BIOLOGICAL TECHNICAL REPORT FOR THE
CRYSTAL VIEW TERRACE/
GREEN ORCHARD PLACE/
OVERLOOK PARKWAY PROJECT
CITY OF RIVERSIDE, CALIFORNIA

CASE No. 11-0050
Within 49 APNs (listed within Attachment 2)

Total Impacts for Scenario 3: 4.0 acres
Total Impacts for Scenario 4: 23.51 acres
Total Area Surveyed: 100.76 acres

Location: USGS 7.5-minute topographic map, Township 03 South, Range 04 West and Township 03 South, Range 05 West of the United States Geological Survey (USGS) 7.5-minute topographic map, Riverside East & Riverside West quadrangles

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Surveys conducted by Beth Procsal, Mike Nieto, Erin McKinney, Italia Gray, and Anna Bennett on February 11, July 19, and November 16, 2011.

Sensitive habitats mapped include southern willow scrub. No sensitive species were observed within the survey area. Focused surveys for least Bell's vireo were conducted and vireo were not detected.

RECON NUMBER 6103
November 15, 2012

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1.0 Executive Summary

The Crystal View Terrace/Green Orchard Place/Overlook Parkway Project (Project; City of Riverside P11-0050) is located in the City of Riverside, California. The three survey areas evaluated for the Project (study area) include a proposed road connection of Overlook Parkway between Brittanee Delk Court and Sandtrack Road (Eastern Survey Area), a proposed bridge crossing connecting portions of Overlook Parkway over the Alessandro Arroyo (Alessandro Arroyo Survey Area), and a new road (Proposed C Street) would be constructed approximately one mile from the intersection of Overlook Parkway and Washington Street north and west ending at the intersection of Madison Street and Victoria Avenue (Western Survey Area). These three survey areas encompass the proposed project impact areas and appropriate buffers.

The three survey areas make up the study area for biological resources. The study area is within the City of Riverside and City of Norco Plan Areas for the Western Riverside County Multiple Species Habitat Conservation Plan (hereafter referred to as the MSHCP), but is not within or adjacent to a Criteria Cell; therefore, no impacts are proposed to occur to a MSHCP Criteria Cell. The biological resources in the study area were assessed according to sensitivity criteria and surveyed according to guidelines set forth in the MSHCP and the California Environmental Quality Act (CEQA).

Graceful tarplant (*Holocarpha virgata* ssp. *elongata*), a Group 2 MSHCP and a California Native Plant Society (CNPS) List 4 species was observed within the study area. In addition, two sensitive wildlife species, Lincoln's sparrow (*Melospiza lincolnii*), an MSHCP covered species (nesting), and Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), a California Department of Fish and Game (CDFG) species of special concern and a Group 1 MSHCP covered species, were observed within the study area. Although the coastal California gnatcatcher was not detected during general surveys, there is suitable nesting habitat within the Riversidean sage scrub and U.S. Fish and Wildlife Service (USFWS) designated Critical Habitat for this species in the Eastern and Alessandro Arroyo Survey areas.

There is also potential for raptors, including Cooper's hawk (*Accipiter cooperii*), a CDFG species of special concern and a Group 2 MSHCP covered species, to nest within the Alessandro Arroyo and Western Survey Areas due to the presence of mature willow and eucalyptus trees. There is also potential for ground nesting raptors, such as northern harrier (*Circus cyaneus hudsonius*), a CDFG species of special concern and a Group 3 MSHCP covered species, to nest within the non-native grassland within the Western Survey Area. Long-term impacts associated with urbanization and associated infrastructure improvements are addressed through consistency with the MSHCP. Since the project is not intended to be part of the MSHCP Conservation Area (i.e. not located in a Criteria Cell), and complies with the survey requirements of the MSHCP, any

biological impacts that could occur to these plant and wildlife species as a result of the proposed project are mitigated through the MSHCP. For raptor species that are not covered by the MSHCP, the same avoidance measures required for covered species would also serve to minimize impacts to these wildlife species.

In accordance with the Migratory Bird Treaty Act (MBTA) and CDFG Code 3503, no direct impacts shall occur to any nesting birds, their eggs, chicks, or nests during their breeding seasons. If construction activities were to occur during the combined bird-breeding season of February 1 – September 15, a qualified biologist shall conduct a pre-construction clearance survey for nesting birds in suitable nesting habitat that occurs within the proposed area of impact. Pre-construction nesting surveys will identify any active migratory birds (and other sensitive non-migratory birds) nests. Direct impacts to any active migratory bird nest would therefore be avoided.

The southern willow scrub located in the Alessandro Arroyo Survey Area supports suitable nesting habitat for the least Bell's vireo. Focused surveys for this sensitive bird species were conducted from early May to mid-July in 2011, and no vireos were detected. Based on these focused survey results, no direct or indirect impacts to this species are anticipated; therefore, no mitigation is required.

The Eastern Survey Area supports suitable habitat for Stephens' kangaroo rat; however, no Stephens' kangaroo rat, sign, or burrows were detected during the survey. Based on the absence of the species, direct impacts to this species are not anticipated to occur. However, this survey area, as well as the Alessandro Arroyo and Western Survey Areas, are within the Stephens' kangaroo rat Plan Fee Area and requires payment of fees for impacts to Stephens' kangaroo rat habitat.

A burrow and habitat assessment survey for western burrowing owl (*Athene cunicularia hypugaea*), a California species of special concern and MSHCP covered species, was conducted as recommended by the Conservation Summary Report Generator (County of Riverside 2003a). Suitable habitat for this species was not observed during the survey; therefore, protocol nesting season surveys were not conducted and no impacts to this species are anticipated.

A wetland delineation was conducted within the three survey areas. Within the Eastern Survey Area, U.S. Army Corps of Engineers (ACOE) jurisdictional resources total 0.11 acre, which includes 0.06 acre of ACOE wetlands and 0.05 acre of ACOE non-wetland waters of the U.S. The majority of the non-wetland waters within this survey area are located within the southern drainage. CDFG jurisdictional waters within the Eastern Survey Area total 0.31 acre, which include 0.26 acre of wetlands and 0.05 acre of streambed. California Regional Water Quality Control Board (RWQCB) jurisdictional total 0.31 acre waters of the State.

Within the Alessandro Arroyo Survey Area, ACOE jurisdictional waters of the U.S. total 0.94 acre on-site, including 0.93 acre of ACOE wetlands and 0.01 acre of ACOE non-wetland waters. CDFG jurisdictional waters total 1.78 acres on-site, including 1.77 acres of wetlands and 0.01 acre of streambed. RWQCB jurisdictional waters of the State total 1.78 acres.

Within the Western Survey Area where the Gage Canal was evaluated for jurisdictional resources, ACOE jurisdictional waters of the U.S. total 0.19 acre non-wetland waters. Additionally, CDFG jurisdictional waters total 0.19 acre of streambed, and RWQCB jurisdictional waters of the State total 0.19 acre.

If the proposed road connection of Overlook Parkway between Brittanee Delk Court and Sandtrack Road and the proposed bridge connection of Overlook Parkway over the Alessandro Arroyo are constructed, project implementation will impact approximately 0.22 acre of jurisdictional resources within the Eastern Survey Area and 1.08 acre within the Alessandro Arroyo Survey Area. For the Proposed C Street in the Western Survey Area, 0.04 acre of jurisdictional resources would be impacted. Impacts to these areas would be considered significant and would require mitigation at a minimum of a 1:1 ratio in order to comply with “no-net-loss” policies.

A total of 1.56 acres of mitigation for permanent impacts at a 2:1 ratio, and temporary impacts at a 1:1 ratio would be required. All mitigation listed above for state and federal waters is subject to the approval of by the regulatory agencies. Mitigation for impacts is planned through habitat creation, restoration, and/or enhancement. Preferred mitigation would be enhancement of southern willow scrub outside of the bridge footprint within the Alessandro Arroyo Survey Area. In addition, notification to the ACOE Section 404 Nationwide Permit Program, a Streambed Alteration Agreement from CDFG, and a 401 Water Quality Certification from the RWQCB would be required.

2.0 Introduction

This report is intended to satisfy City of Riverside (City) biological review requirements in accordance with the Western Riverside County MSHCP and CEQA, and to identify and map the location of potential jurisdictional waters to provide necessary background information for analysis by ACOE, CDFG, and RWQCB. The study area for the proposed project is located within the MSHCP area (County of Riverside 2003b). The required Biological Report Summary Sheets and the Level of Significance Checklist are included as Attachments 3 and 4, respectively.

2.1 Project Location

The Project is located in the City of Riverside, California (Attachment 1: Figure 1). The project is located within Township 03 South, Range 04 West and Township 03 South, Range 05 West of the United States Geological Survey (USGS) 7.5-minute topographic map, Riverside East and Riverside West quadrangles (Attachment 1: Figure 2; USGS 1980a, 1980b).

The project area is a large area generally bounded by John F Kennedy Drive and Hermosa Drive to the south, Adams Street and the State Route 91 (SR-91) to the west, Arlington Avenue to the north, and Alessandro Boulevard and Trautwein Road to the east. However, a more specific study area was developed for the evaluation of biological resources. The study area is approximately 100 acres and includes areas where roadways and associated facilities proposed by one or more of the scenarios could require construction and other ground disturbing activities. The three survey areas are described below (Attachment 1: Figure 3):

- The Eastern Survey Area includes a 200-foot buffer for the proposed road connection for the alignment of Overlook Parkway between Brittanee Delk Court and Sandtrack Road.
- The Alessandro Arroyo Survey Area includes a 200-foot buffer for the proposed bridge and roadway connection for Overlook Parkway over the Alessandro Arroyo between Via Vista Drive and Crystal View Terrace.
- The Western Survey Area includes a 200-foot buffer for the Proposed C Street and associated components (e.g., vacated roads, cul-de-sacs, and roadway realignments).

The survey areas are located on 49 Assessor's Parcel Numbers (APNs). A complete list of project APNs can be found in Attachment 2.

2.2 Project Background

The project involves the evaluation of four circulation scenarios associated with Overlook Parkway. Overlook Parkway runs east-west from Washington Street to Alessandro Boulevard, however, Overlook Parkway is not connected between Brittanee Delk Court and Sandtrack Road and over the Alessandro Arroyo between Crystal View Terrace and Via Vista Drive. In addition, Overlook Parkway does not extend west past Washington Street; therefore, a direct connection to SR-91 does not exist from Overlook Parkway. As a result of the approval of two separate tract maps, gates at Crystal View Terrace and Green Orchard Place were installed to address cut-through traffic until Overlook Parkway was completed across the Alessandro Arroyo. Four circulation scenarios are

Alessandro Arroyo, to Alessandro Boulevard, and a connection westerly of Washington Street is built.

Scenario 2 — The gates at both Crystal View Terrace and Green Orchard Place would be permanently removed, and there would be no connection of Overlook Parkway across the Alessandro Arroyo, easterly to Alessandro Boulevard, or a connection westerly of Washington Street. However, the Overlook Parkway connection would remain on the Master Plan of Roadways of the General Plan 2025 for future consideration. The City would be required to approve an amendment to Policy CCM-4.4 in the City General Plan 2025, along with project conditions related to the gates for two projects.

Scenario 3 — The gates at Crystal View Terrace and Green Orchard Place would be removed, and Overlook Parkway would be connected between Via Vista Drive and Sandtrack Road with the construction of a fill crossing and over the Alessandro Arroyo with a bridge crossing, allowing for a through connection to Alessandro Boulevard. The connection to the SR-91 would not be considered and would be removed from the Master Plan of Roadways in the General Plan 2025.

Scenario 4 — Both Crystal View Terrace and Green Orchard Place gates would be removed and Overlook Parkway would be connected east across Alessandro Arroyo and to Alessandro Boulevard. In addition, a roadway (the Proposed C Street) would be constructed approximately one mile from the intersection of Overlook Parkway and Washington Street north and west ending at the intersection of Madison Street and Victoria Avenue.

Scenarios 1 and 2 involve either maintaining or removing existing gates and do not propose any construction; therefore, no biological impacts would occur if either Scenario 1 or 2 were to be selected by decision makers. For this reason, these scenarios do not require further discussion in this report. Scenarios 3 and 4 involve the construction of new roadway segments. For the purposes of biological impacts, only Scenarios 3 and 4 will be evaluated in this document. Specific project components associated with Scenarios 3 and 4 are discussed below.

