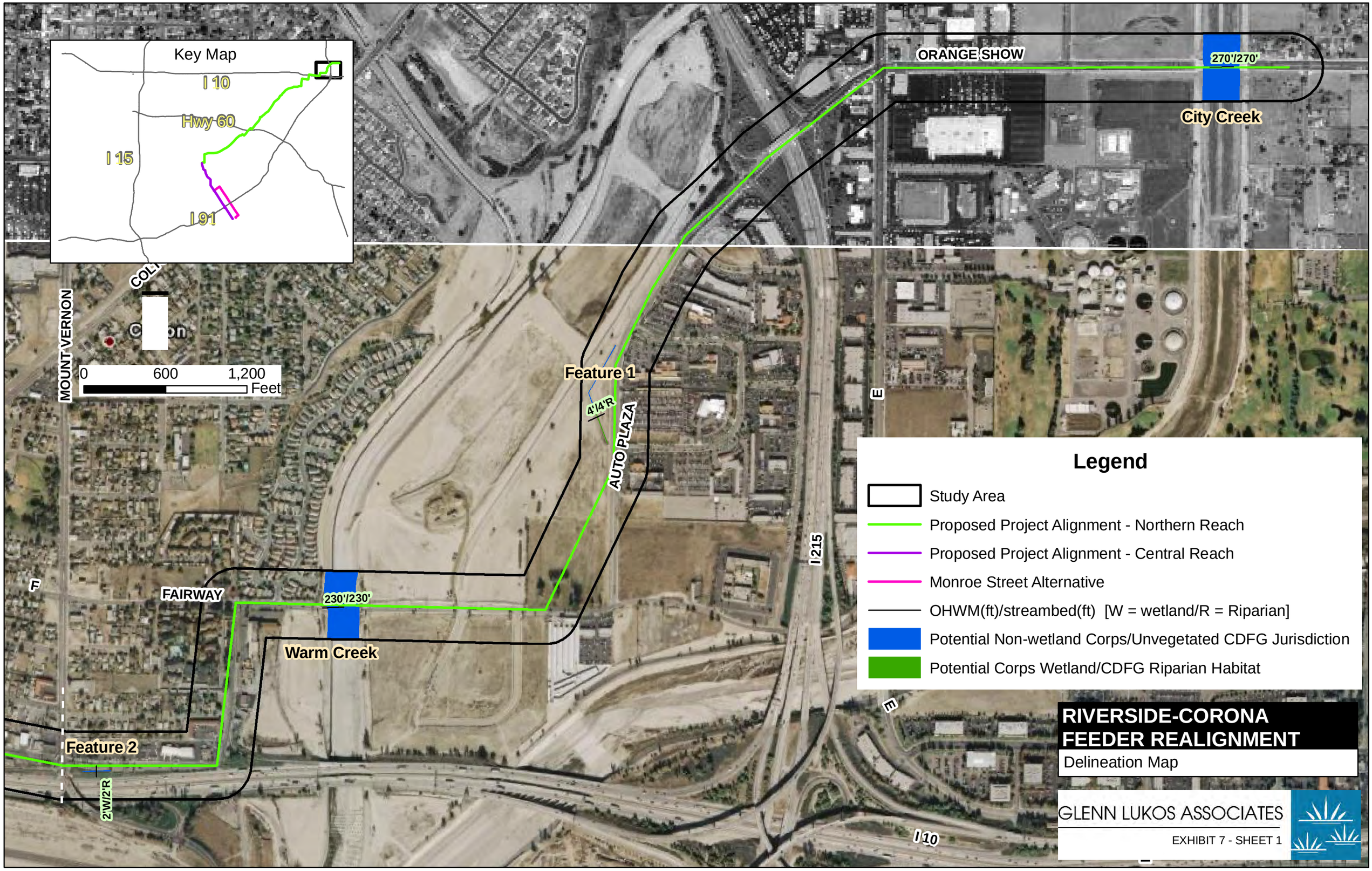
PHOTOGRAPH 6: Residential/Urban/Exotic

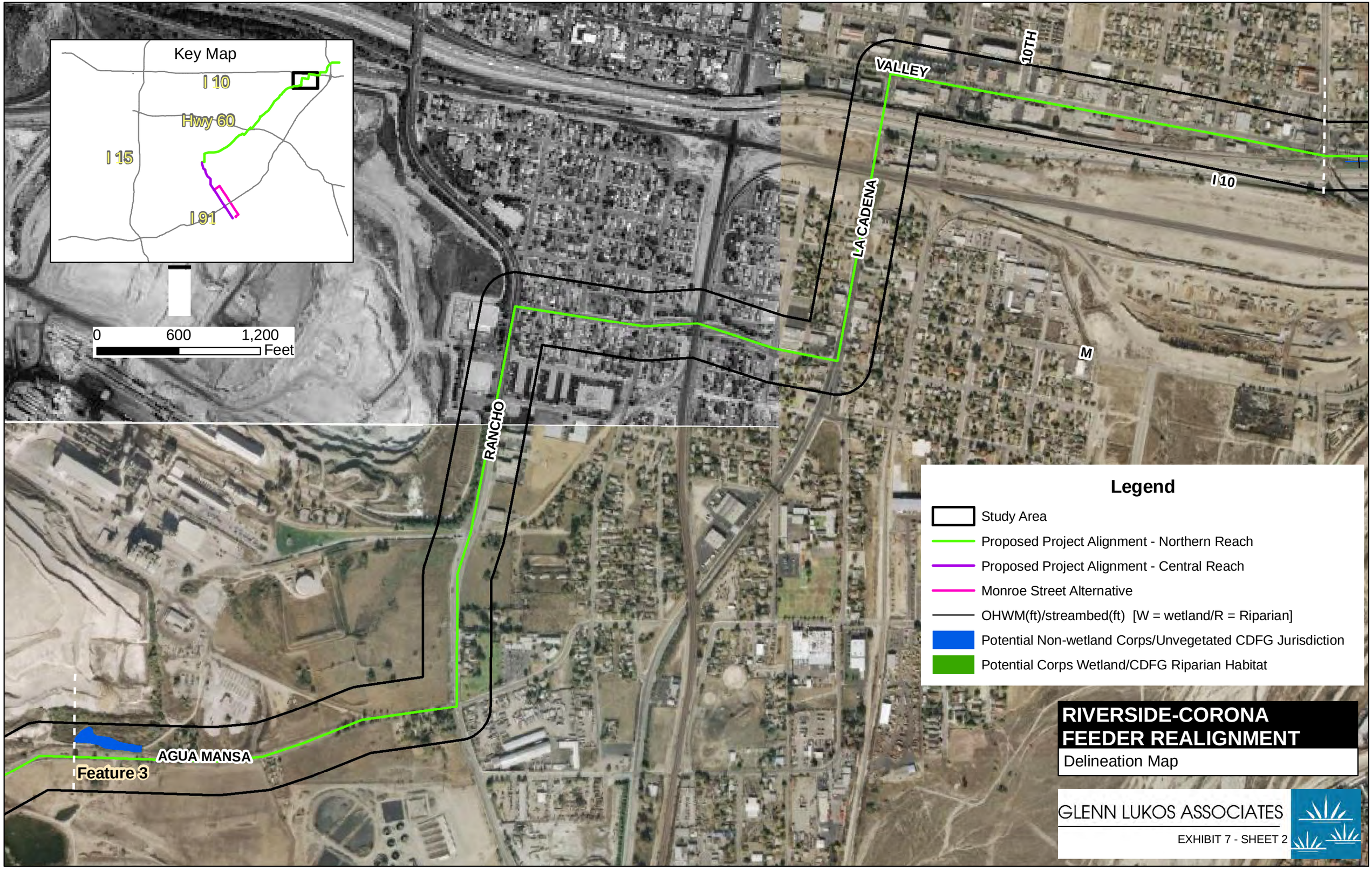
GLENN LUKOS ASSOCIATES

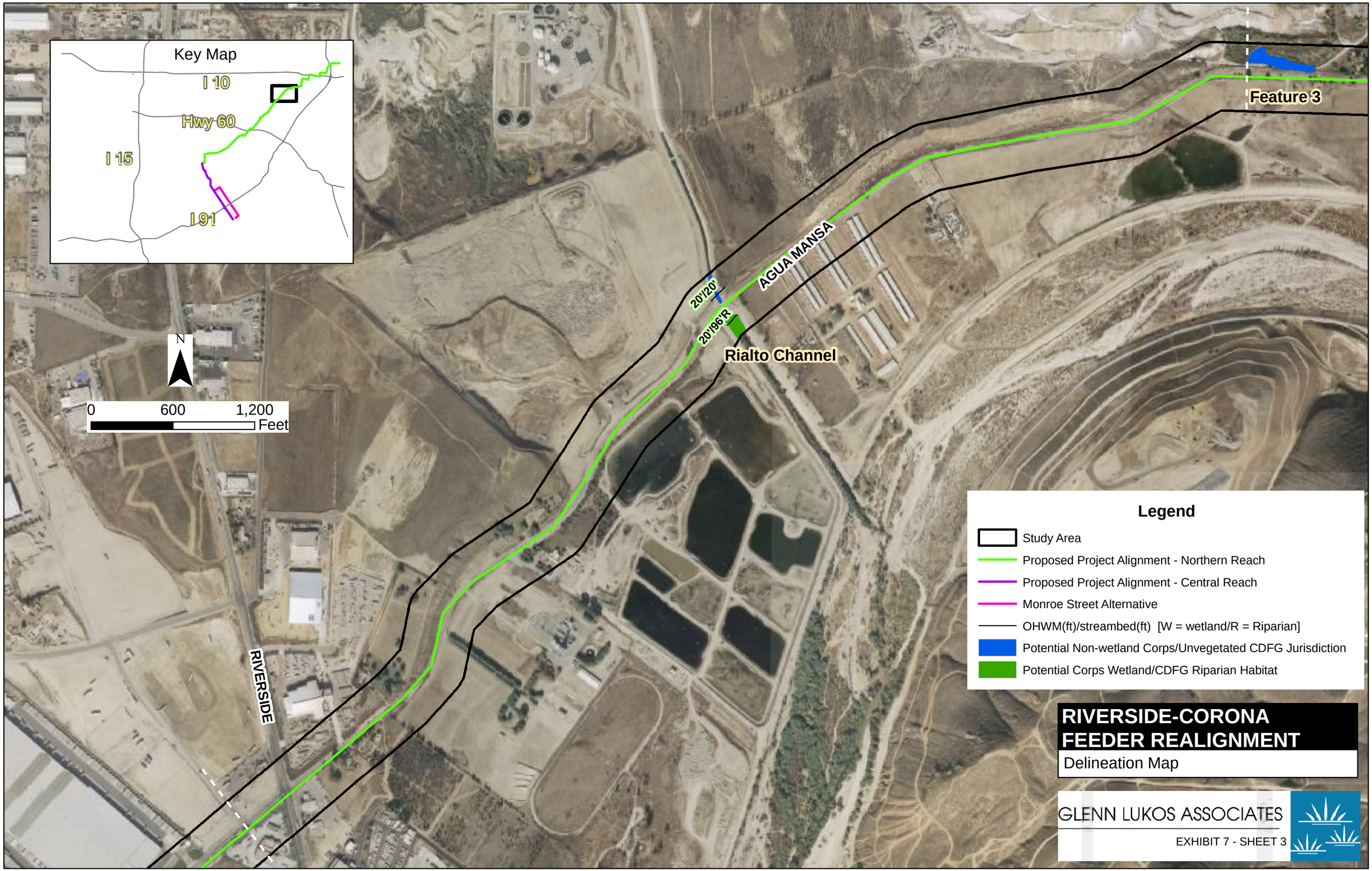
Exhibit 6

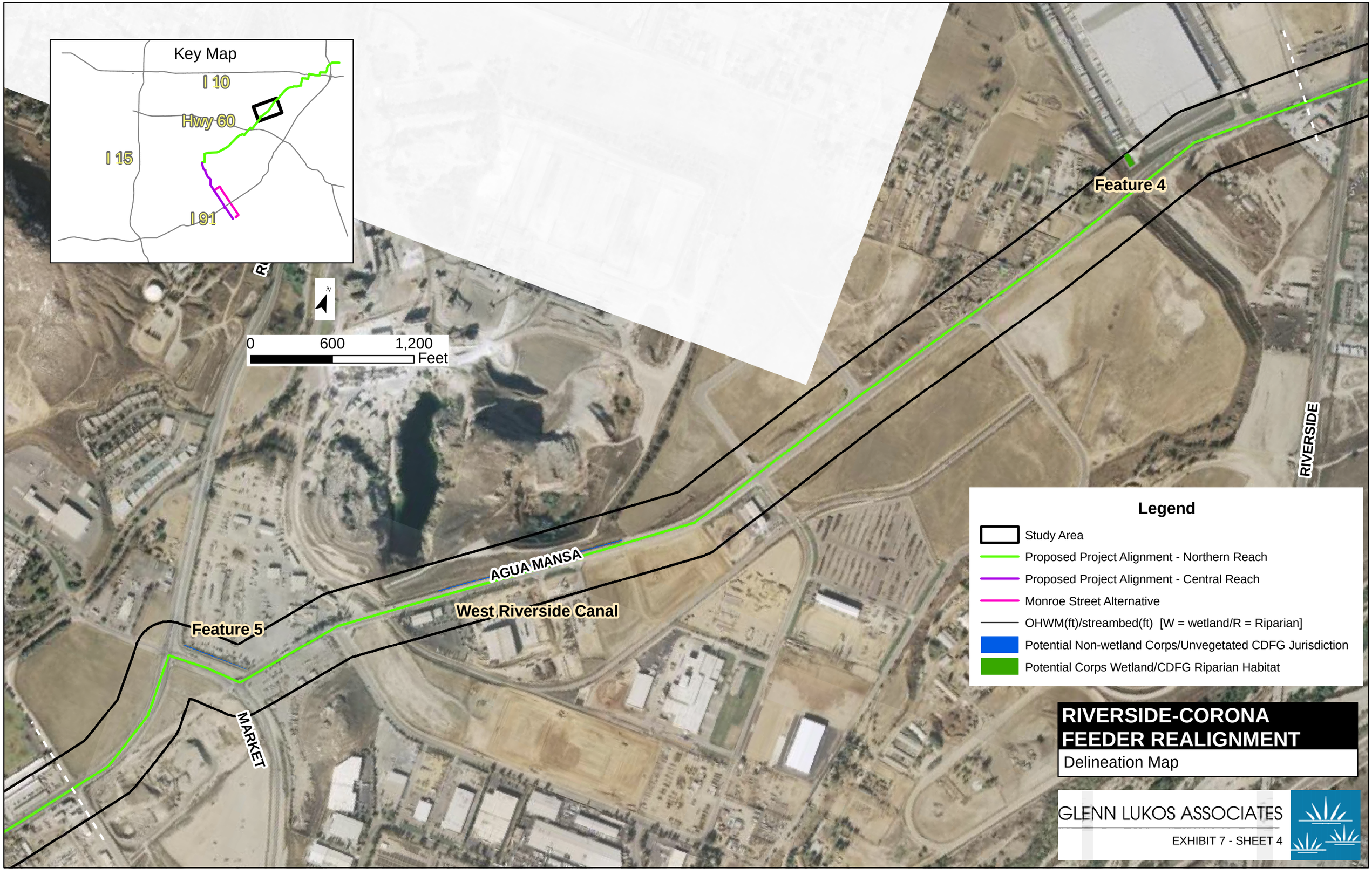
RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

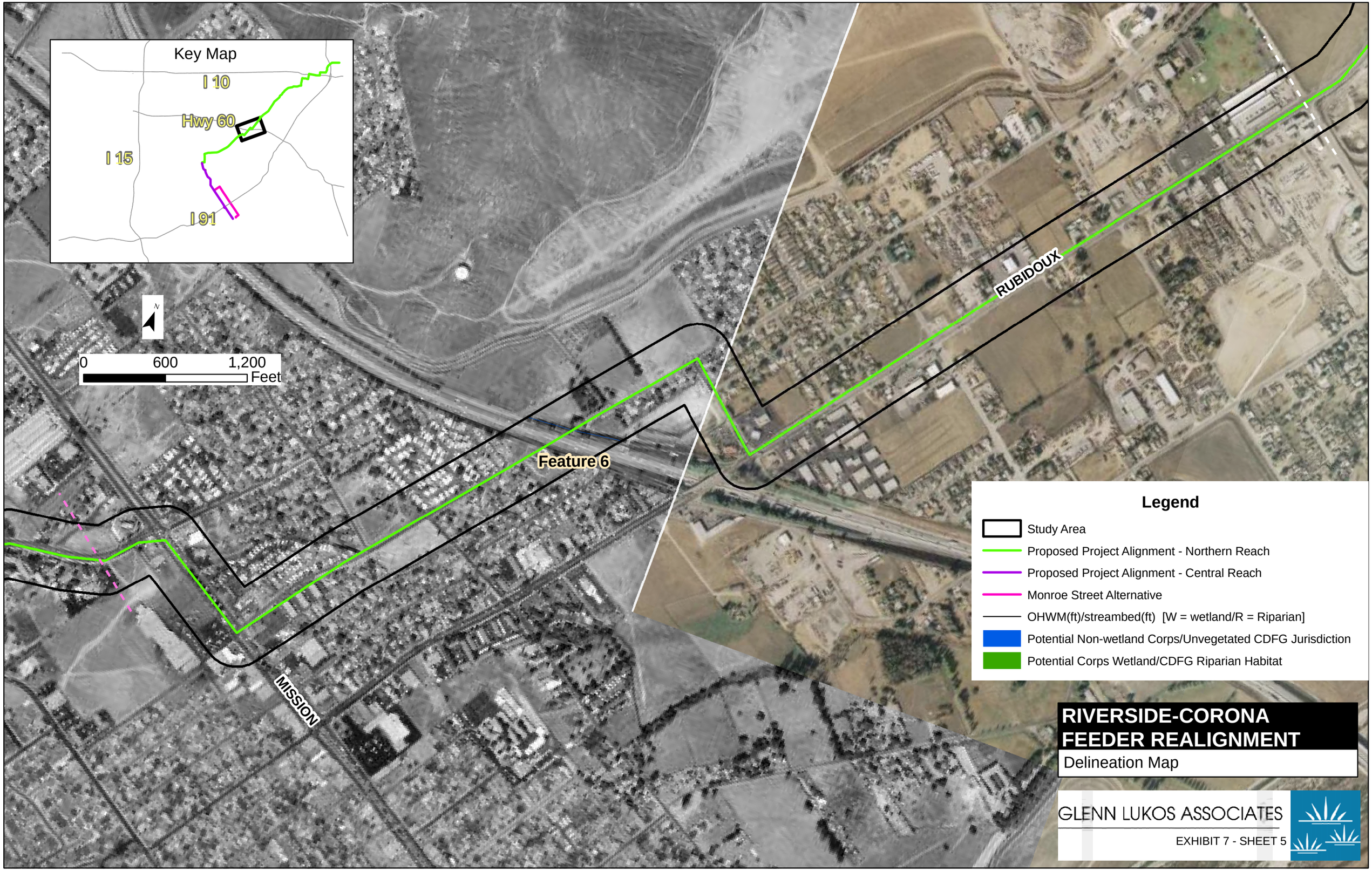
Site Photographs

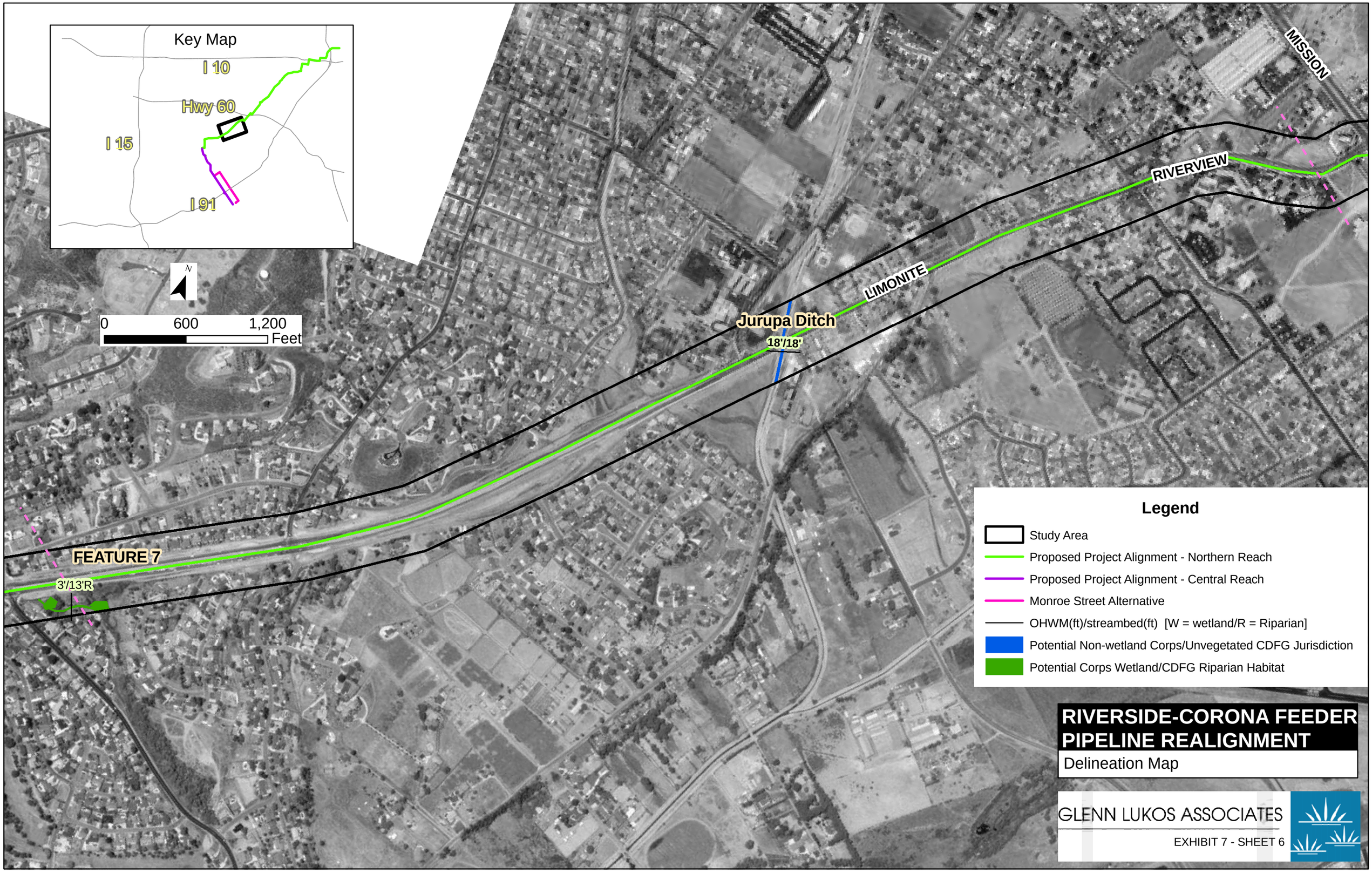

Key Map
I 10
Hwy 60
I 15
I 91
ORANGE SHOW
270'/270'
City Creek
MOUNT VERNON
0
600
1,200
Feet
Feature 1
4'/4'R
AUTO PLAZA
E
I 215
F
FAIRWAY
230'/230'
Warm Creek
Feature 2
2'W/2'R
I 10
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 1


Key Map
I 10
Hwy 60
I 15
I 91
0
600
1,200
Feet
VALLEY
10TH
LA CADENA
I 10
M
RANCHO
AGUA MANSA
Feature 3
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 2

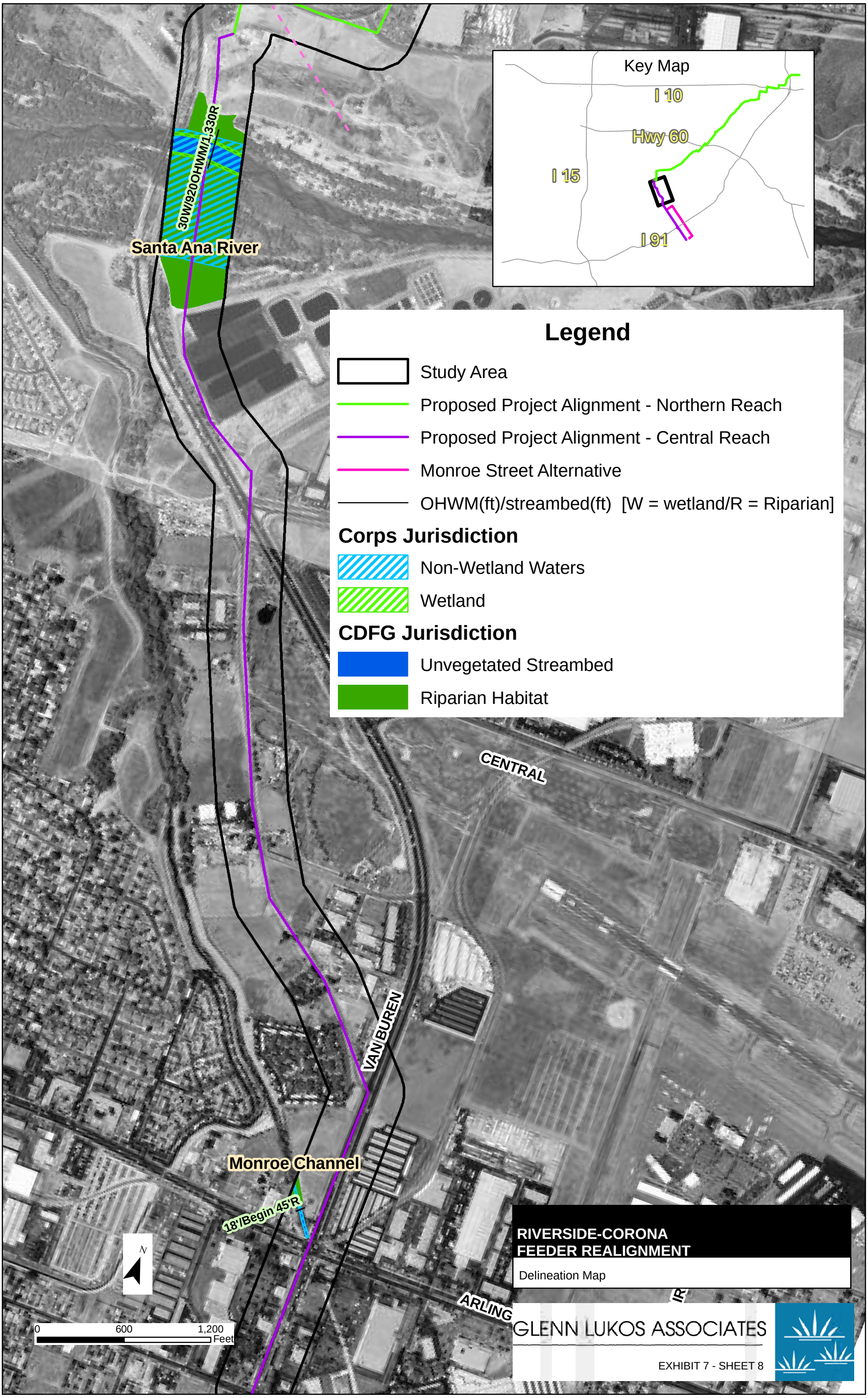

Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
Feature 3
AGUA MANSA
20'/20'
20'/96'R
Rialto Channel
RIVERSIDE
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 3


Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
Feature 4
RIVERSIDE
AGUA MANSA
West Riverside Canal
Feature 5
MARKET
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 4


Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
RUBIDOUX
Feature 6
MISSION
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 5

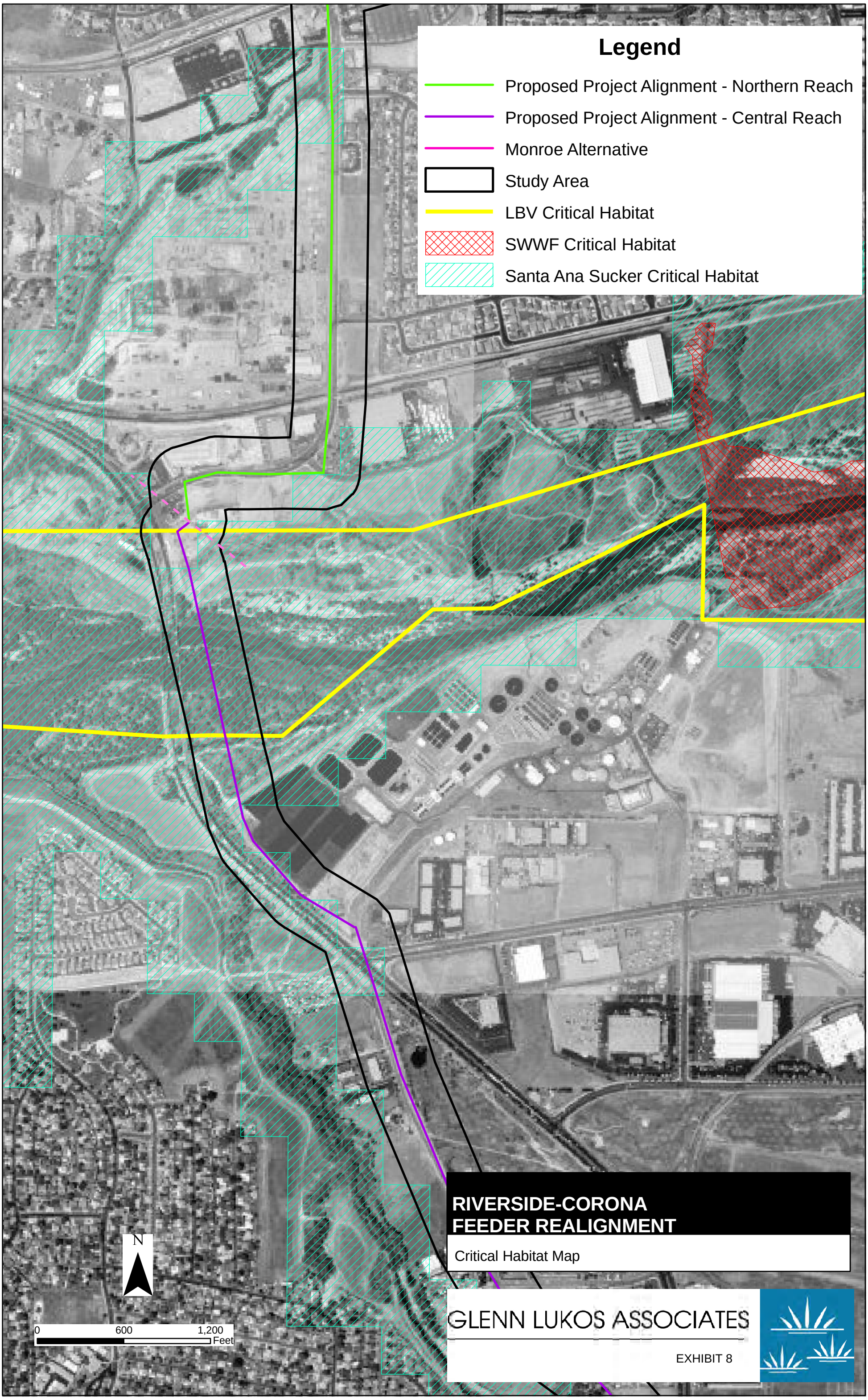

Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
MISSION
RIVERVIEW
LIMONITE
Jurupa Ditch
18'/18'
FEATURE 7
3'/13'R
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA FEEDER PIPELINE REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 6

4'W/10'OHWM/115'R
INDIAN HILLS GOLF COURSE DRAINAGE
7'W/15'OHWM/50'R
LIMONITE
CAMINO REAL
FEATURE 7
Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 7


Key Map
I 10
Hwy 60
I 15
I 91
30W/920OHWM/1,330R
Santa Ana River
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Corps Jurisdiction
Non-Wetland Waters
Wetland
CDFG Jurisdiction
Unvegetated Streambed
Riparian Habitat
CENTRAL
VAN BUREN
Monroe Channel
18'/Begin 45'R
N
0
600
1,200
Feet
ARLING
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 8

Key Map
I 10
Hwy 60
I 15
I 91
COLORADO
14'/14'
Feature 8
9'/9'
Monroe Channel
JACKSON
CALIFORNIA
USGS
0
600
1,200
Feet
MAGNOLIA
MONROE
Legend
Study Area
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Non-Jurisdictional Ditches
Corps Jurisdiction
Non-Wetland Waters
Wetland
CDFG Jurisdiction
Unvegetated Streambed
Riparian Habitat
RIVERSIDE-CORONA FEEDER
PIPELINE REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 9
STATE HWY 91
3'/3'
Feature 9
4'/4'
Arlington Valley Channel

Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Non-Jurisdictional Ditches
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Corps Jurisdiction
Non-Wetland Waters
Wetland
CDFG Jurisdiction
Unvegetated Streambed
Riparian Habitat
Key Map
I 10
Hwy 60
I 15
I 91
MAGNOLIA
MONROE
ADAMS
STATE HWY 91
Feature 9
3'/3'
8'/8'
Arlington Valley Channel
VICTORIA
N
0
600
1,200
Feet
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delienation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 7 - SHEET 10
USGS


Legend
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Alternative
Study Area
LBV Critical Habitat
SWWF Critical Habitat
Santa Ana Sucker Critical Habitat
N
0
600
1,200
Feet
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Critical Habitat Map
GLENN LUKOS ASSOCIATES
EXHIBIT 8

APPENDIX A

BIOLOGICAL SURVEY SUMMARY

The biological survey summary lists the types of surveys conducted on the project site with corresponding surveys dates and the names of the biologists who conducted the surveys.

Survey Date	Survey Type	Surveying Biologist
6/09/08	General Biological Surveys and Habitat Assessment Conduct Site Reconnaissance	E. Bomkamp I. Chlup
7/28/08	General Biological Surveys, Habitat Assessment and Jurisdictional Delineation	I. Chlup K. Livergood
7/30/08	General Biological Surveys, Habitat Assessment and Jurisdictional Delineation	I. Chlup K. Livergood
12/05/08	Focused Burrowing Owl Survey	J. Meyer
12/10/08	Focused Burrowing Owl Survey	J. Meyer
12/11/08	Focused Burrowing Owl Survey	J. Meyer
12/12/08	Focused Burrowing Owl Survey	J. Meyer
3/24/09	Focused Burrowing Owl Survey	J. Meyer
3/25/09	Focused Burrowing Owl Surveys	J. Meyer
4/22/09	Focused Burrowing Owl Survey	J. Meyer
4/30/09	Focused Burrowing Owl Survey	J. Meyer

APPENDIX B

FLORAL COMPENDIUM

The floral compendium lists species identified on the project site. Taxonomy follows the Jepson Manual (Hickman 1993) and, for sensitive species, the California Native Plant Society's Rare Plant Inventory (Tibor 2001). Common plant names are taken from Munz (1974) and Roberts (1998). An asterisk (*) denotes a non-native species.

SCIENTIFIC NAME	COMMON NAME
ANGIOSPERMS-EUDICOTS	
AIZOACEAE	**ICE PLANT FAMILY**
Carpobrotus ssp.	Common iceplant
AMARANTHACEAE	**AMARANTH FAMILY**
Amaranthus albus	Pigweed amaranth
ANACARDIACEAE	**SUMAC FAMILY**
Malosma laurina	Laurel Sumac
Rhus integrifolia	Lemonadeberry
*Schinus molle**	Peruvian Pepper Tree
APOCYNACEAE	**DOGBANE FAMILY**
*Nerium oleander**	Oleander
ASTERACEAE	**SUNFLOWER FAMILY**
Ambrosia psilostachya	Western ragweed
Artemisia californica	Coastal sagebrush
Artemisia douglasiana	California mugwort
Baccharis pilularis	Coyote brush
Baccharis salicifolia	Mule fat
Conyza canadensis	Horseweed
Encelia farinosa	Brittlebush
Helianthus annuus	Common sunflower
Heterotheca grandiflora	Telegraph weed
*Hypochoeris glabra**	Smooth cat's ear
Isocoma menziesii	Coastal goldenbush
*Lactuca serriola**	Prickly lettuce
Xanthium strumarium	Cocklebur

BETULACEAE	**BIRCH FAMILY**
Alnus rhombifolia	Alder
BORAGINACEAE	**BORAGE FAMILY**
Heliotropium curassavicum	Salt heliotrope
BRASSICACEAE	**MUSTARD FAMILY**
*Hirschfeldia incana**	Shortpod mustard
Roripa nasturtium-aquaticum	watercress
Sisymbrium irio	London rocket
CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**
Sambucus mexicana	Mexican elderberry
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
*Chenopodium album**	Lamb's quarters
Chenopodium californicum	California goosefoot
*Salsola tragus**	Russian thistle
CUCURBITACEAE	**GOURD FAMILY**
Cucurbita palmata	Coyote gourd
EUPHORBIACEAE	**SPURGE FAMILY**
Eremocarpus setigerus	Dove weed
*Ricinis communis**	Castor bean
FABACEAE	**LEGUME FAMILY**
*Melilotus indicus**	Yellow sweet clover
GERANIACEAE	**GERANIUM FAMILY**
*Erodium cicutarium**	Red-stemmed filaree
HYDROPHYLLACEAE	**WATERLEAF FAMILY**
Phacelia ssp.	Phacelia
MORACEAE	**MULBERRY FAMILY**
Ficus carica	Common fig
MYRTACEAE	**MYRTLE FAMILY**

Eucalyptus ssp.*	Eucalyptus
OLEACEAE	**OLIVE FAMILY**
*Olea europaea**	European olive
PLATANACEAE	**SYCAMORE FAMILY**
Platanus racemosa	Western sycamore
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum fasciculatum var. *foliolosum*	Interior flat-top buckwheat
*Polygonum arenastrum**	Common knotweed
RUTACEAE	**ORANGE FAMILY**
Citrus limon	Lemon tree
Citrus sinensis	Orange tree
SALICACEAE	**WILLOW FAMILY**
Populus fremontii ssp. *fremontii*	Fremont cottonwood
Salix gooddingii	Goodding's black willow
Salix lasiolepis	Arroyo willow
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura wrightii	Jimson weed
*Nicotiana glauca**	Tree tobacco
TAMARICACEAE	**TAMARISK FAMILY**
*Tamarix ramosissima**	Tamarisk
URTICACEAE	**NETTLE FAMILY**
Urtica dioica ssp. *holosericea*	Stinging nettle
ZYGOPHYLLACEAE	**CALTROP FAMILY**
*Tribulus terrestris**	Puncture vine
ANGIOSPERMS-MONOCOTS	
CYPERACEAE	**SEDGE FAMILY**
Cyperus esculentus	Nutgrass
Scirpus acutus	Common bulrush
PALMACEAE	**PALM FAMILY**

Washingtonia robusta	Mexican fan palm
POACEAE	**GRASS FAMILY**
*Arundo donax**	Giant reed
*Avena barbata**	Slender wild oat
*Bromus diandrus**	Ripgut grass
Bromus madritensis ssp. *rubens**	Red brome
*Cynodon dactylon**	Bermuda grass
Echinochloa colona	Jungle rice grass
Leptochloa uninervia	Mexican sprangletop
Lolium multiflorum	Italian rye grass
Phalaris ssp.*	Canary grass
*Polypogon monspeliensis**	Rabbitfoot grass
Schismus barbatus	Schismus
TYPHACEAE	**CAT-TAIL FAMILY**
Typha domingensis	Southern cat-tail

APPENDIX C

FAUNAL COMPENDIUM

Scientific nomenclature and common names for vertebrate species referred to in this report follow Collins (1997) for amphibians and reptiles, Jones, et al. (1992) for mammals, and AOU Checklist (1998) for birds.

The wildlife compendium lists species identified on the project site.
* = Non-native species.

SCIENTIFIC NAME	COMMON NAME
REPTILES	
IGUANIDAE	**IGUANID LIZARDS**
Sceloporus occidentalis	western fence lizard
Uta stansburiana	side-blotched lizard
BIRDS	
ARDEIDAE	**HERONS**
Butorides virescens	green heron
CHARADRIIDAE	**PLOVERS**
Charadrius vociferus	killdeer
CATHARTIDAE	**NEW WORLD VULTURES**
Cathartes aura	turkey vulture
ACCIPITRIDAE	**HAWKS**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
FALCONIDAE	**FALCONS**
Falco sparverius	American Kestrel
COLUMBIDAE	**PIGEONS AND DOVES**
*Columba livia**	rock dove
Zenaida macroura	mourning dove
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's hummingbird

TYRANNIDAE	**TYRANT FLYCATCHERS**
Sayornis nigricans	black phoebe
Tyrannus vociferans	Cassin's kingbird
Tyrannus verticalis	western kingbird
HIRUNDINIDAE	**SWALLOWS**
Hirundo rustica	barn swallow
CORVIDAE	**JAYS AND CROWS**
Corvus brachyrhynchos	American crow
Corvus corax	common raven
PARIDAE	**CHICKADEES AND TITMICE**
Psaltriparus minimus	Bushtit
TROGLODYTIDAE	**WRENS**
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
MUSCICAPIDAE	**KINGLETS, GNATCATCHERS, THRUSHES & BABBLERS**
Chamaea fasciata	wrentit
MIMIDAE	**MOCKINGBIRDS AND THRASHERS**
Mimus polyglottos	northern mockingbird
STURNIDAE	**STARLINGS**
*Sturnus vulgaris**	European Starling
EMBERIZIDAE	**WOOD WARBLERS, TANAGERS, BUNTINGS & BLACKBIRDS**
Guiraca caerulea	blue grosbeak
Pipilo crissalis	California towhee
Passer domesticus	house sparrow
Melospiza melodia	song sparrow
ICTERIDAE	**BLACKBIRDS AND ORIOLES**
Agelaius phoeniceus	red-winged blackbird
Icterus cucullatus	hooded oriole
FRINGILLIDAE	**FINCHES**
Carpodacus mexicanus	house finch
Carduelis psaltria	lesser goldfinch

MAMMALS	
LEPORIDAE	**HARES & RABBITS**
Sylvilagus auduboni	desert cottontail rabbit
CANIDAE	**FOXES, WOLVES, & COYOTES**
Canis latrans	coyote
SCIURIDAE	**SQUIRRELS**
Spermophilus beecheyi	California ground squirrel

GLENN LUKOS ASSOCIATES
Regulatory Services

May 11, 2009

Richard MacHott
Albert A. Webb Associates
3788 McCray Street
Riverside, California 92506

SUBJECT: Riverside-Corona Feeder Realignment Project in San Bernardino and Western Riverside Counties, California.

Dear Mr. MacHott:

This letter report summarizes our preliminary findings of U.S. Army Corps of Engineers (Corps) and California Department of Fish and Game (CDFG) jurisdiction for the above-referenced property.[1] This letter report has been prepared for in-house planning purposes only and should not routinely be submitted to regulatory or resource agencies. If it is necessary to submit a written jurisdictional delineation to one of the agencies, we will prepare an abridged version of this letter report.

The Riverside-Corona Feeder Realignment Project Study Area in San Bernardino and western Riverside Counties [Exhibit 1], comprises approximately 100 acres and contains 14 blue-line drainages (as depicted on the U.S. Geological Survey (USGS) topographic maps San Bernardino South, California [dated 1967 and photorevised in 1980], Fontana, California [dated 1967 and photorevised in 1980] and Riverside West, California [dated 1967 and photorevised in 1980]) [Exhibit 2]. The Study Area consists of two alignments: the Proposed Alignment and the Monroe Street Alternative Alignment. The Proposed Project Alignment begins at the intersection of Cleveland Avenue and Jackson Street in the City of Riverside and extends northward to its terminus in the City of San Bernardino at Orange Show Road west of Waterman Avenue. The Proposed Alignment is separated into two sub-segments: the portion north of the intersection of Van Buren Avenue and Clay Street (the Northern Reach) for which potential jurisdictional areas were identified but not delineated and the portion south of the intersection (the Central Reach) for which a jurisdictional delineation was completed. The Monroe Street

[1] This report presents our best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations and written policy and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries. If a final jurisdictional determination is required, GLA can assist in getting written confirmation of jurisdictional boundaries from the agencies.

29 Orchard ▪ Lake Forest ▪ California 92630-8300
Telephone: (949) 837-0404 Facsimile: (949) 837-5834

Alternative Alignment begins at the intersection of Cleveland and Irving Streets and extends northwest to its terminus at the intersection of Colorado and Jackson Streets. The study area includes portions of the cities of Riverside, Rialto, Colton, and San Bernardino and portions of unincorporated Riverside and San Bernardino counties in portions of Sections 16, 17, 19, and 20 Township 2 South Range 5 West; Sections 6, 7, 8, 17, and 18 Township 3 South Range 5 West; and Sections 23, 24, 25, 26, 31, and 36 Township 2 South Range 6 West of the Riverside West, California quadrangle; portions of Sections 3 and 10 Township 2 South Range 5 West of the Fontana, California quadrangle; and portions of Sections 15, 21, 30, and 32 Range 4 West and portions of Section 25 Range 5 West of the San Bernardino South, California quadrangle.

On June 9, July 28, and July 30, 2008, regulatory specialists of Glenn Lukos Associates, Inc. (GLA) examined the project site to determine the limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act, and (2) CDFG jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. Enclosed is a 600-scale map [Exhibit 3] that depicts potential areas of Corps and CDFG jurisdiction. Photographs to document the topography, vegetative communities, and general widths of each of the waters are provided as Exhibit 4. Wetland data sheets are attached as Appendix A. Rapanos data sheets are included as Appendix B.

Potential Corps jurisdiction associated with the Proposed Project Alignment – Northern Reach totals up to 3.29 acres of relatively permanent waters (RPWs) and up to 4.23 acres of non-relatively permanent waters (non-RPWs). Corps jurisdiction associated with the Proposed Project Alignment – Central Reach totals 10.28 acres of RPWs. Corps jurisdiction associated with the Monroe Street Alternative total 0.18 acre of RPWs. The project as currently designed does not impact Corps jurisdiction.

Potential CDFG jurisdiction associated with the Proposed Project Alignment – Northern Reach totals up to 8.45 acres including approximately 2.20 acres of riparian habitat. CDFG jurisdiction associated with the Proposed Project Alignment – Central Reach totals 14.75 acres, of which 13.18 acres consists of riparian habitat. CDFG jurisdiction associated with the Monroe Street Alternative total 0.18 acre, none of which consists of riparian habitat. The project as currently designed does not impact CDFG jurisdiction.

I. METHODOLOGY

Prior to beginning the field delineation a 600-scale color aerial photograph, a 600-scale topographic base map of the property, and the previously cited USGS topographic map were examined to determine the locations of potential areas of Corps/CDFG jurisdiction. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Suspected wetland habitats on the site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[2] (Wetland Manual) and the 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement).[3]. While in the field the limits of CDFG jurisdiction were recorded onto a 600-scale color aerial photograph using visible landmarks. Other data were recorded onto wetland data sheets.

The Soil Conservation Service (SCS)[4] has mapped the following soil types as occurring in the general vicinity of the project site:

Soil Unit	Soil Taxonomy	Description
Arlington Fine Sandy Loam	Haplic Durixeralfs	2-8% slopes, deep 2-8% slopes, and deep 8-15% slopes; consists of well-drained, nearly level to strongly sloping soils; occurs on alluvial fans and terraces at elevations of about 400 to 2,000 feet.
Arlington Loam	Haplic Durixeralfs	2-5% slopes and deep 0-5% slopes; consists of well-drained, nearly level to strongly sloping soils; occurs on alluvial fans and terraces at elevations of about 400 to 2,000 feet.
Buchenau Loam	Typic Durixeralfs	0-2% slopes and 2-8% slopes; slightly saline-alkali; consists of well to moderately well drained soils; occurs on small alluvial fans formed from metasedimentary rocks; occurs at elevations of less than 300 feet to 1,500 feet.

[2] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

[3] U.S. Army Corps of Engineers. 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement. Ed. J.S. Wakeley, R.W. Lichevar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

[4] SCS is now known as the National Resource Conservation Service or NRCS.

Soil Unit	Soil Taxonomy	Description
Buchenau Silt Loam	Typic Durixeralfs	2-8% slopes, eroded; consists of well to moderately well drained soils; occurs on small alluvial fans formed from metasedimentary rocks; occurs at elevations of less than 300 feet to 1,500 feet.
Buren Fine Sandy Loam	Haplic Durixeralfs	2-8% slopes, eroded; consists of well drained soils; formed in alluvium derived mostly from basic igneous rocks and partly from other crystalline rocks; occurs on gently to strongly sloping alluvial fans and terraces at elevations of 700 to 3,000 feet.
Cieneba Sandy Loam	Typic Xerorthents	15-50% slopes, eroded; consists of somewhat excessively drained soils; formed from material weathered from granite and other rocks of similar texture and composition; occurs at elevations of 500 to 4,000 feet.
Dehli Fine Sand	Typic Xeropsamments	2-15% sloped, wind-eroded; consists of very deep, somewhat excessively drained soils; formed in wind modified material weathered from granitic rock sources; occurs on floodplains, alluvial fans, and terraces at elevations of 25 to 1,400 feet.
Dello Loamy Sand	Typic Psammaquents	0-5% slopes and poorly drained 0-2% slopes; consists of very deep, very poorly drained soils formed in alluvium from granitic rock sources at elevations from 10 feet below sea level to 500 feet; occur on nearly level flood plains, slough remnants, and in small depressions in the San Joaquin Valley and Sacramento-San Joaquin Delta.
Fallbrook Sandy Loam	Typic Haploxeralfs	8-15% slopes, eroded and 15-25% slopes, eroded; consists of deep, well drained soils formed in material weathered from granitic and closely related granitic rocks; occurs on rolling hills at elevations of 200 to 3,000 feet or as high as 3,500 feet on south facing slopes.
Fallbrook Fine Sandy Loam	Typic Xerorthents	2-8% slopes, eroded; consists of deep, well drained soils formed in material weathered from granitic and closely related granitic rocks; occurs on rolling hills at elevations of 200 to 3,000 feet or as high as 3,500 feet on south facing slopes.

Soil Unit	Soil Taxonomy	Description
Grangeville Fine Sandy Loam	Fluvaquentic Haploxerolls	Drained 0-2% slopes and poorly drained, saline-alkali 0-5% slopes; consists of very deep, somewhat poorly drained soils formed in moderate coarse textured alluvium dominantly from granitic rock sources; occurs on alluvial fans and floodplains at elevations of 0 to 1800 feet.
Greenfield Sandy Loam	Typic Haploxeralfs	2-9% slopes, 2-8% slopes, eroded, and 8-15% slopes, eroded; consists of deep, well drained soils formed in moderately coarse and coarse textured alluvium or some wind deposited material derived from granitic and mixed rock sources; occurs on alluvial fans and terraces at elevations of 100 to 3,500 feet.
Hanford Loamy Fine Sand	Typic Xerorthents	0-8% slopes; consists of very deep, well drained soils formed in moderately coarse textured alluvium dominantly from granite and other quartz bearing rocks of similar texture; occurs on stream bottoms, floodplains and alluvial fans at elevations of 150 to 3,500 feet.
Hanford Coarse Sandy Loam	Typic Xerorthents	2-8% slopes; consists of very deep, well drained soils formed in moderately coarse textured alluvium dominantly from granite and other quartz bearing rocks of similar texture; occurs on stream bottoms, floodplains and alluvial fans at elevations of 150 to 3,500 feet.
Hanford Fine Sandy Loam	Typic Xerorthents	0-2% slopes; consists of very deep, well drained soils formed in moderately coarse textured alluvium dominantly from granite and other quartz bearing rocks of similar texture; occurs on stream bottoms, floodplains and alluvial fans at elevations of 150 to 3,500 feet.
Madera Fine Sandy Loam	Abruptic Durixeralfs	5-15% slopes, eroded, and shallow 2-8% slopes, eroded; consists of moderately deep, well or moderately well drained soils formed in old alluvium derived from granitic rock sources; occurs on gently sloping to undulating terraces at elevations of 10 to 250 feet
Monserate Sandy Loam	Typic Durixeralfs	0-5% slopes and 8-15% slopes, eroded; consists of moderately well to well drained soils formed in alluvium derived principally from granitic rocks; occurs on nearly level to moderately steep old dissected terraces and fans at elevations of 700 to 2,500 feet.

Soil Unit	Soil Taxonomy	Description
Pachappa Fine Sandy Loam	Mollic Haploxeralfs	2-8% slopes, eroded; consists of well drained soils formed from moderately coarse textured alluvium; occurs on nearly level to gently sloping alluvial fans and flood plains under annual grass-herb vegetation at elevations under 1000 feet
Psamments and Fluvents		Intermittent Streams
Porterville Clay	Aridic Haploxererts	0-5% slopes; consists of moderately deep, slightly saline-alkali, well drained soils formed in fine textured alluvial material from basic and metabasic igneous rock; occurs on alluvial fans and foothills at elevation ranges less than 2,000 feet in the lower valleys and 4,00 to 4,500 feet in the higher valleys.
Porterville Gravelly Clay	Aridic Haploxererts	2-15% slopes, eroded; consists of moderately deep, well drained soils formed in fine textured alluvial material from basic and metabasic igneous rock; occurs on alluvial fans and foothills at elevation ranges less than 2,000 feet in the lower valleys and 4,00 to 4,500 feet in the higher valleys.
Quarries		Quarries
Ramona Sandy Loam	Typic Haploxeralfs	0-2% slopes; 2-5% slopes, eroded; 0-5% slopes, severely eroded; 5-8 percent slopes, severely eroded; 2-9% slopes; consists of well-drained soil formed in alluvium derived mostly from granitic and related rock sources; occurs on nearly level to moderately steep terraces and fans at elevations of 250 to 3,500 feet.
Riverwash		Unconsolidated riverbed
San Emigdio Gravelly Sand Loam	Typic Xerofluvents	2-9% slopes; consists of very deep, well drained soils formed in moderately coarse textured alluvium dominantly from sedimentary formations; occurs on alluvial fans, floodplains, and in narrow valleys at elevations of 100 to 2,000 feet.
San Emigdio Fine Sandy Loam	Typic Xerofluvents	2-9% slopes; consists of very deep, well drained soils formed in moderately coarse textured alluvium dominantly from sedimentary formations; occurs on alluvial fans, floodplains, and in narrow valleys at elevations of 100 to 2,000 feet.

Soil Unit	Soil Taxonomy	Description
Tujunga Loamy Sand	Typic Xeropsamments	0-5% slopes and channeled 0-8% slopes; consists of very deep, somewhat excessively drained soils formed in sandy alluvium weathered mostly from granitic sources; occurs on alluvial fans and flood plains at elevations of 5 to 4,300 feet.
Vista Coarse Sandy Loam	Typic Haploxerepts	8-15% slopes, eroded; consists of moderately deep, well drained soils formed in material weathered from decomposed granitic rocks; occurs on hills and mountainous uplands at elevations of 400 to 3,900 feet in southern California and at less than 3,500 feet elevation in central California.

None of these soil units are identified as hydric in the SCS's publication, Hydric Soils of the United States[5]. According to the USDA's Southwest San Bernardino Area hydric soils list, the Delhi fine sand and Grangeville fine sandy loam map units may include minor components that are hydric when found within depressions, Fluvents may be hydric when found within intermittent streams and Tujunga loamy sand may include a minor component that is hydric when found within drainageways. According to the USDA's Western Riverside Area hydric soils list Dello loamy sand may be hydric when located on flood plain, Riverwash my be hydric when located within a floodplain channel, the Grangeville fine sandy loam and Madera fine sandy loam map units may include minor components that are hydric when found within depressions, and the Tujunga loamy sand, channeled, 0 – 8 percent slopes map unit may include a major riverwash component that may be hydric when found in drainageways.

[5] United States Department of Agriculture, Soil Conservation Service. 1991. Hydric Soils of the United States, 3rd Edition, Miscellaneous Publication Number 1491. (In cooperation with the National Technical Committee for Hydric Soils.)

II. JURISDICTION

A. <u>Army Corps of Engineers</u>

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a) as:

> *(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
> *(2) All interstate waters including interstate wetlands;*
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
> > *(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
> > *(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
> > *(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...*
> *(4) All impoundments of waters otherwise defined as waters of the United States under the definition;*
> *(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
> *(6) The territorial seas;*
> *(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*
>
> *Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.*

(8) Waters of the United States do not include prior converted cropland.[6] Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as 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.*

1. Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.

Pursuant to Article I, Section 8 of the U.S. Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s the Corps interpreted the interstate commerce requirement in a manner that restricted Corps jurisdiction on isolated (intrastate) waters. On September 12, 1985, EPA asserted that Corps jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of "waters of the United States" in Corps regulations was modified as quoted above from 33 CFR 328.3(a).

On January 9, 2001, the Supreme Court of the United States issued a ruling on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.* (SWANCC). In this case the Court was asked whether use of an isolated, intrastate pond by migratory birds is a sufficient interstate commerce connection to bring the pond into federal jurisdiction of Section 404 of the Clean Water Act.

The written opinion notes that the court's previous support of the Corps' expansion of jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc*.) was for a

[6] The term "prior converted cropland" is defined in the Corps' Regulatory Guidance Letter 90-7 (dated September 26, 1990) as "wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is <u>inundated for no more than 14 consecutive days</u> during the growing season…." [Emphasis added.]

wetland that abutted a navigable water and that the court did not express any opinion on the question of the authority of the Corps to regulate wetlands that are not adjacent to bodies of open water. The current opinion goes on to state:

> *In order to rule for the respondents here, we would have to hold that the jurisdiction of the Corps extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.*

Therefore, we believe that the court's opinion goes beyond the migratory bird issue and says that no isolated, intrastate water is subject to the provisions of Section 404(a) of the Clean Water Act (regardless of any interstate commerce connection). However, the Corps and EPA have issued a joint memorandum which states that they are interpreting the ruling to address only the migratory bird issue and leaving the other interstate commerce clause nexuses intact.

2. Rapanos v. United States and Carabell v. United States

On June 5, 2007, the U.S. Environmental Protection Agency (EPA) and Corps issued joint guidance that addresses the scope of jurisdiction pursuant to the Clean Water Act in light of the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* ("Rapanos"). The chart below was provided in the joint EPA/Corps guidance.

For project sites that include waters other than Traditional Navigable Waters (TNWs) and/or their adjacent wetlands or Relatively Permanent Waters (RPMs) tributary to TNWs and/or their adjacent wetlands as set forth in the chart below, the Corps must apply the significant nexus standard, that includes the data set forth in the *Approved Jurisdictional Determination Form* included as Appendix A.

For "isolated" waters or wetlands, the joint guidance also requires an evaluation by the Corps and EPA to determine whether other interstate commerce clause nexuses, not addressed in the SWANCC decision are associated with isolated features on project sites for which a jurisdictional determination is being sought from the Corps. The information pertaining to isolated waters is also included on the *Approved Jurisdictional Determination Form* included as Appendix A.

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

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

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters
- Significant nexus includes consideration of hydrologic and ecologic factors

3. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the United States”) is defined at 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." In 1987 the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual and the Arid West Supplement generally require that, in order to be

considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the manual and Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent 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[7]);

- 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); and

- Whereas the 1987 Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

B. Regional Water Quality Control Board

Subsequent to the SWANCC decision, the Chief Counsel for the State Water Resources Control Board issued a memorandum that addressed the effects of the SWANCC decision on the Section 401 Water Quality Certification Program.[8] The memorandum states:

> *California's right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the Corps, or another application for a federal license or permit. Thus if the Corps determines that the water body in question is not subject to regulation under the COE's 404 program, for instance, no application for 401 certification will be required…*
>
> *The SWANCC decision does not affect the Porter Cologne authorities to regulate discharges to isolated, non-navigable waters of the states….*

[7] Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. U.S. Fish and Wildlife Service Biological Report 88(26.10).

[8] Wilson, Craig M. January 25, 2001. Memorandum addressed to State Board Members and Regional Board Executive Officers.

> *Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." (Water Code § 13260(a)(1) (emphasis added).) The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code § 13050(e).) The U.S. Supreme Court's ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the COE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g., vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions from issuing WDRs (or waivers of WDRs) in the absence of a request for 401 certification….*

In this memorandum the SWRCB's Chief Counsel has made the clear assumption that fill material to be discharged into isolated waters of the United States is to be considered equivalent to "waste" and therefore subject to the authority of the Porter Cologne Water Quality Act. However, while providing a recounting of the Act's definition of waters of the United States, this memorandum fails to also reference the Act's own definition of waste:

> *"Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.*

The lack of inclusion of a reference to "fill material," "dirt," "earth" or other similar terms in the Act's definition of "waste," or elsewhere in the Act, suggests that no such association was intended. Thus, the Chief Counsel's memorandum signals that the SWRCB is attempting to retain jurisdiction over discharge of fill material into isolated waters of the United States by administratively expanding the definition of "waste" to include "fill material" without actually seeking amendment of the Act's definition of waste (an amendment would require action by the state legislature). Consequently, discharge of fill material into waters of the State not subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act <u>may</u> require

authorization pursuant to the Porter Cologne Act through application for waste discharge requirements (WDRs) or through waiver of WDRs, despite the lack of a clear regulatory imperative.

C. California Department of Fish and Game

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFG defines a "stream" (including creeks and rivers) 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." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs."

CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFG Legal Advisor has prepared the following opinion:

- 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 [CDFG] as natural waterways...

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

Thus, CDFG jurisdictional limits closely mirror those of the Corps. Exceptions are CDFG's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

III. RESULTS

A. Corps Jurisdiction

Potential Corps jurisdiction associated with the Proposed Project Alignment – Northern Reach totals up to 3.29 acres of relatively permanent waters (RPWs) and up to 4.23 acres of non-relatively permanent waters (non-RPWs). The boundaries of potential waters of the United States associated with the Proposed Project Alignment – Northern Reach are depicted on the enclosed maps.

Corps jurisdiction associated with the Proposed Project Alignment – Central Reach totals 10.28 acres of RPWs. Corps jurisdiction associated with the Monroe Street Alternative total 0.18 acre of RPWs. The boundaries of waters of the United States are depicted on the enclosed maps.

**TABLE 1: POTENTIAL CORPS JURISDICTION:
PROPOSED PROJECT ALIGNMENT – NORTHERN REACH
RELATIVELY PERMANENT WATERS**

Feature Name	Approximate Size
Relatively Permanent Waters	
Warm Creek	Up to 2.64 acres
Rialto Channel	0.24 acre
Jurupa Ditch	0.22 acre
Indian Hills Golf Course Feature	0.19 acre
Total	**Up to 3.29 acres**
Non-Relatively Permanent Waters	
City Creek	Up to 3.10 acres
Feature 1	0.07 acre
Feature 2	0.02 acre
Feature 3	0.80 acre
Feature 4	0.08 acre
West Riverside Canal	0.10 acre
Feature 5	0.01 acre
Feature 6	0.02 acre
Feature 7	0.03 acre
Total	**Up to 4.23 acres**

TABLE 2: CORPS JURISDICTION
PROPOSED PROJECT ALIGNMENT – CENTRAL REACH

Feature Name	Wetland (acres)	Non-Wetland Waters (acres)	Total (acres)
Relatively Permanent Waters			
Santa Ana River	0.40	9.65	10.05
Monroe Channel at Arlington Avenue and Van Buren Boulevard	0.00	0.16	0.16
Arlington Valley Channel	0.00	0.07	0.07
Total	**0.40**	**9.88**	**10.28**

TABLE 3: CORPS JURISDICTION
MONROE STREET ALTERNATIVE

Feature Name	Wetland (acres)	Non-Wetland Waters (acres)	Total (acres)
Relatively Permanent Waters			
Monroe Channel at Colorado Avenue	0.00	0.15	0.15
Feature 8	0.00	0.03	0.03
Total	**0.00**	**0.18**	**0.18**

Northern Reach of the Proposed Project Alignment

1. City Creek

City Creek lies near the northern terminus of the Northern Reach of the Proposed Project Alignment Study Area where it intersects with Orange Show Road. The 270-foot wide creek is a soft-bottomed, unvegetated flood control channel and appears to be maintained. An ordinary high water mark (OHWM) was not observed due to recent maintenance activities. Although City Creek did not support any base flows or vegetation at the time of observation, aerial photography suggests that the creek may support intermittent flows. The Proposed Project intersects the creek approximately 4,000 feet north of its confluence with the Santa Ana River. The proximity of the creek to the Santa Ana River in addition to its apparent capacity to accommodate storm flows make it possible that it would to be subject to Corps jurisdiction based upon the Rapanos guidance, however delineation of the limits and characteristics of this feature including regulatory status pursuant to the SWANNC ruling and the Rapanos guidance requires additional

fieldwork and coordination with Corps. CDFG jurisdiction associated with City Creek totals approximately 3.10 acre of unvegetated streambed within the Study Area.

2. Feature 1

Feature 1 lies within the Northern Reach of the Proposed Project Alignment west of Auto Plaza Drive. The feature consists of a three to four-foot channel extending from a storm drain outlet. The feature supports yellow nutsedge *(Cyperus esculentus*, FACW*)*, Mexican sprangletop *(Leptochloa uninervia*, FACW*)*, and jungle rice (*Echinochloa colona*, FACW*)*. Delineation of the limits and characteristics of this feature including regulatory status pursuant to the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps. CDFG jurisdiction associated with Feature 1 totals approximately 0.07 acre, of which approximately 0.03 acre consists of riparian vegetation.

3. Warm Creek

Warm Creek is a Relatively Permanent Water (RPW) that intersects the Northern Reach of the Proposed Project Alignment Study Area at Fairview Drive. The creek is a concrete-lined channel with debris and sediment visible across the bottom. Warm Creek does not support any vegetation. The Proposed Project intersects the creek approximately 3,000 feet north of its confluence with the Santa Ana River. Delineation of the limits and characteristics of this feature requires additional fieldwork. CDFG jurisdiction associated with Warm Creek totals approximately 2.64 acre of unvegetated streambed within the Study Area.

4. Feature 2

Feature 2 lies south of Sperry Drive within the Northern Reach of the Proposed Project Alignment Study Area. The feature is a roadside ditch with standing water at an inlet from a near road. The concrete ditch supports ice plant *(Carpobrotus edulis*, UPL*)*, black willow *(Salix goodingii*, OBL*)*, Southern cattail *(Typha domingensis*, OBL*)*, jungle rice, Mexican sprangletop, and common sunflower *(Helianthus annuus*, FAC-*)*. Feature B totals approximately 0.02 acre. Delineation of the limits and characteristics of this feature including regulatory status pursuant to the California Fish and Game Code, the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps and CDFG.

5. Feature 3

Feature 3 lies within the Northern Reach of the Proposed Project Alignment. Feature 3 consists of a pit excavated in upland that supports freshwater marsh and a seep at the toe of slope immediately adjacent to Agua Mansa Road. The excavated pit supports bulrush (*Scirpus acutus*, OBL). The seep at the toe of slope supports Southern cattail, castor bean *(Ricinus communis*, FACU), jungle rice, Canada horseweed *(Conyza Canadensis*, FAC), and yellow sweetclover (*Melilotus indica*¸FAC). In the Study Area surrounding Feature 3 are California buckwheat (*Eriogonum fasciculatum*, UPL) scrub and disturbed California buckwheat scrub, California brittlebush *(Encelia californica*, UPL*)* scrub, scattered mule fat (*Baccharis salicifolia*, FACW*)*, non-native grasses and ornamental vegetation. Feature 3, totaling approximately 0.80 acre, is associated with the surrounding mining operations and appears isolated. Delineation of the limits and characteristics of this feature including regulatory status pursuant to the California Fish and Game Code, the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps and CDFG.

6. Rialto Channel

Rialto Channel intersects the Northern Reach of the Proposed Project Alignment at Aqua Mansa road between Hopkins Road and Dunn Ranch Road. Rialto Channel is a relatively permanent water that measures approximately 20 feet in width. To the north of Agua Mansa Road the feature is an open concrete channel. To the south of Agua Mansa Road, the channel is soft-bottomed and supports southern willow woodland. The Proposed Project intersects the feature approximately 1,700 feet north of its confluence with the Santa Ana River. The feature totals approximately 0.12 acre of unvegetated channel, 0.12 vegetated channel, and 0.31 acre of riparian vegetation. Corps jurisdiction totals approximately 0.24 acre. Additional analysis is necessary to determine if the feature meets the Corps' definition of a three-parameter wetland. CDFG jurisdiction totals approximately 0.55 acre, of which 0.43 acre consists of vegetated riparian habitat.

7. Feature 4

Feature 4 is a vegetated detention basin located within the Northern Reach of the Proposed Project Alignment north of Agua Mansa Road between El Rivino Road and Riverside Avenue. The basin supports mule fat, black willow, cottonwood (*Populus fremontii*, FACW), and salt cedar (*Tamarisk ramosissisma*, FAC). The feature, totaling 0.08 acre, appears to be constructed in upland for the purpose of treating storm water runoff. Delineation of the limits and characteristics of this feature including regulatory status pursuant to the California Fish and

Game Code, the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps and CDFG.

8. West Riverside Canal

According to the USGS 7.5' Fontana, California quadrangle, the West Riverside Canal extends along the northern edge of Agua Mansa Road within the Northern Reach of the Proposed Project Alignment. The Canal at this location is a roadside ditch with neither riparian vegetation nor an observed ordinary high water mark (OHWM). The 0.10 acre ditch appears to no longer convey flows. Delineation of the limits and characteristics of this feature including regulatory status pursuant to the California Fish and Game Code, the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps and CDFG.

9. Feature 5

Feature 5, totaling approximately 0.01 acre, parallels Market Street between Agua Mansa road and Rubidoux Boulevard within the Northern Reach of the Proposed Project Alignment. The one foot wide feature is a roadside ditch with no riparian vegetation. Delineation of the limits and characteristics of this feature including regulatory status pursuant to the California Fish and Game Code, the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps and CDFG.

10. Feature 6

Feature 6, totaling approximately 0.02 acre, lies within the Northern Reach of the Proposed Project Alignment immediately north of the 91 Freeway. The feature is a concrete V-ditch constructed in upland. Delineation of the limits and characteristics of this feature including regulatory status pursuant to the California Fish and Game Code, the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps and CDFG.

11. Jurupa Ditch

The Jurupa Ditch intersects the Northern Reach of the Proposed Project Alignment at Limonite Avenue between Plaza Lane and Pacific Avenue. The unvegetated concrete channel exhibits relatively permanent base flows and measures approximately 18 feet in width. The Proposed Project intersects the feature approximately 7,500 feet north of its confluence with the Santa Ana River. Corps and CDFG jurisdiction total approximately 0.22 acre of unvegetated streambed within the Study Area.

12. Feature 7

Feature 7 originates at Limonite Avenue east of Peralta Place within the Northern Reach of the Proposed Project Alignment approximately 4,000 feet north of its confluence with the Santa Ana River. The feature measures approximately two to three feet in width within the Study Area and supports mule fat and willow. The proximity of this feature to the Santa Ana River in addition to its dense riparian vegetation, make it possible that it would to be subject to Corps jurisdiction based upon the Rapanos guidance, however delineation of the limits and characteristics of this feature including regulatory status pursuant to the SWANNC ruling and the Rapanos guidance requires additional fieldwork and coordination with Corps. The feature totals approximately 0.03 acre of non-wetland waters. CDFG jurisdiction totals approximately 0.14 acre of riparian vegetation.

13. Indian Hills Golf Course Drainage

The Indian Hills Golf Course Drainage intersects the Northern Reach of the Proposed Project Alignment at Limonite Avenue and Clay Street approximately 4,900 feet north of its confluence with the Santa Ana River. The channel exhibits perennial flows and the channel banks support black willow, wild grape (*Vitis californica*, FACW), watercress (*Rorippa nasturtium-aquaticum*, OBL), fig (*Ficus carica*, UPL), alder (*Alnus rhombifolia*, FACW) and mule fat. Upstream of Limonite Avenue, the channel bed exhibited brown high chroma silty loam soils (10YR 4/2) with redoxymorphic features. Downstream of Limonite Avenue, the channel bed exhibited dark grey loamy sand soils (N 2.5/0). Three-parameter wetland is limited to the low flow channel where soils are inundated for long periods. Corps jurisdiction totals approximately 0.19 acre of which 0.08 acre consists of wetland. CDFG jurisdiction totals approximately 0.70 acre, all of which consists of vegetated riparian habitat.

Central Reach of the Proposed Project Alignment

14. Santa Ana River

The Santa Ana River lies within the Central Reach of the Proposed Project Alignment. The river is perennial at its intersection with the proposed project. It exhibits a sandy loam bed and supports a mosaic of perennial streambed, freshwater marsh, riparian forest and riparian scrub habitats. Species identified within the streambed included sycamore (*Platanus racemosa*, FACW), black willow, arroyo willow (*Salix lasiolepis*, FACW), stinging nettle (*Urtica dioica*, FACW), bulrush, and mule fat. The perennial channel is well-incised. Therefore, Corps' three-parameter wetland is limited to the margins of the perennial channel. The OHWM, indicated by sediment deposits and the presence of litter and debris, did extend onto the terraces adjacent to

the channel. Corps jurisdiction associated with the Santa Ana River at this location totals 10.05 acres, of which 0.40 acre consist of wetland. CDFG jurisdiction associated with the Santa Ana River at this location totals 14.35 acres, of which 12.95 acres consists of vegetated riparian habitat.

15. Monroe Channel at Arlington Avenue and Van Buren Boulevard

Monroe Channel intersects the Proposed Project Alignment - Central Reach Study Area northwest of the intersection of Arlington Avenue and Van Buren Boulevard Street. The Monroe Channel at this location exhibits a soft-bottomed unvegetated channel with perennial flows. The channel supports mature willows approximately 250 feet northwest of the intersection. Corps jurisdiction associated with Monroe Channel at this location totals 0.16 acre of non-wetland waters. CDFG jurisdiction associated with Monroe Channel at this location totals 0.33 acre, of which 0.23 acre consists of vegetated riparian habitat.

16. Arlington Valley Channel

Arlington Valley Channel intersects the Central Reach of the Proposed Project Alignment at Jackson Avenue immediately south of the 91 Freeway. The concrete lined ditch, appearing on USGS topographic maps as a blue-line stream, averages six feet in width. Based on aerial photography, the ditch appears to support at least intermittent base flows. Corps and CDFG jurisdiction associated with the Arlington Valley Channel at this location totals 0.07 acre of non-wetland waters/unvegetated streambed.

17. Various Roadside Ditches

Several unvegetated road-side ditches parallel Jackson Avenue, Cleveland Avenue and Monroe Avenue within the study area. These features are not subject to Corps or CDFG jurisdiction.

Monroe Street Alternative Alignment

18. Monroe Channel at Colorado Avenue

The Monroe Channel intersects the Monroe Street Alternative at Colorado Avenue. The unvegetated concrete channel, measuring approximately 13 feet in width, exhibits perennial flows. Corps and CDFG jurisdiction associated with the Monroe Channel at this location totals 0.15 acre of non-wetland waters/unvegetated streambed.

19. Feature 8

Feature 8 originates within the Central Reach of the Proposed Project Alignment Study Area and discharges to the Monroe Channel. The feature is a concrete channel exhibiting perennial flows and supporting cattails. Corps and CDFG jurisdiction associated with Feature 8 totals 0.03 acre of non-wetland waters/unvegetated streambed.

20. Feature 9

Feature 9 originates within the Monroe Street Alternative Study Area immediately west of Monroe Street and South of the 91 Freeway. The feature is a small unvegetated earthen ditch constructed in upland and exhibiting signs of sheet flow. The feature is not subject to Corps or CDFG jurisdiction.

B. <u>Regional Water Quality Control Board Jurisdiction</u>

Regional Water Quality Control Board regulates all Corps waters in addition to those that may not be subject to Corps pursuant to the Rapanos guidance.

C. <u>CDFG Jurisdiction</u>

Potential CDFG jurisdiction associated with the Proposed Project Alignment – Northern Reach totals up to 8.45 acres including approximately 2.20 acres of riparian habitat. The boundaries of potential waters of the State associated with the Proposed Project Alignment – Northern Reach are depicted on the enclosed maps.

CDFG jurisdiction associated with the Proposed Project Alignment – Central Reach totals 14.75 acres, of which 13.18 acres consists of riparian habitat. CDFG jurisdiction associated with the Monroe Street Alternative total 0.18 acre, none of which consists of riparian habitat. The boundaries of waters of the United States are depicted on the enclosed maps. CDFG jurisdiction includes all areas within Corps jurisdiction.

TABLE 4: POTENTIAL CDFG JURISDICTION
PROPOSED PROJECT ALIGNMENT – NORTHERN REACH

Feature Name	Approximate Size
City Creek	Up to 3.10 acres
Feature 1	0.07 acre
Warm Creek	Up to 2.64 acres
Feature 2	0.02 acre
Feature 3	0.80 acre
Rialto Channel	0.55 acre
Feature 4	0.08 acre
West Riverside Canal	0.10 acre
Feature 5	0.01 acre
Feature 6	0.02 acre
Jurupa Ditch	0.22 acre
Feature 7	0.14 acre
Indian Hills Golf Course Feature	0.70 acre
Total	8.45 acres

TABLE 5: CDFG JURISDICTION –
PROPOSED PROJECT ALIGNMENT – CENTRAL REACH

Feature Name	Riparian (acres)	Unvegetated Streambed (acres)	Total (acres)
Santa Ana River	12.95	1.40	14.35
Monroe Channel at Arlington Avenue and Van Buren Boulevard	0.23	0.10	0.33
Arlington Valley Channel	0.00	0.07	0.07
Total	**13.18**	**1.57**	**14.75**

TABLE 6: CDFG JURISDICTION – MONROE STREET ALTERNATIVE

Feature Name	Riparian (acres)	Unvegetated Streambed (acres)	Total (acres)
Monroe Channel at Colorado Avenue	0.00	0.15	0.15
Feature 8	0.00	0.03	0.03
Total	**0.00**	**0.18**	**0.18**

IV. DISCUSSION

A. Impact Analysis

With the exception of approximately 1,700 feet of pipeline that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus of Doolittle Street, the proposed alignments are located within existing roadways. The pipeline will be extended beneath the Santa Ana River using boring and micro-tunneling techniques that will eliminate the need to disturb habitat at the ground's surface. Therefore, no permanent or temporary impacts are currently proposed. Regulatory procedures are described below in case avoidance of jurisdictional features becomes infeasible.

B. Corps Regulations and Procedures

The discharge of dredged or fill material (temporarily or permanently) into waters of the United States requires prior authorization from the Corps pursuant to Section 404 of the Clean Water Act. Activities that usually involve a regulated discharge of dredged or fill materials include (but are not limited to) grading, placing of riprap for erosion control, pouring concrete, laying sod, preparing soil for planting (e.g., turning soil over, adding soil amendments[9]), stockpiling excavated material, mechanized removal of vegetation, and driving of piles for certain types of structures. Activities that do not involve a regulated discharge (if performed in a manner to avoid discharges) include excavation, placing a structure, driving pilings (for transportation structures), clearing of vegetation using hand held equipment and working above the ground surface, pumping water, and walking or driving vehicles.

Federal law recognizes wetlands and other waters of the United States as valuable natural resources. Therefore, federal agencies, principally the Corps, USFWS, and EPA strongly discourage activities within federal jurisdiction that alter aquatic habitats. In addition, Corps policy, derived from the National Environmental Policy Act, prohibits "piece-mealing," the submission of separate permit applications for discharges that are reasonably related to the same project

[9] Similar planting activities associated with on-going farming operations may be exempt from regulation by Section 404 of the Clean Water Act.

1. Nationwide Permits

On March 12, 2007, the Corps published, in the *Federal Register*, a Reissuance of Nationwide Permits (NWP). With this notice (and effective March 19, 2007) the Corps has 49 NWPs that preauthorize specific minor discharges. Use of some NWPs does not require review by the Corps. Formulation of a project design in which all proposed discharges into waters of the United States are authorized under NWPs could significantly reduce federal permit processing time. The revised NWPs are more complicated that the previous NWPs and a number of new conditions have been added to the NWP program. The following is only a summary of NWPs that may be applicable to the subject site or the work proposed at the subject site. You should not use any of the NWPs unless you have read and understood the entire text of the NWP and all of the conditions (national and regional) of the NWP program.

NWP number 12 authorizes activities required for the construction, maintenance, repair and removal of utility lines and associated facilities in waters of the United States. These activities include the discharge dredged or fill materials into waters of the United States used as backfill or bedding for utility lines (including outfall and intake structures) provided there is no change in the preconstruction bottom contours.[10] A utility line is defined as a pipe used for the transportation of any gaseous, liquid, or slurry substance and any cable, line, or wire for the transmission of electrical energy, or telephone, telegraph, radio, or television communication. This NWP also authorizes construction, maintenance, or expansion of utility line substations; foundations for overhead utility line towers, poles, and anchors; and access roads for construction and maintenance of utility lines. This NWP does not authorize the realignment or burial of a natural stream channel through a conduit or culvert nor other activities which would drain a water of the United States, such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area. Activities authorized by this NWP may not cause the permanent loss of more than 1/2 acre of waters of the United States.[11] Material excavated for installation of the utility line or outfall and intake structures may be temporarily stockpiled in waters of the United States for up to three months (or up to an additional 180 days if site-specific approval is obtained from the Corps). When installed through wetlands, the top six to 12 inches of the trench should be backfilled with topsoil originally excavated from the trench. All excess material must be removed to upland areas immediately upon completion of construction. All

[10] Construction of outfall and/or intake structures under this NWP (rather than under NWP number 7) does not require compliance with NPDES and may not require approval by the Corps through the pre-construction notification process. Note, however, that this NWP authorizes outfall and intake structures that would not result in a change in preconstruction contours, i.e., that are flush with the existing stream bank or bottom.

[11] Temporary impacts caused by filling, flooding, excavation, or drainage, where the project area is restored to preconstruction contours and elevations, are not include in the calculation of this 1/2-acre limit.

exposed slopes and stream banks must be stabilized immediately upon completion of the utility line. The trench cannot be constructed in a manner as to drain waters of the United States (e.g., backfilling with extensive layers of gravel to create a French drain). Use of NWP number 12 requires a case-by-case approval by the Corps through the pre-construction notification process if (1) mechanized clearing of the alignment would take place in a forested wetland, (2) work would take place within a Section 10 (navigable) water, (3) the utility line (excluding overhead lines) would be installed in more than 500 linear feet of waters of the United States, (4) a utility line is placed parallel to the streambed within jurisdictional waters of the United States, (5) discharges associated with construction of a utility line substation would cause the loss of more than 1/10 acre of waters of the United States, (6) more than 500 linear feet of a permanent access road is constructed above grade in waters of the United States, or (7) a permanent access road is constructed with impervious materials within waters of the United States.

NWP number 13 authorizes the discharge into waters of the United States of dredged or fill material used for bank stabilization provided that (1) no material is placed in excess of the minimum needed for erosion protection; (2) the bank stabilization activity is less than 500 feet in length; (3) the activity is limited to less than an average of one cubic yard of fill placed along the bank within waters of the United States per linear foot of bank; (4) no material is placed in wetlands; (5) no material is placed so as to impair surface water flow into or out of any wetlands; (6) no material is placed in a manner that will be eroded by normal or expected high flows; and (7) the activity is not a stream channelization activity. Bank stabilization projects in excess of 500 linear feet, in excess of an average of one cubic yard per linear foot, or causing the loss of special aquatic sites may be authorized by this NWP upon approval by the Corps on a case-by-case basis through the pre-construction notification process.[12]

NWP number 14 authorizes activities for the construction, expansion, modification, or improvement of linear transportation crossings[13] within waters of the United States. This nationwide permit differentiates between crossings occurring within non-tidal waters or tidal waters.

- For linear transportation projects in non-tidal waters, this NWP authorizes discharges that cause the permanent loss not more than 1/2 acre of waters of the United States.

[12] In determining the volume of material used for bank stabilization, only that volume placed below the plane of ordinary high water is counted towards the 500-cubic-yard-limit. Any material placed above the plane of ordinary high water does not require authorization from the Corps.

[13] The term "linear transportation crossings" is defined to include highways, railways, trails, and airport runways and taxiways.

- For linear transportation projects in tidal waters, this NWP authorizes discharges that cause the permanent loss of not more than 1/3 acre of waters of the United States.

Use of NWP number 14 requires a case-by-case approval by the Corps through the pre-construction notification process if (1) the discharge causes the loss of more than 1/10 acre of waters of the United States or (2) the discharge would occur within a special aquatic site (e.g., wetlands). The notification must include a compensatory mitigation proposal to offset permanent losses of waters of the United States and a statement describing how temporary losses of waters of the United States will be minimized. For discharges into wetlands, the notification must include a wetland delineation. The width of the fill must be limited to the minimum necessary for the actual crossing. The crossing must be a single and complete project. Note that some road fills may be eligible for an exemption from the need for a Section 404 permit altogether. These include some roads used for silviculture, farming, and mining.

NWP number 25 authorizes the discharge into waters of the United States of concrete where it is discharged into tightly sealed forms or cells as a structural member for standard pile-supported structures (e.g., piers and docks) and for linear projects (e.g., bridges, transmission line footings, and walkways).

NWP number 41 authorizes the discharge of dredged or fill material into non-tidal waters of the United States (excluding non-tidal wetlands adjacent to tidal waters) associated with modifying the cross sectional configuration of existing drainage ditches.[14] The work cannot increase the drainage capacity beyond the original design capacity or expand the area drained by the ditch. Excavated material may be temporarily sidecast into waters of the United States for up to three months. This NWP is intended to allow improvement of water quality by allowing regrading of drainage ditches with gentler slopes to reduce erosion and to increase nutrient uptake by plants. Use of NWP number 41 requires a case-by-case approval by the Corps through the pre-construction notification process if more than 500 linear feet of the drainage ditch would be reshaped.

NWP number 43 authorizes the discharge for the construction and maintenance of stormwater management facilities including stormwater ponds, detention basins, water control structures, outfall structures, emergency spillways, and maintenance dredging of existing stormwater management ponds, detention basins, and retention basins. Discharged of dredged or fill material for the construction of new stormwater management facilities in perennial streams is not authorized.

[14] Note that maintenance of drainage ditches (to their original design and capacity) is exempt from regulation under Section 404 of the Clean Water Act.

- The authorized discharge cannot cause the permanent loss of more than 1/2 acre of waters of the United States.

- The authorized discharge cannot cause the loss of more than 300 linear feet of streambed (unless for intermittent and ephemeral streambeds this 300 linear foot limit is waived in writing by the district engineer).

- This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters.

- This NWP does not authorize discharges of dredged or fill material for the construction of new stormwater management facilities in perennial streams.

Use of NWP number 43 for construction of new stormwater management facilities, or the expansion of existing stormwater management facilities requires a case-by-case approval by the Corps through the pre-construction notification process. Use of NWP number 43 for maintenance of existing facilities does not require prior notification if maintenance is limited to restoring the original design capacities.

NWP number 46 authorizes the discharge of dredged or fill material into non-tidal ditches that:

- Constructed in uplands,
- Receive water from an area determined to be a water of the United States prior to the construction of the ditch,
- Divert water to an area determined to be a water of the united States prior to construction of the ditch, and
- Are determined to be waters of the United States.

All uses of NWP number 46 require a case-by-case approval by the Corps through the pre-construction notification process.

a) Pre-construction Notification Process

Some NWPs require that the Corps approve each use of the NWP on a case-by-case basis. The process of obtaining this approval is called a pre-construction notification. Obtaining authorization through the pre-construction notification process is not automatic.

Notification to the Corps must include (1) the permittee's name, address, and telephone number; (2) location of the project; (3) description of the project, its purpose, its impacts (direct and

indirect), (4) information about other Corps authorizations needed,[15] and (5) a delineation of special aquatic sites (if required by the NWP). Certain NWPs require specific additional information as outlined in condition number 13. The Corps has 30 days from receipt of the notification to determine whether or not the notification is complete. The Corps may request additional information only once; if the requested information is properly submitted, the Corps cannot make a request for yet more information. If the permittee has not received notice from the Corps within 45 days of the Corps' receipt of a complete application, the permittee may assume that authorization has been approved.[16] For pre-construction notifications for projects that would cause the loss of more than 1/2 acre of waters of the United States, the Corps must solicit input from USFWS, EPA, CDFG, State Historic Preservation Officer (SHPO), and National Marine Fisheries Service (NMFS).

b) Conditional Use of Nationwide Permits

All of the NWPs are conditioned by a set of general conditions published at 33 CFR 330 Appendix A, Section C. Special attention should be paid to ensure compliance with six of these conditions.

Endangered Species. Condition number 17 states that no activity is authorized under any NWP if that activity may affect a listed species or critical habitat unless Section 7consultation addressing the effects of the proposed activity has been completed. The district engineer is responsible for making the ''may effect'' determination. The district engineer may, at his option, complete the consultation and allow the activity to be authorized by NWP, or he may at any time take discretionary authority (i.e., require that an individual permit be obtained for the proposed activity). If any federally-listed (or proposed for listing) endangered or threatened species or critical habitat might be affected by the proposed project, or is in the vicinity of the project, the permittee must not commence work and must notify the Corps.

Cultural Resources. Condition number 18 states that no activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized until the Corps has complied with Section 106 of the National Historic Preservation Act. The permittee must notify the district engineer if the proposed activity may adversely affect historic properties that the National Park Service has listed, or determined eligible for listing, on the National Register of Historic Places.

[15] Many Corps districts (including the Los Angeles District) have issued written policy clarifying that their intent is to receive a small version of an environmental assessment with each notification.

[16] If the notification, as originally submitted, is deemed complete, the 45-day clock starts from the date of the Corps' receipt of the notification, not after the 30-day review period has ended.

Water Quality Certification. Condition number 21 states that an individual 401 water quality certification must be obtained or waived for the proposed activity if the State Water Quality Control Board has not already certified the NWP. On May 11, 2007 the State Water Resources Control Board conditionally certified NWP numbers 1, 4, 5, 6, 9, 10, 11, 20, 22, 24, 28, 29, 32, 34 and 38. Use of this "conditional certification" requires prior notification to the State Board and the appropriate Regional Board. If the applicant is not notified by the Regional Board within 30 days of the postmarked date of the notification, the applicant may assume that the project meets the conditions of the certification. Certification for all other NWPs must be obtained by application to the Regional Board on a case-by-case basis. The district engineer may require water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

Designated Critical Resource Waters. Condition number 19 prohibits the use of NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49 and 50 for any activity within or directly affecting critical resource waters, including wetlands adjacent to such waters. Critical resource waters include NOAA-designated marine sanctuaries, National Estuarine Research Reserves, coral reefs, state natural heritage sites, and outstanding national resource waters, or other waters officially designated by a state as having particular environmental or ecological significance and identified by the Corps.

Mitigation. Condition number 20 requires mitigation where necessary to ensure that the adverse effects to the aquatic environment are minimal. Compensatory mitigation will generally be required for wetland impacts greater than 0.10 acre at a minimum 1:1 ratio for all wetland impacts requiring a pre-construction notification; preservation will be allowed only in exceptional circumstances. Vegetated buffers will be required adjacent to streams and other open waters[17] located on the property. The buffers will normally be 25 to 50 feet wide on each side of the waterbody, but wider buffers may be required. The wetland buffers (upland or wetland) may be counted as 1/3 of the total mitigation requirement beyond the initial 1:1 wetland replacement requirement. Consolidated mitigation approaches (such as mitigation banking) are the Corps' preferred method of providing compensatory mitigation. Impacts to wetland totaling less than 0.10 acre may not require compensatory mitigation. For losses below this threshold, district engineers will review PCNs to determine if compensatory mitigation is necessary to ensure that the work authorized by NWP results in minimal adverse effects on the aquatic environment, individually and cumulatively.

[17] For the purposes of the NWPs, the term "open waters" does not include ephemeral drainages, but does include any other water of the United States that exhibits an ordinary high water mark, including intermittent drainages.

Regional Conditions. Each district office of the Corps is encouraged to develop regional conditions for use of NWPs within the district. The regional conditions may only further restrict the published NWPs and may not authorize additional activities. On May 18, 2007 the Los Angeles District issued a public notice issuing regional conditions within the District.

Regional Condition 3 requires that all projects proposed for authorization by nationwide or regional general permits where prior notification to the district engineer is required, applicants must provide color photographs or color photocopies of the project area taken from representative points documented on a site map. Pre-project photographs and the site map would be provided with the permit application. Photographs should represent conditions typical or indicative of the resources before impacts. None of the regional conditions would affect the authorization of the proposed project under a NWP.

c) Multiple Use of Nationwide Permits

Under the previous rules, the impact limit of each NWP used on a single and complete project was additive, that is, the impact for each NWP used could be added together to achieve a total impact in excess of that allowed by any one of the NWPs. Under the current rules, the total impact limit of multiple NWPs on a single project cannot exceed the impact limit of the NWP with the highest limit being used on the project.

d) Linear Projects

Corps regulations at 33 CFR 330.2(i) state that "for linear projects, the 'single and complete project'... will apply to each crossing of a separate water of the United States... at that location..." The regulations go on to explain that for linear projects crossing the same waterbody at several separate and distinct locations, each crossing is considered a single and complete project and that individual channels in a braided stream or river are not separate water bodies.

e) Expiration of Nationwide Permits

Nationwide permits are issued for a period of 5 years. The new NWPs issued on March 12, 2007 (and which became effective on March 19, 2007) will expire on March 18, 2012. Corps regulations at 33 CFR 330.6(b) state that work that has started in reliance upon a NWP may continue for an additional year after expiration of the NWP.[18]

[18] The Corps has determined that being under contract prior to expiration of the NWPs to have work commence is equivalent to having started the work prior to expiration of the NWPs.

A letter of verification from the Corps, stating that the proposed work is authorized by a nationwide permit may be obtained for any nationwide permit, but must be obtained for those nationwide permits for which "notification" is required by condition number 13. For activities that have not been verified by the Corps, the project must commence or be under contract to commence by the expiration date of the NWP and the work must be completed within 12 months after such date. For activities that have been verified, the work must commence or be under contract to commence within the verification period and the work must be completed by the date determined by the Corps in the letter of verification. This completion date may extend beyond the date that the NWPs, themselves, expire. For projects that have been verified by the Corps, an extension of a Corps approved completion date may be requested.

C. Regional Water Quality Control Board Procedures

If none of the waters at the site are eliminated from Corps jurisdiction as being isolated, intrastate waters, or because they lack a significant nexus with TNWs, all of the Corps' jurisdiction would also considered to be within the Regional Board's jurisdiction pursuant to Section 401 of the Clean Water Act. In this case, before the Corps can finalize issuance of authorization pursuant to Section 404 of the Clean Water Act, the applicant must obtain 401 water quality certification from the Regional Board. A 401 application will not be accepted by the Regional Board until after an environmental impact report (EIR) or negative declaration has been certified. The Regional Board generally requires that any impacts to jurisdictional areas or to water quality be fully mitigated. Corps regulations allow 60 days for the Regional Board to process the 401 application; however, the Corps will rarely issue its permit if the Regional Board has not taken action, even if the allotted 60 days has passed.

If features within the Proposed Project Alignment – Northern Reach are excluded from regulation by Corps based on the lack of a significant nexus with TNWs, they may still be regulated by State Water Quality Control Board under the Porter-Cologne Act. The State Board has stated that fill placed in such waters may be subject to waste discharge requirements issued by the Regional Boards after review of an application and a public hearing before the Regional Board. Because this requirement for impacts due to fills is so new, there is no accurate estimate for what materials are needed for an application or how long it will take to obtain waste discharge requirements.

D. CDFG Regulations and Procedures

Unlike the Corps, CDFG regulates not only the discharge of dredged or fill material, but all activities that alter streams and lakes and their associated habitat. CDFG has no abbreviated permitting process comparable to the Corps nationwide permits. A CDFG 1602 agreement is required for all activities resulting in impacts to streambeds and their associated riparian habitats.

A 1602 notification (application) will not be accepted by the CDFG until after an environmental impact report (EIR) or negative declaration has been certified. CDFG generally requires that any impacts to streambeds and adjacent riparian habitats be fully mitigated. To ensure rapid and favorable action on a 1602 notification, a mitigation plan should be submitted with the notification package. It normally takes 30 days for the CDFG to process a 1602 notification.

E. Potential Mitigation

If the division engineer takes discretionary authority and requires an individual permit, or if authorization is sought under a NWP requiring case-by-case approval by the Corps through the pre-construction notification process, or if the proposed work does not qualify for authorization by NWP, then the Corps (and the state and federal resource agencies) will likely require mitigation for the impacted wetland/riparian habitat.

Unlike the Corps, the CDFG will likely require mitigation for all impacts to streambeds and their associated riparian habitats resulting from any aspect of the proposed project, regardless of Corps requirements or extent of impacts.

Mitigation can take several forms. It can consist of (1) avoidance of impacts, (2) reduction of impacts, or (3) compensation for impacts.[19] The first two types of mitigation (avoidance or reduction of impacts) are much preferred by the agencies and should be investigated to the maximum extent possible. In cases where impacts cannot be avoided or significantly reduced, compensation must be considered.

Compensation is the creation of habitat to replace similar habitat unavoidably eliminated at a different location. In order to be accepted, the concerned agencies must be convinced that the

[19] The November 15, 1989 Memorandum of Agreement (MOA) between the Corps and EPA directed the Corps to require that impacts to waters of the United States be avoided to the maximum extent practicable. Although the MOA was intended to apply to individual permits only, recent experience with Corps permit managers has indicated that they are requiring prospective nationwide permittees to document that discharges into waters of the United States cannot be avoided and that there are no available upland alternatives.

proposed compensation will totally mitigate for the lost habitat. Because the creation of habitat requires time (usually several years) there is a temporal loss of habitat unless the mitigation is performed several years in advance of the removal of the existing habitat. As a result, the agencies often require compensation at a ratio of greater than one-to-one. Our experience with NWPs is that habitat replacement is usually required at a ratio of between 1.5:1 and 2:1; however, a ratio of 3:1 or more is not unheard of for the loss of high quality wetlands.

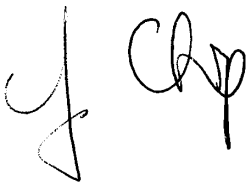
If performed on the project site or immediately adjacent to the project site, the mitigation is said to be "on site." If no mitigation opportunities are available at or adjacent to the project site, "off site" mitigation may be considered. Generally, as the distance between the project and mitigation sites increases, the value of the mitigation (as determined by the agencies) decreases. In addition, if the mitigation is too far off site, disputes may arise between local governing bodies in which one local government refuses to allow mitigation within its boundaries for a project outside its boundaries. Compensation does not have to take place on property owned by the developer (although it is imperative that the developer obtain written permission prior to formal application).

The Corps has recently taken the position that mitigation banking and other forms of consolidated mitigation are the preferred method of providing compensatory mitigation because this method involves larger blocks of protected aquatic environment, are more likely to meet the mitigation goals, and are more easily checked for compliance.

If you have any questions about this letter report, please contact Ingrid Chlup at (949) 837-0404 ext. 35.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.



Ingrid Chlup
Regulatory Specialist

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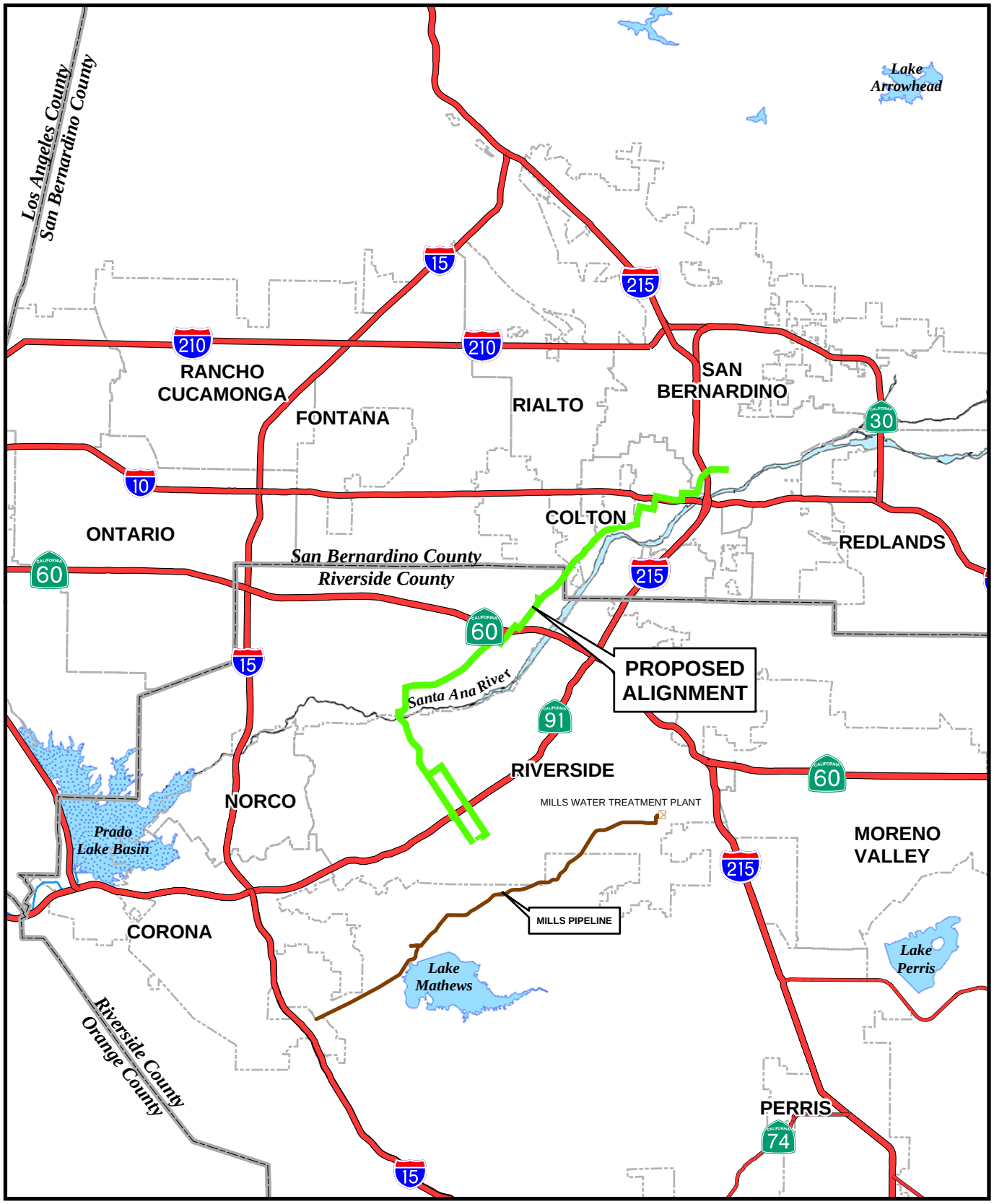

Not to Scale

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ALBERT A. WEBB ASSOCIATES

Figure 1

Regional Location

Riverside Corona Feeder

G:\2007\07-0377\Gis\regional_map.mxd

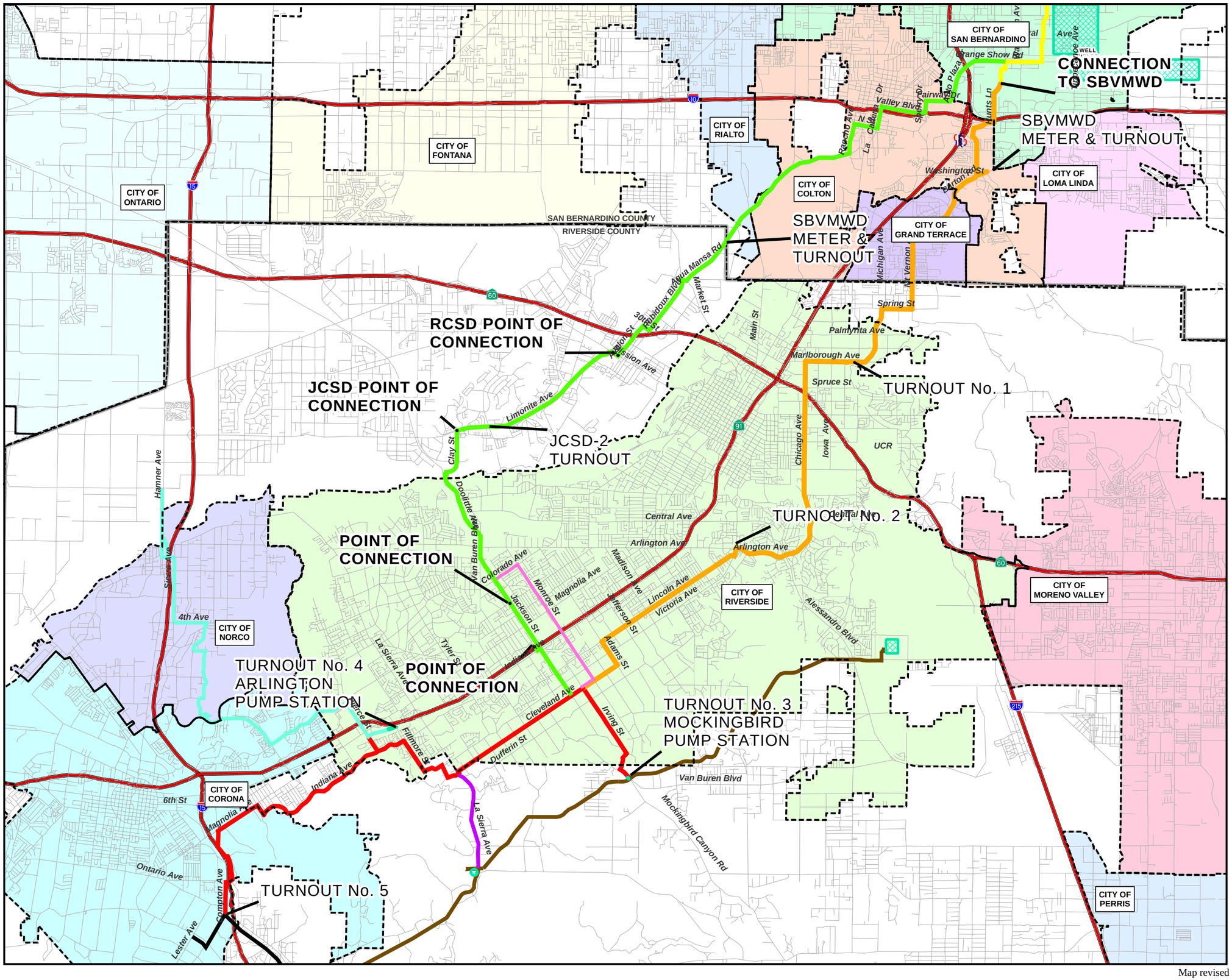


Figure 2

Proposed Project with Previous Alignment/ Location

LEGEND

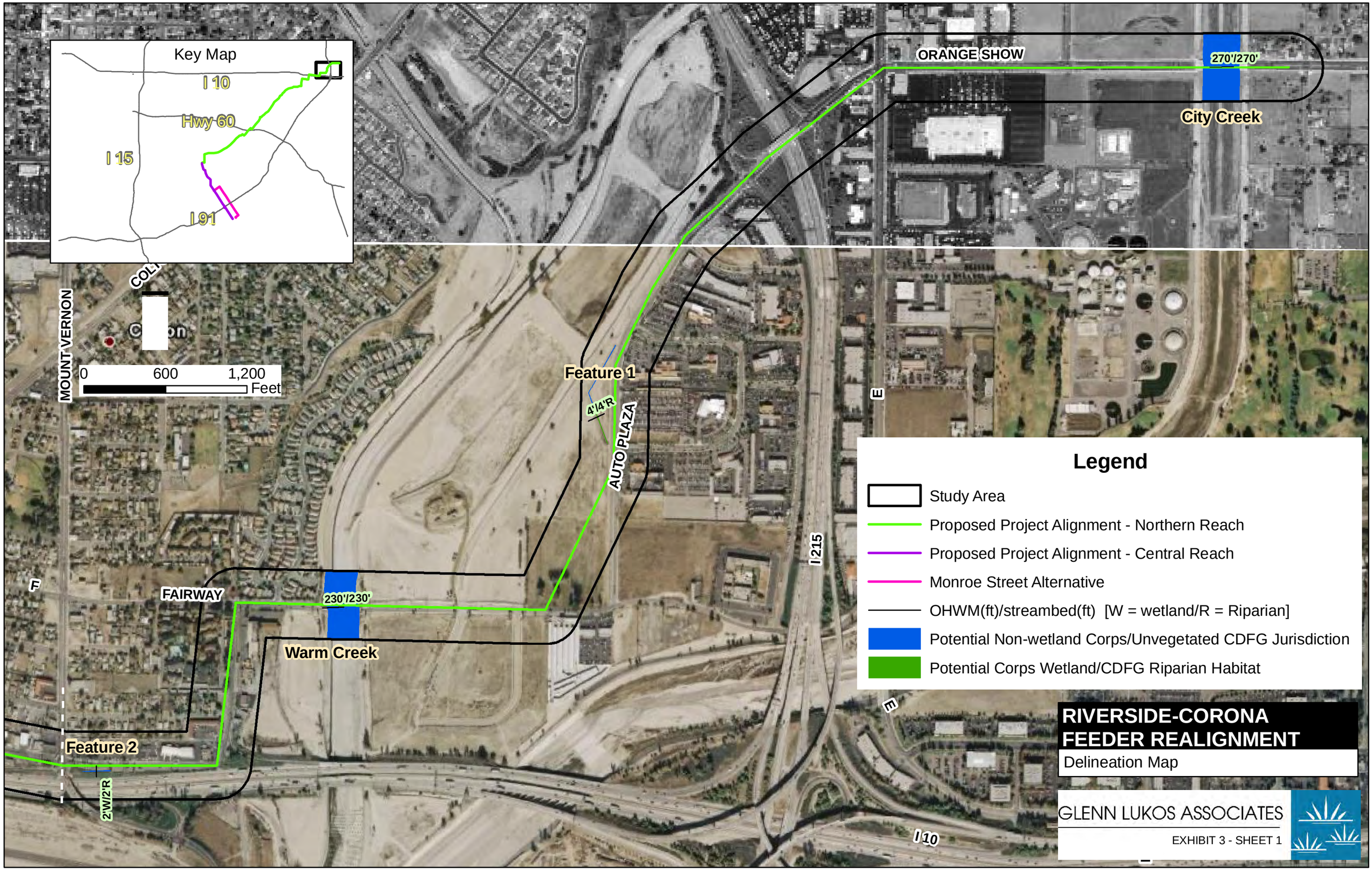
- Proposed Riverside-Corona Feeder
- RC Feeder Monroe Alternative
- R-C Feeder Alignment (to Remain)
- Original R-C Feeder Alignment
- Freeway
- Roads
- City Boundaries
- County Line

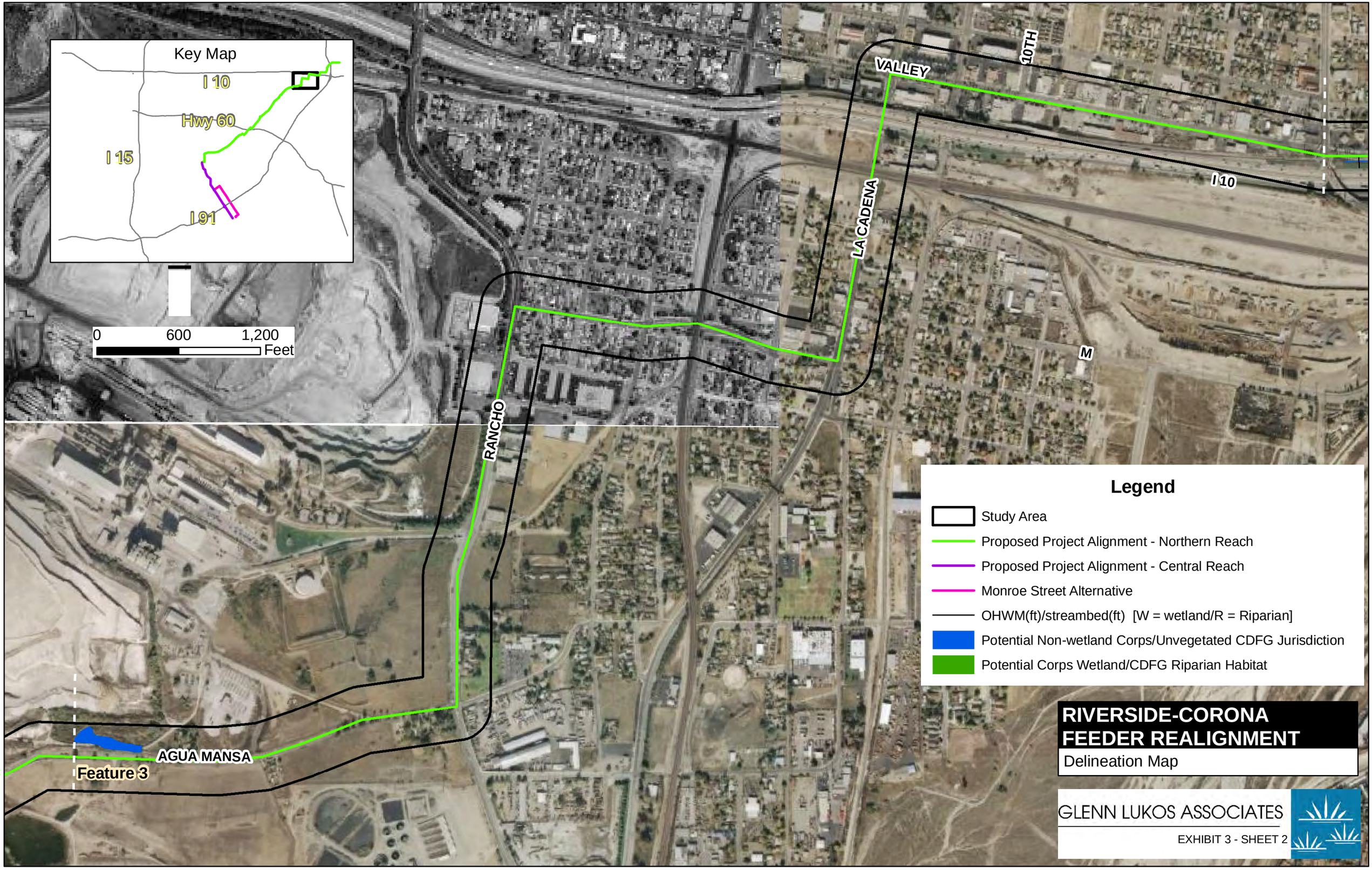
N

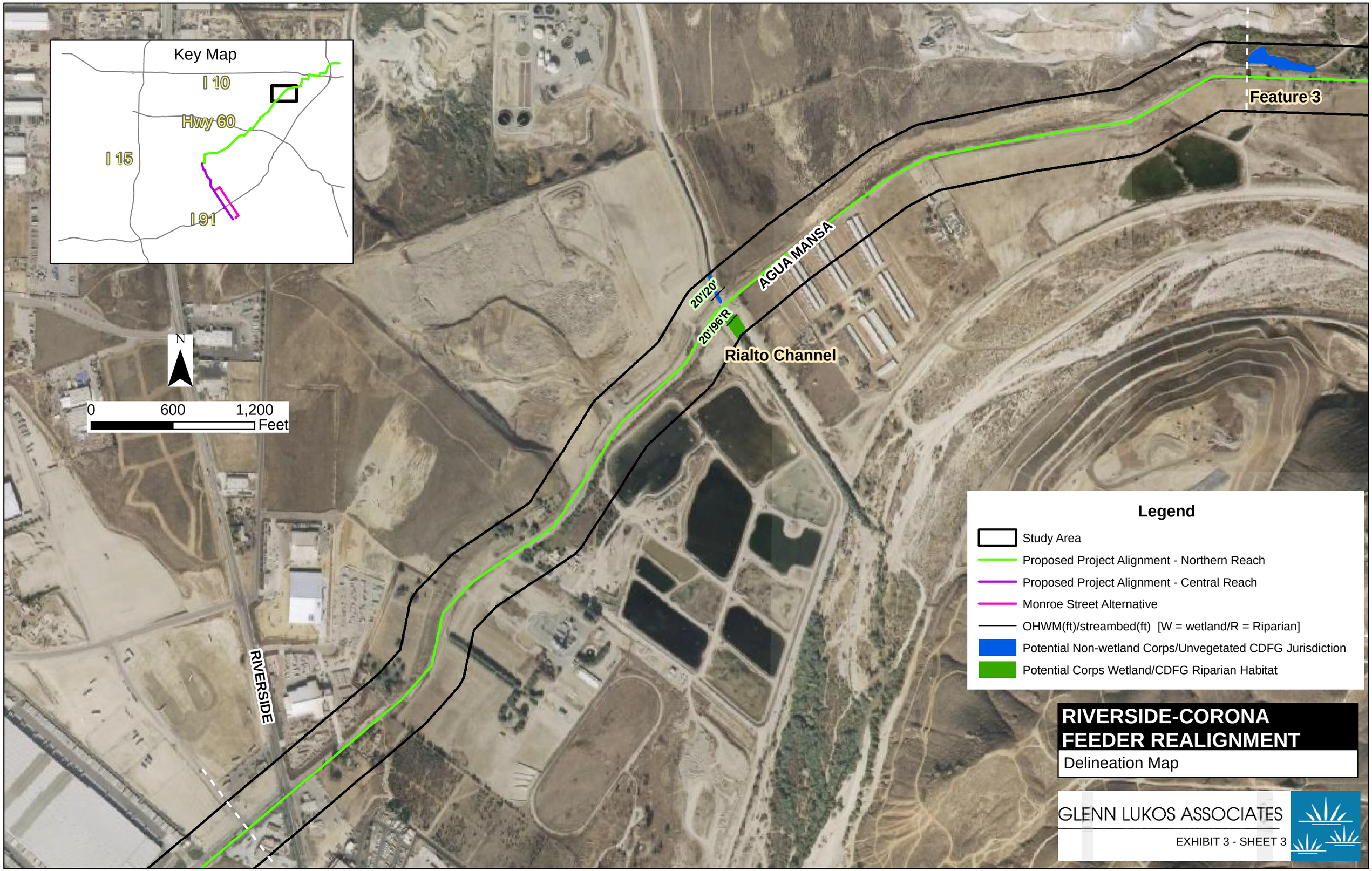
ALBERT A. WEBB ASSOCIATES

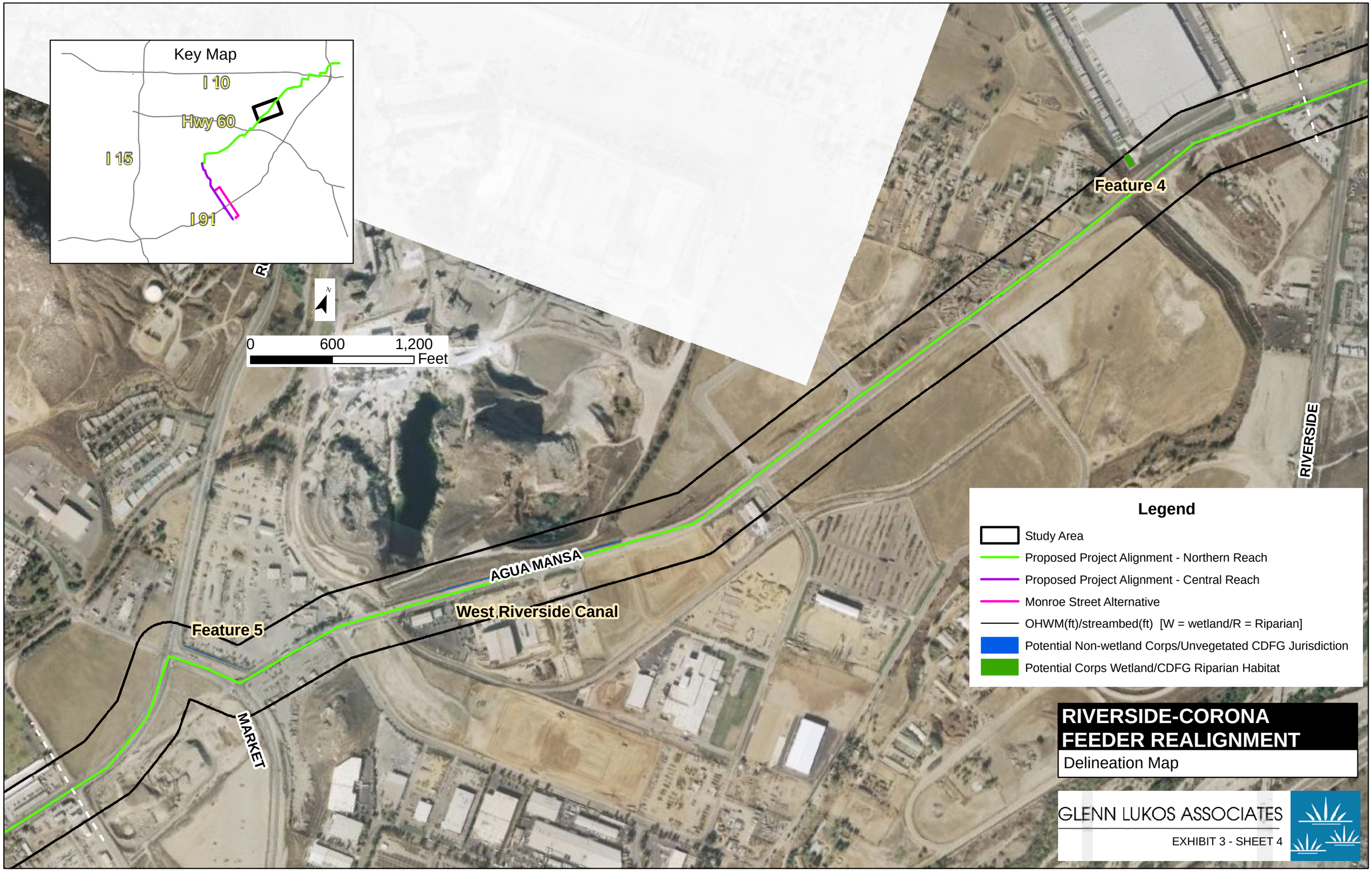
0 5,000 10,000 15,000 Feet

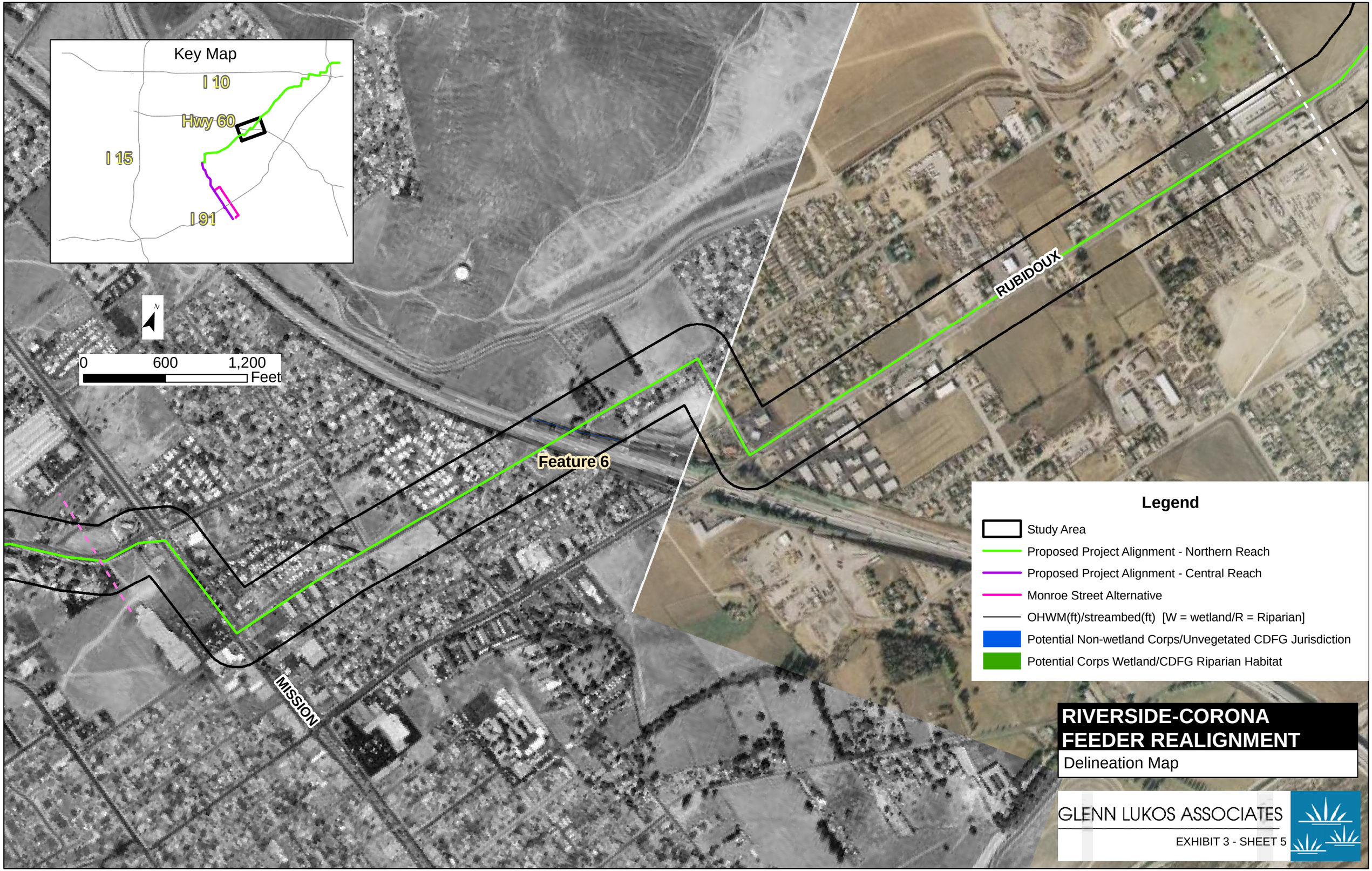
Map revised July 9, 2008. G:\2007\07-0377\Gis\prop_RCF_17x11_revised.mxd

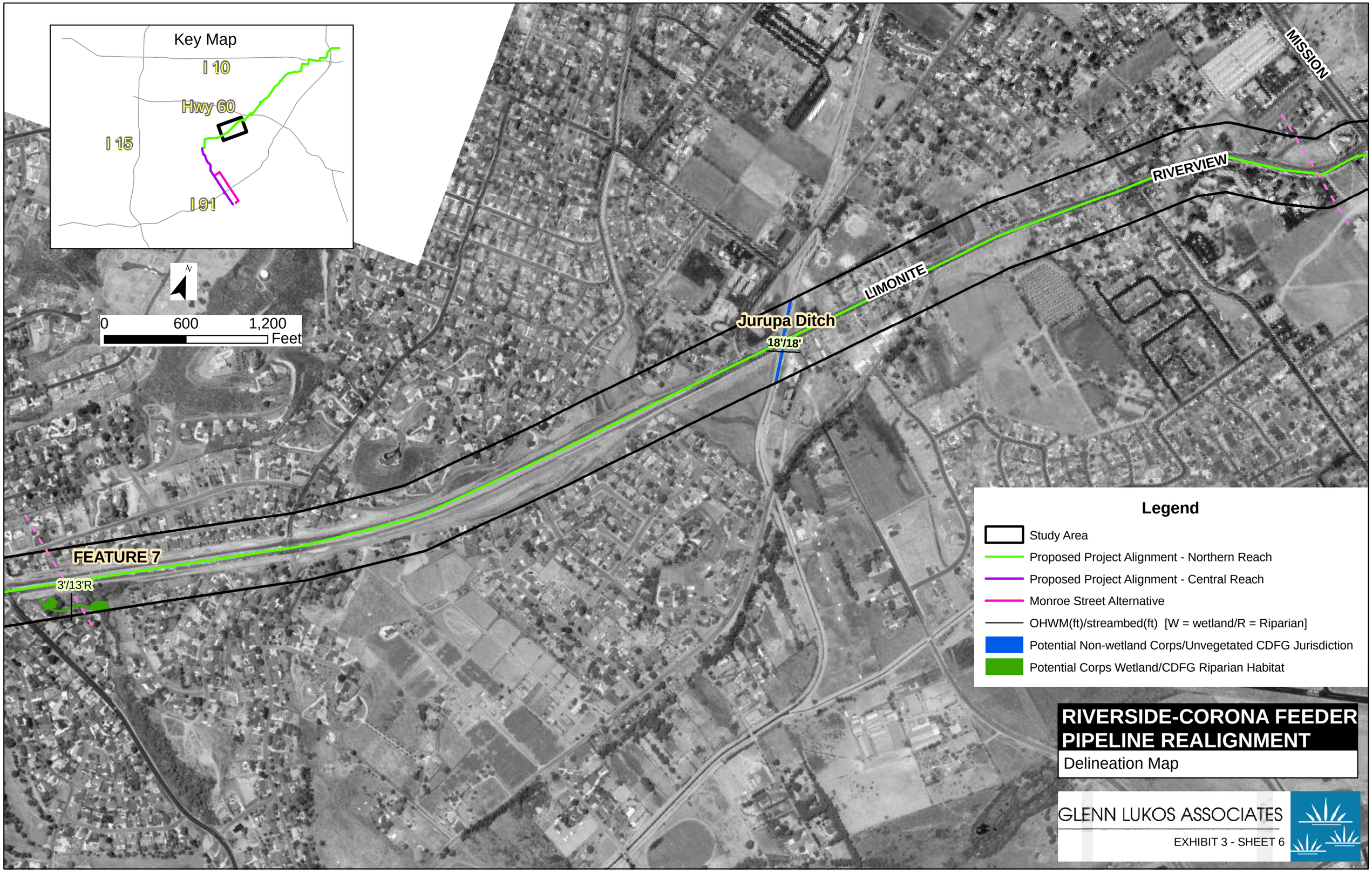

Key Map
I 10
Hwy 60
I 15
I 91
ORANGE SHOW
270'/270'
City Creek
MOUNT VERNON
0
600
1,200
Feet
Feature 1
4'/4'R
AUTO PLAZA
E
I 215
F
FAIRWAY
230'/230'
Warm Creek
Feature 2
2'W/2'R
I 10
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 1


Key Map
I 10
Hwy 60
I 15
I 91
0
600
1,200
Feet
VALLEY
10TH
I 10
LA CADENA
M
RANCHO
AGUA MANSA
Feature 3
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 2

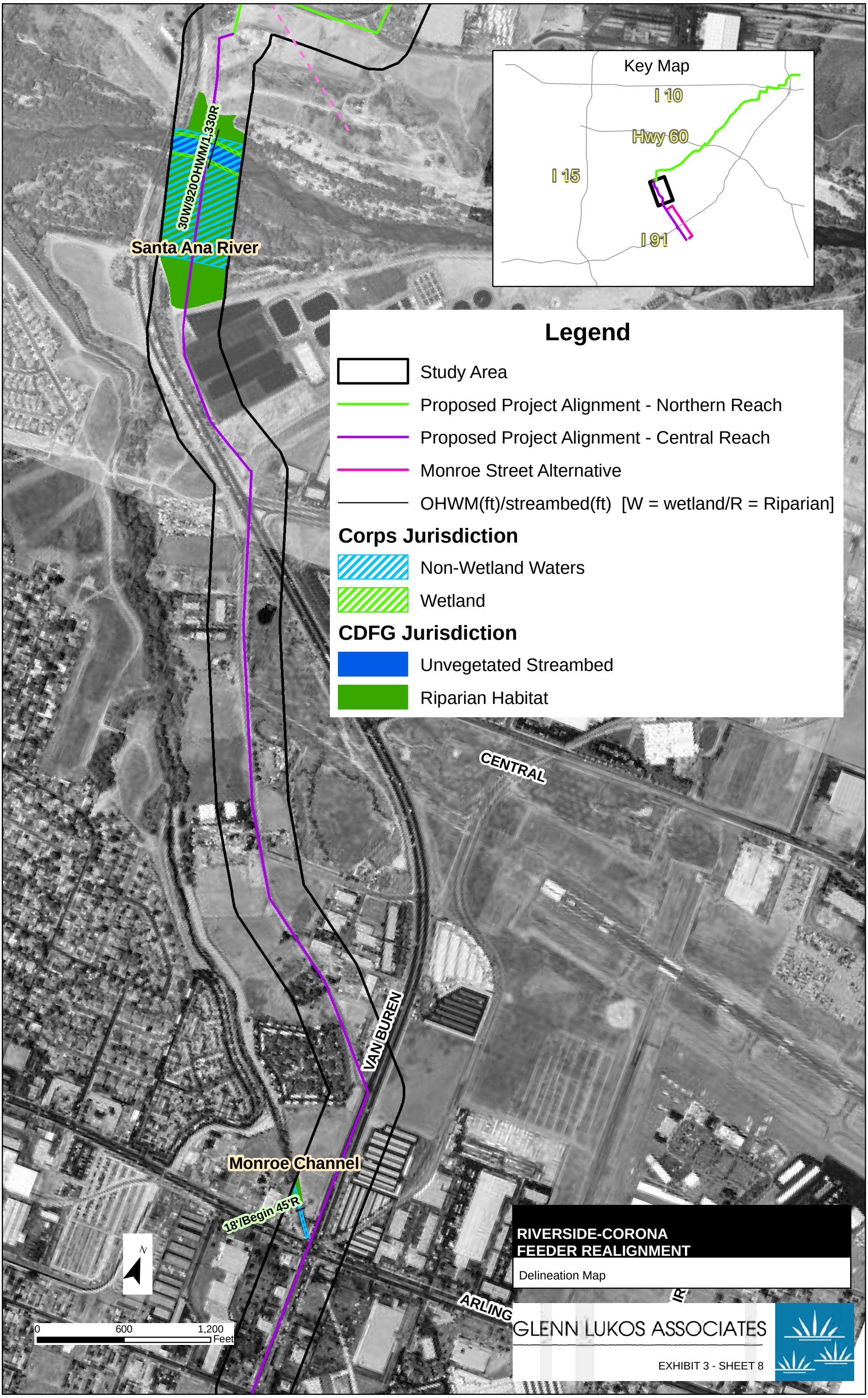

Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
Feature 3
AGUA MANSA
20'/20'
20'/96'R
Rialto Channel
RIVERSIDE
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 3


Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
Feature 4
Feature 5
AGUA MANSA
West Riverside Canal
MARKET
RIVERSIDE
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 4


Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
Feature 6
RUBIDOUX
MISSION
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 5


Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
MISSION
RIVERVIEW
LIMONITE
Jurupa Ditch
18'/18'
FEATURE 7
3'/13'R
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA FEEDER PIPELINE REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 6

4'W/10'OHWM/115'R
INDIAN HILLS GOLF COURSE DRAINAGE
7'W/15'OHWM/50'R
LIMONITE
CAMINO REAL
FEATURE 7
Key Map
I 10
Hwy 60
I 15
I 91
N
0
600
1,200
Feet
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Potential Non-wetland Corps/Unvegetated CDFG Jurisdiction
Potential Corps Wetland/CDFG Riparian Habitat
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 7


Key Map
I 10
Hwy 60
I 15
I 91
30W/920OHWM/1,330R
Santa Ana River
Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Corps Jurisdiction
Non-Wetland Waters
Wetland
CDFG Jurisdiction
Unvegetated Streambed
Riparian Habitat
CENTRAL
VAN BUREN
Monroe Channel
18'/Begin 45'R
N
0
600
1,200
Feet
ARLING
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 8

Key Map
I 10
Hwy 60
I 15
I 91
COLORADO
14'/14'
Feature 8
9'/9'
Monroe Channel
JACKSON
CALIFORNIA
USGS
0
600
1,200
Feet
MAGNOLIA
MONROE
Legend
Study Area
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Non-Jurisdictional Ditches
Corps Jurisdiction
Non-Wetland Waters
Wetland
CDFG Jurisdiction
Unvegetated Streambed
Riparian Habitat
RIVERSIDE-CORONA FEEDER
PIPELINE REALIGNMENT
Delineation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 9
STATE HWY 91
3'/3'
Feature 9
4'/4'
Arlington Valley Channel

Legend
Study Area
Proposed Project Alignment - Northern Reach
Proposed Project Alignment - Central Reach
Monroe Street Alternative
Non-Jurisdictional Ditches
OHWM(ft)/streambed(ft) [W = wetland/R = Riparian]
Corps Jurisdiction
Non-Wetland Waters
Wetland
CDFG Jurisdiction
Unvegetated Streambed
Riparian Habitat
Key Map
I 10
Hwy 60
I 15
I 91
MAGNOLIA
MONROE
ADAMS
STATE HWY 91
Feature 9
3'/3'
8'/8'
Arlington Valley Channel
VICTORIA
USGS
N
0
600
1,200
Feet
RIVERSIDE-CORONA
FEEDER REALIGNMENT
Delienation Map
GLENN LUKOS ASSOCIATES
EXHIBIT 3 - SHEET 10

PHOTOGRAPH 1: Feature 1 at storm drain outlet looking southwest. Photo taken July 28, 2008.

PHOTOGRAPH 2: Warm Creek at Fairview Drive looking northeast. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 3: Feature 2 looking south from Sperry Drive. Photo taken July 28, 2008.

PHOTOGRAPH 4: Feature 3 excavated pit associated with mining operations. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 5: Feature 3 seep at toe of slope adjacent to Agua Mansa Road. Photo taken July 28, 2008.

PHOTOGRAPH 6: Rialto Channel looking north from Agua Mansa Road. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 7: Rialto Channel looking south from Agua Mansa Road. Photo taken July 28, 2008.

PHOTOGRAPH 8: Feature 4: vegetated detention basin. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 9: Roadside ditch which is a possible remnant of the West Riverside Canal. Photo taken July 28, 2008.

PHOTOGRAPH 10: Feature 5 roadside ditch. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 11: The Jurupa Ditch. Photo taken July 28, 2008.

PHOTOGRAPH 12: Feature 7 looking southeast from Limonite Avenue. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 13: Indian Hills Golf Course Drainage south of Limonite Avenue and Clay Street looking south. Photo taken July 28, 2008.

PHOTOGRAPH 14: Santa Ana River. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 15: Monroe Channel at Van Buren Boulevard and Arlington Avenue. Photo taken July 28, 2008.

PHOTOGRAPH 16: Monroe Channel at Colorado Avenue. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 17: Feature 8 at Monroe Street looking southwest. Photo taken July 28, 2008.

PHOTOGRAPH 18: Feature 9. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 19: Roadside Ditch along Monroe, north of Cleveland.

PHOTOGRAPH 20: South braid of the Santa Ana River. OHWM was based on the presence of the litter and debris as visible in photo. Photo taken July 28, 2008.

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

PHOTOGRAPH 21: Riparian Woodland associated with the Santa Ana River. Photo Taken July 28, 2008

PHOTOGRAPH 22: Arlington Valley Channel, Photo Taken April 23, 2009

GLENN LUKOS ASSOCIATES

Exhibit 4

RIVERSIDE-CORONA FEEDER REALIGNMENT PROJECT

Site Photographs

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Riverside-Corona Feeder Pipeline City/County: Riverside County Sampling Date: 7/28/08

Applicant/Owner: Western Municipal Water District State: CA Sampling Point: 1

Investigator(s): I. Chlup / K. Livergood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N 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:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black willow (Salix goodingii)	50	Y	OBL
2. Fig (Ficus carica)	5	N	UPL
3.			
4.			
Total Cover:	55		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Watercress (Rorippa nasturtium-aquaticum)	5	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	5		
Woody Vine Stratum			
1. Wild grape (Vitis californica)	95	Y	FACW
2.			
Total Cover:	95		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2						Silt Loam	
5-10	10YR 3/4	60	7.5YR 4/6	40	C	M	Silt loam	
10-13	7.5YR 4/4	80	10Y 3/0	20	D	M	Sandy loam	
13+	10YR 3/0	98	7.5YR 4/4	25	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: Hydric soil not observed at time of sampling. Long-term inundation not observed. – pit on bank adj to low flow/inundated channel ~4' wide

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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: 10' wide High water table evidenced by adjacent creek flows. Hydrology is predominantly a result of ground water not surface flows.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Riverside-Corona Feeder Pipeline City/County: Riverside County Sampling Date: 7/28/08

Applicant/Owner: Western Municipal Water District State: CA Sampling Point: 2

Investigator(s): I. Chlup / K. Livergood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N 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:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black willow (Salix gooddingii)	30	Y	OBL
2. Alder (Alnus rhombifolia)	20	Y	FACW
3. Fig (Ficus carica)	5	N	UPL
4.			
Total Cover:	55		
Sapling/Shrub Stratum			
1. Mule fat (Baccharis salicifolia)	15	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	15		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. wild grape (Vitis californica)	80	Y	FACW
2.			
Total Cover:	80		

% Bare Ground in Herb Stratum 20 * % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

* Bare ground was actually an accumulation of woody debris, unvegetated.

terrace – creek well incised

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2						loamy sand	
4-7	10YR 3/3						silty clay loam	
7-8							sand	
8+	10YR 3/2						loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

none observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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:

None observed

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Riverside-Corona Feeder Pipeline City/County: Riverside County Sampling Date: 7/28/08

Applicant/Owner: Western Municipal Water District State: CA Sampling Point: 3

Investigator(s): I. Chlup / K. Livergood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Drainage bottom Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N 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 _____
Hydric Soil Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____

Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black willow (Salix gooddingii)	100	Y	OBL
2.			
3.			
4.			
Total Cover:	100		
Sapling/Shrub Stratum			
1. Ricinus communis	<1	N	FACU
2. Populus fremontii	<1	N	FACW
3. Baccharis salicifolia	2	Y	FACW
4.			
5.			
Total Cover:	4		
Herb Stratum			
1. Phalaris sp	1	~~Y~~ Y	Z-fac
2. Vitis californica	1	Y	facW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	2		
Woody Vine Stratum			
1.			
2.			
Total Cover:	~~[illegible]~~ 0		

% Bare Ground in Herb Stratum 98% % 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks: Inundated creek-bed. 2 braids 5' and 2'
Hydric Soil criteria - inundated for very long period

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- X 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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): 3"

Water Table Present? Yes ✓ No ___ Depth (inches): to surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): to surface

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: Riverside - Corona Feeder pipeline City/County: Riverside County Sampling Date: 7/28/08

Applicant/Owner: Western Municipal Water District State: CA Sampling Point: 4

Investigator(s): I. Chlup / K. Livergood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N 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:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	100	Y	OBL
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Berberis salicifolia	15	Y	FACW
2.			
3.			
4.			
5.			
Total Cover: 15			
Herb Stratum			
1. unidentified grass	15	Y	unk
2. Vitis californica	1	N	facw
3. Lolium multiflorum	5	N	NI
4. polypogon monspeliensis	1	N	FACW+
5. Phalaris	5	N	3fac
6.			
7.			
8.			
Total Cover: 27			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: minimum 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66-100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Terrace between braids

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					loamy sand	
5+	N 2.5/0	100					coarse loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

hydric only where inundation observed for long + very long periods in 2' + 5' brand (buffer)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 11

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: Pit at mouth of outlet

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Riverside-Corona Feeder Pipeline City/County: Riverside County Sampling Date: 7/28/08

Applicant/Owner: Western Municipal Water District State: CA Sampling Point: 5

Investigator(s): I. Chlup / K. Livergood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N 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:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus racemosa	10	N	FACW
2. Salix goddingii	40	Y	OBL
3. Salix laseolepis	10	N	FACW
4.			
Total Cover:	60		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Urtica dioica	5	N	FACW
2. Scirpus acutus	100	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	105		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

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 _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:
Pit taken at edge of bulrush.

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks: Ponded/inundated for very long duration
Hydric Soil criteria: ponded for very long durations

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- X 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 1

Water Table Present? Yes X No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

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: Riverside - Corona Feeder Pipeline City/County: Riverside County Sampling Date: 7/28/08

Applicant/Owner: Western Municipal Water District State: CA Sampling Point: 6

Investigator(s): I. Chlup / K. Livergood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Terrace in drainage Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N 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:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix gooddingii	40	D	OBL
2. Platanus racemosa	10		FACW
3. Salix laseolepis	10		FACW
4.			
Total Cover: 60			
Sapling/Shrub Stratum			
1. Tamarix sp.	5	D	FACW
2. Baccharis salicifolia	1		FACW
3.			
4.			
5.			
Total Cover: 6			
Herb Stratum			
1. Conyza canadensis	20	D	FAC
2. Phacelia sp.	5		2Fac
3. Xanthium strumarium	2		FAC+
4. Urtica dioica	2		FACW
5. Melilotus indica	5		FAC
6. Salix laseolepis	20	D	FACW
7.			
8.			
Total Cover: 54			
Woody Vine Stratum			
1.			
2.			
Total Cover: _____			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20							Clean sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No indicators present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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): 0

Water Table Present? Yes _____ No ✓ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): 0

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: Riverside-Corona Feeder Pipeline City/County: Riverside County Sampling Date: 7/28/08

Applicant/Owner: Western Municipal Water District State: CA Sampling Point: 7

Investigator(s): I. Chlup/K. Livergood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N 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:
Location: Santa Ana River terrace

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Baccharis salicifolia	25	D	FACW
2. Nicotiana glauca	10	D	FAC
3.			
4.			
5.			
Total Cover: 35			
Herb Stratum			
1. Heliotropium curassavicum	80	D	OBL
2. Hirschfeldia incana	15		UPL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 95			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/2	100					loam	large cobbles

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ 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 Plowed Soils (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ 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 indicators of hydrology present.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Monroe Channel
State:CA County/parish/borough: Riverside City: Riverside
Center coordinates of site (lat/long in degree decimal format): Lat. 33.9946° **Pick List**, Long. 117.454° **Pick List**.
Universal Transverse Mercator:
Name of nearest waterbody: Middle Santa Ana River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pacific Ocean
Name of watershed or Hydrologic Unit Code (HUC): 801.26 Middle Santa Ana River - Arlington HSA
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 873 linear feet: 14 to 18' width (ft) and/or 0.31 acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

---

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
  Wetland size: acres
  Wetland type. Explain: .
  Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
  Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
  ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
  ☐ Discrete wetland hydrologic connection. Explain: .
  ☐ Ecological connection. Explain: .
  ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Personal Observation and aerial photography.
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **872** linear feet **14-18** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

---

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:24k, Fontana, San Bernardino West, and Riverside West.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Western Riverside Area and Southwestern San Bernardino Area.
☒ National wetlands inventory map(s). Cite name:FWS Inventory.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Eagle Aerial 2006, USGS Seamless Server and Google accessed April 22, 2009.
or ☒ Other (Name & Date):GLA site photographs July 2008.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Feature 8
State:CA County/parish/borough: Riverside City: Riverside
Center coordinates of site (lat/long in degree decimal format): Lat. 33.940° **Pick List**, Long. 117.441° **Pick List**.
Universal Transverse Mercator:
Name of nearest waterbody: Middle Santa An River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pacific Ocean
Name of watershed or Hydrologic Unit Code (HUC): 801.26 Middle Santa Ana River - Arlington HSA
☐ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 228 linear feet: 6 width (ft) and/or 0.03 acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
  Wetland size: acres
  Wetland type. Explain: .
  Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
  Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
  ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
  ☐ Discrete wetland hydrologic connection. Explain: .
  ☐ Ecological connection. Explain: .
  ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Personal Observation and aerial photography .
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **228** linear feet **6** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☒ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:24k, Fontana, San Bernardino South, and Riverside West.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Western Riverside and Southwestern San Bernardino Area Surveys.
☒ National wetlands inventory map(s). Cite name:FWS Inventory.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Eagle Aerial 2006, USGS Seamless Server and Google accessed April 22, 2009.
or ☒ Other (Name & Date):GLA site photograph, July 2008.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Arlington Channel
State:CA County/parish/borough: Riverside City: Riverside
Center coordinates of site (lat/long in degree decimal format): Lat. 33.919° **Pick List**, Long. 117.345° **Pick List**.
Universal Transverse Mercator:
Name of nearest waterbody: Middle Santa Ana River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pacific Ocean
Name of watershed or Hydrologic Unit Code (HUC): 801.26 Middle Santa Ana River - Arlinton HSA
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 563 linear feet: 3 width (ft) and/or 0.07 acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
  Wetland size: acres
  Wetland type. Explain: .
  Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
  Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
  ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
  ☐ Discrete wetland hydrologic connection. Explain: .
  ☐ Ecological connection. Explain: .
  ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Personal Observation and Aerial Photography.
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Personal Observation and Aerial Photography.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **563** linear feet **3** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:24k, Riverside West, Fontana and San Bernardino South.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Western Riverside Area and Southwestern San Bernardino Area Surveys.
☒ National wetlands inventory map(s). Cite name:FWS inventory.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Eagle Aerial 2006, USGS Seamless Server and Google accessed April 22, 2009.
or ☒ Other (Name & Date):GLA Site Photographs April 23, 2009.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: SANTA ANA RIVER
State:CA County/parish/borough: RIVERSIDE City: Riverside and unicorporated Riverside County
Center coordinates of site (lat/long in degree decimal format): Lat. 33.964° **N**, Long. 117.466° **W**.
Universal Transverse Mercator:
Name of nearest waterbody: Prado Basin-Santa Ana River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pacific Ocean
Name of watershed or Hydrologic Unit Code (HUC): 801.21 Middle Santa Ana River
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 500 linear feet: 920 width (ft) and/or 10.05 acres.
   Wetlands: 0.40 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **square miles**
Drainage area: **square miles**
Average annual rainfall: inches
Average annual snowfall: 0.0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

---

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Relatively stable.
Presence of run/riffle/pool complexes. Explain: Present within perennial low-flow braids.
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: Perennial.
Other information on duration and volume: .

Surface flow is: **Discrete and confined.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
  Wetland size: acres
  Wetland type. Explain: .
  Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
  Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
  ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
  ☐ Discrete wetland hydrologic connection. Explain: .
  ☐ Ecological connection. Explain: .
  ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
  ☐ Federally Listed species. Explain findings: .
  ☐ Fish/spawn areas. Explain findings: .
  ☐ Other environmentally-sensitive species. Explain findings: .
  ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: personal observation and aerial photography.
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **500** linear feet **920** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:24k, Fontana, San Bernardino South, and Riverside West.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Western Riverside Area, Southwestern San Bernardino Area.
☒ National wetlands inventory map(s). Cite name:FWS Wetland inventory.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Eagle Aerial 2006, USGS Seamless Server and Google accessed April 22, 2009 .
or ☒ Other (Name & Date):GLA Site Photographs July 2008.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

RESULTS OF WINTERING SEASON FOCUSED PROTOCOL SURVEYS FOR THE WESTERN BURROWING OWL (*Athene cunicularia hypugaea*) FOR THE CENTRAL REACH OF THE RIVERSIDE CORONA FEEDER PIPELINE, RIVERSIDE COUNTY, CALIFORNIA

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I. SUMMARY

This report discusses the results of wintering season focused protocol surveys conducted at the Central Reach of the Riverside Corona Feeder Pipeline Extending from the Intersection of Cleveland Avenue and Jackson Street to the Intersection of Limonite and Clay Street (Project Site), for the western burrowing owl (*Athene cunicularia hypugaea*) [Exhibit 1: Regional Map and Exhibit 2: Vicinity Map]. On December 5, 10, 11, and 12, 2008, biologists from Glenn Lukos Associates, Inc. conducted focused protocol surveys for the burrowing owl following wintering season protocol guidelines of the California Burrowing Owl Consortium and the California Department of Fish and Game (CDFG). No burrowing owls were observed during the wintering season survey. No potential burrows were located within the Project Site and eight (8) potential burrows were observed within the 500-foot buffer area of the Project Site, none of which contained diagnostic signs (whitewash, pellets, small mammal bones, and feathers) of burrowing owl activity.

II. BIOLOGY AND DISTRIBUTION OF THE BURROWING OWL

The western burrowing owl (*Athene cunicularia hypugaea*) is designated as a Federal species of concern and is also designated as a State species of concern by the California Department of Fish and Game. The burrowing owl has a broad distribution, breeding from southern Canada (nearly extirpated in some areas), and south through eastern Washington, central Oregon, and California to Baja California, east to western Minnesota, northwestern Iowa, eastern Nebraska, central Kansas, Oklahoma, eastern Texas, Louisiana, and south to central Mexico (AOU 1957). This winter range is much the same as the breeding range, except that most burrowing owls apparently vacate the northern areas of the Great Plains and Great Basin (Haug et al. 1993).

In California, the burrowing owl is a yearlong resident formerly common in appropriate habitats throughout the state, excluding the humid northwest coastal forests and high mountains (Zeiner et al. 1990). It is present on the larger offshore islands and is found as high as 5,300 feet in Lassen County. Generally, burrowing owls occur in the Central Valley extending from Redding south to the Grapevine, east through the Mojave desert and west to San Jose, the San Francisco Bay area, the outer coastal foothills area which extend from Monterey south to San Francisco, and also in the Sonoran desert (Grinnell and Miller 1944). The owl is also a resident in the open areas of the lowlands over much of the southern California region (Garrett and Dunn 1981).

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrubland characterized by low-growing vegetation (Zarn 1974). Suitable habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as

ground squirrels or badgers, but also may use man-made structures, such as cement culverts; debris piles of cement, asphalt, or wood; or openings beneath cement or asphalt pavement. Burrowing owls may also use a variety of developed areas including golf courses, cemeteries, airports, vacant lots, abandoned buildings, and irrigation ditches (Haug et al 1993). Occasionally owls may dig their own burrow in soft, friable soil (Robertson 1929). Owls will modify and enlarge the mammal burrows for their use. One burrow is typically selected for use as a nest, however, satellite burrows are usually found within the immediate vicinity of the nest burrow within the defended territory of the owl. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992).

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (whitewash) at or near a burrow entrance.

The burrowing owl is a crepuscular hunter (active during the dawn and dusk hours) with a prey base including invertebrates and small vertebrates (Thomsen 1971). They may hunt by using short flights, running along the ground, hovering or by using an elevated perch from where prey is spotted. Burrowing owls are relatively opportunistic foragers (Haug et al. 1993). Their diet is composed of a variety of foods, mainly including insects and small mammals, although they may also take reptiles, other birds, and carrion.

III. SITE DESCRIPTION

Disturbed areas that contain suitable habitat for the western burrowing owls are scattered along the central reach of the proposed pipeline within the 500-foot buffer area. These areas are routinely maintained (or disced) fields that contain ruderal vegetation, debris piles, and spoil mounds. Some of these areas are remnant agricultural fields.

No California ground squirrels (*Spermohpilus beecheyi*) were observed within any of the suitable habitat areas, however, eight (8) California ground squirrel burrows were observed. Additional mammals observed within the 500-foot buffer area include desert cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), domestic cat (*Felis catus*), domestic dog (*Canis lupus familiaris*), and domestic horse (*Equus caballus*).

Birds observed within the Project Site and the 500-foot buffer area include house finch (*Carpodacus mexicanus*), mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), Cassin's kingbird (*Tyrannus vociferans*), American crow (*Corvus brachyrhynchos*), western gull (*Larus occidentalis*), Anna's hummingbird (*Calypte anna*), killdeer (*Charadrius vociferus*), lesser goldfinch (*Cardeulis psaltria*), California towhee (*Pipilo crissalis*), European starling (*Sturnus vulgaris*), western meadowlark (*Sturnella neglecta*), yellow-rumped warbler (*Dendroica*

coronata), rock dove (*Columbia livia*), red-tailed hawk (*Buteo jamaicensis*) [overhead], American kestrel (*Falco sparverius*) [overhead], Canada goose (*Branta canadensis*) [overhead], white-crowned sparrow (*Zonotrichia leucophrys*), mallard (*Anas platyrhynchos*) [overhead], and snowy egret (*Egretta thula*) [overhead].

No reptiles or amphibians were observed within the Project Site or the 500-foot buffer area during the winter surveys.

3.1 Soils

The Soil Conservation Service (SCS)[1] has mapped the following soil types as occurring within the western burrowing owl suitable habitat located within the 500-foot buffer area of the Project Site:

Arlington Loam, 2 to 5 Percent Slopes (ApB) and Arlington Fine Sandy Loam, Deep, 2 to 8 Percent Slopes (AoC)

The Arlington series consists of well-drained soils on alluvial fans and terraces. Slopes range from 0 to 35 percent, but most slopes are less than 15 percent. These soils developed in alluvium, dominantly from granitic rocks. Vegetation typically associated with the Arlington soils includes annual grasses, forbs, and chamise. In a typical profile, the surface layer is brown loam about 7 inches thick. The subsoil is brown and reddish-brown loam about 17 inches thick. Underlying the subsoil is weakly cemented alluvium. Arlington soils are used for dryland grain, pasture, and range and for irrigated citrus crops, truck crops, and grain. They are also used for nonfarm purposes.

Buchenau Loam, Slightly Saline-Alkali, 2 to 8 Percent Slopes (BhC)

The Buchenau series consists of moderately well drained soils on alluvial fans. Slopes range from 0 to 8 Percent. These soils developed in mixed alluvium and are underlain by a platy, calcareous hardpan. Vegetation typically associated with the Buchenau soils includes annual grasses, saltgrass, and forbs. In a typical profile, the surface layer is brown loam about 10 inches thick. The subsoil is yellowish-brown, brown, and pale-brown clay loam and loam about 29 inches thick. The substratum is light brownish-gray loam, which overlies a cemented, platy hardpan at a depth of about 52 inches. The Buchenau soils are used for irrigated truck crops, alfalfa, permanent pasture, and grain. They are also used for dryland pasture and range, and for nonfarm purposes.

Buren Fine Sandy Loam, 2 to 8 Percent Slopes, Eroded (BuC2)

In the Buren series are moderately well drained soils on terraces and alluvial fans. Slopes range from 2 to 15 percent. These soils developed in alluvium from mixed sources and are underlain by a weakly cemented pan. Vegetation typically associated with the Buren soils includes annual grasses, forbs, and chamise. In a typical progfile, the surface layer

[1] SCS is now known as the National Resource Conservation Service or NRCS.

is yellowish-brown and brown fine sandy loam about 12 inches thick. The subsoil is brown and pale-brown clay loam in the upper part. It becomes light olive-brown loam at a depth of 28 inches. The substratum is yellowish-brown, weakly cemented loam at a depth of about 37 inches. The Buren soils are used for irrigated citrus, truck crops, and alfalfa, for dryland grain, pasture, and range, and for nonfarm purposes.

Dello Loamy Sand, Poorly Drained, 0 to 2 Percent Slopes (DmA)

In the Dello series are somewhat poorly drained to poorly drained soils on alluvial fans and flood plains. Slopes range from 0 to 5 percent. These soils developed in alluvium consisting mainly of granitic material. Vegetation typically associated with the Dello soils includes annual grasses, tarweed, willows, and in few areas, cottonwood trees. In a typical, the surface layer is grayish-brown loamy fine sand about 8 inches thick. Below is light brownish-gray loamy fine sand and light-gray sand, and this material extends to s depth of several feet. The Dello soils are used for dryland pasture and grain, for irrigated alfalfa, and for homesites.

Hanford Coarse Sandy Loam, 2 to 8 Percent Slopes (HcC)

The Hanford series consists of well-drained and somewhat excessively drained soils on alluvial fans. Slopes are 0 to 15 percent. These soils developed in alluvium made up of granitic materials. Vegetation typically associated with the Hanford soils includes annual grasses, forbs, and chamise. Typically, the upper 18 inches of the profile is grayish-brown coarse sandy loam. Underlying this is brown, stratified coarse sandy loam and loamy sand. The Hanford soils are used for dryland pasture and grain and for irrigated alfalfa, potatoes, citrus, grapes, and grain. They are also used for homesites.

Madera Fine Sandy Loam, Shallow, 2 to 8 Percent Slopes, Eroded (MbC2)

In the Madera series are moderately well drained soils on dissected terraces and old alluvial fans. Slopes are 0 to 15 percent. These soils developed in alluvium consisting mainly of granitic materials. Vegetation typically associated with the Madera soils includes annual grasses, forbs, and chamise. In a typical profile, the surface layer is pale-brown and brown fine sandy loam about 19 inches thick. The subsoil is yellowish-brown clay. At a depth of about 26 inches is a yellowish-brown indurated hardpan. The Madera soils are used for dryland pasture and grain and for irrigated alfalfa, grain, and sugar beets. They are also used for homesites and other nonfarm purposes.

Porterville Clay, Moderately Deep, Slightly Saline-Alkali, 0 to 5 Percent Slopes (PtB)

In the Porterville series are well-drained soils on alluvial fans. Slopes range from 0 to 15 percent. These soils developed in alluvium consisting mainly of very fine basic igneous materials. Vegetation typically associated with the Porterville soils includes annual grasses, forbs, salvia, and buckwheat. In a typical profile, the surface layer is brown cobbly clay and clay about 15 inches thick. The next layer is reddish-brown clay about 10

inches thick. Underlying this, to a depth of several feet, is brown and yellowish-red clay. The Porterville soils are used for dryland grain, pasture, and range and for irrigated citrus, alfalfa, and truck crops. Small areas are used for homesites and other nonfarm purposes.

Terrace Escarpments (TeG)

Terrace escarpments consist of variable alluvium on terraces or barrancas. Slopes range from 30 to 75 percent. Small areas of recently deposited alluvium may be near the bottom of the escarpments. This land type may have exposed "rim pan," gravel cobblestones, stones, or large boulders in variable quantities. Approximately one-quarter of the acreage is made up of eroded spots and active gullies that head toward the terrace top.

This land is unaltered alluvial outwash derived from granite, gabbro, metamorphosed sandstone, sandstone, or mica-schist. It has various soil profiles that are commonly truncated. The material is light grayish brown to brown in color and slightly acid to neutral in reaction.

Vegetation typically associated with terrace escarpments includes annual grasses, salvia, flat-top buckwheat, and chamise. This land is generally idle where it is included in tilled fields, but if the fields are pastured, some forage is provided. Where this land is near areas of croplands, it furnishes a habitat for small game, such as rabbits, doves, and quail.

3.2 Plant Communities

As previously mentioned, the Proposed Pipeline Alignment falls within existing roadways including Clay Street, Van Buren Boulevard, Doolittle Avenue, and Jackson Street with the exception of approximately 1,700 feet that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus of Doolittle Street. However, disturbed areas that contain suitable habitat for the western burrowing owls are scattered along the central reach of the proposed pipeline within the 500-foot buffer area. These areas are routinely maintained (or disced) fields that contain ruderal vegetation, debris piles, and spoil mounds. Some of these areas are remnant agricultural fields.

Vegetation observed within the potentially suitable burrowing owl habitat in the 500-foot buffer area includes Bermuda grass (*Cynodon dactylon*), telegraph weed (*Heterotheca grandiflora*), red brome (*Bromus madritensis* ssp. *rubens*), California encelia (*Encelia californica*), summer mustard (*Hirschfeldia incana*), western ragweed (*Ambrosia psilostachya*), Russian thistle (*Salsola tragus*), tocalote (*Centaurea melitensis*), western sunflower (*Helianthus annus*), common cryptantha (*Cryptantha intermedia*), California aster (*Lessingia filaginifolia*), red-stemmed filare (*Erodium cicutarium*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), sweet bush (*Bebia juncea*), tree tobacco (*Nicotiana glauca*), giant reed (*Arundo donax*), tree of heaven (*Ailanthus altissima*), alkali heliotrope (*Heliotropium cuarassivicum*),

Jimson weed (*Datura wrightii*), field binweed (*Convolvulus arvensis*), Australian saltbush (*Atriplex semibaccata*), Russian knapweed (*Centaurea repens*), and common knotweed (*Polygonum arenastrum*).

IV. METHODOLOGY

GLA biologists conducted focused protocol surveys for the western burrowing owl following the wintering season protocol guidelines prepared by the California Burrowing Owl Consortium and California Department of Fish and Game (CDFG). Biologists conducted a total of four survey visits. Survey visits were conducted on December 5, 10, 11, and 12, 2008. Table 1 provides a list of the survey dates, including the surveying biologists and weather conditions.

Table 1. Summary of Focused Survey Visits

Date	Biologists	Start Time	Weather Conditions
12/05/08	Justin Meyer	0630 am	58°F, clear, 1-3 wind, good visibility
12/10/08	Justin Meyer	0630 am	46°F, clear, 1-3 wind, good visibility
12/11/08	Justin Meyer	0630 am	46°F, 80% cloud cover, 0-1 wind, good visibility
12/12/08	Justin Meyer	0630 am	47°F, 70% cloud cover, no wind, good visibility

As previously noted, the Proposed Pipeline Alignment falls within existing roadways including Clay Street, Van Buren Boulevard, Doolittle Avenue, and Jackson Street with the exception of approximately 1,700 feet that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus of Doolittle Street. No suitable burrowing owl habitat is located within the Proposed Pipeline Alignment. Therefore, no transects were conducted along the Proposed Pipeline Alignment. However, disturbed areas that contain suitable habitat for the western burrowing owls are scattered along the central reach of the proposed pipeline within the 500-foot buffer area. GLA biologists did not have permission to access the off-site suitable habitat areas within the 500-foot buffer area, therefore biologists walked the entire boundaries of the 500-foot buffer areas that contained suitable habitat for the western burrowing owl to survey for owls and occupied burrows.

All potential burrows (and any diagnostic sign) were mapped using a handheld Global Positioning System (GPS). Four survey visits were conducted for the western burrowing owl pursuant to the protocol guidelines of the California Burrowing Owl Consortium and the California Department of Fish and Game (CDFG). Off site areas (within 500 feet of the property) were also considered for owls, to account for additional on site foraging habitat that could be used by off site owls and for indirect impacts. Burrows would be

mapped as occupied if owls were observed at or near the burrows, or if the burrows exhibited diagnostic signs (i.e., whitewash, pellets, bones, feathers, etc.).

Biologists used binoculars to survey for owls from fixed locations throughout the 500-foot buffer areas. Survey locations were placed at a distance from any potential burrows to minimize the affect of the presence of the surveyors, should owls be present.

V. RESULTS

During focused surveys conducted for the 2008/2009 wintering season, no burrowing owls were observed within the Project Site or within the 500-foot buffer area. Eight (8) burrows were mapped as potential burrowing owl burrows, none of which contained any diagnostic signs of burrowing owls.

Based on the results of habitat assessments and focused surveys, it was determined that the Project Site and the 500-foot buffer areas that contain suitable western burrowing owl habitat do not support any wintering western burrowing owls due to the lack of diagnostic sign within the Project Site or the 500-foot buffer area.

Pre-construction presence/absence surveys for burrowing owls are recommended where suitable habitat is present (i.e. potential burrowing owl burrows). Surveys should be conducted within 30 days prior to disturbance. Take of active nests will be avoided. Passive exclusion (use of one way doors and collapse of burrows) will occur if owls are present outside the nesting season.