2.3 Project Components

As part of Scenario 3, two areas of Overlook Parkway are proposed to be connected through construction of a fill crossing and bridge. In addition, storm drains, water lines, and gas and electric power lines would be extended to tie into existing lines concurrent with roadway construction. Temporary construction activities would occur within a construction easement on either side of the proposed roadways. Construction staging would be accommodated primarily on Overlook Parkway and other existing roadways. Scenario 4 includes all features of Scenario 3, and also includes the construction of the Proposed C Street west of Washington Street and associated features.

Erosion control and best management practices (BMPs) would be implemented during construction, such as silt fencing and sand bags on daylight slopes to collect erosion from reaching undisturbed areas. Within the existing curb and gutters, check bands (sand bags) and straw bales near inlets would provide further protection from construction materials. A concrete wash area would be used to clean vehicles and materials prior to leaving off-site. After construction, surface areas temporarily impacted would be restored to their natural condition and revegetated with a native seed mix consistent with the on-site vegetation communities.

As discussed below, there are three specific areas that could be potentially impacted by project activities. This document evaluates the biological impacts that would occur in the study area (see Attachment 1: Figure 3).

Within the Eastern Survey Area, the missing section of roadway east of the Alessandro Arroyo (approximately 465 linear feet) between Brittanee Delk Court and Sandtrack Road would be completed. The improvements would include a continuation of the existing 62-foot-wide, two-lane arterial roadway, consisting of a median, parkways, sidewalks, and curbs. The grading operations would be completed by excavating soil from the southerly side of the proposed roadway and compacting the removed material on the northerly side to provide the final subgrade elevations. The grading would include 2:1 cut slopes on the southerly side and variable slope fills on the northerly side of the new roadway (2:1 max). As part of the improvements, the existing median on Overlook Parkway would be extended and the road surface would be paved and striped to match the existing road surface and lane configuration. In addition, a culvert would be installed to allow the flow from existing drainages to be conveyed under the new roadway. The anticipated duration to complete this section is approximately two months.

Within the Alessandro Arroyo Survey Area two 33.5-foot-wide bridges, separated by a 31-foot-wide gap, would be constructed along Overlook Parkway from Crystal View Terrace to the existing segment near Via Vista Drive, spanning the Alessandro Arroyo. Abutments are proposed where each bridge structure would meet the existing roadway of Overlook Parkway. As part of the improvements, the existing median on Overlook Parkway would be extended and the bridge surface would be paved and striped to match the existing road surface. Retaining walls are proposed at the outside corners of each bridge to accommodate the existing slopes and reduce the permanent impacts to the vegetation associated with regrading. At the ends of the bridge, the project proposes to re-grade at a 2:1 slope and provide wing walls or short retaining walls at the inside corners of each bridge. In addition, a rock slope protection area, approximately six feet deep, would be installed to protect the abutment slope against scour. The bridge construction is anticipated to last approximately nine months.

Within the Western Survey Area, the Proposed C Street would be constructed approximately one mile from the intersection of Overlook Parkway and Washington Street north and west ending at the intersection of Madison Street and Victoria Avenue. The proposed alignment would include four lanes of travel, with 80 feet of curb-to-curb improvements, including a 12-foot median, within a 100-foot right-of-way. The roadway cross section for the Proposed C Street would be graded to accommodate sidewalks, curb and gutter, and an area for laying pavement material.

The Proposed C Street would connect to the existing intersection of Victoria Avenue and Madison Street. The Proposed C Street includes four 10-foot lanes of travel, and therefore, would necessitate the following improvements to the existing intersection: the existing four-way stop controlled intersection would be signalized, and crosswalks would be added on the western segment of Victoria Avenue. The existing median would be extended to allow for a trail that would be placed within the median as a crosswalk. The trail would be constructed of color-matched concrete, paver stones, or flat rocks embedded in concrete mortar. The final design of all improvements would comply with American with Disability Act (ADA) standards. No curbs or turn pockets are proposed.

As a result of the Proposed C Street, other project components are required, including: a cul-de-sac and vacated road along the existing portion of Washington Street from Engle Drive to just north of the existing Overlook Parkway and Washington Street intersection; a cul-de-sac and vacated road along Dufferin Avenue west of the Proposed C Street alignment; the realignment of Lenox Avenue/Graylock Avenue to provide a connection to the Proposed C Street alignment and existing Washington Street; and the vacation of a portion of Madison Avenue and a realignment to the Proposed C Street. Construction of the Proposed C Street and related improvements would occur under Scenario 4 only. New roads would be paved and striped. The City would vacate the existing right-of-way in select sections where cul-de-sacs and other improvements are proposed. Vacating the right-of-way involves removing pavement and all traffic devices within developed,

paved areas. The Proposed C Street would cross the Gage Canal, requiring a culvert under the road for the Canal just east of the existing alignment of Washington Street. As a result of the vacation of the existing Washington Street, the portion of roadway currently covering the Gage Canal would be removed.

In addition to new roadways, several intersections in urban and developed areas within the project area require additional turn lanes as mitigation for impacts related to traffic. These improvements are proposed within paved and developed areas; therefore, ground-disturbing activities would be contained to developed areas not considered sensitive. In addition, the duration and type of construction activities is expected to be short-term.

3.0 Survey Methodology

Fieldwork focused on three primary objectives: (1) vegetation mapping, (2) assessing habitat for sensitive plant and wildlife species, and (3) delineating wetlands and other jurisdictional resources. All observations of plant and wildlife species were recorded.

3.1 Vegetation Mapping

RECON biologists mapped vegetation on the Alessandro Arroyo and Western Survey Areas on February 11, 2011, and the Eastern Survey Area on July 19, 2011 and November 16, 2011. Vegetation communities present within the survey areas were mapped on a one-inch-equals-400-feet color aerial photograph. The general survey was conducted by walking slowly throughout survey areas. Field survey times, dates, and weather conditions are presented in Table 1. The Eastern and Alessandro Arroyo Survey Areas include a 200-foot buffer around the proposed bridge and road extensions, and the Western Survey Area also includes a 200-foot buffer around the proposed road alignments.

Fieldwork for the Western Survey Area originally covered more than 250 acres west of Washington Street to support the evaluation of several alternative routes for the extension of Overlook Parkway. During the course of conducting preliminary traffic modeling of this area and potential roadway alternatives, one route was selected for further study.

TABLE 1
SURVEY DATES, TIMES, AND WEATHER CONDITIONS

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
02/1/2011	Beth Procsal Mike Nieto Anna Bennett	General Biology, Wetland Delineation	9:00a.m.; 64˚F; wind 0-2 mph; 0% cloud cover	3:00p.m.; 68˚F; wind 2 mph; 0% cloud cover
07/19/2011	Beth Procsal Erin McKinney	General Biology	9:30a.m.; 76˚F; wind 0–1 mph; 0% cloud cover	11:30a.m.; 85˚F; winds 0–2 mph; 0% cloud cover
11/16/2011	Beth Procsal Italia Gray	Wetland Delineation	9:15a.m.; 60˚F; wind 0–2 mph; 0% cloud cover	12:45p.m.; 72˚F; winds 0–1 mph; 0% cloud cover

°F = degrees Fahrenheit; mph = mile per hour; % = percent

3.2 Flora

All plant species observed within the survey areas were noted and identified. Floral nomenclature for common plants follows Hickman (1993), vegetation communities follow Holland (1986), and sensitive plant species follow CNPS (2001).

3.3 Fauna

Animal species observed directly or detected from calls, tracks, scat, nests, or other sign were noted. As surveys were conducted during the daytime hours, nocturnal animals were surveyed for through sign, such as scat, tracks, or burrows. In addition, species present only during the summer and fall may not have been detected. Zoological nomenclature for birds is in accordance with the American Ornithologists' Union Checklist (1998); for butterflies, Mattoni (1990) and Opler and Wright (1999); for amphibians and reptiles, Crother (2001) and Crother et al. (2008); and for mammals, Jones et al. (1997) and Hall (1981).

3.4 Habitat Assessment

The parcel numbers were entered into the Conservation Summary Report Generator on the Riverside County Integrated Project website (County of Riverside 2003a) to identify the sensitive species that may potentially occur on-site and require a habitat assessment. The results indicated a habitat assessment was required for western burrowing owl. The required habitat assessment was conducted at all three survey areas during the general surveys to determine the potential for occupation by this wildlife

species. Additionally, determinations were made as to the suitability of the habitats in the survey areas to support federally listed species, including least Bell's vireo, coastal California gnatcatcher, arroyo toad, and Stephens' kangaroo rat.

Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon known ranges and habitat preferences for the species (Jennings and Hayes 1994; State of California 2009, 2010a–d; CNPS 2007), the MSHCP (County of Riverside 2003b), and species occurrence records from other sites in the vicinity of the survey areas.

3.5 Jurisdictional Delineation

Wetland delineations, following the guidelines set forth by ACOE (2008), were performed on February 11, 2011 and November 16, 2011 to gather field data at potential jurisdictional wetland sites in the three survey areas. Prior to conducting the delineation, a one-inch-equals-100-feet aerial photograph of the site and the USGS Riverside East quadrangle were reviewed to identify potential jurisdictional resources. Once on-site, all potential jurisdictional resources were assessed for the presence of any of the three ACOE wetland parameters. A detailed description of the jurisdictional delineations can be found in the Wetland Delineation report prepared for the Project (RECON 2012a; Appendix A).

3.6 Riparian/Riverine, Vernal Pools, and Fairy Shrimp Requirements

In compliance with Section 6.1.2 of the MSHCP, any riparian/riverine habitat and vernal pools within the study area were identified, mapped, and recorded during the general biological surveys. Section 6.1.2 of the MSHCP defines Riparian/Riverine Areas and vernal pools as follows:

> Riparian/Riverine Areas are lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.
>
> Vernal pools are seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season, but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative

wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season.

In addition to mapping vernal pools, the MSHCP requires mapping of stock ponds, ephemeral pools, and other features which may be suitable habitat for Riverside fairy shrimp (*Streptocephalus woottoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Santa Rosa fairy shrimp (*Linderiella santarosae*).

4.0 Results

4.1 Topography and Soils

The Eastern Survey Area is located where there is a break in Overlook Parkway, between the intersections of Sandtrack Road and Overlook Parkway and Brittanee Delk Court and Overlook Parkway. The Alessandro Arroyo Survey Area is located where there is a break in Overlook Parkway over the Alessandro Arroyo, between the intersections of Crystal View Terrace and Overlook Parkway and Via Vista Drive and Overlook Parkway. The Western Survey Area is south of Victoria Avenue and west of Washington Street. Elevation at the Eastern Survey Area ranges from 1,420 to 1,500 feet above mean sea level (amsl); the Alessandro Arroyo Survey Area ranges from approximately 1,360 to 1,420 feet amsl; and the Western Survey Area ranges from 880 to 1,040 feet amsl.

Two soil types are mapped on the Eastern Survey Area, which include Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded, and Fallbrook sandy loam, 8 to 15 percent slopes, eroded (U.S. Department of Agriculture 1971) (see Attachment 1: Figure 4).

Five soil types are mapped on the Alessandro Arroyo Survey Area, including: Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded; Cieneba sandy loam, 15 to 50 percent slopes, eroded; Cieneba sandy loam, 8 to 15 percent slopes, eroded; Hanford coarse sandy loam, 2 to 8 percent slopes; and Vista coarse sandy loam, 8 to 15 percent slopes, eroded (U.S. Department of Agriculture 1971) (Attachment 1: Figure 4).

Nine soil types are mapped on the Western Survey Area, including: Arlington fine sandy loam, 2 to 8 percent slopes; Arlington loam, 2 to 5 percent slopes; Arlington loam, deep, 5 to 15 percent slopes; Bonsall fine sandy loam, 8 to 15 percent slopes; Buren fine sandy loam, 8 to 15 percent slopes, eroded; Delhi fine sand, 2 to 15 percent slopes, wind-eroded; Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded; Greenfield sandy loam, 2 to 8 percent slopes, eroded; and Vista coarse sandy loam, 15

to 35 percent slopes, eroded (U.S. Department of Agriculture 1971) (see Attachment 1: Figure 4).