If you have any questions regarding this letter report, please contact Justin Meyer at (949) 837-0404 ext 47.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Justin Meyer
Biologist
0640-6a.burrowingowl.doc

VI. REFERENCES

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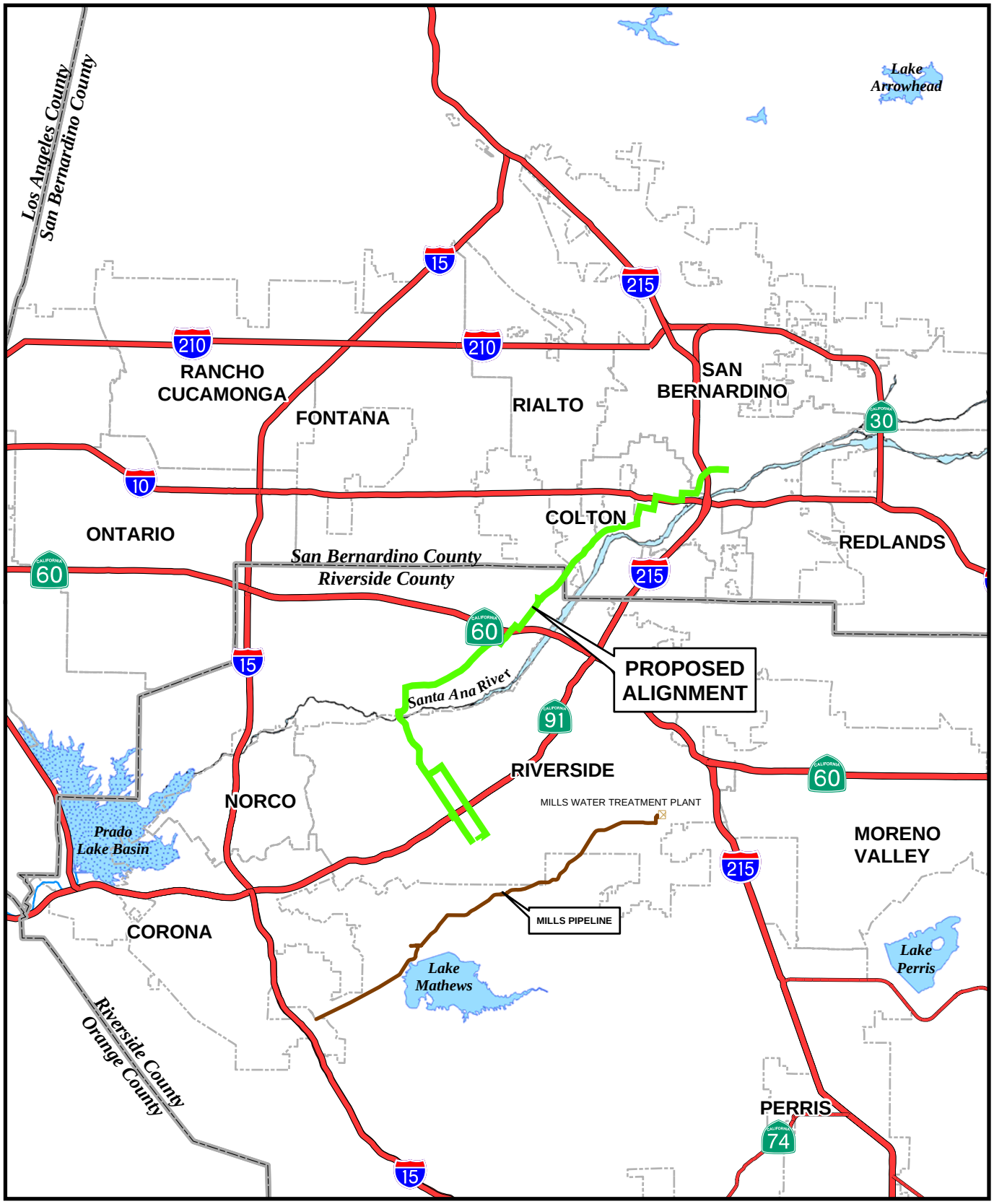

Not to Scale

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ALBERT A. WEBB ASSOCIATES

Figure 1

Regional Location

Riverside Corona Feeder

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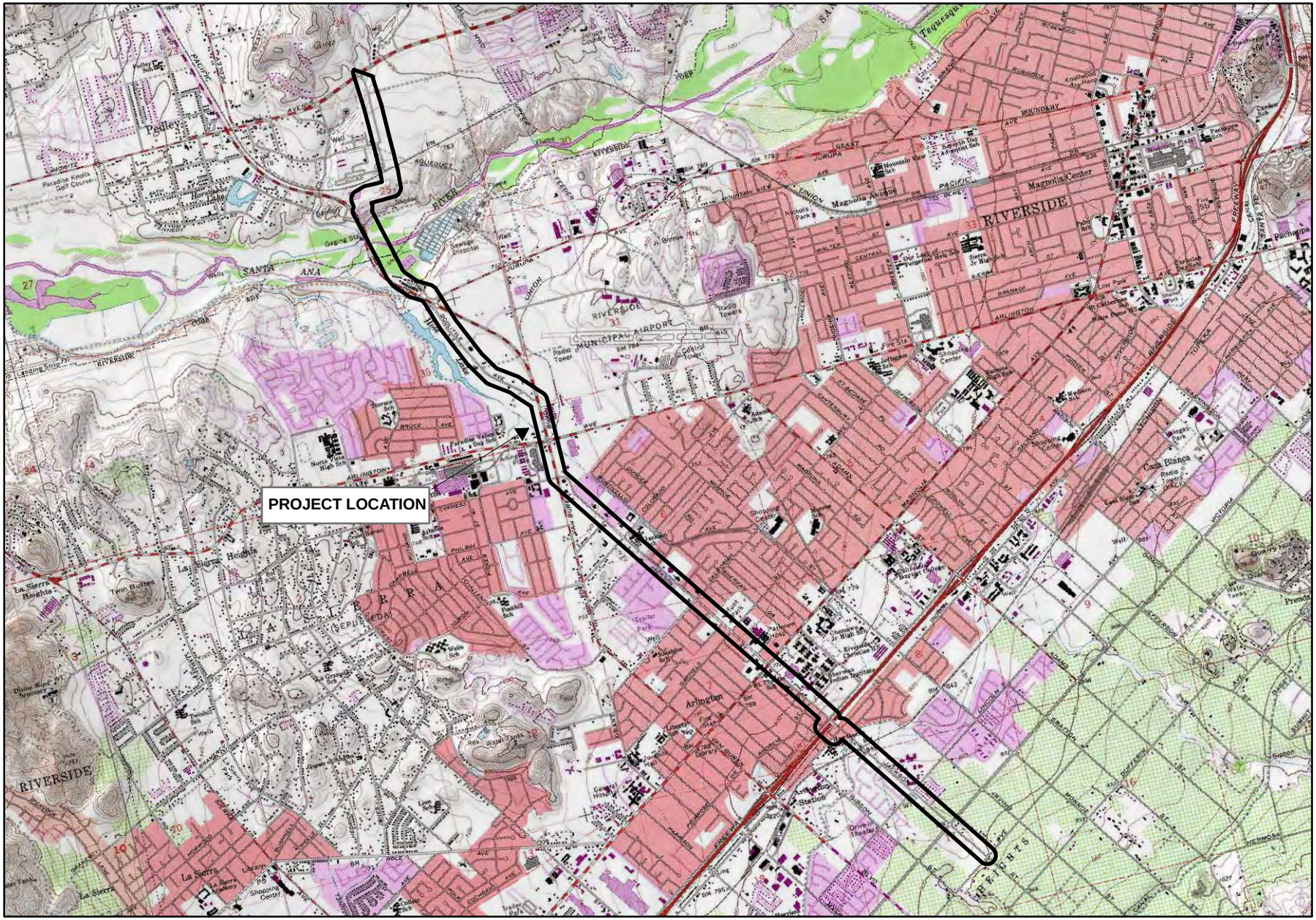
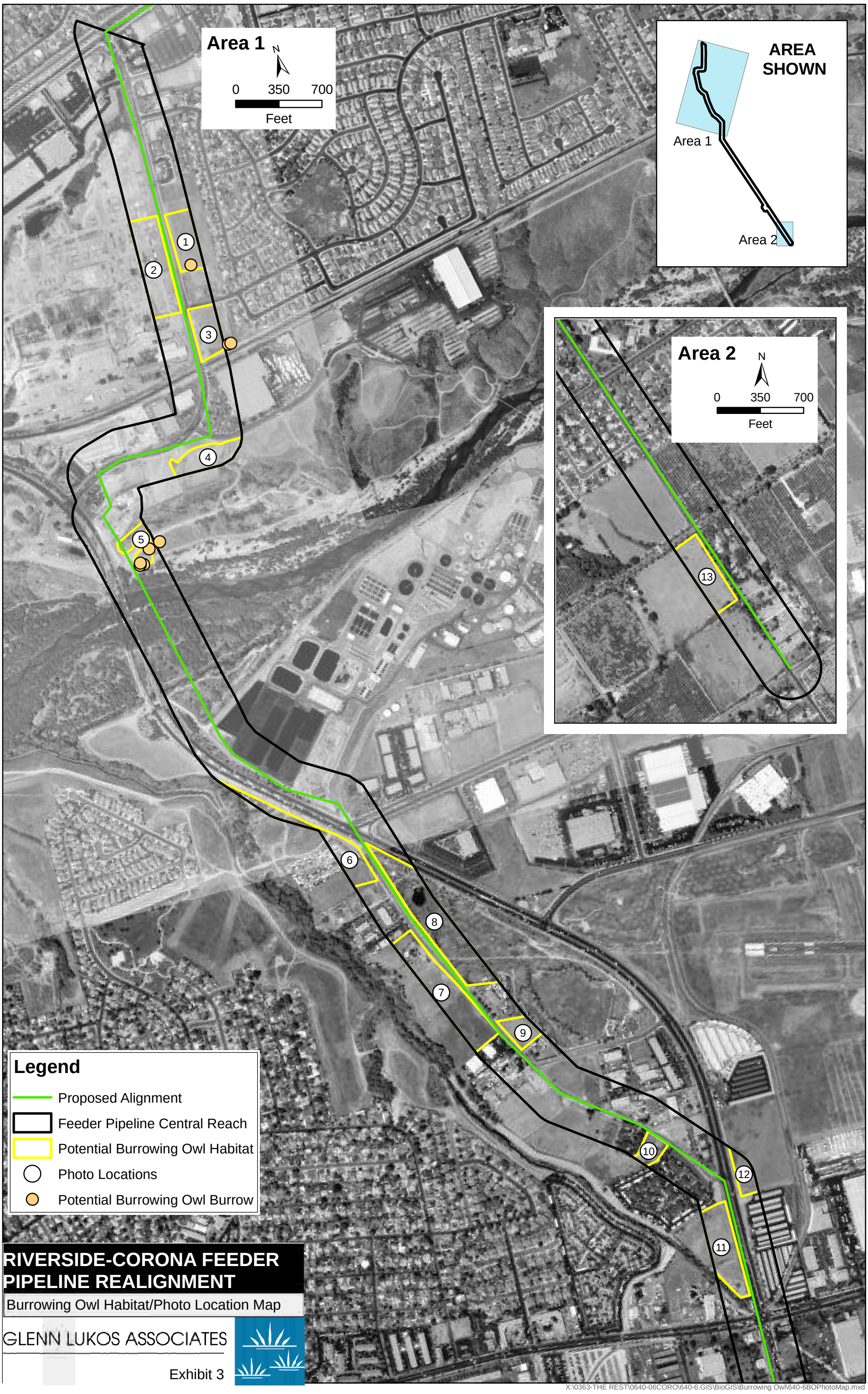


RIVERSIDE-CORONA FEEDER PIPELINE REALIGNMENT

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



RIVERSIDE-CORONA FEEDER PIPELINE REALIGNMENT

Burrowing Owl Habitat/Photo Location Map

GLENN LUKOS ASSOCIATES

Exhibit 3

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RESULTS OF NESTING SEASON FOCUSED PROTOCOL SURVEYS FOR THE WESTERN BURROWING OWL (*Athene cunicularia hypugaea*) FOR THE CENTRAL REACH OF THE RIVERSIDE CORONA FEEDER PIPELINE, RIVERSIDE COUNTY, CALIFORNIA

Prepared for Albert A. Webb Associates
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Phone: 951- 248-4260. Contact: Richard MacHott

Prepared by Glenn Lukos Associates
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Contact: Justin Meyer

May 12, 2009

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I. SUMMARY

This report discusses the results of nesting season focused protocol surveys conducted at the Central Reach of the Riverside Corona Feeder Pipeline Extending from the Intersection of Cleveland Avenue and Jackson Street to the Intersection of Limonite and Clay Street (Project Site), for the western burrowing owl (*Athene cunicularia hypugaea*) [Exhibit 1: Regional Map and Exhibit 2: Vicinity Map]. On March 24, 25, April 22, and 30, 2009 biologists from Glenn Lukos Associates, Inc. conducted focused protocol surveys for the burrowing owl following nesting season protocol guidelines of the California Burrowing Owl Consortium and the California Department of Fish and Game (CDFG). No burrowing owls or diagnostic signs (whitewash, pellets, small mammal bones, and feathers) of burrowing owls were observed during the nesting season survey. No potential burrows were located within the Project Site and nine (9) potential burrows were observed within the 500-foot buffer area of the Project Site, none of which contained diagnostic signs (whitewash, pellets, small mammal bones, and feathers) of burrowing owl activity [Exhibit 3: Burrowing Map].

II. BIOLOGY AND DISTRIBUTION OF THE BURROWING OWL

The western burrowing owl (*Athene cunicularia hypugaea*) is designated as a Federal species of concern and is also designated as a State species of concern by the California Department of Fish and Game. The burrowing owl has a broad distribution, breeding from southern Canada (nearly extirpated in some areas), and south through eastern Washington, central Oregon, and California to Baja California, east to western Minnesota, northwestern Iowa, eastern Nebraska, central Kansas, Oklahoma, eastern Texas, Louisiana, and south to central Mexico (AOU 1957). This winter range is much the same as the breeding range, except that most burrowing owls apparently vacate the northern areas of the Great Plains and Great Basin (Haug et al. 1993).

In California, the burrowing owl is a yearlong resident formerly common in appropriate habitats throughout the state, excluding the humid northwest coastal forests and high mountains (Zeiner et al. 1990). It is present on the larger offshore islands and is found as high as 5,300 feet in Lassen County. Generally, burrowing owls occur in the Central Valley extending from Redding south to the Grapevine, east through the Mojave desert and west to San Jose, the San Francisco Bay area, the outer coastal foothills area which extend from Monterey south to San Francisco, and also in the Sonoran desert (Grinnell and Miller 1944). The owl is also a resident in the open areas of the lowlands over much of the southern California region (Garrett and Dunn 1981).

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrubland characterized by low-growing vegetation (Zarn 1974). Suitable habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and

Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; debris piles of cement, asphalt, or wood; or openings beneath cement or asphalt pavement. Burrowing owls may also use a variety of developed areas including golf courses, cemeteries, airports, vacant lots, abandoned buildings, and irrigation ditches (Haug et al 1993). Occasionally owls may dig their own burrow in soft, friable soil (Robertson 1929). Owls will modify and enlarge the mammal burrows for their use. One burrow is typically selected for use as a nest, however, satellite burrows are usually found within the immediate vicinity of the nest burrow within the defended territory of the owl. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992).

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (whitewash) at or near a burrow entrance.

The burrowing owl is a crepuscular hunter (active during the dawn and dusk hours) with a prey base including invertebrates and small vertebrates (Thomsen 1971). They may hunt by using short flights, running along the ground, hovering or by using an elevated perch from where prey is spotted. Burrowing owls are relatively opportunistic foragers (Haug et al. 1993). Their diet is composed of a variety of foods, mainly including insects and small mammals, although they may also take reptiles, other birds, and carrion.

III. SITE DESCRIPTION

Disturbed areas that contain suitable habitat for the western burrowing owls are scattered along the central reach of the proposed pipeline within the 500-foot buffer area [Exhibit 4: Site Photos]. These areas are routinely maintained (or disced) fields that contain ruderal vegetation, debris piles, and spoil mounds. Some of these areas are remnant agricultural fields. The ruderal vegetation that exists in most of the disturbed areas is approximately 18 inches to 24 inches tall and has completely covered all but three of the potential burrows.

California ground squirrels (*Spermohpilus beecheyi*) were observed on a debris piles within the suitable habitat area and nine (9) California ground squirrel burrows or small mammal burrows were observed within the 500-foot buffer area. Additional mammals observed within the 500-foot buffer area include desert cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), domestic dog (*Canis familiaris*), domestic cat (*Felis catus*), and domestic horse (*Equus caballus*).

Birds observed within the Project Site and the 500-foot buffer area include house finch (*Carpodacus mexicanus*), mourning dove (*Zenaida macroura*), black phoebe (*Sayornis*

nigricans), American crow (*Corvus brachyrhynchos*), western gull (*Larus occidentalis*) [overhead], Anna's hummingbird (*Calypte anna*), killdeer (*Charadrius vociferus*), lesser goldfinch (*Cardeulis psaltria*), California towhee (*Pipilo crissalis*), European starling (*Sturnus vulgaris*), western meadowlark (*Sturnella neglecta*), rock pigeon (*Columbia livia*), red-tailed hawk (*Buteo jamaicensis*) [overhead], white-crowned sparrow (*Zonotrichia leucophrys*), snowy egret (*Egretta thula*) [overhead], savannah sparrow (*Passerculus sandwichensis*), house sparrow (*Passer domesticus*), song sparrow (*Melospiza melodia*), spotted towhee (*Pipilo maculatus*), northern mockingbird (*Mimus polyglottos*), California quail (*Callipepla californica*), bushtit (*Psaltriparus minimus*), common yellowthroat (*Geothlypis trichas*), northern rough-winged swallow (*Stelgidopteryx serripennis*), Canada goose (*Branta canadensis*) [overhead], double-crested cormorant (*Phalacrocorax auritus*) [overhead], Bewick's wren (*Thryomanes bewickii*), red-winged blackbird (*Agelaius phoeniceus*), great egret (*Ardea alba*) [overhead], house wren (*Troglodytes aedon*), hooded oriole (*Icterus cucullatus*), Nuttall's woodpecker (*Picoides nuttallii*), mallard (*Anas platyrhynchos*) [overhead], Brewer's blackbird (*Euphagus cyanocephalus*), and barn swallow (*Hirundo rustica*).

No amphibians and one reptile, the side-blotched lizard (*Uta stansburiana*), were observed within the Project Site or the 500-foot buffer area during the nesting surveys.

3.1 Soils

The Soil Conservation Service (SCS)[1] has mapped the following soil types as occurring within the western burrowing owl suitable habitat located within the 500-foot buffer area of the Project Site:

Arlington Loam, 2 to 5 Percent Slopes (ApB) and Arlington Fine Sandy Loam, Deep, 2 to 8 Percent Slopes (AoC)

The Arlington series consists of well-drained soils on alluvial fans and terraces. Slopes range from 0 to 35 percent, but most slopes are less than 15 percent. These soils developed in alluvium, dominantly from granitic rocks. Vegetation typically associated with the Arlington soils includes annual grasses, forbs, and chamise. In a typical profile, the surface layer is brown loam about 7 inches thick. The subsoil is brown and reddish-brown loam about 17 inches thick. Underlying the subsoil is weakly cemented alluvium. Arlington soils are used for dryland grain, pasture, and range and for irrigated citrus crops, truck crops, and grain. They are also used for nonfarm purposes.

Buchenau Loam, Slightly Saline-Alkali, 2 to 8 Percent Slopes (BhC)

The Buchenau series consists of moderately well drained soils on alluvial fans. Slopes range from 0 to 8 Percent. These soils developed in mixed alluvium and are underlain by a platy, calcareous hardpan. Vegetation typically associated with the Buchenau soils

[1] SCS is now known as the National Resource Conservation Service or NRCS.

includes annual grasses, saltgrass, and forbs. In a typical profile, the surface layer is brown loam about 10 inches thick. The subsoil is yellowish-brown, brown, and pale-brown clay loam and loam about 29 inches thick. The substratum is light brownish-gray loam, which overlies a cemented, platy hardpan at a depth of about 52 inches. The Buchenau soils are used for irrigated truck crops, alfalfa, permanent pasture, and grain. They are also used for dryland pasture and range, and for nonfarm purposes.

Buren Fine Sandy Loam, 2 to 8 Percent Slopes, Eroded (BuC2)

In the Buren series are moderately well drained soils on terraces and alluvial fans. Slopes range from 2 to 15 percent. These soils developed in alluvium from mixed sources and are underlain by a weakly cemented pan. Vegetation typically associated with the Buren soils includes annual grasses, forbs, and chamise. In a typical progfile, the surface layer is yellowish-brown and brown fine sandy loam about 12 inches thick. The subsoil is brown and pale-brown clay loam in the upper part. It becomes light olive-brown loam at a depth of 28 inches. The substratum is yellowish-brown, weakly cemented loam at a depth of about 37 inches. The Buren soils are used for irrigated citrus, truck crops, and alfalfa, for dryland grain, pasture, and range, and for nonfarm purposes.

Dello Loamy Sand, Poorly Drained, 0 to 2 Percent Slopes (DmA)

In the Dello series are somewhat poorly drained to poorly drained soils on alluvial fans and flood plains. Slopes range from 0 to 5 percent. These soils developed in alluvium consisting mainly of granitic material. Vegetation typically associated with the Dello soils includes annual grasses, tarweed, willows, and in few areas, cottonwood trees. In a typical, the surface layer is grayish-brown loamy fine sand about 8 inches thick. Below is light brownish-gray loamy fine sand and light-gray sand, and this material extends to s depth of several feet. The Dello soils are used for dryland pasture and grain, for irrigated alfalfa, and for homesites.

Hanford Coarse Sandy Loam, 2 to 8 Percent Slopes (HcC)

The Hanford series consists of well-drained and somewhat excessively drained soils on alluvial fans. Slopes are 0 to 15 percent. These soils developed in alluvium made up of granitic materials. Vegetation typically associated with the Hanford soils includes annual grasses, forbs, and chamise. Typically, the upper 18 inches of the profile is grayish-brown coarse sandy loam. Underlying this is brown, stratified coarse sandy loam and loamy sand. The Hanford soils are used for dryland pasture and grain and for irrigated alfalfa, potatoes, citrus, grapes, and grain. They are also used for homesites.

Madera Fine Sandy Loam, Shallow, 2 to 8 Percent Slopes, Eroded (MbC2)

In the Madera series are moderately well drained soils on dissected terraces and old alluvial fans. Slopes are 0 to 15 percent. These soils developed in alluvium consisting mainly of granitic materials. Vegetation typically associated with the Madera soils

includes annual grasses, forbs, and chamise. In a typical profile, the surface layer is pale-brown and brown fine sandy loam about 19 inches thick. The subsoil is yellowish-brown clay. At a depth of about 26 inches is a yellowish-brown indurated hardpan. The Madera soils are used for dryland pasture and grain and for irrigated alfalfa, grain, and sugar beets. They are also used for homesites and other nonfarm purposes.

Porterville Clay, Moderately Deep, Slightly Saline-Alkali, 0 to 5 Percent Slopes (PtB)

In the Porterville series are well-drained soils on alluvial fans. Slopes range from 0 to 15 percent. These soils developed in alluvium consisting mainly of very fine basic igneous materials. Vegetation typically associated with the Porterville soils includes annual grasses, forbs, salvia, and buckwheat. In a typical profile, the surface layer is brown cobbly clay and clay about 15 inches thick. The next layer is reddish-brown clay about 10 inches thick. Underlying this, to a depth of several feet, is brown and yellowish-red clay. The Porterville soils are used for dryland grain, pasture, and range and for irrigated citrus, alfalfa, and truck crops. Small areas are used for homesites and other nonfarm purposes.

Terrace Escarpments (TeG)

Terrace escarpments consist of variable alluvium on terraces or barrancas. Slopes range from 30 to 75 percent. Small areas of recently deposited alluvium may be near the bottom of the escarpments. This land type may have exposed “rim pan,” gravel cobblestones, stones, or large boulders in variable quantities. Approximately one-quarter of the acreage is made up of eroded spots and active gullies that head toward the terrace top.

This land is unaltered alluvial outwash derived from granite, gabbro, metamorphosed sandstone, sandstone, or mica-schist. It has various soil profiles that are commonly truncated. The material is light grayish brown to brown in color and slightly acid to neutral in reaction.

Vegetation typically associated with terrace escarpments includes annual grasses, salvia, flat-top buckwheat, and chamise. This land is generally idle where it is included in tilled fields, but if the fields are pastured, some forage is provided. Where this land is near areas of croplands, it furnishes a habitat for small game, such as rabbits, doves, and quail.

3.2 Plant Communities

As previously mentioned, the proposed central reach of the pipeline alignment falls within existing roadways including Clay Street, Van Buren Boulevard, Doolittle Avenue, and Jackson Street with the exception of approximately 1,700 feet that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus of Doolittle Street. However, disturbed areas that contain suitable habitat for the western burrowing owls are scattered along the central reach of the proposed pipeline within the 500-foot buffer area. These areas are

routinely maintained (or disced) fields that contain ruderal vegetation, debris piles, and spoil mounds. Some of these areas are remnant agricultural fields. The ruderal vegetation that exists in most of the disturbed areas is approximately 18 inches to 24 inches tall and has completely covered all but three of the potential burrows.

Dominant vegetation observed within the potentially suitable burrowing owl habitat in the 500-foot buffer area consists of oat grass (*Avena* sp.), hare barley (*Hordeum murinum*), red-stemmed filaree (*Erodium cicutarium*), wild radish (*Raphanus sativas*), London rocket (*Sysmrium irio*), and common fiddleneck (*Amsinkia menziesii*), but also includes summer mustard (*Hirschfeldia incana*), cheeseweed (*Malva parviflora*), ripgut brome (*Bromus diandrus*), tree tobacco (*Nicotiana glauca*), western sunflower (*Helianthus annus*), sourclover (*Melilotus indica*), California encelia (*Encelia californica*), western ragweed (*Ambrosia psilostachya*), Russian thistle (*Salsola tragus*), tocalote (*Centaurea melitensis*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), giant reed (*Arundo donax*), tree of heaven (*Ailanthus altissima*), and Russian knapweed (*Centaurea repens*).

IV. METHODOLOGY

GLA biologists conducted focused protocol surveys for the western burrowing owl following the nesting season protocol guidelines prepared by the California Burrowing Owl Consortium and California Department of Fish and Game (CDFG). Biologists conducted a total of four survey visits. Survey visits were conducted on March 24, 25, April 22, and 30, 2009. Table 1 provides a list of the survey dates, including the surveying biologists and weather conditions.

Table 1. Summary of Focused Survey Visits

Date	Biologists	Start Time	Weather Conditions
3/24/09	Justin Meyer	0645 am	51°F, clear, 1-3 wind, good visibility
3/25/09	Justin Meyer	0645 am	56°F, 5% cloud cover, 0 wind, good visibility
4/22/09	Justin Meyer	0615 am	58°F, clear, 0 wind, good visibility
4/30/09	Justin Meyer	0615 am	51°F, 20% cloud cover, 0 wind, good visibility

As previously noted, the proposed central reach of the pipeline alignment falls within existing roadways including Clay Street, Van Buren Boulevard, Doolittle Avenue, and Jackson Street with the exception of approximately 1,700 feet that will extend beneath the Santa Ana River and approximately 500 feet that extends through a disturbed area immediately north of the existing terminus of Doolittle Street. No suitable burrowing owl habitat is located within the proposed central reach of the pipeline alignment. Therefore,

no transects were conducted along the Proposed Pipeline Alignment. However, disturbed areas that contain suitable habitat for the western burrowing owl are scattered along the central reach of the proposed pipeline within the 500-foot buffer area. GLA biologists did not have permission to access the off-site suitable habitat areas within the 500-foot buffer area, therefore biologists walked the entire boundaries of the 500-foot buffer areas that contained suitable habitat for the western burrowing owl to survey for owls and occupied burrows.

All potential burrows (and any diagnostic sign) were mapped using a handheld Global Positioning System (GPS). Four survey visits were conducted for the western burrowing owl pursuant to the protocol guidelines of the California Burrowing Owl Consortium and the California Department of Fish and Game (CDFG). Off site areas (within 500 feet of the property) were also considered for owls, to account for additional on site foraging habitat that could be used by off site owls and for indirect impacts. Burrows would be mapped as occupied if owls were observed at or near the burrows, or if the burrows exhibited diagnostic signs (i.e., whitewash, pellets, bones, feathers, etc.).

Biologists used binoculars to survey for owls from fixed locations throughout the 500-foot buffer areas. Survey locations were placed at a distance from any potential burrows to minimize the affect of the presence of the surveyors, should owls be present.

V. RESULTS

During focused surveys conducted for the 2009 nesting season, no burrowing owls were observed within the Project Site or within the 500-foot buffer area. Nine (9) burrows were mapped as potential burrowing owl burrows, none of which contained any diagnostic signs of burrowing owls.

Based on the results of habitat assessments and focused surveys, it was determined that the Project Site and the 500-foot buffer areas that contain suitable western burrowing owl habitat do not support any nesting western burrowing owls due to the lack of diagnostic sign within the Project Site or the 500-foot buffer area.

Pre-construction presence/absence surveys for burrowing owls are recommended where suitable habitat is present (i.e. potential burrowing owl burrows). Surveys should be conducted within 30 days prior to disturbance. Take of active nests will be avoided. Passive exclusion (use of one way doors and collapse of burrows) will occur if owls are present outside the nesting season.

If you have any questions regarding this letter report, please contact Justin Meyer at (949) 837-0404 ext 47.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Justin Meyer
Biologist

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VI. REFERENCES

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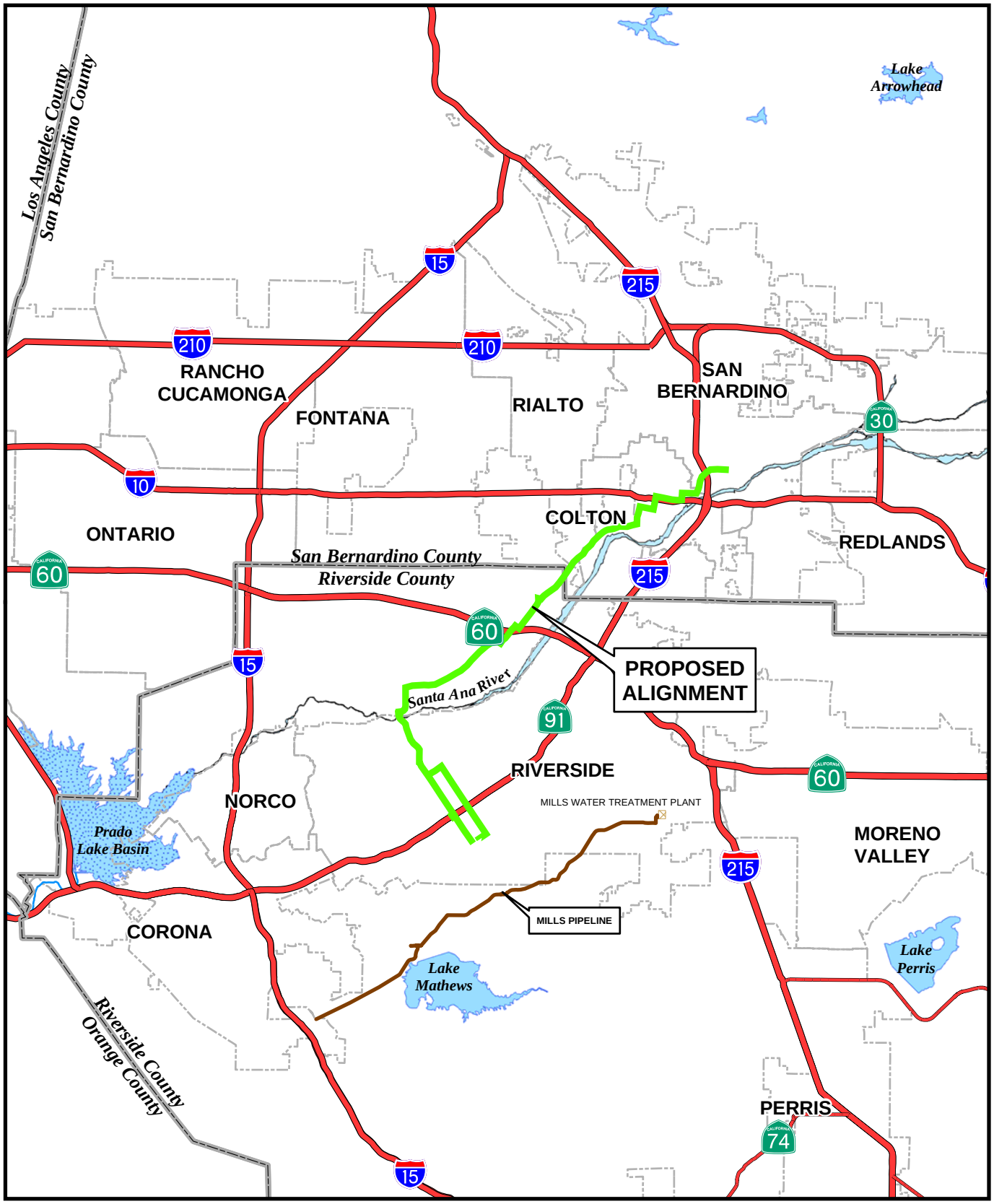

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ALBERT A. WEBB ASSOCIATES

Figure 1

Regional Location

Riverside Corona Feeder

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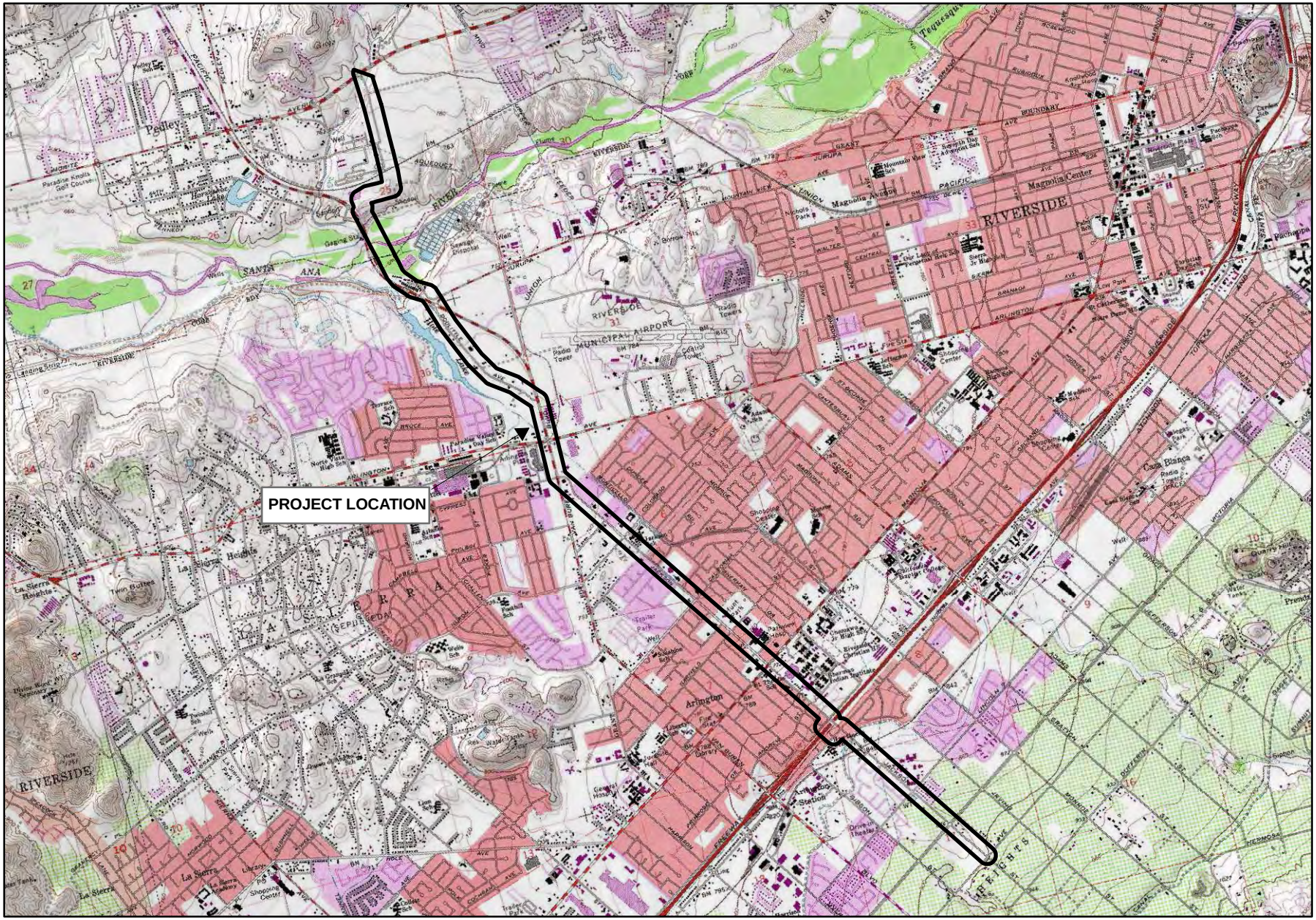
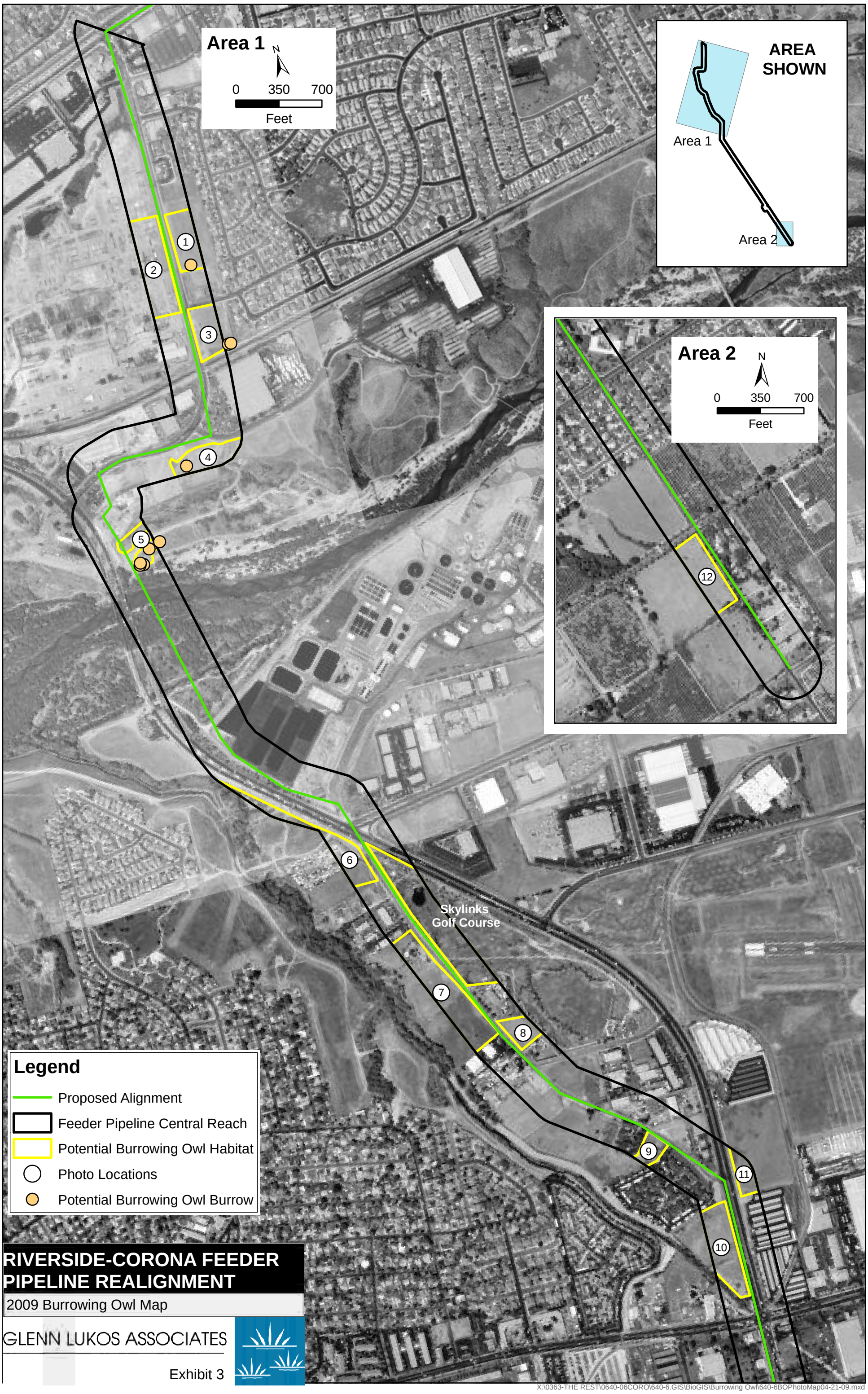


RIVERSIDE-CORONA FEEDER PIPELINE REALIGNMENT

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



RIVERSIDE-CORONA FEEDER PIPELINE REALIGNMENT

2009 Burrowing Owl Map

GLENN LUKOS ASSOCIATES

Exhibit 3

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BIOLOGICAL ASSESSMENT
CEQA
RIVERSIDE – CORONA FEEDER

CONNECTION TO THE CENTRAL FEEDER

Prepared for:

Albert A. Webb Associates
3788 McCray Street
Riverside, California 92506

Prepared by:

Brian F. Smith and Associates
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Poway, California 92064

Revised December 4, 2009

REPORT SUMMARY

Author(s):	Laurence N. Dean, Senior Biologist
Consulting Firm:	Brian F. Smith and Associates 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
Report Date:	Revised December 4, 2009
Report Title:	Biological Assessment, CEQA, Riverside – Corona Feeder, Connection to the Central Feeder
Prepared for:	Albert A. Webb Associates 3788 McCray Street Riverside, California 92506
Lead Agency:	Western Riverside Municipal Water District 450 Alessandro Blvd. Riverside, California 92508
Submitted by:	Brian F. Smith and Associates 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
USGS Quadrangle:	*Redlands*, California (7.5 minute)
Study Area:	Approximately 180 acres

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Summary

The Riverside – Corona Feeder, Connection to the Central Feeder Project consists of the placement of approximately 6,350 linear feet of pipeline along San Bernardino Avenue between Alabama Street and Webster Street. A 180-acre well field is also proposed on either side of San Bernardino Avenue from the intersection of Alabama Street west to just past the intersection of Nevada Street.

Twelve state and federally listed species (marsh sandwort, Nevin's barberry, salt marsh bird's-beak, slender-horned spineflower, Santa Ana River woollystar, Sierra Madre yellow-legged frog, western yellow-billed cuckoo, coastal California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, Stephens' kangaroo rat, and San Bernardino kangaroo rat) were identified as potentially occurring within or near the proposed project area. The western burrowing owl, a California State Bird Species of Special Concern (Class 2), may also be present.

The proposed pipeline alignment is located in the right-of-way of San Bernardino Avenue and comprises approximately 11.4 acres of Urban/Developed habitat. Non-Native Grasslands and Orchards are located adjacent to the limits of construction for the pipeline alignment. The non-native grasslands provide suitable habitat for western burrowing owls. If construction activity is conducted within the limits of construction (San Bernardino Avenue right-of-way), suitable habitat for western burrowing owls on adjacent non-native grasslands will not be affected by the proposed project.

Habitat within the limits of construction for the proposed well field includes Non-Native Grasslands, Orchards, and Urban/Developed. The non-native grasslands provide suitable habitat for western burrowing owls. Focused surveys for western burrowing owls shall be conducted to determine if this species is present prior to construction activity (including grubbing, clearing, and grading) or well drilling. If burrowing owls are found to be present, a plan to avoid or mitigate impacts to burrowing owls shall be developed. The plan shall be reviewed and approved by the U .S. Fish and Wildlife Service and the California Department of Fish and Game. If there is more than a 30-day interval between the focused surveys and commencement of construction, a 30-Day Burrowing Owl Pre-Construction Survey shall be conducted even if western burrowing owls were not observed during the focused surveys. If construction starts within 30 days of the pre-construction survey, additional surveys shall not be required.

In conclusion, it has been determined that if the proposed mitigation measures are implemented, the proposed action will have no effect on marsh sandwort, Nevin's barberry, Santa Ana River woollystar, slender-horned spineflower, Sierra Madre yellow-legged frog, western yellow-billed cuckoo, coastal California gnatcatcher, southwestern willow flycatcher,

least Bell's vireo, western burrowing owl, Stephens' kangaroo rat, and San Bernardino kangaroo rat.

1.0 INTRODUCTION

The purpose of this Biological Assessment is to address the effect of the Riverside – Corona Feeder, Connection to the Central Feeder Project and associated groundwater well field on species listed as endangered or threatened under state and federal endangered species acts.

The Western Municipal Water District intends to carry out the construction of the Connection to the Central Feeder Project under Title IX, Subtitle B, Section 9112 of the Omnibus Public Lands Act of 2009, Public Law 111-11. This biological assessment, prepared for Albert A. Webb Associates, addresses the proposed action in compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, and the California Endangered Species Act (Fish & Game Code Section 2050 *et seq.*).

2.0 PROJECT LOCATION

The proposed project is located in San Bernardino County, California (Figure 1). The proposed action involves installing up to 54-inch diameter pipeline within the right-of-way for San Bernardino Avenue between Alabama Street and Webster Street in the City of Redlands, California. A groundwater well field is also proposed on either side of San Bernardino Avenue from the intersection of Alabama Street west to just past the intersection of Nevada Street (Figure 2).

3.0 PROJECT DESCRIPTION

The Connection to the Central Feeder Project will connect new or existing groundwater production wells to be located within the San Bernardino Basin Area (exact locations not determined) into the San Bernardino Valley Municipal Water District's Central Feeder Pipeline, thereby providing additional means for transporting San Bernardino Groundwater Basin water through regional pipeline facilities that are connected to the Riverside – Corona Feeder Project. The Connection to the Central Feeder Project consists of the placement of approximately 6,350 linear feet of up to 54-inch diameter pipeline in the San Bernardino Avenue right-of-way between Alabama Street and Webster Street in the City of Redlands (MacHott 2009). A

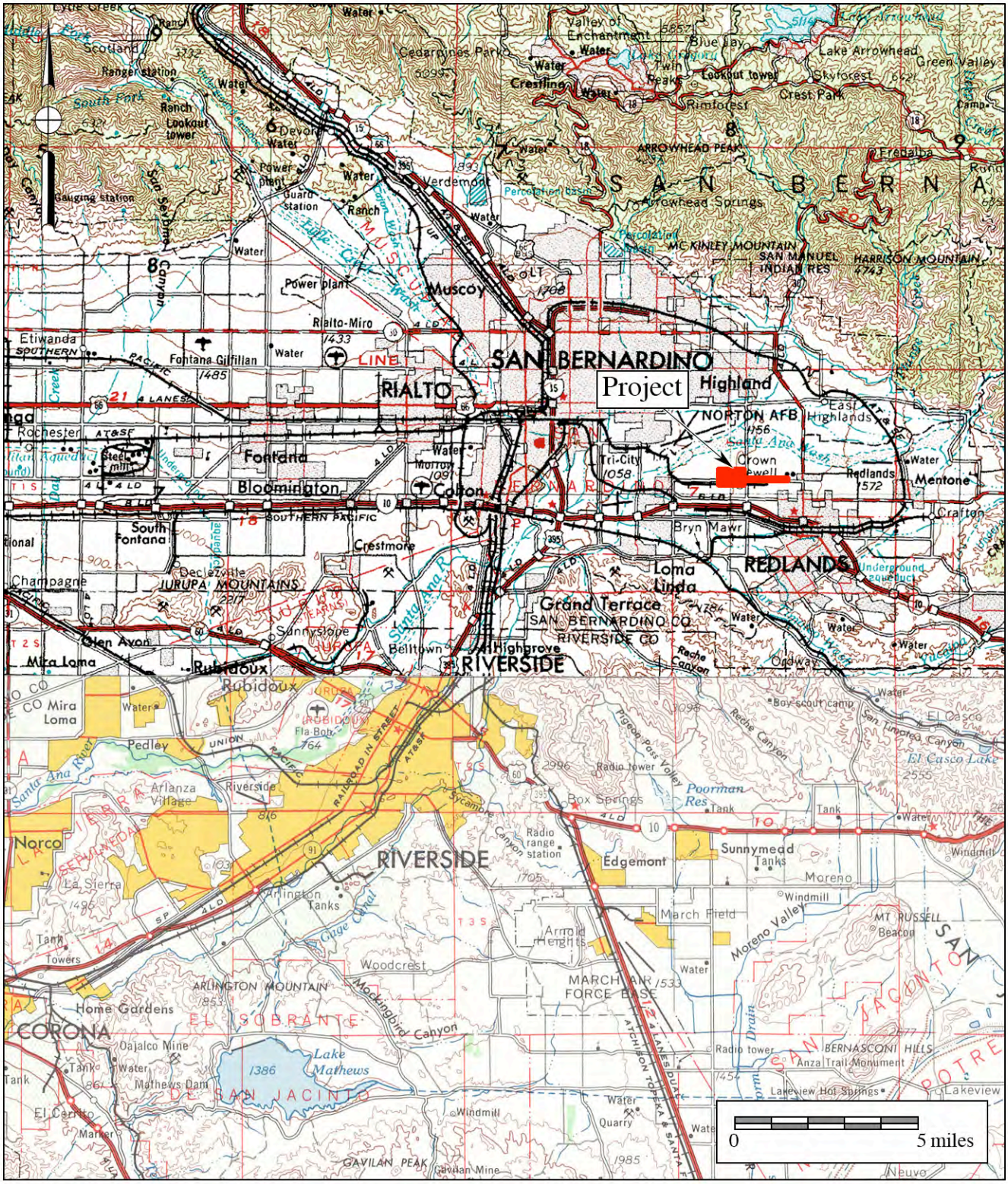

Figure 1

General Location Map

Riverside-Corona Feeder Connection to Central Feeder

USGS *Santa Ana and San Bernardino* (1:250,000 series)

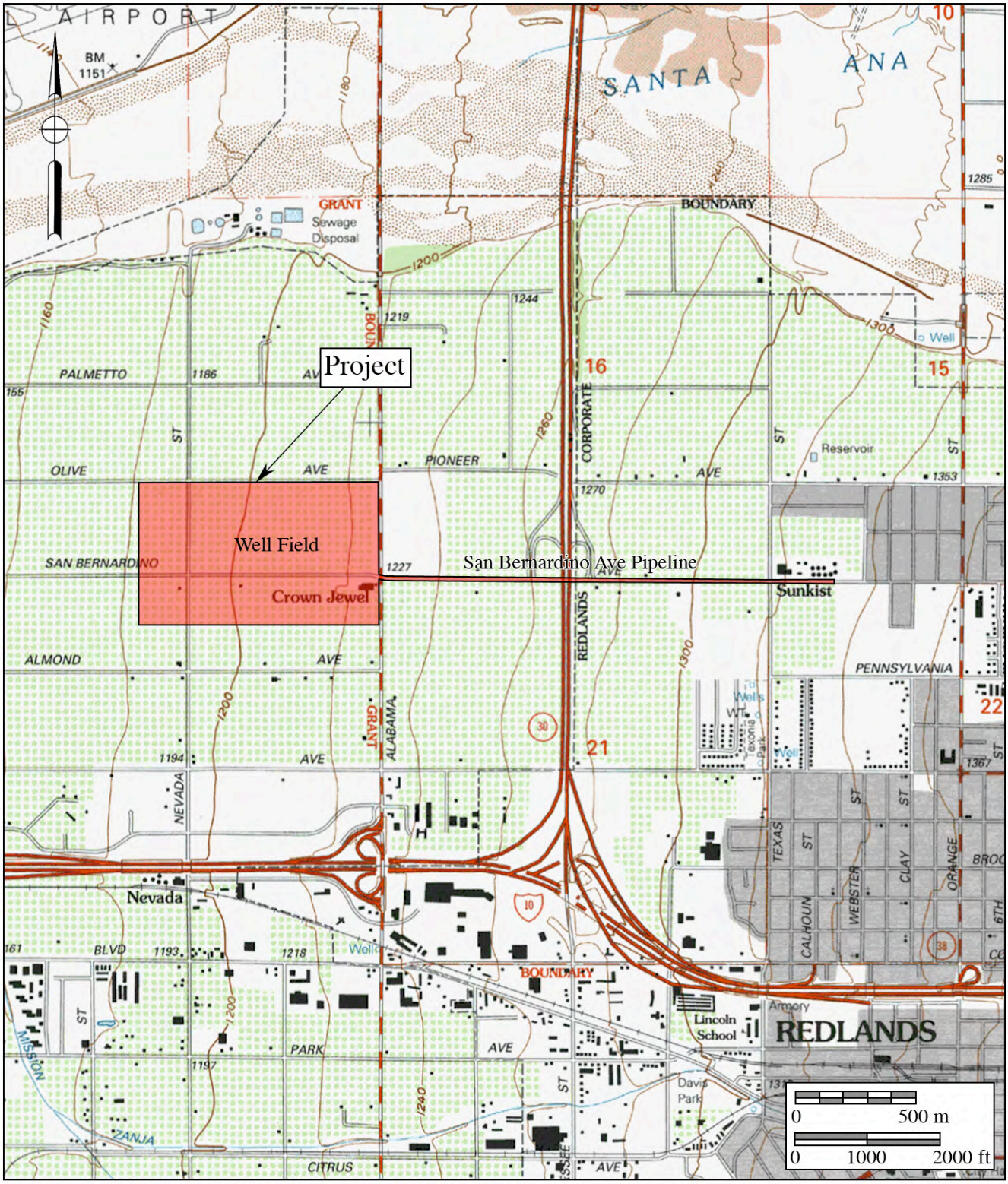

Figure 2

Project Location Map

Riverside-Corona Feeder Connection to Central Feeder

USGS *Redlands* Quadrangle (7.5 minute series)

Brian F. Smith and Associates, Inc. Environmental Consultants

production well field is also proposed on either side of San Bernardino Avenue from the intersection of Alabama Street west to just past the intersection of Nevada Street (see Figure 2).

The project is assessed based on the Area of Potential Effect, which is the area that is potentially impacted physically, visibly, and audibly by the proposed action. Impacts include the direct effects of construction and the indirect effects of construction such as noise. The Area of Potential Effect for the proposed project extends 150 feet on either side of the limits of construction for the pipeline alignment and the booster stations.

4.0 METHODS

Prior to the project site visit, Brian F. Smith and Associates' biologists reviewed the California Natural Diversity Data Base (CNDDB 2009a and b), and the California Native Plant Society Rare Plant Inventory (CNPS 2009) to determine if sensitive species may be present within or near the limits of construction. National Wetland Inventory maps (USFWS 2009) for the project were consulted to determine if wetlands have been mapped within the limits of construction. Appropriate United States Geological Survey maps (7.5 minute) were reviewed to determine if drainage features, including "blue-line streams," may be present. The Natural Resources Conservation Service Official Soil Series Descriptions were consulted to determine soils associated with the proposed project area.

The project area is small enough to allow one biologist to cover the entire site in one visit. The site was surveyed on foot by slowly walking over the area in a series of random transects to provide visual coverage of the entire project area. Vegetation and wildlife species observed were recorded as field observations were made. Wildlife signs (scat, bones, feathers, tracks, dens and burrows) were also recorded if encountered. Frequent pauses were made during the survey to watch and listen for wildlife.

5.0 EXISTING ENVIRONMENT

This discussion of the existing environment describes the project area setting and includes general physical characteristics of the project area, plant communities associated with the project area, and biological resources located in the vicinity of the project area.

5.1 Physical Characteristics

The discussion of physical characteristics includes soils, topography, and geology.

5.1.1 Soils

Soils associated with the proposed project area are predominantly (WSS 2009):

- Hanford sandy loam, 0 to 2 percent slopes
- Tujunga loamy sand, 0 to 9 percent slopes

The Hanford series consists of very deep well-drained soils that formed in moderately coarse textured alluvium derived from granite. Hanford soils are found on floodplains and alluvial fans and have slopes of 0 to 15 percent (NRCS 2009).

The Tujunga series consists of very deep somewhat excessively drained soils formed in alluvium weathered mostly from granitic sources. Tujunga soils are located on alluvial fans and floodplains and have slopes of 0 to 9 percent (NRCS 2009).

5.1.2 Topography

The project area is gently sloped, with the lowest point located on the west end of San Bernardino Avenue and the highest point located at the east end. Elevation on the west end is 1,160 feet above mean sea level and 1,340 feet above mean sea level on the east end (a change in elevation of 180 feet over approximately 1.98 miles).

5.1.3 Geology

San Bernardino County is located in the Peninsular Range Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the County, extends some 1,000 miles from the Raymond – Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California, Mexico. The project area is underlain by Cenozoic non-marine (continental) sedimentary rocks and alluvial deposits.

5.2 Biological Resources

The Biological Resources section discusses vegetation, plant communities, wildlife (including sensitive species), and associated habitats found within the project area. In addition to the project area, adjacent areas (out to a distance of 150 feet on either side of the limits of construction) are discussed.

5.2.1 Plant Communities

Descriptions of plant communities are based on Holland's (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California.* The descriptions developed by Holland (1986) provide a standard nomenclature for plant communities throughout California. Holland does not provide descriptions of some plant communities. In those instances, descriptions from *Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions* (Oberbauer 1996) have been used.

Three plant communities occur within the proposed pipeline alignment and well field: Urban/Developed; Non-Native Grassland; and, Orchards/Vineyards (Figure 3 and Table 1).

Table 1
Plant Communities
Area of Potential Effect
Riverside – Corona Feeder, Connection to Central Feeder
San Bernardino County, California

Plant Community	Acres Present Area of Potential Effect
Urban/Developed	186.2
Orchard	40.4
Non-Native Annual Grassland	49.9
Total	276.5

Urban/Developed, Element Code 12000 (Oberbauer 1996)

Urban/Developed is a mixture of built structures such as roads, residences, commercial buildings, and parking lots. Vegetation is largely non-native and includes lawns, golf courses, road shoulders, airports, and parks. Remnants of native plant communities may be found at scattered, isolated locations. Ruderal communities occur in areas of disturbance. Vegetation in these areas consists of non-native invasive plants.

Non-Native Grassland, Element Code 42200 (Holland 1986)

Non-native grasslands are found throughout most of southern California. This community consists of non-native annual grasses such as red brome (*Bromus rubens*), Wild oats (*Avena fatua and Avena barbata*), and rip-gut brome (*Bromus diandrus*). Several flowering forbs such as Filaree (*Erodium* spp.), Phacelia *(Phacelia* spp.), tarweeds (*Hemezonia* spp.), and lupines (*Lupinus* spp.) are also found in non-native grasslands.

Orchards and Vineyards, Element Code 18100 (Oberbauer 1996)

These are general agriculture areas and include vineyards and orchards of commercial species. In San Bernardino County, orchards are often citrus and avocado groves.

Plant species observed along San Bernardino Avenue during site visits are listed in Table 2.

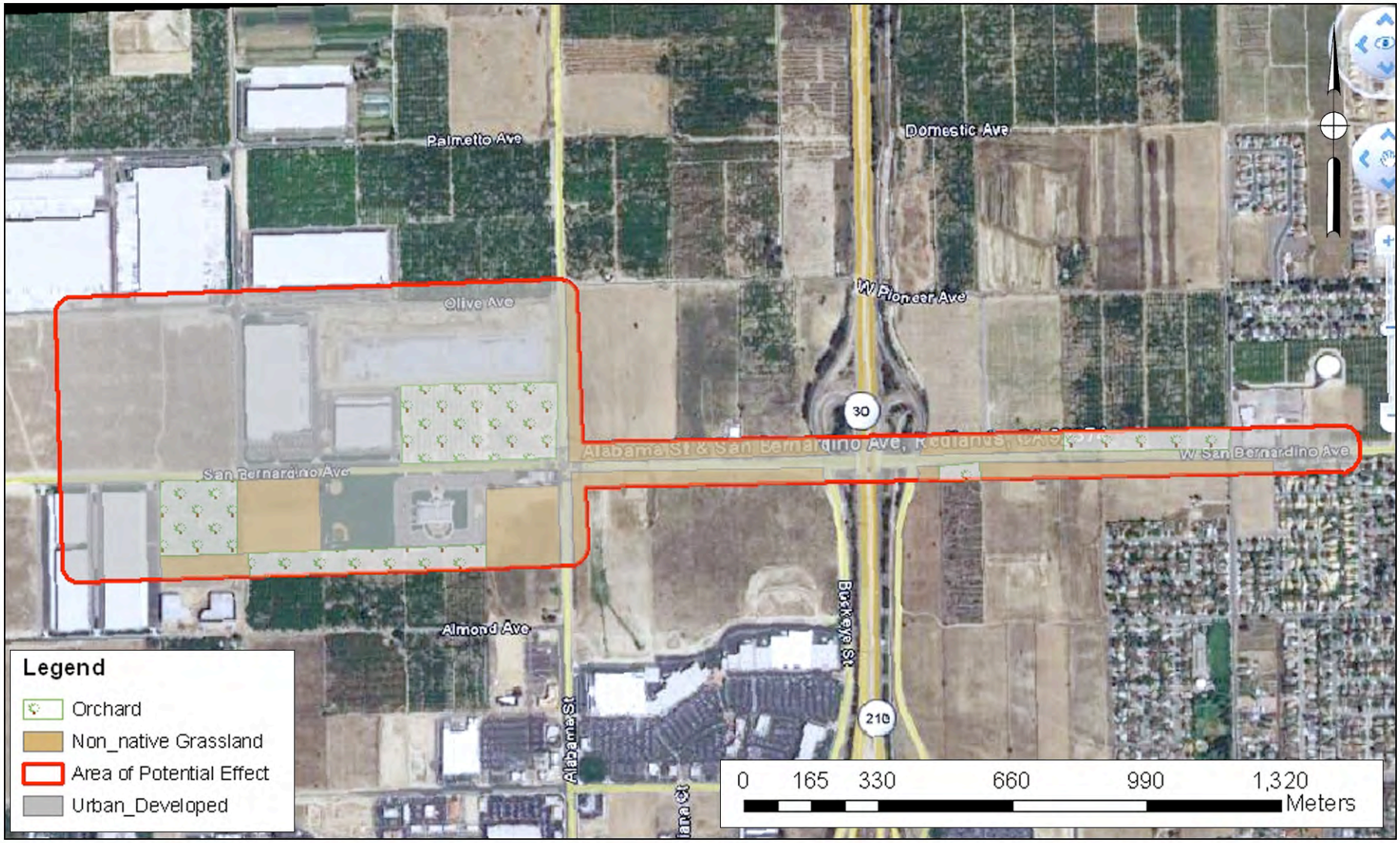

Figure 3

Plant Communities

Riverside-Corona Feeder Connection to Central Feeder

Table 2 Plant Species Observed Riverside – Corona Feeder, Connection to the Central Feeder San Bernardino County, California		
Common Name	***Scientific Name***	**Habitat**
Red brome	*Bromus madritensis rubens*	U/N
Wild oat	*Avena fatua*	U/N
Slender wild oat	*Avena barbata*	U/N
Rip-gut brome	*Bromus diandrus*	U/N
Bermuda grass	*Cynodon dactylon*	U/N/O
Goldentop grass	*Lamarckia aurea*	O
Telegraphweed*	*Heterotheca grandiflora*	U/N
Horseweed*	*Conyza canadensis*	U/N/O
Sun flower*	*Helianthus annuus*	U
Sheep sorrel*	*Rumex acetosella*	U
Western ragweed*	*Ambrosia psilostachya*	U
Short-pod mustard	*Hirschfeldia incana*	U
Wild cucumber	*Marah fabaceus*	U/N
Phacelia*	*Phacelia spp.*	N
Fiddleneck*	*Amsinckia menziesii*	N
Jimson weed/sacred datura*	*Datura wrightii*	N
Dove weed*	*Croton setigerus*	N
Sycamore	*Platanus racemosa*	U
Fan Palm	*Washingtonia sp.*	U/O
Royal palm	*Roystonea spp.*	U/O
Lime	*Citrus spp.*	O
Orange	*Citrus spp.*	O
Lemon	*Citrus spp.*	O
Eucalyptus	*Eucalyptus spp.*	U
Tree of Life	*Ailanthus altissima*	U
Olive	*Olea europaea*	U
Russian thistle	*Salsola kali*	U/N

* – Native Plant Species

U – Urban/Developed

O – Orchards/Vineyards

N – Non-Native Grassland

5.2.2 Zoological Resources

Wildlife observed along San Bernardino Avenue and on the proposed well field site was representative of urban areas and include starlings, American crow, and western meadowlark (Table 3).

Table 3
Animal Species Observed Directly or Indirectly
Riverside – Corona Feeder, Connection to the Central Feeder
San Bernardino County, California

Common Name	***Scientific Name***
American crow	*Corvus brachyrhynchos*
Red-tailed hawk	*Buteo jamaicensis*
Song sparrow	*Melospiza melodia*
California towhee	*Pipilo crissalis*
House finch	*Carpodacus mexicanus*
Mourning dove	*Zenaida macroura*
Western fence lizard	*Sceloporus occidentalis*
Honey bee	*Apis mellifera*

5.2.3 Sensitive Species and Critical Habitat

A review of the California Natural Diversity Data Base (CNDDB 2009a and b) indicated that one species of special or management concern and 12 sensitive species listed by state and federal endangered species acts may be present in the vicinity of the proposed project area (Table 4).

U. S. Fish and Wildlife Service data (USFWS 2009) and the CNDDB (2009a and b) were consulted to determine if critical habitat for sensitive species may be present within the project area. Critical habitat is a specific geographic area or areas that are essential for the survival of a threatened or endangered species. Critical habitat may include areas not currently occupied by the species, but that will be needed for its recovery. The project area is not located within designated critical habitat.

Table 4 Listed Species Potentially Present Riverside – Corona Feeder, Connection to the Central Feeder San Bernardino County, California				
Common Name	***Scientific Name***	**Federal Status**	**State Status**	**CNPS Rank**
Marsh sandwort	*Arenaria paludicola*	E	E	1B.1
Nevin's barberry	*Berberis nevinii*	E	E	1B.1
Salt marsh bird's-beak	*Cordylanthus maritimus maritimus*	E	E	1B.2
Slender-horned spineflower	*Dodecahema leptoceras*	E	E	1B.1
Santa Ana River woollystar	*Eriastrum densifolium sanctorum*	E	E	1B.1
Sierra Madre yellow-legged frog	*Ranus mucosa*	E	--	NA
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	E	NA
Coastal California gnatcatcher	*Polioptila californica californica*	T	--	NA
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	E	NA
Least Bell's vireo	*Vireo bellii pusillus*	E	E	NA
Stephens' kangaroo rat	*Dipodomys stephensi*	E	T	NA
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	E	T	NA
Western burrowing owl	*Athene cunicularia hypugaea*	MBTA	SSC	NA

E – Endangered

T – Threatened

C – Candidate for listing as threatened or endangered

SSC – Species of Special Concern

MBTA – Migratory Bird Treaty Act

1B – Rare, threatened, or endangered in California or elsewhere

0.1 – Seriously endangered in California

0.2 – Fairly endangered in California

Marsh Sandwort (*Arenaria paludicola*)

Marsh sandwort is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. Critical habitat has not been designated.

Marsh sandwort was once found in swamps and marshes from San Francisco County south to San Bernardino County, but now only 10 individuals exist in one population near Black Lake Canyon on the Nipomo Mesa in San Luis Obisbo County, California (Hickman 1996). Marsh sandwort has likely been extirpated in San Bernardino County.

Suitable habitat for marsh sandwort is not present within the limits of construction. Marsh sandwort was not observed during site visits and is not likely present.

Nevin's Barberry *(Berberis nevinii)*

Nevin's barberry is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. Nevin's barberry is a narrow endemic plant species. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

Nevin's barberry is found in coarse soils and rocky slopes in chaparral and gravelly wash margins in alluvial scrub. The only known population of Nevin's barberry occurs in San Luis Obisbo County. This species has likely been extirpated in San Bernardino County.

Suitable habitat for Nevin's barberry is not present within the limits of construction. Nevin's Barberry was not observed during site visits and is not likely present.

Salt Marsh Bird's-Beak (*Cordylanthus maritimus maritimus*)

Salt marsh bird's-beak is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. Critical habitat has not been designated.

Salt marsh bird's-beak is an annual plant that grows in the upper tidal zone of salt marsh. It may also be found in alkaline meadows and saline flats in San Bernardino County. Suitable habitat for this species does not occur on site. Salt marsh birds-beak was not observed during site visits and is not likely present.

Slender-Horned Spineflower *(Dodecahema leptocercas)*

The slender-horned spineflower is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. Slender-horned spineflower is a narrow endemic plant species.

Slender-horned spineflower is usually found in sandy soil in association with mature alluvial scrub. Cryptogamic crusts are frequently present in areas occupied by slender-horned spineflower. These soil crusts are composed of associations of mosses, algae, lichens, and some xerophytic liverworts. Cryptogamic crusts enable soils to retain moisture and may help suppress invasion by non-native plant species (MSHCP 2003).

Habitat for the slender-horned spineflower does not occur within the limits of construction. This species was not observed during site visits and is not likely present.

Santa Ana River Woollystar *(Eriastrum densifolium sanctorum)*

The Santa Ana River woollystar is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. Santa Ana River woollystar is a narrow endemic plant species. If suitable habitat is present, surveys will be required. Critical habitat has not been designated.

The Santa Ana River woollystar is found only within open washes and early-successional alluvial fan scrub where flooding and scouring maintain open shrublands. Suitable habitat comprises a patchy distribution of gravelly soils, sandy soils, rock mounds, and boulder fields (MSHCP 2003).

The proposed project area includes Urban/Developed, Non-native Grassland and Orchards. Habitat for the Santa Ana River woollystar is not present. Santa Ana River woollystar was not observed during site visits and is not likely present.

Sierra Madre Yellow-Legged Frog (*Ranus mucosa)*

The Sierra Madre yellow-legged frog, also known as the southern mountain yellow-legged frog, is listed as endangered by the U. S. Fish and Wildlife Service and is a State of California Species of Special Concern. Critical habitat was designate for the southern California district population in 2006 (50 CFR 17).

The mountain yellow-legged frog is typically found on sunny riverbanks, meadow streams, isolated pools, lake borders, and rocky stream courses. It can be found in ponds, tarns, lakes, and streams at moderate to high elevations. In southern California, populations appear to be restricted to streams and small pools in ponderosa pine, montane hardwood-conifer, and montane riparian habitat types.

Suitable habitat for the mountain yellow-legged frog does not occur within the limits of construction. The mountain yellow-legged frog was not observed during site visits and is not likely present.

Western Yellow-Billed Cuckoo *(Coccyzus americanus occidentalis)*

The western yellow-billed cuckoo is a U. S. Fish and Wildlife Service candidate for listing as threatened or endangered (FR 73:238). This species is listed as endangered by the State of California. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The western yellow-billed cuckoo in California requires dense, wide riparian woodlands with well-developed understory for breeding. Breeding is restricted to river bottoms where dense understory is adjacent to slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation (MSHCP 2003).

Suitable habitat for the western yellow-billed cuckoo does not occur within the limits of construction. The western yellow-billed cuckoo was not observed during site visits and is not likely present.

Coastal California Gnatcatcher *(Polioptila californica californica)*

The coastal California gnatcatcher is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. If suitable habitat is present, focused surveys will be required. Critical habitat for the coastal California gnatcatcher was designated in 1997 and revised in 2007 (FR 64:25).

The coastal California gnatcatcher is a small, non-migratory songbird that is found within or near sage scrub habitat in southwestern California and northwestern Baja California, Mexico. The coastal California gnatcatcher is found almost exclusively in sage scrub, but has also been found in chaparral and riparian habitats.

Suitable habitat is not present within the limits of construction. The coastal California gnatcatcher was not observed during site visits and is not likely present. The project area is not located within designated critical habitat for this species.

Southwestern Willow Flycatcher (*Empidonax traillii extimus)*

The southwestern willow flycatcher is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. If suitable habitat is present, additional surveys will be required. Critical habitat was designated in 2005 (FR 70:201).

The southwestern willow flycatcher breeds in dense riparian growth along rivers, streams, or other wetlands. The vegetation is often dominated by dense growths of willows (*Salix* sp.), seepwillow (*Baccharis glutinosa* sp.), or other shrubs and medium-sized trees. There may be an overstory of cottonwood (*Populus* sp.), tamarisk (*Tamarix* sp.), or other large trees,

but this is not always the case. One of the most important characteristics of the habitat appears to be the presence of dense vegetation; usually throughout all vegetation layers present (USGS 2009). Almost all southwestern willow flycatcher breeding habitats are within proximity (less than 20 yards) of water or very saturated soil. At some locations, surface water is present early in the nesting season, but gradually dries up as the season progresses (USGS 2009).

Suitable habitat for the southwestern willow flycatcher does not occur within the limits of construction. The southwestern willow flycatcher was not observed during site visits and is not likely present.

Least Bell's Vireo *(Vireo bellii pusillus)*

Least Bell's vireo is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. If suitable habitat is present, focused surveys will be required. Critical habitat was designated for least Bell's vireo in 1994 (FR 59:22).

Least Bell's vireos are usually found in riverine/riparian habitats that typically have dense understory within 1-2 meters of the ground and a dense, stratified canopy along water or along dry parts of intermittent streams. Typically, least Bell's vireo is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast lie oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities and in the immediate vicinity of water.

Suitable habitat for the least Bell's vireo does not occur within the limits of construction. The least Bell's vireo was not observed during site visits and is not likely present.

The proposed project area is not located within designated critical habitat for least Bell's vireo.

Western Burrowing Owl (*Athene cunicularia hypugaea)*

The western burrowing owl is not listed by the U. S. Fish and Wildlife Service or the State of California. The U. S. Fish and Wildlife Service considers the western burrowing owl a "Bird Species of Concern" that may become listed as threatened or endangered if significant management steps are not taken. The western burrowing owl is protected under the Migratory Bird Treaty Act. The western burrowing owl is a California State Bird Species of Special Concern (Class 2). Class 2 Bird Species of Special Concern have scattered or highly localized populations and require active management to prevent them from becoming threatened or endangered species (Shuford and Gardali 2008).

Burrowing owls use a variety of natural habitats for nesting and foraging that are typically characterized by low-growing vegetation. Burrowing owl habitat includes native and non-native annual grassland, natural clearings within shrub lands, shrub lands with low density shrub cover, golf-courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas (MSHCP 2003).

Burrowing owls typically use burrows made by burrowing mammals, such as ground squirrels (*Spermophilus beecheyi*) or badgers (*Taxidea taxus*). They may also utilize man-made structures, such as earthen berms; cement culverts; cement, asphalt, rock, or wood debris piles; or openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, or in proximity to man-made structures (MSHCP 2003).

Western burrowing owls were not observed during site visits. Suitable habitat is present in non-native grasslands within and adjacent to the project area. Burrowing owls were not observed during site visits, but the presence of suitable habitat requires that focused surveys be conducted as well as a 30-Day Burrowing Owl Pre-Construction Survey.

Stephens' Kangaroo Rat *(Dipodomys stephensi)*

Stephens' kangaroo rat is listed as endangered by the U. S. Fish and Wildlife Service and as threatened by the State of California. Focused surveys will be required if suitable habitat is present. Critical habitat has not been established for Stephens' kangaroo rat.

The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrub lands with cover of less than 50 percent during the summer. The proportion of annual forbs and grasses is important because Stephens' kangaroo rats avoid dense grasses and are more likely to inhabit more open areas. Soil type also is an important habitat factor for Stephens' kangaroo rat occupation. The Stephens' kangaroo rat typically is found in sandy loams with low clay to gravel content. Slope is a factor in Stephens' kangaroo rat occupation; the Stephens' kangaroo rat tends to use flatter slopes (i.e., < 30 percent). In general, the highest abundance of Stephens' kangaroo rats occurs on gentle slopes less than 15 percent (MSHCP 2003). Stephens' kangaroo rat populations have been reported within 6 miles of the proposed project area.

Grassland associated with the proposed project area is very dense or has been disked. Suitable habitat for Stephens' kangaroo rats is not present. Burrows and sign such as droppings and tail drags were not observed during site visits. Stephens' kangaroo rat is not likely present.

San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*)

The San Bernardino kangaroo rat is listed as endangered by the U. S. Fish and Wildlife Service and is a State of California Species of Special Concern. If suitable habitat is present, focused surveys will be required. Critical habitat was designated in 2002 and revised in 2008 (FR 73:202).

The San Bernardino kangaroo rat typically is found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and floodplains, and along washes with nearby sage scrub. Soil texture is an important factor. The San Bernardino kangaroo rat avoids rocky soils (MSHCP 2003).

Alluvial fan scrub does not occur within the limits of construction. The San Bernardino kangaroo rat was not observed during site visits and is not likely present.

The project area is not located within or adjacent to designated critical habitat for the San Bernardino kangaroo rat.

6.0 JURISDICTIONAL WATERS AND WETLANDS

6.1 Wetlands

To be considered a wetland, a site must meet three criteria: hydric soils, wetland hydrology, and, hydrophytic vegetation. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil. The presence of hydric soils may be determined by a variety of field indicators and by consulting a list of hydric soils for the project area. The soils associated with the current project area are not on the list of hydric soils for the State of California (NRCS 2009). Field indicators such as low chroma soils, concretions, and/or oxidized root channels were not observed.

Wetland hydrology is present when, under normal circumstances, the land surface is either inundated or the upper portion of the soil is saturated at a sufficient frequency and duration to create anaerobic conditions. Field indicators used for hydric soils may be used to support the presence or absence of wetland hydrology. There is no indication that soils within the limits of construction are inundated or saturated for a long enough period of time during the growing season to promote hydric conditions or hydrophytic vegetation. Field indicators of hydric soils such as low chroma soils, concretions, and/or oxidized root channels were not observed.

In general, hydrophytic vegetation includes plants that thrive in wet conditions and exhibit obvious physical adaptations for the capturing and transporting of oxygen. Some hydrophytic vegetation such as mule fat occurs in drainages within the limits of construction; however, this vegetation is not predominant (fifty-one percent or greater). The project area does not meet the criterion for hydrophytic vegetation.

Based on the absence of hydric soils, wetland hydrology, and hydrophytic vegetation, there are no wetlands present within the limits of construction.

7.0 JURISDICTIONAL DETERMINATION

Two agencies or entities may have jurisdictional responsibilities related waters occurring within the proposed project area: U. S. Army Corps of Engineers; and, California Department of Fish and Game. The basis for jurisdiction is discussed below.

7.1 U. S. Army Corps of Engineers

The U. S. Army Corps of Engineers regulates dredging and filling in Waters of the United States under the authority of Section 404 of the Clean Water Act. Waters of the United State are defined to include all navigable waters including tidal waters, all interstate waters and wetlands, all impoundments of the waters mentioned above, all tributaries of the waters mentioned above, all territorial seas, and all wetlands adjacent to the waters mentioned above (33 CFR 328).

Title 33 of the Code of Federal Regulations defines wetlands as, "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" [33 CFR 328.3(b)]. In the Solid Waste Agency of Northern Cook County v. Army Corps of Engineers, the U. S. Supreme Court determined that U. S. Army Corps of Engineers jurisdiction may not extend to wetlands and waterways where the only nexus with Waters of the U. S. is use by migratory birds. In the Rapanos – Carabell Supreme Court decisions, the Supreme Court rejected the argument that the term "waters of the United States" is limited to only those waters that are navigable in the traditional sense and their abutting wetlands. However, the court decided that regulatory authority should extend only to "relatively permanent, standing or continuously flowing bodies of water" connected to traditional navigable waters, and to "wetlands with a continuous surface connection to" such relatively permanent waters (EPA/COE 2008).

Two distinct jurisdictional tests emerged from the Rapanos – Carabell decision: "significant nexus" test and "relatively permanent, standing or continuously flowing" test. The U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency have developed guidelines for making jurisdictional determinations based on these tests. The following summary of key points related to U. S. Environmental Protection Agency and U. S. Army Corps of Engineers jurisdiction is taken directly from a joint EPA/USACOE memorandum (EPA/COE 2008).

7.1.1 Summary of Key Points related to EPA and USACOE Jurisdiction

"The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries."

"The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

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

"The agencies generally *will not assert* jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water."

"The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters."

"Significant nexus includes consideration of hydrologic and ecologic factors."

Based on these criteria, there are no jurisdictional waters or wetlands present within the limits of construction. However, only the U. S. Army Corps of Engineers may make a final determination regarding jurisdiction.

7.2 California Department of Fish and Game

Sections 1600 through 1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the California Department of Fish and Game for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use material from a streambed." The California Department of Fish and Game defines a stream, creek or river 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." The California Department of Fish and Game defines lakes as including man-made lakes and reservoirs. In addition to the bed and banks of a stream, the California Department of Fish and Game jurisdiction includes riparian or wetland vegetation associated with the water body. Projects that require a Streambed Alteration Agreement may also require a permit from the U. S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Based on these criteria, there are no waters falling under the jurisdiction of the California Department of Fish and Game within the limits of construction. However, only the State of California may make a final determination regarding jurisdiction.

8.0 EFFECTS OF THE PROPOSED ACTION

The proposed action will affect Urban/Developed, Non-Native Grassland, and Orchard/Vineyard habitats (Figure 4 and Table 5).

Twelve state and federally listed species were identified as potentially occurring within or near the proposed project area. The western burrowing owl, a California State Bird Species of Special Concern (Class 2), may also be present.

Marsh Sandwort (*Arenaria paludicola*)

Marsh sandwort has probably been extirpated in San Bernardino County. Suitable habitat is not present within or adjacent to the limits of construction. Marsh sandwort was not observed during site visits and will not be affected by the proposed action.

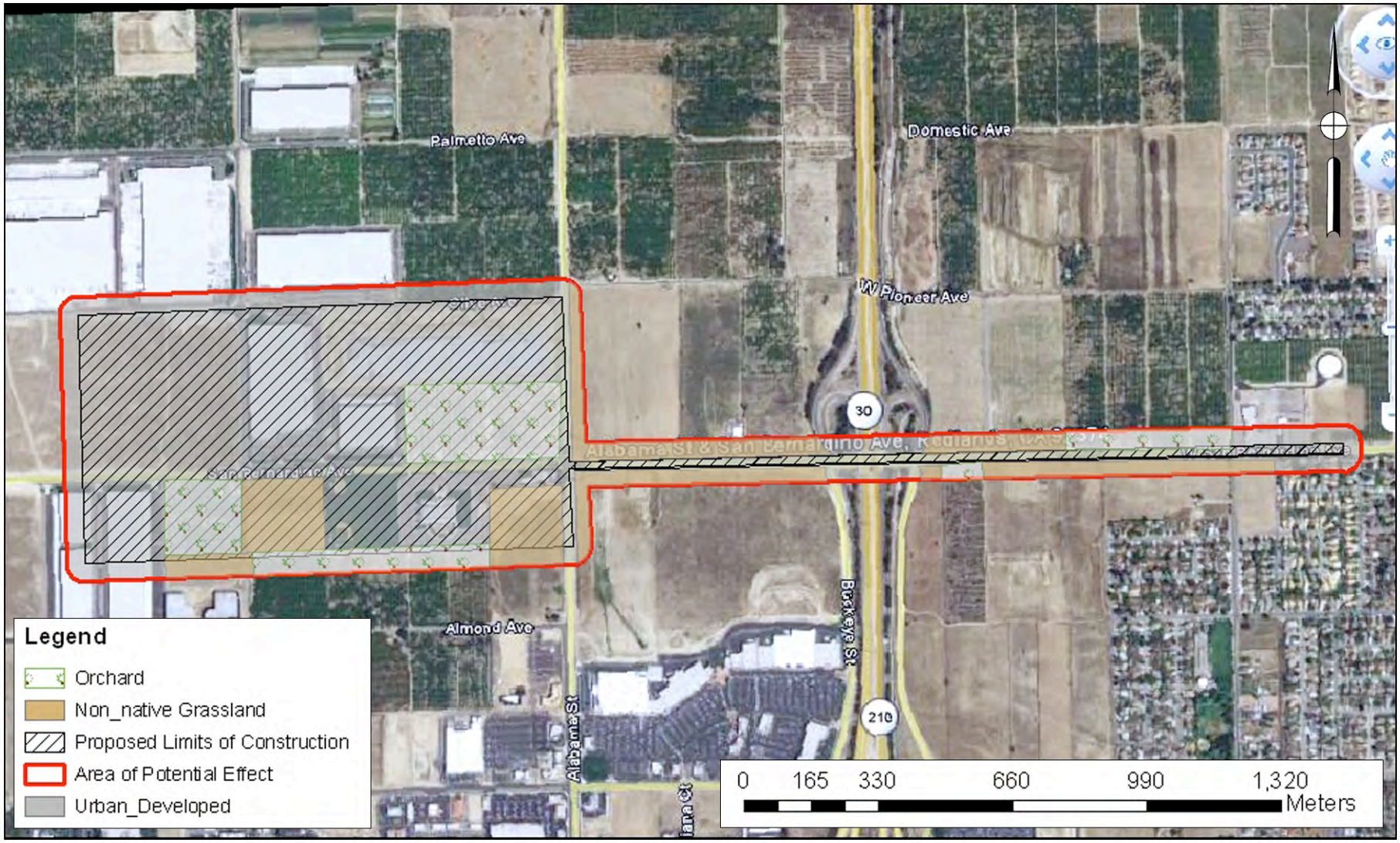

Figure 4

Impacts to Plant Communities

Riverside-Corona Feeder Connection to Central Feeder

Table 5 Plant Communities Effected Riverside – Corona Feeder, Connection to Central Feeder San Bernardino County, California		
Plant Community	**Acres Present Area of Potential Effect**	**Acres Effected**
Urban/Developed	186.2	157.7
Orchard	40.4	28.4
Non-Native Annual Grassland	49.9	16.9
Total	276.5	203.0

Nevin's Barberry (*Berberis nevinii*)

Suitable habitat for Nevin's barberry is not present within or adjacent to the limits of construction. Nevin's barberry was not observed during site visits and will not be affected by the proposed action.

Salt Marsh Bird's-Beak (*Cordylanthus maritimus maritimus*)

Suitable habitat for salt marsh bird's-beak is not present within or adjacent to the limits of construction. Salt marsh bird's-beak was not observed during site visits and will not be affected by the proposed action.

Slender-Horned Spineflower (*Dodecahema leptocercas*)

Suitable habitat for the slender-horned spineflower does not occur within or adjacent to the limits of construction. This species was not observed during site visits and will not be affected by the proposed action.

Santa Ana River Woollystar *(Eriastrum densifolium sanctorum)*

Suitable habitat for the Santa Ana River woollystar is not present within or adjacent to the limits of construction. Santa Ana River woollystar was not observed during site visits and will not be affected by the proposed action.

Sierra Madre Yellow-Legged Frog (*Ranus mucosa*)

Suitable habitat for the Sierra Madre yellow-legged frog is not present within or adjacent to the limits of construction. This species was not observed during site visits and will not be affected by the proposed action.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)

Suitable habitat for western yellow-billed cuckoo is not present within or adjacent to the limits of construction. Western yellow-billed cuckoo was not observed during site visits and will not be affected by the proposed action.

Coastal California Gnatcatcher (*Polioptila californica californica*)

Suitable habitat for the coastal California gnatcatcher is not present within or adjacent to the limits of construction. The project area is not located within designated critical habitat. Coastal California gnatcatchers were not observed during site visits and will not be affected by the proposed action.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Suitable habitat for the southwestern willow flycatcher does not occur within or adjacent to the limits of construction. The southwestern willow flycatcher was not observed during site visits and will not be affected by the proposed action.

Least Bell's Vireo (*Vireo bellii pusillus*)

Suitable habitat for least Bell's vireo is not present within or adjacent to the limits of construction. The proposed project area is not located within designated critical habitat for the species. Least Bell's vireo was not observed during site visits and will not be affected by the proposed action.

Western Burrowing Owl (*Athene cunicularia hypugaea*)

Suitable habitat for the western burrowing owl is present in the non-native annual grasslands within the project area. Burrowing owls were not observed during site visits; however, the presence of suitable habitat requires conducting focused surveys for this species. In addition, a 30-Day Burrowing Owl Pre-Construction Survey will be required even if owls are not found during the focused surveys.

Stephens' Kangaroo Rat (*Dipodomys stephensi*)

Suitable habitat for Stephens' kangaroo rat is not present within or adjacent to the limits of construction. Evidence or sign of Stephens' kangaroo rat (burrows, droppings, tracks, tail-drags) was not observed during site visits and will not be affected by the proposed action.

San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*)

Suitable habitat for the San Bernardino kangaroo rat is not present on the project site. Evidence or sign of this species (burrows, droppings, tracks, tail-drags) was not observed during site visits and will not be affected by the proposed action.

9.0 RECOMMENDED MITIGATION OR AVOIDANCE MEASURES

9.1 Western Burrowing Owl

Prior to any construction activity (including clearing, grubbing, and grading), focused surveys shall be conducted of all suitable western burrowing owl habitat potentially affected by the proposed action.

If there is more than a 30-day interval between the focused surveys and commencement of construction, a 30-Day Burrowing Owl Pre-Construction Survey shall be conducted even if western burrowing owls were not observed during the focused surveys. If construction starts within 30 days of the pre-construction survey, additional surveys shall not be required.

10.0 CONCLUSIONS

In conclusion, it has been determined that if the proposed mitigation measures are implemented, the proposed action will have no effect on marsh sandwort, Nevin's barberry, salt marsh bird's-beak, slender-horned spineflower, Santa Ana River woollystar, Sierra Madre yellow-legged frog, western yellow-billed cuckoo, coastal California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, Stephens' kangaroo rat, San Bernardino kangaroo rat, and western burrowing owl.

11.0 CERTIFICATION

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

DATE: December 4, 2009 SIGNED: _____

Laurence N. Dean, Senior Biologist

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BIOLOGICAL ASSESSMENT
CEQA
RIVERSIDE – CORONA FEEDER

CLAY STREET CONNECTION

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Revised December 4, 2009

REPORT SUMMARY

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Report Date:	Revised December 4, 2009
Report Title:	Biological Assessment, CEQA, Riverside – Corona Feeder, Clay Street Connection
Prepared for:	Albert A. Webb Associates 3788 McCray Street Riverside, California 92506
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Submitted by:	Brian F. Smith and Associates 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
USGS Quadrangle:	*Riverside West*, California (7.5 minute)
Study Area:	Approximately 25.42 acres

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Summary

The Riverside – Corona Feeder, Clay Street Connection Project consists of the placement of approximately 7,800 linear feet of pipeline along Limonite Avenue from the road's intersection with Clay Street westward to Pedley Road then continuing north on Pedley Road to 56th Street. Four proposed booster station sites are included in the assessment. The proposed pipeline alignment will directly affect 18.8 acres of Urban/Developed habitat . Proposed Booster Station 1 will directly affect an additional 0.3 acres of Urban/Developed habitat and 3.3 acres of non-native grassland habitat. Proposed Booster Station 2 will directly affect an additional 1.4 acres of Urban/Developed habitat. Proposed Booster Station 3 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.7 acres of non-native grassland habitat. Proposed Booster Station 4 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.9 acres of non-native grassland habitat .

Eleven species (dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Brand's star phacelia, San Miguel savory, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, western burrowing owl, and Stephens' kangaroo rat) listed under state and federal endangered species acts and the Western Riverside County Multiple Species Habitat Conservation Plan were determined to potentially be present within or near the proposed project area. Suitable habitat for these species was not found within the limits of construction. The proposed project area is not within or adjacent to designated critical habitat for any listed species.

It has been determined that if proposed mitigation measures are followed, the proposed action will have no effect on dwarf burr ambrosia, Santa Ana River woollystar, Dehli sands flower-loving fly, Brand's star phacelia, San Miguel savory, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, western burrowing owl, and/or Stephens' kangaroo rat.

1.0 INTRODUCTION

The purpose of this Biological Assessment is to address the effect of the Riverside – Corona Feeder, Clay Street Connection Project on species listed as endangered or threatened under state and federal endangered species acts and species covered by the Western Riverside County Multiple Species Habitat Conservation Plan.

The Western Municipal Water District intends to carry out the construction of the Riverside – Corona Feeder, Clay Street Connection under Title IX, Subtitle B, Section 9112 of the Omnibus Public Lands Act of 2009, Public Law 111-11. This Biological Assessment,

prepared for Albert A. Webb Associates, addresses the proposed action in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended, the California Endangered Species Act (Fish and Game Code Section 2050 *et seq*.), and provisions of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

2.0 PROJECT LOCATION

The proposed project is located in western Riverside County, California (Figure 1). The proposed project area is located within the right-of-way for Limonite Avenue between Clay Street and Pedley Road and within the right-of-way of Pedley Road between Limonite Avenue and 56th Street (Figure 2). Three proposed booster station sites are located at the intersection of Pedley Road/Morton Avenue and Limonite Avenue (see Figure 2). A fourth proposed booster station is located at the northwest of the intersection of Limonite Avenue and Baldwin Avenue (see Figure 2).

3.0 PROJECT DESCRIPTION

The Riverside – Corona Feeder, Clay Street Connection Project consists of the placement of approximately 7,800 linear feet of pipeline up to 48 inches in diameter. This connection will allow the Riverside – Corona Feeder to connect to an existing Jurupa Community Services District waterline located in 56th Street, to tie into the Chino Desalter Phase 3 expansion, and to facilitate the connection of Western Municipal Water District facilities to those that are a part of the Chino Basin Dry-Year Yield Program. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction (MacHott 2009).

The project is assessed based on the Area of Potential Effect, which is the area that is potentially impacted physically, visibly, and audibly by the proposed action. Impacts include the direct effects of construction and the indirect effects of construction such as noise. The Area of Potential Effect for the proposed project extends 150 feet on either side of the limits of construction for the pipeline alignment and the booster stations.

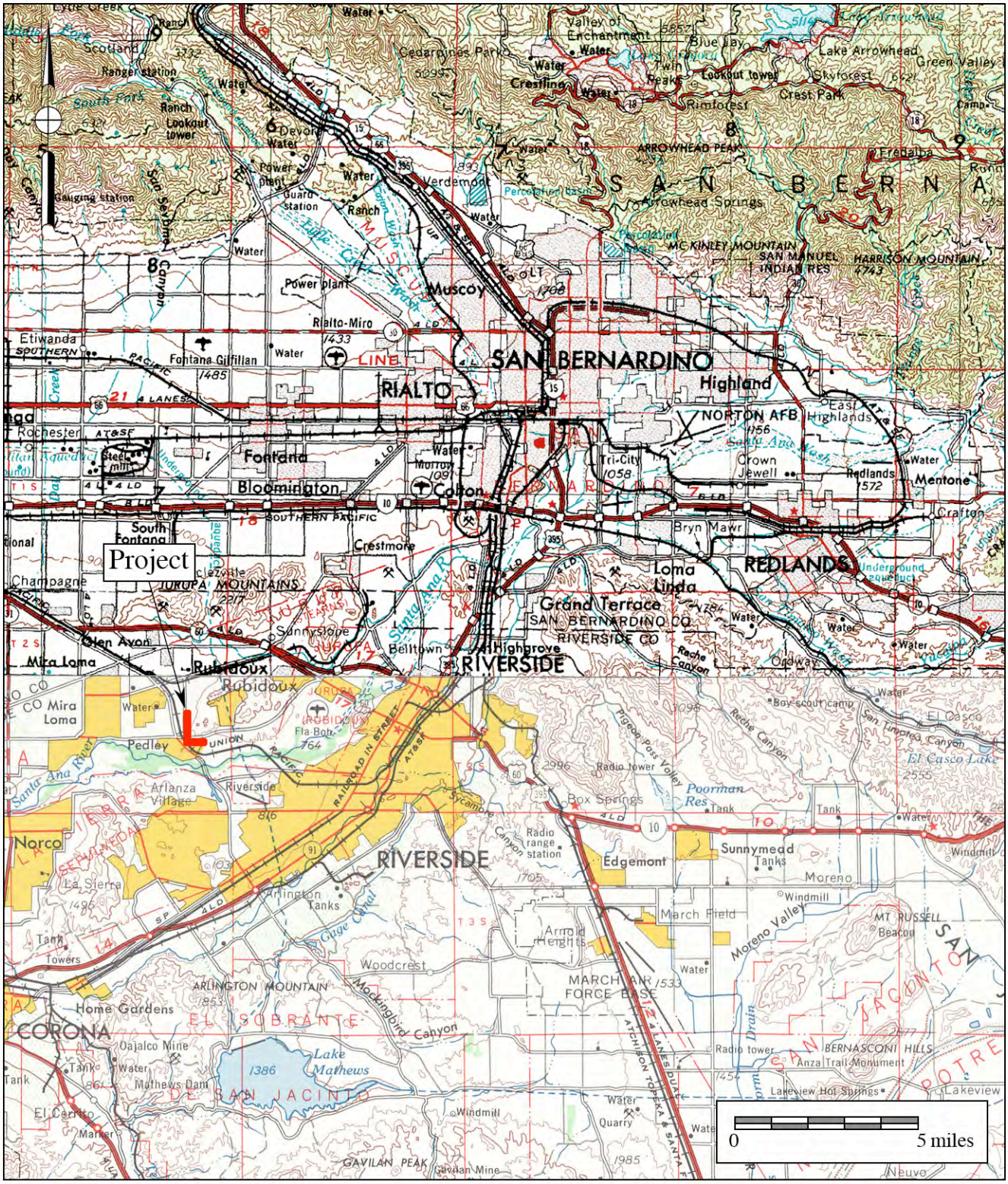

Figure 1

General Location Map

Riverside–Corona Feeder, Clay Street Connection

USGS *Santa Ana and San Bernardino* (1:250,000 series)

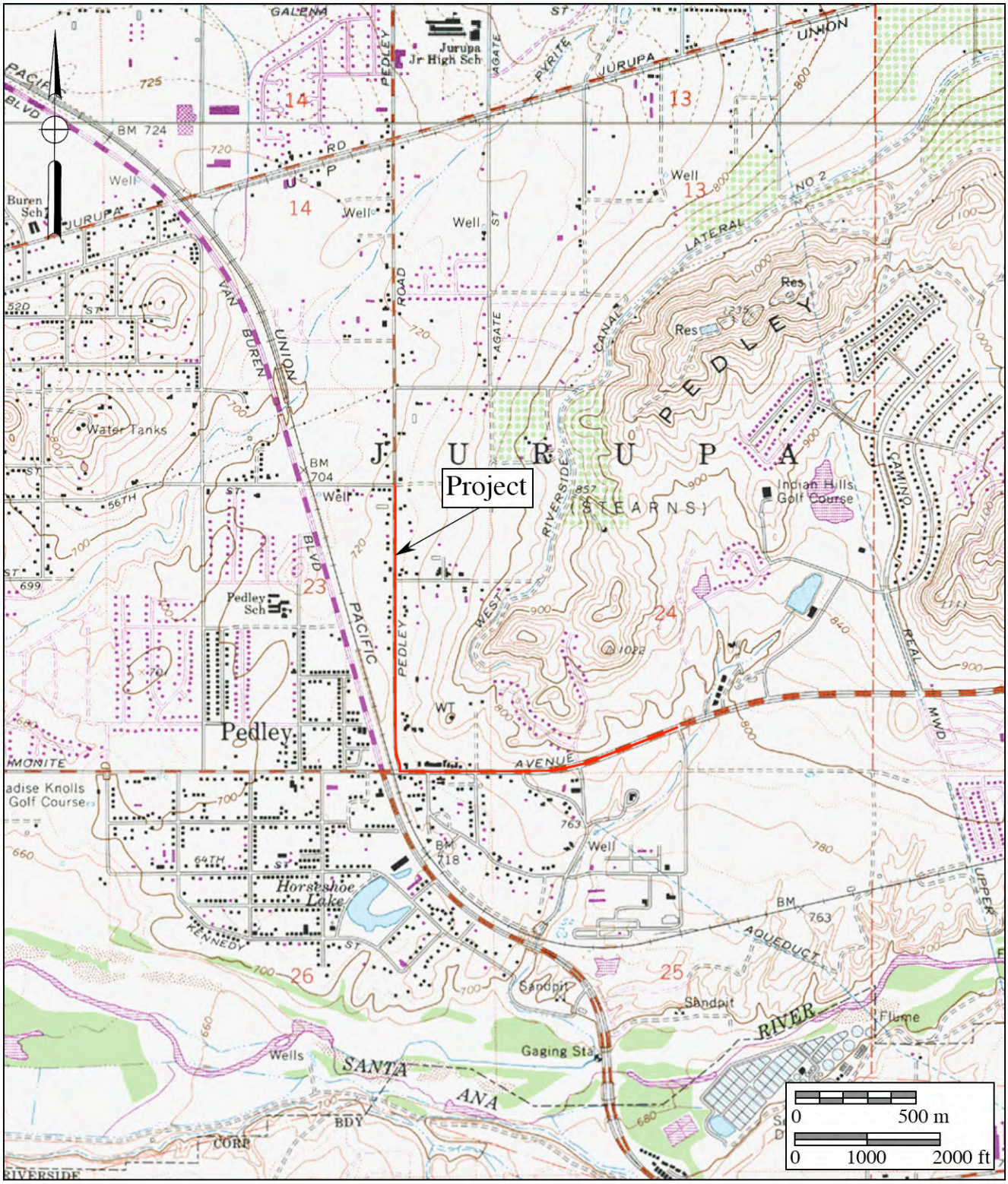

Figure 2

Project Location Map

Riverside–Corona Feeder, Clay Street Connection

USGS *Riverside West* and *Fontana* Quadrangles (7.5 minute series)

4.0 METHODS

Prior to the project site visit, Brian F. Smith and Associates' biologists reviewed the California Natural Diversity Data Base (CNDDB 2009a and b), and the California Native Plant Society Rare Plant Inventory (CNPS 2009) to determine if sensitive species may be present within or near the limits of construction. National Wetland Inventory maps (USFWS 2009) for the project were consulted to determine if wetlands have been mapped within the limits of construction. Appropriate United States Geological Survey maps (7.5 minute) were reviewed to determine if drainage features, including "blue-line streams," may be present. The List of Hydric Soils for Western Riverside County (NCRS 2009) and the Soils Survey Western Riverside County (USDA 1971) were consulted to determine soils associated with the proposed project area.

The project area is small enough to allow one biologist to cover the entire site in one visit. The site was surveyed on foot by slowly walking over the area in a series of random transects to provide visual coverage of the entire project area. Vegetation and wildlife species observed were recorded as field observations were made. Wildlife signs (scat, bones, feathers, tracks, dens and burrows) were also recorded if encountered. Frequent pauses were made during the survey to watch and listen for wildlife.

5.0 EXISTING ENVIRONMENT

This discussion of the existing environment describes the project area and includes general physical characteristics of the project area, plant communities associated with the project area, and biological resources in the vicinity of the project area.

5.1 Physical Characteristics

The discussion of physical characteristics includes soils, topography, and geology.

5.1.1 Soils

Soils associated with the proposed project area are predominantly (WSS 2009):

- Madera fine sandy loam, 5 to 8 percent slopes, eroded
- Madera fine sandy loam, shallow, 2 to 8 percent slope, eroded
- Ramona sandy loam, 0 to 5 percent slopes, severely eroded
- Hanford coarse sandy loam, 2 to 8 percent slopes.
- Terrace Escarpments

The Madera series consists of well to moderately drained loam over a moderately deep hardpan. Madera series soils formed in old alluvium derived from granitic rock (NRCS 2009).

The Ramona series is a member of the fine-loamy, mixed, thermic family of Typic Haploxeralfs (Haploxeralfs are moderately deep to very deep, well to somewhat excessively drained soils formed in mixed parent materials associated with brushlands). Ramona soils are slightly to medium acidic sandy loams or sandy clay loams near the surface but tend to become neutral at deeper depths (NRCS 2009).

Hanford series soils are very deep, well-drained soils that formed in moderately coarse textured alluvium derived from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans and have slopes of 0 to 15 percent (NRCS 2009).

The Terrace Escarpment series occurs on steep slopes along narrow flood plains. In most places, there is a layer of loam or gravelly soil that overlays soft marine sandstone, gravels, or shale (NRCS 2009).

5.1.2 Topography

The project area is sloped, with the lowest point located at the north end of Pedley Road and highest point located at the south end of Pedley Road at the intersection with Limonite Avenue. Elevations within the project area range from approximately 800 feet above mean sea level to 760 feet above mean sea level.

5.1.3 Geology

Riverside County is located in the Peninsular Range Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the County, extends some 1,000 miles from the Raymon – Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California, Mexico. The project area is located on an alluvial terrace north of Lake Mathews, and is underlain by Cenozoic non-marine (continental) sedimentary rock and alluvial deposits.

5.2 Biological Resources

The Biological Resources section discusses vegetation, plant communities, wildlife (including sensitive species), and associated habitats found within the proposed project area. In addition to the limits of construction, the adjacent areas (out to a distance of 150 feet on either side of the limits of construction) are discussed.

5.2.1 Plant Communities

The pipeline alignment along Limonite Avenue and Pedley Road is in an Urban/Developed plant community. The proposed site for Booster Station 2 is also in an Urban/Developed habitat. The proposed sites for Booster Stations 1, 3, and 4 are in predominantly non-native grassland habitat (Figure 3 and Table 1). Plant species observed during site visits are listed in Table 2.

Descriptions of plant communities are based on Holland's (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California.* The descriptions developed by Holland (1986) provide a standard nomenclature for plant communities throughout California. Holland does not provide descriptions of some plant communities. In those instances, descriptions from *Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions* (Oberbauer 1996) have been used.

<u>Urban/Developed, Element Code 12000 (Oberbauer 1996)</u>

Urban/Developed is a mixture of built structures such as roads, residences, commercial buildings, and parking lots. Vegetation is largely non-native and includes lawns, golf courses, road shoulders, airports, and parks. Remnants of native plant communities may be found at scattered, isolated locations. Ruderal communities occur in areas of disturbance. Vegetation in these areas consists of non-native invasive plants.

<u>Non-Native Grassland, Element Code 42200 (Holland 1986)</u>

Non-native grasslands are found throughout most of southern California. This community consists of non-native annual grasses such as red brome (*Bromus rubens*), Wild oats (*Avena fatua and Avena barbata*), and rip-gut brome (*Bromus diandrus*). Several flowering forbs such as Filaree (*Erodium* spp.), Phacelia *(Phacelia* spp.), tarweeds (*Hemezonia* spp.), and lupines (*Lupinus* spp.) are also found in non-native grasslands.

5.2.2 Zoological Resources

Wildlife observed along Limonite Avenue, Pedley Road, and the adjacent proposed booster station sites was representative of urban areas and include starlings, American crow, and pigeons (Table 3).

5.2.3 Sensitive Species and Critical Habitat

A total of 11 sensitive species were determined to be potentially present in the vicinity of the proposed action. A review of the California Natural Diversity Data Base (2009a and b) indicated that eight sensitive species listed as threatened or endangered by state and federal endangered species acts may be present (Table 4).

Figure 3

Plant Communities

Riverside-Corona Feeder, Clay Street Connection

Table 1
Plant Communities
Area of Potential Effect
Riverside – Corona Feeder, Clay Street Connection
Riverside County, California

Plant Community	Acres
Urban/Developed	55.4
Non-Native Grassland	12.6
Total	68.0

Table 2
Plant Species Observed
Riverside – Corona Feeder, Clay Street Connection
Riverside County, California

Common Name	*Scientific Name*	Habitat
Red brome	*Bromus madritensis rubens*	N/U
Wild oat	*Avena fatua*	N/U
Rip-gut brome	*Bromus diandrus*	N/U
Bermuda grass	*Cynodon dactylon*	N/U
Telegraphweed*	*Heterotheca grandiflora*	N/U
Horseweed*	*Conzya candensis*	N/U
Sun flower*	*Helianthus annuus*	N/U
Sheep sorrel*	*Rumex acetosella*	N
Western ragweed*	*Ambrosia psilostachya*	N/U
Short-pod mustard	*Hirschfeldia incana*	N/U
Phacelia*	*Phacelia spp.*	N
Fiddleneck*	*Amsinckia menziesii*	N
Jimson weed/sacred datura*	*Datura wrightii*	N
Dove weed*	*Croton setigerus*	N
Tree of Life	*Ailanthus altissima*	N
Olive	*Olea europaea*	N
Russian thistle	*Salsola kali*	N

* – Native Plant Species
N – Non-Native Grassland
U – Urban/Developed

Table 3 Animal Species Observed Directly or Indirectly Riverside – Corona Feeder, Clay Street Connection Riverside County, California	
Starling	*Sturnus vulgaris*
American crow	*Corvus brachyrhynchos*
Common pigeon	*Columba livia*

Table 4
Listed Species Potentially Present
Riverside – Corona Feeder, Clay Street Connection
Riverside County, California

Common Name	***Scientific Name***	**Federal Status**	**State Status**	**CNPS Rank**
Dwarf burr ambrosia	*Ambrosia pumila*	E	--	1B.1
Santa Ana River woollystar	*Eriastrum densifolium sanctorum*	E	E	1B.1
Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	E	--	NA
Brand's star phacelia	*Phacelia stellaris*	C	--	1B.1
San Miguel savory	*Satureja chandleri*	--	--	1B.2
Santa Ana Sucker	*Catostomus santaanae*	T	--	NA
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	E	NA
Coastal California gnatcatcher	*Polioptila californica californica*	T	--	NA
Least Bell's vireo	*Vireo bellii pusillus*	E	E	NA
Stephens' kangaroo rat	*Dipodomys stephensi*	E	T	NA
Western burrowing owl	*Athene cunicularia hypugaea*	MBTA	SSC	NA

E – Endangered
T – Threatened
C – Candidate for listing as threatened or endangered
SSC - Species of Special Concern
MBTA – Migratory Bird Treaty Act
1.B – Rare, threatened, or endangered in California or elsewhere
0.1 – Seriously endangered in California
0.2 – Fairly endangered in California

The Western Riverside County Multiple Species Habitat Conservation Plan is a comprehensive, multi-jurisdictional habitat conservation plan focusing on the conservation of species and their associated habitats in western Riverside County. Species covered by the Western Riverside County Multiple Species Habitat Conservation Plan are those species included in the Incidental Take Authorization issued to the County by the federal or state government as part of the Western Riverside County Multiple Species Habitat Conservation Plan. Potential impacts to covered species must be assessed as part of any project within the plan area to ensure that authorized "incidental take" is not exceeded. In addition to the eight species protected by the endangered species acts, the Western Riverside County Multiple Species Habitat Conservation Plan indicated that three narrow endemic species and the western burrowing owl may occur in the vicinity of the proposed project area. If suitable habitat is present for narrow endemic species or the western burrowing owl, additional studies will be required.

U. S. Fish and Wildlife Service data (USFWS 2009) and the California Natural Diversity Data Base (2009a and b) were consulted to determine if critical habitat for sensitive species may be present within the project area. Critical habitat is a specific geographic area or areas that are essential for the survival of a threatened or endangered species. Critical habitat may include an area not currently occupied by the species, but that will be needed for its recovery. The proposed project area is not within designated critical habitat.

The Western Riverside County Multiple Species Habitat Conservation Plan was consulted to determine if the proposed project area is located within the designated reserve assembly. The reserve assembly is a preserve system described by the Western Riverside County Multiple Species Habitat Conservation Plan. Development in the reserve assembly is limited and controlled by the County. The proposed project area is not within the reserve assembly.

Dwarf Burr Ambrosia (*Ambrosia pumila*)

Dwarf burr ambrosia (also known as San Diego Ambrosia) is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. Dwarf burr ambrosia is a narrow endemic plant species covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

In Riverside County, dwarf burr ambrosia is associated with open, gently sloped grasslands and is generally associated with alkaline soils. Dwarf burr ambrosia generally occurs on slopes ranging from 0 to 9 percent on sandy or clay loams.

Only three populations of dwarf burr ambrosia are known to occur in Riverside County. The two largest populations occur in the vicinity of Alberhill located approximately 19 miles southeast of the proposed project area. A third and smaller population is found at Skunk Hollow located approximately 35 miles southeast of the proposed project area.

Habitat for the dwarf burr ambrosia is not present within the limits of construction. Dwarf burr ambrosia was not observed during site visits and is not likely to be present.

Santa Ana River Woollystar *(Eriastrum densifolium sanctorum)*

The Santa Ana River woollystar is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. Santa Ana River woollystar is a narrow endemic plant species covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The Santa Ana River woollystar is found in open washes and early-successional alluvial fan scrub where flooding and scouring keeps the scrub open. Suitable habitat is usually a combination of gravelly and sandy soils with scattered cobbles and boulders (MSHCP 2003). Santa Ana River woollystar has been reported along the Santa Ana River about 4.7 miles southeast of the proposed project area.

Habitat for the Santa Ana River woollystar is not present within the limits of construction. Santa Ana River woollystar was not observed during site visits and is not likely to be present.

Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*)

The Delhi Sands flower-loving fly is listed as endangered by the U. S. Fish and Wildlife Service. The State of California has not listed this species. The Delhi Sands flower-loving fly is covered by the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat has not been designated for this species.

The Delhi Sands flower-loving fly is restricted to the Colton Dunes (Delhi soil series) in northwestern Riverside and southwestern San Bernardino counties in southern California. Existing populations of the Delhi Sands flower-loving fly occur within Riverside and San Bernardino counties straddling Interstate 10 in the vicinity of Colton and Rialto and from Colton to Mira Loma. The Delhi Sands flower-loving fly has not been reported in the vicinity of the proposed project area.

Suitable habitat for this species (Delhi soils) is not present within the limits of construction. The Delhi Sands flower-loving fly was not observed during site visits and is not likely to be present.

Brand's Star Phacelia (*Phacelia stellaris*)

Brand's star phacelia is a federal candidate for listing as a threatened or endangered species. The State of California has not listed this species. Brand's star phacelia is a narrow endemic plant species covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

Brand's star phacelia is usually associated with coastal dunes and/or coastal scrub in sandy openings, sandy benches, dunes, sandy washes, or flood plains of rivers and is restricted to clay (MSHCP 2003). The closest recorded occurrence of Brand's star phacelia is approximately 30 miles west of the proposed project area.

Suitable habitat for Brand's star phacelia is not present within the limits of construction. Brand's star phacelia was not observed during site visits and is not likely to be present.

San Miguel Savory (Satureja chandleri)

San Miguel savory is not listed by the U. S. Fish and Wildlife Service or the California Department of Fish and Game. San Miguel savory is a narrow endemic plant species covered by the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

San Miguel savory is possibly one of the most endangered plants in California. Potential habitat for this species includes areas supporting rocky, gabbroic, and metavolcanic substrates in coastal sage scrub, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands (MSHCP 2003). The closest recorded occurrence of this species is on the Santa Rosa Plateau located approximately 22 miles southeast of the proposed project area.

Suitable habitat for San Miguel savory is not present within the limits of construction. San Miguel savory was not observed during site visits and is not likely to be present.

Santa Ana Sucker (*Catostomus santaanae*)

The Santa Ana sucker is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat was designated for the Santa Ana sucker in 2005 (50 CFR 17).

The Santa Ana sucker is a fish species that is generally found in small, shallow streams with currents ranging from swift to sluggish. They are found at depths ranging from a few centimeters to one meter or more. Substrates in these streams generally consist of gravel, rubble, and boulders. Streams in which the species is found are subject to periodic, severe flooding (MSHCP 2003).

Aquatic habitat is not present within the limits of construction. Therefore, the Santa Ana sucker is not present within the limits of construction and will not be affected by the proposed project.

Western Yellow-Billed Cuckoo *(Coccyzus americanus occidentalis)*

The western yellow-billed cuckoo is a U. S. Fish and Wildlife Service candidate for listing as threatened or endangered (FR 73:238). This species is listed as endangered by the State of California. The western yellow-billed cuckoo is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The western yellow-billed cuckoo in California requires dense, wide riparian woodlands with well-developed understory for breeding. Breeding is restricted to river bottoms where dense understory is adjacent to slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation (MSHCP 2003). The western yellow-billed cuckoo has been reported in Southern Cottonwood Willow Riparian Woodland along the Santa Ana River approximately 2 miles east of the proposed project area.

Suitable habitat for the western yellow-billed cuckoo is not present within the limits of construction. The western yellow-billed cuckoo was not observed during site visits and is not likely to be present.

Coastal California gnatcatcher *(Polioptila californica californica)*

The coastal California gnatcatcher is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. The coastal California gnatcatcher is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat for the coastal California gnatcatcher was designated in 2000 and revised in 2007 (FR 74:115).

The coastal California gnatcatcher is a small, non-migratory songbird that is found in or near sage scrub habitat in southwestern California and northwestern Baja California, Mexico. The coastal California gnatcatcher is found almost exclusively in sage scrub, but has also been

found in chaparral and riparian habitats. The coastal California gnatcatcher has been reported in Riversidean sage scrub approximately 1.5 miles northeast of the proposed project area.

Suitable habitat for the coastal California gnatcatcher is not present within or adjacent to the limits of construction. The coastal California gnatcatcher was not observed during site visits and is not likely to be present.

Designated critical habitat is located approximately 4 miles northeast of the proposed project area.

Least Bell's Vireo *(Vireo bellii pusillus)*

Least Bell's vireo is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. The coastal California gnatcatcher is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat was designated for least Bell's vireo in 1994 (FR 59:22).

Least Bell's vireos are usually found in riverine/riparian habitats that typically have dense understory within 1-2 meters of the ground and a dense, stratified canopy along water or along dry parts of intermittent streams. Typically, least Bell's vireo is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast lie oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities and in the immediate vicinity of water.

Suitable habitat for the least Bell's vireo does not occur within or adjacent to the limits of construction. The least Bell's vireo was not observed during site visits and is not likely to be present.

The proposed project area is not located within designated critical habitat for least Bell's vireo.

Stephens' Kangaroo Rat *(Dipodomys stephensi)*

Stephens' kangaroo rat is listed as endangered by the U. S. Fish and Wildlife Service and as threatened by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Focused surveys will be required if suitable habitat is present. Critical habitat has not been established for Stephens' kangaroo rat.

Stephens' kangaroo rat is covered by the Stephens' Kangaroo Rat Habitat Conservation Plan (RCHCA 2009). The primary purpose of the habitat conservation plan is to provide the

information required for issuance of a federal permit from the U. S Fish and Wildlife Service for "incidental take" of Stephens' kangaroo rat and equivalent authorization from the California Department of Fish and Game through an endangered species permit. The habitat conservation plan replaced the Riverside County Habitat Conservation Agency's existing Stephens' kangaroo rat conservation program and its federal and state incidental take authorizations with the program and authorizations described in the habitat conservation plan. The habitat conservation plan intends to provide for the establishment, expansion, and ongoing management of permanent reserves to ensure the continued existence of Stephens' kangaroo rat in the habitat conversation plan area of western Riverside County, while providing opportunities to benefit other species of concern (RCHCA 2009).

The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrub lands with cover of less than 50 percent during the summer. The proportion of annual forbs and grasses is important because Stephens' kangaroo rats avoid dense grasses and are more likely to inhabit more open areas. Soil type also is an important habitat factor for Stephens' kangaroo rat occupation. The Stephens' kangaroo rat typically is found in sandy loams with low clay to gravel content. Slope is a factor in Stephens' kangaroo rat occupation; the Stephens' kangaroo rat tends to use flatter slopes (i.e., < 30 percent). In general, the highest abundance of Stephens' kangaroo rats occurs on gentle slopes less than 15 percent (MSHCP 2003). Stephens' kangaroo rat populations have been reported within 6 miles of the proposed project area.

Grassland associated with the proposed project area is very dense or has been disked. Therefore, Suitable habitat for Stephens' kangaroo rats is not present within or adjacent to the limits of construction. Burrows and sign such as droppings and tail drags were not observed during site visits. Stephens' kangaroo rat is not likely to be present within the limits of construction.

Western Burrowing Owl (*Athene cunicularia hypugaea*)

The western burrowing owl is not listed by the U. S. Fish and Wildlife Service or the State of California. The U. S. Fish and Wildlife Service considers the western burrowing owl a "Bird Species of Concern" that may become listed as threatened or endangered if significant management steps are not taken. The western burrowing owl is protected under the Migratory Bird Treaty Act. The western burrowing owl is a California State Bird Species of Special Concern (Class 2). Class 2 Bird Species of Special Concern have scattered or highly localized populations and require active management to prevent them from becoming threatened or endangered species (Shuford and Gardali 2008). This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Additional surveys are required if a proposed project area is located within suitable habitat for this species.

Burrowing owls use a variety of natural habitats for nesting and foraging that are typically characterized by low-growing vegetation. Burrowing owl habitat includes native and non-native annual grassland, natural clearings within shrub lands, shrub lands with low density shrub cover, golf-courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas (MSHCP 2003).

Burrowing owls typically use burrows made by burrowing mammals, such as ground squirrels (*Spermophilus beecheyi*) or badgers (*Taxidea taxus*). They may also utilize man-made structures, such as earthen berms; cement culverts; cement, asphalt, rock, or wood debris piles; or openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, or in proximity to man-made structures (MSHCP 2003).

Western burrowing owls were not observed during site visits. Suitable habitat is not present along Pedley Road and Limonite Avenue; however, suitable habitat for this species is present in non-native grasslands within proposed Booster Station sites 1, 3, and 4.

6.0 JURISDICTIONAL WATERS AND WETLANDS

6.1 Wetlands

To be considered a wetland, a site must meet three criteria: hydric soils, wetland hydrology, and, hydrophytic vegetation. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil. The presence of hydric soils may be determined by a variety of field indicators and by consulting a list of hydric soils for the project area. The soils associated with the current project area are not on the list of hydric soils for the State of California (NRCS 2009). Field indicators such as low chroma soils, concretions, and/or oxidized root channels were not observed.

Wetland hydrology is present when, under normal circumstances, the land surface is either inundated or the upper portion of the soil is saturated at a sufficient frequency and duration to create anaerobic conditions. Field indicators used for hydric soils may be used to support the presence or absence of wetland hydrology. There is no indication that soils within the limits of construction are inundated or saturated for a long enough period of time during the growing season to promote hydric conditions or hydrophytic vegetation. Field indicators of hydric soils such as low chroma soils, concretions, and/or oxidized root channels were not observed.

In general, hydrophytic vegetation includes plants that thrive in wet conditions and exhibit obvious physical adaptations for the capturing and transporting of oxygen. Some hydrophytic vegetation such as mule fat occurs in drainages within the limits of construction; however, this vegetation is not predominant (fifty-one percent or greater). The project area does not meet the criterion for hydrophytic vegetation.

Based on the absence of hydric soils, wetland hydrology, and hydrophytic vegetation, there are no wetlands present within the limits of construction.

7.0 JURISDICTIONAL DETERMINATION

Two agencies or entities may have jurisdictional responsibilities related waters occurring within the proposed project area: U. S. Army Corps of Engineers; and, California Department of Fish and Game. The basis for jurisdiction is discussed below.

7.1 U. S. Army Corps of Engineers

The U. S. Army Corps of Engineers regulates dredging and filling in Waters of the United States under the authority of Section 404 of the Clean Water Act. Waters of the United State are defined to include all navigable waters including tidal waters, all interstate waters and wetlands, all impoundments of the waters mentioned above, all tributaries of the waters mentioned above, all territorial seas, and all wetlands adjacent to the waters mentioned above (33 CFR 328).

Title 33 of the Code of Federal Regulations defines wetlands as, "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" [33 CFR 328.3(b)]. In the Solid Waste Agency of Northern Cook County v. Army Corps of Engineers, the U. S. Supreme Court determined that U. S. Army Corps of Engineers jurisdiction may not extend to wetlands and waterways where the only nexus with Waters of the U. S. is use by migratory birds. In the Rapanos – Carabell Supreme Court decisions, the Supreme Court rejected the argument that the term "waters of the United States" is limited to only those waters that are navigable in the traditional sense and their abutting wetlands. However, the court decided that regulatory authority should extend only to "relatively permanent, standing or continuously flowing bodies of water" connected to traditional navigable waters, and to "wetlands with a continuous surface connection to" such relatively permanent waters (EPA/COE 2008).

Two distinct jurisdictional tests emerged from the Rapanos–Carabell decision: "significant nexus" test and "relatively permanent, standing or continuously flowing" test. The U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency have developed guidelines for making jurisdictional determinations based on these tests. The following summary of key points related to U. S. Environmental Protection Agency and U. S. Army Corps of Engineers jurisdiction is taken directly from a joint EPA/USACOE memorandum (EPA/COE 2008).

7.1.1 Summary of Key Points related to EPA and USACOE Jurisdiction

"The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries."

"The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

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

"The agencies generally *will not assert* jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water."

"The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters."

"Significant nexus includes consideration of hydrologic and ecologic factors."

Based on these criteria, there are no jurisdictional waters or wetlands present within the limits of construction. However, only the U. S. Army Corps of Engineers may make a final determination regarding jurisdiction.

7.2 California Department of Fish and Game

Sections 1600 through 1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the California Department of Fish and Game for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use material from a streambed." The California Department of Fish and Game defines a stream, creek or river 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." The California Department of Fish and Game defines lakes as including man-made lakes and reservoirs. In addition to the bed and banks of a stream, the California Department of Fish and Game jurisdiction includes riparian or wetland vegetation associated with the water body. Projects that require a Streambed Alteration Agreement may also require a permit from the U. S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Based on these criteria, there are no waters falling under the jurisdiction of the California Department of Fish and Game within the limits of construction. However, only the State of California may make a final determination regarding jurisdiction.

8.0 EFFECTS OF THE PROPOSED ACTION

The proposed pipeline alignment will directly affect 18.8 acres of Urban/Developed habitat consisting primarily of asphalt paving, concrete gutters and curbs, and road shoulders largely devoid of vegetation along Limonite Avenue and Pedley Road (Figure 4). Proposed Booster Station 1 will directly affect an additional 0.3 acres of Urban/Developed habitat and 3.3 acres of non-native grassland habitat. Proposed Booster Station 2 will directly affect an additional 1.4 acres of Urban/Developed habitat. Proposed Booster Station 3 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.7 acres of non-native grassland habitat. Proposed Booster Station 4 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.9 acres of non-native grassland habitat (Table 5).

Figure 4

Impacts to Plant Communities

Riverside-Corona Feeder, Clay Street Connection

Table 5 Plant Communities Effected Riverside – Corona Feeder, Clay Street Connection Riverside County, California	
Pipeline Alignment	**Acres Potentially Effected**
Urban/Developed	18.8
Total	18.8
Proposed Booster Station 1 Site	
Non-Native Grassland	3.3
Urban/Developed	0.3
Total	3.6
Proposed Booster Station 2 Site	
Urban/Developed	1.4
Total	1.4
Proposed Booster Station 3 Site	
Non-Native Grassland	0.7
Urban/Developed	0.01
Total	0.71
Proposed Booster Station 4 Site	
Non-Native Grassland	0.9
Urban/Developed	0.01
Total	1.0

The proposed pipeline with the Booster Station 2 option would have the least impact, affecting a total of 20.2 acres of Urban/Developed habitat. The proposed pipeline with the Booster Station 1 option would have the greatest impact, affecting a total of 22.4 acres of Urban/Developed and non-native grassland habitat.

Eleven sensitive species were identified as potentially occurring within or in proximity to the proposed project area. The western burrowing owl is the only sensitive species that may be present within the proposed project area. Suitable habitat for the western burrowing owl is present at proposed Booster Station sites 1, 3, and 4.

Dwarf Burr Ambrosia

Suitable habitat for dwarf burr ambrosia is not present within or adjacent to the limits of construction. Dwarf burr ambrosia was not observed during site visits and will not be affected by the proposed action.

Santa Ana River Woollystar

Suitable habitat for the Santa Ana River woollystar is not present within or adjacent to the limits of construction. Santa Ana River woollystar was not observed during site visits and will not be affected by the proposed action.

Delhi Sands flower-loving fly

Suitable habitat for Delhi Sands flower-loving fly is not present within or adjacent to the limits of construction. Delhi Sands flower-loving fly was not observed during site visits and will not be affected by the proposed action.

Brand's star phacelia

Suitable habitat for Brand's star phacelia is not present within or adjacent to the limits of construction. Brand's star phacelia was not observed during site visits and will not be affected by the proposed action.

San Miguel savory

Suitable habitat for San Miguel savory is not present within or adjacent to the limits of construction. San Miguel savory was not observed during site visits and will not be affected by the proposed action.

Santa Ana Sucker

The Santa Ana sucker is an aquatic species. Aquatic habitat is not present within or adjacent to the limits of construction. The Santa Ana sucker will not be affected by the proposed action.

Western yellow-billed cuckoo

Suitable habitat for western yellow-billed cuckoo is not present within or adjacent to the limits of construction. Western yellow-billed cuckoo's were not observed during site visits and will not be affected by the proposed action.

Coastal California gnatcatcher

Suitable habitat for the coastal California gnatcatcher is not present within or adjacent to the limits of construction. Coastal California gnatcatchers were not observed during site visits and are not likely to be present on the proposed project site.

Least Bell's vireo

Suitable habitat for least Bell's vireo is not present within or adjacent to the limits of construction. The proposed project area is not located within designated critical habitat for the

species. Least Bell's vireo was not observed during site visits and will not be affected by the proposed action.

Stephens' kangaroo rat

Suitable habitat for Stephens' kangaroo rat is not present within or adjacent to the limits of construction. It is unlikely Stephens' kangaroo rat will be adversely affected by the proposed action.

Western burrowing owl

Suitable habitat for the western burrowing owl is present within proposed Booster Station sites 1, 3, and 4 and in non-native grasslands adjacent to the pipeline alignment limits of construction. Burrowing owls were not observed during site visits; however, the presence of suitable habitat requires conducting focused surveys for this species. In addition, a 30-Day Burrowing Owl Pre-Construction Survey will be required even if western burrowing owls are not found during the focused surveys.

9.0 RECOMMENDED MITIGATION OR AVOIDANCE MEASURES

9.1 Western burrowing owl

Prior to any construction activity (including clearing, grubbing, and grading), focused surveys shall be conducted of all suitable western burrowing owl habitat potentially affected by the proposed action.

If there is more than a 30-day interval between the focused surveys and commencement of construction, a 30-Day Burrowing Owl Pre-Construction Survey shall be conducted even if western burrowing owls were not observed during the focused surveys. If construction starts within 30 days of the pre-construction survey, additional surveys shall not be required.

10.0 CONCLUSIONS

In conclusion, it has been determined that if the proposed mitigation measures are implemented, the proposed action will have no effect on dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Brand's star phacelia, San Miguel savory, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, Stephens' kangaroo rat, and/or western burrowing owl.

11.0 CERTIFICATION

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

DATE: December 4, 2009 SIGNED:_____

Laurence N. Dean, Senior Biologist

12.0 LITERATURE CITED

33 CFR 328. Code of Federal Regulations, Title 33, Part 328, Navigation and Navigable Waters.

50 CFR 17. Code of Federal Regulations, Section 50, Part 17; Endangered and Threatened Wildlife and Plants; Final Rule To Designate Critical Habitat for the Santa Ana Sucker (*Catostomus santaanae)*.

CNDDB 2009a. California Natural Diversity Data Base, Rarefind 3. California Department of Fish and Game, Biographic Data Branch, Sacramento, California.

CNDDB 2009b. California Natural Diversity Data Base, ArcGIS9.x. California Department of Fish and Game, Biographic Data Branch, Sacramento, California.

CNPS 2009. California Native Plant Society Inventory of Rare and Endangered Plants http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi .

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FR 74:115. Federal Register Vol. 74, No. 115. *Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher* (Polioptila californica californica)*; Final Rule*.

FR 73:238. Federal Register Vol. 73, No. 238. Endangered and Threatened Wildlife and Plants; Review of Native Species that are Candidates for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions; Proposed Rule.

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BIOLOGICAL ASSESSMENT
CEQA
RIVERSIDE – CORONA FEEDER

LA SIERRA CONNECTION

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Revised December 4, 2009

REPORT SUMMARY

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Report Date:	Revised December 4, 2009
Report Title:	Biological Assessment, CEQA, Riverside – Corona Feeder, La Sierra Connection
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Lead Agency:	Western Riverside Municipal Water District 450 Alessandro Blvd. Riverside, California 92508
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USGS Quadrangle:	*Riverside West*, California (7.5 minute)
Study Area:	Approximately 29.7 acres

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Summary

The Riverside – Corona Feeder, La Sierra Connection Project consists of the placement of 10,800 linear feet of up to 42-inch diameter pipe. The pipeline alignment is situated within the right-of-way for La Sierra Avenue, approximately 29.7 acres of Urban/Disturbed habitat. A total of 11 sensitive species were identified as potentially occurring in the vicinity of the proposed action. The California Natural Diversity Data Base identified 10 species (dwarf burr ambrosia, Santa Ana River woollystar, Munz's onion, Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, bald eagle, and Stephens' kangaroo rat) as potentially occurring in the vicinity of the proposed project. The Western Riverside County Multiple Species Habitat Conservation Plan indicated that the western burrowing owl may also be present.

Suitable habitat for the 11 sensitive species identified in association with the project vicinity does not occur within the limits of construction, the right-of-way for La Sierra Avenue. Suitable habitat for the coastal California gnatcatcher, Stephens' kangaroo rat, and western burrowing owl is present in Riversidean sage scrub, disturbed Riversidean sage scrub, and non-native annual grassland adjacent to the limits of construction.

Construction activity (including parking, staging areas, and spoil storage areas) shall be restricted to the limits of construction when adjacent to Riversidean sage scrub, non-native annual grassland, southern willow scrub, and disturbed Riversidean sage scrub. Prior to construction, the limits of construction shall be delineated with orange vinyl fencing to ensure that accidental intrusion into adjacent areas does not occur.

We have determined that if mitigated as proposed, the proposed action will have no effect on dwarf burr ambrosia, Santa Ana River woollystar, Munz's onion, Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, Stephens' kangaroo rat, bald eagle, or western burrowing owl.

1.0 INTRODUCTION

The purpose of this Biological Assessment is to address the effect of the Riverside – Corona Feeder, La Sierra Connection Project on species listed as endangered or threatened under state and federal endangered species acts and the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

The Western Municipal Water District intends to carry out the construction of the Riverside – Corona Feeder, La Sierra Connection under Title IX, Subtitle B, Section 9112 of the

Omnibus Public Lands Act of 2009, Public Law 111-11. This biological assessment, prepared for Albert A. Webb Associates, addresses the proposed action in compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the California Endangered Species Act (Fish and Game Code Section 2050 *et seq*.), and provisions of the Western Riverside County Multiple Species Habitat Conservation Plan. Section 7 of the Endangered Species Act requires federal agencies to consult with U. S. Fish and Wildlife Service and/or the National Marine Fisheries Service to ensure that proposed federal activities are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat.

2.0 PROJECT LOCATION

The proposed project is located in western Riverside County, California (Figure 1). The proposed action involves installing approximately 10,800 linear feet of up to 42-inch diameter pipeline within the La Sierra Avenue right-of-way. The La Sierra Connection alignment extends south from the intersection of La Sierra Avenue and Cleveland Avenue to connect to the existing Mills Gravity Pipeline located at the intersection of La Sierra Avenue and El Sobrante Road (Figure 2).

3.0 PROJECT DESCRIPTION

The La Sierra Connection Project is designed to deliver water from the San Bernardino Groundwater Basin Area to communities throughout western Riverside County during drought, emergency periods, and when water is otherwise available. The purpose of the proposed project is to improve the reliability of the water supply, to reduce possible water shortages during dry years, to reduce dependence upon the direct delivery of imported water during dry year conditions, to interconnect local groundwater basins thereby creating a regional approach for the distribution of groundwater in order to improve groundwater reliability, to tie into the Chino Desalter Phase 3 expansion, to facilitate the connection of local facilities to those that are a part of the Chino Basin Dry-Year Yield Program, to leave available the opportunity for future use of recycled water for groundwater basin recharge, and to contribute to the Upper Santa Ana Watershed effort to become drought-proof and self-sufficient. The proposed project would provide an additional connection between Reach F of the Riverside – Corona Feeder Project and the Mills Gravity Pipeline and will improve local water delivery capabilities (MacHott 2009).

The project is assessed based on the Area of Potential Effect, which is the area that is potentially impacted physically, visibly, and audibly by the proposed action. Impacts include the direct effects of construction and the indirect effects of construction such as noise. The Area of

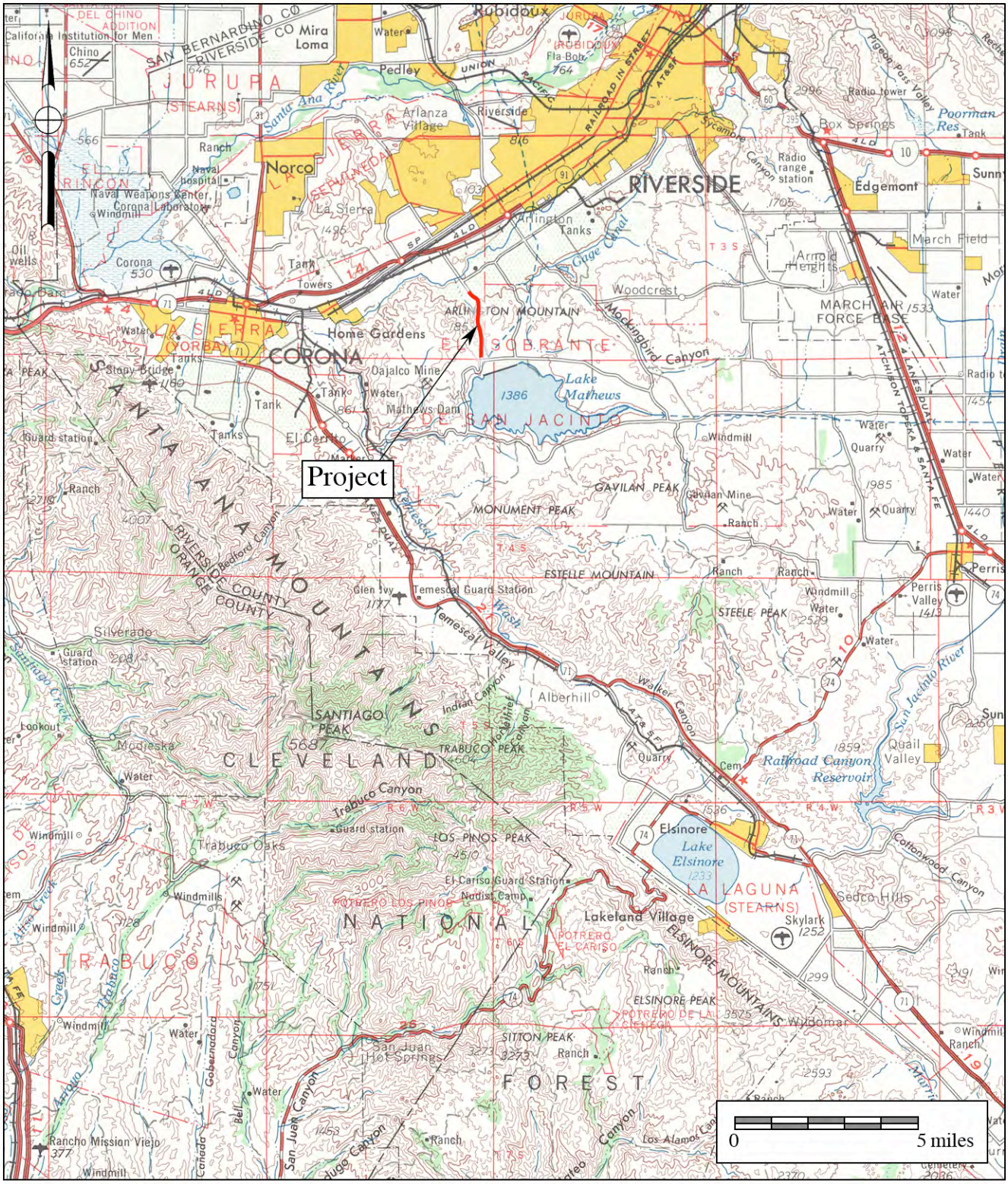

Figure 1

General Location Map

Riverside–Corona Feeder, La Sierra Connection

USGS *Santa Ana* (1:250,000 series)

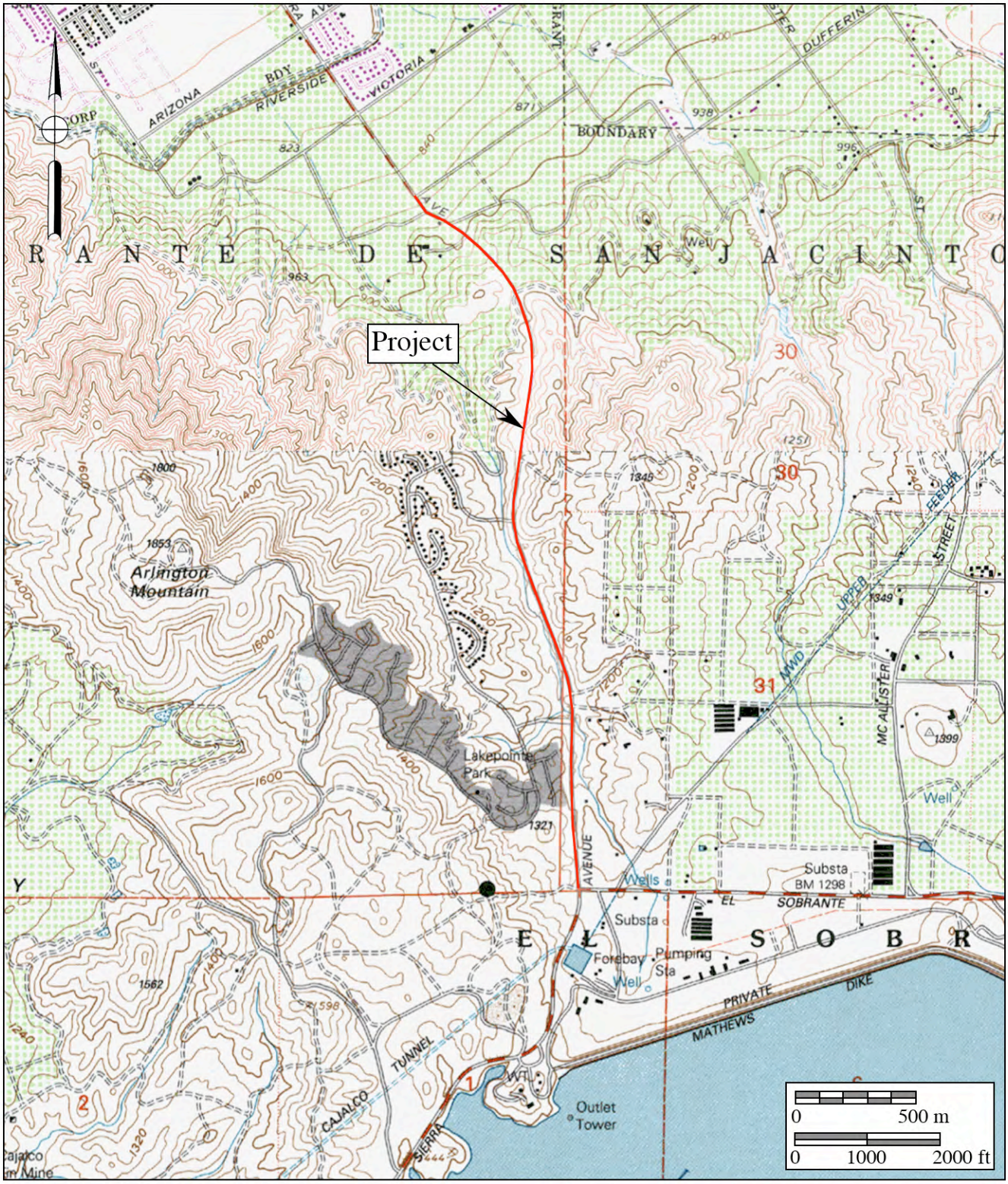

Figure 2

Project Location Map

Riverside–Corona Feeder, La Sierra Connection

USGS *Riverside West* and *Lake Mathews* Quadrangles (7.5 minute series)

Potential Effect for the proposed project extends 150 feet on either side of the limits of construction for the pipeline alignment.

4.0 METHODS

Prior to the project site visit, Brian F. Smith and Associates' biologists reviewed the California Natural Diversity Data Base (CNDDB 2009a and b), and the California Native Plant Society Rare Plant Inventory (CNPS 2009) to determine if sensitive species may be present within or near the limits of construction. National Wetland Inventory maps (USFWS 2009) for the project were consulted to determine if wetlands have been mapped within the limits of construction. Appropriate United States Geological Survey maps (7.5 minute) were reviewed to determine if drainage features, including "blue-line streams," may be present. The List of Hydric Soils for Western Riverside County (NCRS 2009) and the Soils Survey Western Riverside County (USDA 1971) were consulted to determine soils associated with the proposed project area.

The project area is small enough to allow one biologist to cover the entire site in one visit. The site was surveyed on foot by slowly walking over the area in a series of random transects to provide visual coverage of the entire project area. Vegetation and wildlife species observed were recorded as field observations were made. Wildlife sign (scat, bones, feathers, tracks, dens and burrows) were also recorded if encountered. Frequent pauses were made during the survey to watch and listen for wildlife.

5.0 EXISTING ENVIRONMENT

The proposed project will be contained entirely within the right-of-way for La Sierra Avenue from the road's intersection with El Sobrante Road on the south end of the project area to the intersection of La Sierra Avenue and Cleveland Street on the north end. The La Sierra Avenue right-of-way measures an average of 120 feet in width. Approximately 10,800 linear feet will be disturbed by installation of the pipeline. The area of disturbance measures approximately 29.7 acres.

5.1 Physical Characteristics

The discussion of physical characteristics includes soils, topography, and geology.

5.1.1 Soils

Soils associated with the proposed project area are predominantly (WSS 2009):

- Buren loam, deep, 2 to 8 percent slopes, eroded
- Cajalco fine sandy loam, 8 to 15 percent slopes, eroded
- Cajalco rocky fine sandy loam, 15 to 50 percent slopes
- Cajalco fine sandy loam, 15 to 15 percent slopes, eroded
- Hanford coarse sandy loam, 2 to 8 percent slopes.

The Buren series soils tend to be well drained and slow to moderately slowly permeable. Buren series soils are found on gently to strongly sloping alluvial fans and terraces. They formed in alluvium derived from basic igneous rocks and from other crystalline rocks (NRCS 2009).

The Cajalco series soils tend to be well drained and moderately permeable. They usually occur on gentle slopes to steep uplands, and are derived from basic igneous rock (NRCS 2009).

Hanford series soils are very deep, well-drained soils that formed in moderately coarse textured alluvium derived from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans and have slopes of 0 to 15 percent (NRCS 2009).

5.1.2 Topography

La Sierra Avenue is situated on gentle slopes located north of Lake Mathews. Slopes on the north and south ends of the project area are relatively flat with slopes of up to 8 percent at the north end and up to 15 percent at the south end. Slopes range from 2 to 50 percent along the alignment. The project area is sloped, with the lowest point located at the north end and highest point located at the south end. Elevations within the project area range from approximately 1,247 feet above mean sea level to 859 feet above mean sea level.

5.1.3 Geology

Riverside County is located in the Peninsular Range Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the County, extends some 1,000 miles from the Raymond – Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California, Mexico. The La Sierra Connection Project area is located within the La Sierra Avenue right-of-way. The road is situated on gentle slopes north of Lake Mathews.

5.2 Biological Resources

The Biological Resources section discusses vegetation, plant communities, wildlife (including sensitive species), and associated habitats found within the limits of construction. In addition to the project area, the adjacent areas (out to a distance of 150 feet on either side of the project boundary) area described.

5.2.1 Plant Communities

The La Sierra Avenue right-of-way is an Urban/Developed plant community. Adjacent plant communities include Riversidean sage scrub, disturbed Riversidean sage scrub, southern willow scrub, and non-native annual grassland (Figure 3 and Table 1).

Table 1
Plant Communities
Area of Potential Effect
Riverside-Corona Feeder, La Sierra Connection
Riverside County, California

Plant Community	Acreage
Urban/Developed	52.1
Disturbed Riversidean Sage Scrub	1.7
Riversidean Sage Scrub	50.1
Southern Willow Scrub	10.2
Non-Native Annual Grassland	5.1
Total	119.2

Descriptions of plant communities are based on Holland's (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California.* The descriptions developed by Holland (1986) provide a standard nomenclature for plant communities throughout California. Holland does not provide descriptions of some plant communities. In those instances, descriptions from *Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions* (Oberbauer 1996) have been used.

<u>Urban/Developed, Element Code 12000 (Oberbauer 1996)</u>

Urban/Developed is a mixture of built structures such as roads, residences, commercial buildings, and parking lots. Vegetation is largely non-native and includes lawns, golf courses, road shoulders, airports, and parks. Remnant of native plants may be found at scattered, isolated locations.

<u>Riversidean Sage Scrub, Element Code 327000 (Holland 1986)</u>

Riversidean sage scrub occurs along the coastal base of the Transverse and Peninsular Ranges of southern California from Los Angeles to the U. S./Mexico border. Riversidean sage scrub is found on drier sites and is dominated by California sage, California buckwheat, and red brome.

<u>Southern Willow Scrub, Element Code 63320 (Holland 1986)</u>

Southern willow scrub is a successional plant community that occurs along perennial and seasonal watercourses and in other areas that are seasonally flooded. This community is

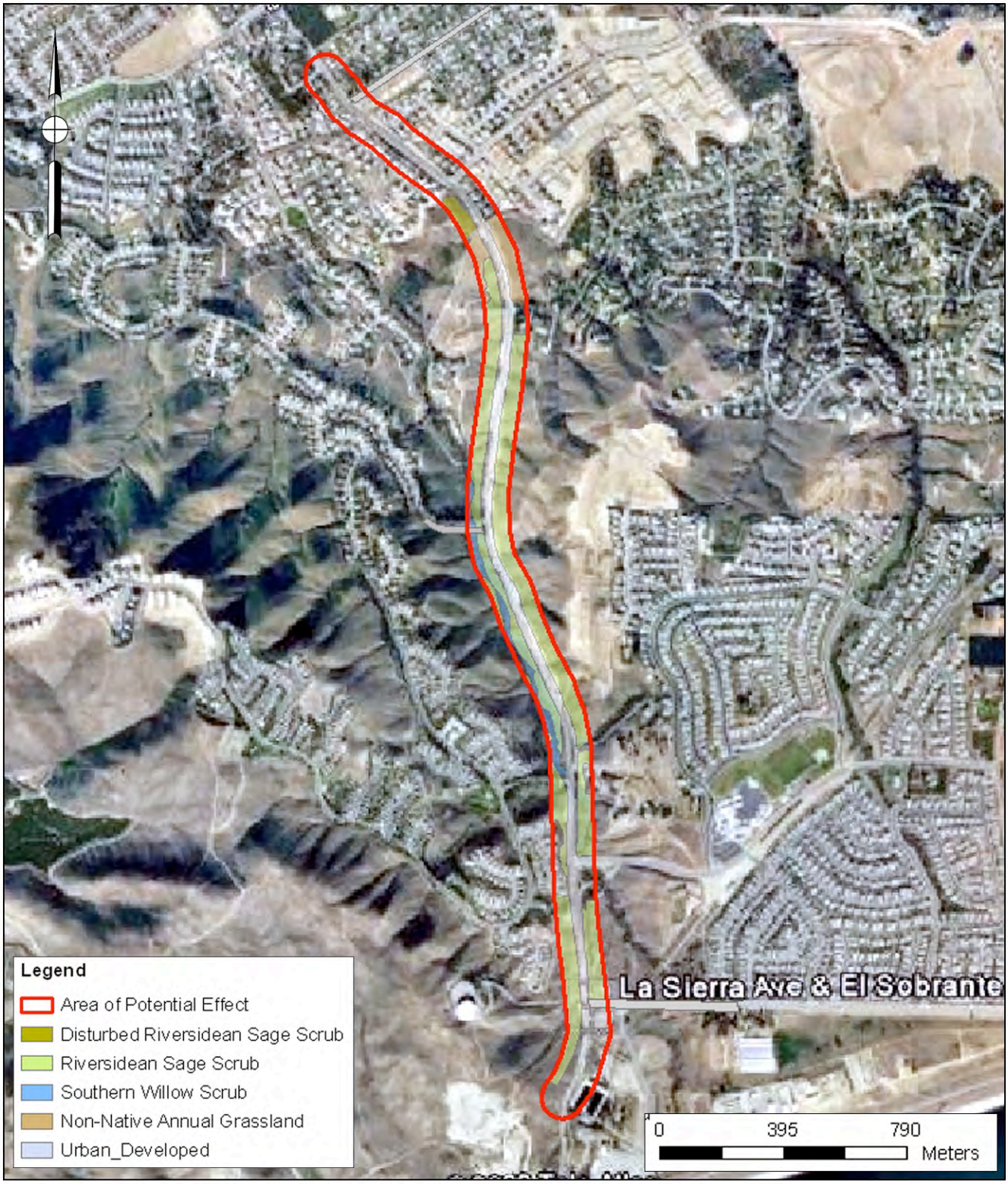

Figure 3

Plant Communities

Riverside–Corona Feeder, La Sierra Connection

characterized by the presence of several species of dense stands of willow, sycamores, and cottonwoods.

Non-Native Annual Grassland, Element Code 42200 (Holland 1986)

Non-native annual grasslands are found throughout most of southern California. This community consists of non-native annual grasses such as red brome (*Bromus rubens*), Wild oats (*Avena fatua and Avena barbata*), and rip-gut brome (*Bromus diandrus*). Several flowering forbs such as filaree (*Erodium* spp.), phacelia *(Phacelia* spp.), tarweeds (*Hemezonia* spp.), and lupines (*Lupinus* spp.) are also found in non-native annual grasslands.

Plant species observed adjacent to the La Sierra Connection Project limits of construction include predominantly non-native invasive species and scattered native plants (Table 2)

5.2.2 Zoological Resources

Wildlife observed along La Sierra Avenue included species found in urban areas as well as those occurring in or near riparian and sage scrub communities (Table 3). The presence of animal species was determined by direct observation or by the presence of sign such as tracks and/or scat.

5.2.3 Sensitive Species and Critical Habitat

A total of 11 sensitive species were identified as potentially present in the vicinity of the proposed project. A review of the California Natural Diversity Data Base (CNDDB 2009a and b) and the Western Riverside County Multiple Species Habitat Conservation Plan indicated that 10 species listed under state and federal endangered species acts have the potential to occur within the project area, or may be affected by the proposed action. The Western Riverside County Multiple Species Habitat Conservation Plan indicated that the western burrowing owl may be present in the vicinity of the proposed action (Table 4).

The Western Riverside County Multiple Species Habitat Conservation Plan is a comprehensive, multi-jurisdictional habitat conservation plan focusing on the conservation of species and their associated habitats in western Riverside County. Species covered by the Western Riverside County Multiple Species Habitat Conservation Plan are those species included in the Incidental Take Authorization issued to the County by the federal or state government as part of the Western Riverside County Multiple Species Habitat Conservation Plan. Potential impacts to covered species must be assessed as part of any project within the plan area.

Table 2 Plant Species Observed Riverside – Corona Feeder, La Sierra Connection Riverside County, California		
Common Name	***Scientific Name***	**Habitat**
Red brome	*Bromus madritensis rubens*	N/R/DR/S/U
Wild oat	*Avena fatua*	N/R/DR/S/U
Rip-gut brome	*Bromus diandrus*	N/R/DR/S/U
Bermuda grass	*Cynodon dactylon*	U/DR
Telegraphweed*	*Heterotheca grandiflora*	U/N
Sun flower*	*Helianthus annuus*	U
Sheep sorrel*	*Rumex acetosella*	N/R/DR/S/U
Western ragweed*	*Ambrosia psilostachya*	N/R/DR/S/U
Short-pod mustard	*Hirschfeldia incana*	N/R/DR/S/U
Phacelia*	*Phacelia spp.*	N/R/DR
Fiddleneck*	*Amsinckia menziesii*	N/R
Jimson weed/sacred datura*	*Datura wrightii*	U
Dove weed*	*Croton setigerus*	U/N/R
Brittle bush*	*Encelia farinosa*	U/R/DR
Eucalyptus	*Eucalyptus spp.*	U
Tree tobacco	*Nicotiana glauca*	U/S
Blue elderberry*	*Sambucus mexicanus*	U/S
California sage*	*Artemisia californica*	U/R/DR
Castor bean	*Ricinus communis*	U
Tumbleweed	*Salsola kali*	U
Myoporum	*Myoporum laetum*	U
Mulberry	*Morus sp.*	U
Bottlebush	*Callistemon citrinus.*	U
Honeysuckle	*Lonicera sp.*	U
Sycamore	*Platanus occidentalis*	U/S
California buckwheat*	*Eriogonum fasciculatum*	U/R/DR
Fan palm	*Washingtonia sp.*	U
Black willow*	*Salix gooddingii*	S
Arroyo willow*	*Salix lasiolepis*	S
Palo verde*	*Parkinsonia sp.*	U

* – Native Plant Species
N – Non-Native Annual Grassland
R – Riversidean Sage Scrub
DR – Disturbed Riversidean Sage Scrub
S – Southern Willow Scrub
U – Urban/Developed

Table 3
Animal Species Observed Directly or Indirectly
Riverside – Corona Feeder, La Sierra Connection
Riverside County, California

Common Name	*Scientific Name*
American crow	*Corvus brachyrhynchos*
Red-tailed hawk	*Buteo jamaicensis*
Song sparrow	*Melospiza melodia*
California towhee	*Pipilo crissalis*
House finch	*Carpodacus mexicanus*
House sparrow	*Passer domesticus*
Mourning dove	*Zenaida macroura*
Coyote	*Canis latrans*
Side-blotched lizard	*Uta stansburiana*
Western fence lizard	*Sceloporus occidentalis*

Table 4
Listed Species Potentially Present
Riverside – Corona Feeder, La Sierra Connection
Riverside County, California

Common Name	*Scientific Name*	Federal Status	State Status	CNPS Rank
Dwarf burr ambrosia	*Ambrosia pumila*	E	--	1.B.1
Santa Ana River woollystar	*Eriastrum densifolium sanctorum*	E	E	1.B.1
Munz's onion	*Allium munzii*	E	T	1.B.1
Delhi sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	E	--	NA
Santa Ana sucker	*Catostomus santaanae*	T	--	NA
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	E	NA
Coastal California gnatcatcher	*Polioptila californica californica*	T	--	NA
Least Bell's vireo	*Vireo bellii pusillus*	E	E	NA
Stephens' kangaroo rat	*Dipodomys stephensi*	E	T	NA
Bald eagle	*Haliaeetus leucocephalus*	Delisted	E	NA
Western burrowing owl	*Athene cunicularia hypugaea*	MBTA	SSC	NA

C – Candidate for listing as threatened or endangered
E – Endangered
T – Threatened
MBTA – Migratory Bird Treaty Act
SSC – Species of Special Concern
1.B – Rare, threatened, or endangered in California and elsewhere
0.1 – Seriously endangered in California

U. S. Fish and Wildlife Service data (USFWS 2009) and the CNDDB (2009a and b) were consulted to determine if critical habitat for sensitive species may be present in the project area. Critical habitat is a specific geographic area or areas that are essential for the survival of a threatened or endangered species. Critical habitat may include an area not currently occupied by the species, but that will be needed for its recovery. The Western Riverside County Multiple Species Habitat Conservation Plan was consulted to determine if the proposed project is located within the designated reserve assembly. The reserve assembly is a preserve system described by the Western Riverside County Multiple Species Habitat Conservation Plan. Development in the reserve assembly is limited and controlled by the County.

Dwarf Burr Ambrosia (*Ambrosia pumila*)

Dwarf burr ambrosia (also known as San Diego Ambrosia) is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Dwarf burr ambrosia is a narrow endemic plant species.

In Riverside County, dwarf burr ambrosia is associated with open, gently sloped grasslands and is generally associated with alkaline soils. Dwarf burr ambrosia generally occurs on slopes from 0 to 9 percent on sandy or clay loams.

Only three populations of dwarf burr ambrosia are known to occur in Riverside County. The two largest populations occur in the vicinity of Alberhill, approximately 11 miles southeast of the proposed project. A third, and smaller, population is found at Skunk Hollow, approximately 29 miles southeast of the proposed project. A population of Dwarf burr ambrosia was reported in 1940 in a wet alkaline area approximately 3.7 miles north of the intersection of La Sierra Avenue and Cleveland Avenue. The site has been developed, and the dwarf burr ambrosia that occurred there has been extirpated.

Suitable habitat for this species is not present within the limits of construction. Soils associated with the project area are not alkaline. Dwarf burr ambrosia was not observed during site visits and is not likely to be present.

Santa Ana River Woollystar *(Eriastrum densifolium sanctorum)*

The Santa Ana River woollystar is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Santa Ana River woollystar is a narrow endemic plant species. Critical habitat has not been designated.

The Santa Ana River woollystar is found only in open washes and early-successional alluvial fan scrub where flooding and scouring keeps scrubs open. Suitable habitat is usually a combination of gravelly and sandy soils with scattered cobbles and boulders (MSHCP 2003).

Santa Ana River woollystar has not been reported in the vicinity of the proposed project. The proposed project area is Urban/Developed. Habitat for the Santa Ana River woollystar does not occur within the limits of construction. This species was not observed and is not likely to be present.

Munz's Onion (*Allium munzii*)

Munz's onion is listed as endangered by the U. S. Fish and Wildlife Service and as threatened by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Munz's onion is a narrow endemic plant species.

Munz's onion is endemic to southwestern Riverside County. This species is restricted to heavy clay soils occurring in a band several miles wide and extending from Corona through Temescal Canyon and along the Elsinore Fault Zone to the southwestern foothills of the San Jacinto Mountains (MSHCP 2003).

Suitable habitat for this species (heavy clay soils) is not present within the limits of construction. There are no recorded occurrences in the vicinity of the proposed project. Munz's onion was not observed during site visits and is not likely to be present.

Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*)

The Delhi Sands flower-loving fly is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation PlanCritical habitat has not been designated for this species.

The Delhi Sands flower-loving fly is restricted to the Colton Dunes (Delhi soil series) in northwestern Riverside and southwestern San Bernardino counties in southern California. Existing populations of the Delhi Sands flower-loving fly occur within Riverside and San Bernardino counties straddling Interstate 10 in the vicinity of Colton and Rialto and from Colton to Mira Loma. The Delhi Sands flower-loving fly has not been reported in the vicinity of the proposed project.

Suitable habitat for this species (Delhi soils) is not present within the limits of construction. The Delhi Sands flower-loving fly was not observed during site visits and is not likely to be present.

Santa Ana Sucker (*Catostomus santaanae*)

The Santa Ana sucker is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat was designated for the Santa Ana sucker in 2005 (50 CFR 17).

The Santa Ana sucker is a fish species that is generally found in small, shallow streams with currents ranging from swift to sluggish. They are found at depths ranging from a few centimeters to one meter or more. Substrates in these streams generally consist of gravel, rubble, and boulders. Streams in which the species is found are subject to periodic, severe flooding (MSHCP 2003).

Aquatic habitat is not present within the limits of construction. Therefore, the Santa Ana sucker is not present within the limits of construction and will not be affected by the La Sierra Connection Project.

Western Yellow-Billed Cuckoo *(Coccyzus americanus occidentalis)*

The western yellow-billed cuckoo is listed by the U. S. Fish and Wildlife Service as a candidate for listing as a threatened or endangered species (FR 73:238) and as endangered by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat has not been designated for this species.

The western yellow-billed cuckoo in California requires dense, wide riparian woodlands with well-developed understory for breeding. Breeding is restricted to river bottoms and other mesic habitats where humidity is high and the dense understory abuts slow-moving watercourses, backwaters, or seeps.

The western yellow-billed cuckoo has not been reported in the vicinity of the proposed project. Suitable habitat for the western yellow-billed cuckoo does not occur within the limits of construction. The western yellow-billed cuckoo was not observed during site visits and is not likely to be present.

Coastal California Gnatcatcher *(Polioptila californica californica)*

The coastal California gnatcatcher is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western

Riverside County Multiple Species Habitat Conservation Plan. Critical habitat for the coastal California gnatcatcher was designated in 2000 and revised in 2007 (FR 72:243).

The coastal California gnatcatcher is a small, non-migratory songbird that is found in or near sage scrub habitat in southwestern California and northwestern Baja California, Mexico. The coastal California gnatcatcher is found almost exclusively in sage scrub, but has also been found in chaparral and riparian habitats.

There are 34 recorded sightings of the coastal California gnatcatcher in the vicinity of the proposed project. Two recorded occurrences are within 75 feet of the proposed project. The northernmost recorded sighting was in 2001, wherein two gnatcatchers were observed in ruderal vegetation on an area that had been cleared without obtaining required permits. The CNDDB (2009a and b) noted that these birds may have been a pair nesting in nearby Riversidean sage scrub. The second recorded observation was made in 2002 north and east of the intersection of La Sierra Avenue and Oleander Avenue. Several adult and juvenile coastal California gnatcatchers were observed at this location. Much of the habitat at this location has been lost to development.

The proposed project is not located within designated critical habitat for the coastal California gnatcatcher. Designated critical habitat is located approximately 3 miles south of the proposed project. Suitable habitat for coastal California gnatcatchers is not present within the limits of construction. However, suitable habitat is present in Riversidean sage scrub and disturbed Riversidean sage scrub adjacent to the limits of construction.

Least Bell's Vireo *(Vireo bellii pusillus)*

Least Bell's vireo is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat was designated for least Bell's vireo in 1994 (FR 59:22).

Least Bell's vireos primarily occupy riverine/riparian habitats that typically feature dense cover within 1-2 meters of the ground and a dense, stratified canopy along water or along dry parts of intermittent streams. Typically, least Bell's vireo is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast lie oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities and in the immediate vicinity of water.

Least Bell's vireo has been reported at four locations in the vicinity of the proposed project. The closest location is approximately 1.75 miles west of the proposed project. Habitat

within the limits of construction includes only Urban/Developed. Suitable habitat for the least Bell's vireo does not occur within the limits of construction. Southern willow scrub adjacent to the limits of construction lacks the dense understory preferred by this species. The least Bell's vireo was not observed during site visits and is not likely to be present.

The proposed project area is not located within designated critical habitat for least Bell's vireo. Critical habitat for this species is located approximately 6.2 miles northwest of the project area.

Stephens' Kangaroo Rat *(Dipodomys stephensi)*

Stephens' kangaroo rat is listed as endangered by the U. S. Fish and Wildlife Service and as threatened by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat has not been established for Stephens' kangaroo rat.

Stephens' kangaroo rat is covered by the Stephens' Kangaroo Rat Habitat Conservation Plan (RCHCA 2009). The primary purpose of the habitat conservation plan is to provide the information required for issuance of a federal permit from the U. S Fish and Wildlife Service for "incidental take" of Stephens' kangaroo rat and equivalent authorization from the California Department of Fish and Game through an endangered species permit. The habitat conservation plan replaced the Riverside County Habitat Conservation Agency's existing Stephens' kangaroo rat conservation program and its federal and state incidental take authorizations with the program and authorizations described in the habitat conservation plan. The habitat conservation plan intends to provide for the establishment, expansion, and ongoing management of permanent reserves to ensure the continued existence of Stephens' kangaroo rat in the habitat conversation plan area of western Riverside County, while providing opportunities to benefit other species of concern (RCHCA 2009).

The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrub lands with cover of less than 50 percent during the summer. The proportion of annual forbs and grasses is important because Stephens' kangaroo rats avoid dense grasses and are more likely to inhabit more open areas. Soil type also is an important habitat factor for Stephens' kangaroo rat occupation. The Stephens' kangaroo rat typically is found in sandy loams with low clay to gravel content. Slope is a factor in Stephens' kangaroo rat occupation; the Stephens' kangaroo rat tends to use flatter slopes (i.e., < 30 percent). In general, the highest abundance of Stephens' kangaroo rats occurs on gentle slopes less than 15 percent (MSHCP 2003).

There are four recorded sightings for Stephens' kangaroo rat within 0.9 miles of the project area. Two of the recorded sightings are located immediately adjacent to La Sierra

Avenue. The third sighting is located approximately 0.3 miles west of La Sierra Avenue. The fourth recorded sighting is located approximately 0.9 miles west of La Sierra Avenue. Population densities in these areas range from low to high. All sightings were in non-native annual grassland bordered by Riversidean sage scrub.

Suitable habitat for Stephens' kangaroo rats is not present within the limits of construction along the La Sierra Avenue right-of-way. However, suitable habitat for this species is present in non-native annual grassland, Riversidean sage scrub, and disturbed Riversidean sage scrub adjacent to the limits of construction.

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle has been delisted by the U. S. Fish and Wildlife Service and is listed as endangered by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan.

Bald eagles are usually found near the coasts, along rivers, near swamps, and large lakes. The bald eagle nests in trees and sometimes on cliffs. Nests are always close to water. In southern California, bald eagles are most often found around large deep lakes. They are considered a winter visitor that may have historically bred in the area (MSHCP 2003).

There are several recorded sightings of bald eagles at Lake Matthews located approximately 0.4 miles south of the proposed project. Bald eagles may occasionally fly over the proposed project area, but the location does not provide foraging or nesting habitat for the species. The proposed action will not adversely affect the bald eagle.

Western Burrowing Owl (*Athene cunicularia hypugaea)*

The western burrowing owl is not listed by the U. S. Fish and Wildlife Service or the State of California. The U. S. Fish and Wildlife Service considers the western burrowing owl a "Bird Species of Concern" that may become listed as threatened or endangered if significant management steps are not taken. The western burrowing owl is protected under the Migratory Bird Treaty Act. The western burrowing owl is a California State Bird Species of Special Concern (Class 2). Class 2 Bird Species of Special Concern have scattered or highly localized populations and require active management to prevent them from becoming threatened or endangered species (Shuford and Gardali 2008). This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Additional surveys are required if a proposed project area is located within suitable habitat for this species.

Burrowing owls use a variety of natural habitats for nesting and foraging that are typically characterized by low-growing vegetation. Burrowing owl habitat includes native and

non-native annual grassland, natural clearings within shrub lands, shrub lands with low density shrub cover, golf-courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas (MSHCP 2003).

Burrowing owls typically use burrows made by burrowing mammals, such as ground squirrels (*Spermophilus beecheyi*) or badgers (*Taxidea taxus*). They may also utilize man-made structures, such as earthen berms; cement culverts; cement, asphalt, rock, or wood debris piles; or openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, or in proximity to man-made structures (MSHCP 2003).