Both Hanford coarse sandy loam and Greenfield sandy loam are alluvial soils often found in drainages and creek beds. Hanford coarse sandy loam is found within the entire Alessandro Arroyo, a well-defined drainage. However, Greenfield sandy loam is found within upland habitats, including non-native grassland and orchard, within the Western Survey Area. The other soil types are typically used for irrigated citrus, dryland grain, pasture, and range purposes (U.S. Department of Agriculture 1971).

4.2 Vegetation Communities/Land Cover Types

As shown on Figure 5 in Attachment 1, 10 vegetation communities and land cover types are present, including southern willow scrub, freshwater marsh, Riversidean sage scrub, disturbed Riversidean sage scrub, non-native grassland, disturbed land, active agricultural land, orchard, ornamental vegetation, and developed. No vernal pools were mapped within the study area. Acreage totals are presented in Table 2. A total of 41 plant species were identified within the study area (Attachment 5). Of this total, 23 (56 percent) are introduced species and 18 (44 percent) are native to southern California.

TABLE 2
VEGETATION COMMUNITIES AND LAND COVER TYPES (acres)

Vegetation Communities/ Land Cover Types	Total Acres in Eastern Survey Area	Total Acres in Alessandro Arroyo Survey Area	Total Acres in Western Survey Area	TOTAL in Study Area
Southern willow scrub	0.25	1.77	0.00	**2.02**
Freshwater marsh	0.01	0.00	0.00	**0.01**
Riversidean sage scrub	5.45	4.46	0.00	**9.91**
Disturbed Riversidean Sage Scrub	0.07	0.00	0.00	**0.07**
Non-native grassland	0.00	0.00	31.25	**31.25**
Disturbed land	0.20	0.80	6.93	**7.93**
Active agricultural land	0.00	0.00	2.51	**2.51**
Orchard	0.00	0.00	10.01	**10.01**
Ornamental vegetation	0.25	0.00	0.43	**0.68**
Developed	4.82	3.29	28.26	**36.37**
TOTAL	**11.05**	**10.32**	**79.39**	**100.76**

4.2.1 Southern Willow Scrub – 2.02 Acre

Southern willow scrub is a dense riparian community dominated by broad-leaved, winter deciduous trees. The density of the willows often prevents a dense understory of smaller plants from growing. The representative species typically grow in loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. Repeated flooding of southern willow scrub prevents succession to a community dominated by sycamores and cottonwoods (Holland 1986).

Approximately 0.25 acre of moderate-quality southern willow scrub occurs within Eastern Survey Area. The habitats are dominated by arroyo willow (*Salix lasiolepis*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Approximately 1.77 acres of high-quality southern willow scrub occurs within a south to north-flowing drainage within the Alessandro Arroyo that drains into the Santa Ana River. This vegetation is dense and multi-tiered and supports a native understory (Attachment 6: Photographs 1-3). This vegetation is found within the northern drainage which is narrow, approximately 10-15 feet wide, and spans the majority of the drainage.

4.2.2 Freshwater Marsh – 0.01 acres

Freshwater marsh is a wetland vegetation community that occurs within relatively shallow, open bodies of freshwater with little flow. This vegetation is frequently observed around the lakeshore fringe of ponds and around seeps and springs. All wetland habitats have been greatly reduced throughout their entire range and continue to decline as a result of urbanization.

Approximately 0.01 acre of freshwater marsh habitat occurs at the northwestern corner of the Eastern Survey Area. This vegetation community is dominated by southern cattail.

4.2.3 Riversidean Sage Scrub – 9.91 Acres and Disturbed Riversidean Sage Scrub – 0.07 acre

Riversidean sage scrub is the inland (xeric) form of coastal sage scrub, a vegetation community composed of low-growing, aromatic, drought-deciduous, soft-woody shrubs that have an average height of approximately three to four feet (Holland 1986). Typical shrub stands are fairly open and dominated by native shrub species. The plant community is typically found on xeric sites such as steep slopes, severely drained soils, or clays that release stored soil moisture slowly (Holland 1986). It also intergrades at slightly higher elevations with several southern Californian chaparrals.

High-quality Riversidean sage scrub, dominated by California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), and California buckwheat (*Eriogonum fasciculatum*), occurs within the Eastern and Alessandro Arroyo Survey Areas (Attachment 6: Photographs 5-8). Shrub cover in these areas is greater than 50 percent and averages two to three feet in height. Native annuals were observed growing amongst the shrubs. The disturbed Riversidean sage scrub is composed of approximately 20 percent shrub cover with a high volume of non-native grasses. This area appears to have been cleared at one time and is in the state of re-growth. There are 5.45 acres in the Eastern Survey Area and 4.46 acres of Riversidean sage scrub in the Alessandro Arroyo Survey Area, and 0.07 acre of disturbed Riversidean sage scrub in the Eastern Survey Area.

4.2.4 Non-native Grassland – 31.25 Acres

Non-native grassland is characterized by a sparse to dense cover of annual grasses reaching up to three feet high, which may include numerous native wildflowers, particularly in years of high rainfall. Annual species germinate with the onset of the rainy season and set seeds in the late winter or spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds. Non-native grassland is usually found in areas that range from being moist or waterlogged in the winter to being very dry during the summer and fall (Holland 1986).

Non-native grassland occurs throughout the Western Survey Area, primarily within abandoned agricultural fields. These non-native grasslands are dense (approximately 75 percent cover) and dominated by species such as wild oats (*Avena* sp.), red-stemmed filaree, London rocket (*Sisymbrium irio*), and rancher's fireweed (*Amsinckia menziesii*) (Attachment 6: Photographs 9-10). There are 31.25 acres of non-native grassland in the Western Survey Area.

4.2.5 Disturbed Land – 7.93 Acres

Disturbed land occurs on the northeastern end of the Eastern Survey Area, on the western end of the Alessandro Arroyo Survey Area, and within the middle of the Western Survey Area (Attachment 6: Photographs 2, 11-12). Minimal vegetation is present and is dominated by invasive herbaceous species such as red-stemmed filaree (*Erodium cicutarium*), Russian thistle (*Salsola tragus*), and wild barley (*Hordeum murinum*). Much of the disturbed land within the study area is a result of grading activities. There is 0.2 acre of disturbed land in the Eastern Survey Area, 0.80 acre in the Alessandro Arroyo Survey Area, and 6.93 acres in the Western Survey Area.

4.2.6 Active Agricultural Land – 2.51 Acres

Active agricultural land occurs on the eastern half of the Western Survey Area. This field contains planted cactus (Attachment 6: Photograph 13). There are 2.51 acres of active agricultural land in the Western Survey Area.

4.2.7 Orchard – 10.01 Acres

Orchards of various citrus species occur in the middle of the Western Survey Area (see Attachment 6: see Photograph 12). There are 10.01 acres of orchards in the Western Survey Area.

4.2.8 Ornamental Vegetation – 0.68 Acre

Ornamental vegetation is found in the middle of the Eastern Survey Area and on the northern tip of the Western Survey Area (Attachment 6: see Photographs 5 and 14). Indian fig (*Opuntia ficus-indica*) dominates this land cover type within the Eastern Survey Area. The ornamental vegetation within the Western Survey Area consists of mature trees, including gum tree (*Eucalyptus* sp.), fig tree (*Ficus* sp.), Canary Island palm (*Phoenix canariensis*), and Peruvian pepper tree (*Schinus molle*). There is 0.25 acre of ornamental vegetation in the Eastern Survey Area and 0.43 acre of ornamental vegetation in the Western Survey Area.

4.2.9 Developed – 36.37 Acres

Business lots, roadways, and private and residential development throughout the site are classified as developed land. There are 4.82 acres within the Eastern Survey Area, 3.29 acres of developed land within the Alessandro Arroyo Survey Area, and 28.26 acres within the Western Survey Area. A concrete-lined canal, the Gage Canal, is currently mapped as developed land within the southeastern tip of the Western Survey Area (Attachment 6: Photograph 14). Although the canal holds water, there is no vegetation associated with the canal, and it does not appear to support any wildlife.

4.3 Wildlife

The wildlife observed within the study area is typical of urban communities within the city of Riverside. A complete list of the species detected is provided in Attachment 7. Sensitive species observed or with the potential to occur are discussed in the Sensitive Biological Resources section.

4.3.1 Invertebrates

The distribution of butterflies is generally defined by the distribution of their larval food plants. Species common to urban and riparian communities are expected to be the most common butterfly species within the survey areas.

Painted lady butterflies (*Vanessa cardui*) and Sara orangetip (*Anthocharis sara*) were observed within the Western Survey Area in the non-native grassland.

4.3.2 Amphibians

Amphibians require moisture for at least a portion of their life cycle, with many requiring a permanent water source for habitat and reproduction. Terrestrial amphibians have adapted to more arid conditions and are not completely dependent on a perennial or standing source of water. These species avoid desiccation by burrowing beneath the soil or leaf litter during the day and during the dry season.

No amphibian species were observed during the survey; however, species commonly found in urbanized areas, such as Pacific treefrog (*Pseudacris regilla*), are likely to occur within the riparian vegetation in the Alessandro Arroyo Survey Area due to the presence of mesic conditions within the drainage.

4.3.3 Reptiles

The diversity and abundance of reptile species varies with habitat type. Many reptiles are restricted to certain vegetation communities and soil types, although some of these species will also forage in adjacent communities. Other species are more ubiquitous, using a variety of vegetation types for foraging and shelter.

Belding's orange-throated whiptail was observed within the Eastern Survey Area, granite spiny lizard (*Sceloporus orcutti*) was commonly observed within the Alessandro Arroyo Survey Area, and western fence lizard (*Sceloporus occidentalis*) was commonly observed within the non-native grassland throughout the Western Survey Area.

4.3.4 Birds

The diversity of bird species varies with respect to the character, quality, and diversity of vegetation communities present on a site. High-quality vegetation communities typically support a moderate to high variety of bird species. Riparian vegetation communities, such as southern willow scrub, provide foraging and shelter opportunities for a wide variety of bird species. Disturbed and developed areas are used by bird species adapted to urban settings.

The most commonly observed species within the survey areas are typical of riparian and urban habitats, including mourning dove (*Zenaida macroura*), house wren (*Troglodytes aedon parkmanii*), killdeer (*Charadrius vociferous vociferus*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), and black phoebe (*Sayornis nigricans semiatra*).

4.3.5 Mammals

Areas with herbaceous vegetation provide foraging opportunities for small mammals and larger predatory mammals, such as the coyote (*Canis latrans*). Most mammal species are nocturnal and must be detected during daytime surveys by observing their signs, such as tracks, scat, and burrows.

Three mammal species, desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), and northern raccoon (*Procyon lotor*), were observed or detected within the Riversidean sage scrub and non-native grassland in the Eastern and Western Survey Areas, respectively.

4.4 Sensitive Biological Resources

4.4.1 Regulatory Setting - Applicable Federal Regulations

Federal Endangered Species Act. The federal Endangered Species Act of 1973 (ESA), as amended, 16 U.S.C. 1531 et seq., provides for listing of endangered and threatened species of plants and animals and designation of critical habitat for listed animal species. The ESA also prohibits all persons subject to U.S. jurisdiction from “taking” endangered species, which includes any harm or harassment. Section 7 of the ESA requires that federal agencies, prior to project approval, consult USFWS and/or the National Marine Fisheries Service to ensure adequate protection of listed species that may be affected by the project.

National Environmental Policy Act of 1969 (NEPA) (Public Law 91-190; 42 U.S.C. 4321 et seq.). NEPA mandates federal agencies to consider and document environmental impacts of proposed actions and legislation. NEPA also mandates preparation of comprehensive environmental impact statements where proposed action is “major” and significantly affects the quality of the human environment.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive, and is listed at 50 CFR 10.13. The regulatory definition of

"migratory bird" is broad and includes any mutation or hybrid of a listed species and includes any part, egg, or nest of such bird (50 CFR 10.12). Migratory birds are not necessarily federally listed endangered or threatened birds under the ESA. The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Clean Water Act, 1972 (CWA)**.** The CWA provides a structure for regulating discharges into the waters of the U.S. Through this Act, the Environmental Protection Agency (EPA) is given the authority to implement pollution control programs. These include setting wastewater standards for industry and water quality standards for contaminants in surface waters. The discharge of any pollutant from a point source into navigable waters is illegal unless a permit under its provisions is acquired. In California, the State Water Resources Control Board and the nine RWQCB are responsible for implementing the CWA.