Western burrowing owls were not observed during site visits. Suitable habitat is not present within the limits of construction; however, suitable habitat for this species is present in non-native annual grasslands adjacent to the limits of construction.

6.0 JURISDICTIONAL WATERS AND WETLANDS

6.1 Wetlands

To be considered a wetland, a site must meet three criteria: hydric soils, wetland hydrology, and, hydrophytic vegetation. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil. The presence of hydric soils may be determined by a variety of field indicators and by consulting a list of hydric soils for the project area. The soils associated with the current project area are not on the list of hydric soils for the State of California (NRCS 2009). Field indicators such as low chroma soils, concretions, and/or oxidized root channels were not observed.

Wetland hydrology is present when, under normal circumstances, the land surface is either inundated or the upper portion of the soil is saturated at a sufficient frequency and duration to create anaerobic conditions. Field indicators used for hydric soils may be used to support the presence or absence of wetland hydrology. There is no indication that soils within the limits of construction are inundated or saturated for a long enough period of time during the growing season to promote hydric conditions or hydrophytic vegetation. Field indicators of hydric soils such as low chroma soils, concretions, and/or oxidized root channels were not observed.

In general, hydrophytic vegetation includes plants that thrive in wet conditions and exhibit obvious physical adaptations for the capturing and transporting of oxygen. Some hydrophytic vegetation such as mule fat occurs in drainages within the limits of construction;

however, this vegetation is not predominant (fifty-one percent or greater). The project area does not meet the criterion for hydrophytic vegetation.

Based on the absence of hydric soils, wetland hydrology, and hydrophytic vegetation, there are no wetlands present within the limits of construction.

7.0 JURISDICTIONAL DETERMINATION

Two agencies or entities may have jurisdictional responsibilities related waters occurring within the proposed project area: U. S. Army Corps of Engineers; and, California Department of Fish and Game. The basis for jurisdiction is discussed below.

7.1 U. S. Army Corps of Engineers

The U. S. Army Corps of Engineers regulates dredging and filling in Waters of the United States under the authority of Section 404 of the Clean Water Act. Waters of the United State are defined to include all navigable waters including tidal waters, all interstate waters and wetlands, all impoundments of the waters mentioned above, all tributaries of the waters mentioned above, all territorial seas, and all wetlands adjacent to the waters mentioned above (33 CFR 328).

Title 33 of the Code of Federal Regulations defines wetlands as, "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" [33 CFR 328.3(b)]. In the Solid Waste Agency of Northern Cook County v. Army Corps of Engineers, the U. S. Supreme Court determined that U. S. Army Corps of Engineers jurisdiction may not extend to wetlands and waterways where the only nexus with Waters of the U. S. is use by migratory birds. In the Rapanos – Carabell Supreme Court decisions, the Supreme Court rejected the argument that the term "waters of the United States" is limited to only those waters that are navigable in the traditional sense and their abutting wetlands. However, the court decided that regulatory authority should extend only to "relatively permanent, standing or continuously flowing bodies of water" connected to traditional navigable waters, and to "wetlands with a continuous surface connection to" such relatively permanent waters (EPA/COE 2008).

Two distinct jurisdictional tests emerged from the Rapanos–Carabell decision: "significant nexus" test and "relatively permanent, standing or continuously flowing" test. The U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency have developed

guidelines for making jurisdictional determinations based on these tests. The following summary of key points related to U. S. Environmental Protection Agency and U. S. Army Corps of Engineers jurisdiction is taken directly from a joint EPA/USACOE memorandum (EPA/COE 2008).

7.1.1 Summary of Key Points related to EPA and USACOE Jurisdiction

"The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries."

"The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

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

"The agencies generally *will not assert* jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water."

"The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters."

"Significant nexus includes consideration of hydrologic and ecologic factors."

Based on these criteria, there are no jurisdictional waters or wetlands present within the limits of construction. However, only the U. S. Army Corps of Engineers may make a final determination regarding jurisdiction.

7.2 California Department of Fish and Game

Sections 1600 through 1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the California Department of Fish and Game for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use material from a streambed." The California Department of Fish and Game defines a stream, creek or river 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." The California Department of Fish and Game defines lakes as including man-made lakes and reservoirs. In addition to the bed and banks of a stream, the California Department of Fish and Game jurisdiction includes riparian or wetland vegetation associated with the water body. Projects that require a Streambed Alteration Agreement may also require a permit from the U. S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Based on these criteria, there are no waters falling under the jurisdiction of the California Department of Fish and Game within the limits of construction. However, only the State of California may make a final determination regarding jurisdiction.

8.0 EFFECTS OF THE PROPOSED ACTION

The proposed action will directly affect approximately 29.7 acres of Urban/Developed habitat consisting primarily of asphalt paving, concrete gutters and curbs, and road shoulders largely devoid of vegetation (Figure 4 and Table 5). The proposed action will not affect sensitive habitats including wetlands and jurisdictional waterways.

Eleven federally listed species were identified as potentially occurring within or in proximity to the proposed project. None of these species will be affected by the proposed action.

Dwarf Burr Ambrosia

Suitable habitat for dwarf burr ambrosia is not present within the limits of construction. Dwarf burr ambrosia was not observed during site visits and will not be affected by the proposed action.

Santa Ana River Woollystar

Suitable habitat for the Santa Ana River woollystar is not present within the limits of construction. Santa Ana River woollystar was not observed during site visits and will not be affected by the proposed action.

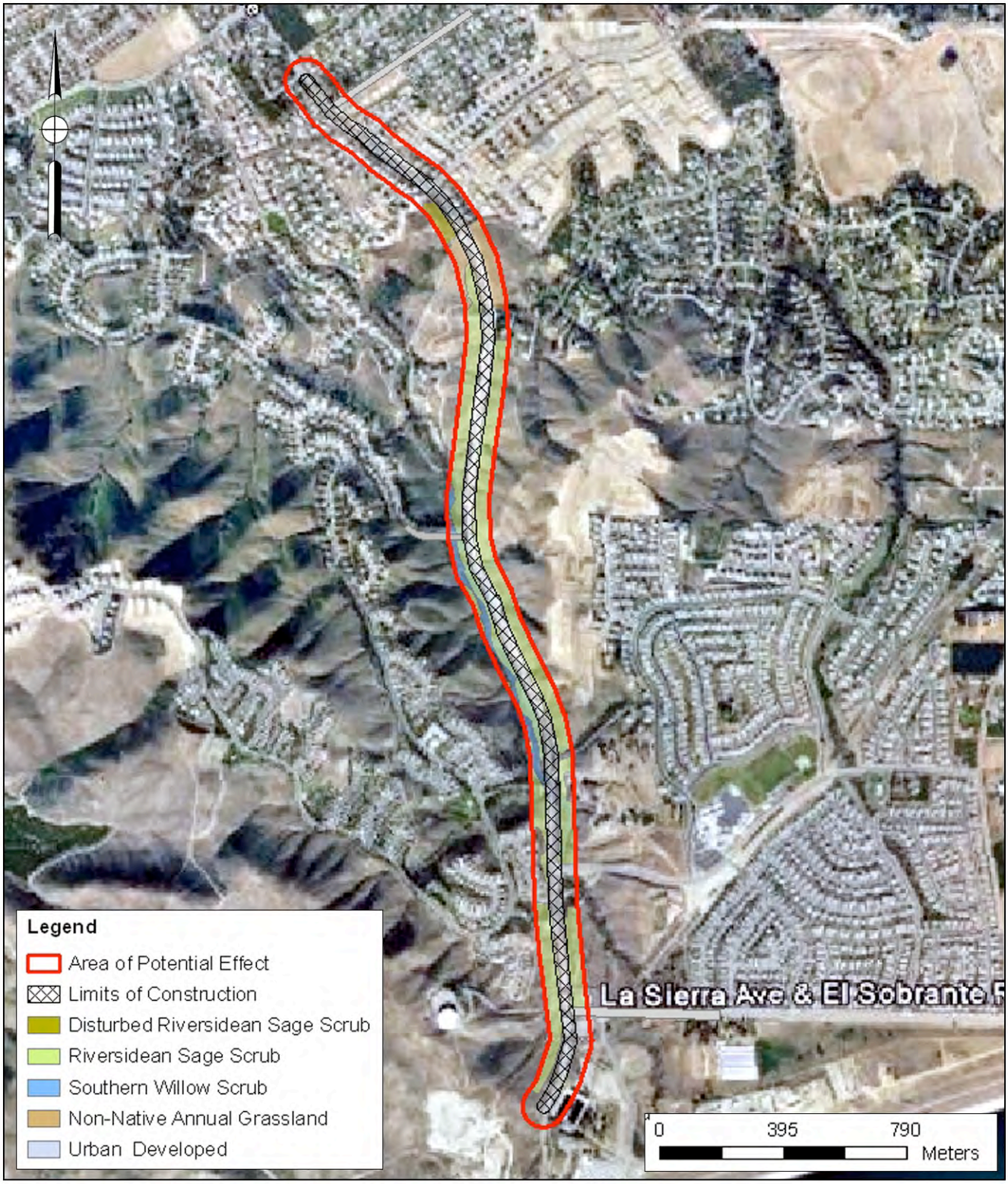

Figure 4

Impacts to Plant Communities

Riverside–Corona Feeder, La Sierra Connection

Table 5 Plant Communities Effected Riverside – Corona Feeder, La Sierra Connection Riverside County, California		
Plant Community	**Acreage Area of Potential Effect**	**Acreage Effected**
Urban/Developed	52.1	29.7
Disturbed Riversidean Sage Scrub	1.7	0
Riversidean Sage Scrub	50.1	0
Southern Willow Scrub	10.2	0
Non-Native Annual Grassland	5.1	0
Total	119.2	29.7

Munz's Onion

Suitable habitat for Munz's onion is not present within the limits of construction. Munz's onion was not observed during site visits and will not be affected by the proposed action.

Delhi Sands Flower-Loving Fly

Suitable habitat for dwarf burr ambrosia is not present on the proposed project site. Delhi Sands flower-loving fly was not observed during site visits and will not be affected by the proposed action.

Santa Ana Sucker

The Santa Ana sucker is an aquatic species. Aquatic habitat is not present within the limits of construction. The Santa Ana sucker will not be affected by the proposed action.

Western Yellow-Billed Cuckoo

Suitable habitat for western yellow-billed cuckoo is not present within the limits of construction. Western yellow-billed cuckoos were not observed during site visits and will not be affected by the proposed action.

Coastal California Gnatcatcher

Suitable habitat for the coastal California gnatcatcher is not present within the limits of construction. However, suitable habitat is present in Riversidean sage scrub and disturbed Riversidean sage scrub adjacent to the limits of construction. The project area is not situated within designated critical habitat for this species. The proposed action will not directly impact suitable habitat for this species as long as all construction activity (including parking, staging areas, and spoil storage areas) is limited to the La Sierra Avenue right-of-way. However, the proposed action may indirectly impact coastal California gnatcatchers (i.e., construction noise) if construction activity is conducted during the species' breeding season.

Least Bell's Vireo

Suitable habitat for least Bell's vireo is not present within the limits of construction. The proposed project area is not located within designated critical habitat for the species. Least Bell's vireo was not observed during site visits and will not be affected by the proposed action.

Stephens' Kangaroo Rat

Suitable habitat for Stephens' kangaroo rat is not present within the limits of construction. Habitat for Stephens' kangaroo rat is present on both sides of the alignment in areas of non-native annual grassland, Riversidean sage scrub, and disturbed Riversidean sage scrub. The proposed action will not disturb suitable habitat for this species as long as all construction activity (including parking, staging areas, and spoil storage areas) is limited to the La Sierra Avenue right-of-way. However, the proposed action may directly affect Stephens' kangaroo rats that may wander into the limits of construction as a result of animals falling into open excavations and being unable to escape or death of the animal as a result of being crushed by moving equipment.

Bald Eagle

Suitable habitat for bald eagle is not present within the limits of construction. Bald eagles were not observed during site visits and will not be affected by the proposed action.

Western Burrowing Owl

Western burrowing owls were not observed during site visits. Suitable habitat is not present within the limits of construction; however, suitable habitat for this species is present adjacent to the limits of construction in non-native annual grassland. The proposed action will not disturb suitable habitat for this species as long as all construction activity (including parking, staging areas, and spoil storage areas) is limited to the La Sierra Avenue right-of-way.

9.0 RECOMMENDED MITIGATION OR AVOIDANCE

Suitable habitat for the coastal California gnatcatcher, Stephens' kangaroo rat, and western burrowing owl are present adjacent to the limits of construction for the La Sierra Connection Project. The following actions are recommended to avoid, minimize, or mitigate for impacts to these species.

9.1 Coastal California Gnatcatcher

The proposed action will not directly impact suitable habitat for the coastal California gnatcatcher as long as all construction activity (including parking, staging areas, and spoil storage areas) is limited to the La Sierra Avenue right-of-way. However, the proposed action

may indirectly impact coastal California gnatcatchers (i.e., construction noise) if construction activity is conducted during the species' breeding season (March 1 through August 15).

The U. S. Fish and Wildlife Service determined that noise levels in excess of a time weighted hourly average of 60 decibels (dBA) adversely impact breeding and nesting activity for the coastal California gnatcatcher. Disturbance resulting from construction noise would be considered as "incidental take" under the Endangered Species Act of 1973. Therefore, if construction noise exceeds 60 dBA, construction shall not be permitted on those portions of the limits of construction adjacent to suitable habitat for the coastal California gnatcatcher during the breeding season for this species (March 1 through August 15).

If it is not feasible to avoid construction adjacent to suitable habitat for the coastal California gnatcatcher during the breeding season, then focused surveys shall be conducted in suitable habitat to determine if this species is present. If coastal California gnatcatchers are determined to be present, then construction shall not be permitted during the breeding season in those portions of the limits of construction adjacent to suitable habitat.

If coastal California gnatcatchers are present in adjacent suitable habitat and avoiding construction during breeding season is not practical, then noise attenuation measures may be employed to reduce noise levels to acceptable limits. A noise assessment shall be conducted to determine how far the 60 dBA noise contour would extend into adjacent suitable gnatcatcher habitat. Noise attenuation measures shall be designed based on this assessment. Noise attenuation measures shall be designed to reduce noise levels at the edge of occupied habitat to 60 dBA or ambient, whichever is greater. Noise attenuation measures shall be in place at least two weeks prior to the beginning of the breeding season.

The limits of construction adjacent to suitable coastal California gnatcatcher habitat (Riversidean sage scrub and disturbed Riversidean sage scrub) shall be fenced with orange vinyl barrier material, and this area shall be inspected regularly throughout construction by the project biologist.

9.2 Stephens' Kangaroo Rat

The proposed action will not disturb suitable habitat for the Stephens' kangaroo rat as long as all construction activity (including parking, staging areas, and spoil storage areas) is limited to the La Sierra Avenue right-of-way. However, the proposed action may directly affect Stephens' kangaroo rats that may wander into the limits of construction as a result of animals falling into open excavations and being unable to escape or death of the animal as a result of being crushed by moving equipment.

Prior to construction, the limits of construction adjacent to suitable Stephens' kangaroo rat habitat shall be fenced with orange vinyl barrier material. Silt fencing shall be installed in addition to the orange vinyl fencing to discourage Stephens' kangaroo rats from wandering into the limits of construction. The limits of construction shall be inspected regularly throughout construction by the project biologist.

9.3 Western burrowing owl

The proposed action will not disturb suitable habitat for the western burrowing owl as long as all construction activity (including parking, staging areas, and spoil storage areas) is limited to the La Sierra Avenue right-of-way. Prior to construction, the limits of construction adjacent to suitable western burrowing owl habitat shall be fenced with orange vinyl barrier material. The limits of construction shall be inspected regularly throughout construction by the project biologist.

10.0 CONCLUSIONS

In conclusion, it has been determined that if the proposed mitigation measures are implemented, the proposed action will have no effect on dwarf burr ambrosia, Santa Ana River woollystar, Munz's onion, Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, bald eagle, Stephens' kangaroo rat, and/or western burrowing owl.

11.0 CERTIFICATION

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

DATE: December 4, 2009 SIGNED: _____

Laurence N. Dean, Senior Biologist

12.0 LITERATURE CITED

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BIOLOGICAL ASSESSMENT
CEQA
RIVERSIDE – CORONA FEEDER

PROPOSED MOCKINGBIRD CONNECTION

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Revised December 4, 2009

REPORT SUMMARY

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Report Title:	Biological Assessment, CEQA, Riverside – Corona Feeder, Proposed Mockingbird Connection
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Lead Agency:	Western Riverside Municipal Water District 450 Alessandro Blvd. Riverside, California 92508
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USGS Quadrangle:	*Riverside West*, California (7.5 minute)
Study Area:	Approximately 18.40 acres

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Summary

The proposed action will not affect state or federally listed species potentially present in the vicinity of the project including dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, or least Bell's vireo.

The proposed action will not affect jurisdictional waters of the United States or the State of California including wetlands and vernal pools, or critical habitat for any listed species.

The proposed action may result in incidental take of the endangered Stephens' kangaroo rat and may adversely affect this species. Focused surveys for Stephens' kangaroo rat shall be conducted prior to any disturbance of suitable habitat. If it is determined that Stephens' kangaroo rat will be affected by the proposed action, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the endangered coastal California gnatcatcher and may adversely affect this species. Focused surveys for coastal California gnatcatcher shall be conducted prior to any disturbance of suitable habitat. If it is determined that coastal California gnatcatcher will be affected by the proposed action, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the western burrowing owl, which is protected under the Migratory Bird Treaty Act and is a California Bird Species of Special Concern (Class 2), and may adversely affect this species. Focused surveys of suitable habitat shall be conducted prior to any disturbance of the habitat. If western burrowing owls are determined to be present, the California Department of Fish and Game shall be consulted to determine how to protect or preserve the owls and sufficient habitat to maintain the owls.

Suitable habitat for Stephens' kangaroo rat, coastal California gnatcatcher, and western burrowing owl will be noted on all grading plans. During construction, suitable habitat shall be protected by erecting orange vinyl fencing along the interface of suitable habitat with the limits of construction. The project biologist shall inspect the barriers throughout construction. If the barrier has been compromised and suitable habitat disturbed, the project biologist shall prepare a report describing the disturbance and recommended restoration or other mitigation.

If mitigated as recommended, the proposed action will not significantly affect biological resources including species listed under state and federal endangered species acts or other species of special concern.

1.0 INTRODUCTION

The purpose of this Biological Assessment is to address the effect of the Riverside – Corona Feeder, Proposed Mockingbird Connection Project on species listed as endangered or threatened under state and federal endangered species acts, and on jurisdictional waters including wetlands and vernal pools.

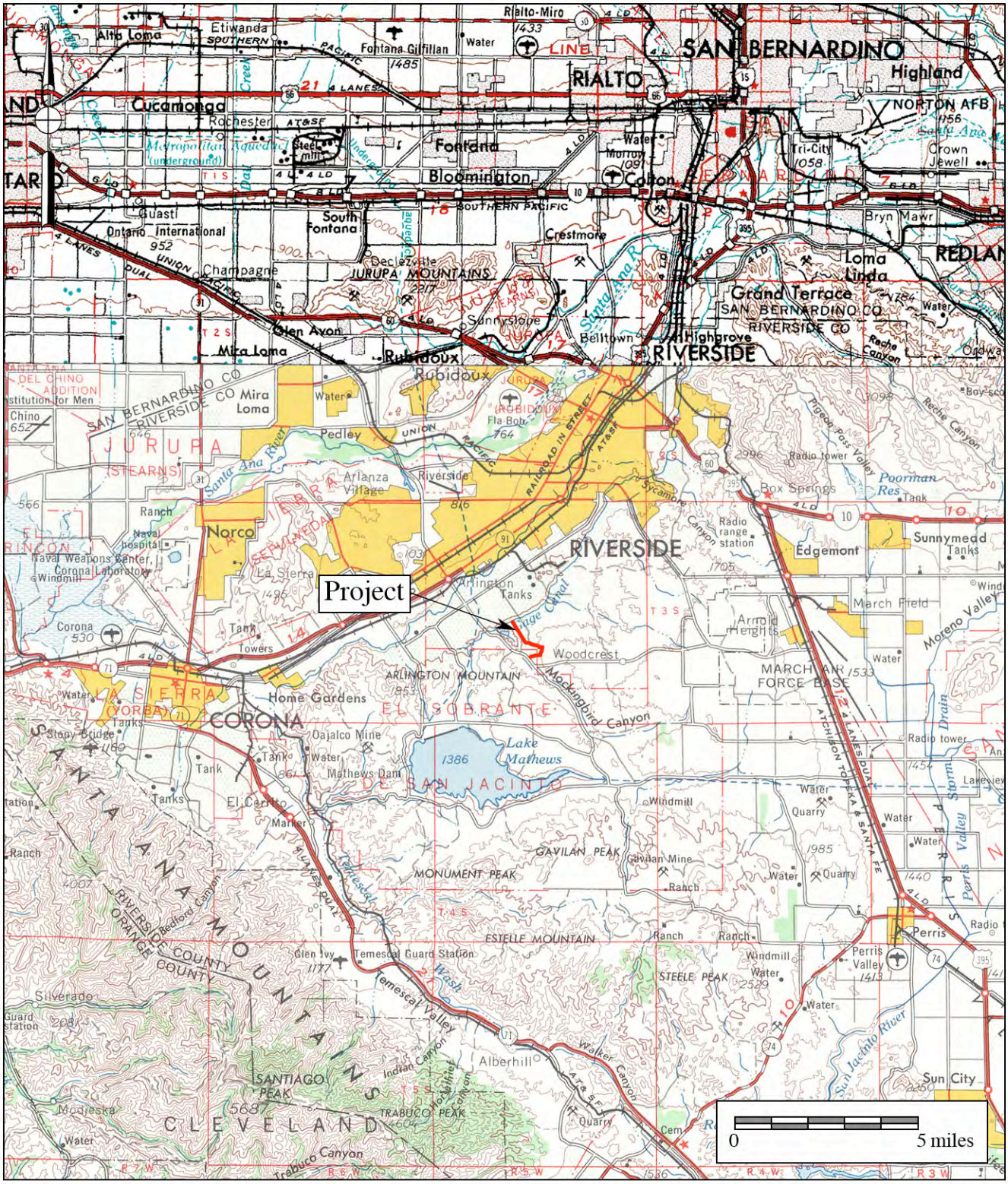
The Western Municipal Water District intends to carry out the construction of the Riverside – Corona Feeder, Proposed Mockingbird Connection under Title IX, Subtitle B, Section 9112 of the Omnibus Public Lands Act of 2009, Public Law 111-11. This biological assessment prepared for Albert A. Webb Associates addresses the proposed action in compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the California Endangered Species Act (Fish and Game Code Section 2050 *et seq*), and provisions of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

2.0 PROJECT LOCATION

The proposed project is located in Western Riverside County, California (Figure 1). The pipeline alignment begins at the intersection with the Metropolitan Water District right-of-way with Van Buren Boulevard. The alignment follows the right-of-way north then east until it intersects Constable Road. It then follows Constable Road north until it ends; at that point the alignment follows an unnamed dirt road north approximately 0.1 miles, then turns west for 0.3 miles until it intersects Irving Street, then proceeds northwest on Irving Street (Figure 2) to Reach E of the Riverside – Corona Feeder, Proposed Mockingbird Connection Project.

3.0 PROJECT DESCRIPTION

The Riverside – Corona Feeder, Proposed Mockingbird Connection Project consists of approximately 5,900 linear feet of pipeline, a five million-gallon reservoir, and a related pump station. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through existing pipeline easements to connect to the proposed pump station and reservoir to be constructed on Lot 20, Approved Tentative Tract 34059, in the City of Riverside. The pipeline will then extend east within an existing pipeline easement, and then south within Constable Road to the existing Mills Gravity Pipeline easement. At that point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to Western Municipal Water District's existing Mockingbird Booster


Project
0
5 miles
SAN BERNARDINO
RIALTO
Highland
NORTON AFB
Cucamonga
Fontana
Bloomington
Colton
Rubidoux
RIVERSIDE
Norco
Corona
Lake Mathews
Woodcrest
Edgemont
Sunnymead
March Field
Perris
Sun City
Alberhill
Mira Loma
Glen Avon
Ontario International
Crestmore
Grand Terrace
Loma Linda
Highgrove
Belltown
Arlington
Home Gardens
Pedley
Riverside
Box Springs
Poorman Res
Arlington Tanks
Mockingbird Canyon
ARLINGTON MOUNTAIN
GAVILAN PEAK
MONUMENT PEAK
ESTELLE MOUNTAIN
STEELE PEAK
SANTIAGO PEAK
TRABUCO PEAK
SANTA ANA MOUNTAINS
JURUPA MOUNTAINS
Santa Ana River
Temescal Valley
Temescal Wash
San Jacinto River
Perris Valley
Moreno Valley
Mockingbird Canyon
Trabuco Canyon
Walker Canyon
Indian Canyon
Silverado
Modjeska
Tri-City
Crown Jewell
Bryn Mawr
Fontana Gilfillan
Rialto-Miro
Etiwanda
Alta Loma
Rochester
Guasti
Champagne
Sunnyslope
South Fontana
Metropolitan Aqueduct (underground)
Steel mill
Morton
Radio tower
Radio range station
Windmill
Quarry
Water
Tank
Cemetery
Naval hospital
Naval Weapons Center, Corona Laboratory
Institution for Men
Chino
Ranch
Arlington Tanks
Oajalco Mine
Mathews Dam
El Cerrito
Glen Ivy
Temescal Guard Station
Gavilan Mine
Perris Valley
Lakeview
Sycamore Canyon
Reche Canyon
Pigeon Pass Valley
Box Springs
Fla Bob
Arlington Heights
Stony Bridge
Bedford Canyon
Lake Mathews
Mathews Dam
Temescal Wash
Temescal Valley
Walker Canyon
Indian Canyon
Trabuco Canyon
Reche Canyon
Sycamore Canyon
Pigeon Pass Valley
Poorman Res
Perris Valley Storm Drain
Moreno Valley
San Jacinto River
Santa Ana River
Santa Ana Canyon
Cucamonga Creek
Day Creek
Etiwanda Creek
Chino Creek
Santa Ana Canyon

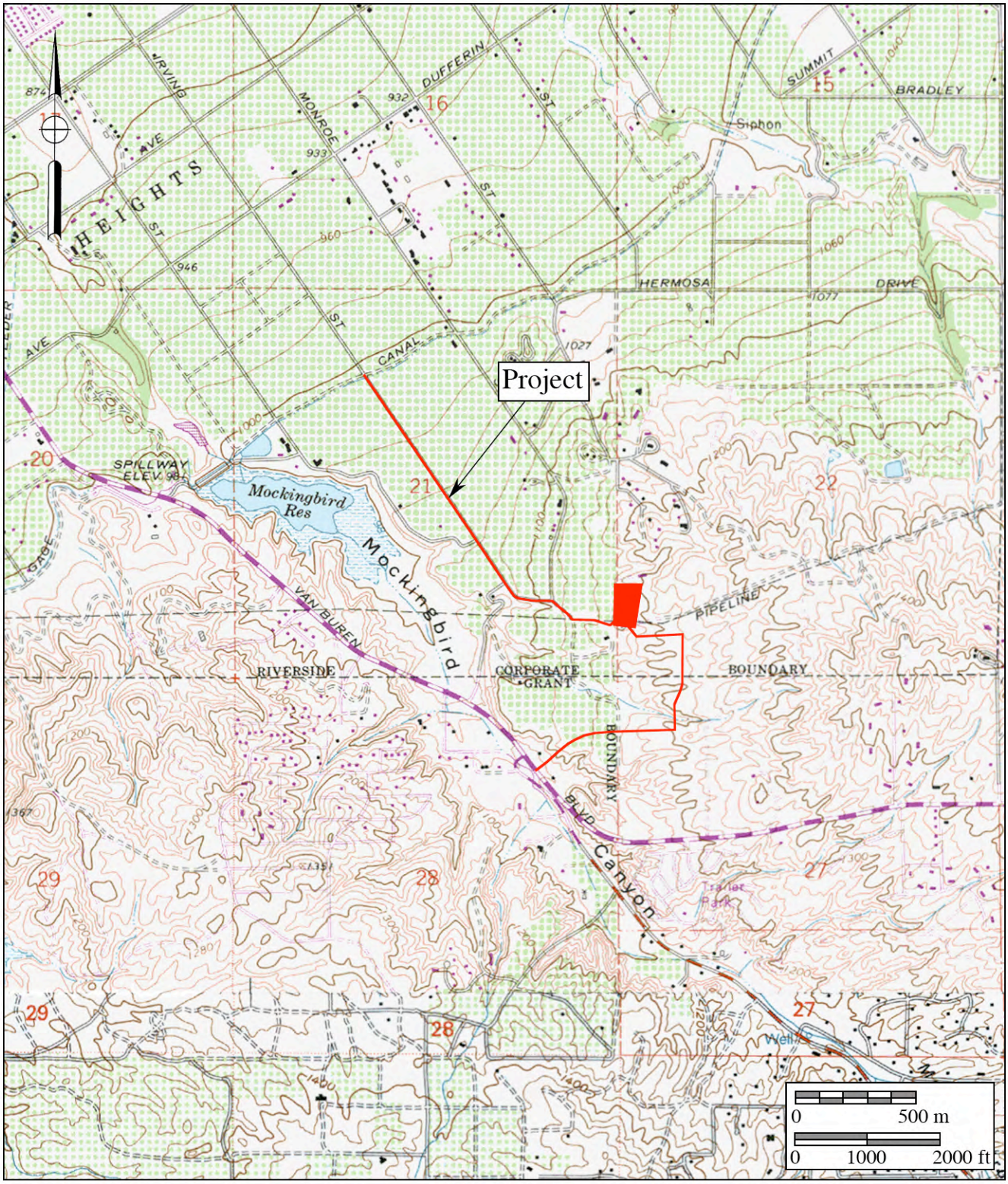


Figure 2

Project Location Map

Riverside–Corona Feeder, Proposed Mockingbird Connection

USGS *Riverside West* and *Lake Mathews* Quadrangles (7.5 minute series)

Station. The pump station will include pumps and flow-control facilities to convey water in either direction.

The project is assessed based on the Area of Potential Effect, which is the area that is potentially impacted physically, visibly, and audibly by the proposed action. Impacts include the direct effects of construction and the indirect effects of construction such as noise. The Area of Potential Effect for the proposed project extends 150 feet on either side of the limits of construction for the pipeline alignment and Lot 20.

4.0 METHODS

Prior to the project site visit, Brian F. Smith and Associates' biologists reviewed the California Natural Diversity Data Base (CNDDB 2009a and b), and the California Native Plant Society Rare Plant Inventory (CNPS 2009) to determine if sensitive species may be present within or near the limits of construction. National Wetland Inventory maps (USFWS 2009) for the project were consulted to determine if wetlands have been mapped within the limits of construction. Appropriate United States Geological Survey maps (7.5 minute) were reviewed to determine if drainage features, including "blue-line streams," may be present. The List of Hydric Soils for Western Riverside County (NCRS 2009) and the Soils Survey Western Riverside County (USDA 1971) were consulted to determine soils associated with the proposed project area.

The project area is small enough to allow one biologist to cover the entire site in one visit. The site was surveyed on foot by slowly walking over the area in a series of random transects to provide visual coverage of the entire project area. Vegetation and wildlife species observed were recorded as field observations were made. Wildlife sign (scat, bones, feathers, tracks, dens and burrows) were also recorded if encountered. Frequent pauses were made during the survey to watch and listen for wildlife.

5.0 EXISTING ENVIRONMENT

This discussion of the existing environment describes the project area setting and includes general physical characteristics of the project area, plant communities associated with the project area, and biological resources in the vicinity of the project area.

5.1 Physical Characteristics

The discussion of physical characteristics includes soils, topography, and geology.

5.1.1 Soils

Soils associated with the proposed project area are predominantly (WSS 2009):

- Arlington fine sandy loam, deep, 2 to 8 percent slopes
- Arlington loam, deep, 0 to 5 percent slopes
- Arlington loam, deep, 5 to 15 percent slopes
- Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
- Fallbrook sandy loam, 8 to 15 percent slopes, eroded
- Fallbrook sandy loam, 15 to 25 percent slopes, eroded
- Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded
- Hanford coarse sandy loam, 2 to 8 percent slopes
- Terrace escarpments

Arlington soils are neutral to moderately alkaline, very fine sandy loam underlain by a soil horizon that is cemented by silica displaced across the horizon to form a subsurface hardpan (NRCS 2009).

The Cieneba series consists of very shallow and shallow, somewhat excessively drained soils derived from granitic rock. Cieneba soils have slopes of 9 to 85 percent (NRCS 2009).

The Fallbrook soils are well-drained soils derived from granitic rocks. Fallbrook soils are on rolling hills and have slopes of 5 to 75 percent (NRCS 2009).

Hanford series soils are very deep, well-drained soils that formed in moderately coarse textured alluvium derived from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans and have slopes of 0 to 15 percent (NRCS 2009).

The Terrace Escarpment series occurs on steep slopes along narrow flood plains. In most places, there is a layer of loam or gravelly soil that overlays soft marine sandstone, gravels, or shale (NRCS 2009).

5.1.2 Topography

The Proposed Mockingbird Connection pipeline alignment traverses gently rolling terrain varying in elevation from approximately 1,100 feet above mean sea level on the southerly end of the alignment to approximately 1,000 feet above mean sea level on the north.

5.1.3 Geology

Riverside County lies in the Peninsular Range Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the County, extends some 1,000 miles from the Raymond – Malibu Fault Zone in western Los Angeles County to the southern tip

of Baja California, Mexico. The Proposed Mockingbird Connection project area is located on an alluvial terrace.

5.2 Biological Resources

The Biological Resources section discusses vegetation, plant communities, wildlife (including sensitive species), and associated habitats found within the limits of construction. In addition to the project area, adjacent areas (out to a distance of 150 feet on either side of the project boundary) are discussed.

5.2.1 Plant Communities

The Proposed Mockingbird Connection pipeline alignment traverses Urban/Developed, Riversidean sage scrub, and Orchard plant communities (Figure 3 and Table 1). Plant species observed during site visits are listed in Table 2.

Descriptions of plant communities are based on Holland's (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California*. The descriptions developed by Holland (1986) provide a standard nomenclature for plant communities throughout California. Holland does not provide descriptions of some plant communities. In those instances, descriptions from *Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions* (Oberbauer 1996) have been used.

<u>Urban/Developed, Element Code 12000 (Oberbauer 1996)</u>

Urban/Developed is a mixture of built structures such as roads, residences, commercial buildings, and parking lots. Vegetation is largely non-native and includes lawns, golf courses, road shoulders, airports, and parks. Remnants of native plant communities may be found at scattered, isolated locations. Ruderal communities occur in areas of disturbance. Vegetation in these areas consists of non-native invasive plants.

<u>Riversidean Sage Scrub, Element Code 327000 (Holland 1986)</u>

Riversidean sage scrub occurs along the coastal base of the Transverse and Peninsular Ranges of southern California from Los Angeles to the U. S./Mexico border. Riversidean sage scrub is found on drier sites and is dominated by California sage, California buckwheat, and red brome.

<u>Orchards and Vineyards, Element Code 18100 (Oberbauer 1996)</u>

These are general agriculture areas and include vineyards and orchards of commercial species. In Riverside County, orchards are often citrus and avocado groves.

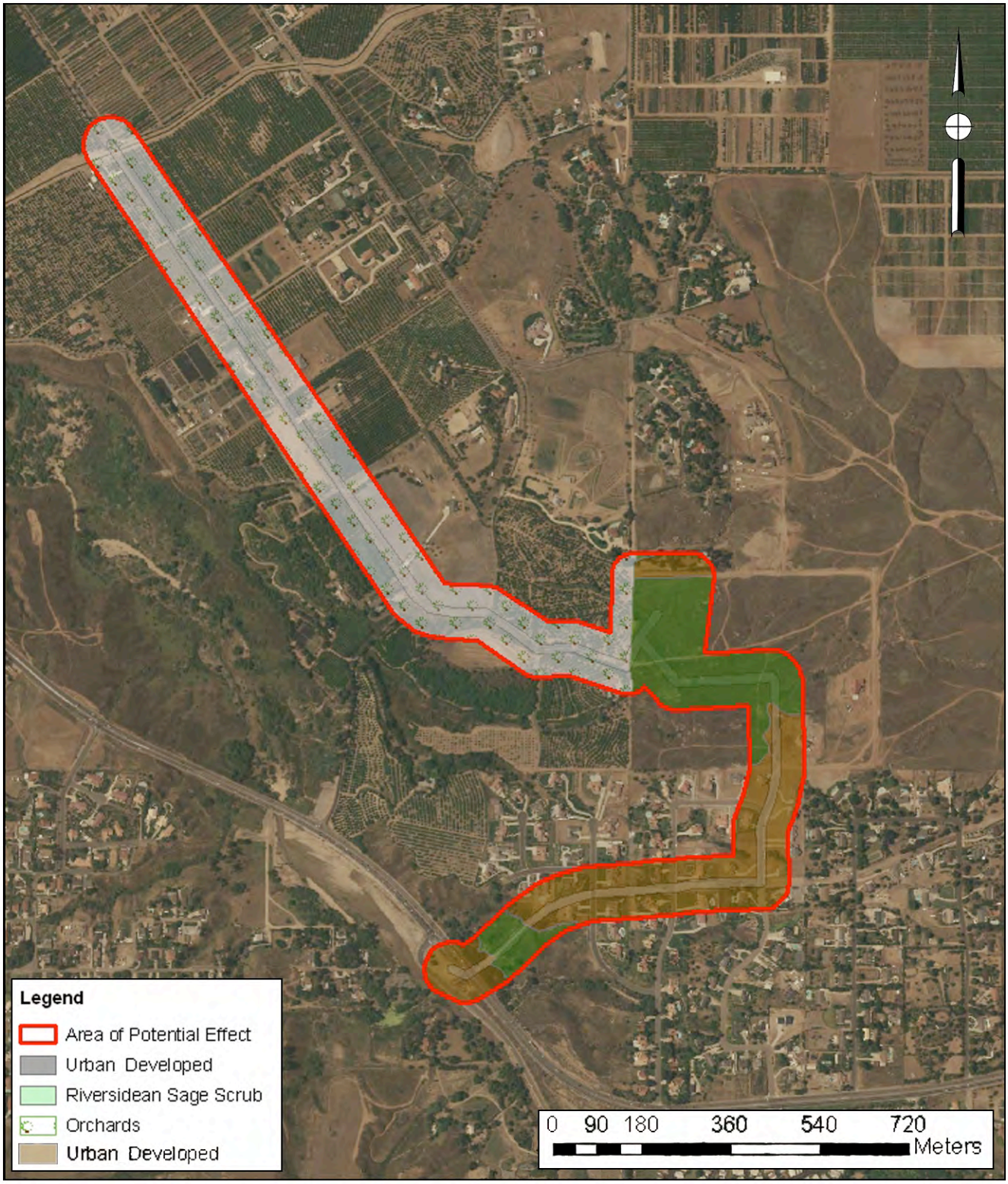


Figure 3

Plant Communities

Riverside–Corona Feeder, Proposed Mockingbird Connection

Table 1 Plant Communities Area of Potential Effect Riverside – Corona Feeder, Mockingbird Connection Riverside County, California	
Plant Community	**Acres**
Urban/Developed	49.3
Orchard	84.9
Riversidean Sage Scrub	32.4
Total	166.6

Table 2 Plant Species Observed Riverside – Corona Feeder, Proposed Mockingbird Connection Riverside County, California		
Common Name	***Scientific Name***	**Habitat**
Red brome	*Bromus madritensis rubens*	U/D, RSS, O
Wild oat	*Avena fatua*	U/D, RSS, O
Rip-gut brome	*Bromus diandrus*	U/D, RSS
Telegraphweed*	*Heterotheca grandiflora*	U/D, O
Horseweed*	*Conyza canadensis*	U/D, O
Sheep sorrel*	*Rumex acetosella*	U/D
Western ragweed*	*Ambrosia psilostachya*	U/D
Short-pod mustard	*Hirschfeldia incana*	U/D, O
Rock-cress*	*Arabis sp.*	RSS
Fiddleneck*	*Amsinckia menziesii*	RSS
Jimson weed/sacred datura*	*Datura wrightii*	RSS
Dove weed*	*Croton setigerus*	U/D, RSS
Climbing milkweed*	*Sarcostemma cynanchoides*	RSS
Tree tobacco	*Nicotiana glauca*	U/D, RSS
California sage*	*Artemisia californica*	RSS
White sage*	*Salvia mellifera*	RSS
Tumbleweed	*Salsola kali*	U/D, RSS,O
California buckwheat*	*Eriogonum fasciculatum*	RSS
Fan palm	*Washingtonia sp.*	U/D

5.2.2 Zoological Resources

Wildlife observed along the Proposed Mockingbird Connection pipeline alignment and within Lot 20 was representative of a mixture of urban areas, agriculture, and sage scrub and included black-tailed jackrabbit, brush rabbit, crow, California ground squirrel, and American crow. Sign of western burrowing owls, woodrats, and kangaroo rats were observed within Lot 20 (Table 3).

Table 3
Animal Species Observed Directly or Indirectly
Riverside – Corona Feeder, Proposed Mockingbird Connection
Riverside County, California

Common Name	***Scientific Name***
American crow	*Corvus brachyrhynchos*
California towhee	*Pipilo crissalis*
Mourning dove	*Zenaida macroura*
Western burrowing owl	*Athene cunicularia hypugaea*
Side-blotched lizard	*Uta stansburiana*
Western fence lizard	*Sceloporus occidentalis*
Woodrat	*Neotoma sp.*
Kangaroo rat	*Dipodomys sp.*
Brush rabbit	*Sylvilagus bachmani*
Black-tailed jackrabbit	*Lepus californicus*

5.2.3 Sensitive Species and Critical Habitat

A total of nine sensitive species were determined to be potentially present in the vicinity of the proposed project limits of construction. A review of the CNDDB (2009a and b) indicated that eight species listed by state and federal endangered species acts may be present (Table 4). In addition, the western burrowing owl, a California State Species of Special Concern covered by the Western Riverside County Multiple Species Habitat Conservation Plan, may be present.

Table 4
Listed Species Potentially Present
Riverside – Corona Feeder, Proposed Mockingbird Connection
Riverside County, California

Common Name	*Scientific Name*	Federal Status	State Status	CNPS Rank
Dwarf burr ambrosia	*Ambrosia pumila*	E	None	1B.1
Santa Ana River woollystar	*Eriastrum densifolium sanctorum*	E	E	1B.1
Delhi sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	E	None	NA
Santa Ana sucker	*Catostomus santaanae*	T	None	NA
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	E	NA
Coastal California gnatcatcher	*Polioptila californica californica*	T	None	NA
Least Bell's vireo	*Vireo bellii pusillus*	E	E	NA
Western burrowing owl	*Athene cunicularia hypugaea*	MBTA	SSC	NA
Stephens' kangaroo rat	*Dipodomys stephensi*	E	T	NA

E – Endangered
T – Threatened
C – Candidate for threatened or endangered status
MBTA – Migratory Bird Treaty Act
SSC – Species of special concern
1B – Rare, threatened, or endangered in California and elsewhere
0.1 – Seriously endangered in California

U. S. Fish and Wildlife Service data (USFWS 2009) and the CNDDB (2009a and b) were consulted to determine if critical habitat for sensitive species may be present within the limits of construction. Critical habitat is a specific geographic area or areas that are essential for the survival of a threatened or endangered species. Critical habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery. The proposed project area is not within designated critical habitat.

Dwarf Burr Ambrosia (*Ambrosia pumila*)

Dwarf burr ambrosia (also known as San Diego Ambrosia) is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Dwarf burr ambrosia is a narrow endemic plant species. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

In Riverside County, dwarf burr ambrosia is associated with open, gently sloped grasslands and is generally associated with alkaline soils. Dwarf burr ambrosia generally occurs on slopes ranging from 0 to 9 percent on sandy or clay loams.

Only three populations of dwarf burr ambrosia are known to occur in Riverside County. The two largest populations occur in the vicinity of Alberhill, approximately 19 miles southeast of the proposed project. A third, and smaller population is found at Skunk Hollow, approximately 35 miles southeast of the proposed project (MSHCP 2003).

Suitable habitat is not present. There is one record of an extirpated population of dwarf burr ambrosia located approximately 3.9 miles north of the proposed project. Soils associated with the pipeline alignment and Lot 20 are not alkaline. Dwarf burr ambrosia was not observed during site visits and is not likely to be present.

Santa Ana River Woollystar (*Eriastrum densifolium sanctorum*)

The Santa Ana River woollystar is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Santa Ana River woollystar is a narrow endemic plant species. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The Santa Ana River woollystar is found in open washes and early-successional alluvial fan scrub where flooding and scouring keeps the scrub open. Suitable habitat is usually a combination of gravelly and sandy soils with scattered cobbles and boulders (MSHCP 2003). Santa Ana River woollystar has been reported along the Santa Ana River about 4.7 miles southeast of the proposed project area.

The proposed project area is Urban/Developed and habitat for the Santa Ana River woollystar is not present. Santa Ana River woollystar was not observed during site visits and is not likely to be present.

Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*)

The Delhi Sands flower-loving fly is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. The Delhi Sands flower-loving fly is a narrow endemic species. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The Delhi Sands flower-loving fly is restricted to the Colton Dunes (Delhi soil series) in northwestern Riverside and southwestern San Bernardino counties in southern California. Existing populations of the Delhi Sands flower-loving fly occur within Riverside and San Bernardino counties straddling Interstate 10 in the vicinity of Colton and Rialto and from Colton

to Mira Loma. The Delhi Sands flower-loving fly has not been reported in the vicinity of the proposed project area.

Suitable habitat for this species (Delhi soils) is not present within the limits of construction. The Delhi Sands flower-loving fly was not observed during site visits and is not likely to be present.

Santa Ana Sucker (*Catostomus santaanae*)

The Santa Ana sucker is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat was designated for the Santa Ana sucker in 2005 (50 CFR 17). The closest critical habitat unit is located along the Santa Ana River approximately 4.5 miles north of the proposed project.

The Santa Ana sucker is a fish species that is generally found in small, shallow streams with currents ranging from swift to sluggish. They are found at depths ranging from a few centimeters to one meter or more. Substrates in these streams generally consist of gravel, rubble, and boulders. Streams in which the species is found are subject to periodic, severe flooding (MSHCP 2003).

Aquatic habitat is not present within the limits of construction. Therefore, the Santa Ana sucker is not present within the limits of construction and will not be affected by the Proposed Mockingbird Canyon Connection Project.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)

The western yellow-billed cuckoo is a U. S. Fish and Wildlife Service candidate for listing as threatened or endangered (FR 47:251). It is listed by the State of California as endangered. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The western yellow-billed cuckoo in California requires riparian woodlands with dense understory adjacent to slow-moving watercourses, backwaters, or seeps. Willow is almost always a component of the vegetation (MSHCP 2003). The western yellow-billed cuckoo has been reported in Southern Cottonwood Willow Riparian Woodland along the Santa Ana River approximately 2 miles east of the proposed project.

Suitable habitat for the western yellow-billed cuckoo does not occur within the limits of construction. The western yellow-billed cuckoo was not observed during site visits and is not likely to be present.

Coastal California Gnatcatcher (*Polioptila californica californica*)

The coastal California gnatcatcher is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat for the coastal California gnatcatcher was designated in 2000 and revised in 2007 (FR 74:115).

The coastal California gnatcatcher is a small, non-migratory songbird that is found in or near sage scrub habitat in southwestern California and northwestern Baja California, Mexico. The coastal California gnatcatcher is found almost exclusively in sage scrub, but has also been found in chaparral and riparian habitats. The coastal California gnatcatcher has been reported in Riversidean sage scrub approximately 1.5 miles northeast of the proposed project.

Riversidean sage scrub along the Proposed Mockingbird Connection pipeline alignment and within Lot 20 provides suitable habitat for the coastal California gnatcatcher. There are 26 recorded occurrences of the coastal California gnatcatcher within 5 miles of the project area. Seven of the sightings are within 2 miles of the proposed project, and one sighting is about 0.4 miles from the site. The presence of suitable habitat and the numerous recorded sightings of this species in the vicinity of the proposed project indicate there is a high potential for the coastal California gnatcatcher to be present within the limits of construction, particularly within Lot 20.

Designated critical habitat is located approximately 4 miles northeast of the proposed project area.

Least Bell's Vireo (*Vireo bellii pusillus*)

Least Bell's vireo is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat was designated for least Bell's vireo in 1994 (FR 59:22).

Least Bell's vireos are usually found in riverine/riparian habitats that typically have dense understory within 1-2 meters of the ground and a dense, stratified canopy along water or along dry parts of intermittent streams. Typically, least Bell's vireo is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast lie oak riparian

forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities and in the immediate vicinity of water.

There is a recorded occurrence of least Bell's vireo in riparian woodlands approximately 1.1 miles southwest of the proposed project area. Habitat within the Area of Potential Effect for the proposed project includes Urban/Developed, Orchards, and/or Riversidean sage scrub. Suitable habitat for the least Bell's vireo does not occur within the limits of construction. The least Bell's vireo was not observed during site visits and is not likely to be present.

The proposed project area is not within designated critical habitat for least Bell's vireo.

Western Burrowing Owl (*Athene cunicularia hypugaea*)

The western burrowing owl is not listed by the U. S. Fish and Wildlife Service or the State of California. The U. S. Fish and Wildlife Service considers the western burrowing owl a "Bird Species of Concern" that may become listed as threatened or endangered if significant management steps are not taken. The western burrowing owl is protected under the Migratory Bird Treaty Act. The western burrowing owl is a California State Bird Species of Special Concern (Class 2). Class 2 Bird Species of Special Concern have scattered or highly localized populations and require active management to prevent them from becoming threatened or endangered species (Shuford and Gardali 2008). This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Additional surveys are required if a proposed project area is located within suitable habitat for this species.

Burrowing owls use a variety of natural habitats for nesting and foraging that are typically characterized by low-growing vegetation. Burrowing owl habitat includes native and non-native grassland, natural clearings within shrub lands, shrub lands with low density shrub cover, golf-courses, drainage ditches, earthen berms, along the edges of airport runways, pastureland, dairies, fallow fields, and agricultural use areas (MSHCP 2003).

Burrowing owls typically use burrows made by burrowing mammals, such as ground squirrels (*Spermophilus beecheyi*) or badgers (*Taxidea taxus*). They may also utilize man-made structures, such as earthen berms; cement culverts; cement, asphalt, rock, or wood debris piles; and/or openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, and/or in proximity to man-made structures (MSHCP 2003). Burrowing owls have been reported within 5 miles of the proposed project area.

Suitable habitat for this species is present within Lot 20. Suitable burrows and perches were observed (rock formations). Burrowing owls were not observed during site visits; however, burrowing owl pellets consisting of insect parts were found around rock formations. Burrowing

owls have been reported within 0.9 miles of Lot 20. The presence of suitable habitat and proximity to recorded sightings of burrowing owls implies a high potential for the presence of western burrowing owls within Lot 20.

Stephens' Kangaroo Rat (*Dipodomys stephensi*)

Stephens' kangaroo rat is listed as endangered by the U. S. Fish and Wildlife Service and as threatened by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Focused surveys will be required if suitable habitat is present. Critical habitat has not been established for Stephens' kangaroo rat.

Stephens' kangaroo rat is covered by the Stephens' Kangaroo Rat Habitat Conservation Plan (RCHCA 2009). The primary purpose of the habitat conservation plan is to provide the information required for issuance of a federal permit from the U. S Fish and Wildlife Service for "incidental take" of Stephens' kangaroo rat and equivalent authorization from the California Department of Fish and Game through an endangered species permit. The habitat conservation plan replaced the Riverside County Habitat Conservation Agency's existing Stephens' kangaroo rat conservation program and its federal and state incidental take authorizations with the program and authorizations described in the habitat conservation plan. The habitat conservation plan intends to provide for the establishment, expansion, and ongoing management of permanent reserves to ensure the continued existence of Stephens' kangaroo rat in the habitat conversation plan area of western Riverside County, while providing opportunities to benefit other species of concern (RCHCA 2009).

The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrub lands with cover of less than 50 percent during the summer. The proportion of annual forbs and grasses is important because Stephens' kangaroo rats avoid dense grasses and are more likely to inhabit more open areas. Soil type also is an important habitat factor for Stephens' kangaroo rat occupation. The Stephens' kangaroo rat typically is found in sandy loams with low clay to gravel content. Slope is a factor in Stephens' kangaroo rat occupation; the Stephens' kangaroo rat tends to use flatter slopes (i.e., < 30 percent). In general, the highest abundance of Stephens' kangaroo rats occurs on gentle slopes less than 15 percent (MSHCP 2003).

The proposed project is located within a mapped population of Stephens' kangaroo rats. Approximately 16 additional populations have been recorded in the vicinity of the proposed action. During site visits, tail drags and droppings were observed within Lot 20. It could not be determined if these were left by Stephens' kangaroo rats; however, the presence of suitable habitat, sign of kangaroo rat presence within Lot 20, and the project area's proximity to recorded populations of Stephens' kangaroo rat implies a high potential for this species to occur within the limits of construction. Kangaroo rat sign were not observed along the pipeline alignment.

6.0 JURISDICTIONAL WATERS AND WETLANDS

6.1 Wetlands

To be considered a wetland, a site must meet three criteria: hydric soils, wetland hydrology, and, hydrophytic vegetation. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil. The presence of hydric soils may be determined by a variety of field indicators and by consulting a list of hydric soils for the project area. The soils associated with the current project area are not on the list of hydric soils for the State of California (NRCS 2009). Field indicators such as low chroma soils, concretions, and/or oxidized root channels were not observed.

Wetland hydrology is present when, under normal circumstances, the land surface is either inundated or the upper portion of the soil is saturated at a sufficient frequency and duration to create anaerobic conditions. Field indicators used for hydric soils may be used to support the presence or absence of wetland hydrology. There is no indication that soils within the limits of construction are inundated or saturated for a long enough period of time during the growing season to promote hydric conditions or hydrophytic vegetation. Field indicators of hydric soils such as low chroma soils, concretions, and/or oxidized root channels were not observed.

In general, hydrophytic vegetation includes plants that thrive in wet conditions and exhibit obvious physical adaptations for the capturing and transporting of oxygen. Some hydrophytic vegetation such as mule fat occurs in drainages within the limits of construction; however, this vegetation is not predominant (fifty-one percent or greater). The project area does not meet the criterion for hydrophytic vegetation.

Based on the absence of hydric soils, wetland hydrology, and hydrophytic vegetation, there are no wetlands present within the limits of construction.

7.0 JURISDICTIONAL DETERMINATION

Two agencies or entities may have jurisdictional responsibilities related waters occurring within the proposed project area: U. S. Army Corps of Engineers; and, California Department of Fish and Game. The basis for jurisdiction is discussed below.

7.1 U. S. Army Corps of Engineers

The U. S. Army Corps of Engineers regulates dredging and filling in Waters of the United States under the authority of Section 404 of the Clean Water Act. Waters of the United State are defined to include all navigable waters including tidal waters, all interstate waters and wetlands, all impoundments of the waters mentioned above, all tributaries of the waters mentioned above, all territorial seas, and all wetlands adjacent to the waters mentioned above (33 CFR 328).

Title 33 of the Code of Federal Regulations defines wetlands as, "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" [33 CFR 328.3(b)]. In the Solid Waste Agency of Northern Cook County v. Army Corps of Engineers, the U. S. Supreme Court determined that U. S. Army Corps of Engineers jurisdiction may not extend to wetlands and waterways where the only nexus with Waters of the U. S. is use by migratory birds. In the Rapanos – Carabell Supreme Court decisions, the Supreme Court rejected the argument that the term "waters of the United States" is limited to only those waters that are navigable in the traditional sense and their abutting wetlands. However, the court decided that regulatory authority should extend only to "relatively permanent, standing or continuously flowing bodies of water" connected to traditional navigable waters, and to "wetlands with a continuous surface connection to" such relatively permanent waters (EPA/COE 2008).

Two distinct jurisdictional tests emerged from the Rapanos–Carabell decision: "significant nexus" test and "relatively permanent, standing or continuously flowing" test. The U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency have developed guidelines for making jurisdictional determinations based on these tests. The following summary of key points related to U. S. Environmental Protection Agency and U. S. Army Corps of Engineers jurisdiction is taken directly from a joint EPA/USACOE memorandum (EPA/COE 2008).

7.1.1 Summary of Key Points related to EPA and USACOE Jurisdiction

"The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries."

"The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

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

"The agencies generally *will not assert* jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water."

"The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters."

"Significant nexus includes consideration of hydrologic and ecologic factors."

Based on these criteria, there are no jurisdictional waters or wetlands present within the limits of construction. However, only the U. S. Army Corps of Engineers may make a final determination regarding jurisdiction.

7.2 California Department of Fish and Game

Sections 1600 through 1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the California Department of Fish and Game for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use material from a streambed." The California Department of Fish and Game defines a stream, creek or river 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." The California Department of Fish and Game defines lakes as including man-made lakes and reservoirs. In addition to the bed and banks of a stream, the California Department of Fish and Game jurisdiction includes riparian or wetland vegetation associated with the water body. Projects that require a Streambed Alteration

Agreement may also require a permit from the U. S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Based on these criteria, there are no waters falling under the jurisdiction of the California Department of Fish and Game within the limits of construction. However, only the State of California may make a final determination regarding jurisdiction.

8.0 EFFECTS OF THE PROPOSED ACTION

The proposed pipeline alignment will affect 8.7 acres of disturbed habitat consisting of a maintained dirt road. Construction of a pump station and an aboveground reservoir (tank) will affect approximately 6.9 acres of Riversidean sage scrub (Figure 4 and Table 5).

Nine sensitive species were identified as potentially occurring within or in proximity to the limits of construction. Three species (western burrowing owl, coastal California gnatcatcher, and Stephens' kangaroo rat) were determined to have high potential to occur within the limits of construction.

Dwarf Burr Ambrosia

Suitable habitat for dwarf burr ambrosia is not present within the limits of construction. Dwarf burr ambrosia was not observed during site visits and will not be affected by the proposed action.

Santa Ana River Woollystar

Suitable habitat for the Santa Ana River woollystar is not present within the limits of construction. Santa Ana River woollystar was not observed during site visits and will not be affected by the proposed action.

Delhi Sands Fower-Loving Fly

Suitable habitat for Delhi Sands flower-loving fly is not present within the limits of construction. Delhi Sands flower-loving fly was not observed during site visits and will not be affected by the proposed action.

Santa Ana Sucker

The Santa Ana sucker is an aquatic species. Aquatic habitat is not present within the limits of construction. The Santa Ana sucker will not be affected by the proposed action.

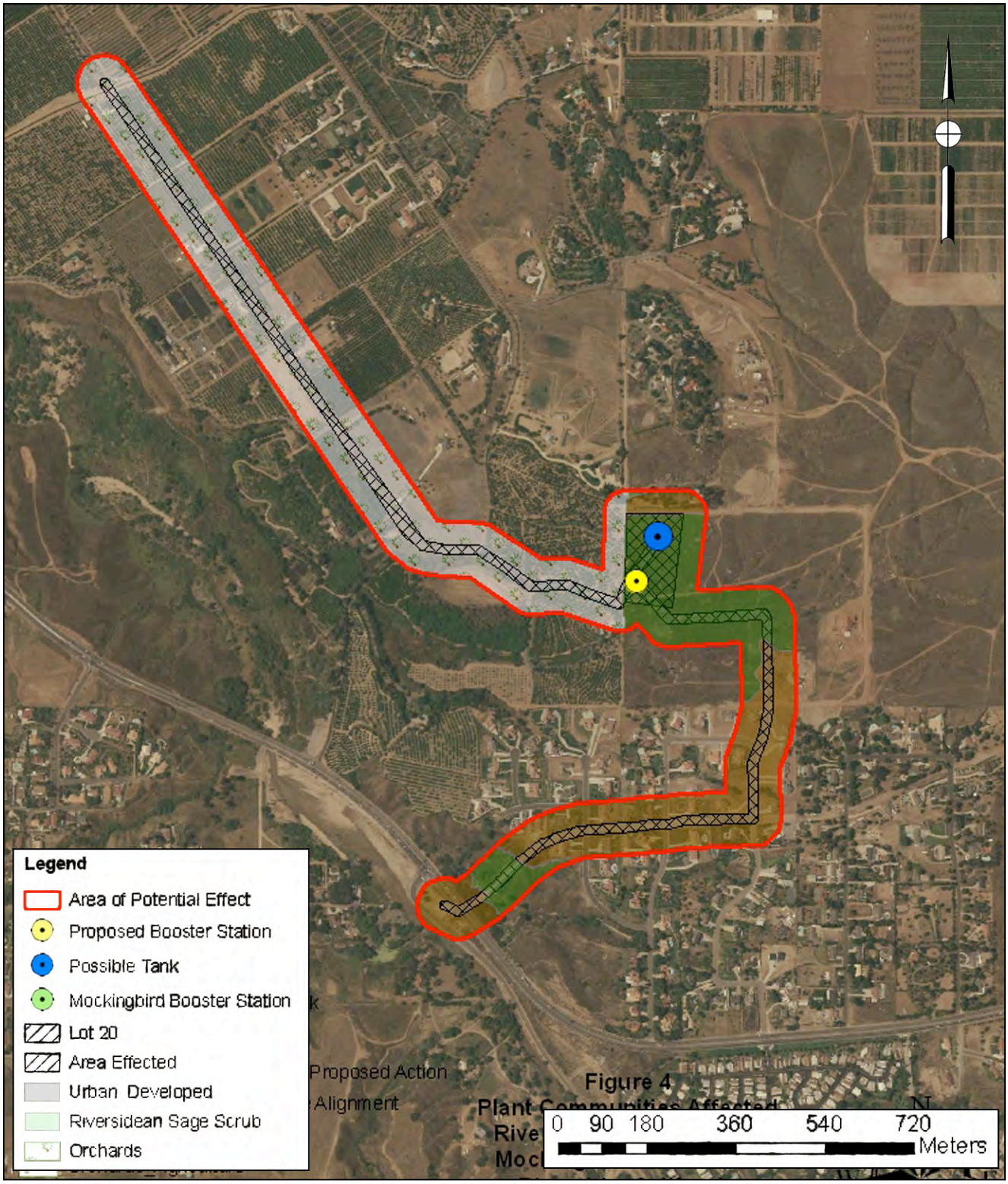


Figure 4

Impacts to Plant Communities

Riverside–Corona Feeder, Proposed Mockingbird Connection

Table 5 Plant Communities Effected Riverside – Corona Feeder, Proposed Mockingbird Connection Riverside County, California		
Plant Community	**Acres Present Area of Potential Effect**	**Acres Effected**
Urban/Developed	49.3	0.5
Orchard	84.9	8.2
Riversidean	32.4	6.9
Total	166.6	15.6

Western Yellow-Billed Cuckoo

Suitable habitat for western yellow-billed cuckoo is not present within or near the limits of construction. Western yellow-billed cuckoo's were not observed during site visits and will not be affected by the proposed action.

Coastal California Gnatcatcher

Suitable habitat for the coastal California gnatcatcher is present within Lot 20 and in Riversidean sage scrub adjacent to the pipeline alignment. There are numerous recorded sightings of this species in the vicinity of the limits of constructions. Although coastal California gnatcatchers were not observed during site visits there is a high probability that this species may be present within Lot 20 and adjacent to the pipeline alignment where it crosses Riversidean sage scrub. The proposed action has the potential to directly and indirectly effect the coastal California gnatcatcher.

Least Bell's Vireo

Suitable habitat for least Bell's vireo is not present within the limits of construction. The proposed project area is not within designated critical habitat for the species. Least Bell's vireo was not observed during site visits and will not be affected by the proposed action.

Western Burrowing Owl

Suitable habitat for the western burrowing owl is present in the Riversidean sage scrub within Lot 20. Burrowing owls were not observed during site visits; however, sign (pellets and suitable burrows) of burrowing owl presence were observed. The presence of suitable habitat and sign of owl presence requires conducting focused surveys for this species. Burrowing owl sign were not observed within the pipeline alignment.

Development of Lot 20 could result in the destruction of eggs, young, and adult owls unless appropriate measures are followed. Prior to construction (including grubbing, clearing, and grading), focused surveys shall be conducted for western burrowing owls. If owls are encountered, state and federal wildlife agencies shall be consulted to determine how to treat owls that may be present.

A 30-Day Pre-Construction Survey shall also be conducted to insure that owls are not present when construction begins.

Stephens' Kangaroo Rat

Stephens' kangaroo rats have been recorded within or in the vicinity of Lot 20. During site visits, evidence of kangaroo rats was observed at several locations; however, the species could not be determined. The evidence consisted of tail drags, droppings, and tracks. Kangaroo rats were not directly observed, but there is high potential for this species to be present within Lot 20. Implementation of the proposed action has the potential to destroy 4.8 acres of Stephens' kangaroo rat habitat, resulting in the "incidental take" of an undetermined number of Stephens' kangaroo rats.

Additional marginal habitat is present in a small Riversidean sage scrub community near the south end of the pipeline alignment. Kangaroo rat sign were not observed in the other areas examined.

9.0 RECOMMENDED MITIGATION OR AVOIDANCE MEASURES

Suitable habitat for coastal California gnatcatcher, Stephens' kangaroo rat, and western burrowing owl is located within the project area. The following actions are recommended to avoid, minimize, or mitigate for impacts to these species.

9.1 Coastal California Gnatcatcher

Prior to any construction in suitable coastal California gnatcatcher habitat (including clearing, grading, and grubbing), focused surveys shall be conducted for coastal California gnatcatcher. If gnatcatchers are determined to be present, the proposed action is likely to result in incidental take of individuals occupying suitable habitat within the limits of construction and is likely to adversely affect the coastal California gnatcatcher. If gnatcatchers are determined to be present, the project proponents shall consult with the U. S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act. Construction shall not occur in suitable habitat for this species until the consultation is complete and any actions recommended by the U. S. Fish and Wildlife Service are in place.

The U. S. Fish and Wildlife Service determined that noise levels in excess of a time weighted hourly average of 60 decibels (dBA) adversely impact breeding and nesting activity for the coastal California gnatcatcher. Disturbance resulting from construction noise would be considered as "incidental take" under the Endangered Species Act of 1973. Therefore, if construction noise exceeds 60 dBA, construction shall not be permitted on those portions of the limits of construction adjacent to suitable habitat for the coastal California gnatcatcher during the breeding season for this species (March 1 through August 15).

If it is not feasible to avoid construction adjacent to suitable habitat for the coastal California gnatcatcher during the breeding season, then focused surveys shall be conducted in suitable habitat to determine if this species is present. If coastal California gnatcatchers are determined to be present, then construction shall not be permitted during the breeding season in those portions of the limits of construction adjacent to suitable habitat.

If coastal California gnatcatchers are present in adjacent suitable habitat and avoiding construction during breeding season is not practical, then noise attenuation measures may be employed to reduce noise levels to acceptable limits. A noise assessment shall be conducted to determine how far the 60 dBA noise contour would extend into adjacent suitable gnatcatcher habitat. Noise attenuation measures shall be designed based on this assessment. Noise attenuation measures shall be designed to reduce noise levels at the edge of occupied habitat to 60 dBA or ambient, whichever is greater. Noise attenuation measures shall be in place at least two weeks prior to the beginning of the breeding season.

9.2 Stephens' Kangaroo Rat

Prior to any construction in suitable habitat for Stephens' kangaroo rat (including clearing, grading, and grubbing), focused surveys shall be conducted for Stephens' kangaroo rat. If Stephens' kangaroo rats are determined to be present, the proposed action is likely to result in incidental take of individuals occupying suitable habitat within the limits of construction and is likely to adversely affect Stephens' kangaroo rat. If Stephens' kangaroo rats are determined to be present, the project proponents shall consult with the U. S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act. Construction shall not occur in suitable habitat for this species until the consultation is complete and any actions recommended by the U. S. Fish and Wildlife Service are in place.

Suitable habitat for Stephens' kangaroo rat is present in Riversidean sage scrub, disturbed Riversidean sage scrub, and non-native grasslands adjacent to the limits of construction. The proposed action may directly effect Stephens' kangaroo rats that may wander into the limits of construction as a result of animals falling into open excavations and being unable to escape or death of the animal as a result of being crushed by moving equipment.

9.3 Western Burrowing Owl

Prior to any construction in suitable western burrowing owl habitat (including clearing, grading, and grubbing), focused surveys shall be conducted for western burrowing owls. If burrowing owls are determined to be present, the proposed action is likely to result in incidental take of individuals occupying suitable habitat within the limits of construction and is likely to adversely affect the western burrowing owl. If burrowing owls are determined to be present, the project proponents shall consult with the California Department of Fish and Game and U. S. Fish and Wildlife Service to determine what steps must be taken to preserve and protect the burrowing owls and sufficient habitat to maintain the burrowing owls. Construction shall not occur in suitable habitat for this species until the consultation is complete and any actions recommended by the California Department of Fish and Game and U. S. Fish and Wildlife Service are in place.

However, the proposed action may indirectly effect western burrowing owls as a result of personnel or equipment entering suitable habitat adjacent to the limits of construction. Prior to construction, the limits of construction adjacent to suitable western burrowing owl habitat shall be fenced with orange vinyl barrier material. The limits of construction shall be inspected by the project biologist throughout construction.

10.0 CONCLUSIONS

In conclusion, the proposed action, will not affect dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, or least Bell's vireo.

The proposed action may result in incidental take of the endangered Stephens' kangaroo rat and is likely to adversely affect this species. Focused surveys for this species shall be conducted in suitable habitat. If Stephens' kangaroo rat is determined to be present, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the threatened coastal California gnatcatcher and is likely to adversely affect the coastal California gnatcatcher. Focused surveys for this species shall be conducted in suitable habitat. If coastal California gnatcatcher is determined to be present, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the western burrowing owl, which is protected under the Migratory Bird Treaty Act and is a State of California Bird Species of Special Concern (Class 2), and is likely to adversely affect this species. Focused surveys for this species shall be conducted in suitable habitat. If western burrowing owls are determined to be present, the project proponent shall consult with the California Department of Fish and Game and U. S. Fish and Wildlife Service to determine steps to be taken to preserve and protect the burrowing owls and sufficient habitat to support the owls.

If mitigated as recommended, the proposed action will not significantly affect biological resources including species listed under state and federal endangered species acts or other species of special concern.

11.0 CERTIFICATION

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

DATE: December 4, 2009 SIGNED:_____

Laurence N. Dean, Senior Biologist

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FOCUSED SURVEYS FOR THE WESTERN BURROWING OWL *(Athene cunicularia hypugaea)* ALONG THE RIVERSIDE – CORONA FEEDER CLAY STREET CONNECTION COUNTY OF RIVERSIDE, CALIFORNIA

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1 March 2010

1.0 SUMMARY

The proposed action is the construction of water pipeline in Limonite and Pedley Roads between 56th Street and Clay Street in Riverside, California. A booster station has been proposed for one of four locations. The pipeline alignment is Urban/Developed habitat and does not provide suitable western burrowing owl (*Athene cunicularia hypugaea*) habitat. The proposed booster station sites are in Non-Native Annual Grasslands. Non-Native Annual Grasslands within and adjacent to the alignment also provide burrows suitable for use by burrowing owls. However, dense vegetative cover within the project area in the late winter, spring and early summer precludes use by burrowing owls. Disking of the grasslands for fire protection in mid to late summer may make some burrows accessible to burrowing owls in the late summer, fall and winter. Burrowing owls and sign of burrowing owl use were not observed during focused surveys.

Because of site conditions, a nesting season focused survey is not recommended. However, there is potential for migrating owls to use portions of the project area, and therefore a 30-Day Pre-Construction Survey must be conducted. If burrowing owls are detected, they will be kept under observation by a qualified biologist. If it appears that nesting is occurring or behavior is being disrupted by project-related activities, all work adjacent to the active burrow shall be halted until the owl or owls depart the area.

2.0 INTRODUCTION

The western burrowing owl has not been listed under state and federal endangered species acts. It is however, protected under the Migratory Bird Treaty Act of 1918, which makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Title 50 of the Code of Federal Regulations (CFR) Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by 50 CFR 21. The California Department of Fish and Game considers the burrowing owl to be a "Species of Special Concern" and the U. S. Fish and Wildlife Service considers the burrowing owl to be a "Bird of Conservation Concern." Although these terms do not have legal status, they refer to species that are in jeopardy of being listed as threatened or endangered. "Species of Special Concern" are required to be treated as if they were listed species for purposes of the California Environmental Protection Act. "Birds of Conservation Concern" are to be treated as listed species for all actions with a federal nexus, such as funding or actions on federal lands.

Burrowing owls tend to prefer areas with good horizontal visibility, low ground cover density and elevated perches, factors providing for easy detection of prey and predators. Burrowing owls are generally found in dry, open treeless areas such as agricultural lands, annual

and perennial grasslands, deserts, and arid scrublands with low-growing vegetation. Burrowing owls may also be found on golf courses, cemeteries, airports, in vacant lots and along road shoulders. This species uses burrows of burrowing mammals, rock outcrops, culverts, debris piles and similar structures for nest sites. In Riverside County, these owls occur most often in agricultural areas and grasslands (MSHCP 2003).

A habitat assessment was prepared for the Clay Street Connection pipeline alignment and proposed booster station sites in December 2009 (Appendix A). During site visits in September 2009, it was determined that suitable habitat for the western burrowing owl occurs in Non-Native Annual Grasslands and Disturbed Areas of predominantly non-native vegetation. Based on the presence of suitable habitat, it was determined that focused surveys for burrowing owls would be conducted along the Clay Street Connection pipeline alignment.

2.1 Project Location

The proposed project is located in western Riverside County, California (Figure 1) within the right-of-way of Pedley Road and Limonite Avenue between 56th Street and Clay Street (Figure 2). Three booster station sites proposed for consideration are located at the intersection of Pedley Road, Norton Avenue and Limonite Avenue. A fourth proposed booster station site is located northwest of the intersection of Limonite Avenue and Baldwin Avenue (see Figure 2).

2.2 Project Description

The Clay Street Connection Project consists of the placement of approximately 7,800 linear feet of pipeline up to 48 inches in diameter. This connection will allow the Riverside – Corona Feeder to connect to an existing Jurupa Community Services District waterline located in 56th Street, to tie into the Chino Desalter Phase 3 expansion, and to facilitate the connection of Western Municipal Water District facilities to those that are a part of the Chino Basin Dry-Year Yield Program. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction (MacHott 2009) (Figure 3). The four booster station sites proposed for consideration range in size from 0.75 acres to 3.56 acres.

3.0 METHODS

The focused survey area was determined by placing a 150-meter buffer on both sides of the Clay Street Connection alignment and all proposed booster station sites. The burrowing owl survey protocol requires that a 150-meter buffer around the project area be included in the survey area (Appendix B). The area within the buffer was assessed to determine where survey efforts would be focused. Focused burrowing owl surveys consist of four parts: habitat assessment,

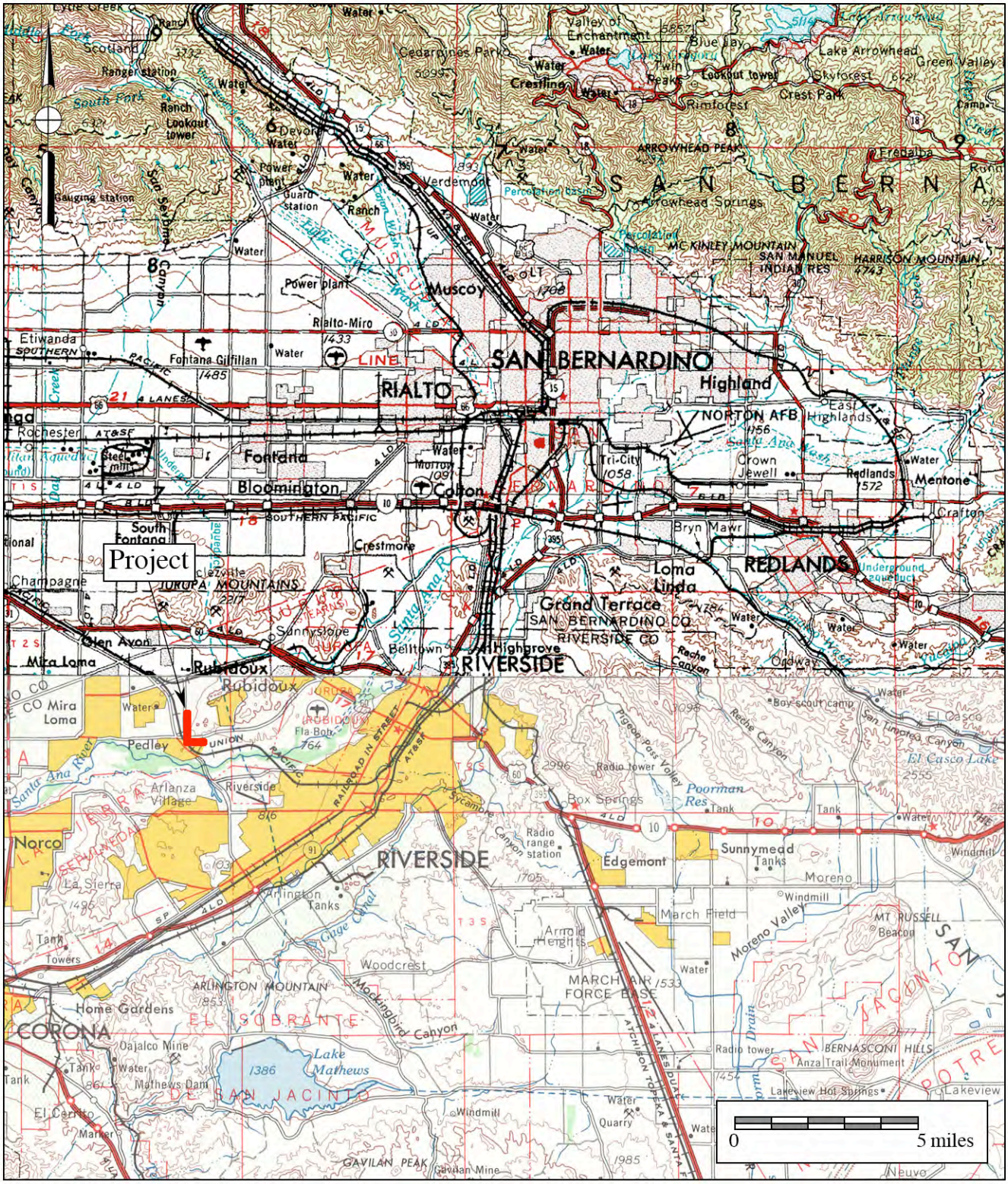

Figure 1

General Location Map

Riverside–Corona Feeder, Clay Street Connection

USGS *Santa Ana and San Bernardino* (1:250,000 series)

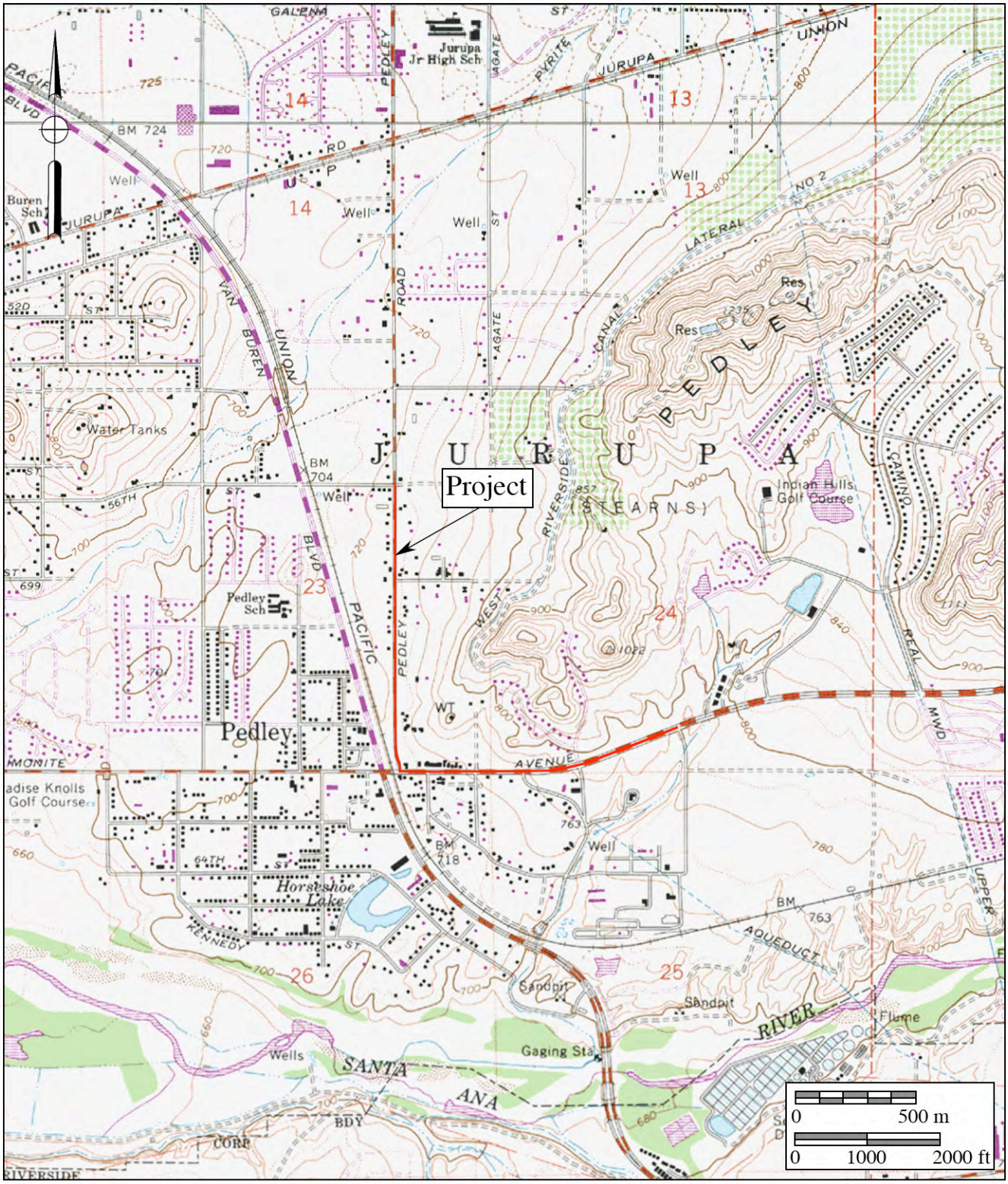

Figure 2

Project Location Map

Riverside–Corona Feeder, Clay Street Connection

USGS *Riverside West* and *Fontana* Quadrangles (7.5 minute series)

Figure 3

General Site Plan

Clay Street Connection

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burrow survey and mapping, owl census and mapping, and preparation of a written report of findings. The habitat assessment describes the project area and surrounding area of potential effect. If it is determined that suitable habitat is present within the project area or in the surrounding area, a burrow survey is required. The burrow survey is intended to identify burrows within the project area and in the surrounding buffer that could be used by burrowing owls. During this phase, all suitable burrows are mapped and examined for sign of burrowing owl presence. If there are burrows present that could be used by burrowing owls, a determination must be made regarding the presence or absence of burrowing owls. This determination is completed by visiting previously mapped suitable burrows on four different days. Visits must be made from one hour before sunrise to two hours after sunrise or one hour before sunset to two hours after sunset. During these visits, all burrows actively occupied by burrowing owls or with evidence of burrowing owl use are observed and recorded. Generally two seasonal surveys are required. If burrowing owls are not observed during the nesting season survey, a survey for winter residents is to be conducted.

Suitable burrows were identified by walking the area in a grid pattern recording all suitable burrows encountered. Burrows were recorded with a Trimble GeoXT Data Logger containing Terrasync software. Field data was corrected with Pathfinder Office and exported as a shapefile to ArcGIS Desktop 9.2. ArcGIS was used to analyze the relationship of suitable burrows to the proposed project area.

4.0 RESULTS

4.1 Habitat Assessment

A habitat assessment was prepared for the proposed project in December 2009. The assessment (Appendix A) provides a more detailed discussion of the project setting than is presented here.

4.2 Plant Communities

The Clay Street Connection alignment traverses Urban/Developed habitat. The proposed booster station sites are in Non-Native Annual Grasslands. Plant species observed during site visits are listed in Table 1.