4.4.2 Regulatory Setting - Applicable State Regulations

California Environmental Quality Act. CEQA provides guidelines for defining impacts so that local jurisdictions are able to determine what constitutes an "adverse effect" and significant impact to a biological resource.

California Endangered Species Act. Similar to the federal ESA, the California ESA provides protection to species considered threatened or endangered by the State of California. The California ESA recognizes the importance of threatened and endangered fish, wildlife, and plant species and their habitats, and prohibits the taking of any endangered, threatened, or rare plant and/or animal species unless specifically permitted for education or management purposes.

California Fish and Game Code, Section 1600. Under Section 1602 of the Fish and Game Code, CDFG regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFG has jurisdiction over riparian habitats (e.g., southern willow scrub) associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFG jurisdiction does not include tidal areas or isolated resources.

California Fish and Game Code, Section 3503 and 3503.5. Under Section 3503 of the CDFG Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs (CDFG 1991).

Porter-Cologne Water Quality Act. The Act provides for statewide coordination of water quality regulations. The California State Water Resources Control Board was established as the statewide authority, and nine separate RWQCB were developed to oversee water quality on a day-to-day basis.

4.4.3 Western Riverside County MSHCP

The MSHCP is a comprehensive, multi-jurisdictional habitat conservation plan focusing on the conservation of species and their associated habitats. This plan is one of several large, multi-jurisdictional habitat-planning efforts in southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. The MSHCP allows the County of Riverside and its cities to better control local land use decisions and maintain a strong economic climate in the region while addressing the requirements of the federal Endangered Species Act (County of Riverside 2003b). The MSHCP plan area encompasses 1.26 million acres (1,966 square miles), including all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto.

The MSHCP serves as a habitat conservation plan pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as amended, as well as a Natural Community Conservation Plan under the Natural Community Conservation Planning Act of 2001. The MSHCP is used to allow the participating jurisdictions to authorize "Take" of plant and wildlife species identified within the plan area. USFWS and CDFG have authority to regulate the take of threatened, endangered, and rare species. Under the MSHCP, USFWS and CDFG will grant "Take Authorization" for otherwise lawful actions, such as public and private development, that may incidentally take or harm individual species or their habitat outside of the MSHCP Criteria Area, in exchange for the assembly and management of a coordinated MSHCP Criteria Area (County of Riverside 2003b).

The MSHCP was published for public review in November 2002. On June 17, 2003, the County of Riverside Board of Supervisors adopted the MSHCP, certified the Environmental Impact Report/Environmental Impact Statement, and authorized the Chairman to sign the Implementing Agreement. The plan has been approved and implemented by the permitting agencies. The City of Riverside is a permitting agency.

The Project is located within the Riverside and Norco Plan Areas for the MSHCP Plan Area (County of Riverside 2003b) and outside of any Criteria Cell (Attachment 1: Figure 6). A Criteria Cell is land, approximately 160 acres in size, which has been identified as an area with conservation potential. The Eastern Survey Area is 2.4 miles northeast of the nearest Criteria Cell. The Alessandro Arroyo and Western Survey Areas are approximately 2.5 miles and 2.9 miles northeast, respectively, of the nearest Criteria Cell (see Attachment 1: Figure 6).

New roadway projects in the MSHCP area are required to contribute five percent of the facility construction cost to the Western Riverside County Regional Conservation Authority (WRCRCA).

4.4.4 Stephens' Kangaroo Rat Habitat Conservation Plan

In 1996, USFWS approved a long-term HCP for Stephens' kangaroo rat and granted an incidental take permit for Riverside County covering an estimated 30,000 acres of occupied habitat (RCHCA 1996). The plan authorizes the incidental take of half of the occupied habitat remaining in the HCP plan area while using development fees to implement the plan, purchase private property, and create a reserve system. The Stephens' kangaroo rat HCP and corresponding permits are in effect for areas covered by the MSHCP; however, at this stage, the Stephens' kangaroo rat HCP and the MSHCP remain separate. The Fee Area is subject to mandatory conservation measures as outlined in the Stephens' kangaroo rat HCP (RCHCA 1996) and as subsequently modified.

All three survey areas occur within the Stephens' kangaroo rat habitat mitigation fee area (Fee Area) (Riverside County Habitat Conservation Agency [RCHCA] 1996) (see Attachment 1: Figure 6).

4.4.5 Sensitive Plants

All sensitive plant species known to occur in the project vicinity (within two miles of the survey areas) that are federally listed threatened or endangered or that have potential to occur based on species range are addressed in Attachment 8.

According to the Riverside County Integrated Project Conservation Summary Report Generator (County of Riverside 2003a), no sensitive plant habitat assessments were recommended. One noteworthy plant, graceful tarplant, was observed during the survey. This species was observed in low numbers, scattered within the Riversidean sage scrub vegetation location within the Eastern Survey Area. This species is described below.

Graceful tarplant (*Holocarpha virgata* ssp. *elongata*). Graceful tarplant is a Group 2 MSHCP (County of Riverside 2003b) and CNPS List 4 species (CNPS 2001). This strongly aromatic, sticky, annual herb in the sunflower family (Asteraceae) has a slender stem that may grow four feet tall and blooms between July and November. It occurs in Orange, Riverside and San Diego counties. It may occur in coastal and Riversidean sage scrub and cismontane woodland (CNPS 2001), but it is most commonly found in grasslands below 2,500 feet (Hickman 1993). Usually there is little shrub cover where graceful tarplant is found, but non-native grasses and herbs may dominate the area.

4.4.6 Sensitive Wildlife

All sensitive wildlife species known to occur in the project vicinity (within two miles of the survey areas) that are federally- and state-listed threatened or endangered, considered sensitive by the State of California, or that have potential to occur based on species range are addressed in Attachment 9.

A habitat assessment for western burrowing owl was required by the Riverside County Integrated Project Conservation Summary Report Generator (County of Riverside 2003a). Due to the presence of moderate- to high-quality riparian/riverine and Riversidean sage scrub habitats, there is potential for the federally listed least Bell's vireo, coastal California gnatcatcher, and Stephens' kangaroo rat to nest within these habitats. In addition, Belding's orange-throated whiptail, a CDFG species of special concern, was detected the Eastern Survey Area in July, and Lincoln's sparrow, a MSHCP covered species (nesting) was detected within the Western Survey Area in February. These species are described below.

Western burrowing owl (*Athene cunicularia hypugaea*). The western burrowing owl is a MSHCP conditionally covered subspecies and a CDFG species of special concern. Western burrowing owl is primarily restricted to the western United States and Mexico. Habitat for the western burrowing owl includes dry, open, short grass areas often associated with burrowing mammals (Haug et al. 1993). The burrowing owl ranges throughout the coastal lowlands in grasslands, agricultural areas, and coastal dunes (Unitt 1984). The burrowing owl is nocturnal and perches during daylight at the entrance to its burrow or on low posts. Nesting occurs from March through August. Burrowing owls form pair-bonds for more than one year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of this subspecies include the poisoning of squirrels and prairie dogs and collisions with automobiles.

Suitable western burrowing owl habitat is not present in the study area given the lack of open habitat that provides foraging opportunities and soft, sandy soil that allows for burrowing. Therefore, a focused survey is not required.

Arroyo toad (*Anaxyrus californicus*). The arroyo toad is federally listed as endangered, is a CDFG species of special concern, and is a MSHCP covered species. The arroyo toad occurs in coastal drainages in Santa Barbara, Ventura, Los Angeles, Orange, and San Diego counties and northwestern Baja California, Mexico, as well as from six desert drainages in Riverside and San Bernardino counties (Jennings and Hayes 1994). It is generally found in shallow pools or along sandy banks of third-order or greater streams with low currents (Jennings and Hayes 1994). Arroyo toads breed in pools, with the majority of the pool greater than one foot deep with a substrate of sand, gravel, or pebbles, lacking vegetation. Subadults and adults can range into surrounding uplands as much as 0.5 mile to 1.2 miles away from the stream (USFWS 1999). Arroyo toads are nocturnal and breed from March to June, depending on local climate. The main threats to arroyo toad are degradation and loss of riparian habitat and predation by bullfrogs (*Rana catesbeiana*).

Although the Alessandro Arroyo Survey Area includes a slow-moving stream with sandy channels, the area is surrounded to the east and west by existing development, and the stream itself is culverted upstream of the survey area, altering flows and reducing the habitat quality for arroyo toads. Due to these site conditions, coupled with a lack of known arroyo toad occurrences within the Santa Ana watershed, there is a low likelihood of arroyo toad occurring within the study area; therefore, surveys were not conducted for this species. Additionally, the nearest occurrence of arroyo toad is 17 miles southwest of the Alessandro Arroyo Survey Area.

Least Bell's vireo (*Vireo bellii pusillus*). The least Bell's vireo is federally and state listed as endangered and is a MSHCP covered species. Its historical breeding range once extended from northwestern Baja California, Mexico, to interior northern California, as far north as Red Bluff in Tehama County, California (Franzreb 1989). Its current distribution is now restricted to eight southern counties, the majority occurring in San Diego County (USFWS 1998). Least Bell's vireo winters in Mexico and breeds in southern California and northern Baja California, Mexico. The species is exclusively found in riparian habitats, including cottonwood-willow woodlands and forests, oak woodlands, and mule fat scrub, and requires dense cover for nesting (USFWS 1998). Least Bell's vireo arrives at the breeding grounds in mid-March and remains until September or October. Their diet consists primarily of insects and spiders and some fruit (Brown 1993). Populations of least Bell's vireo have declined drastically due to extensive loss of riparian habitat to agricultural and urban development, including channelization and mining of streams and nest parasitism by brown-headed cowbirds (*Molothrus ater*). The population has increased as a result of extensive brown-headed cowbird trapping programs.

Focused surveys are required to be conducted within all "riparian/riverine" habitats in accordance with the MSHCP. USFWS protocol breeding season surveys for the least Bell's vireo were conducted within the Alessandro Arroyo Survey Area from early May to mid-July. This species was not detected during the surveys; however, there is potential for this species to nest within the riparian/riverine habitat due to the presence of suitable southern willow scrub vegetation. In 2005, this species was recorded within 0.7 mile of the Alessandro Arroyo Survey Area (State of California 2010b).

Coastal California gnatcatcher (*Polioptila californica californica*). The coastal California gnatcatcher is federally listed as threatened, is a California species of special concern, and is a MHSCP covered species. The coastal California gnatcatcher is a non-migratory resident species found on the coastal slopes of southern California, ranging from Ventura County southward through Los Angeles, Orange, Riverside, and San Diego counties into Baja California, Mexico (Atwood and Bontrager 2001). Coastal California gnatcatchers typically occur in or near sage scrub habitat, although chaparral, grassland, and riparian woodland habitats are used where they occur adjacent to sage scrub. Breeding occurs from February through August, and nests are constructed most often in California sagebrush. The coastal California gnatcatcher diet consists mainly of sessile small arthropods, such as leafhoppers, spiders, beetles, and true bugs (Atwood and Bontrager 2001). The primary cause of decline in the coastal California gnatcatcher is due to habitat loss and degradation.

Although no coastal California gnatcatchers were detected during the general surveys, there is suitable nesting habitat within the Riversidean sage scrub and USFWS designated Critical Habitat for this species in the Eastern and Alessandro Arroyo Survey areas (see Figure 6).

Raptors. There is potential for raptor species such as Cooper's hawk, a CDFG species of special concern and Group 2 MSHCP covered species, red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus elegans*) to nest within the riparian trees in the Alessandro Arroyo Survey Area and in large eucalyptus in the Western Survey Area. Additionally, there is potential for ground nesters such as northern harrier to nest within the non-native grassland within the Western Survey Area.

Stephens' kangaroo rat (*Dipodomys stephensi*). The Stephens' kangaroo rat is a state-listed endangered and federally listed threatened species. This nocturnal species occupies portions of Riverside and San Diego counties. There are three distinct regions with Stephens' kangaroo rat populations: western Riverside County, western San Diego County, and central San Diego County. Stephens' kangaroo rat historically occurred in southwestern San Bernardino County, but this species is believed to be extirpated from that area (USFWS 1997). Habitat for the Stephens' kangaroo rat includes open grasslands, fallow agricultural fields, and sparse coastal sage scrub vegetation types in areas with penetrable soils and flat to fairly steep sloping topography (USFWS 1997). Stephens' kangaroo rat is found at elevations of 180 to 4,100 feet, with most populations

located at elevations below 2,000 feet (USFWS 1997). Habitat for the Stephens' kangaroo rat varies in composition and density from place to place and season to season. Filaree (*Erodium* spp.) frequently dominates the best Stephens' kangaroo rat habitat areas, especially during and shortly after the rainy season (RECON 1989). Areas with dense grass cover are not suitable for Stephens' kangaroo rat (USFWS 1997). A nocturnal species, Stephens' kangaroo rat consumes a diet primarily of seeds. The decline of this species is attributed primarily to habitat loss and fragmentation due to urban development and agriculture. Other factors contributing to loss of the species include off-road vehicles, rodent control, and predation by feral and domestic cats (USFWS 1997).

Suitable habitat for this species was detected in the Eastern Survey Area, where there is sparse Riversidean sage scrub with loose soils. However, no Stephens' kangaroo rats, sign, or kangaroo rat burrows were detected during the survey. In addition, this survey area is not within a Criteria Cell (see Attachment 1: Figure 6).

Belding's orange-throated whiptail (*Aspidoscelis* [=*Cnemidophorus*] *hyperythrus beldingi*). Belding's orange-throated whiptail, a CDFG species of special concern and a Group 1 MSHCP covered species, is widespread within suitable habitat throughout the city of Riverside. This lizard occurs from southwestern San Bernardino County south into Baja California at elevations from sea level to 3,500 feet. Belding's orange-throated whiptail frequents areas of open coastal sage scrub, chaparral, and streamside growth with loose sandy soils (Stebbins 1985). Belding's orange-throated whiptail typically hibernates during winter, emerging in February or March, but can be active year-round providing temperatures are warm (Jennings and Hayes 1994). Breeding occurs from May through July. Belding's orange-throated whiptails feed primarily on insects such as termites (*Reticulitermes* sp.). The decline of this species is attributed to the loss of coastal sage scrub in southern California.

A Belding's orange-throated whiptail was observed within the Riversidean sage scrub within the Eastern Survey Area.

Lincoln's Sparrow (*Melospiza lincolnii*). Lincoln's sparrow is a MSHCP covered species (during the breeding season). This species is considered to be a rare breeder within the MSHCP Plan Area, and widespread during the winter months (County of Riverside 2003b). The southern tip of its breeding range occurs at the San Jacinto Mountains of Riverside County and nests within montane meadows and montane riparian habitats. This bird uses weedy, brushy fields and other open riparian habitats during the winter and mainly feeds on seed and arthropods, including spiders and beetles and other small insects.

One Lincoln sparrow was observed in the winter, foraging with the non-native grassland within the Western Survey Area.

4.4.7 Wildlife Movement Corridors

Wildlife movement corridors and habitat linkages are areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Corridors are generally local pathways connecting short distances usually covering one or two main types of vegetation communities. Linkages are landscape-level connections between very large core areas and generally span several thousand feet and cover multiple habitat types. The habitat connectivity provided by corridors and linkages is important in providing access to mates, food, and water, allowing the dispersal of individuals away from high population density areas and facilitating the exchange of genetic traits between populations (Beier and Loe 1992).

The Eastern and Alessandro Arroyo survey areas lie within largely undeveloped tracts of land and residential development, which provide land for wildlife uses. The Western Survey Area is within an urban setting with agricultural and residential uses. The study area is not located within an identified wildlife corridor or linkage area (i.e. not in the Criteria Area) within the MSHCP, which means it is not an area that was envisioned to be preserved for biological resources.

However, the City's General Plan Open Space and Conservation Element states that "the Santa Ana River, major arroyos [such as the Alessandro Arroyo] and other open space resources serve as wildlife corridors for the movement of species throughout the region" (City of Riverside 2007). Furthermore, since major arroyos are recognized by the City's Grading Ordinance (Municipal Code Title 17) and General Plan 2025 for their functions and values to wildlife and wildlife movement, grading and removal of native vegetation within the arroyo is prohibited. Wildlife moving within the Santa Ana River corridor could also move through the Alessandro Arroyo; however, the Alessandro Arroyo is culverted many times to the north and south, and ultimately the Alessandro Arroyo is restricted by residential development and paved roads in both directions. Movement for smaller mammals and wildlife is made possible through the culverts, while larger mammals could potentially cross smaller neighborhood streets; however, Trautwein Road is a wide arterial road. Additionally, wildlife is blocked from entering the Sycamore Canyon Wilderness Park to the northeast by East Alessandro Boulevard, a heavily traveled road which bisects the undeveloped land to the south and the wilderness park to the north.

As stated above, the Eastern Survey Area, although within undeveloped land, is surrounded by residential development. Within an half of a mile to the north and south is Alessandro Boulevard and Berry Road, respectively, which both act as barriers to further wildlife movement. Additionally, this survey area is not located within a Criteria Cell or MSHCP-designated linkage or formal wildlife corridor. The Western Survey Area does not serve as a wildlife corridor due to the level of development and lack of open natural space and related features such as drainages.

4.4.8 Jurisdictional and Riparian Assessment

Jurisdictional delineations were conducted to determine specific jurisdictional classifications (e.g., non-wetland waters, wetlands) in the study area. Results of these delineations are summarized in the Wetland Delineation report prepared for the Project (RECON 2012a; Appendix A). Table 3 summarizes the jurisdictional resources present within the study area.

TABLE 3
JURISDICTIONAL RESOURCES
WITHIN THE STUDY AREA (acres)

Jurisdictional Waters	Eastern Survey Area	Alessandro Arroyo Survey Area	Western Survey Area
ACOE			
Wetlands	0.06	0.93	0.00
Non-wetland waters of the U.S.	0.05	0.01	0.19
Total ACOE	**0.11**	**0.94**	**0.19**
CDFG[1]			
Wetland	0.26	1.77	0.00
Streambed	0.05	0.01	0.19
Total CDFG	**0.31**	**1.78**	**0.19**
RWQCB	**0.31**	**1.78**	**0.19**

[1]CDFG area of jurisdiction includes all ACOE jurisdictional waters

4.4.8.1 ACOE Jurisdiction Waters of the U.S.

According to ACOE, positive indicators for all three parameters (hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to qualify as a wetland. ACOE also requires the delineation of non-wetland jurisdictional waters. These waters must have strong hydrology indicators such as the presence of seasonal flows and an ordinary high water mark.

ACOE jurisdiction area within the Eastern Survey Area totals 0.11 acre, which includes 0.06 acre of ACOE wetlands and 0.05 acre of ACOE non-wetland waters of the U.S. Non-wetland waters within the survey area are located within the southern drainage (see Attachment 1: Figure 7a, and Table 3).

ACOE jurisdiction area within the Alessandro Arroyo Survey Area totals 0.94 acre, which includes 0.93 acre of ACOE wetlands and 0.01 acre of ACOE non-wetland waters of the U.S. Non-wetland waters within the survey area are composed of the unvegetated channel of an unnamed drainage on the east canyon slope of the survey area (Attachment 1: Figure 7a, and Table 3).

Due to the direct hydrologic connectivity of the Gage Canal to the Santa Ana River (a Traditional Navigable Waterway [TNW]), the ACOE jurisdiction area within the Western Survey Area totals 0.19 acre ACOE non-wetland waters of the U.S (see Attachment 1: Figure 7a, and Table 3).

4.4.8.2 CDFG Jurisdiction Waters of the State

All streambeds and associated wetlands are considered sensitive. These areas fall under the jurisdiction of CDFG (Section 1600 of the California Fish and Game Code). CDFG jurisdictional areas extend to either the outer edge of riparian vegetation or to the top of the bank of streams or lakes, whichever is wider.

A total of 0.31 acre of CDFG jurisdictional areas occur within the Eastern Survey Area, which includes 0.05 acre of CDFG streambed and 0.26 acre of CDFG wetland (see Attachment 1: Figure 7b, and Table 3). This acreage consists of the southern willow scrub and riparian habitat associated with the northern drainage within the survey area. Within the survey area, CDFG streambed is equal to ACOE non-wetland waters. CDFG riparian includes all riparian habitat within the survey area in addition to ACOE wetlands.

A total of 1.78 acres of CDFG jurisdictional areas occur within the Alessandro Arroyo Survey Area, which includes 0.01 acre of CDFG streambed and 1.77 acre of CDFG riparian (Attachment 1: Figure 7b, and Table 3). This acreage consists of riparian habitat associated with the Alessandro Arroyo within the survey area. Within the survey area, CDFG streambed is equal to ACOE non-wetland waters. CDFG riparian includes all riparian habitat within the survey area in addition to ACOE wetlands.

As stated above, due to the direct hydrologic connectivity of the Gage Canal to a TNW, the CDFG jurisdictional areas within the Western Survey Area total 0.19 acre of CDFG streambed.

4.4.8.3 RWQCB Jurisdiction Resources

The RWQCB takes jurisdiction over all waters of the state and all waters of the United States as mandated by both the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act. A total of 0.31, 1.78, and 0.19 acre are within the RWQCB jurisdiction at the Eastern, Alessandro Arroyo, and Western Survey areas, respectively (Attachment 1: Figure 7c, and Table 3). Impacts to jurisdictional resources would require consultation with RWQCB.

4.4.8.4 Erosive features

There are two significant erosive features present within the Alessandro Arroyo Survey Areas. Both features drain runoff from Overlook Parkway (see Attachment 1: Figure 7a).

Runoff flows east from Overlook Parkway through riprap at the base of the road and has cut large rills into the surrounding soil. These two large rills eventually drain into the Alessandro Arroyo. As these rills drain to developed and upland habitat and do not contain significant wetland vegetation, they are considered exempt from ACOE, CDFG, and RWCQB jurisdiction.

5.0 Impact Analysis

The biological impacts of the project were assessed according to the City's biological review requirements in accordance with the MSHCP (County of Riverside 2003b). Mitigation is required for impacts that are considered significant.

No biological impacts would occur if either Scenario 1 or 2 were to be selected, as these scenarios involve either maintaining or removing existing gates and do not propose any construction in natural areas. Scenarios 3 and 4 involve the construction of new roadways which include the connection of Overlook Parkway in two places between Brittanee Delk Court to Sandtrack Road (Eastern Survey Area) and from Crystal View Terrace and Via Vista Drive (Alessandro Arroyo Survey Area). Scenario 4 has the additional component of the Proposed C Street west of Washington Street.

Table 4 summarizes the proposed the temporary and permanent impacts to the vegetation communities for each survey area, and the project impact areas are displayed in Figure 10. Temporary impacts include work areas for crews and equipment within a construction easement on either side of the proposed roadways. Construction staging would be accommodated primarily on Overlook Parkway and other existing roadways. Permanent impacts occur from activities such as the installation of the bridge abutments, paving, and grading. The total impacts from the combined project features under Scenarios 3 and 4 are 4.00 acres and 23.51 acres, respectively (see Table 4).

5.1 Vegetation Community Impacts

Under the guidelines of the MSHCP, impacts to Riversidean sage scrub, disturbed Riversidean sage scrub, non-native grassland, disturbed land, active agricultural fields, orchard, ornamental vegetation, and developed land would not be significant and would not require mitigation. In addition, no MSHCP covered (breeding) species or state or federally listed endangered or threatened species were observed within the three project impacts areas. Although, Lincoln's sparrow, a MSHCP covered (breeding) species, was recorded with the study area, it was observed during the winter. Further information regarding the potential for this species to occur within the study area during the breeding season is discussed within Section 5.3.5.