4.3 Fauna

Wildlife observed along Limonite Avenue, Pedley Road, and the adjacent proposed booster station sites was representative of urban areas and include California ground squirrel, pocket gopher, starlings, American crow, and pigeons. A list of species observed is provided in Table 2.

Table 1 **Plant Species Observed** **Riverside – Corona Feeder** **Clay Street Connection**		
Common Name	***Scientific Name***	**Habitat**
Red brome	*Bromus madritensis rubens*	N/U
Wild oat	*Avena fatua*	N/U
Rip-gut brome	*Bromus diandrus*	N/U
Bermuda grass	*Cynodon dactylon*	N/U
Telegraphweed*	*Heterotheca grandiflora*	N/U
Horseweed*	*Conzya candensis*	N/U
Sun flower*	*Helianthus annuus*	N/U
Sheep sorrel*	*Rumex acetosella*	N
Western ragweed*	*Ambrosia psilostachya*	N/U
Short-pod mustard	*Hirschfeldia incana*	N/U
Phacelia*	*Phacelia spp.*	N
Fiddleneck*	*Amsinckia menziesii*	N
Jimson weed/sacred datura*	*Datura wrightii*	N
Dove weed*	*Croton setigerus*	N
Tree of Life	*Ailanthus altissima*	N
Olive	*Olea europaea*	N
Russian thistle	*Salsola kali*	N

* Native plant species

Table 2 **Animal Species Observed Directly or Indirectly** **Riverside – Corona Feeder** **Clay Street Connection**	
California ground squirrel	*Spermophilus beecheyi*
Pocket gopher	*Thomomys bottae*
Starling	*Sturnus vulgaris*
American crow	*Corvus brachyrhynchos*
Common pigeon	*Columba livia*

4.4 Burrow Survey and Mapping

Urban/Developed habitat was not included in the survey area since suitable burrowing owl habitat is not present in these areas. Areas of Urban/Developed habitat are represented by gray shading on Figure 4. Some areas of suitable habitat are on private property and the landowners could not be identified and contacted for permission to enter their property. When permission to enter could not be obtained, suitable habitat was assessed from the right-of-way using binoculars and a spotting scope. These areas are represented by yellow crosshatching on Figure 4. Areas of suitable habitat that were accessible were surveyed for suitable burrows and sign of burrowing presence. These areas are outlined in yellow on Figure 4.

A focused burrow survey was made on January 11, 2010. Twenty-three suitable burrows were located and mapped. The burrows that were observed were situated in Non-Native Annual Grasslands and appeared to have been excavated by California ground squirrels (*Spermophilus beecheyi*). The Non-Native Annual Grasslands in the study area appear to be frequently disked or mown as a fire protection measure. As a result, all of the burrows were along field margins and the edge of dirt access roads (Figure 5). At the time of the site visits in September 2009, the fields had been recently mown and burrows were easily detected. During the January and February 2010 visits, newly sprouted grasses were already obscuring the burrows. Ground cover on much of the area surveyed was 90 to 100 percent. By spring, the grasses present within the survey area will be one meter or more in height and will have rendered the area unusable by burrowing owls.

4.5 Owl Census

Burrowing owl habitat along the Clay Street Connection alignment was visited on January 11 and 13, 2010 and February 4, 16 and 17, 2010. Rains during late December 2009 and in January and early February 2010 delayed field surveys. Weather conditions at the time of site visits are described in Table 3. Burrowing owls and evidence of burrowing owls were not encountered. Western Burrowing Owl Habitat Assessment And Focused Survey Field Data Sheets are provided in Appendix C.

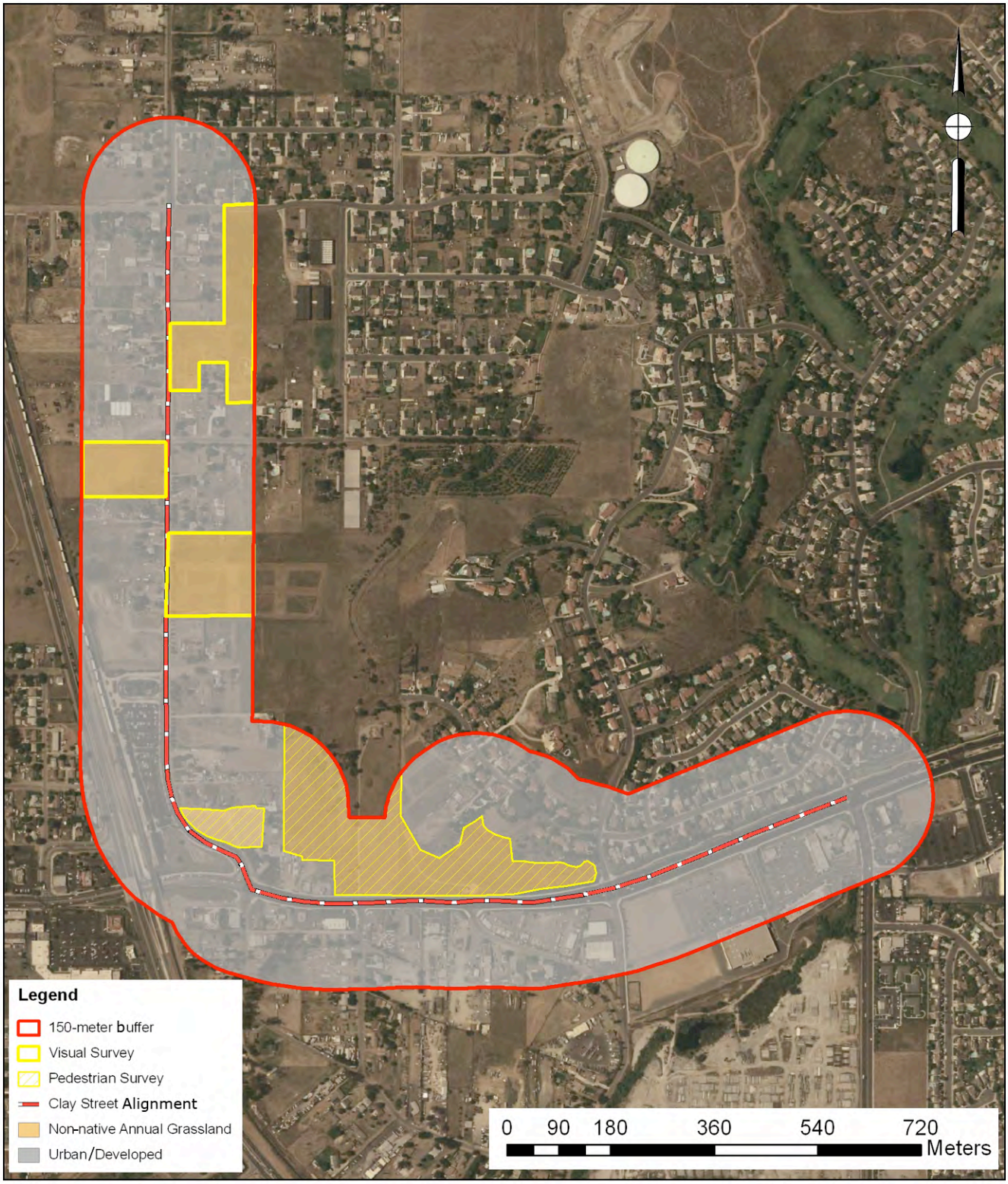

Figure 4

Burrowing Owl Survey Areas

Clay Street Connection

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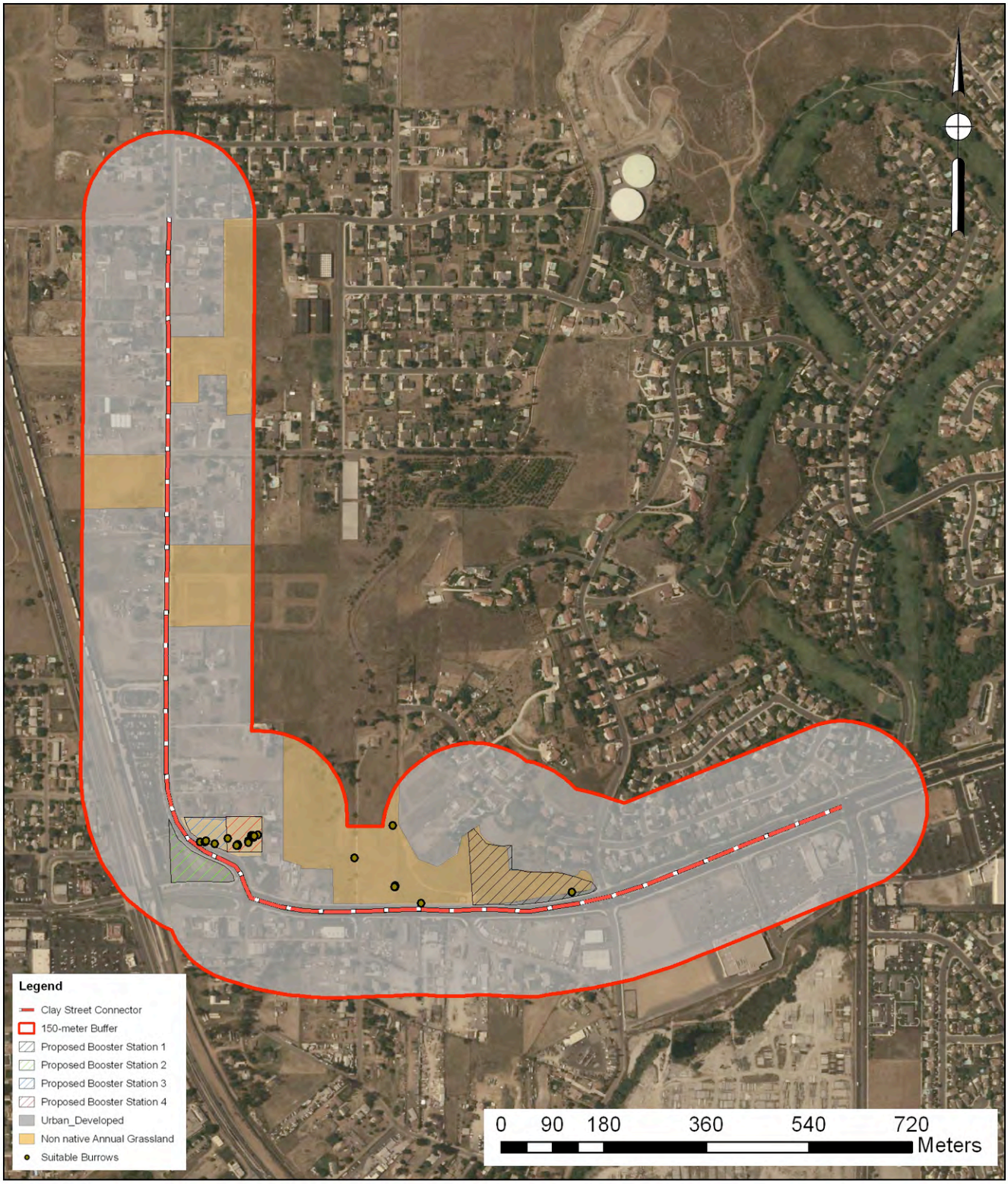

Figure 5

Burrowing Owl Survey Results

Clay Street Connection

Brian F. Smith and Associates, Inc. • Environmental Consultants

Table 3 Conditions During Site Visits Riverside – Corona Feeder Clay Street Connection					
Date	**Visibility**	**Wind**	**Temperature***	**Time of Survey**	**Time of Sunrise/Sunset**
11 January 2010	10 miles	3 mph	62°F	1600-1900	1700
13 January 2010	5 miles	0-3 mph	72°F	1600-1900	1702
4 February 2010	3-5 miles	0-3 mph	68°F	1620-1920	1723
16 February 2010	5 miles	0-3 mph	42°F	0530-0830	0633
17 February	3-5 miles	0-3 mph	54°F	0530-0830	0633

* At start of survey

5.0 DISCUSSION

The portions of the project area within road right-of-ways are Urban/Developed habitat and the proposed action in this area will not directly affect burrowing owls and their habitat. The proposed booster station sites and areas adjacent to the road right-of-ways consist of Non-Native Annual Grasslands. The Non-Native Annual Grasslands provide some marginal burrowing owl habitat.

A total of five surveys were conducted in January and February 2010. Twenty-three burrows suitable for use by western burrowing owls were found in the Non-Native Annual Grasslands located within portions of the project area (proposed booster station sites) and the buffer surrounding the project alignment. The fields where the burrows were found are disked or mown regularly for fire protection, resulting in the destruction of many burrows that would be present if the area was undisturbed. Suitable burrows were found along field borders, the sides of dirt roads and rocky or steep areas that could not be accessed with equipment used for mowing and disking. Burrowing owls or sign of burrowing owls was not observed at the mapped burrows.

Non-native grasses such as *Avena fatua* and *Bromus madritensis* were showing vigorous growth by the end of the focused surveys. Burrows that were readily observed during initial visits in September 2009 had become obscured by grasses and were difficult to detect by the end of February 2010. When mature, the grasses will provide 80 to 100 percent ground cover measuring 1.0 to 1.5 meters in height, creating conditions unfavorable to burrowing owls that prefer open land with good visibility near ground level.

Burrowing owls and sign of burrowing owl presence were not observed during site visits. Burrowing owls were not present during site visits and the lack of burrowing owl sign and the

presence of dense ground cover would indicate they are not present at other times. The burrows that were mapped during the surveys are likely to remain after disking occurs and could be used by burrowing owls in the late summer and through the winter by burrowing owls migrating through the area.

6.0 RECOMMENDATIONS

The portions of the project area within road right-of-ways are Urban/Developed habitat and the proposed action in this area will not directly affect burrowing owls and their habitat. The proposed booster station sites and areas adjacent to the road right-of-ways consist of Non-Native Annual Grasslands. The Urban/Developed habitat does not provide suitable burrowing owl habitat. The Non-Native Annual Grasslands provide some marginal burrowing owl habitat, but habitat conditions do not favor use by burrowing owls. Plant cover is too dense to allow use by burrowing owls and/or the burrows may be destroyed by annual disking. There is some potential for burrows to be used by burrowing owls after disking has created suitable open habitat. Since disking occurs during mid to late summer, it is very unlikely nesting burrowing owls would take up residence.

Based on site conditions, a nesting season survey would not be productive and is not recommended. However, a 30-Day Pre-Construction Survey must be conducted before construction begins. If burrowing owls are present adjacent to and outside of the project alignment, they will not be directly affected by the project. However, if burrowing owls are detected a qualified biologist will keep the owls under observation during construction. If it appears that behavior is being adversely affected by project activities, construction will be halted until the owls have departed the area. If owls are detected within the chosen booster station site, work within the booster station site will be halted until the owls have departed the area or until the owls have been properly relocated outside of the limits of construction.

7.0 CERTIFICATION

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

DATE: 1 March 2010 SIGNED: Laurence N. Dean

Laurence N. Dean, Senior Biologist

8.0 LITERATURE CITED

MSHCP 2003. Western Riverside County Multiple Species Habitat Conservation Plan, County of Riverside Transportation and Land Management Agency, Riverside, California.

APPENDIX A

Biological Assessment CEQA
Riverside – Corona Feeder
Clay Street Connection
December 4, 2009

BIOLOGICAL ASSESSMENT
CEQA
RIVERSIDE – CORONA FEEDER

CLAY STREET CONNECTION

Prepared for:

Albert A. Webb Associates
3788 McCray Street
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Prepared by:

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Revised December 4, 2009

REPORT SUMMARY

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Report Date:	Revised December 4, 2009
Report Title:	Biological Assessment, CEQA, Riverside – Corona Feeder, Clay Street Connection
Prepared for:	Albert A. Webb Associates 3788 McCray Street Riverside, California 92506
Lead Agency:	Western Riverside Municipal Water District 450 Alessandro Blvd. Riverside, California 92508
Submitted by:	Brian F. Smith and Associates 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
USGS Quadrangle:	*Riverside West*, California (7.5 minute)
Study Area:	Approximately 25.42 acres

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Summary

The Riverside – Corona Feeder, Clay Street Connection Project consists of the placement of approximately 7,800 linear feet of pipeline along Limonite Avenue from the road's intersection with Clay Street westward to Pedley Road then continuing north on Pedley Road to 56th Street. Four proposed booster station sites are included in the assessment. The proposed pipeline alignment will directly affect 18.8 acres of Urban/Developed habitat . Proposed Booster Station 1 will directly affect an additional 0.3 acres of Urban/Developed habitat and 3.3 acres of non-native grassland habitat. Proposed Booster Station 2 will directly affect an additional 1.4 acres of Urban/Developed habitat. Proposed Booster Station 3 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.7 acres of non-native grassland habitat. Proposed Booster Station 4 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.9 acres of non-native grassland habitat .

Eleven species (dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Brand's star phacelia, San Miguel savory, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, western burrowing owl, and Stephens' kangaroo rat) listed under state and federal endangered species acts and the Western Riverside County Multiple Species Habitat Conservation Plan were determined to potentially be present within or near the proposed project area. Suitable habitat for these species was not found within the limits of construction. The proposed project area is not within or adjacent to designated critical habitat for any listed species.

It has been determined that if proposed mitigation measures are followed, the proposed action will have no effect on dwarf burr ambrosia, Santa Ana River woollystar, Dehli sands flower-loving fly, Brand's star phacelia, San Miguel savory, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, western burrowing owl, and/or Stephens' kangaroo rat.

1.0 INTRODUCTION

The purpose of this Biological Assessment is to address the effect of the Riverside – Corona Feeder, Clay Street Connection Project on species listed as endangered or threatened under state and federal endangered species acts and species covered by the Western Riverside County Multiple Species Habitat Conservation Plan.

The Western Municipal Water District intends to carry out the construction of the Riverside – Corona Feeder, Clay Street Connection under Title IX, Subtitle B, Section 9112 of the Omnibus Public Lands Act of 2009, Public Law 111-11. This Biological Assessment,

prepared for Albert A. Webb Associates, addresses the proposed action in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended, the California Endangered Species Act (Fish and Game Code Section 2050 *et seq*.), and provisions of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

2.0 PROJECT LOCATION

The proposed project is located in western Riverside County, California (Figure 1). The proposed project area is located within the right-of-way for Limonite Avenue between Clay Street and Pedley Road and within the right-of-way of Pedley Road between Limonite Avenue and 56th Street (Figure 2). Three proposed booster station sites are located at the intersection of Pedley Road/Morton Avenue and Limonite Avenue (see Figure 2). A fourth proposed booster station is located at the northwest of the intersection of Limonite Avenue and Baldwin Avenue (see Figure 2).

3.0 PROJECT DESCRIPTION

The Riverside – Corona Feeder, Clay Street Connection Project consists of the placement of approximately 7,800 linear feet of pipeline up to 48 inches in diameter. This connection will allow the Riverside – Corona Feeder to connect to an existing Jurupa Community Services District waterline located in 56th Street, to tie into the Chino Desalter Phase 3 expansion, and to facilitate the connection of Western Municipal Water District facilities to those that are a part of the Chino Basin Dry-Year Yield Program. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction (MacHott 2009).

The project is assessed based on the Area of Potential Effect, which is the area that is potentially impacted physically, visibly, and audibly by the proposed action. Impacts include the direct effects of construction and the indirect effects of construction such as noise. The Area of Potential Effect for the proposed project extends 150 feet on either side of the limits of construction for the pipeline alignment and the booster stations.

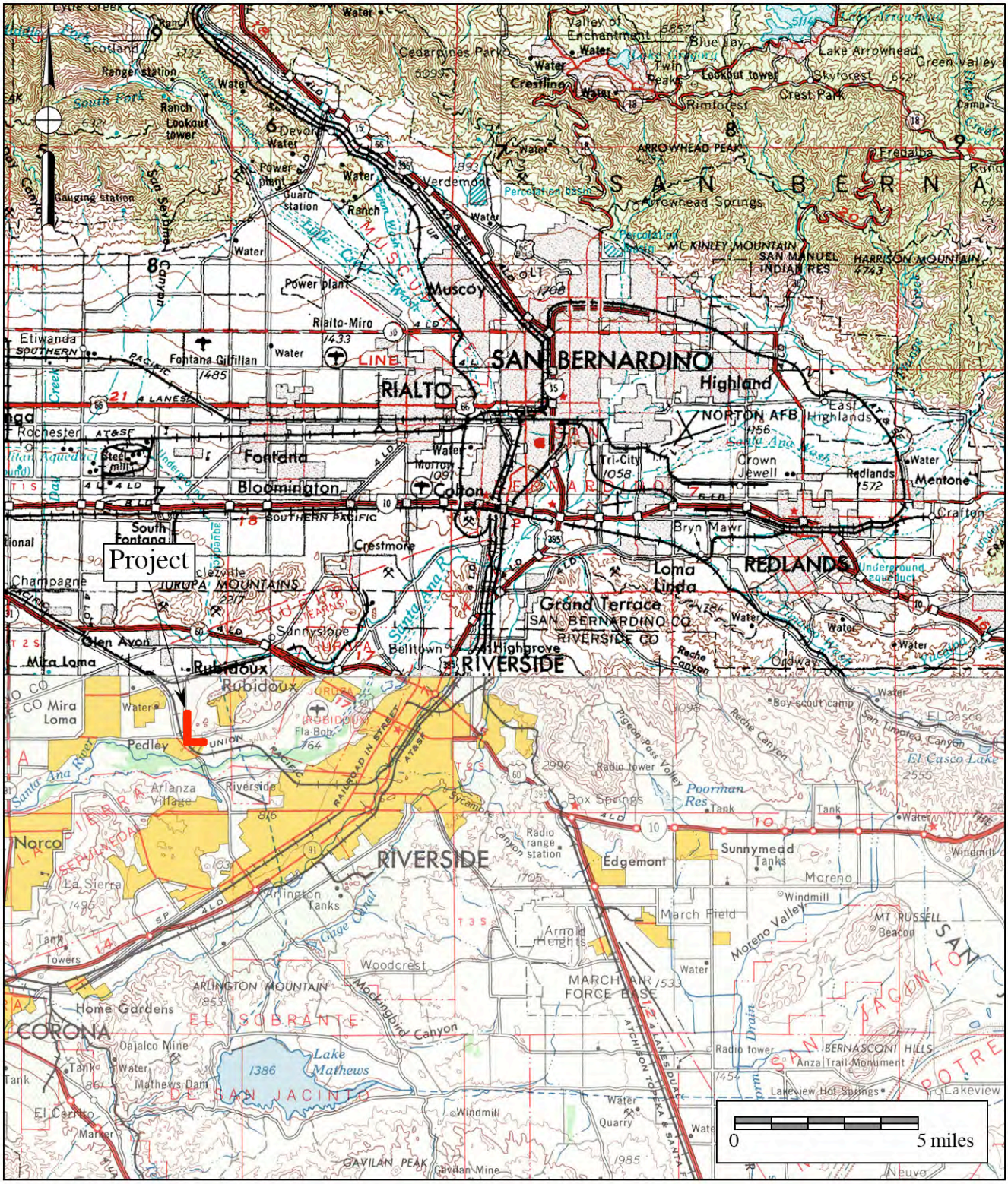

Figure 1

General Location Map

Riverside–Corona Feeder, Clay Street Connection

USGS *Santa Ana and San Bernardino* (1:250,000 series)

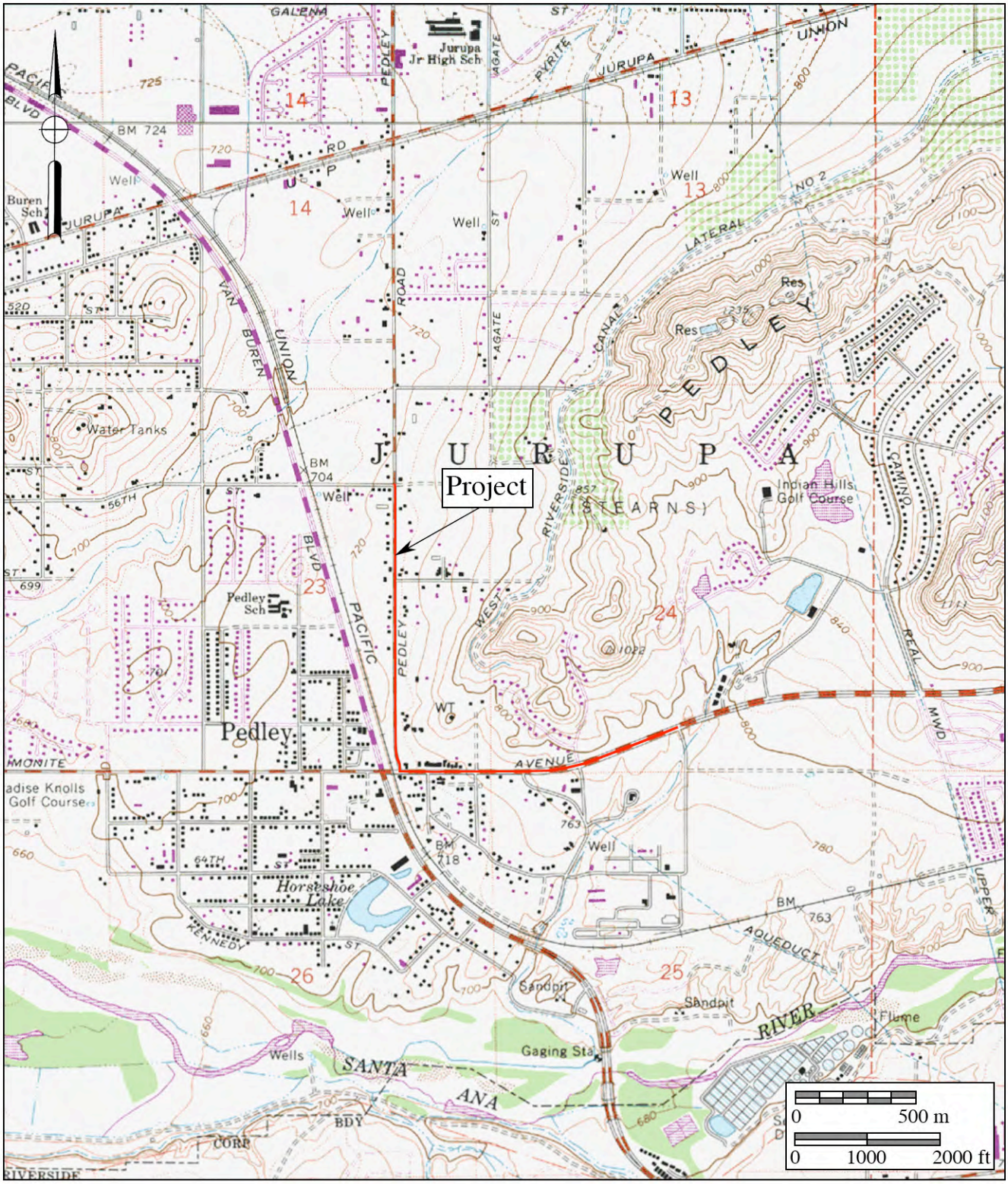

Figure 2

Project Location Map

Riverside–Corona Feeder, Clay Street Connection

USGS *Riverside West* and *Fontana* Quadrangles (7.5 minute series)

4.0 METHODS

Prior to the project site visit, Brian F. Smith and Associates' biologists reviewed the California Natural Diversity Data Base (CNDDB 2009a and b), and the California Native Plant Society Rare Plant Inventory (CNPS 2009) to determine if sensitive species may be present within or near the limits of construction. National Wetland Inventory maps (USFWS 2009) for the project were consulted to determine if wetlands have been mapped within the limits of construction. Appropriate United States Geological Survey maps (7.5 minute) were reviewed to determine if drainage features, including "blue-line streams," may be present. The List of Hydric Soils for Western Riverside County (NCRS 2009) and the Soils Survey Western Riverside County (USDA 1971) were consulted to determine soils associated with the proposed project area.

The project area is small enough to allow one biologist to cover the entire site in one visit. The site was surveyed on foot by slowly walking over the area in a series of random transects to provide visual coverage of the entire project area. Vegetation and wildlife species observed were recorded as field observations were made. Wildlife signs (scat, bones, feathers, tracks, dens and burrows) were also recorded if encountered. Frequent pauses were made during the survey to watch and listen for wildlife.

5.0 EXISTING ENVIRONMENT

This discussion of the existing environment describes the project area and includes general physical characteristics of the project area, plant communities associated with the project area, and biological resources in the vicinity of the project area.

5.1 Physical Characteristics

The discussion of physical characteristics includes soils, topography, and geology.

5.1.1 Soils

Soils associated with the proposed project area are predominantly (WSS 2009):

- Madera fine sandy loam, 5 to 8 percent slopes, eroded
- Madera fine sandy loam, shallow, 2 to 8 percent slope, eroded
- Ramona sandy loam, 0 to 5 percent slopes, severely eroded
- Hanford coarse sandy loam, 2 to 8 percent slopes.
- Terrace Escarpments

The Madera series consists of well to moderately drained loam over a moderately deep hardpan. Madera series soils formed in old alluvium derived from granitic rock (NRCS 2009).

The Ramona series is a member of the fine-loamy, mixed, thermic family of Typic Haploxeralfs (Haploxeralfs are moderately deep to very deep, well to somewhat excessively drained soils formed in mixed parent materials associated with brushlands). Ramona soils are slightly to medium acidic sandy loams or sandy clay loams near the surface but tend to become neutral at deeper depths (NRCS 2009).

Hanford series soils are very deep, well-drained soils that formed in moderately coarse textured alluvium derived from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans and have slopes of 0 to 15 percent (NRCS 2009).

The Terrace Escarpment series occurs on steep slopes along narrow flood plains. In most places, there is a layer of loam or gravelly soil that overlays soft marine sandstone, gravels, or shale (NRCS 2009).

5.1.2 Topography

The project area is sloped, with the lowest point located at the north end of Pedley Road and highest point located at the south end of Pedley Road at the intersection with Limonite Avenue. Elevations within the project area range from approximately 800 feet above mean sea level to 760 feet above mean sea level.

5.1.3 Geology

Riverside County is located in the Peninsular Range Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the County, extends some 1,000 miles from the Raymon – Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California, Mexico. The project area is located on an alluvial terrace north of Lake Mathews, and is underlain by Cenozoic non-marine (continental) sedimentary rock and alluvial deposits.

5.2 Biological Resources

The Biological Resources section discusses vegetation, plant communities, wildlife (including sensitive species), and associated habitats found within the proposed project area. In addition to the limits of construction, the adjacent areas (out to a distance of 150 feet on either side of the limits of construction) are discussed.

5.2.1 Plant Communities

The pipeline alignment along Limonite Avenue and Pedley Road is in an Urban/Developed plant community. The proposed site for Booster Station 2 is also in an Urban/Developed habitat. The proposed sites for Booster Stations 1, 3, and 4 are in predominantly non-native grassland habitat (Figure 3 and Table 1). Plant species observed during site visits are listed in Table 2.

Descriptions of plant communities are based on Holland's (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California.* The descriptions developed by Holland (1986) provide a standard nomenclature for plant communities throughout California. Holland does not provide descriptions of some plant communities. In those instances, descriptions from *Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions* (Oberbauer 1996) have been used.

<u>Urban/Developed, Element Code 12000 (Oberbauer 1996)</u>

Urban/Developed is a mixture of built structures such as roads, residences, commercial buildings, and parking lots. Vegetation is largely non-native and includes lawns, golf courses, road shoulders, airports, and parks. Remnants of native plant communities may be found at scattered, isolated locations. Ruderal communities occur in areas of disturbance. Vegetation in these areas consists of non-native invasive plants.

<u>Non-Native Grassland, Element Code 42200 (Holland 1986)</u>

Non-native grasslands are found throughout most of southern California. This community consists of non-native annual grasses such as red brome (*Bromus rubens*), Wild oats (*Avena fatua and Avena barbata*), and rip-gut brome (*Bromus diandrus*). Several flowering forbs such as Filaree (*Erodium* spp.), Phacelia *(Phacelia* spp.), tarweeds (*Hemezonia* spp.), and lupines (*Lupinus* spp.) are also found in non-native grasslands.

5.2.2 Zoological Resources

Wildlife observed along Limonite Avenue, Pedley Road, and the adjacent proposed booster station sites was representative of urban areas and include starlings, American crow, and pigeons (Table 3).

5.2.3 Sensitive Species and Critical Habitat

A total of 11 sensitive species were determined to be potentially present in the vicinity of the proposed action. A review of the California Natural Diversity Data Base (2009a and b) indicated that eight sensitive species listed as threatened or endangered by state and federal endangered species acts may be present (Table 4).

Figure 3

Plant Communities

Riverside-Corona Feeder, Clay Street Connection

Table 1
Plant Communities
Area of Potential Effect
Riverside – Corona Feeder, Clay Street Connection
Riverside County, California

Plant Community	Acres
Urban/Developed	55.4
Non-Native Grassland	12.6
Total	68.0

Table 2
Plant Species Observed
Riverside – Corona Feeder, Clay Street Connection
Riverside County, California

Common Name	*Scientific Name*	Habitat
Red brome	*Bromus madritensis rubens*	N/U
Wild oat	*Avena fatua*	N/U
Rip-gut brome	*Bromus diandrus*	N/U
Bermuda grass	*Cynodon dactylon*	N/U
Telegraphweed*	*Heterotheca grandiflora*	N/U
Horseweed*	*Conzya candensis*	N/U
Sun flower*	*Helianthus annuus*	N/U
Sheep sorrel*	*Rumex acetosella*	N
Western ragweed*	*Ambrosia psilostachya*	N/U
Short-pod mustard	*Hirschfeldia incana*	N/U
Phacelia*	*Phacelia spp.*	N
Fiddleneck*	*Amsinckia menziesii*	N
Jimson weed/sacred datura*	*Datura wrightii*	N
Dove weed*	*Croton setigerus*	N
Tree of Life	*Ailanthus altissima*	N
Olive	*Olea europaea*	N
Russian thistle	*Salsola kali*	N

* – Native Plant Species
N – Non-Native Grassland
U – Urban/Developed

Table 3 Animal Species Observed Directly or Indirectly Riverside – Corona Feeder, Clay Street Connection Riverside County, California	
Starling	*Sturnus vulgaris*
American crow	*Corvus brachyrhynchos*
Common pigeon	*Columba livia*

Table 4
Listed Species Potentially Present
Riverside – Corona Feeder, Clay Street Connection
Riverside County, California

Common Name	***Scientific Name***	**Federal Status**	**State Status**	**CNPS Rank**
Dwarf burr ambrosia	*Ambrosia pumila*	E	--	1B.1
Santa Ana River woollystar	*Eriastrum densifolium sanctorum*	E	E	1B.1
Delhi Sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	E	--	NA
Brand's star phacelia	*Phacelia stellaris*	C	--	1B.1
San Miguel savory	*Satureja chandleri*	--	--	1B.2
Santa Ana Sucker	*Catostomus santaanae*	T	--	NA
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	E	NA
Coastal California gnatcatcher	*Polioptila californica californica*	T	--	NA
Least Bell's vireo	*Vireo bellii pusillus*	E	E	NA
Stephens' kangaroo rat	*Dipodomys stephensi*	E	T	NA
Western burrowing owl	*Athene cunicularia hypugaea*	MBTA	SSC	NA

E – Endangered
T – Threatened
C – Candidate for listing as threatened or endangered
SSC - Species of Special Concern
MBTA – Migratory Bird Treaty Act
1.B – Rare, threatened, or endangered in California or elsewhere
0.1 – Seriously endangered in California
0.2 – Fairly endangered in California

The Western Riverside County Multiple Species Habitat Conservation Plan is a comprehensive, multi-jurisdictional habitat conservation plan focusing on the conservation of species and their associated habitats in western Riverside County. Species covered by the Western Riverside County Multiple Species Habitat Conservation Plan are those species included in the Incidental Take Authorization issued to the County by the federal or state government as part of the Western Riverside County Multiple Species Habitat Conservation Plan. Potential impacts to covered species must be assessed as part of any project within the plan area to ensure that authorized "incidental take" is not exceeded. In addition to the eight species protected by the endangered species acts, the Western Riverside County Multiple Species Habitat Conservation Plan indicated that three narrow endemic species and the western burrowing owl may occur in the vicinity of the proposed project area. If suitable habitat is present for narrow endemic species or the western burrowing owl, additional studies will be required.

U. S. Fish and Wildlife Service data (USFWS 2009) and the California Natural Diversity Data Base (2009a and b) were consulted to determine if critical habitat for sensitive species may be present within the project area. Critical habitat is a specific geographic area or areas that are essential for the survival of a threatened or endangered species. Critical habitat may include an area not currently occupied by the species, but that will be needed for its recovery. The proposed project area is not within designated critical habitat.

The Western Riverside County Multiple Species Habitat Conservation Plan was consulted to determine if the proposed project area is located within the designated reserve assembly. The reserve assembly is a preserve system described by the Western Riverside County Multiple Species Habitat Conservation Plan. Development in the reserve assembly is limited and controlled by the County. The proposed project area is not within the reserve assembly.

Dwarf Burr Ambrosia (*Ambrosia pumila*)

Dwarf burr ambrosia (also known as San Diego Ambrosia) is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. Dwarf burr ambrosia is a narrow endemic plant species covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

In Riverside County, dwarf burr ambrosia is associated with open, gently sloped grasslands and is generally associated with alkaline soils. Dwarf burr ambrosia generally occurs on slopes ranging from 0 to 9 percent on sandy or clay loams.

Only three populations of dwarf burr ambrosia are known to occur in Riverside County. The two largest populations occur in the vicinity of Alberhill located approximately 19 miles southeast of the proposed project area. A third and smaller population is found at Skunk Hollow located approximately 35 miles southeast of the proposed project area.

Habitat for the dwarf burr ambrosia is not present within the limits of construction. Dwarf burr ambrosia was not observed during site visits and is not likely to be present.

Santa Ana River Woollystar *(Eriastrum densifolium sanctorum)*

The Santa Ana River woollystar is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. Santa Ana River woollystar is a narrow endemic plant species covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The Santa Ana River woollystar is found in open washes and early-successional alluvial fan scrub where flooding and scouring keeps the scrub open. Suitable habitat is usually a combination of gravelly and sandy soils with scattered cobbles and boulders (MSHCP 2003). Santa Ana River woollystar has been reported along the Santa Ana River about 4.7 miles southeast of the proposed project area.

Habitat for the Santa Ana River woollystar is not present within the limits of construction. Santa Ana River woollystar was not observed during site visits and is not likely to be present.

Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*)

The Delhi Sands flower-loving fly is listed as endangered by the U. S. Fish and Wildlife Service. The State of California has not listed this species. The Delhi Sands flower-loving fly is covered by the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat has not been designated for this species.

The Delhi Sands flower-loving fly is restricted to the Colton Dunes (Delhi soil series) in northwestern Riverside and southwestern San Bernardino counties in southern California. Existing populations of the Delhi Sands flower-loving fly occur within Riverside and San Bernardino counties straddling Interstate 10 in the vicinity of Colton and Rialto and from Colton to Mira Loma. The Delhi Sands flower-loving fly has not been reported in the vicinity of the proposed project area.

Suitable habitat for this species (Delhi soils) is not present within the limits of construction. The Delhi Sands flower-loving fly was not observed during site visits and is not likely to be present.

Brand's Star Phacelia (*Phacelia stellaris*)

Brand's star phacelia is a federal candidate for listing as a threatened or endangered species. The State of California has not listed this species. Brand's star phacelia is a narrow endemic plant species covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

Brand's star phacelia is usually associated with coastal dunes and/or coastal scrub in sandy openings, sandy benches, dunes, sandy washes, or flood plains of rivers and is restricted to clay (MSHCP 2003). The closest recorded occurrence of Brand's star phacelia is approximately 30 miles west of the proposed project area.

Suitable habitat for Brand's star phacelia is not present within the limits of construction. Brand's star phacelia was not observed during site visits and is not likely to be present.

San Miguel Savory (Satureja chandleri)

San Miguel savory is not listed by the U. S. Fish and Wildlife Service or the California Department of Fish and Game. San Miguel savory is a narrow endemic plant species covered by the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

San Miguel savory is possibly one of the most endangered plants in California. Potential habitat for this species includes areas supporting rocky, gabbroic, and metavolcanic substrates in coastal sage scrub, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands (MSHCP 2003). The closest recorded occurrence of this species is on the Santa Rosa Plateau located approximately 22 miles southeast of the proposed project area.

Suitable habitat for San Miguel savory is not present within the limits of construction. San Miguel savory was not observed during site visits and is not likely to be present.

Santa Ana Sucker (*Catostomus santaanae*)

The Santa Ana sucker is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Critical habitat was designated for the Santa Ana sucker in 2005 (50 CFR 17).

The Santa Ana sucker is a fish species that is generally found in small, shallow streams with currents ranging from swift to sluggish. They are found at depths ranging from a few centimeters to one meter or more. Substrates in these streams generally consist of gravel, rubble, and boulders. Streams in which the species is found are subject to periodic, severe flooding (MSHCP 2003).

Aquatic habitat is not present within the limits of construction. Therefore, the Santa Ana sucker is not present within the limits of construction and will not be affected by the proposed project.

Western Yellow-Billed Cuckoo *(Coccyzus americanus occidentalis)*

The western yellow-billed cuckoo is a U. S. Fish and Wildlife Service candidate for listing as threatened or endangered (FR 73:238). This species is listed as endangered by the State of California. The western yellow-billed cuckoo is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The western yellow-billed cuckoo in California requires dense, wide riparian woodlands with well-developed understory for breeding. Breeding is restricted to river bottoms where dense understory is adjacent to slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation (MSHCP 2003). The western yellow-billed cuckoo has been reported in Southern Cottonwood Willow Riparian Woodland along the Santa Ana River approximately 2 miles east of the proposed project area.

Suitable habitat for the western yellow-billed cuckoo is not present within the limits of construction. The western yellow-billed cuckoo was not observed during site visits and is not likely to be present.

Coastal California gnatcatcher *(Polioptila californica californica)*

The coastal California gnatcatcher is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. The coastal California gnatcatcher is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat for the coastal California gnatcatcher was designated in 2000 and revised in 2007 (FR 74:115).

The coastal California gnatcatcher is a small, non-migratory songbird that is found in or near sage scrub habitat in southwestern California and northwestern Baja California, Mexico. The coastal California gnatcatcher is found almost exclusively in sage scrub, but has also been

found in chaparral and riparian habitats. The coastal California gnatcatcher has been reported in Riversidean sage scrub approximately 1.5 miles northeast of the proposed project area.

Suitable habitat for the coastal California gnatcatcher is not present within or adjacent to the limits of construction. The coastal California gnatcatcher was not observed during site visits and is not likely to be present.

Designated critical habitat is located approximately 4 miles northeast of the proposed project area.

Least Bell's Vireo *(Vireo bellii pusillus)*

Least Bell's vireo is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. The coastal California gnatcatcher is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat was designated for least Bell's vireo in 1994 (FR 59:22).

Least Bell's vireos are usually found in riverine/riparian habitats that typically have dense understory within 1-2 meters of the ground and a dense, stratified canopy along water or along dry parts of intermittent streams. Typically, least Bell's vireo is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast lie oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities and in the immediate vicinity of water.

Suitable habitat for the least Bell's vireo does not occur within or adjacent to the limits of construction. The least Bell's vireo was not observed during site visits and is not likely to be present.

The proposed project area is not located within designated critical habitat for least Bell's vireo.

Stephens' Kangaroo Rat *(Dipodomys stephensi)*

Stephens' kangaroo rat is listed as endangered by the U. S. Fish and Wildlife Service and as threatened by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Focused surveys will be required if suitable habitat is present. Critical habitat has not been established for Stephens' kangaroo rat.

Stephens' kangaroo rat is covered by the Stephens' Kangaroo Rat Habitat Conservation Plan (RCHCA 2009). The primary purpose of the habitat conservation plan is to provide the

information required for issuance of a federal permit from the U. S Fish and Wildlife Service for "incidental take" of Stephens' kangaroo rat and equivalent authorization from the California Department of Fish and Game through an endangered species permit. The habitat conservation plan replaced the Riverside County Habitat Conservation Agency's existing Stephens' kangaroo rat conservation program and its federal and state incidental take authorizations with the program and authorizations described in the habitat conservation plan. The habitat conservation plan intends to provide for the establishment, expansion, and ongoing management of permanent reserves to ensure the continued existence of Stephens' kangaroo rat in the habitat conversation plan area of western Riverside County, while providing opportunities to benefit other species of concern (RCHCA 2009).

The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrub lands with cover of less than 50 percent during the summer. The proportion of annual forbs and grasses is important because Stephens' kangaroo rats avoid dense grasses and are more likely to inhabit more open areas. Soil type also is an important habitat factor for Stephens' kangaroo rat occupation. The Stephens' kangaroo rat typically is found in sandy loams with low clay to gravel content. Slope is a factor in Stephens' kangaroo rat occupation; the Stephens' kangaroo rat tends to use flatter slopes (i.e., < 30 percent). In general, the highest abundance of Stephens' kangaroo rats occurs on gentle slopes less than 15 percent (MSHCP 2003). Stephens' kangaroo rat populations have been reported within 6 miles of the proposed project area.

Grassland associated with the proposed project area is very dense or has been disked. Therefore, Suitable habitat for Stephens' kangaroo rats is not present within or adjacent to the limits of construction. Burrows and sign such as droppings and tail drags were not observed during site visits. Stephens' kangaroo rat is not likely to be present within the limits of construction.

Western Burrowing Owl (*Athene cunicularia hypugaea*)

The western burrowing owl is not listed by the U. S. Fish and Wildlife Service or the State of California. The U. S. Fish and Wildlife Service considers the western burrowing owl a "Bird Species of Concern" that may become listed as threatened or endangered if significant management steps are not taken. The western burrowing owl is protected under the Migratory Bird Treaty Act. The western burrowing owl is a California State Bird Species of Special Concern (Class 2). Class 2 Bird Species of Special Concern have scattered or highly localized populations and require active management to prevent them from becoming threatened or endangered species (Shuford and Gardali 2008). This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Additional surveys are required if a proposed project area is located within suitable habitat for this species.

Burrowing owls use a variety of natural habitats for nesting and foraging that are typically characterized by low-growing vegetation. Burrowing owl habitat includes native and non-native annual grassland, natural clearings within shrub lands, shrub lands with low density shrub cover, golf-courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas (MSHCP 2003).

Burrowing owls typically use burrows made by burrowing mammals, such as ground squirrels (*Spermophilus beecheyi*) or badgers (*Taxidea taxus*). They may also utilize man-made structures, such as earthen berms; cement culverts; cement, asphalt, rock, or wood debris piles; or openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, or in proximity to man-made structures (MSHCP 2003).

Western burrowing owls were not observed during site visits. Suitable habitat is not present along Pedley Road and Limonite Avenue; however, suitable habitat for this species is present in non-native grasslands within proposed Booster Station sites 1, 3, and 4.

6.0 JURISDICTIONAL WATERS AND WETLANDS

6.1 Wetlands

To be considered a wetland, a site must meet three criteria: hydric soils, wetland hydrology, and, hydrophytic vegetation. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil. The presence of hydric soils may be determined by a variety of field indicators and by consulting a list of hydric soils for the project area. The soils associated with the current project area are not on the list of hydric soils for the State of California (NRCS 2009). Field indicators such as low chroma soils, concretions, and/or oxidized root channels were not observed.

Wetland hydrology is present when, under normal circumstances, the land surface is either inundated or the upper portion of the soil is saturated at a sufficient frequency and duration to create anaerobic conditions. Field indicators used for hydric soils may be used to support the presence or absence of wetland hydrology. There is no indication that soils within the limits of construction are inundated or saturated for a long enough period of time during the growing season to promote hydric conditions or hydrophytic vegetation. Field indicators of hydric soils such as low chroma soils, concretions, and/or oxidized root channels were not observed.

In general, hydrophytic vegetation includes plants that thrive in wet conditions and exhibit obvious physical adaptations for the capturing and transporting of oxygen. Some hydrophytic vegetation such as mule fat occurs in drainages within the limits of construction; however, this vegetation is not predominant (fifty-one percent or greater). The project area does not meet the criterion for hydrophytic vegetation.

Based on the absence of hydric soils, wetland hydrology, and hydrophytic vegetation, there are no wetlands present within the limits of construction.

7.0 JURISDICTIONAL DETERMINATION

Two agencies or entities may have jurisdictional responsibilities related waters occurring within the proposed project area: U. S. Army Corps of Engineers; and, California Department of Fish and Game. The basis for jurisdiction is discussed below.

7.1 U. S. Army Corps of Engineers

The U. S. Army Corps of Engineers regulates dredging and filling in Waters of the United States under the authority of Section 404 of the Clean Water Act. Waters of the United State are defined to include all navigable waters including tidal waters, all interstate waters and wetlands, all impoundments of the waters mentioned above, all tributaries of the waters mentioned above, all territorial seas, and all wetlands adjacent to the waters mentioned above (33 CFR 328).

Title 33 of the Code of Federal Regulations defines wetlands as, "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" [33 CFR 328.3(b)]. In the Solid Waste Agency of Northern Cook County v. Army Corps of Engineers, the U. S. Supreme Court determined that U. S. Army Corps of Engineers jurisdiction may not extend to wetlands and waterways where the only nexus with Waters of the U. S. is use by migratory birds. In the Rapanos – Carabell Supreme Court decisions, the Supreme Court rejected the argument that the term "waters of the United States" is limited to only those waters that are navigable in the traditional sense and their abutting wetlands. However, the court decided that regulatory authority should extend only to "relatively permanent, standing or continuously flowing bodies of water" connected to traditional navigable waters, and to "wetlands with a continuous surface connection to" such relatively permanent waters (EPA/COE 2008).

Two distinct jurisdictional tests emerged from the Rapanos–Carabell decision: "significant nexus" test and "relatively permanent, standing or continuously flowing" test. The U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency have developed guidelines for making jurisdictional determinations based on these tests. The following summary of key points related to U. S. Environmental Protection Agency and U. S. Army Corps of Engineers jurisdiction is taken directly from a joint EPA/USACOE memorandum (EPA/COE 2008).

7.1.1 Summary of Key Points related to EPA and USACOE Jurisdiction

"The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries."

"The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

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

"The agencies generally *will not assert* jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water."

"The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters."

"Significant nexus includes consideration of hydrologic and ecologic factors."

Based on these criteria, there are no jurisdictional waters or wetlands present within the limits of construction. However, only the U. S. Army Corps of Engineers may make a final determination regarding jurisdiction.

7.2 California Department of Fish and Game

Sections 1600 through 1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the California Department of Fish and Game for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use material from a streambed." The California Department of Fish and Game defines a stream, creek or river 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." The California Department of Fish and Game defines lakes as including man-made lakes and reservoirs. In addition to the bed and banks of a stream, the California Department of Fish and Game jurisdiction includes riparian or wetland vegetation associated with the water body. Projects that require a Streambed Alteration Agreement may also require a permit from the U. S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Based on these criteria, there are no waters falling under the jurisdiction of the California Department of Fish and Game within the limits of construction. However, only the State of California may make a final determination regarding jurisdiction.

8.0 EFFECTS OF THE PROPOSED ACTION

The proposed pipeline alignment will directly affect 18.8 acres of Urban/Developed habitat consisting primarily of asphalt paving, concrete gutters and curbs, and road shoulders largely devoid of vegetation along Limonite Avenue and Pedley Road (Figure 4). Proposed Booster Station 1 will directly affect an additional 0.3 acres of Urban/Developed habitat and 3.3 acres of non-native grassland habitat. Proposed Booster Station 2 will directly affect an additional 1.4 acres of Urban/Developed habitat. Proposed Booster Station 3 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.7 acres of non-native grassland habitat. Proposed Booster Station 4 will directly affect an additional 0.01 acres of Urban/Developed habitat and 0.9 acres of non-native grassland habitat (Table 5).

Figure 4

Impacts to Plant Communities

Riverside-Corona Feeder, Clay Street Connection

Table 5 Plant Communities Effected Riverside – Corona Feeder, Clay Street Connection Riverside County, California	
Pipeline Alignment	**Acres Potentially Effected**
Urban/Developed	18.8
Total	18.8
Proposed Booster Station 1 Site	
Non-Native Grassland	3.3
Urban/Developed	0.3
Total	3.6
Proposed Booster Station 2 Site	
Urban/Developed	1.4
Total	1.4
Proposed Booster Station 3 Site	
Non-Native Grassland	0.7
Urban/Developed	0.01
Total	0.71
Proposed Booster Station 4 Site	
Non-Native Grassland	0.9
Urban/Developed	0.01
Total	1.0

The proposed pipeline with the Booster Station 2 option would have the least impact, affecting a total of 20.2 acres of Urban/Developed habitat. The proposed pipeline with the Booster Station 1 option would have the greatest impact, affecting a total of 22.4 acres of Urban/Developed and non-native grassland habitat.

Eleven sensitive species were identified as potentially occurring within or in proximity to the proposed project area. The western burrowing owl is the only sensitive species that may be present within the proposed project area. Suitable habitat for the western burrowing owl is present at proposed Booster Station sites 1, 3, and 4.

Dwarf Burr Ambrosia

Suitable habitat for dwarf burr ambrosia is not present within or adjacent to the limits of construction. Dwarf burr ambrosia was not observed during site visits and will not be affected by the proposed action.

Santa Ana River Woollystar

Suitable habitat for the Santa Ana River woollystar is not present within or adjacent to the limits of construction. Santa Ana River woollystar was not observed during site visits and will not be affected by the proposed action.

Delhi Sands flower-loving fly

Suitable habitat for Delhi Sands flower-loving fly is not present within or adjacent to the limits of construction. Delhi Sands flower-loving fly was not observed during site visits and will not be affected by the proposed action.

Brand's star phacelia

Suitable habitat for Brand's star phacelia is not present within or adjacent to the limits of construction. Brand's star phacelia was not observed during site visits and will not be affected by the proposed action.

San Miguel savory

Suitable habitat for San Miguel savory is not present within or adjacent to the limits of construction. San Miguel savory was not observed during site visits and will not be affected by the proposed action.

Santa Ana Sucker

The Santa Ana sucker is an aquatic species. Aquatic habitat is not present within or adjacent to the limits of construction. The Santa Ana sucker will not be affected by the proposed action.

Western yellow-billed cuckoo

Suitable habitat for western yellow-billed cuckoo is not present within or adjacent to the limits of construction. Western yellow-billed cuckoo's were not observed during site visits and will not be affected by the proposed action.

Coastal California gnatcatcher

Suitable habitat for the coastal California gnatcatcher is not present within or adjacent to the limits of construction. Coastal California gnatcatchers were not observed during site visits and are not likely to be present on the proposed project site.

Least Bell's vireo

Suitable habitat for least Bell's vireo is not present within or adjacent to the limits of construction. The proposed project area is not located within designated critical habitat for the

species. Least Bell's vireo was not observed during site visits and will not be affected by the proposed action.

Stephens' kangaroo rat

Suitable habitat for Stephens' kangaroo rat is not present within or adjacent to the limits of construction. It is unlikely Stephens' kangaroo rat will be adversely affected by the proposed action.

Western burrowing owl

Suitable habitat for the western burrowing owl is present within proposed Booster Station sites 1, 3, and 4 and in non-native grasslands adjacent to the pipeline alignment limits of construction. Burrowing owls were not observed during site visits; however, the presence of suitable habitat requires conducting focused surveys for this species. In addition, a 30-Day Burrowing Owl Pre-Construction Survey will be required even if western burrowing owls are not found during the focused surveys.

9.0 RECOMMENDED MITIGATION OR AVOIDANCE MEASURES

9.1 Western burrowing owl

Prior to any construction activity (including clearing, grubbing, and grading), focused surveys shall be conducted of all suitable western burrowing owl habitat potentially affected by the proposed action.

If there is more than a 30-day interval between the focused surveys and commencement of construction, a 30-Day Burrowing Owl Pre-Construction Survey shall be conducted even if western burrowing owls were not observed during the focused surveys. If construction starts within 30 days of the pre-construction survey, additional surveys shall not be required.

10.0 CONCLUSIONS

In conclusion, it has been determined that if the proposed mitigation measures are implemented, the proposed action will have no effect on dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Brand's star phacelia, San Miguel savory, Santa Ana sucker, western yellow-billed cuckoo, coastal California gnatcatcher, least Bell's vireo, Stephens' kangaroo rat, and/or western burrowing owl.

11.0 CERTIFICATION

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

DATE: December 4, 2009 SIGNED:_____

Laurence N. Dean, Senior Biologist

12.0 LITERATURE CITED

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APPENDIX B

Burrowing Owl Consortium
Survey Protocol & Mitigation Guidelines

BURROWING OWL CONSORTIUM

Survey Protocol & Mitigation Guidelines

INTRODUCTION

California's burrowing owl population is clearly in peril and if declines continue unchecked the species may qualify for listing. Because of the intense pressure for development of open, flat grasslands in California, resource managers frequently face conflicts between owls and development projects. Owls can be affected by disturbance and habitat loss, even though there may be no direct impacts to the birds themselves or their burrows. There is often inadequate information about the presence of owls on a project site until ground disturbance is imminent. When this occurs there is usually insufficient time to evaluate impacts to owls and their habitat. The absence of standardized field survey methods impairs adequate and consistent impact assessment during regulatory review processes, which in turn reduces the possibility of effective mitigation.

These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or the resources that support them. The process begins with a four-step survey protocol to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Each project and situation is different and these procedures may not be applicable in some circumstances. Finally, these are not strict rules or requirements that must be applied in all situations. They are guidelines to consider when evaluating burrowing owls and their habitat, and they suggest options for burrowing owl conservation when land use decisions are made.

Section 1 describes the four phase Burrowing Owl Survey Protocol. Section 2 contains the Mitigation Guidelines. Section 3 contains a discussion of various laws and regulations that protect burrowing owls and a list of references cited in the text.

We have submitted these documents to the California Department of Fish and Game (CDFG) for review and comment. These are untested procedures and we ask for your comments on improving their usefulness.

SECTION 1 - BURROWING OWL SURVEY PROTOCOL

PHASE I: HABITAT ASSESSMENT

The first step in the survey process is to assess the presence of burrowing owl habitat on the project site including a 150-meter (approx. 500 ft.) buffer zone around the project boundary (Thomsen 1971, Martin 1973).

Burrowing Owl Habitat Description

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement.

Occupied Burrowing Owl Habitat

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992). A site should be assumed occupied if at least one burrowing owl has been observed occupying a burrow there within the last three years (Rich 1984).

The Phase II burrow survey is required if burrowing owl habitat occurs on the site. If burrowing owl habitat is not present on the project site and buffer zone, the Phase II burrow survey is not necessary. A written report of the habitat assessment should be prepared (Phase IV), stating the reason(s) why the area is not burrowing owl habitat.

PHASE II: BURROW SURVEY

1. A survey for burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx 500 ft.) of the project impact zone. This 150-meter buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area.

2. Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 30 meters (approx. 100 ft.), and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. To efficiently survey projects larger than 100 acres, it is recommended that two or more surveyors conduct concurrent surveys. Surveyors should maintain a minimum distance of 50 meters (approx. 160 ft.) from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.

3. If burrows or burrowing owls are recorded on the site, a map should be prepared of the burrow concentration areas. A breeding season survey and census (Phase III) of burrowing owls is the next step required.

4. Prepare a report (Phase IV) of the burrow survey stating whether or not burrows are present.

5. A preconstruction survey may be required by project-specific mitigations no more than 30 days prior to ground disturbing activity.

PHASE III: BURROWING OWL SURVEYS, CENSUS AND MAPPING

If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site. Surveys in the breeding season are required to describe if, when, and how the site is used by burrowing owls. If no owls are observed using the site during the breeding season, a winter survey is required.

Survey Methodology

A complete burrowing owl survey consists of four site visits. During the initial site visit examine burrows for owl sign and map the locations of occupied burrows.

Subsequent observations should be conducted from as many fixed points as necessary to provide visual coverage of the site using spotting scopes or binoculars. It is important to minimize disturbance near occupied burrows during all seasons. Site visits must be repeated on four separate days. Conduct these visits from two hours before sunset to one hour after or from one hour before to two hours after sunrise. Surveys should be conducted during weather that is conducive to observing owls outside their burrows. Avoid surveys during heavy rain, high winds (> 20 mph), or dense fog.

Nesting Season Survey. The burrowing owl nesting season begins as early as February 1 and continues through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activities may vary with latitude and climatic conditions. If possible, the nesting season survey should be conducted during the peak of the breeding season, between April 15 and July 15. Count and map all burrowing owl sightings, occupied burrows, and burrows with owl sign. Record numbers of pairs and juveniles, and behavior such as courtship and copulation. Map the approximate territory boundaries and foraging areas if known.

Survey for Winter Residents (non-breeding owls).Survey for Winter Residents (non-breeding owls).Survey for Winter Residents (non-breeding owls). Winter surveys should be conducted between December 1 and January 31, during the period when wintering owls are most likely to be present. Count and map all owl sightings, occupied burrows, and burrows with owl sign.

Surveys Outside the Winter and Nesting Seasons. Positive results (i.e., owl sightings) outside of the above survey periods would be adequate to determine presence of owls on site. However, results of these surveys may be inadequate for mitigation planning because the numbers of owls and their pattern of distribution may change during winter and nesting seasons. Negative results during surveys outside the above periods are not conclusive proof that owls do not use the site.

Preconstruction Survey.Preconstruction Survey.Preconstruction Survey. A preconstruction survey may be required by project-specific mitigations and should be conducted no more than 30 days prior to ground disturbing activity.

PHASE IV: RESOURCE SUMMARY, WRITTEN REPORT

A report should be prepared for CDFG that gives the results of each Phase of the survey protocol, as outlined below.

Phase I: Habitat Assessment

1. Date and time of visit(s) including weather and visibility conditions; methods of survey.

2. Site description including the following information: location, size, topography, vegetation communities, and animals observed during visit(s).

3. An assessment of habitat suitability for burrowing owls and explanation.

4. A map of the site.

Phase II: Burrow Survey

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.

2. A more detailed site description should be made during this phase of the survey protocol including a partial plant list of primary vegetation, location of nearest freshwater (on or within one mile of site), animals observed during transects.

3. Results of survey transects including a map showing the location of concentrations of burrow(s) (natural or artificial) and owl(s), if present.

Phase III: Burrowing Owl Surveys, Census and Mapping

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.

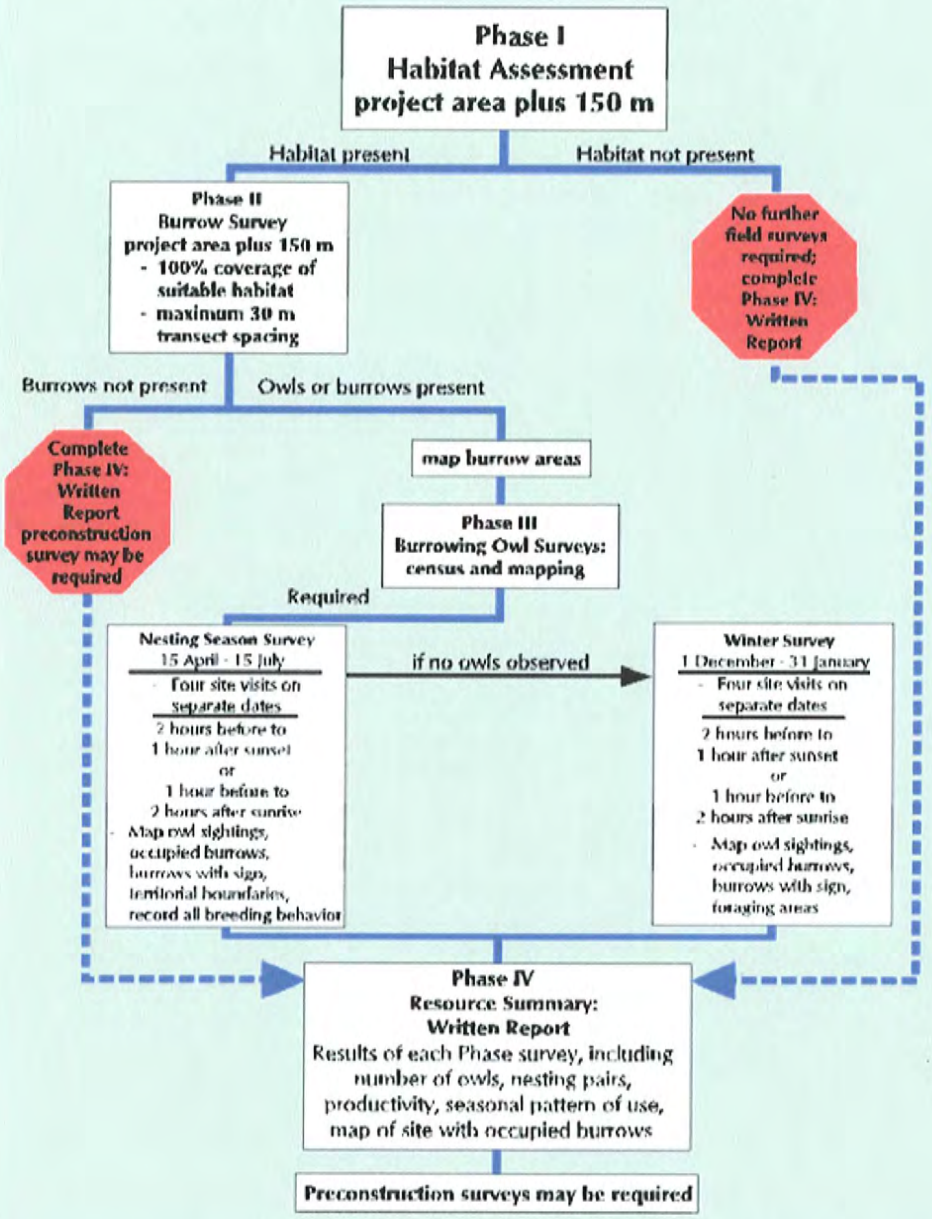
2. Report and map the location of all burrowing owls and owl sign. Burrows occupied by owl(s) should be mapped indicating the number of owls at each burrow. Tracks, feathers, pellets, or other items (prey remains, animal scat) at burrows should also be reported.

3. Behavior of owls during the surveys should be carefully recorded (from a distance) and reported. Describe and map areas used by owls during the surveys. Although not required, all behavior is valuable to document including feeding, resting, courtship, alarm, territorial, parental, or juvenile behavior.

4. Both winter and nesting season surveys should be summarized. If possible include information regarding productivity of pairs, seasonal pattern of use, and include a map of the colony showing territorial boundaries and home ranges.

5. The historical presence of burrowing owls on site should be documented, as well as the source of such information (local bird club, Audubon society, other biologists, etc.).

Burrowing Owl Survey Protocol



SECTION 2 - BURROWING OWL MITIGATION GUIDELINES

The objective of these mitigation guidelines is to minimize impacts to burrowing owls and the resources that support viable owl populations. These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or their resources. The process begins with a four-step survey protocol (see *Burrowing Owl Survey Protocol*) to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures described below are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Mitigation actions should be carried out prior to the burrowing owl breeding season, generally from February 1 through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activity may vary with latitude and climatic conditions. Project sites and buffer zones with suitable habitat should be resurveyed to ensure no burrowing owls have occupied them in the interim period between the initial surveys and ground disturbing activity. Repeat surveys should be conducted not more than 30 days prior to initial ground disturbing activity.

DEFINITION OF IMPACTS

1. Disturbance or harassment within 50 meters (approx. 160 ft.) of occupied burrows.

2. Destruction of burrows and burrow entrances. Burrows include structures such as culverts, concrete slabs and debris piles that provide shelter to burrowing owls.

3. Degradation of foraging habitat adjacent to occupied burrows.

GENERAL CONSIDERATIONS

1. Occupied burrows should not be disturbed during the nesting season, from February 1 through August 31, unless the Department of Fish and Game verifies that the birds have not begun egg-laying and

incubation or that the juveniles from those burrows are foraging independently and capable of independent survival at an earlier date.

2. A minimum of 6.5 acres of foraging habitat, calculated on a 100-m (approx. 300 ft.) foraging radius around the natal burrow, should be maintained per pair (or unpaired resident single bird) contiguous with burrows occupied within the last three years (Rich 1984, Feeney 1992). Ideally, foraging habitat should be retained in a long-term conservation easement.

3. When destruction of occupied burrows is unavoidable, burrows should be enhanced (enlarged or cleared of debris) or created (by installing artificial burrows) in a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.

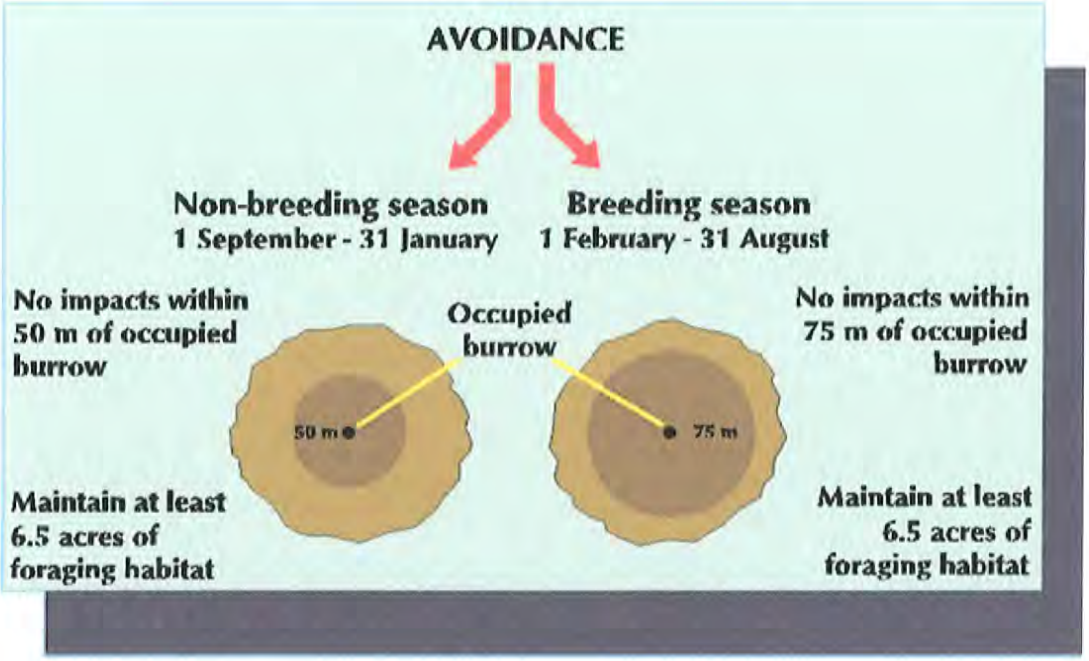
4. If owls must be moved away from the disturbance area, passive relocation (see below) is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows.

5. The mitigation committee recommends monitoring the success of mitigation programs as required in Assembly Bill 3180. A monitoring plan should include mitigation success criteria and an annual report should be submitted to the California Department of Fish and Game.

AVOIDANCE

Avoid Occupied Burrows

No disturbance should occur within 50 m (approx. 160 ft.) of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 m (approx. 250 ft.) during the breeding season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird.

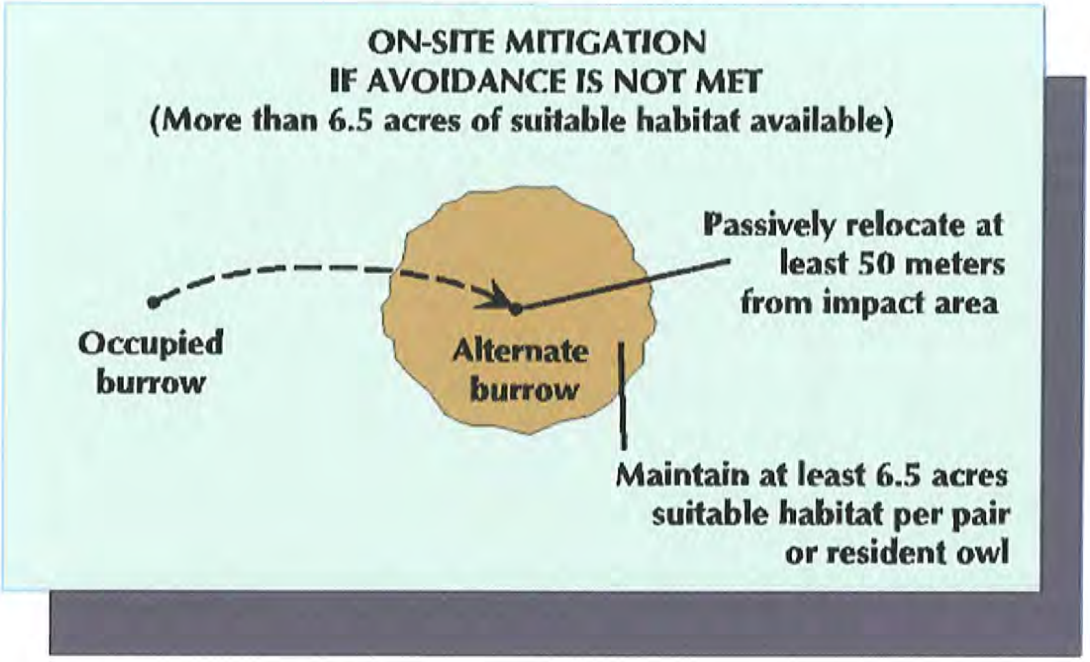


MITIGATION FOR UNAVOIDABLE IMPACTS

On-site Mitigation

On-site passive relocation should be implemented if the above avoidance requirements cannot be met. Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 m from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls (Figure 3). Relocation of owls should only be implemented during the non-breeding season. On-site habitat should be preserved in a conservation easement and managed to promote burrowing owl use of the site.

Owls should be excluded from burrows in the immediate impact zone and within a 50 m (approx. 160 ft.) buffer zone by installing one-way doors in burrow entrances. One-way doors should be left in place 48 hours to insure owls have left the burrow before excavation. One alternate natural or artificial burrow should be provided for each burrow that will be excavated in the project impact zone. The project area should be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags should be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.



Off-site Mitigation

If the project will reduce suitable habitat on-site below the threshold level of 6.5 acres per relocated pair or single bird, the habitat should be replaced off-site. Off-site habitat must be suitable burrowing owl habitat, as defined in the *Burrowing Owl Survey Protocol*, and the site approved by CDFG. Land should be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation should use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.

2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.

3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

SECTION 3 - LEGAL STATUS

The burrowing owl is a migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). Sections 3503, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend is considered "taking" and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g., MBTA).

The burrowing owl is a Species of Special Concern to California because of declines of suitable habitat and both localized and statewide population declines. Guidelines for the Implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as endangered or "rare" regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections b and d). The CEQA requires a mandatory findings of significance if impacts to threatened or endangered species are likely to occur (Sections 21001{c}, 21083. Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

CEQA AND SUBDIVISION MAP ACT

CEQA Guidelines Section 15065 directs that a mandatory finding of significance is required for projects that have the potential to substantially degrade or reduce the habitat of, or restrict the range of a threatened or endangered species. CEQA requires agencies to implement feasible mitigation measures or feasible alternatives identified in EIR's for projects which will otherwise cause significant adverse impacts (Sections 21002, 21081, 21083; Guidelines, sections 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a).).

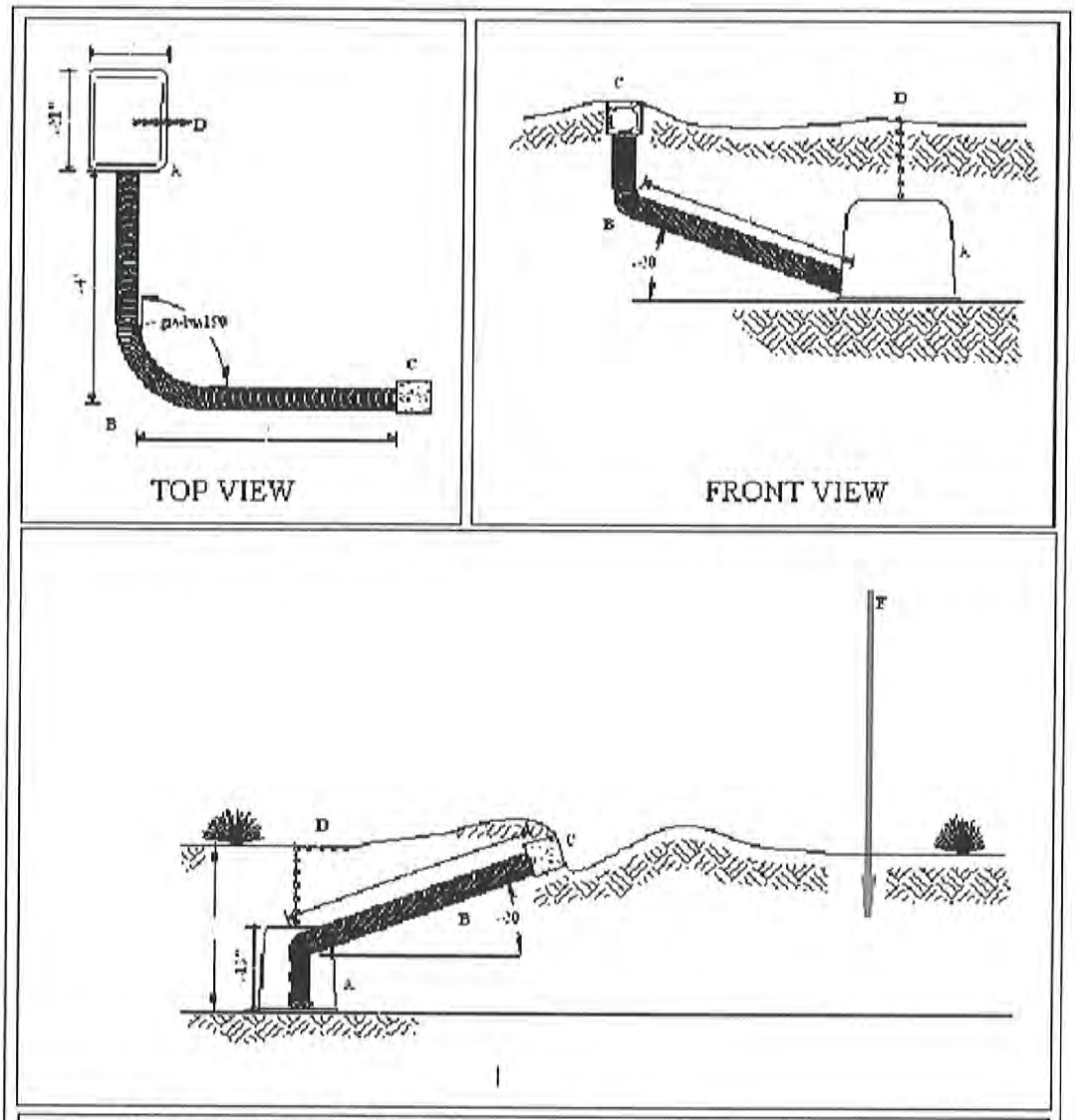
To be legally adequate, mitigation measures must be capable of "avoiding the impact altogether by not taking a certain action or parts of an action"; "minimizing impacts by limiting the degree or magnitude of the action and its implementation"; "rectifying the impact by repairing, rehabilitating or restoring the impacted environment"; "or reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action." (Guidelines, Section 15370).

Section 66474 (e) of the Subdivision Map Act states "a legislative body of a city or county shall deny approval of a tentative map or parcel map for which a tentative map was not required, if it makes any of the following findings:...(e) that the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish and wildlife or their habitat". In recent court cases, the court upheld that Section 66474(e) provides for environmental impact review separate from and independent of the requirements of CEQA (Topanga Assn. for a Scenic Community v. County of Los Angeles, 263 Cal. Rptr. 214 (1989).). The finding in Section 66474 is in addition to the requirements for the preparation of an EIR or Negative Declaration.

ARTIFICIAL BURROWING OWL BURROW DESIGN

Prepared by: Albion Environmental, Inc., 1414 Soquel Avenue, No. 205

Santa Cruz, CA 95062 (831) 469-9128



A - plastic irrigation valve box
B - 4" diameter perforated corrugated plastic pipe
C - 6" square hollow concrete block
D - chain or plastic rope marking location of nesting chamber on ground surface
E - 5' - 6' perch post (optional)

APPENDIX C

Western Burrowing Owl Habitat Assessment and Focused Survey Data Sheets

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Clay St Connector **Project No.:** **Survey No.**

Type Survey:

- ☐ Habitat Assessment
- ☒ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 11 Jan 2010
Start Time: 1600 **Stop:** 1900 **Sunrise:** **Sunset:** 1700
Weather Conditions:
Temp: 68
Cloud Cover: Scattered, high <10%
Visibility: Unlimited
Wind: 0-3 calm
Last Measurable Precip: 7 Jan 10

Plant Communities Present: Non-native Annual Grassland
Height of vegetation: <1-meter
Percent ground cover: 80-85%

Is suitable BUOW Habitat present (Describe)?
Ground Squirrel Burrows

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:

Was owl sign (Castings, droppings, prey remains, feathers) observed?
If yes, describe sign observed on BUOW Sighting Record(Attach photos):
BUOW Sign not observed
Burrow identifier:

Were BUOW observed?
BUOW not observed
Number of Adults: 0 **Number of Males:** 0 **Number of females/juveniles:** 0

Notes (Behavior, etc.):

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Clay St Connector **Project No.:** **Survey No.**

Type Survey:

- ☐ Habitat Assessment
- ☐ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 13 Jan 2010

Start Time: 1600 **Stop:** 1900 **Sunrise:** **Sunset:** ~~1700~~ 1702

Weather Conditions:

Temp: 72°F

Cloud Cover: None

Visibility: Unlimited

Wind: 0-3

Last Measurable Precip: 7 Jan 2010

Plant Communities Present: Non-native annual grassland

Height of vegetation: < 1 meter

Percent ground cover: 80-85%

Is suitable BUOW Habitat present (Describe)?

Ground squirrel burrows around perimeter of areas surveyed

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:

Ground Squirrel burrows

Was owl sign (castings, droppings, prey remains, feathers) observed?

If yes, describe sign observed on BUOW Sighting Record(Attach photos):

BUOW sign was not observed

Burrow identifier:

Were BUOW observed? BUOW were not observed

Number of Adults: Ø **Number of Males:** Ø **Number of females/juveniles:** Ø

Notes (Behavior, etc.):

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Clay St Connector **Project No.:** **Survey No.**

Type Survey:

- ☐ Habitat Assessment
- ☐ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 4 Feb 10

Start Time: 1620 **Stop:** 1920 **Sunrise:** **Sunset:** 1723

Weather Conditions:

Temp: 68°F

Cloud Cover: None

Visibility: Unlimited

Wind: 0-3

Last Measurable Precip: 30 Jan 2010

Plant Communities Present: Non-native Annual Grassland

Height of vegetation: <1meter

Percent ground cover: 80-85%

Is suitable BUOW Habitat present (Describe)?

Ground squirrel burrows around perimeter of properties surveyed

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:

.

Was owl sign (Castings, droppings, prey remains, feathers) observed?

If yes, describe sign observed on BUOW Sighting Record(Attach photos):

BUOW sign was not observed

Burrow identifier:

Were BUOW observed?

BUOO were not observed

Number of Adults: NA **Number of Males:** NA **Number of females/juveniles:** NA

Notes (Behavior, etc.):

Burrows are all located in areas that have not been disced.

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Clayst Connector **Project No.:** **Survey No.**

Type Survey:

- ☐ Habitat Assessment
- ☐ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 16 Feb 2010

Start Time: 0530 **Stop:** 0830 **Sunrise:** 0633 **Sunset:**

Weather Conditions:

Temp: 42

Cloud Cover: None

Visibility: 5 miles

Wind: 0-3

Last Measurable Precip: 9 Feb 10

Plant Communities Present: Non-native annual grassland

Height of vegetation: <1-meter

Percent ground cover: 70-75%

Is suitable BUOW Habitat present (Describe)?

Several ground squirrel burrows around the perimeter of the areas surveyed (2)

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:

Ground Squirrel burrows

Was owl sign (Castings, droppings, prey remains, feathers) observed?

If yes, describe sign observed on BUOW Sighting Record(Attach photos):

BUOW sign was not observed

Burrow identifier:

Were BUOW observed? BUOW were not observed

Number of Adults: **Number of Males:** **Number of females/juveniles:**

Notes (Behavior, etc.):

Burrows are in areas that have not been disturbed by discing.