TABLE 4
PERMANENT AND TEMPORARY IMPACTS TO VEGETATION COMMUNITIES/LAND COVER TYPES FOR SCENARIOS 3 AND 4 (acres)

Vegetation Communities/ Land Cover Types	Eastern Survey Area		Alessandro Arroyo Survey Area		Total Acreage for Scenario 3	Western Survey Area		Total Acreage for Scenario 4
	Temp	Perm	Temp	Perm		Temp	Perm	
Southern Willow Scrub	0.02	0.12	0.76	<0.01 (77sf)	0.90	-	-	0.90
Freshwater Marsh	-	-	-	-	0.00	-	-	0.00
Riversidean Sage Scrub	0.46	0.81	0.68	0.16	2.11	-	-	2.11
Disturbed Riversidean Sage Scrub	0.01	0.06	-	-	0.07	-	-	0.07
Non-native grassland	-	-	-	-	-	2.86	6.63	9.49
Disturbed Land	-	0.20	-	-	0.20	0.48	1.25	1.93
Active Agricultural Field	-	-	-	-	-	0.12	0.04	0.16
Orchard	-	-	-	-	-	0.72	1.75	2.47
Ornamental Vegetation	-	0.23	-	-	0.23	-	-	0.23
Developed	0.03	0.15	0.09	0.22	0.49	1.51	4.15*	6.15
TOTAL	0.52	1.57	1.53	0.38	**4.00**	5.69	13.82	**23.51**

*4.15 acres of Developed land includes 1.57 acres of impacts due to vacated roads.

Permanent impacts will occur to southern willow scrub due to grading activities within the Eastern Survey Area, and temporary impacts will occur within the Eastern and Alessandro Arroyo Survey Areas due to temporary work areas and staging.

Southern willow scrub is considered sensitive by local, state, and federal resource agencies. Impacts to this vegetation community are considered significant and will require mitigation. The design of the bridge, which includes two 34-feet high bridges, separated by a 31-foot-wide gap, would allow sunlight to reach vegetation between and under the bridges throughout the day; therefore, any impact resulting from shading is considered less than significant and does not require mitigation.

5.2 Sensitive Plant Species

Graceful tarplant, a MSHCP Group 2 species and a CNPS List 4 species, was observed in low numbers and scattered within the Riversidean sage scrub within the Eastern Survey Area. However, since the project is not intended to be part of the MSHCP Conservation Area (i.e. not located in a Criteria Cell), and complies with the survey requirements of the MSHCP, any biological impacts that could occur as a result of the proposed project are mitigated through the MSHCP.

5.3 Sensitive Wildlife Species

5.3.1 Arroyo Toad

Suitable potential habitat exists within the Alessandro Arroyo Survey Area, which includes a slow-moving stream with sandy channels. However, the area is surrounded to the east and west by existing development, and the stream itself is culverted upstream of the survey area, altering flows and reducing the habitat quality for arroyo toads. Due to the fact that arroyo toad is not historically known to occur within the Santa Ana watershed, which includes the Alessandro Arroyo, coupled with the site conditions, this species is not expected to occur within the study area; therefore, no impacts to this species are anticipated.

5.3.2 Burrowing Owl

Due to the fact the study area does not support suitable habitat for the western burrowing owl, this species is not expected to occur. Consequently, as a result of the lack of suitable habitat, no impacts are expected to result and a pre-construction survey is not required.

5.3.3 Least Bell's Vireo

The southern willow scrub within the Alessandro Arroyo Survey Area supports nesting habitat for least Bell's vireo. Because this species was not detected during the focused surveys, no least Bell's vireo are expected to be directly or indirectly impacted by project activities.

5.3.4 Stephens' Kangaroo Rat

Although there is suitable habitat within the Eastern Survey Area to support Stephens' kangaroo rat, no Stephens' kangaroo rats, sign, or burrows were detected during the general survey. Therefore, impacts to this species are not expected to occur. Impacts in relation to the Stephens' kangaroo rat Fee Area is discussed below in Section 5.5.

5.3.5 Belding's orange-throated whiptail

Impacts to the Belding's orange-throated whiptail could result from vegetation clearing, grubbing, grading, and construction in disturbed Riversidean sage scrub and Riversidean sage scrub, which provides suitable habitat for this species. This species is widespread within suitable habitat throughout the city of Riverside and these impacts would occur to a relatively small amount of habitat compared to the amount of Riversidean sage scrub in the surrounding area. Additionally, since the project is not intended to be part of the MSHCP Conservation Area (i.e. not located in a Criteria Cell), and complies with the survey requirements of the MSHCP, any biological impacts that could occur as a result of the proposed project are mitigated through the MSHCP.

5.3.6 Coastal California gnatcatcher

Although coastal California gnatcatcher was not detected during the general surveys, there is suitable nesting habitat within the Riversidean sage scrub, and USFWS designated Critical Habitat for this species is present within the Eastern and Alessandro Arroyo Survey areas. However, since the project is not intended to be part of the MSHCP Conservation Area (i.e. not located in a Criteria Cell), and complies with the survey requirements of the MSHCP, any biological impacts that could occur as a result of the proposed project are mitigated through the MSHCP.

5.3.7 Raptors

There is potential for raptors to nest in mature willow and eucalyptus trees in the Alessandro Arroyo and Western Survey Areas and within the non-native grassland within the Western Survey Area during the nesting season of February 1 to August 30. Impacts to nesting raptors are considered significant per the MSHCP and MBTA. Implementation of the proposed project would not result in direct impacts to any species

identified as a candidate, sensitive, or special-status species in local or regional plans, or by CDFG, or USFWS as assured by mitigation measures that require MBTA surveys to avoid impacts to nesting raptors.

5.3.8 Lincoln's sparrow

Lincoln's sparrow, a MSHCP covered species (breeding), utilizes many habitats; therefore, impacts to this species may result from the loss of non-native grassland and southern willow scrub. Because Lincoln's sparrow and associated nests were not detected within suitable nesting habitat (southern willow scrub) within the Alessandro Arroyo Survey Area during the focused surveys conducted from early May to mid-July, it is not anticipated that impacts will occur to this species or their nests.

5.4 Migratory Birds

Construction activities, such as grubbing and grading, may result in the take of migratory bird species if construction is conducted during the breeding season of most bird species. Migratory bird species include special status species that may nest on-site such as southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and loggerhead shrike (*Lanius ludovicianus*). Migratory bird species also include species that may forage during spring and fall migration or overwinter in the area, such as sharp-shinned hawk (*Accipiter striatus velox*), California horned lark (*Eremophila alpestris actia*), and yellow warbler (*Dendroica petechia*). With the implementation of MTBA surveys, direct impacts to any migratory birds and other sensitive birds, including coastal California gnatcatcher and raptors, would be reduced to less than significant.

5.5 Stephens' Kangaroo Rat Fee Area Impacts

Approximately 1.34 acres of impacts to Riversidean sage scrub and disturbed Riversidean sage scrub within the Stephens' kangaroo rat HCP Fee Area is proposed within the Eastern Survey Area and 0.84 acre of Riversidean sage scrub within the Alessandro Arroyo Survey Area. While this species is not expected to occur within the survey areas, both the Eastern and Alessandro Arroyo Survey Areas occur within the Stephens' kangaroo rat HCP Fee Area. In accordance with RCHCA, project activities relating to Scenarios 3 and 4 that impact lands within the Stephens' kangaroo rat HCP Fee Area shall pay a mitigation fee of $500.00 per gross acre of the parcels proposed for development.

5.6 Jurisdictional Area Impacts

ACOE, CDFG, and RWQCB jurisdictional resources are regulated by the federal, state, and local governments under a no-net-loss policy, and all impacts are considered significant and need to be avoided to the greatest extent possible.

Tables 5a-5c summarize impacts to jurisdictional resources. Impacts to jurisdictional resources are shown in Attachment 1: Figures 11-13.

TABLE 5a
PROPOSED IMPACTS TO JURISDICTIONAL RESOURCES IN THE EASTERN SURVEY AREA (acres)

Jurisdictional Resources	Existing Jurisdictional Resources	Temporary Impacts*	Permanent Impacts
ACOE			
Wetland	0.06	0.00	0.03
Non-wetland waters	0.05	0.00	0.02
Total ACOE	**0.11**	**0.00**	**0.05**
CDFG/RWQCB			
Wetland	0.26	0.02	0.13
Streambed	0.05	0.00	0.02
Total CDFG/RWQCB	**0.31**	**0.02**	**0.15**

*Temporarily impacted areas will be restored at a 1:1 ratio to pre-construction conditions where possible.

TABLE 5b
PROPOSED IMPACTS TO JURISDICTIONAL RESOURCES IN THE ALESSANDRO ARROYO SURVEY AREA (acres)

Jurisdictional Resources	Existing Jurisdictional Resources	Temporary Impacts*	Permanent Impacts
ACOE			
Wetland	0.93	0.31	0.00
Non-wetland waters	0.01	<0.01 (76 sf)	0.00
Erosive feature	0.00	<0.01 (327 sf)	0.00
Total ACOE	**0.94**	**0.32**	**0.00**
CDFG/RWQCB			
Wetland	1.77	0.76	<0.01 (77 sf)
Streambed	0.01	<0.01 (76 sf)	0.00
Total CDFG/RWQCB	**1.78**	**0.76**	**<0.01 (77 sf)**

*Temporarily impacted areas will be restored at a 1:1 ratio to pre-construction conditions where possible.

sf = square feet

TABLE 5c
PROPOSED IMPACTS TO JURISDICTIONAL RESOURCES IN THE WESTERN ARROYO SURVEY AREA (acres)

Jurisdictional Resources	Existing Jurisdictional Resources	Temporary Impacts*	Permanent Impacts
ACOE			
Wetland	0.00	0.00	0.00
Non-wetland waters	0.19	<0.01 (430 sf)	0.02
Total ACOE	**0.19**	**<0.01** (430 sf)	**0.02**
CDFG/RWQCB			
Wetland	0.00	0.00	0.00
Streambed	0.19	<0.01 (430 sf)	0.02
Total CDFG/RWQCB	**0.19**	**<0.01** (430 sf)	**0.02**

*Temporarily impacted areas will be restored at a 1:1 ratio to pre-construction conditions where possible.
sf = square feet

5.7 Wildlife Movement Corridors

The road connection and proposed grading within the Eastern Survey Area would result in loss of potential foraging and breeding habitat for some resident wildlife species and would interfere with connectivity to surrounding habitat. However, these construction activities will occur outside of an identified MSHCP Criteria Cell, Core, or Linkage, which means it is not an area that was envisioned to be preserved for biological resources. Therefore, any biological impacts that may occur as a result of the proposed road connection are considered less than significant.

Although the study area is outside of any MSHCP identified wildlife corridor, major arroyos, including the Alessandro Arroyo, are recognized as wildlife corridors by the City's General Plan (2025). The bridge design for the Alessandro Arroyo Survey Area spans the arroyo and has been designed at a height to minimize impacts through the Alessandro Arroyo. While smaller mammals and other wildlife that typically use the Alessandro Arroyo may temporarily cease to use this corridor during construction, there would be no significant, permanent impacts to this wildlife movement corridor. The proposed bridge crossing has been designed to minimize impacts to the Alessandro Arroyo. The abutments were located to also minimize permanent features in the arroyo, and the two piers that would extend into the Alessandro Arroyo would not significantly impede the movement of any wildlife that typically use the arroyo as a corridor.

As previously stated in Section 4.4.7, the Western Survey Area does not serve as a wildlife movement corridor due to the level of development and lack of open natural space and related features such as drainages. No impacts to wildlife movement corridors would occur due to the proposed road alignment.

Section 6.1.4 of the MSHCP addresses the need for certain projects to incorporate measures to address urban/wildland interfaces in or near the MSHCP Conservation Area. The study area is located 2.4 to 2.9 miles northeast of the nearest Criteria Cell and is not located within or next to any MSHCP Conservation Areas that would require the need for implementation of Urban/Wildland Interface Guidelines. The project would not conflict with Section 6.1.4 of the MSHCP.

6.0 Mitigation Recommendations

Generally speaking, any impacts associated with the urbanization and development of a project site are addressed through consistency with the MSHCP. Since the Project can be found to be consistent with the MSHCP since it is not intended to be part of the MSHCP Reserve (i.e. not located in a Criteria Cell), and complies with the survey requirements of the MSHCP, any biological impacts that could occur as a result of the development of the site are mitigated through the MSHCP.

The following section discusses potential significant impacts and the mitigation that would be required for Scenarios 3 and 4. Mitigation is required for impacts that are considered significant under CEQA. Significant impacts include impacts to certain sensitive species and jurisdictional waters, where present. Mitigation is intended to reduce the impacts to a level of less than significant. In addition, mitigation is required for any impacts to jurisdictional wetlands. Mitigation measures typically employed include avoidance, habitat restoration, and the payment of fees into a mitigation bank.

6.1 Vegetation Communities

Mitigation will be required to reduce impacts to southern willow scrub, a wetland habitat, to less than significant. Temporary and permanent impacts to southern willow scrub habitat in the Eastern and Alessandro Arroyo Survey Areas, a total of 0.90 acre, will be mitigated as ACOE and CDFG jurisdictional resources. This mitigation is further discussed in under Section 6.3, Jurisdictional Area Mitigation.

6.2 Migratory Birds and Other Sensitive Non-Migratory Bird Species

In accordance with the MBTA and CDFG Code 3503, no direct impacts shall occur to any nesting birds, their eggs, chicks, or nests during their breeding seasons. If construction activities were to occur during the combined bird-breeding season of February 1 – September 15, prior to the issuance of a grading permit, a qualified biologist shall conduct a pre-construction clearance survey for nesting birds in suitable

nesting habitat that occurs within the proposed area of impact. Pre-construction nesting surveys will identify any active migratory birds (and other sensitive non-migratory birds) nests. Although there is no a formal established protocol for nest avoidance, avoidance buffers of 500 feet for raptors/owls, and 100 to 300 feet for songbirds shall be established, with exact distances to be determined on a case by case basis. However, avoidance buffers for ground nesting raptor species shall be larger than 500 feet. The construction setback for one species, northern harrier, shall include the conservation of habitat within a 250 meter (820 feet) radius around any active nest site locations. If bird nests are present, appropriate construction limits set back shall be maintained until the young are completely independent of the nest. With the implementation of this mitigation measure, direct impacts to any active migratory bird nest would be avoided.

6.3 Jurisdictional Area Mitigation

Mitigation requirements for the impacts to jurisdictional resources are summarized in Table 6. All mitigation listed below for state and federal waters is subject to the approval of the regulatory agencies. To reduce impacts to jurisdictional resources to less than significant, the City is proposing 1.56 acres of wetland creation and restoration/enhancement of existing disturbed wetlands for impacts to ACOE and CDFG jurisdictional resources within the Eastern, Alessandro Arroyo, and Western Survey Areas (see Table 6).

Temporary impacts to jurisdictional waters shall be mitigated on-site through restoration of the areas disturbed during construction at a 1:1 ratio.

Permanent impacts to wetlands require mitigation at a minimum 2:1 ratio through one of the following:

1. Creation of additional wetlands (e.g., southern willow scrub) at a 1:1 ratio and enhancement of existing wetlands containing southern willow scrub at a 1:1 ratio shall be implemented to meet the 2:1 mitigation ratio for the permanent impacts to southern willow scrub wetlands. Creation of wetlands at a 1:1 ratio shall occur at a suitable location and restoration/enhancement of existing wetlands outside of the bridge footprint within the Alessandro Arroyo Survey Area. A Wetland Mitigation Plan shall be prepared which identifies the location of creation/restoration and enhancement areas, methods involved to implement the mitigation effort, and maintenance and monitoring program which is required to ensure the success of the mitigation.

2. An alternative for permanent impacts to wetlands is to provide compensation through the purchase of credits from an established wetland mitigation site, if available. A total of 1.56 acres shall be purchased from an established wetland mitigation site within the same watershed as the proposed project.

TABLE 6
MITIGATION FOR TEMPORARY AND PERMANENT IMPACTS TO JURISDICTIONAL RESOURCES (acres)
WITH PERMANENT IMPACTS AT A 2:1 RATIO

Jurisdictional Resources	Eastern Survey Area		Total Mitigation	Alessandro Arroyo Survey Area		Total Mitigation	Western Survey Area		Total Mitigation	Total Mitigation Required for Study Area (acres)
	Temporary Mitigation Ratio (1:1)	Permanent Mitigation Ratio (2:1)		Temporary Mitigation Ratio (1:1)	Permanent Mitigation Ratio (2:1)		Temporary Mitigation Ratio (1:1)	Permanent Mitigation Ratio (2:1)		
ACOE Jurisdiction										
Wetland	0.00	0.03	*0.06*	0.31	0.00	*0.31*	0.00	0.00	*0.00*	-
Non-wetland waters	0.00	0.02	*0.04*	<0.01 (76 sf)	0.00	*<0.01 (76 sf)*	<0.01 (430sf)	0.02	*0.04*	-
Erosive feature	-	-	-	<0.01 (327 sf)	0.00	*<0.01 (327 sf)*	-	-	-	-
Total ACOE Mitigation	-	-	***0.10***	-	**-**	***0.32***			***0.04***	**0.46**
CDFG Resources										
*Wetland**	0.02	0.12	*0.26*	0.76	<0.01 (77 sf)	*0.76*	0.00	0.00	0.00	
Streambed	0.00	0.02	*0.04*	<0.01 (76 sf)	0.00	<0.01 (76 sf)	<0.01 (430sf)	0.02	*0.04*	
Total CDFG Mitigation	-	-	***0.30***	**-**	**-**	***0.76***	-	-	***0.04***	**1.12**
TOTAL Jurisdictional Mitigation per Survey Area			**0.40**			**1.08**			**0.08**	**1.56**

sf= square feet
* Includes 0.90-acre of southern willow scrub.

3. Either of these mitigation options or a combination of on-site and off-site mitigation would reduce permanent impacts to wetlands to less than significant. With mitigation, the net effect of the project on riparian/riverine areas would be equivalent or superior to the existing conditions.

6.3.1 Federal and State Agencies

Prior to impacting waters of the U.S., the City shall be required to notify the ACOE Section 404 Nationwide Permit Program, procure a Streambed Alteration Agreement from CDFG (Section 1602), and obtain a water quality certification (Clean Water Act Section 401) from the RWQCB in accordance with the state and federal regulations. Temporary impacts to ACOE, CDFG, and RWQCB jurisdictional resources require mitigation through habitat creation, restoration, and/or enhancement at a minimum of 1:1 ratio to achieve a no-net-loss of jurisdictional resources, in consultation with the regulatory agencies, and permanent impacts at a 2:1 ratio. The functions and values of the Gage Canal, which is to convey water to agricultural fields, shall remain intact, as the canal and water flow will not be interrupted. The only changes to the canal are changing underground portions to be open and open portions to be underground, which will result in no-net loss and no significant impacts.

6.3.2 MSHCP Section 6.1.2 Requirements

According to the MSHCP Section 6.1.2, a Determination of Biologically Equivalent or Superior Preservation (DBESP) is required when project alternatives that would avoid sensitive riparian/riverine resources are not feasible. The goal of the DBESP is to demonstrate that, with implementation of the proposed project design features and mitigation measures, the proposed project would result in an alternative that is biologically equivalent or superior to complete avoidance of impacts to riparian/riverine resources on-site and to ensure replacement of any lost functions and values of habitat as it relates to covered species. A DBESP for this project has been prepared pursuant to Section 6.1.2 of the MSHCP (see the Determination of Biologically Equivalent or Superior Preservation prepared for the Project [RECON 2012b; Appendix B].

In summary, the riparian/riverine areas within the study area (southern willow scrub, freshwater marsh, and the unvegetated drainages) are surrounded by development and no sensitive riparian/riverine wildlife species were present. Only one sensitive species, graceful tarplant, was detected on site, but it was not located in an area meeting the definition of riparian/riverine areas.

Potential indirect impacts, including noise impacts to riparian/riverine species and urban runoff, are not expected to occur as a result of project implementation. Noise impacts to riparian/riverine species are not anticipated to occur due to the absence of sensitive species detected in the survey areas. Impacts from urban runoff would be prevented by implementation of construction BMPs as part of a Stormwater Pollution Prevention Plan.

7.0 Certification

I hereby certify that the statements furnished above and in the attachments 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.

DATE: 11/15/2012 SIGNATURE: _____
Beth Procsal, Report Author

Fieldwork Performed By: Beth Procsal, Erin McKinney, Mike Nieto, Anna Bennett, and Italia Gray

8.0 References Cited

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1980a Riverside West quadrangle 7.5-minute topographic map.

1980b Riverside East quadrangle 7.5-minute topographic map.

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ATTACHMENTS

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ATTACHMENT 1

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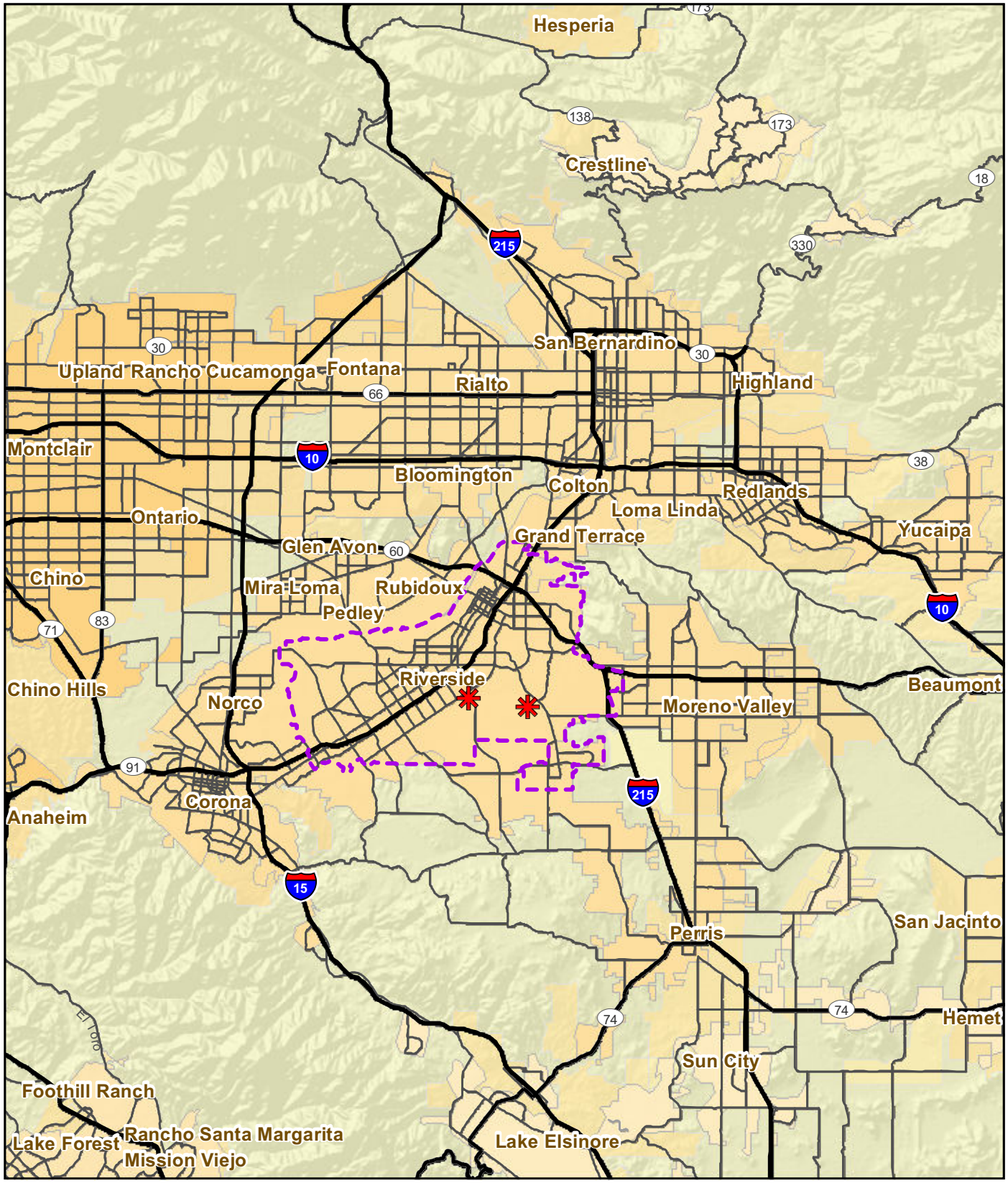