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Mockingbird Cyn **Project No.:** **Survey No.**

Type Survey:

- ☐ Habitat Assessment
- ☐ Focused Burrow Survey /Mapping
- ☑ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 17 Feb 2010

Start Time: 0530 **Stop:** 0830 **Sunrise:** ~~0533~~ 0633 **Sunset:**

Weather Conditions:

Temp: 54°F

Cloud Cover: None

Visibility: 3 miles increasing to 5+

Wind: 0-3 - Calm

Last Measurable Precip: 9 Feb 2010

Plant Communities Present: Riversidean Sage Scrub

Height of vegetation: One meter

Percent ground cover: ~~75~~ 70-75%

Is suitable BUOW Habitat present (Describe)?
Suitable burrows present on and around Lot 20. Suitable habitat is also present in a large rock outcrop

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:
Ground squirrel burrows, openings in rock outcrop

Was owl sign (Castings, droppings, prey remains, feathers) observed?
If yes, describe sign observed on BUOW Sighting Record(Attach photos):

Burrow identifier: Owl Sign was not observed

Were BUOW observed? Burrowing owls were not observed

Number of Adults: NA **Number of Males:** NA **Number of females/juveniles:** NA

Notes (Behavior, etc.):

No additional Comments

APPENDIX D

Survey Photographs

Photo 1, Overview of proposed Booster Station Site 1, looking west. Limonite Avenue is on the left.

Photo 2, Overview of proposed Booster Station Site 1, looking north from Limonite Avenue.

Photo 3, Overview of proposed Booster Station Site 2, looking east.

STEPHENS' KANGAROO RAT AND OTHER POTENTIAL SENSITIVE MAMMAL SPECIES PRESENCE/ABSENCE TRAPPING STUDIES ALONG MOCKINGBIRD ALIGNMENT AND BOOSTER STATIONS COUNTY OF RIVERSIDE, CALIFORNIA

Prepared for:

Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, California 92064

Prepared by:

Philippe Vergne
ENVIRA
P. O. Box 2612
Ramona, California 92065

December 10, 2009

STEPHENS' KANGAROO RAT AND OTHER POTENTIAL SENSITIVE MAMMAL SPECIES PRESENCE/ABSENCE TRAPPING STUDIES ALONG MOCKINGBIRD ALIGNMENT AND BOOSTER STATIONS
COUNTY OF RIVERSIDE, CALIFORNIA

Total Project Acreage: 166.6

Total Acres Surveyed: 166.6

Alignment Length: 1.93 miles

Prepared for:

Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, CA 92064

Prepared by:

Philippe Vergne
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P. O. Box 2612
Ramona, California 92065
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E-mail: phvergne@aol.com

Survey Dates: November 29 to December 6, 2009

Report Date: December 10, 2009

This report was prepared in accordance with professional requirements and recommended protocols for small mammal trapping studies (USFWS Permit TE068072-2).

Philippe Jean Vergne, Field Biologist and Author

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Appendix

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1.0 INTRODUCTION

Philippe Jean Vergne was contracted by Brian F. Smith and Associates to conduct a live-trapping effort for the Stephens' kangaroo rat (*Dipodomys stephensi*) (SKR) and other potential sensitive species on the proposed Mockingbird alignment and Booster Station project site.

The Mockingbird Canyon Connector consists of approximately 5,900 linear feet of pipeline up to a 42-inch diameter, a five million-gallon reservoir and a related pump station. The pump station will include pumps and flow control facilities to convey water in either direction. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements to connect to the proposed pump station and reservoir. The pipeline will then extend east within a pipeline easement and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to Western Municipal Water District's existing Mockingbird Booster Station.

This report describes the existing conditions of the project site, general biological resources observed during the survey, and the results of the trapping studies.

A literature review and records check were conducted for sensitive resources within the vicinity of the proposed project. In addition to the literature review, a general field survey of the project area was conducted. The field survey provided information on the existing conditions of the site and the potential for sensitive resources to be present. Focused trapping surveys for the SKR and other potential sensitive species were conducted in areas containing potential habitat, suitable soils, and small mammal sign.

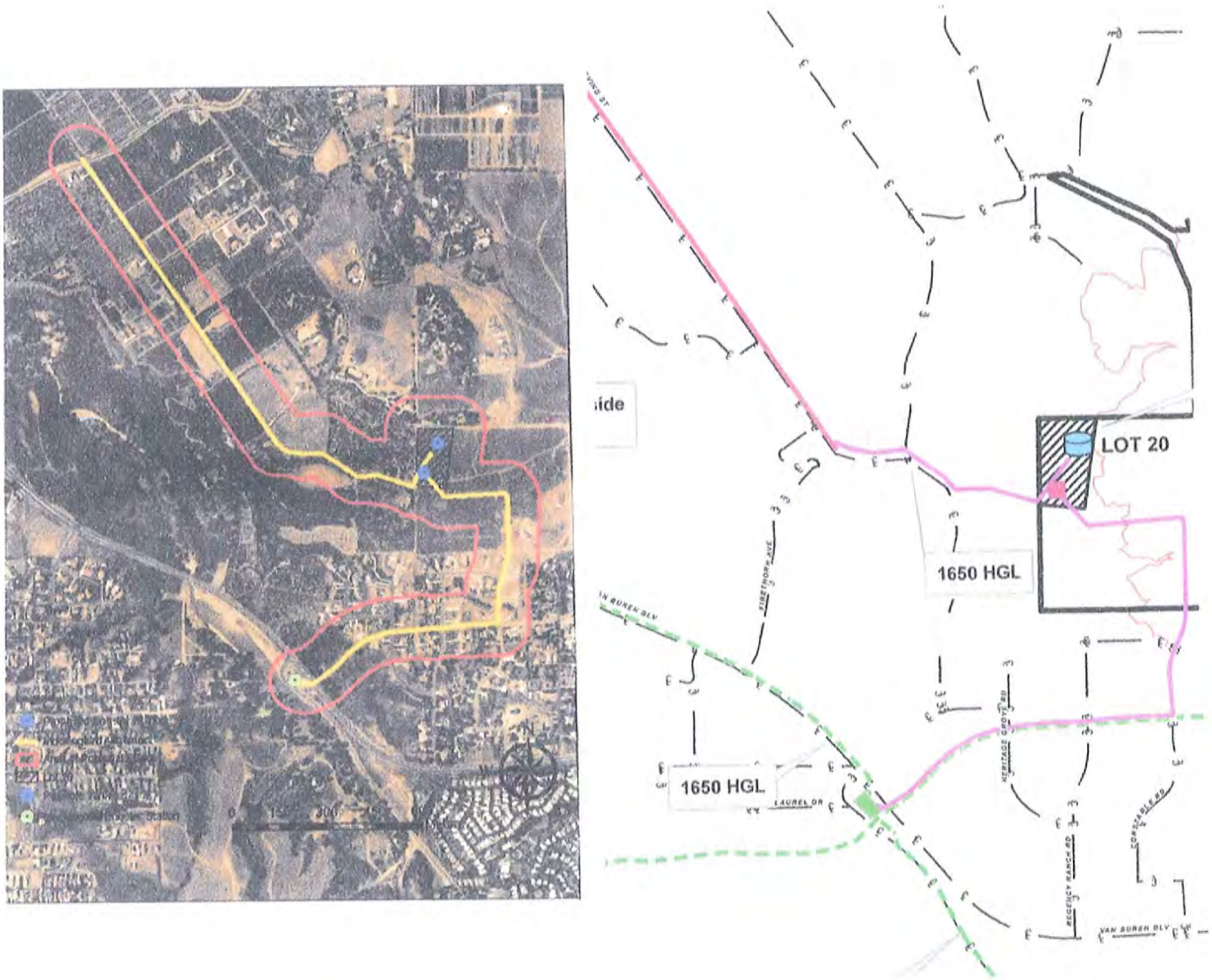
Four sensitive mammal species were identified as potentially present in the vicinity of the project site: the SKR, the Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), the Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) and the San Diego desert woodrat (*Neotoma lepida intermedia*).

Trapping surveys for the SKR were conducted according to U. S. Fish and Wildlife Service (USFWS) protocols. In order to prove absence, the current protocol calls for a minimum of five nights of trapping, conducted when the species is active aboveground at night and preferably during a new moon phase. Due to habitat accessibility and area to be sampled the trapping effort was conducted over seven days. One trapping session was conducted from November 29 to December 6 of 2009.

Based on the trapping results, the SKR occurs on portions of the site, and there will be direct impacts to this species as a result of project implementation. An estimated 4.87 - acres of currently occupied SKR habitat could be directly impacted by the proposed project within lot 20 depending on grading and soils disturbance, an additional 1.53 acres of occupied habitat will be impacted by pipeline construction, and an additional 7.4 acres of occupied habitat occur within the area of potential effect. The exact amount of take cannot be calculated without final and detailed grading and staging plans. Based on the information received, a minimum of 6.4 acres and a maximum of 13.8 acres of SKR occupied habitat could be impacted by project implementation. Appropriate mitigation for this take will be required.

One sensitive species was captured during the course of the trapping survey, the Northwestern San Diego pocket mouse. Impacts to this species from project implementation are not significant on a regional basis due to limited take.

Figure 1 Project Site Vicinity and Location



2.0 METHODS

A literature review and records check was conducted for sensitive resources within the vicinity of the proposed project. In addition to the literature review, a general field survey of the project area was conducted. The field survey provided information on the existing conditions on the site and the potential for sensitive resources to be present. Focused trapping surveys for the SKR were conducted on areas containing potential habitat, suitable soils, and small mammal sign.

2.1 LITERATURE REVIEW

A literature review was conducted prior to the trapping effort. This included a review of standard field guides and texts on sensitive and non-sensitive biological resources, as well as the following sources:

- List of sensitive biological resources provided by the California Natural Diversity Data Base (CNDDB);
- Biological resources reports for the project site and adjacent properties; and
- General texts and other documents identifying potential resources on the site.

All technical information reviewed is included in the References section of this document.

2.2 GENERAL BIOLOGICAL SURVEYS

A reconnaissance level phase one pedestrian survey was conducted on the property on November 28 in order to identify trapping areas for a focused SKR survey within the project boundaries.

Notes were taken during the surveys of all plant and wildlife species observed. Observations of wildlife species included scat, trails, tracks, burrows, nests, calls, and visual observation. In addition, site characteristics such as soils, topography, the condition of the plant communities, and evidence of human use of the site were noted. A list of plant and wildlife species observed is included in Appendix A.

2.3 FOCUSED SURVEYS

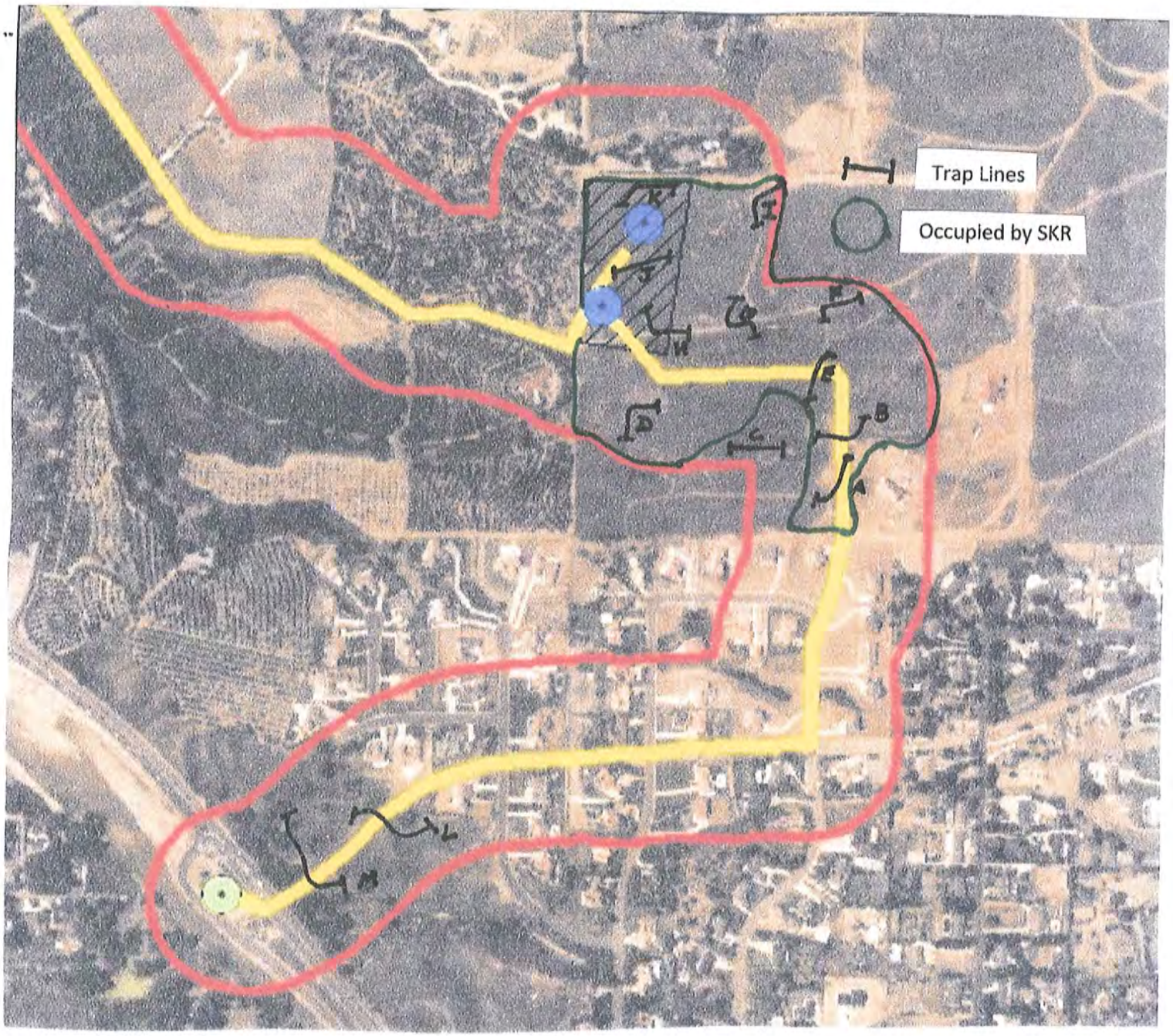
Focused surveys for the SKR were conducted by Philippe Vergne (TE-068072-2) according to U. S. Fish and Wildlife Service (USFWS) protocols. Trapping surveys for the SKR were conducted according to U. S. Fish and Wildlife Service (USFWS) protocols. In order to prove absence, the current protocol calls for a minimum of five nights of trapping, conducted when the species is active aboveground at night and preferably during a new moon phase. Due to habitat accessibility and area to be sampled the trapping effort was conducted over seven days. One trapping session was conducted from November 29 to December 6 of 2009.

Trapping lines of 30 traps, set 12 meters apart, were set at each trapping area (A through M) (Figure 2). Traps were placed in suitable habitat areas on the project site, concentrating on locating traps in areas containing small mammal sign, suitable soils and vegetation for SKR and sign of small mammal occupancy .

Each trap was baited with a mixture of birdseed placed at the back of the traps. The traps were left in place and opened at dusk each night and inspected once during the night and at dawn each morning. All animals were identified and released at the point of capture.

Photographs were taken on the habitat conditions (Appendix B). A description of the associated conditions is also included. Weather conditions at the time of the trapping were also noted.

Figure 2 Trapping Locations and SKR Occupied Habitat



3.0 EXISTING CONDITIONS

3.1 WEATHER CONDITIONS

Weather conditions during the trapping surveys included morning temperatures in the low fifties degrees Fahrenheit, with clear skies and winds of less than three miles per hour. No ground fog or rain occurred during the survey period. The moon was in the first quarter during the protocol survey. Weather conditions are summarized in Table 1 below.

TABLE 1

WEATHER CONDITIONS

Day	Cloud Cover	AM Temperature (F)	Wind (mph)
1	Clear	54	0
2	Clear	52	0
3	Clear	51	0
4	Clear	53	0-3
5	Clear	52	0-5
6	Clear	52	3-5
7	Partly Cloudy	54	3-5

3.2 TOPOGRAPHY AND SOILS

The project site consists of gently to moderately sloping terrain leading to a steeper hillside at the proposed tank area.

The soils onsite, based on soil conservation maps consist mainly of sandy and clay loams suitable for small mammal occupancy.

Surrounding land use varies. The southwestern portion of the site is an open drainage adjacent to Van Buren Boulevard; leading from that area is a developed housing project; to the north of the project the proposed project runs through open space, and hence northwest through agricultural areas.

Disturbances on the site include fire, disking, dirt roads, paved roads, houses, agriculture, and related infrastructure.

3.3 PLANT COMMUNITIES

Five vegetation communities/classifications were identified on site. These are Coastal Sage Scrub, disturbed annual grasslands, Orchards and Vineyards, Urban/Developed, and riparian.

Of these three areas had potential for SKR occupancy. They are the ruderal/disturbed annual grasslands, dirt roads, urban/developed, and open sage scrub.

The limited ruderal/disturbed annual grassland plant community is composed of annual grasses, weeds, and sparse emergent scrub. Plant species within this community include bromes such as red brome (*Bromus madritensis*) and rip-gut brome (*Bromus diandrus*), Mediterranean grass (*Schismus barbatus*), and herbaceous annuals such as red-stemmed filaree (*Erodium cicutarium*), fiddleneck (*Amsinckia menziesii*), doveweed (*Eremocarpus setigerus*), and short-podded mustard (*Hirschfeldia incana*).

The sage scrub areas were dominated by brittle-bush (*Encelia farinosa*), sparse California buckwheat (*Eriogonum fasciculatum*), and California sagebrush (*Artemisia californica*). The understory is dominated by sparse non-native grasses.

A complete list of plant species observed within the trapping areas is found in Appendix A.

3.4 WILDLIFE

Wildlife activity was moderate to high, with most of the wildlife represented by bird species and small fossorial mammals captured during the trapping effort.

No amphibians were found although suitable habitat occurs onsite. Reptiles were observed mainly in the open habitats near the dirt roads, and near the open scrub.

Mammal species observed (other than those trapped) included Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), Audubon's cottontail (*Sylvilagus aubudonii*), and coyote (*Canis latrans*). A complete list of wildlife species observed is found in Appendix A.

3.4.1 Sensitive Biological Resources

The following is a discussion of the sensitive small mammal species identified as potentially occurring on the project site.

Stephens' Kangaroo Rat

The Stephens' kangaroo rat prefers open areas with sparse perennial cover. They occur in areas containing loose soil where the soil depth is at least 0.5 meter (Price and Endo, 1989). SKR will also inhabit disturbed areas such as fallow fields by using the burrows of other rodents, including pocket gophers and the California ground squirrel (O'Farrell, 1989).

Like all kangaroo rats, SKR is primarily a seedeater, feeding on the seeds of both annual and shrub species. It also feeds on green vegetation and insects when these are available. Being a primarily dry biome species, kangaroo rats obtain nearly all of their water from the food they eat, and can subsist indefinitely on water extracted from dry seeds. They forage in open ground and underneath shrubs. Burrows are dug in loose soil.

SKR are documented as occurring in the project vicinity.

Northwestern San Diego Pocket Mouse

The northwestern San Diego pocket mouse prefers habitat similar to that preferred by kangaroo rats. The northwestern San Diego pocket mouse occurs in open, sandy areas in the valleys and foothills of southwestern California. The range of this species extends from Orange County to San Diego County, and includes Riverside and San Bernardino counties. This species is a California Species of Special Concern; its historical range has been reduced by urban development and agriculture.

Los Angeles Pocket Mouse

The Los Angeles pocket mouse (Perognathus longimembris brevinasus)-LAPM is one of two pocket mice found in this area of Riverside County (Williams 1986). Both the Los Angeles pocket mouse and the northwestern San Diego pocket mouse (Chaetodipus fallax fallax) occupy similar habitats, but the northwestern San Diego pocket mouse has a wider range extending south into San Diego County. The habitat of the Los Angeles pocket mouse is described as being confined to lower elevation grasslands and coastal sage scrub habitats, in areas with soils composed of fine sands (Williams 1986). This species prefers habitat similar to that of the SKR and SBKR. It occurs in open sandy areas in the valley and foothills of southwestern California (Hall 1981).

The present known distribution of this species in Riverside and San Bernardino counties extends from the San Gabriel and San Bernardino mountains south to the Temecula and Aguanga areas, and from the east side of the Santa Ana Mountains east to Cabazon (Hall 1981). The LAPM is listed as a California Species of Special Concern by the California Department of Fish and Game (California Department of Fish and Game 2001).

The Los Angeles pocket mouse occurs in the project vicinity.

San Diego Desert Woodrat

The desert woodrat (*Neotoma lepida*) is a relatively wide-ranging species extending along the coast of California from south of San Francisco to the border with Baja California. This species also occurs in the Central Valley and the deserts of southern California and extends along the desert side of the Sierra Nevada into southeastern Oregon.

The coastal species of the desert woodrat, the San Diego desert woodrat, prefers scrub habitats such as coastal sage scrub, chaparral and alluvial fan sage scrub. It is more common in areas with rock piles and coarse sandy to rocky soils throughout coastal southern California. The range of this species extends from just south of Sacramento and the San Francisco area to the border with Baja California. The coastal subspecies of the widespread *Neotoma lepida* is listed as a SSC; its historical range has been impacted by the conversion of scrub habitats into residential, commercial and industrial use.

3.5 TRAP SITE DESCRIPTIONS

Traps were set in areas containing suitable soils, open vegetation cover, and small mammal sign. Areas trapped included the ruderal/disturbed annual grasslands within the open sage scrub, dirt roads, drainages and previously graded or burned areas. Appendix B contains site photographs.

4.0 FOCUSED TRAPPING SURVEY RESULTS

A total of six small mammal species were trapped during the survey period. Table 2 provides summary information on the species trapped per site.

TABLE 2

FOCUSED TRAPPING RESULTS FOR THE MOCKINGBIRD PROJECT

Trap Line	Trap Nights	SKR	DKR	PEMA	REME	PEBO	CHFA
A	30	1	2	4			1
B	150			13			2
C	150		3	11		1	3
D	90	1	2	9		3	1
E	60	2	1	8			
F	120	1	2	5			
G	90	2	1	4			
H	60	3	1	6			2
I	30	1		5			
J	60	2		3			1
K	30	1		5			
L	150			14	1	2	1
M	150			8			
TOTAL	**1,170**	**14**	**13**	**95**	**1**	**6**	**11**

SKR-Stephens' Kangaroo Rat (*Dipodomys stephensi*)
DKR-Dulzura Kangaroo Rat (*Dipodomys simulans*)
PEMA-Deer Mouse (*Permnyscus maniculatis*)
REME-Harvest Mouse (*Reithrodontomys megalotis*)
PEBO-Brush Mouse (*Peromyscus boylii)*
CHFA-Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*)

5.0 CONCLUSION

Based on the trapping results, the SKR occurs on portions of the site, and there will be direct impacts to this species as a result of project implementation. An estimated 4.87 - acres of currently occupied SKR habitat could be directly impacted by the proposed project within lot 20 depending on grading and soils disturbance, an additional 1.53 acres of occupied habitat will be impacted by pipeline construction, and an additional 7.4 acres of occupied habitat occur within the area of potential effect. The exact amount of take cannot be calculated without final and detailed grading and staging plans. Based on the information received, a minimum of 6.4 acres and a maximum of 13.8 acres of SKR occupied habitat could be impacted by project implementation. **Appropriate mitigation for this take will be required.**

One sensitive species was captured during the course of the trapping survey, the Northwestern San Diego pocket mouse. Although not formally listed as threatened or endangered, impacts to these species may be considered significant under the California Environmental Quality Act (CEQA).

The California Environmental Quality Act addresses the determination of significant impacts. For determination of the level of significance to sensitive but non-listed resources, CEQA requires the impact be such that:

- The habitat of the protected resource will be substantially degraded or reduced;
- Cause a wildlife population to drop below self-sustaining levels; or
- The plant or wildlife community will be eliminated.
- Impacts to this species from project implementation are not significant since most of the occupied habitat is being preserved and the amount of take on a regional basis is negligible.

Based on trapping results, project limited take, and regional perspective, impacts to the Northwestern San Diego pocket mouse from project implementation are not significant.

It should be noted that trapping results are valid for one year, after which time additional trapping efforts may be required.

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APPENDIX A

FLORAL AND FAUNAL SPECIES COMPENDIA

Appendix A -Floral and Faunal Compendium

* denotes non-native species

ANGIOSPERMAE: DICOTYLEDONES	DICOT FLOWERING PLANTS
Anacardiaceae	**Sumac family**
**Schinus molle*	Peruvian pepper tree
Asteraceae	**Sunflower family**
Ambrosia artemisifolia	Common ragweed
Artemisia californica	California sagebrush
Baccharis salicifolia	Mulefat
Encelia farinosa	Desert brittlebush
Helianthus annuus	Annual sunflower
Heterotheca grandiflora	Telegraph weed
Boraginaceae	**Borage family**
Amsinckia menziesii	Fiddleneck
Cryptantha micrantha	Tiny popcorn flower
Brassicaceae	**Mustard family**
**Brassica nigra*	Black mustard
**Hirschfeldia incana*	Short-podded mustard
Cactaceae	**Cactus family**
Opuntia littoralis	Coastal prickly pear
Opunta sp.	Cholla
Caprifoliaceae	**Honeysuckle family**
Sambucus mexicana	Blue elderberry
Euphorbiaceae	**Spurge family**
Eremocarpus setigerus	Doveweed
Euphorbia nutans	Spurge
**Ricinus communis*	Castor bean
Fabaceae	**Pea family**
Astragalus pomonensis	Locoweed
Geraniaceae	**Geranium family**
**Erodium cicutarium*	Red-stemmed filaree

Lamiaceae	**Mint family**
Salvia apiana	White sage
Myrtaceae	**Myrtle family**
**Eucalyptus* sp.	Eucalyptus
Polygonaceae	**Buckwheat family**
Eriogonum fasciculatum	California buckwheat
Rumex crispus	Curly dock
Rosaceae	**Rose family**
Adenostoma fasciculatum	Chamise
Salicaceae	**Willow family**
Salix lasiolepis	Arroyo willow
Solanaceae	**Nightshade family**
Nicotiana glauca	Indian tobacco
ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Poaceae	**Grass family**
**Avena barbata*	Slender wild oats
**Bromus diandrus*	Ripgut brome
**Bromus madritensis*	Red brome
**Bromus mollis*	Soft chess
**Schismus barbatus*	Mediterranean grass

Taxonomy and nomenclature follow Hickman 1993 and Munz 1974.

FAUNA

REPTILIA	**REPTILES**
Iguanidae *Uta stansburiana*	**Iguanas and their allies** Side-blotched lizard
Teiidae *Cnemidophorus tigris multiscutatus*	**Whiptails and their allies** Coastal whiptail
Colubridae *Pituophis melanoleucucs*	**Colubrids** Gopher snake (Shed Skin)
AVES	**BIRDS**
Charadriidae *Charadrius vociferus*	**Plovers and relatives** Killdeer
Cathartidae *Cathartes aura*	**Vultures** Turkey vulture
Accipitridae *Buteo jamaicensis*	**Kites, hawks and eagles** Red-tailed hawk
Falconidae *Falco sparverius*	**Caracaras and falcons** American kestrel
Phasianidae *Callipepla californica*	**Quails and pheasants** California quail
Columbidae *Zenaida macroura*	**Pigeons and doves** Mourning dove
Tytonidae *Tyto alba*	**Barn owl** Barn owl
Cuculidae *Geococcyx californianus*	**Typical cuckoos** Greater roadrunner
Alaudidae *Eremophila alpestris*	**Larks** Horned lark
Corvidae *Corvus brachyrhynchos* *Corvus corax*	**Crows and ravens** American crow Common raven

Mimidae	**Mimic thrushes**
Mimus polyglottos	Northern mockingbird
Sturnidae	**Starlings**
Sturnus vulgaris	European starling
Emberizidae	**Warblers, sparrows, blackbirds and relatives**
Pipilo crissalis	California towhee
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and hares**
Sylvilagus audubonii	AudubonÆs cottontail
Lepus californicus	Black-tailed jackrabbit
Sciuridae	**Squirrels, chipmunks and marmots**
Spermophilus beecheyi	California ground squirrel
Geomyidae	**Pocket gophers**
Thomomys bottae	BottaÆs pocket gopher
Heteromyidae	**Pocket mice and kangaroo rats**
Chaetodippus fallax fallax	Northwestern San Diego pocket mouse
Dipodomys simulans	Dulzura kangaroo rat
Dipodomys stephensi	Stephens kangaroo rat
Cricetidae	**Cricetine mice and rats**
Reithrodontomys megalotis	Western harvest mouse
Peromyscus maniculatus	Deer mouse
Peromyscus boylii	Brush mouse
Canidae	**Foxes, wolves and relatives**
Canis latrans	Coyote
Urocyon cinereoargenteus	Gray fox

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

APPENDIX B

SITE PHOTOGRAPHS

Looking at lot 20

Looking at east of lot 20

Looking at Trapping Area G

SKR burrows in lot 20

Trapping Area M

APPENDIX C

CNDDB FORMS

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 11-29 & 12-6 2009

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: Dipodomys stephensi

Common Name: Stephen's Kangaroo Rat

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 14 Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☐ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: PHILIPPE VERGNE
Address: PO Box 2612
Perris, CA 92065
E-mail Address: PNVERGNE@HOTL.COM
Phone: (619) 885-0236

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

# adults	# juveniles	# larvae	# egg masses	# unknown
14				

☐ wintering ☑ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ other

Location Description **(please attach map AND/OR fill out your choice of coordinates, below)**

County: Riverside Landowner / Mgr.: NO

Quad Name: _____ Elevation: _____

T____ R____ Sec ____, ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): _____

T____ R____ Sec ____, ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☐

Coordinates:

See map

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*

Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Sparse Coastal Sage Scrub & Disturbed Annual Grassland

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☐ Good ☑ Fair ☐ Poor

Immediate AND surrounding land use: Open Space, Rural Houses, Agricultural

Visible disturbances: ORV, Ag., grading

Threats: Construction, Agriculture

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

Konecny Biological Services
Biological Consulting, Research, Conservation

April 14, 2010

Brian F. Smith & Associates
14010 Poway Road, Suite A
Poway, CA 92064

Attn: Mr. Larry Dean

Re: Results of a Focused Survey for the Coastal California Gnatcatcher at the Mockingbird Connector Corona Feeder Alignment, Riverside County, California, 2010.

Dear Mr. Dean:

This letter report presents the results of focused surveys for the coastal California gnatcatcher (*Polioptila californica californica*) (gnatcatcher) at the Mockingbird Connector Corona Feeder (Mockingbird Connector) Alignment in Riverside County, California. The gnatcatcher is listed as a threatened species by the United States Fish and Wildlife Service (USFWS). The California Department of Fish and Game (CDFG) consider the gnatcatcher to be a California Species of Special Concern (CSSC).

Surveys for the gnatcatcher were conducted following protocol approved by the USFWS (USFWS 1997), for jurisdictions not participating in the Natural Communities Conservation Program (NCCP) and the Endangered Species Act section 4(d) process. This activity is authorized by USFWS section 10(a) permit number TE837308-5, and a CDFG Memorandum of Understanding. The gnatcatcher surveys were conducted by wildlife biologist John Konecny.

INTRODUCTION

The gnatcatcher is a small gray songbird that is an obligate resident of coastal sage scrub (CSS) dominated plant communities. Its range occurs from approximately 30 degrees north latitude in Baja California, Mexico, northward to southern Ventura County in southern California, and includes the Counties of San Diego, Riverside, Orange, Los Angeles, Ventura, and San Bernardino (Atwood 1992). United States populations of the gnatcatcher have undergone decline due to the loss and fragmentation of coastal sage scrub habitat resulting from urban development and agricultural activities.

Gnatcatchers usually begin to molt into breeding plumage in early February (Grishaver *et al* 1998). Males select the site for nesting, and nest building begins two to four weeks after the molt. The nest is constructed primarily by the male, and takes between four and eleven days to complete. If there is persistent predation, up to ten nests can be constructed. Eggs are incubated for twelve days, and nestlings fledge at 13 days. Young remain with their parents for three to five weeks after fledging.

Coastal sage scrub is a native plant community composed of relatively low growing, dry season deciduous, and succulent plants. Riversidean sage scrub (RSS) is the most xeric form of sage scrub in southern California from central Los Angeles County to the Mexican frontier along the coastal base of the Transverse and Peninsular ranges (Holland 1986). Characteristic species of

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this plant community include California sagebrush (*Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum*), desert Encelia (*Encelia farinose*), white sage (*Salvia apiana*), hoary saltbush (*Atriplex canescens*), deer weed (*Lotus scoparius*), Yerba Santa (*Eriodictyon crassifolium*), and Our Lord's Candle (*Yucca whipplei*).

PROJECT LOCATION

The Mockingbird Connector is located approximately five miles northeast of Lake Mathews and six miles south of the City of Riverside in western Riverside County, California (Figure 1). Specifically, the project site is located in Township 4 South, Range 5 West, and in an unnumbered section of the Riverside West, California 7.5 minute quadrangle.

PROJECT SITE DESCRIPTION

The Mockingbird Connector site is a predominantly agricultural site, surrounded by other agricultural and a residential development in the southeast corner. Two patches of RSS are present on the site. The northern patch is approximately 31 acres (12 hectare) and is relatively flat. This patch is bisected by a dirt road running east to west. The vegetation community is primarily low growing California sagebrush and desert Encelia intermixed with mustard (*Brassica* sp.). The RSS is denser in the northern half of this patch, and an unnamed drainage bisects the southern half.

The southern patch is approximately nine acres (3.6 hectare) and is physically separated from the northern patch by a residential development. The southern patch is topographically high relief with several steep sided slopes. The vegetation in this patch is a taller RSS, composed of California sagebrush and desert Encelia with intermixed Mexican elderberry (*Sambucas mexicanus*) and mustard. Van Buren Boulevard borders the site on the southwest. Elevation of the Mockingbird Connector site ranges from 1070 feet (326 meters) above Mean Sea Level (MSL) in the southwest corner to 1180 feet (360 meters) above MSL in the northeast corner.

METHODS

Pursuant to USFWS protocol for jurisdictions not participating in the NCCP and section 4(d) process, nine focused surveys for the gnatcatcher were conducted at the Mockingbird Connector site between and December 6th 2009, and March 30th, 2010 to determine presence or absence of the gnatcatcher. The surveys were conducted two weeks apart. Surveys were conducted in all RSS habitat within the Mockingbird Connector site. Surveys were generally conducted between the hours of 0700 and 1100. Each of the nine surveys lasted approximately four hours.

Field survey methods consisted of the surveying biologist walking slowly around the construction site and carefully recording all animal species observed or heard in the vicinity. Initial attempts to locate gnatcatchers were done passively (visually). Digital vocalizations of the gnatcatcher were played with and iPOD and amplified speakers after initial passive attempts to locate gnatcatchers failed. Survey dates, survey personnel, times, and environmental conditions are summarized in Table 1.

Table 1. Summary of Weather Conditions During Nine Focused Coastal California Gnatcatcher Surveys at the Mockingbird Connector Corona Feeder Site, Riverside County, California, 2010.

Survey #	Date	Surveyor (Species)*	Time	Weather Conditions
1	12/06/09	JK (CAGN)	0715-1230	100% overcast, 42-54°F, wind 1-3 mph
2	12/20/09	JK (CAGN)	0705-1115	50% overcast, 54-62°F, wind 1-3 mph
3	01/03/10	JK (CAGN	0710-1110	10% overcast, 49-72°F, wind 3-10 mph
4	01/16/10	JK (CAGN)	0700-1110	40% overcast, 44-59°F, wind3-5 mph
5	01/30/10	JK (CAGN)	0655-1100	40% overcast, 40-56°F, wind 3-5 mph
6	02/13/10	JK (CAGN)	0705-1100	100% overcast, 45-70°F, wind 1-3 mph
7	02/28/10	JK (CAGN)	0715-1120	20% overcast, 42-57°F, wind 5-10 mph
8	03/16/10	JK (CAGN)	0705-1115	100% overcast, 57-75°F, wind 7-12 mph
9	03/30/10	JK (CAGN)	0650-1055	40% overcast, 47-65°F, wind 7-10 mph

* JK - John Konecny; CAGN - California Gnatcatcher

RESULTS and DISCUSSION

One pair of gnatcatchers were detected in the northern patch of RSS (Figure 2) on the Mockingbird Connector site. These gnatcatchers were observed on five of the nine visits and were usually present in the northern half of the patch. Only on one occasion were they observed south of the dirt road. The sightings are clustered in an approximate 15 acre (6 hectare) area, and I would conclude this is the only pair present.

No gnatcatchers were detected in the southern patch of RSS. This patch is physically isolated from the northern patch. While it has the constituent elements of gnatcatcher habitat, i.e. California sagebrush and desert Encelia, it is relatively small (less than 10 acres), and completely surrounded by agricultural and development. No other federal or state listed endangered or threatened species were detected on the site. No other CSSC species were detected.

Few bird species were detected during the nine surveys, but those species found are typical of the Riverside area at this time of the year and include: red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), Nuttal's woodpecker (*Picoides nuttallii*), black phoebe (*Sayornis nigricans*), Cassin's kingbird (*Tyrannus vociferans*), American crow (*Corvus brachyrhynchos*), western scrub jay (*Aphelocoma californica*), bushtit (*Psaltriparus minumus*), Bewick's wren (*Thryomanes bewickii*), northern mockingbird (*Mimus polyglottis*), yellow-rumped warbler (*Dendroica coronata*), orange-crowned warbler (*Vermivora celata*), California towhee (*Pipilo crissalis*), spotted towhee (*P. maculatus*), white-crowned sparrows (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), lesser goldfinch (*Carduelis psaltria*), and house finch (*Carpodacus mexicanus*).

The following is recommended: 1) If gnatcatcher habitat is impacted directly or indirectly, the project proponents shall consult with the Service pursuant to section 7 of the Endangered Species Act over the "may effect" to the gnatcatcher. Construction shall not occur in suitable habitat for this species until the consultation is complete and any actions recommended by the Service are in place.

CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. The results of focused surveys for listed species are typically considered valid for one year by the USFWS and CDFG. If you have any questions or require additional information, please call me at (760) 489-5276.

Sincerely,

John K. Konecny
Wildlife Biologist
TE837308-5

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Figure 1. **Location of the Focused California Gnatcatcher Survey Area (red circles) at the Mockingbird Connector Corona Feeder Site, County of Riverside, 2010.**

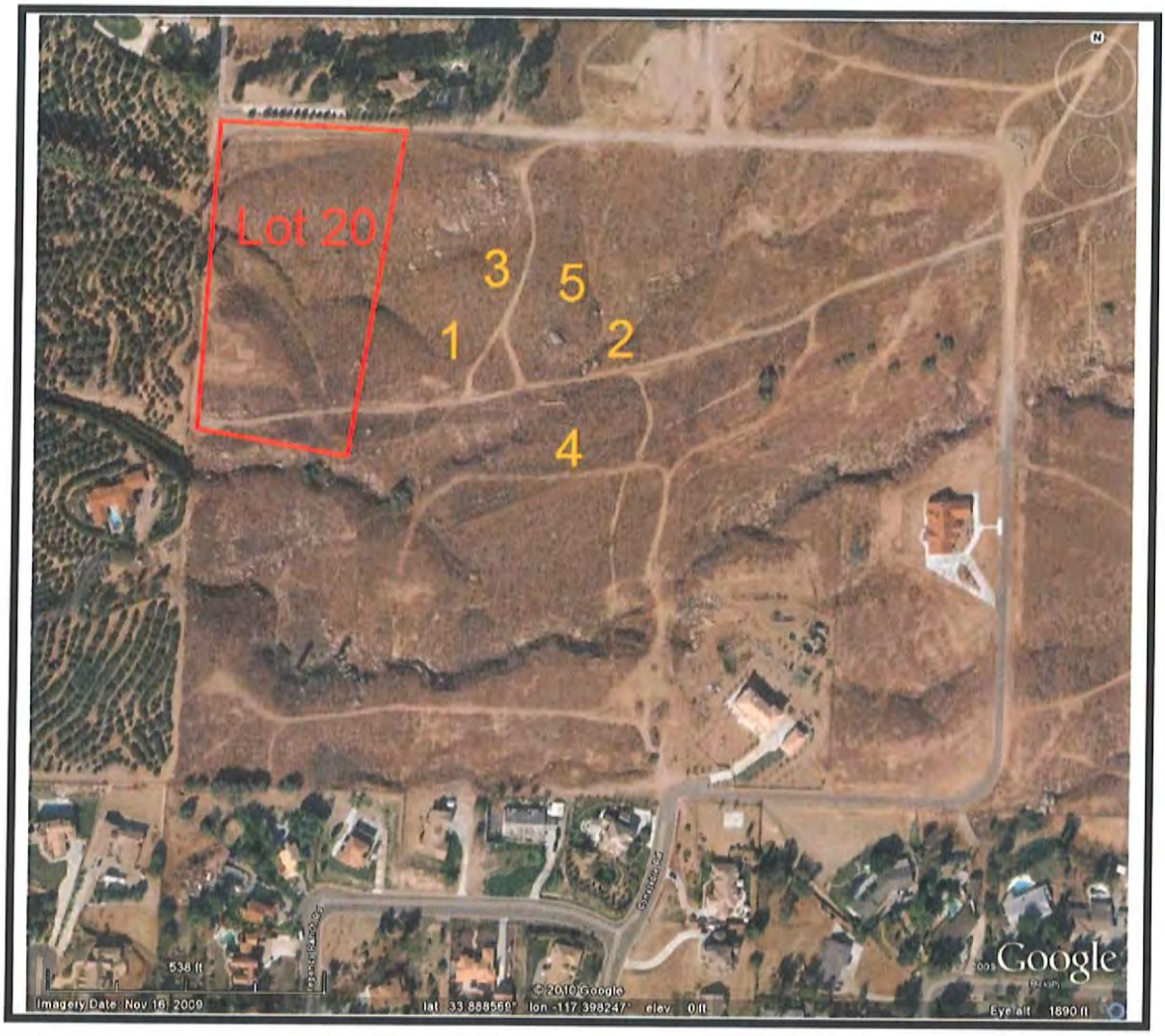

Figure 2. **Location of California Gnatcatchers Detected During the Mockingbird Connector Corona Feeder Focused Survey, County of Riverside, 2010. (Detection Dates: 1) – 6 December, 2009; 2) – 3 January, 2010; 3) – 16 January, 2010; 4) – 13 February, 2010; 5) – 16 March, 2010).**

FOCUSED SURVEYS FOR THE WESTERN BURROWING OWL *(Athene cunicularia hypugaea)* ALONG THE RIVERSIDE – CORONA FEEDER PROPOSED MOCKINGBIRD CONNECTION COUNTY OF RIVERSIDE, CALIFORNIA

Prepared for:

Albert A. Webb and Associates
3788 McCray Street
Riverside, California 92506

Prepared by;

Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

1 March 2010

1.0 SUMMARY

Focused winter surveys for the western burrowing owl (*Athene cunicularia hypugaea*) were conducted along the Riverside – Corona Feeder Proposed Mockingbird Connection alignment in January and February 2010. Suitable habitat was encountered at several locations; however, burrowing owls or evidence of their presence were not observed.

A winter survey does not provide conclusive evidence of the presence or absence of burrowing owls. A nesting season survey (February 1 through August 31) must be conducted to determine if nesting burrowing owls may be present. A nesting season survey is important because it is during the nesting period that the greatest amount of damage may be done to nests, eggs, young and brooding adults.

2.0 INTRODUCTION

The western burrowing owl has not been listed under state and federal endangered species acts. It is however, protected under the Migratory Bird Treaty Act of 1918, which makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Title 50 of the Code of Federal Regulations (CFR) Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by 50 CFR 21. The California Department of Fish and Game considers the burrowing owl to be a "Species of Special Concern" and the U. S. Fish and Wildlife Service considers the burrowing owl a "Bird of Conservation Concern." Although these terms do not have legal status, they refer to species that are in jeopardy of being listed as threatened or endangered. "Species of Special Concern" are required to be treated as if they were listed species for purposes of the California Environmental Protection Act. "Birds of Conservation Concern" are to be treated as listed species for all actions with a federal nexus, such as funding or actions on federal lands.

Burrowing owls tend to prefer areas with good horizontal visibility, low ground cover density and elevated perches; factors providing for easy detection of prey and predators. Burrowing owls are generally found in dry, open treeless areas such as agricultural lands, annual and perennial grasslands, deserts, and arid scrublands with low-growing vegetation. Burrowing owls may also be found on golf courses, cemeteries, airports, in vacant lots and along road shoulders. This species uses burrows of burrowing mammals, rock outcrops, culverts, debris piles and similar structures for nest sites. In Riverside County, these owls occur most often in agricultural areas and grasslands (MSHCP 2003).

A habitat assessment was prepared for the Proposed Mockingbird Connection pipeline alignment in December 2009. During site visits in September 2009, it was determined suitable habitat for the western burrowing owl occurs in Riversidean Sage Scrub along the alignment and

burrowing owl sign was observed near suitable burrows in Riversidean Sage Scrub near Lot 20. The sign consisted of regurgitated pellets made up of insect parts (Darkling beetle [genus *eleodes*] carapace fragments) deposited around a large rock outcrop. The outcrop had also been "whitewashed" by birds using the rocks as a perch or roost. Based on suitable habitat and burrowing owl sign, it was determined that focused surveys for burrowing owls should be conducted along the Proposed Mockingbird Connection pipeline alignment.

2.1 Project Location

The Proposed Mockingbird Connection Project area is located in Western Riverside County, California (Figure 1). The pipeline alignment begins at the intersection of the Metropolitan Water District's right-of-way with Van Buren Boulevard. The alignment follows the right-of-way north, and then turns east until it intersects Constable Road. It then follows Constable Road north until it ends. At that point, the alignment follows an unnamed dirt road north approximately 0.1 miles, then turns west for 0.3 miles until it intersects Irving Street, then proceeds northwest on Irving Street (Figure 2) to connect to the La Sierra Pipeline.

2.2 Project Description

The project area consists of approximately 5,900 linear feet of pipeline, up to 42-inch diameter, located within street right-of-ways and within pipeline easements within the City of Riverside and adjacent unincorporated Riverside County; a five-million-gallon reservoir; and, an associated pump station. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through existing pipeline easements to connect to the proposed pump station and reservoir to be constructed on Lot 20. The pipeline will then extend east within an existing pipeline easement, and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross underneath Van Buren Boulevard to connect to Western Municipal Water District's existing Mockingbird Booster Station. The pump station will include pumps and flow control facilities to convey water in either direction (Figure 3).

3.0 METHODS

The focused survey areas were determined by placing a 150-meter buffer on both sides of the proposed alignment and around all proposed pump stations and storage tanks. The burrowing owl survey protocol requires that a 150-meter buffer around the project area be included in the survey area (Appendix B). The area within the buffer was assessed to determine where survey efforts would be focused. Once survey areas were identified focused surveys were conducted (Figure 4).

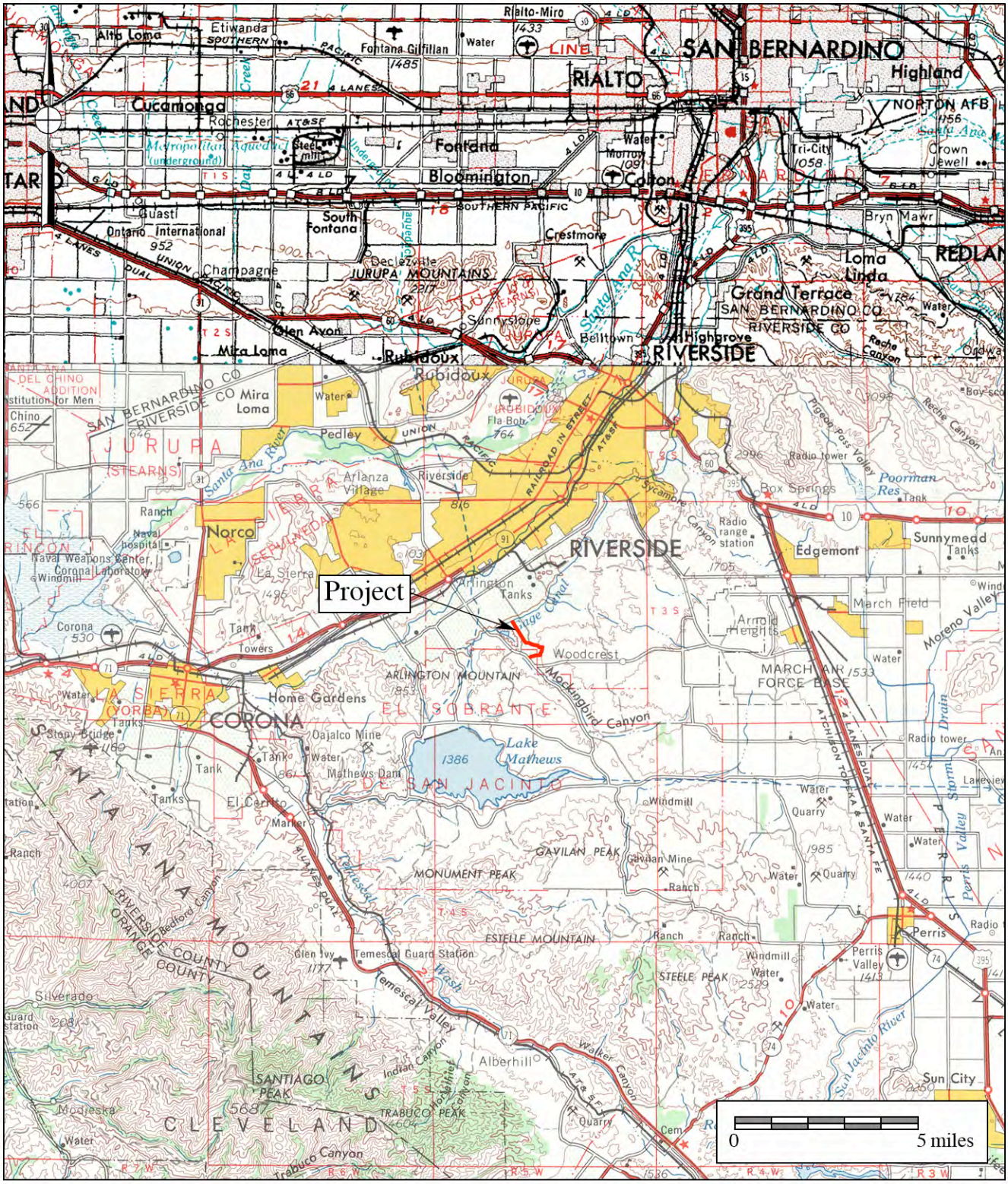

Figure 1

General Location Map

Riverside–Corona Feeder, Proposed Mockingbird Connection

USGS *San Bernardino* and *Santa Ana* (1:250,000 series)

Brian F. Smith and Associates, Inc. Environmental Consultants

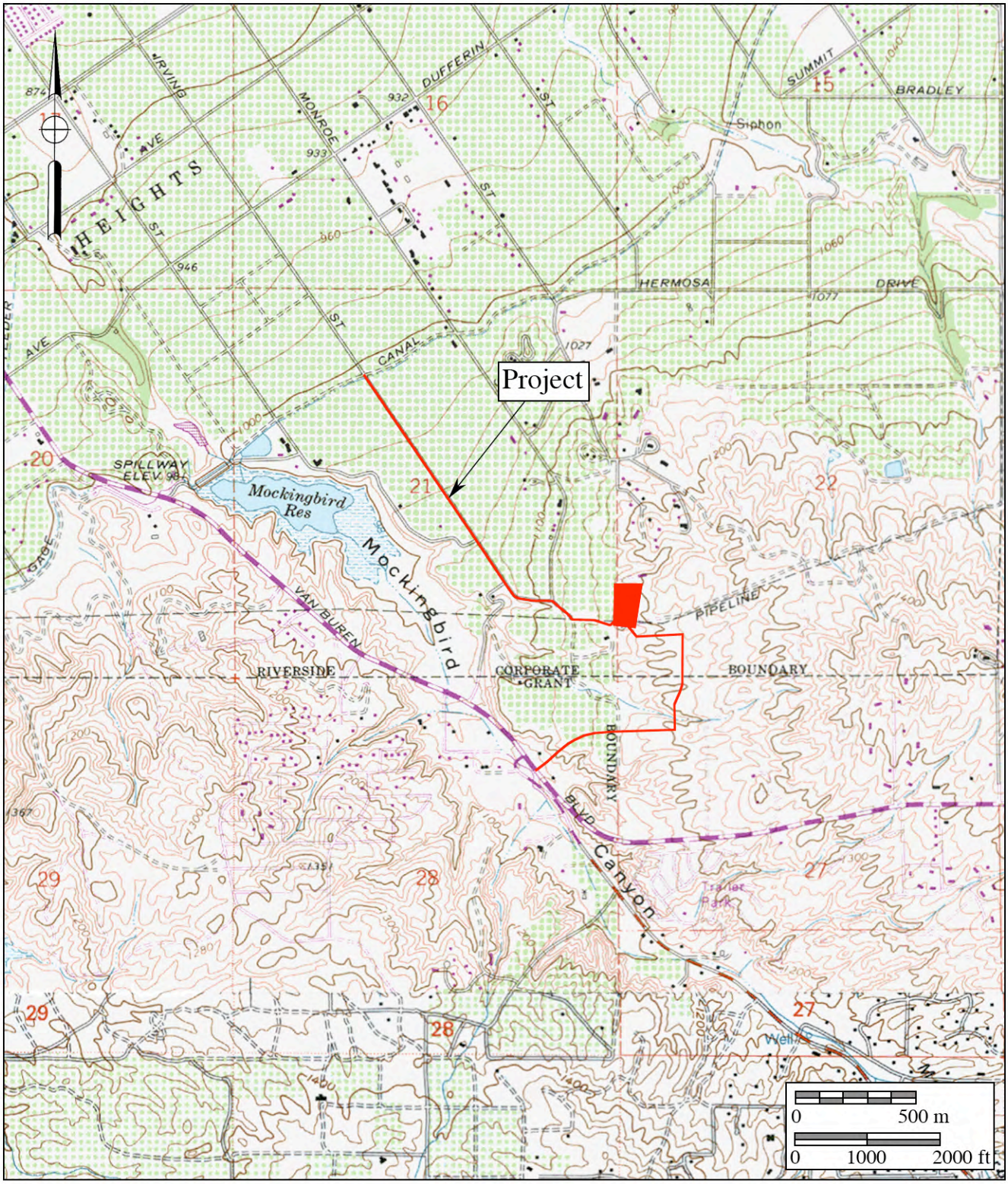

Figure 2

Project Location Map

Riverside–Corona Feeder, Proposed Mockingbird Connection

USGS *Riverside West* and *Lake Mathews* Quadrangles (7.5 minute series)

Brian F. Smith and Associates, Inc. Environmental Consultants

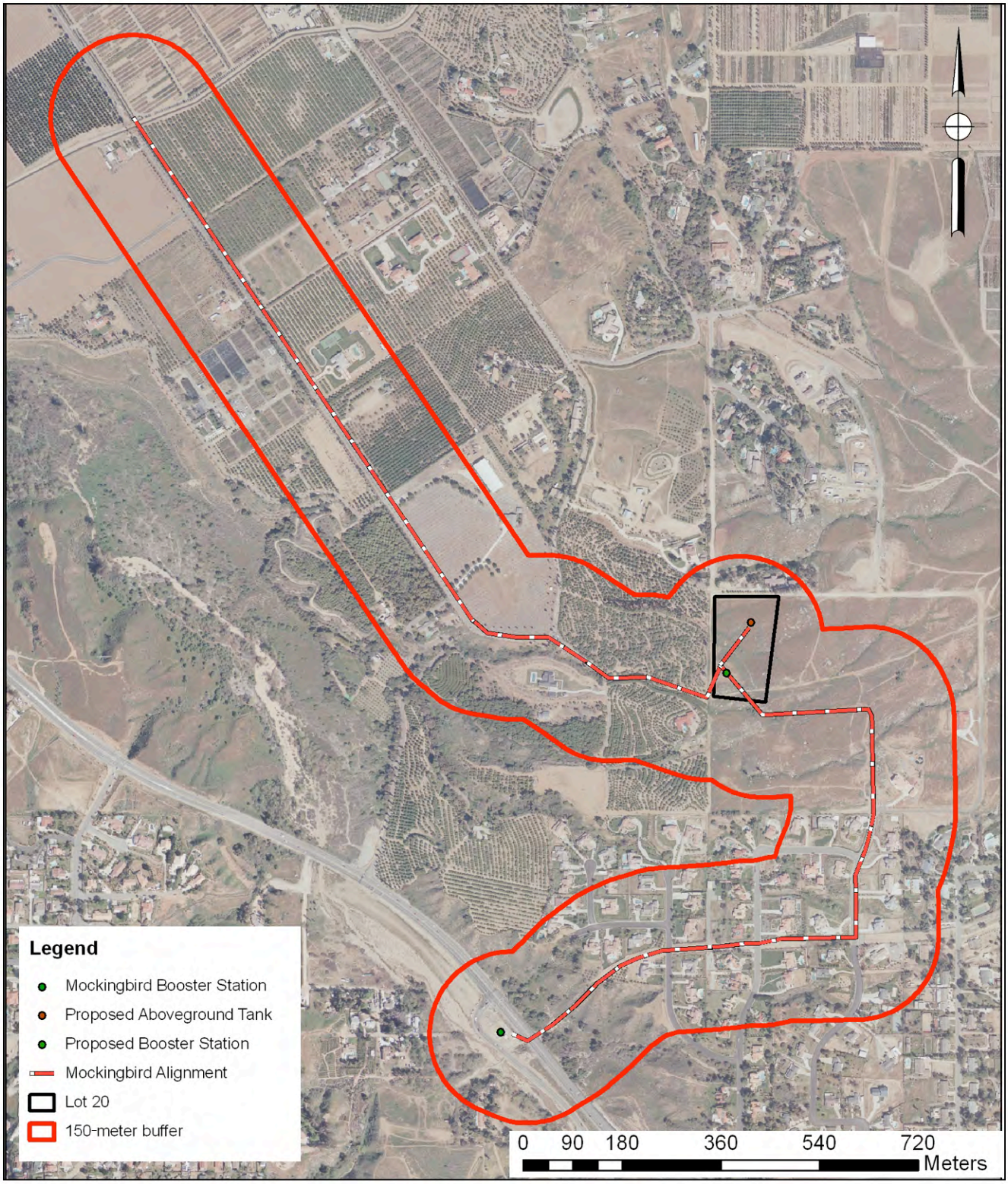

Figure 3

General Site Plan

Proposed Mockingbird Connection

Brian F. Smith and Associates, Inc. • Environmental Consultants

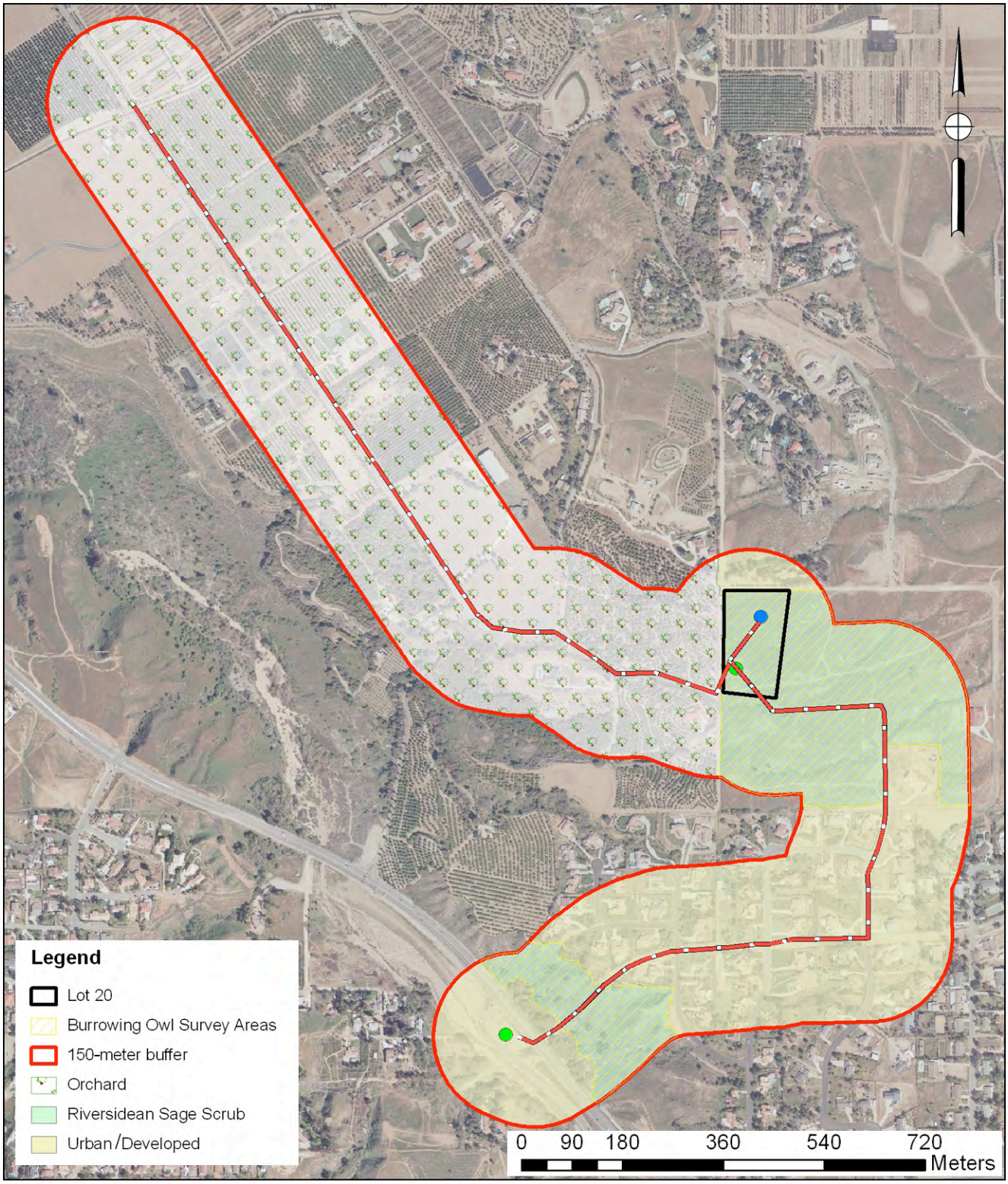

Figure 4

Burrowing Owl Survey Areas

Proposed Mockingbird Connection

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Focused burrowing owl surveys consist of four parts: habitat assessment, burrow survey and mapping, owl census and mapping, and preparation of a written report of findings.

The burrow survey is intended to identify burrows within the project area and in the surrounding buffer that could be used by burrowing owls. During this phase, all suitable burrows are mapped and examined for sign of burrowing owl presence. Suitable burrows were identified by walking the area in a grid pattern recording all suitable burrows encountered. Burrows were recorded with a Trimble GeoXT Data Logger containing Terrasync software. Field data was corrected with Pathfinder Office and exported as a shapefile to ArcGIS Desktop 9.2. ArcGIS was used to analyze the relationship of suitable burrows to the proposed project area.

If there are burrows present that could be used by burrowing owls, a determination must be made regarding the presence or absence of burrowing owls. This is done by visiting previously mapped suitable burrows on four different days. Visits must be made from one hour before sunrise to two hours after sunrise or one hour before sunset to two hours after sunset. During these visits, all burrows actively occupied by burrowing owls or with evidence of burrowing owl use are observed and recorded.

Generally two seasonal surveys are required. If burrowing owls are not observed during the nesting season survey, a survey for winter residents is to be conducted as well.

4.0 RESULTS

4.1 Habitat Assessment

A habitat assessment was prepared for the proposed project in December 2009. The assessment (Appendix A) provides a more detailed discussion of the project setting than is presented here.

4.2 Plant Communities

The Proposed Mockingbird Connection alignment traverses Urban/Developed, Riversidean Sage Scrub and Orchard plant communities. Burrows suitable for use by burrowing owls were observed in areas of Riversidean Sage Scrub occurring along the alignment (Figure 5).

Riversidean Sage Scrub occurs along the coastal base of the Transverse and Peninsular Ranges of southern California from Los Angeles to the U. S./Mexico border. Riversidean Sage Scrub is found on drier sites and is dominated by California sage, California buckwheat and red brome. The Riversidean Sage Scrub occurring along the proposed alignment is predominantly Encelia (*Encelia farinosa)* and California buckwheat (*Eriogonum fasiculatum)* with scattered California sage (*Artemisia californica)*, and white sage (*Salvia mellifera)*. Non-native grasses

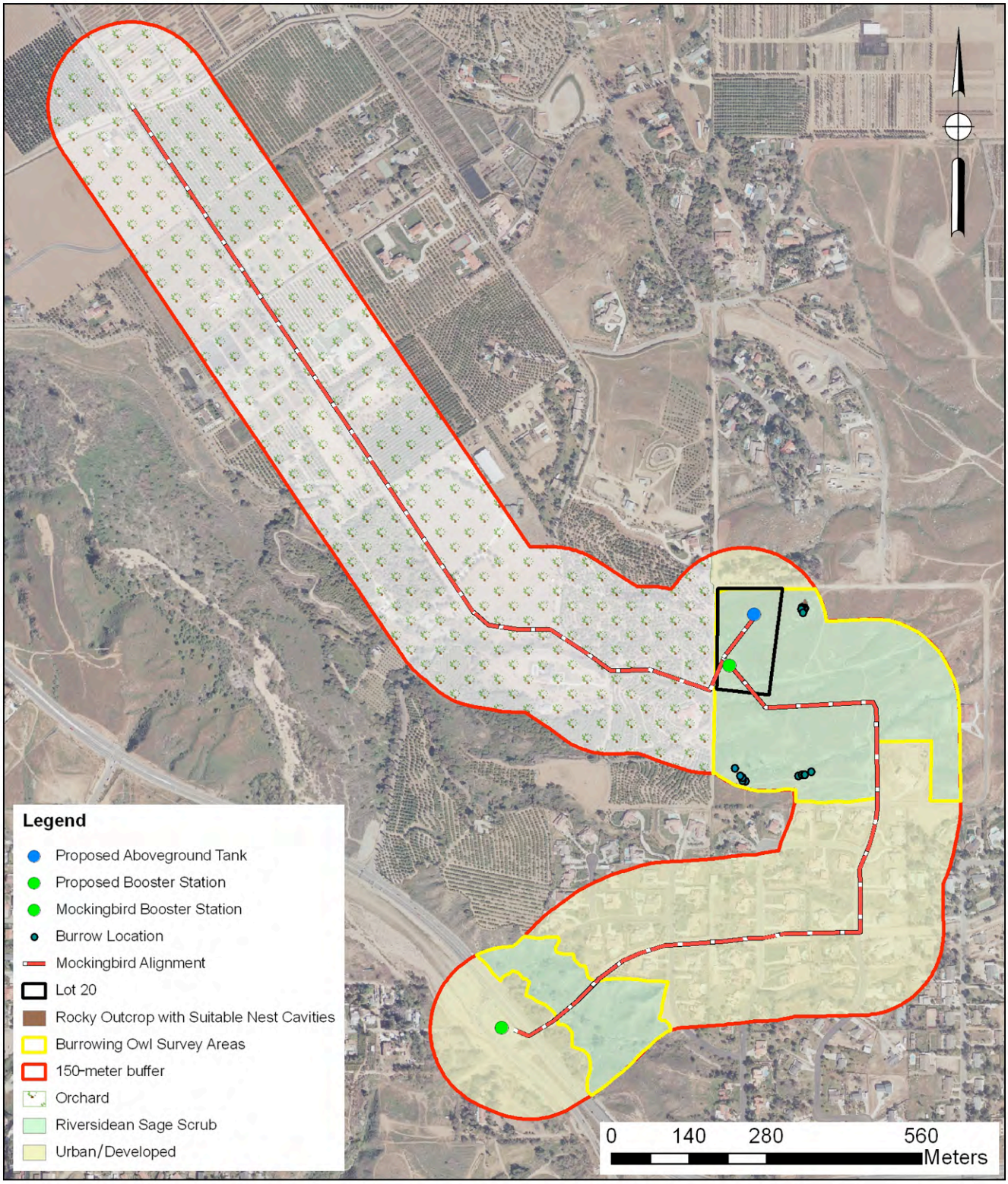

Figure 5

Burrowing Owl Results

Proposed Mockingbird Connection

such as *Bromus madritensis* and *Avena fatua* occur throughout, particularly in areas that have been disturbed. A list of plants observed during site visits is provided in Table 1.

Table 1
Plant Species Observed
Riverside – Corona Feeder
Proposed Mockingbird Connection

Common Name	*Scientific Name*	Habitat
Red brome	*Bromus madritensis rubens*	U/D, RSS, O
Wild oat	*Avena fatua*	U/D, RSS, O
Rip-gut brome	*Bromus diandrus*	U/D, RSS
Telegraphweed*	*Heterotheca grandiflora*	U/D, O
Horseweed*	*Conyza canadensis*	U/D, O
Sheep sorrel*	*Rumex acetosella*	U/D
Western ragweed*	*Ambrosia psilostachya*	U/D
Short-pod mustard	*Hirschfeldia incana*	U/D, O
Black mustard	*Brassica nigra*	U/D, RSS, O
Rock-cress*	*Arabis sp.*	RSS
Fiddleneck*	*Amsinckia menziesii*	*RSS*
Jimson weed/sacred datura*	*Datura wrightii*	RSS
Dove weed*	*Croton setigerus*	U/D, RSS
Climbing milkweed*	*Sarcostemma cynanchoides*	RSS
Tree tobacco	*Nicotiana glauca*	U/D, RSS
California sage*	*Artemisia californica*	RSS
White sage*	*Salvia mellifera*	RSS
Tumbleweed	*Salsola kali*	U/D, RSS, O
California buckwheat*	*Eriogonum fasiculatum*	RSS
Fan palm	*Washingtonia sp.*	U/D
Wild aster*	*Erigeron foliosus*	RSS
Coastal cholla*	*Opuntia parryi*	RSS
Stinging nettle*	*Urtica dioica*	R/R
Cow parsnip*	*Heracleum maximum*	R/R
Sunflower*	*Helianthus*	U/D, RSS
Blue elderberry*	*Sambucus mexicana*	RSS
Cattail*	*Typha sp.*	R/R
Peruvian pepper tree	*Schinus molle*	RSS
Filaree	*Erodium cicutarium*	U/D, RSS
Mulefat*	*Baccharis salicifolia*	R/R

U/D=Urban/Developed; RSS Riversidean Sage Scrub; R/R=Riparian/Riverine; O=Orchard; *=Native

4.3 Fauna

Wildlife observed along the Proposed Mockingbird Connection alignment and on Lot 20 was a mixture of wildlife typical of urban areas, agriculture and sage scrub. Species observed include black-tailed jack rabbit, brush rabbit, killdeer, American crow, sage sparrow, rufous-crowned sparrow, California ground squirrel, side-blotched lizard and coastal whiptail. Sign of coyote, raccoon, woodrat, and kangaroo rat were observed in the areas surveyed. A list of species observed is provided in Table 2.

Table 2
Animal Species Observed Directly or Indirectly
Riverside – Corona Feeder
Proposed Mockingbird Connection

Common Name	***Scientific Name***
Anna's hummingbird	*Calypte anna*
Rock wren	*Salpinctes obsoletus*
House finch	*Carpodacus mexicanus*
Black Phoebe	*Sayornis nigricans*
American crow	*Corvus brachyrhynchos*
California towhee	*Pipilo crissalis*
Killdeer	*Charadrius vociferus*
Rufous-crowned sparrow	*Aimophila ruficeps*
Sage sparrow	*Amphispiza belli*
Mourning dove	*Zenaida macroura*
Western burrowing owl	*Athene cunicularia hypugaea*
Side-blotched lizard	*Uta stansburiana*
Western fence lizard	*Sceloporus occidentalis*
Granite spiny lizard	*Sceloporus orcutti*
Wood rat	*Neotoma sp.*
Kangaroo rat	*Dipodomys sp.*
California ground squirrel	*Spermophilus beecheyi*
Brush rabbit	*Sylvilagus bachmani*
Black-tailed jack rabbit	*Lepus californicus*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*

4.4 Burrow Survey and Mapping

The potential survey area is outlined in red on Figure 4. This figure represents a 150-meter buffer on each side of the Proposed Mockingbird Connection pipeline alignment and around Lot 20 and proposed booster pump and storage tank locations. Not all of the area delineated for focused surveys was actually surveyed. The residential area at the south end of the survey area was not included in the survey, as suitable habitat is not present in this area. Developed land on the south end of the property was not included in the surveys either. This area includes Van Buren Boulevard, a paved access road and an existing pump station. An area on the northeast end of the residential development could not be surveyed in detail. This area is fenced private property and the owner denied access. Orchards on the north end of the pipeline alignment were not surveyed in detail, as they are all private property and the owners could not be found to request permission to enter. Although these areas could not be surveyed in detail, they were carefully scanned with binoculars and a high power spotting scope.

The areas outlined in yellow on Figure 4 were those areas that were surveyed in detail. The remaining areas, with the exception of the residential development, were examined at a distance with binoculars and a high power spotting scope. All of the proposed pipeline alignment was accessible and was examined for suitable habitat and indications that burrowing owls may be present.

4.5 Owl Census

At the time of the focused burrow search on January 11, 2010, a search for burrowing owls was also conducted. Three more searches for burrowing owls were conducted on January 13, February 2, and February 4, 2010. A total of four searches for burrowing owls have been conducted. Burrowing owls and evidence of burrowing owls was not encountered during any of the focused surveys.

The survey protocol requires that at least five days must pass from the date of last rainfall and the conduct of a survey. Rains during late December 2009 and in January and early February 2010 delayed field surveys. Weather conditions at the time of site visits are described in Table 3. Western Burrowing Owl Habitat Assessment and Focused Survey field forms are included in Appendix C. These forms include information on survey times and dates, weather conditions and burrows observed.

Table 3 Conditions During Site Visits Riverside – Corona Feeder Proposed Mockingbird Connection				
Date	**Visibility**	**Wind**	**Temperature***	**Time of Survey**
11 January 2010	10 miles	3 mph	43°F	0555-0855
13 January 2010	5 miles	0-3 mph	43°F	0555-0855
2 February 2010	3-5 miles	0-3 mph	53°F	0545-0845
4 February 2010	3-5 miles	0-3 mph	52°F	0545-0845

5.0 DISCUSSION

Burrows suitable for use by burrowing owls were encountered during surveys made between January 11 and February 4, 2010. Burrowing owls or sign of burrowing owl presence were not observed. Burrowing owls were not present within the Proposed Mockingbird Connection alignment or in the surrounding 150-meter buffer in January and February 2010. However, when site visits were made in September 2009 as part of a habitat assessment for the project, sign of burrowing owl use were present in a rock outcrop approximately 50 meters east of Lot 20 (see Figure 5). The sign consisted of several regurgitated owl pellets made up of insect parts. When this area was revisited in January and February 2010 the pellets could not be found. Pellets made up of insect parts are very fragile and may have been broken up and the remnants scattered by the heavy rains.

The majority of the burrows encountered during the 2010 winter surveys was 100 to 150 meters away from the proposed pipeline alignment and would not be disturbed by the proposed action (see Figure 5). Some of the burrows and nesting cavities that were observed are within 50 to 75 meters of the boundary of Lot 20 (see Figure 5). For the purposes of this report, the boundary of Lot 20 is considered the limits of construction for that portion of the project area.

6.0 RECOMMENDATIONS

6.1 Nesting Season Focused Surveys

The burrowing owl survey guidelines require that a nesting season survey should be conducted between February 1 and August 31 to determine if nesting burrowing owls are present. If burrowing owls are not detected, then a winter survey shall be conducted to determine if wintering owls are present. For this project, the wintering survey was conducted first. No evidence of burrowing owls was detected. This does not ensure that nesting owls will

not be present. Disturbance during the nesting season has the greatest potential for doing harm to burrowing owls by destroying nests, eggs, young birds and brooding adults. Therefore, a nesting season survey shall be conducted prior to any disturbance of the proposed project area in the vicinity of known suitable burrows. Based on the information presented in this report, the nesting season survey may be limited to the burrows and nesting cavities adjacent to Lot 20.
If burrowing owls are determined to be present within the proposed project area or in the adjacent buffer, steps shall be taken to avoid adverse project-related effects to burrowing owls or their habitat. The survey protocols for burrowing owls define adverse project-related effects as:

- Disturbance within 50 meters of an occupied burrow,
- Destruction of burrows and burrow entrances,
- Degradation of foraging habitat adjacent to occupied burrows.

The following steps are recommended to avoid adversely affecting burrowing owls that may be present within or in the vicinity of the proposed project.

- No disturbance shall occur within 50 meters of occupied burrows during the non-breeding season, September 1 through January 31.
- No disturbance shall occur within 75 meters of occupied burrows during the breeding season, February 1 through August 31.
- A minimum of 6.5 acres of foraging habitat per pair or single resident bird shall be maintained around each burrow site.

6.2 30-Day Pre-Construction Survey

If clearing, grubbing and grading does not start within 30 days of the nesting season, then a 30-Day Pre-Construction Survey shall be conducted regardless of the results of the nesting season survey.

6.3 Protection of Nest Sites

If burrowing owls are determined to be present, in order to ensure that active burrows are not disturbed and to minimize disturbance to nesting burrowing owls, the limits of construction on Lot 20 shall be modified to exclude the area within 75 meters of the burrows (see Figure 5).

6.4 Equipment and Materials Storage

All equipment shall be yarded on existing roads or within the limits of construction of Lot 20. All construction materials will be stockpiled on existing roads or within the limits of construction of Lot 20.

6.5 Monitoring

The limits of construction as described in Section 6.3 (above) and in Figure 5 shall be fenced with orange vinyl construction barrier material. The limits of construction shall be monitored weekly by the project biologist to ensure active burrows are not disturbed. During these inspections, yarding of equipment and materials stockpiles shall also be inspected to ensure they are in compliance with the recommendations outlined in this section.

7.0 CERTIFICATION

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

DATE: 1 March 2010 SIGNED: _____

Laurence N. Dean, Senior Biologist

8.0 LITERATURE CITED

MSHCP 2003. Western Riverside County Multiple Species Habitat Conservation Plan, County of Riverside Transportation and Land Management Agency, Riverside, California.

APPENDIX A

Biological Assessment CEQA
Riverside – Corona Feeder
Proposed Mockingbird Connection
December 4, 2009

BIOLOGICAL ASSESSMENT
CEQA
RIVERSIDE – CORONA FEEDER

PROPOSED MOCKINGBIRD CONNECTION

Prepared for:

Albert A. Webb Associates
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Prepared by:

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Revised December 4, 2009

REPORT SUMMARY

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Report Date:	Revised December 4, 2009
Report Title:	Biological Assessment, CEQA, Riverside – Corona Feeder, Proposed Mockingbird Connection
Prepared for:	Albert A. Webb Associates 3788 McCray Street Riverside, California 92506
Lead Agency:	Western Riverside Municipal Water District 450 Alessandro Blvd. Riverside, California 92508
Submitted by:	Brian F. Smith and Associates 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
USGS Quadrangle:	*Riverside West*, California (7.5 minute)
Study Area:	Approximately 18.40 acres

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Summary

The proposed action will not affect state or federally listed species potentially present in the vicinity of the project including dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, or least Bell's vireo.

The proposed action will not affect jurisdictional waters of the United States or the State of California including wetlands and vernal pools, or critical habitat for any listed species.

The proposed action may result in incidental take of the endangered Stephens' kangaroo rat and may adversely affect this species. Focused surveys for Stephens' kangaroo rat shall be conducted prior to any disturbance of suitable habitat. If it is determined that Stephens' kangaroo rat will be affected by the proposed action, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the endangered coastal California gnatcatcher and may adversely affect this species. Focused surveys for coastal California gnatcatcher shall be conducted prior to any disturbance of suitable habitat. If it is determined that coastal California gnatcatcher will be affected by the proposed action, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the western burrowing owl, which is protected under the Migratory Bird Treaty Act and is a California Bird Species of Special Concern (Class 2), and may adversely affect this species. Focused surveys of suitable habitat shall be conducted prior to any disturbance of the habitat. If western burrowing owls are determined to be present, the California Department of Fish and Game shall be consulted to determine how to protect or preserve the owls and sufficient habitat to maintain the owls.

Suitable habitat for Stephens' kangaroo rat, coastal California gnatcatcher, and western burrowing owl will be noted on all grading plans. During construction, suitable habitat shall be protected by erecting orange vinyl fencing along the interface of suitable habitat with the limits of construction. The project biologist shall inspect the barriers throughout construction. If the barrier has been compromised and suitable habitat disturbed, the project biologist shall prepare a report describing the disturbance and recommended restoration or other mitigation.

If mitigated as recommended, the proposed action will not significantly affect biological resources including species listed under state and federal endangered species acts or other species of special concern.

1.0 INTRODUCTION

The purpose of this Biological Assessment is to address the effect of the Riverside – Corona Feeder, Proposed Mockingbird Connection Project on species listed as endangered or threatened under state and federal endangered species acts, and on jurisdictional waters including wetlands and vernal pools.

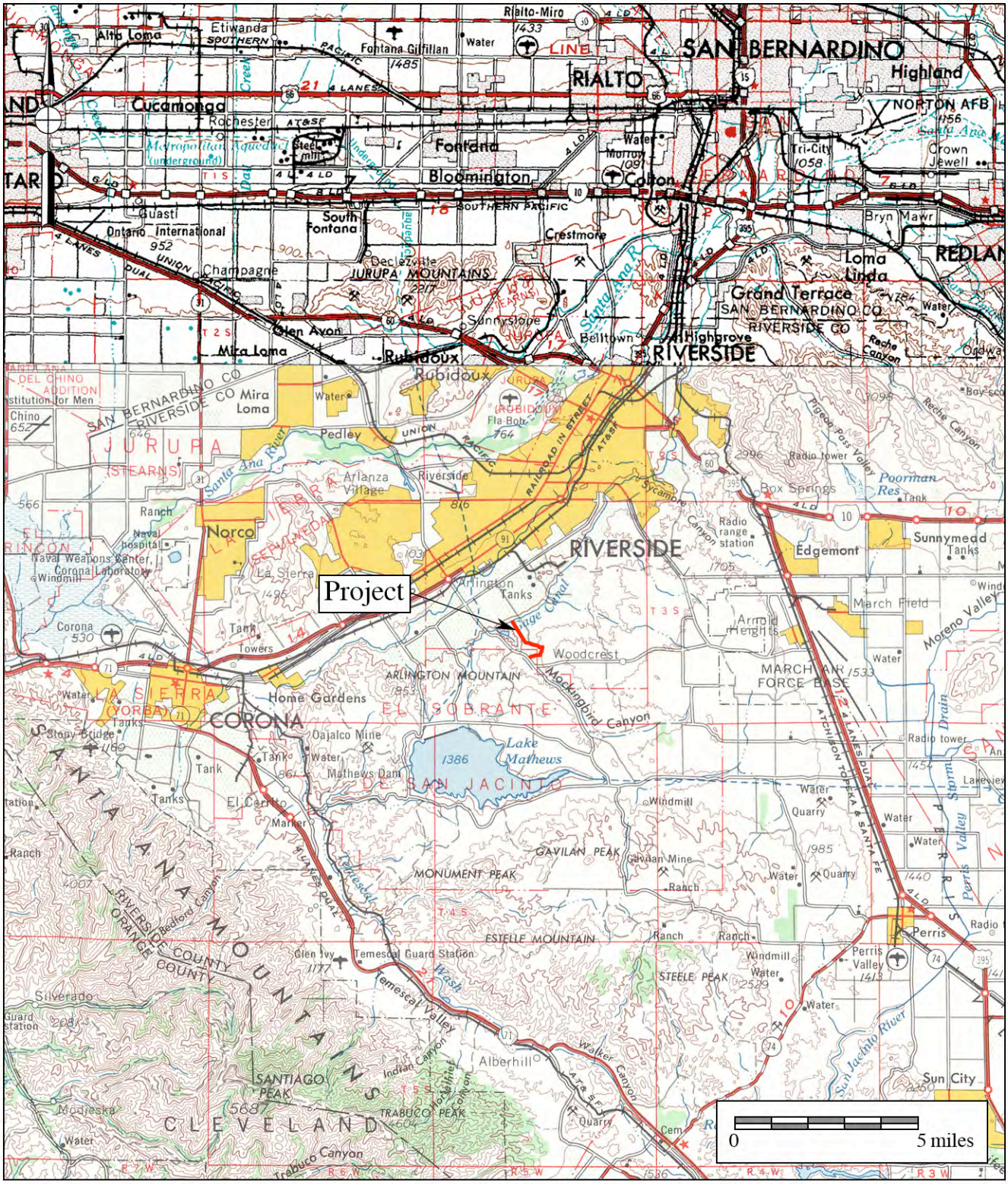
The Western Municipal Water District intends to carry out the construction of the Riverside – Corona Feeder, Proposed Mockingbird Connection under Title IX, Subtitle B, Section 9112 of the Omnibus Public Lands Act of 2009, Public Law 111-11. This biological assessment prepared for Albert A. Webb Associates addresses the proposed action in compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the California Endangered Species Act (Fish and Game Code Section 2050 *et seq*), and provisions of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

2.0 PROJECT LOCATION

The proposed project is located in Western Riverside County, California (Figure 1). The pipeline alignment begins at the intersection with the Metropolitan Water District right-of-way with Van Buren Boulevard. The alignment follows the right-of-way north then east until it intersects Constable Road. It then follows Constable Road north until it ends; at that point the alignment follows an unnamed dirt road north approximately 0.1 miles, then turns west for 0.3 miles until it intersects Irving Street, then proceeds northwest on Irving Street (Figure 2) to Reach E of the Riverside – Corona Feeder, Proposed Mockingbird Connection Project.

3.0 PROJECT DESCRIPTION

The Riverside – Corona Feeder, Proposed Mockingbird Connection Project consists of approximately 5,900 linear feet of pipeline, a five million-gallon reservoir, and a related pump station. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through existing pipeline easements to connect to the proposed pump station and reservoir to be constructed on Lot 20, Approved Tentative Tract 34059, in the City of Riverside. The pipeline will then extend east within an existing pipeline easement, and then south within Constable Road to the existing Mills Gravity Pipeline easement. At that point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to Western Municipal Water District's existing Mockingbird Booster


Project
0
5 miles
SAN BERNARDINO
RIALTO
Highland
NORTON AFB
Cucamonga
Fontana
Bloomington
Colton
Rubidoux
RIVERSIDE
Norco
Corona
Lake Mathews
Woodcrest
Edgemont
Sunnymead
March Field
Perris
Sun City
Alberhill
Mira Loma
Glen Avon
Ontario International
Crestmore
Grand Terrace
Loma Linda
Highgrove
Belltown
Arlington
Home Gardens
Pedley
Riverside
Box Springs
Poorman Res
Arlington Tanks
Mockingbird Canyon
ARLINGTON MOUNTAIN
GAVILAN PEAK
MONUMENT PEAK
ESTELLE MOUNTAIN
STEELE PEAK
SANTIAGO PEAK
TRABUCO PEAK
SANTA ANA MOUNTAINS
JURUPA MOUNTAINS
Santa Ana River
Temescal Valley
Temescal Wash
San Jacinto River
Perris Valley
Moreno Valley
Mockingbird Canyon
Trabuco Canyon
Walker Canyon
Indian Canyon
Silverado
Modjeska
Tri-City
Crown Jewell
Bryn Mawr
Fontana Gilfillan
Rialto-Miro
Etiwanda
Alta Loma
Rochester
Guasti
Champagne
Sunnyslope
South Fontana
Metropolitan Aqueduct (underground)
Steel mill
Morton
Radio tower
Radio range station
Windmill
Quarry
Water
Tank
Cemetery
Naval hospital
Naval Weapons Center, Corona Laboratory
Institution for Men
Chino
Ranch
Arlington Tanks
Oajalco Mine
Mathews Dam
El Cerrito
Glen Ivy
Temescal Guard Station
Gavilan Mine
Perris Valley
Lakeview
Sycamore Canyon
Reche Canyon
Pigeon Pass Valley
Box Springs
Fla Bob
Arlington Heights
Stony Bridge
Bedford Canyon
Lake Mathews
Mathews Dam
Temescal Wash
Temescal Valley
Walker Canyon
Indian Canyon
Trabuco Canyon
Reche Canyon
Sycamore Canyon
Pigeon Pass Valley
Poorman Res
Perris Valley Storm Drain
Moreno Valley
San Jacinto River
Santa Ana River
Santa Ana Canyon
Cucamonga Creek
Day Creek
Etiwanda Creek
Chino Creek
Santa Ana Canyon

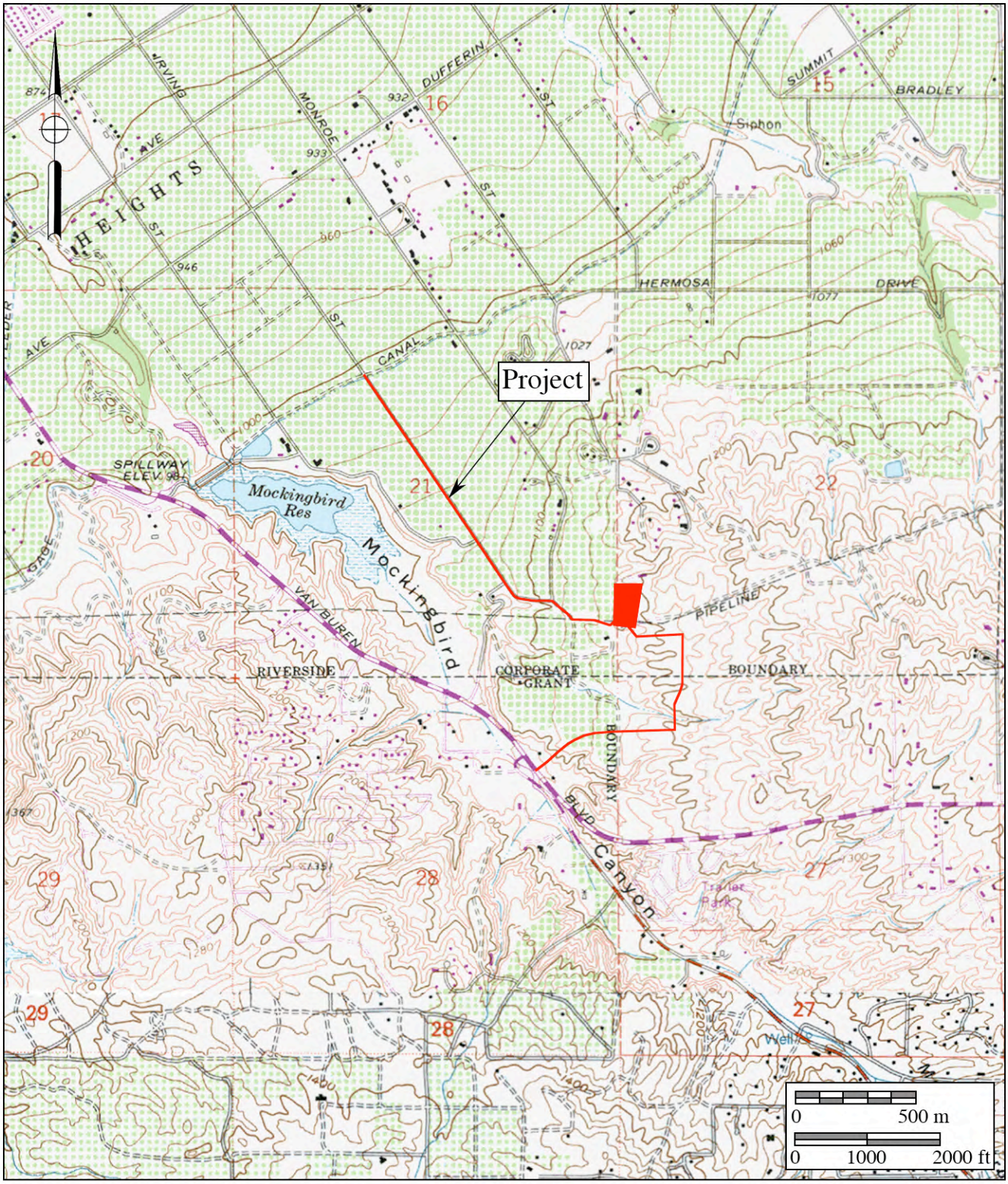


Figure 2

Project Location Map

Riverside–Corona Feeder, Proposed Mockingbird Connection

USGS *Riverside West* and *Lake Mathews* Quadrangles (7.5 minute series)

Station. The pump station will include pumps and flow-control facilities to convey water in either direction.

The project is assessed based on the Area of Potential Effect, which is the area that is potentially impacted physically, visibly, and audibly by the proposed action. Impacts include the direct effects of construction and the indirect effects of construction such as noise. The Area of Potential Effect for the proposed project extends 150 feet on either side of the limits of construction for the pipeline alignment and Lot 20.

4.0 METHODS

Prior to the project site visit, Brian F. Smith and Associates' biologists reviewed the California Natural Diversity Data Base (CNDDB 2009a and b), and the California Native Plant Society Rare Plant Inventory (CNPS 2009) to determine if sensitive species may be present within or near the limits of construction. National Wetland Inventory maps (USFWS 2009) for the project were consulted to determine if wetlands have been mapped within the limits of construction. Appropriate United States Geological Survey maps (7.5 minute) were reviewed to determine if drainage features, including "blue-line streams," may be present. The List of Hydric Soils for Western Riverside County (NCRS 2009) and the Soils Survey Western Riverside County (USDA 1971) were consulted to determine soils associated with the proposed project area.

The project area is small enough to allow one biologist to cover the entire site in one visit. The site was surveyed on foot by slowly walking over the area in a series of random transects to provide visual coverage of the entire project area. Vegetation and wildlife species observed were recorded as field observations were made. Wildlife sign (scat, bones, feathers, tracks, dens and burrows) were also recorded if encountered. Frequent pauses were made during the survey to watch and listen for wildlife.

5.0 EXISTING ENVIRONMENT

This discussion of the existing environment describes the project area setting and includes general physical characteristics of the project area, plant communities associated with the project area, and biological resources in the vicinity of the project area.

5.1 Physical Characteristics

The discussion of physical characteristics includes soils, topography, and geology.

5.1.1 Soils

Soils associated with the proposed project area are predominantly (WSS 2009):

- Arlington fine sandy loam, deep, 2 to 8 percent slopes
- Arlington loam, deep, 0 to 5 percent slopes
- Arlington loam, deep, 5 to 15 percent slopes
- Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
- Fallbrook sandy loam, 8 to 15 percent slopes, eroded
- Fallbrook sandy loam, 15 to 25 percent slopes, eroded
- Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded
- Hanford coarse sandy loam, 2 to 8 percent slopes
- Terrace escarpments

Arlington soils are neutral to moderately alkaline, very fine sandy loam underlain by a soil horizon that is cemented by silica displaced across the horizon to form a subsurface hardpan (NRCS 2009).

The Cieneba series consists of very shallow and shallow, somewhat excessively drained soils derived from granitic rock. Cieneba soils have slopes of 9 to 85 percent (NRCS 2009).

The Fallbrook soils are well-drained soils derived from granitic rocks. Fallbrook soils are on rolling hills and have slopes of 5 to 75 percent (NRCS 2009).

Hanford series soils are very deep, well-drained soils that formed in moderately coarse textured alluvium derived from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans and have slopes of 0 to 15 percent (NRCS 2009).

The Terrace Escarpment series occurs on steep slopes along narrow flood plains. In most places, there is a layer of loam or gravelly soil that overlays soft marine sandstone, gravels, or shale (NRCS 2009).

5.1.2 Topography

The Proposed Mockingbird Connection pipeline alignment traverses gently rolling terrain varying in elevation from approximately 1,100 feet above mean sea level on the southerly end of the alignment to approximately 1,000 feet above mean sea level on the north.

5.1.3 Geology

Riverside County lies in the Peninsular Range Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the County, extends some 1,000 miles from the Raymond – Malibu Fault Zone in western Los Angeles County to the southern tip

of Baja California, Mexico. The Proposed Mockingbird Connection project area is located on an alluvial terrace.

5.2 Biological Resources

The Biological Resources section discusses vegetation, plant communities, wildlife (including sensitive species), and associated habitats found within the limits of construction. In addition to the project area, adjacent areas (out to a distance of 150 feet on either side of the project boundary) are discussed.

5.2.1 Plant Communities

The Proposed Mockingbird Connection pipeline alignment traverses Urban/Developed, Riversidean sage scrub, and Orchard plant communities (Figure 3 and Table 1). Plant species observed during site visits are listed in Table 2.

Descriptions of plant communities are based on Holland's (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California*. The descriptions developed by Holland (1986) provide a standard nomenclature for plant communities throughout California. Holland does not provide descriptions of some plant communities. In those instances, descriptions from *Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions* (Oberbauer 1996) have been used.

<u>Urban/Developed, Element Code 12000 (Oberbauer 1996)</u>

Urban/Developed is a mixture of built structures such as roads, residences, commercial buildings, and parking lots. Vegetation is largely non-native and includes lawns, golf courses, road shoulders, airports, and parks. Remnants of native plant communities may be found at scattered, isolated locations. Ruderal communities occur in areas of disturbance. Vegetation in these areas consists of non-native invasive plants.

<u>Riversidean Sage Scrub, Element Code 327000 (Holland 1986)</u>

Riversidean sage scrub occurs along the coastal base of the Transverse and Peninsular Ranges of southern California from Los Angeles to the U. S./Mexico border. Riversidean sage scrub is found on drier sites and is dominated by California sage, California buckwheat, and red brome.

<u>Orchards and Vineyards, Element Code 18100 (Oberbauer 1996)</u>

These are general agriculture areas and include vineyards and orchards of commercial species. In Riverside County, orchards are often citrus and avocado groves.

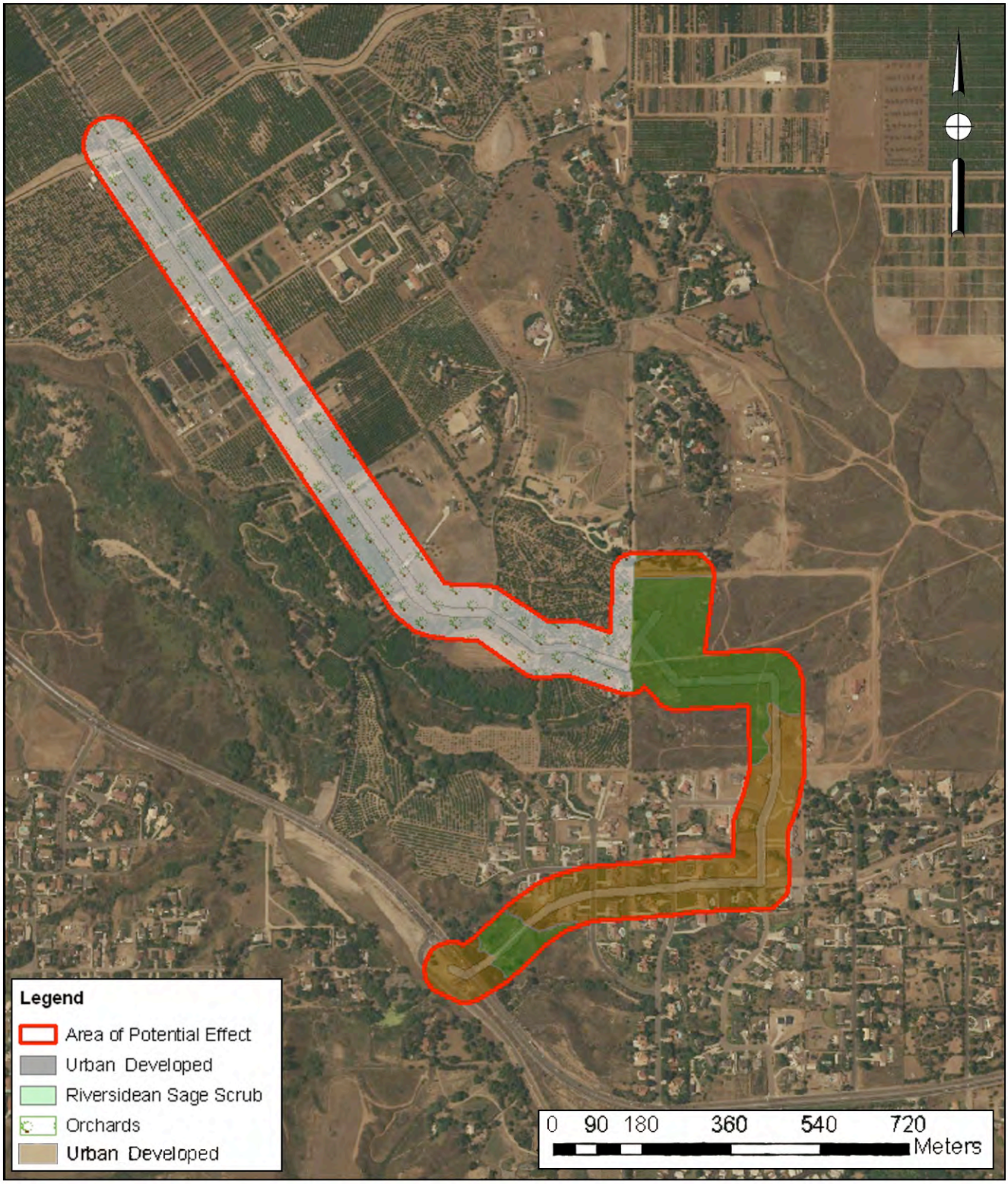


Figure 3

Plant Communities

Riverside–Corona Feeder, Proposed Mockingbird Connection

Table 1 Plant Communities Area of Potential Effect Riverside – Corona Feeder, Mockingbird Connection Riverside County, California	
Plant Community	**Acres**
Urban/Developed	49.3
Orchard	84.9
Riversidean Sage Scrub	32.4
Total	166.6

Table 2 Plant Species Observed Riverside – Corona Feeder, Proposed Mockingbird Connection Riverside County, California		
Common Name	***Scientific Name***	**Habitat**
Red brome	*Bromus madritensis rubens*	U/D, RSS, O
Wild oat	*Avena fatua*	U/D, RSS, O
Rip-gut brome	*Bromus diandrus*	U/D, RSS
Telegraphweed*	*Heterotheca grandiflora*	U/D, O
Horseweed*	*Conyza canadensis*	U/D, O
Sheep sorrel*	*Rumex acetosella*	U/D
Western ragweed*	*Ambrosia psilostachya*	U/D
Short-pod mustard	*Hirschfeldia incana*	U/D, O
Rock-cress*	*Arabis sp.*	RSS
Fiddleneck*	*Amsinckia menziesii*	RSS
Jimson weed/sacred datura*	*Datura wrightii*	RSS
Dove weed*	*Croton setigerus*	U/D, RSS
Climbing milkweed*	*Sarcostemma cynanchoides*	RSS
Tree tobacco	*Nicotiana glauca*	U/D, RSS
California sage*	*Artemisia californica*	RSS
White sage*	*Salvia mellifera*	RSS
Tumbleweed	*Salsola kali*	U/D, RSS,O
California buckwheat*	*Eriogonum fasciculatum*	RSS
Fan palm	*Washingtonia sp.*	U/D

5.2.2 Zoological Resources

Wildlife observed along the Proposed Mockingbird Connection pipeline alignment and within Lot 20 was representative of a mixture of urban areas, agriculture, and sage scrub and included black-tailed jackrabbit, brush rabbit, crow, California ground squirrel, and American crow. Sign of western burrowing owls, woodrats, and kangaroo rats were observed within Lot 20 (Table 3).

Table 3
Animal Species Observed Directly or Indirectly
Riverside – Corona Feeder, Proposed Mockingbird Connection
Riverside County, California

Common Name	***Scientific Name***
American crow	*Corvus brachyrhynchos*
California towhee	*Pipilo crissalis*
Mourning dove	*Zenaida macroura*
Western burrowing owl	*Athene cunicularia hypugaea*
Side-blotched lizard	*Uta stansburiana*
Western fence lizard	*Sceloporus occidentalis*
Woodrat	*Neotoma sp.*
Kangaroo rat	*Dipodomys sp.*
Brush rabbit	*Sylvilagus bachmani*
Black-tailed jackrabbit	*Lepus californicus*

5.2.3 Sensitive Species and Critical Habitat

A total of nine sensitive species were determined to be potentially present in the vicinity of the proposed project limits of construction. A review of the CNDDB (2009a and b) indicated that eight species listed by state and federal endangered species acts may be present (Table 4). In addition, the western burrowing owl, a California State Species of Special Concern covered by the Western Riverside County Multiple Species Habitat Conservation Plan, may be present.

Table 4
Listed Species Potentially Present
Riverside – Corona Feeder, Proposed Mockingbird Connection
Riverside County, California

Common Name	*Scientific Name*	Federal Status	State Status	CNPS Rank
Dwarf burr ambrosia	*Ambrosia pumila*	E	None	1B.1
Santa Ana River woollystar	*Eriastrum densifolium sanctorum*	E	E	1B.1
Delhi sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	E	None	NA
Santa Ana sucker	*Catostomus santaanae*	T	None	NA
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	E	NA
Coastal California gnatcatcher	*Polioptila californica californica*	T	None	NA
Least Bell's vireo	*Vireo bellii pusillus*	E	E	NA
Western burrowing owl	*Athene cunicularia hypugaea*	MBTA	SSC	NA
Stephens' kangaroo rat	*Dipodomys stephensi*	E	T	NA

E – Endangered
T – Threatened
C – Candidate for threatened or endangered status
MBTA – Migratory Bird Treaty Act
SSC – Species of special concern
1B – Rare, threatened, or endangered in California and elsewhere
0.1 – Seriously endangered in California

U. S. Fish and Wildlife Service data (USFWS 2009) and the CNDDB (2009a and b) were consulted to determine if critical habitat for sensitive species may be present within the limits of construction. Critical habitat is a specific geographic area or areas that are essential for the survival of a threatened or endangered species. Critical habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery. The proposed project area is not within designated critical habitat.

Dwarf Burr Ambrosia (*Ambrosia pumila*)

Dwarf burr ambrosia (also known as San Diego Ambrosia) is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Dwarf burr ambrosia is a narrow endemic plant species. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

In Riverside County, dwarf burr ambrosia is associated with open, gently sloped grasslands and is generally associated with alkaline soils. Dwarf burr ambrosia generally occurs on slopes ranging from 0 to 9 percent on sandy or clay loams.

Only three populations of dwarf burr ambrosia are known to occur in Riverside County. The two largest populations occur in the vicinity of Alberhill, approximately 19 miles southeast of the proposed project. A third, and smaller population is found at Skunk Hollow, approximately 35 miles southeast of the proposed project (MSHCP 2003).

Suitable habitat is not present. There is one record of an extirpated population of dwarf burr ambrosia located approximately 3.9 miles north of the proposed project. Soils associated with the pipeline alignment and Lot 20 are not alkaline. Dwarf burr ambrosia was not observed during site visits and is not likely to be present.

Santa Ana River Woollystar (*Eriastrum densifolium sanctorum*)

The Santa Ana River woollystar is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Santa Ana River woollystar is a narrow endemic plant species. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The Santa Ana River woollystar is found in open washes and early-successional alluvial fan scrub where flooding and scouring keeps the scrub open. Suitable habitat is usually a combination of gravelly and sandy soils with scattered cobbles and boulders (MSHCP 2003). Santa Ana River woollystar has been reported along the Santa Ana River about 4.7 miles southeast of the proposed project area.

The proposed project area is Urban/Developed and habitat for the Santa Ana River woollystar is not present. Santa Ana River woollystar was not observed during site visits and is not likely to be present.

Delhi Sands Flower-Loving Fly (*Rhaphiomidas terminatus abdominalis*)

The Delhi Sands flower-loving fly is listed as endangered by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. The Delhi Sands flower-loving fly is a narrow endemic species. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The Delhi Sands flower-loving fly is restricted to the Colton Dunes (Delhi soil series) in northwestern Riverside and southwestern San Bernardino counties in southern California. Existing populations of the Delhi Sands flower-loving fly occur within Riverside and San Bernardino counties straddling Interstate 10 in the vicinity of Colton and Rialto and from Colton

to Mira Loma. The Delhi Sands flower-loving fly has not been reported in the vicinity of the proposed project area.

Suitable habitat for this species (Delhi soils) is not present within the limits of construction. The Delhi Sands flower-loving fly was not observed during site visits and is not likely to be present.

Santa Ana Sucker (*Catostomus santaanae*)

The Santa Ana sucker is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat was designated for the Santa Ana sucker in 2005 (50 CFR 17). The closest critical habitat unit is located along the Santa Ana River approximately 4.5 miles north of the proposed project.

The Santa Ana sucker is a fish species that is generally found in small, shallow streams with currents ranging from swift to sluggish. They are found at depths ranging from a few centimeters to one meter or more. Substrates in these streams generally consist of gravel, rubble, and boulders. Streams in which the species is found are subject to periodic, severe flooding (MSHCP 2003).

Aquatic habitat is not present within the limits of construction. Therefore, the Santa Ana sucker is not present within the limits of construction and will not be affected by the Proposed Mockingbird Canyon Connection Project.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)

The western yellow-billed cuckoo is a U. S. Fish and Wildlife Service candidate for listing as threatened or endangered (FR 47:251). It is listed by the State of California as endangered. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat has not been designated.

The western yellow-billed cuckoo in California requires riparian woodlands with dense understory adjacent to slow-moving watercourses, backwaters, or seeps. Willow is almost always a component of the vegetation (MSHCP 2003). The western yellow-billed cuckoo has been reported in Southern Cottonwood Willow Riparian Woodland along the Santa Ana River approximately 2 miles east of the proposed project.

Suitable habitat for the western yellow-billed cuckoo does not occur within the limits of construction. The western yellow-billed cuckoo was not observed during site visits and is not likely to be present.

Coastal California Gnatcatcher (*Polioptila californica californica*)

The coastal California gnatcatcher is listed as threatened by the U. S. Fish and Wildlife Service, but is not listed by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat for the coastal California gnatcatcher was designated in 2000 and revised in 2007 (FR 74:115).

The coastal California gnatcatcher is a small, non-migratory songbird that is found in or near sage scrub habitat in southwestern California and northwestern Baja California, Mexico. The coastal California gnatcatcher is found almost exclusively in sage scrub, but has also been found in chaparral and riparian habitats. The coastal California gnatcatcher has been reported in Riversidean sage scrub approximately 1.5 miles northeast of the proposed project.

Riversidean sage scrub along the Proposed Mockingbird Connection pipeline alignment and within Lot 20 provides suitable habitat for the coastal California gnatcatcher. There are 26 recorded occurrences of the coastal California gnatcatcher within 5 miles of the project area. Seven of the sightings are within 2 miles of the proposed project, and one sighting is about 0.4 miles from the site. The presence of suitable habitat and the numerous recorded sightings of this species in the vicinity of the proposed project indicate there is a high potential for the coastal California gnatcatcher to be present within the limits of construction, particularly within Lot 20.

Designated critical habitat is located approximately 4 miles northeast of the proposed project area.

Least Bell's Vireo (*Vireo bellii pusillus*)

Least Bell's vireo is listed as endangered by the U. S. Fish and Wildlife Service and the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. If suitable habitat is present, focused surveys will be required. Critical habitat was designated for least Bell's vireo in 1994 (FR 59:22).

Least Bell's vireos are usually found in riverine/riparian habitats that typically have dense understory within 1-2 meters of the ground and a dense, stratified canopy along water or along dry parts of intermittent streams. Typically, least Bell's vireo is associated with southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast lie oak riparian

forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities and in the immediate vicinity of water.

There is a recorded occurrence of least Bell's vireo in riparian woodlands approximately 1.1 miles southwest of the proposed project area. Habitat within the Area of Potential Effect for the proposed project includes Urban/Developed, Orchards, and/or Riversidean sage scrub. Suitable habitat for the least Bell's vireo does not occur within the limits of construction. The least Bell's vireo was not observed during site visits and is not likely to be present.

The proposed project area is not within designated critical habitat for least Bell's vireo.

Western Burrowing Owl (*Athene cunicularia hypugaea*)

The western burrowing owl is not listed by the U. S. Fish and Wildlife Service or the State of California. The U. S. Fish and Wildlife Service considers the western burrowing owl a "Bird Species of Concern" that may become listed as threatened or endangered if significant management steps are not taken. The western burrowing owl is protected under the Migratory Bird Treaty Act. The western burrowing owl is a California State Bird Species of Special Concern (Class 2). Class 2 Bird Species of Special Concern have scattered or highly localized populations and require active management to prevent them from becoming threatened or endangered species (Shuford and Gardali 2008). This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Additional surveys are required if a proposed project area is located within suitable habitat for this species.

Burrowing owls use a variety of natural habitats for nesting and foraging that are typically characterized by low-growing vegetation. Burrowing owl habitat includes native and non-native grassland, natural clearings within shrub lands, shrub lands with low density shrub cover, golf-courses, drainage ditches, earthen berms, along the edges of airport runways, pastureland, dairies, fallow fields, and agricultural use areas (MSHCP 2003).

Burrowing owls typically use burrows made by burrowing mammals, such as ground squirrels (*Spermophilus beecheyi*) or badgers (*Taxidea taxus*). They may also utilize man-made structures, such as earthen berms; cement culverts; cement, asphalt, rock, or wood debris piles; and/or openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, and/or in proximity to man-made structures (MSHCP 2003). Burrowing owls have been reported within 5 miles of the proposed project area.

Suitable habitat for this species is present within Lot 20. Suitable burrows and perches were observed (rock formations). Burrowing owls were not observed during site visits; however, burrowing owl pellets consisting of insect parts were found around rock formations. Burrowing

owls have been reported within 0.9 miles of Lot 20. The presence of suitable habitat and proximity to recorded sightings of burrowing owls implies a high potential for the presence of western burrowing owls within Lot 20.

Stephens' Kangaroo Rat (*Dipodomys stephensi*)

Stephens' kangaroo rat is listed as endangered by the U. S. Fish and Wildlife Service and as threatened by the State of California. This species is covered under the Western Riverside County Multiple Species Habitat Conservation Plan. Focused surveys will be required if suitable habitat is present. Critical habitat has not been established for Stephens' kangaroo rat.

Stephens' kangaroo rat is covered by the Stephens' Kangaroo Rat Habitat Conservation Plan (RCHCA 2009). The primary purpose of the habitat conservation plan is to provide the information required for issuance of a federal permit from the U. S Fish and Wildlife Service for "incidental take" of Stephens' kangaroo rat and equivalent authorization from the California Department of Fish and Game through an endangered species permit. The habitat conservation plan replaced the Riverside County Habitat Conservation Agency's existing Stephens' kangaroo rat conservation program and its federal and state incidental take authorizations with the program and authorizations described in the habitat conservation plan. The habitat conservation plan intends to provide for the establishment, expansion, and ongoing management of permanent reserves to ensure the continued existence of Stephens' kangaroo rat in the habitat conversation plan area of western Riverside County, while providing opportunities to benefit other species of concern (RCHCA 2009).

The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrub lands with cover of less than 50 percent during the summer. The proportion of annual forbs and grasses is important because Stephens' kangaroo rats avoid dense grasses and are more likely to inhabit more open areas. Soil type also is an important habitat factor for Stephens' kangaroo rat occupation. The Stephens' kangaroo rat typically is found in sandy loams with low clay to gravel content. Slope is a factor in Stephens' kangaroo rat occupation; the Stephens' kangaroo rat tends to use flatter slopes (i.e., < 30 percent). In general, the highest abundance of Stephens' kangaroo rats occurs on gentle slopes less than 15 percent (MSHCP 2003).

The proposed project is located within a mapped population of Stephens' kangaroo rats. Approximately 16 additional populations have been recorded in the vicinity of the proposed action. During site visits, tail drags and droppings were observed within Lot 20. It could not be determined if these were left by Stephens' kangaroo rats; however, the presence of suitable habitat, sign of kangaroo rat presence within Lot 20, and the project area's proximity to recorded populations of Stephens' kangaroo rat implies a high potential for this species to occur within the limits of construction. Kangaroo rat sign were not observed along the pipeline alignment.

6.0 JURISDICTIONAL WATERS AND WETLANDS

6.1 Wetlands

To be considered a wetland, a site must meet three criteria: hydric soils, wetland hydrology, and, hydrophytic vegetation. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil. The presence of hydric soils may be determined by a variety of field indicators and by consulting a list of hydric soils for the project area. The soils associated with the current project area are not on the list of hydric soils for the State of California (NRCS 2009). Field indicators such as low chroma soils, concretions, and/or oxidized root channels were not observed.

Wetland hydrology is present when, under normal circumstances, the land surface is either inundated or the upper portion of the soil is saturated at a sufficient frequency and duration to create anaerobic conditions. Field indicators used for hydric soils may be used to support the presence or absence of wetland hydrology. There is no indication that soils within the limits of construction are inundated or saturated for a long enough period of time during the growing season to promote hydric conditions or hydrophytic vegetation. Field indicators of hydric soils such as low chroma soils, concretions, and/or oxidized root channels were not observed.

In general, hydrophytic vegetation includes plants that thrive in wet conditions and exhibit obvious physical adaptations for the capturing and transporting of oxygen. Some hydrophytic vegetation such as mule fat occurs in drainages within the limits of construction; however, this vegetation is not predominant (fifty-one percent or greater). The project area does not meet the criterion for hydrophytic vegetation.

Based on the absence of hydric soils, wetland hydrology, and hydrophytic vegetation, there are no wetlands present within the limits of construction.

7.0 JURISDICTIONAL DETERMINATION

Two agencies or entities may have jurisdictional responsibilities related waters occurring within the proposed project area: U. S. Army Corps of Engineers; and, California Department of Fish and Game. The basis for jurisdiction is discussed below.

7.1 U. S. Army Corps of Engineers

The U. S. Army Corps of Engineers regulates dredging and filling in Waters of the United States under the authority of Section 404 of the Clean Water Act. Waters of the United State are defined to include all navigable waters including tidal waters, all interstate waters and wetlands, all impoundments of the waters mentioned above, all tributaries of the waters mentioned above, all territorial seas, and all wetlands adjacent to the waters mentioned above (33 CFR 328).

Title 33 of the Code of Federal Regulations defines wetlands as, "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" [33 CFR 328.3(b)]. In the Solid Waste Agency of Northern Cook County v. Army Corps of Engineers, the U. S. Supreme Court determined that U. S. Army Corps of Engineers jurisdiction may not extend to wetlands and waterways where the only nexus with Waters of the U. S. is use by migratory birds. In the Rapanos – Carabell Supreme Court decisions, the Supreme Court rejected the argument that the term "waters of the United States" is limited to only those waters that are navigable in the traditional sense and their abutting wetlands. However, the court decided that regulatory authority should extend only to "relatively permanent, standing or continuously flowing bodies of water" connected to traditional navigable waters, and to "wetlands with a continuous surface connection to" such relatively permanent waters (EPA/COE 2008).

Two distinct jurisdictional tests emerged from the Rapanos–Carabell decision: "significant nexus" test and "relatively permanent, standing or continuously flowing" test. The U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency have developed guidelines for making jurisdictional determinations based on these tests. The following summary of key points related to U. S. Environmental Protection Agency and U. S. Army Corps of Engineers jurisdiction is taken directly from a joint EPA/USACOE memorandum (EPA/COE 2008).

7.1.1 Summary of Key Points related to EPA and USACOE Jurisdiction

"The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries."

"The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

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

"The agencies generally *will not assert* jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water."

"The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess 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 traditional navigable waters."

"Significant nexus includes consideration of hydrologic and ecologic factors."

Based on these criteria, there are no jurisdictional waters or wetlands present within the limits of construction. However, only the U. S. Army Corps of Engineers may make a final determination regarding jurisdiction.

7.2 California Department of Fish and Game

Sections 1600 through 1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the California Department of Fish and Game for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use material from a streambed." The California Department of Fish and Game defines a stream, creek or river 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." The California Department of Fish and Game defines lakes as including man-made lakes and reservoirs. In addition to the bed and banks of a stream, the California Department of Fish and Game jurisdiction includes riparian or wetland vegetation associated with the water body. Projects that require a Streambed Alteration

Agreement may also require a permit from the U. S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Based on these criteria, there are no waters falling under the jurisdiction of the California Department of Fish and Game within the limits of construction. However, only the State of California may make a final determination regarding jurisdiction.

8.0 EFFECTS OF THE PROPOSED ACTION

The proposed pipeline alignment will affect 8.7 acres of disturbed habitat consisting of a maintained dirt road. Construction of a pump station and an aboveground reservoir (tank) will affect approximately 6.9 acres of Riversidean sage scrub (Figure 4 and Table 5).

Nine sensitive species were identified as potentially occurring within or in proximity to the limits of construction. Three species (western burrowing owl, coastal California gnatcatcher, and Stephens' kangaroo rat) were determined to have high potential to occur within the limits of construction.

Dwarf Burr Ambrosia

Suitable habitat for dwarf burr ambrosia is not present within the limits of construction. Dwarf burr ambrosia was not observed during site visits and will not be affected by the proposed action.

Santa Ana River Woollystar

Suitable habitat for the Santa Ana River woollystar is not present within the limits of construction. Santa Ana River woollystar was not observed during site visits and will not be affected by the proposed action.

Delhi Sands Fower-Loving Fly

Suitable habitat for Delhi Sands flower-loving fly is not present within the limits of construction. Delhi Sands flower-loving fly was not observed during site visits and will not be affected by the proposed action.

Santa Ana Sucker

The Santa Ana sucker is an aquatic species. Aquatic habitat is not present within the limits of construction. The Santa Ana sucker will not be affected by the proposed action.

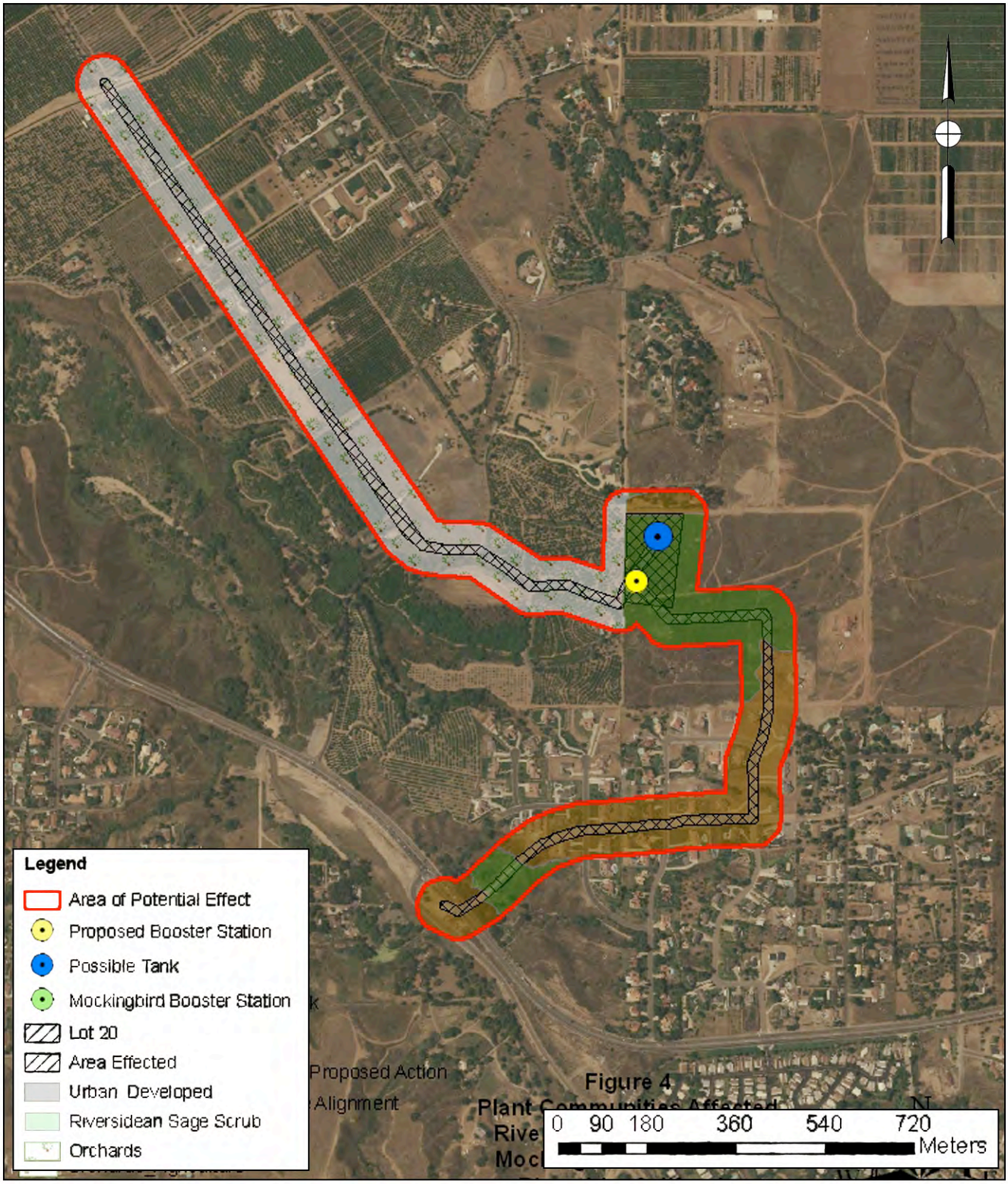


Figure 4

Impacts to Plant Communities

Riverside–Corona Feeder, Proposed Mockingbird Connection

Table 5 Plant Communities Effected Riverside – Corona Feeder, Proposed Mockingbird Connection Riverside County, California		
Plant Community	**Acres Present Area of Potential Effect**	**Acres Effected**
Urban/Developed	49.3	0.5
Orchard	84.9	8.2
Riversidean	32.4	6.9
Total	166.6	15.6

Western Yellow-Billed Cuckoo

Suitable habitat for western yellow-billed cuckoo is not present within or near the limits of construction. Western yellow-billed cuckoo's were not observed during site visits and will not be affected by the proposed action.

Coastal California Gnatcatcher

Suitable habitat for the coastal California gnatcatcher is present within Lot 20 and in Riversidean sage scrub adjacent to the pipeline alignment. There are numerous recorded sightings of this species in the vicinity of the limits of constructions. Although coastal California gnatcatchers were not observed during site visits there is a high probability that this species may be present within Lot 20 and adjacent to the pipeline alignment where it crosses Riversidean sage scrub. The proposed action has the potential to directly and indirectly effect the coastal California gnatcatcher.

Least Bell's Vireo

Suitable habitat for least Bell's vireo is not present within the limits of construction. The proposed project area is not within designated critical habitat for the species. Least Bell's vireo was not observed during site visits and will not be affected by the proposed action.

Western Burrowing Owl

Suitable habitat for the western burrowing owl is present in the Riversidean sage scrub within Lot 20. Burrowing owls were not observed during site visits; however, sign (pellets and suitable burrows) of burrowing owl presence were observed. The presence of suitable habitat and sign of owl presence requires conducting focused surveys for this species. Burrowing owl sign were not observed within the pipeline alignment.

Development of Lot 20 could result in the destruction of eggs, young, and adult owls unless appropriate measures are followed. Prior to construction (including grubbing, clearing, and grading), focused surveys shall be conducted for western burrowing owls. If owls are encountered, state and federal wildlife agencies shall be consulted to determine how to treat owls that may be present.

A 30-Day Pre-Construction Survey shall also be conducted to insure that owls are not present when construction begins.

Stephens' Kangaroo Rat

Stephens' kangaroo rats have been recorded within or in the vicinity of Lot 20. During site visits, evidence of kangaroo rats was observed at several locations; however, the species could not be determined. The evidence consisted of tail drags, droppings, and tracks. Kangaroo rats were not directly observed, but there is high potential for this species to be present within Lot 20. Implementation of the proposed action has the potential to destroy 4.8 acres of Stephens' kangaroo rat habitat, resulting in the "incidental take" of an undetermined number of Stephens' kangaroo rats.

Additional marginal habitat is present in a small Riversidean sage scrub community near the south end of the pipeline alignment. Kangaroo rat sign were not observed in the other areas examined.

9.0 RECOMMENDED MITIGATION OR AVOIDANCE MEASURES

Suitable habitat for coastal California gnatcatcher, Stephens' kangaroo rat, and western burrowing owl is located within the project area. The following actions are recommended to avoid, minimize, or mitigate for impacts to these species.

9.1 Coastal California Gnatcatcher

Prior to any construction in suitable coastal California gnatcatcher habitat (including clearing, grading, and grubbing), focused surveys shall be conducted for coastal California gnatcatcher. If gnatcatchers are determined to be present, the proposed action is likely to result in incidental take of individuals occupying suitable habitat within the limits of construction and is likely to adversely affect the coastal California gnatcatcher. If gnatcatchers are determined to be present, the project proponents shall consult with the U. S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act. Construction shall not occur in suitable habitat for this species until the consultation is complete and any actions recommended by the U. S. Fish and Wildlife Service are in place.

The U. S. Fish and Wildlife Service determined that noise levels in excess of a time weighted hourly average of 60 decibels (dBA) adversely impact breeding and nesting activity for the coastal California gnatcatcher. Disturbance resulting from construction noise would be considered as "incidental take" under the Endangered Species Act of 1973. Therefore, if construction noise exceeds 60 dBA, construction shall not be permitted on those portions of the limits of construction adjacent to suitable habitat for the coastal California gnatcatcher during the breeding season for this species (March 1 through August 15).

If it is not feasible to avoid construction adjacent to suitable habitat for the coastal California gnatcatcher during the breeding season, then focused surveys shall be conducted in suitable habitat to determine if this species is present. If coastal California gnatcatchers are determined to be present, then construction shall not be permitted during the breeding season in those portions of the limits of construction adjacent to suitable habitat.

If coastal California gnatcatchers are present in adjacent suitable habitat and avoiding construction during breeding season is not practical, then noise attenuation measures may be employed to reduce noise levels to acceptable limits. A noise assessment shall be conducted to determine how far the 60 dBA noise contour would extend into adjacent suitable gnatcatcher habitat. Noise attenuation measures shall be designed based on this assessment. Noise attenuation measures shall be designed to reduce noise levels at the edge of occupied habitat to 60 dBA or ambient, whichever is greater. Noise attenuation measures shall be in place at least two weeks prior to the beginning of the breeding season.

9.2 Stephens' Kangaroo Rat

Prior to any construction in suitable habitat for Stephens' kangaroo rat (including clearing, grading, and grubbing), focused surveys shall be conducted for Stephens' kangaroo rat. If Stephens' kangaroo rats are determined to be present, the proposed action is likely to result in incidental take of individuals occupying suitable habitat within the limits of construction and is likely to adversely affect Stephens' kangaroo rat. If Stephens' kangaroo rats are determined to be present, the project proponents shall consult with the U. S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act. Construction shall not occur in suitable habitat for this species until the consultation is complete and any actions recommended by the U. S. Fish and Wildlife Service are in place.

Suitable habitat for Stephens' kangaroo rat is present in Riversidean sage scrub, disturbed Riversidean sage scrub, and non-native grasslands adjacent to the limits of construction. The proposed action may directly effect Stephens' kangaroo rats that may wander into the limits of construction as a result of animals falling into open excavations and being unable to escape or death of the animal as a result of being crushed by moving equipment.

9.3 Western Burrowing Owl

Prior to any construction in suitable western burrowing owl habitat (including clearing, grading, and grubbing), focused surveys shall be conducted for western burrowing owls. If burrowing owls are determined to be present, the proposed action is likely to result in incidental take of individuals occupying suitable habitat within the limits of construction and is likely to adversely affect the western burrowing owl. If burrowing owls are determined to be present, the project proponents shall consult with the California Department of Fish and Game and U. S. Fish and Wildlife Service to determine what steps must be taken to preserve and protect the burrowing owls and sufficient habitat to maintain the burrowing owls. Construction shall not occur in suitable habitat for this species until the consultation is complete and any actions recommended by the California Department of Fish and Game and U. S. Fish and Wildlife Service are in place.

However, the proposed action may indirectly effect western burrowing owls as a result of personnel or equipment entering suitable habitat adjacent to the limits of construction. Prior to construction, the limits of construction adjacent to suitable western burrowing owl habitat shall be fenced with orange vinyl barrier material. The limits of construction shall be inspected by the project biologist throughout construction.

10.0 CONCLUSIONS

In conclusion, the proposed action, will not affect dwarf burr ambrosia, Santa Ana River woollystar, Delhi Sands flower-loving fly, Santa Ana sucker, western yellow-billed cuckoo, or least Bell's vireo.

The proposed action may result in incidental take of the endangered Stephens' kangaroo rat and is likely to adversely affect this species. Focused surveys for this species shall be conducted in suitable habitat. If Stephens' kangaroo rat is determined to be present, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the threatened coastal California gnatcatcher and is likely to adversely affect the coastal California gnatcatcher. Focused surveys for this species shall be conducted in suitable habitat. If coastal California gnatcatcher is determined to be present, consultation with the U. S. Fish and Wildlife Service is required under Section 7 of the Endangered Species Act.

The proposed action may result in incidental take of the western burrowing owl, which is protected under the Migratory Bird Treaty Act and is a State of California Bird Species of Special Concern (Class 2), and is likely to adversely affect this species. Focused surveys for this species shall be conducted in suitable habitat. If western burrowing owls are determined to be present, the project proponent shall consult with the California Department of Fish and Game and U. S. Fish and Wildlife Service to determine steps to be taken to preserve and protect the burrowing owls and sufficient habitat to support the owls.

If mitigated as recommended, the proposed action will not significantly affect biological resources including species listed under state and federal endangered species acts or other species of special concern.

11.0 CERTIFICATION

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

DATE: December 4, 2009 SIGNED:_____

Laurence N. Dean, Senior Biologist

12.0 LITERATURE CITED

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APPENDIX B

Burrowing Owl Consortium
Survey Protocol & Mitigation Guidelines

BURROWING OWL CONSORTIUM

Survey Protocol & Mitigation Guidelines

INTRODUCTION

California's burrowing owl population is clearly in peril and if declines continue unchecked the species may qualify for listing. Because of the intense pressure for development of open, flat grasslands in California, resource managers frequently face conflicts between owls and development projects. Owls can be affected by disturbance and habitat loss, even though there may be no direct impacts to the birds themselves or their burrows. There is often inadequate information about the presence of owls on a project site until ground disturbance is imminent. When this occurs there is usually insufficient time to evaluate impacts to owls and their habitat. The absence of standardized field survey methods impairs adequate and consistent impact assessment during regulatory review processes, which in turn reduces the possibility of effective mitigation.

These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or the resources that support them. The process begins with a four-step survey protocol to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Each project and situation is different and these procedures may not be applicable in some circumstances. Finally, these are not strict rules or requirements that must be applied in all situations. They are guidelines to consider when evaluating burrowing owls and their habitat, and they suggest options for burrowing owl conservation when land use decisions are made.

Section 1 describes the four phase Burrowing Owl Survey Protocol. Section 2 contains the Mitigation Guidelines. Section 3 contains a discussion of various laws and regulations that protect burrowing owls and a list of references cited in the text.

We have submitted these documents to the California Department of Fish and Game (CDFG) for review and comment. These are untested procedures and we ask for your comments on improving their usefulness.

SECTION 1 - BURROWING OWL SURVEY PROTOCOL

PHASE I: HABITAT ASSESSMENT

The first step in the survey process is to assess the presence of burrowing owl habitat on the project site including a 150-meter (approx. 500 ft.) buffer zone around the project boundary (Thomsen 1971, Martin 1973).

Burrowing Owl Habitat Description

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement.

Occupied Burrowing Owl Habitat

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992). A site should be assumed occupied if at least one burrowing owl has been observed occupying a burrow there within the last three years (Rich 1984).

The Phase II burrow survey is required if burrowing owl habitat occurs on the site. If burrowing owl habitat is not present on the project site and buffer zone, the Phase II burrow survey is not necessary. A written report of the habitat assessment should be prepared (Phase IV), stating the reason(s) why the area is not burrowing owl habitat.

PHASE II: BURROW SURVEY

1. A survey for burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx 500 ft.) of the project impact zone. This 150-meter buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area.

2. Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 30 meters (approx. 100 ft.), and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. To efficiently survey projects larger than 100 acres, it is recommended that two or more surveyors conduct concurrent surveys. Surveyors should maintain a minimum distance of 50 meters (approx. 160 ft.) from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.

3. If burrows or burrowing owls are recorded on the site, a map should be prepared of the burrow concentration areas. A breeding season survey and census (Phase III) of burrowing owls is the next step required.

4. Prepare a report (Phase IV) of the burrow survey stating whether or not burrows are present.

5. A preconstruction survey may be required by project-specific mitigations no more than 30 days prior to ground disturbing activity.

PHASE III: BURROWING OWL SURVEYS, CENSUS AND MAPPING

If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site. Surveys in the breeding season are required to describe if, when, and how the site is used by burrowing owls. If no owls are observed using the site during the breeding season, a winter survey is required.

Survey Methodology

A complete burrowing owl survey consists of four site visits. During the initial site visit examine burrows for owl sign and map the locations of occupied burrows.

Subsequent observations should be conducted from as many fixed points as necessary to provide visual coverage of the site using spotting scopes or binoculars. It is important to minimize disturbance near occupied burrows during all seasons. Site visits must be repeated on four separate days. Conduct these visits from two hours before sunset to one hour after or from one hour before to two hours after sunrise. Surveys should be conducted during weather that is conducive to observing owls outside their burrows. Avoid surveys during heavy rain, high winds (> 20 mph), or dense fog.

Nesting Season Survey. The burrowing owl nesting season begins as early as February 1 and continues through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activities may vary with latitude and climatic conditions. If possible, the nesting season survey should be conducted during the peak of the breeding season, between April 15 and July 15. Count and map all burrowing owl sightings, occupied burrows, and burrows with owl sign. Record numbers of pairs and juveniles, and behavior such as courtship and copulation. Map the approximate territory boundaries and foraging areas if known.

Survey for Winter Residents (non-breeding owls).Survey for Winter Residents (non-breeding owls).Survey for Winter Residents (non-breeding owls). Winter surveys should be conducted between December 1 and January 31, during the period when wintering owls are most likely to be present. Count and map all owl sightings, occupied burrows, and burrows with owl sign.

Surveys Outside the Winter and Nesting Seasons. Positive results (i.e., owl sightings) outside of the above survey periods would be adequate to determine presence of owls on site. However, results of these surveys may be inadequate for mitigation planning because the numbers of owls and their pattern of distribution may change during winter and nesting seasons. Negative results during surveys outside the above periods are not conclusive proof that owls do not use the site.

Preconstruction Survey.Preconstruction Survey.Preconstruction Survey. A preconstruction survey may be required by project-specific mitigations and should be conducted no more than 30 days prior to ground disturbing activity.

PHASE IV: RESOURCE SUMMARY, WRITTEN REPORT

A report should be prepared for CDFG that gives the results of each Phase of the survey protocol, as outlined below.

Phase I: Habitat Assessment

1. Date and time of visit(s) including weather and visibility conditions; methods of survey.

2. Site description including the following information: location, size, topography, vegetation communities, and animals observed during visit(s).

3. An assessment of habitat suitability for burrowing owls and explanation.

4. A map of the site.

Phase II: Burrow Survey

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.

2. A more detailed site description should be made during this phase of the survey protocol including a partial plant list of primary vegetation, location of nearest freshwater (on or within one mile of site), animals observed during transects.

3. Results of survey transects including a map showing the location of concentrations of burrow(s) (natural or artificial) and owl(s), if present.

Phase III: Burrowing Owl Surveys, Census and Mapping

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.

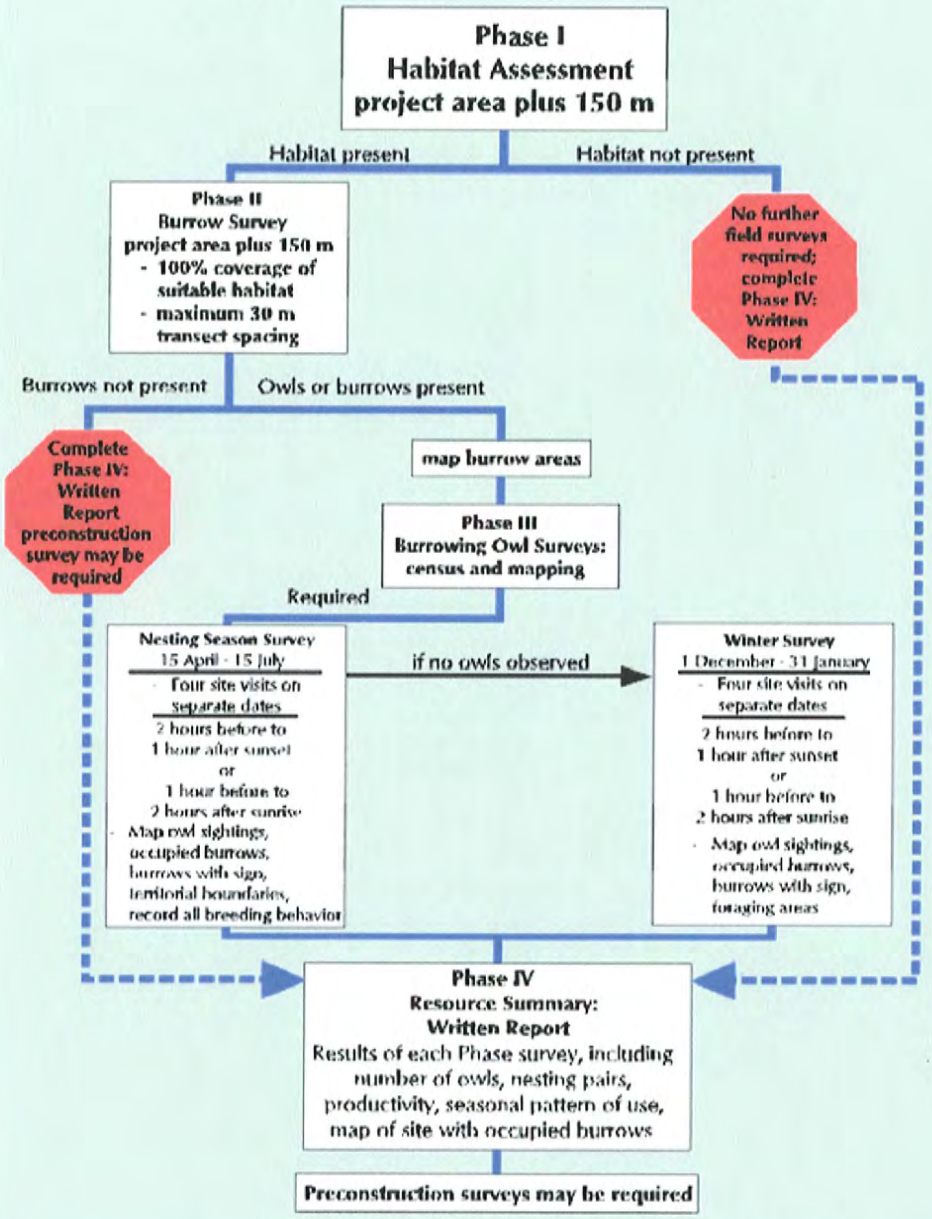
2. Report and map the location of all burrowing owls and owl sign. Burrows occupied by owl(s) should be mapped indicating the number of owls at each burrow. Tracks, feathers, pellets, or other items (prey remains, animal scat) at burrows should also be reported.

3. Behavior of owls during the surveys should be carefully recorded (from a distance) and reported. Describe and map areas used by owls during the surveys. Although not required, all behavior is valuable to document including feeding, resting, courtship, alarm, territorial, parental, or juvenile behavior.

4. Both winter and nesting season surveys should be summarized. If possible include information regarding productivity of pairs, seasonal pattern of use, and include a map of the colony showing territorial boundaries and home ranges.

5. The historical presence of burrowing owls on site should be documented, as well as the source of such information (local bird club, Audubon society, other biologists, etc.).

Burrowing Owl Survey Protocol



SECTION 2 - BURROWING OWL MITIGATION GUIDELINES

The objective of these mitigation guidelines is to minimize impacts to burrowing owls and the resources that support viable owl populations. These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or their resources. The process begins with a four-step survey protocol (see *Burrowing Owl Survey Protocol*) to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures described below are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Mitigation actions should be carried out prior to the burrowing owl breeding season, generally from February 1 through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activity may vary with latitude and climatic conditions. Project sites and buffer zones with suitable habitat should be resurveyed to ensure no burrowing owls have occupied them in the interim period between the initial surveys and ground disturbing activity. Repeat surveys should be conducted not more than 30 days prior to initial ground disturbing activity.

DEFINITION OF IMPACTS

1. Disturbance or harassment within 50 meters (approx. 160 ft.) of occupied burrows.

2. Destruction of burrows and burrow entrances. Burrows include structures such as culverts, concrete slabs and debris piles that provide shelter to burrowing owls.

3. Degradation of foraging habitat adjacent to occupied burrows.

GENERAL CONSIDERATIONS

1. Occupied burrows should not be disturbed during the nesting season, from February 1 through August 31, unless the Department of Fish and Game verifies that the birds have not begun egg-laying and

incubation or that the juveniles from those burrows are foraging independently and capable of independent survival at an earlier date.

2. A minimum of 6.5 acres of foraging habitat, calculated on a 100-m (approx. 300 ft.) foraging radius around the natal burrow, should be maintained per pair (or unpaired resident single bird) contiguous with burrows occupied within the last three years (Rich 1984, Feeney 1992). Ideally, foraging habitat should be retained in a long-term conservation easement.

3. When destruction of occupied burrows is unavoidable, burrows should be enhanced (enlarged or cleared of debris) or created (by installing artificial burrows) in a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.

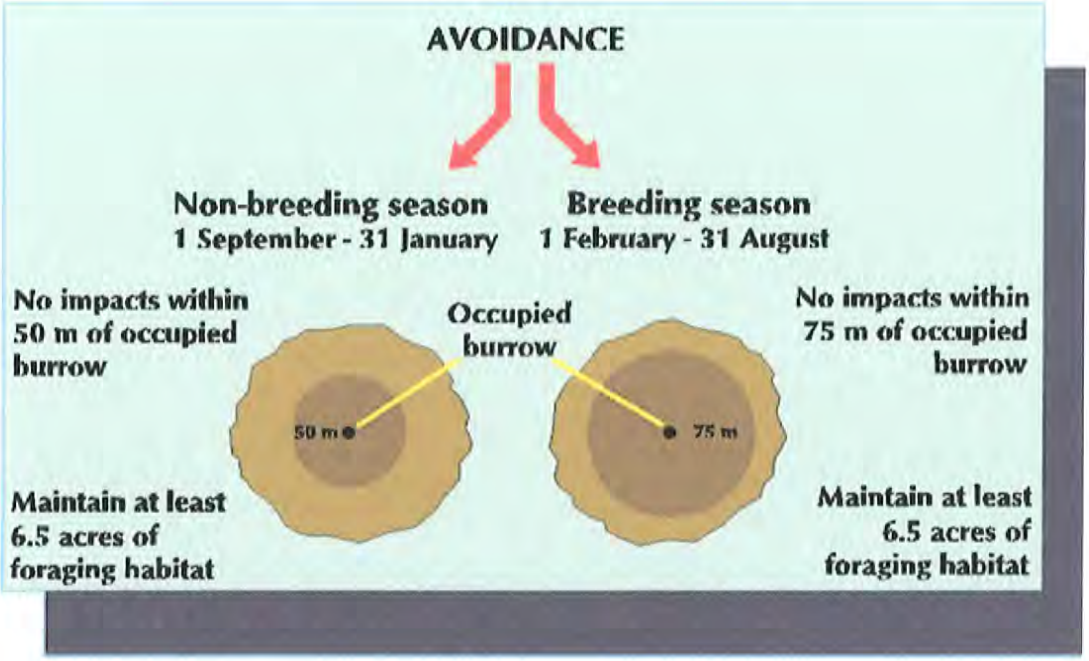
4. If owls must be moved away from the disturbance area, passive relocation (see below) is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows.

5. The mitigation committee recommends monitoring the success of mitigation programs as required in Assembly Bill 3180. A monitoring plan should include mitigation success criteria and an annual report should be submitted to the California Department of Fish and Game.

AVOIDANCE

Avoid Occupied Burrows

No disturbance should occur within 50 m (approx. 160 ft.) of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 m (approx. 250 ft.) during the breeding season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird.

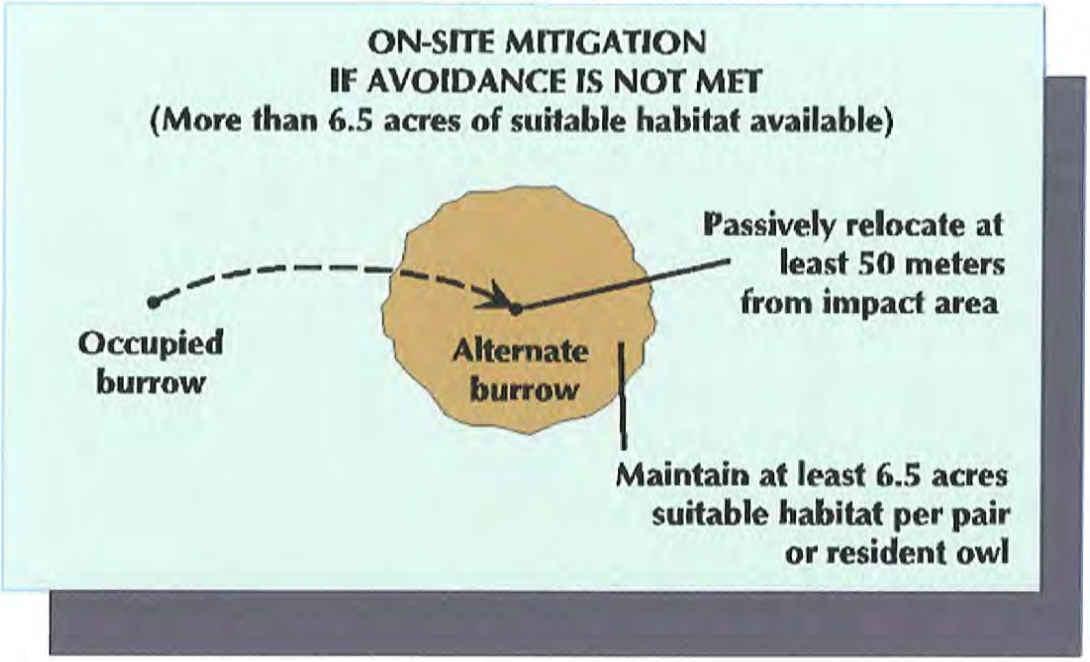


MITIGATION FOR UNAVOIDABLE IMPACTS

On-site Mitigation

On-site passive relocation should be implemented if the above avoidance requirements cannot be met. Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 m from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls (Figure 3). Relocation of owls should only be implemented during the non-breeding season. On-site habitat should be preserved in a conservation easement and managed to promote burrowing owl use of the site.

Owls should be excluded from burrows in the immediate impact zone and within a 50 m (approx. 160 ft.) buffer zone by installing one-way doors in burrow entrances. One-way doors should be left in place 48 hours to insure owls have left the burrow before excavation. One alternate natural or artificial burrow should be provided for each burrow that will be excavated in the project impact zone. The project area should be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags should be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow.



Off-site Mitigation

If the project will reduce suitable habitat on-site below the threshold level of 6.5 acres per relocated pair or single bird, the habitat should be replaced off-site. Off-site habitat must be suitable burrowing owl habitat, as defined in the *Burrowing Owl Survey Protocol*, and the site approved by CDFG. Land should be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation should use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.

2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.

3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

SECTION 3 - LEGAL STATUS

The burrowing owl is a migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). Sections 3503, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend is considered "taking" and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g., MBTA).

The burrowing owl is a Species of Special Concern to California because of declines of suitable habitat and both localized and statewide population declines. Guidelines for the Implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as endangered or "rare" regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections b and d). The CEQA requires a mandatory findings of significance if impacts to threatened or endangered species are likely to occur (Sections 21001{c}, 21083. Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

CEQA AND SUBDIVISION MAP ACT

CEQA Guidelines Section 15065 directs that a mandatory finding of significance is required for projects that have the potential to substantially degrade or reduce the habitat of, or restrict the range of a threatened or endangered species. CEQA requires agencies to implement feasible mitigation measures or feasible alternatives identified in EIR's for projects which will otherwise cause significant adverse impacts (Sections 21002, 21081, 21083; Guidelines, sections 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a).).

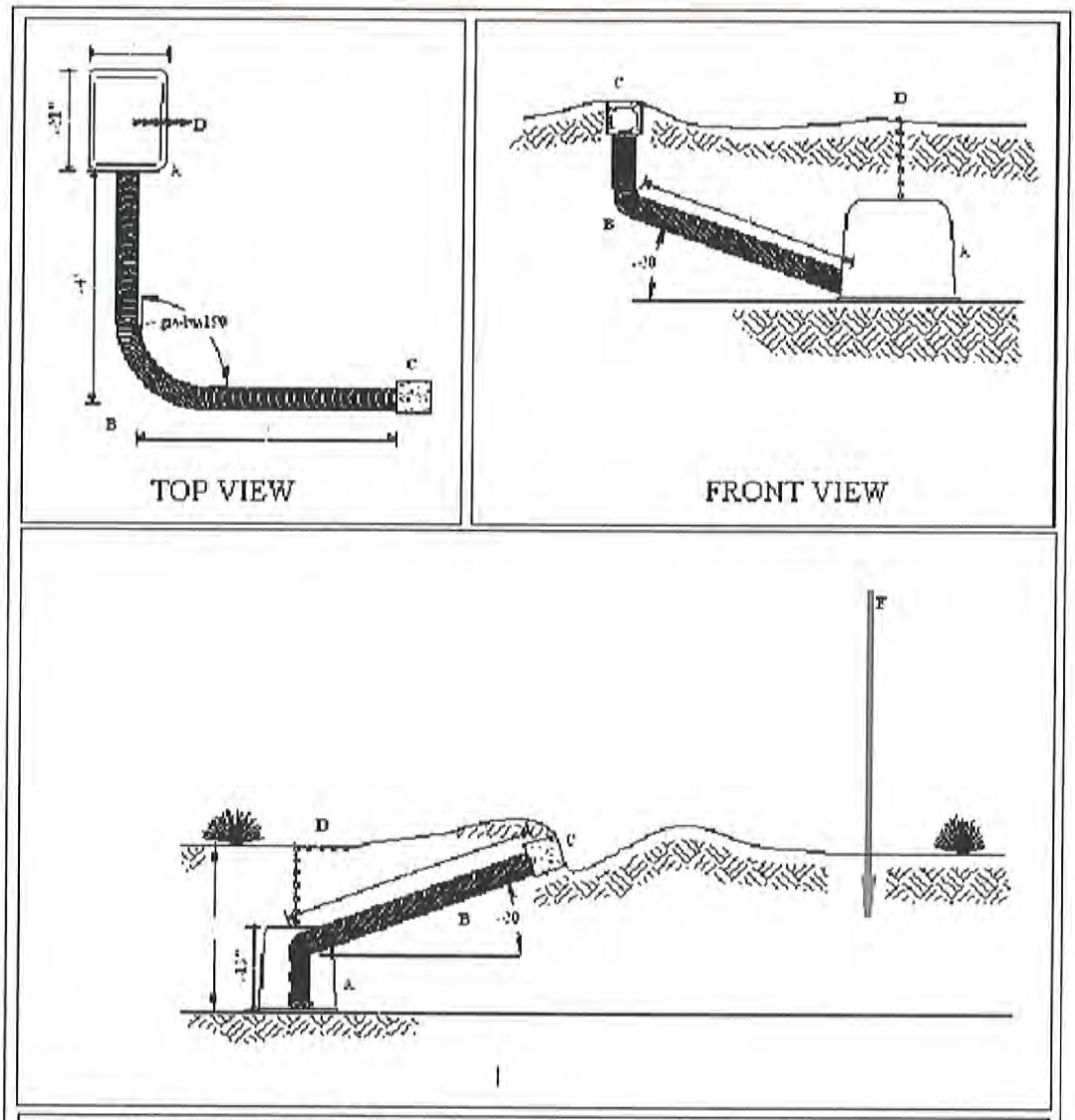
To be legally adequate, mitigation measures must be capable of "avoiding the impact altogether by not taking a certain action or parts of an action"; "minimizing impacts by limiting the degree or magnitude of the action and its implementation"; "rectifying the impact by repairing, rehabilitating or restoring the impacted environment"; "or reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action." (Guidelines, Section 15370).

Section 66474 (e) of the Subdivision Map Act states "a legislative body of a city or county shall deny approval of a tentative map or parcel map for which a tentative map was not required, if it makes any of the following findings:...(e) that the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish and wildlife or their habitat". In recent court cases, the court upheld that Section 66474(e) provides for environmental impact review separate from and independent of the requirements of CEQA (Topanga Assn. for a Scenic Community v. County of Los Angeles, 263 Cal. Rptr. 214 (1989).). The finding in Section 66474 is in addition to the requirements for the preparation of an EIR or Negative Declaration.

ARTIFICIAL BURROWING OWL BURROW DESIGN

Prepared by: Albion Environmental, Inc., 1414 Soquel Avenue, No. 205

Santa Cruz, CA 95062 (831) 469-9128



A - plastic irrigation valve box
B - 4" diameter perforated corrugated plastic pipe
C - 6" square hollow concrete block
D - chain or plastic rope marking location of nesting chamber on ground surface
E - 5' - 6' perch post (optional)

APPENDIX C

Western Burrowing Owl Habitat Assessment and Focused Survey Data Sheets

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Mocking bird Cyn **Project No.:** **Survey No.** 1

Type Survey:

- ☐ Habitat Assessment
- ☒ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 11 Jan 09
Start Time: 0550 **Stop:** 0830 **Sunrise:** 0655 **Sunset:** —
Weather Conditions:
Temp: 38
Cloud Cover: 10% clearing after sunrise
Visibility: 10 miles
Wind: 0-3
Last Measurable Precip: 7 Jan 09

Plant Communities Present: Riversidean Sage Scrub
Height of vegetation: 1 meter
Percent ground cover: 70-75%

Is suitable BUOW Habitat present (Describe)?

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:
11 burrows - ground squirrel numerous openings in rock outcrop

Was owl sign (Castings, droppings, prey remains, feathers) observed?
If yes, describe sign observed on BUOW Sighting Record(Attach photos):
BUOW sign were not ~~observ~~ observed
Burrow identifier: NA

Were BUOW observed?
BUOW not observed.
Number of Adults: **Number of Males:** **Number of females/juveniles:**

Notes (Behavior, etc.):

In Sept 09 several owl pellets made up of insect parts were found in the vicinity of a large rock outcrop cas of lot 20 and in the buffer. These could not be found on this visit. May have broken down in rains.

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Mockingbird Cyn **Project No.:** **Survey No.** 2

Type Survey:

- ☐ Habitat Assessment
- ☐ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 13 Jan 09
Start Time: 0555 **Stop:** 0855 **Sunrise:** 0655 **Sunset:** —
Weather Conditions:
Temp: 42
Cloud Cover: Scattered cloud cover at start. Clouds disappeared after sunrise
Visibility: 5 miles
Wind: 0 - 3 mph
Last Measurable Precip: 7 Jan 09

Plant Communities Present: Riversidean Sage Scrub
Height of vegetation: 1.0-meter
Percent ground cover: 70-75 %

Is suitable BUOW Habitat present (Describe)?
Ground squirrel Burrows
Crevices in rock formation/outcrop

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:
.

Was owl sign (Castings, droppings, prey remains, feathers) observed?
If yes, describe sign observed on BUOW Sighting Record(Attach photos):
BUOW sign not observed.
Burrow identifier:

Were BUOW observed? BUOW not observed

Number of Adults: NA **Number of Males:** NA **Number of females/juveniles:** NA

Notes (Behavior, etc.):

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Mockingbird Cyn **Project No.:** **Survey No.** 3

Type Survey:

- ☐ Habitat Assessment
- ☐ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 2 Feb 2010

Start Time: 0545 **Stop:** 0845 **Sunrise:** 0646 **Sunset:** —

Weather Conditions:

Temp: 44°

Cloud Cover: None

Visibility: ~~Visibility~~ 3-5 ~~mil~~ miles

Wind: 0-3 Calm

Last Measurable Precip: 28 Jan 2009

Plant Communities Present: Riversidean Sage Scrub

Height of vegetation: 1-meter

Percent ground cover: 70-75%

Is suitable BUOW Habitat present (Describe)?

Ground squirrel burrows and ~~crevices~~ crevices in rock outcrops.

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:

.

Was owl sign (Castings, droppings, prey remains, feathers) observed?

If yes, describe sign observed on BUOW Sighting Record(Attach photos):

BUOW Sign not observed

Burrow identifier:

Were BUOW observed? BUOW not observed

Number of Adults: NA **Number of Males:** NA **Number of females/juveniles:** NA

Notes (Behavior, etc.):

None

WESTERN BURROWING OWL HABITAT ASSESSMENT AND FOCUSED SURVEY DATA SHEET

Project Name: Mockingbird Cyn **Project No.:** **Survey No.** (4)

Type Survey:

- ☐ Habitat Assessment
- ☐ Focused Burrow Survey /Mapping
- ☒ Focused Owl Survey/Census
- ☐ 30-Day Preconstruction Survey

Investigator(s): L.N. Dean

Date: 4 Feb 2010
Start Time: 0545 **Stop:** 0845 **Sunrise:** — **Sunset:** 0645
Weather Conditions:
Temp: 48°F
Cloud Cover: None
Visibility: 3-5 miles some haze
Wind: 0-3
Last Measurable Precip: 9 Feb 2010

Plant Communities Present: Riversidean Sage Scrub
Height of vegetation: 1-meter
Percent ground cover: 70-75 %

Is suitable BUOW Habitat present (Describe)?
There are ground squirrel burrows and openings in rock outcrop providing suitable burrows

Number and types of suitable burrows (mammal burrow, culvert, debris pile, etc.) observed:

Was owl sign (Castings, droppings, prey remains, feathers) observed?
If yes, describe sign observed on BUOW Sighting Record(Attach photos):
BUOW sign was not observed
Burrow identifier:

Were BUOW observed? BUOW were not observed

Number of Adults: NA **Number of Males:** NA **Number of females/juveniles:** NA

Notes (Behavior, etc.):

No additional Comments

APPENDIX D

Survey Photographs

Photo 1, Rocky outcrop near Lot 20. Refer to Figure 3 in report for location of Lot 20. Owl pellets and several burrows were found at this location. Note "whitewash" (excrement) on rocks indicative of use by birds as perch or roost.

Photo 2, Burrows suitable for use by burrowing owls.
These were found near the base of the outcrop in Photo 1.

Photo 3., Looking north across Lot 20. Rock outcrop in Photo 1 is near ridgeline in this photo. Refer to Figure 3 in report for location of Lot 20.

Photo 4, Looking south across Lot 20. Refer to Figure 3 in report for location of Lot 20.

Photo 5, Riversidean Sage Scrub and potential burrowing owl habitat along Proposed Mockingbird Connection alignment. Lot 20 is just below the horizon to the left.

Photo 6, Riversidean Sage Scrub along west side of Proposed Mockingbird Connection alignment

Photo7, South end of Proposed Mockingbird Connection alignment, looking south along pipeline right-of-way through Disturbed Riversidean Sage Scrub.
Van Buren Boulevard is the paved road in the middle distance.

Photo 8, Looking north along portion of alignment seen in Photo 7, above.

Frac-Out Contingency Plan for Horizontal Directional Drilling

The proposed Riverside Corona Feeder pipeline is proposed to cross the Santa Ana River, Springbrook Wash, and other unnamed drainage courses by Horizontal Directional Drilling (HDD). HDD is less intrusive than traditional open-cut trenching where habitats sustain direct soil disturbance.

Frac-out, or inadvertent return of drilling lubricant, is a potential concern when the HDD is used under sensitive habitats, waterways, and areas of concern for biological resources. The HDD procedure uses bentonite slurry, a fine clay material as a drilling lubricant. The bentonite is non-toxic and commonly used in farming practices, but benthic invertebrates, aquatic plants and fish and their eggs can be smothered by the fine particles if bentonite were discharged to waterways.

The purpose of a Contingency Plan or "Frac-out" plan is to:

- Minimize the potential for a frac-out associated with horizontal directional drilling activities
- Provide for the timely detection of frac-outs
- Protect areas that are considered environmentally sensitive (streams, wetlands, other biological resources, cultural resources)
- Ensure an organized, timely, and "minimum-impact" response in the event a frac-out and release of drilling mud occur
- Ensure that all appropriate notifications are made to WMWD and environmental specialists immediately (e.g., Designated Biologist), and to appropriate regulatory agencies in 24 hours and that documentation is completed

Prior to construction, sensitive biological resources will be protected by implementing the following measures:

- A pedestrian survey will be conducted of the drilling entry and exit areas, surrounding work areas, and the drilling route (to the extent it is accessible) to ensure that there are no sensitive biological resources present on the surface.
- Where present, sensitive biological resources will be flagged for avoidance or construction limits will be clearly marked
- Barriers (straw bales or sedimentation fences) will be erected between the bore site and nearby sensitive resources prior to drilling, as appropriate, to prevent released material from reaching the resource
- On-site briefings will be conducted for the workers to identify and locate sensitive resources at the site
- Ensure that all field personnel understand their responsibility for timely reporting of frac-outs
- Maintaining necessary response equipment on-site or at a readily accessible location and in good working order
- Disallowing fill into waters of the United States unless proper permits have been obtained
- Monitoring for the duration of drilling activities by a qualified biologist

- Implement any of the mitigation measures specified by CDFG in its Streambed Alteration Agreement, pursuant to Fish and game Code Section 1600.

The drilling entry and exit areas will be clearly marked, surrounded by construction fencing and silt fencing to minimize the potential for all-site migration of drilling mud. Access and egress locations will be designated and clearly marked.

The primary areas of concern for inadvertent returns occur at the entrance and exit points where the drilling equipment are at depths of less than 12 to 20 feet deep. The likelihood of inadvertent return decreases as the depth of the pipe increases. To reduce the potential of a frac-out affecting sensitive resources to the greatest extent feasible, the entrance and exit points for drilling will be located at least 150 feet from riparian vegetation along the Santa Ana River and other drainages.

To minimize the potential extent of impacts from a frac-out, all HDD will be attended by a full-time biological monitor, to look for observable "frac-out" conditions or lowered pressure readings on the drilling equipment. Early detection is key to minimizing the area of potential impact.

Contingency Response

Once a frac-out is identified:

- All work stops, including the recycling of drilling mud/lubricant. The pressure of water above the pipe keeps excess mud from escaping through the fracture.
- Determine the location and extent of the frac-out.

If the frac-out is terrestrial:

- Isolate the area with hay bales, sand bags, or silt fencing to surround and contain the drilling mud.
- Consult with CDFG regarding next appropriate action among the following:
    - A mobile vacuum truck will be used to pump the drilling mud from the contained area and recycled to the return pit.
    - The drilling mud will be left in place to avoid potential damage from vehicles entering the area.
- Once excess drilling mud is removed, the area will be seeded and/or replanted using species similar to those in the adjacent area, or allowed to re-grow from existing vegetation.
- Revegetated areas will be monitored twice per year for two years subsequent to frac-out to confirm revegetation is successful.

If the frac-out is aquatic (i.e., under water):

- Monitor frac-out for 4 hours to determine if the drilling mud congeals. (Bentonite will usually harden, effectively sealing the frac-out location).
- Consult with CDFG regarding next appropriate action among the following:
    - If drilling mud congeals, take no other action that would potentially suspend sediments in the water column.
    - If drilling mud does not congeal, erect isolation/containment environment (underwater boom and curtain).

- If the fracture becomes excessively large, a spill response team would be called in to contain and clean up excess drilling mud in the water. Phone numbers of spill response teams in the area will be on site.

- If the spill affects and area that is vegetated, the area will be seeded and/or replanted using species similar to those in the adjacent area, or allowed to re-grow from existing vegetation.
- Revegetated areas will be monitored twice per year for two years subsequent to frac-out to confirm revegetation is successful.

After frac-out is stabilized and any required removal is completed, document post-cleanup conditions with photographs and prepare frac-out incident report describing time, place, actions taken to remediate frac-out and measures implemented to prevent recurrence. Incident report will be provided to WMWD and CDFG as part of project compliance not more than 30 days after the incident.