Study Area

Riverside City Limit

RECON

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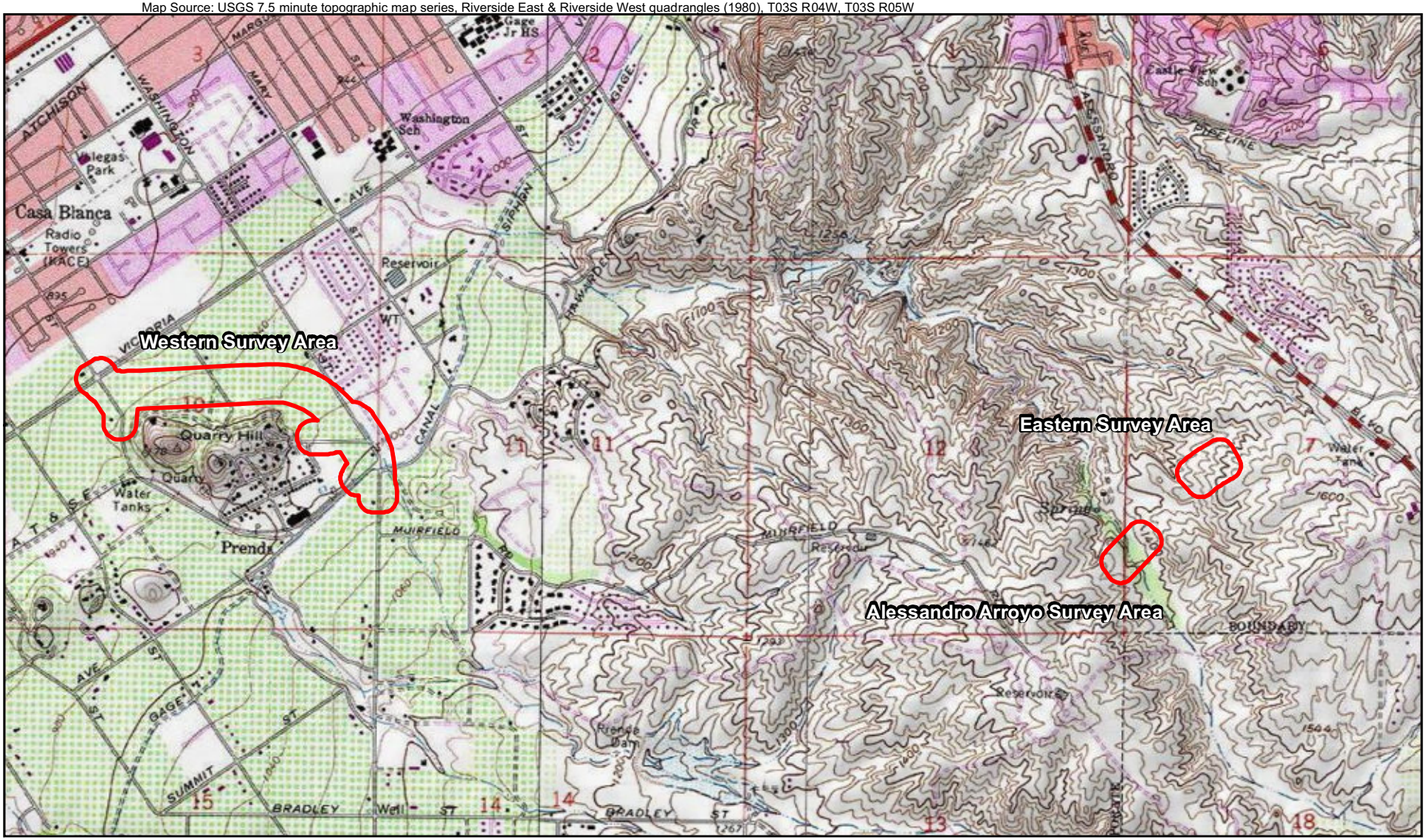
FIGURE 1

Regional Location

Map Source: USGS 7.5 minute topographic map series, Riverside East & Riverside West quadrangles (1980), T03S R04W, T03S R05W



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Study Area

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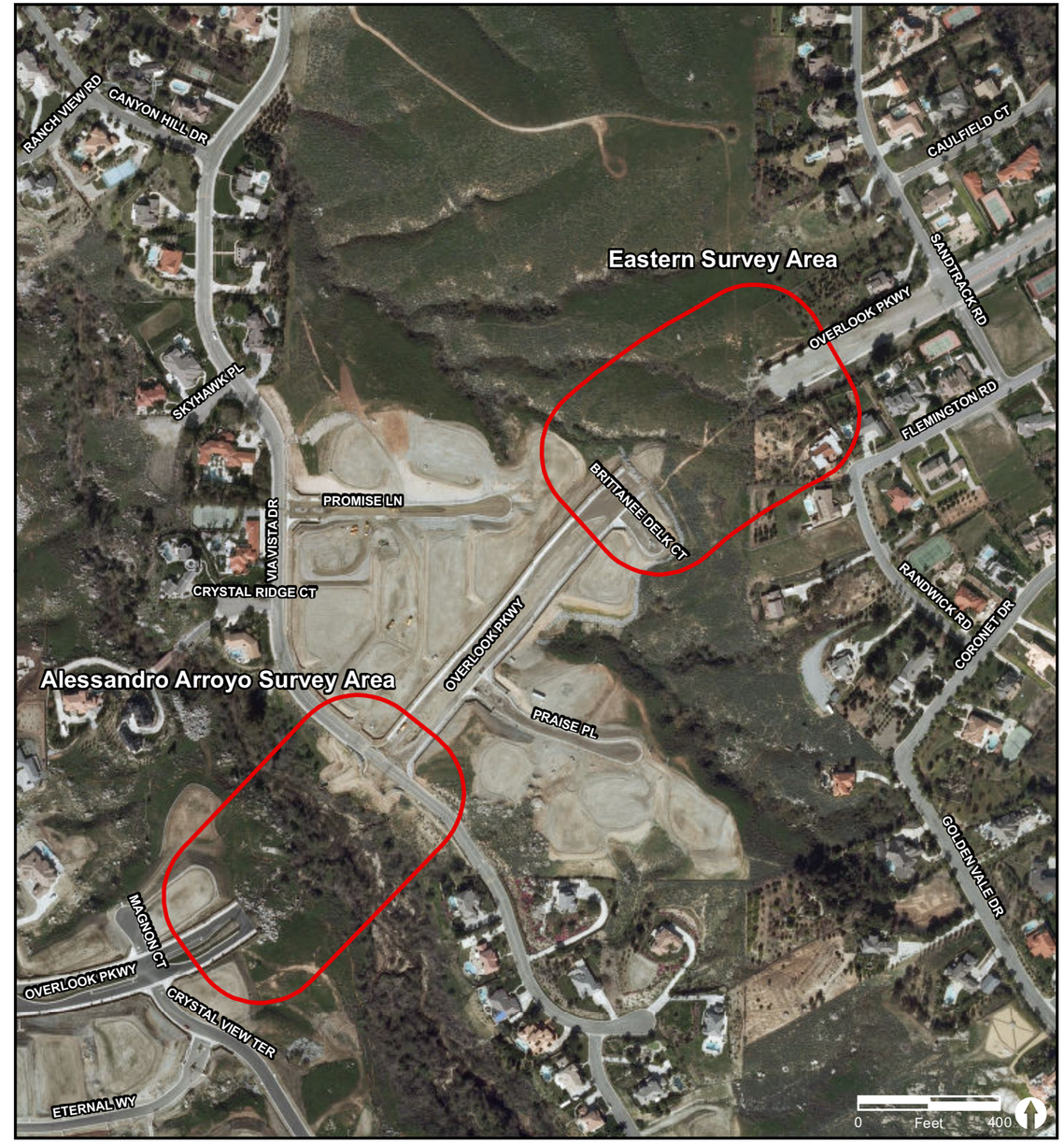
FIGURE 2

Location of Study Area on USGS Map

Impage Source: City of Riverside, 2009



Study Area

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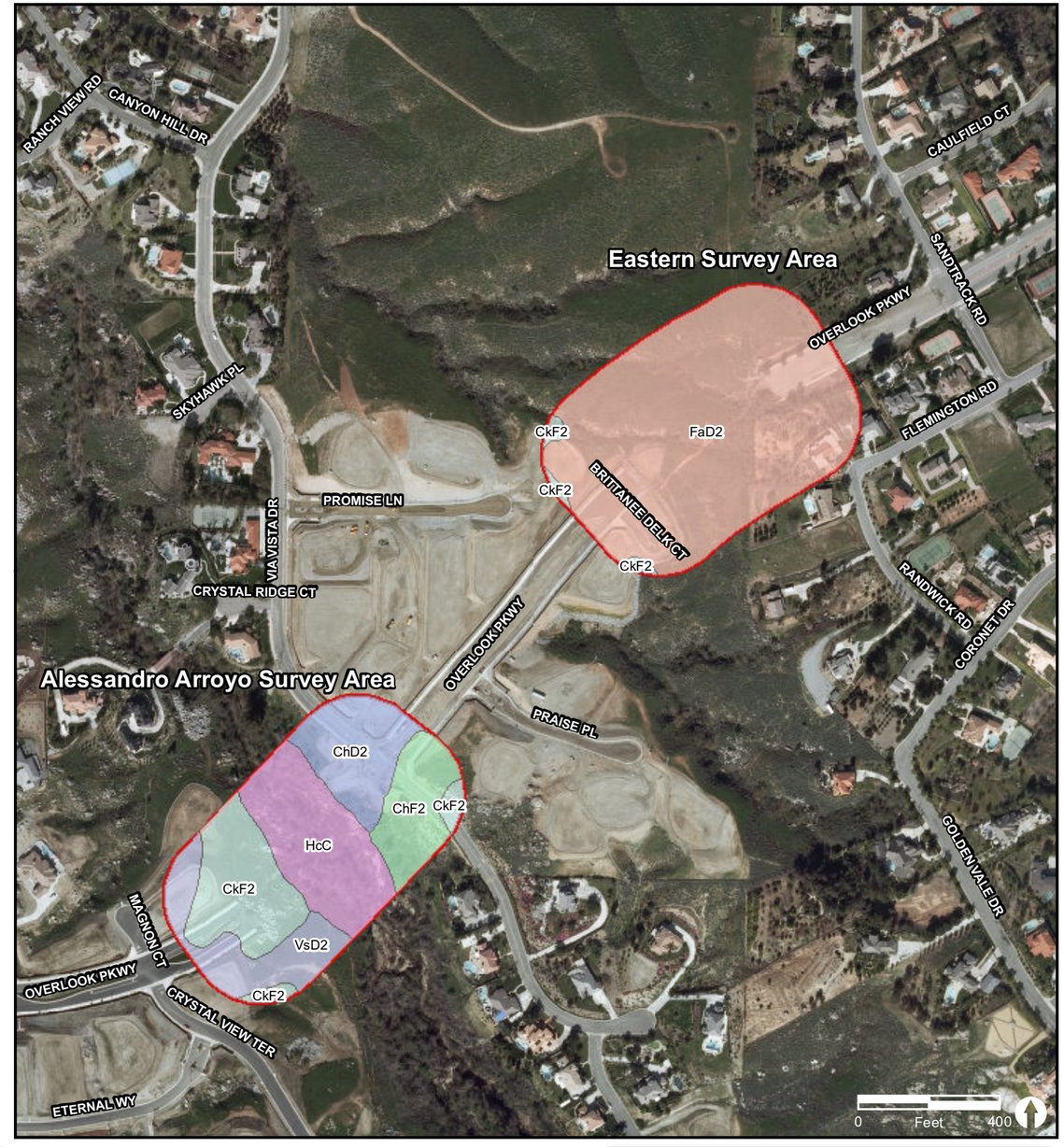
FIGURE 3

Study Area on Aerial Photograph

Image Source: City of Riverside, 2009



Study Area

Soils

- AoC - Arlington fine sandy loam, deep, 2 to 8 percent slopes
- ApB - Arlington loam, 2 to 5 percent slopes
- ArD - Arlington loam, deep, 5 to 15 percent slopes
- BdD - Bonsall fine sandy loam, 8 to 15 percent slopes
- BuD2 - Buren fine sandy loam, 8 to 15 percent slopes, eroded
- ChD2 - Cieneba sandy loam, 8 to 15 percent slopes, eroded
- ChF2 - Cieneba sandy loam, 15 to 50 percent slopes, eroded
- CkF2 - Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
- DaD2 - Delhi fine sand, 2 to 15 percent slopes, wind-eroded
- FaD2 - Fallbrook sandy loam, 8 to 15 percent slopes, eroded
- FkD2 - Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded
- GyC2 - Greenfield sandy loam, 2 to 8 percent slopes, eroded
- HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
- VsD2 - Vista coarse sandy loam, 8 to 15 percent slopes, eroded
- VsF2 - Vista coarse sandy loam, 15 to 35 percent slopes, eroded

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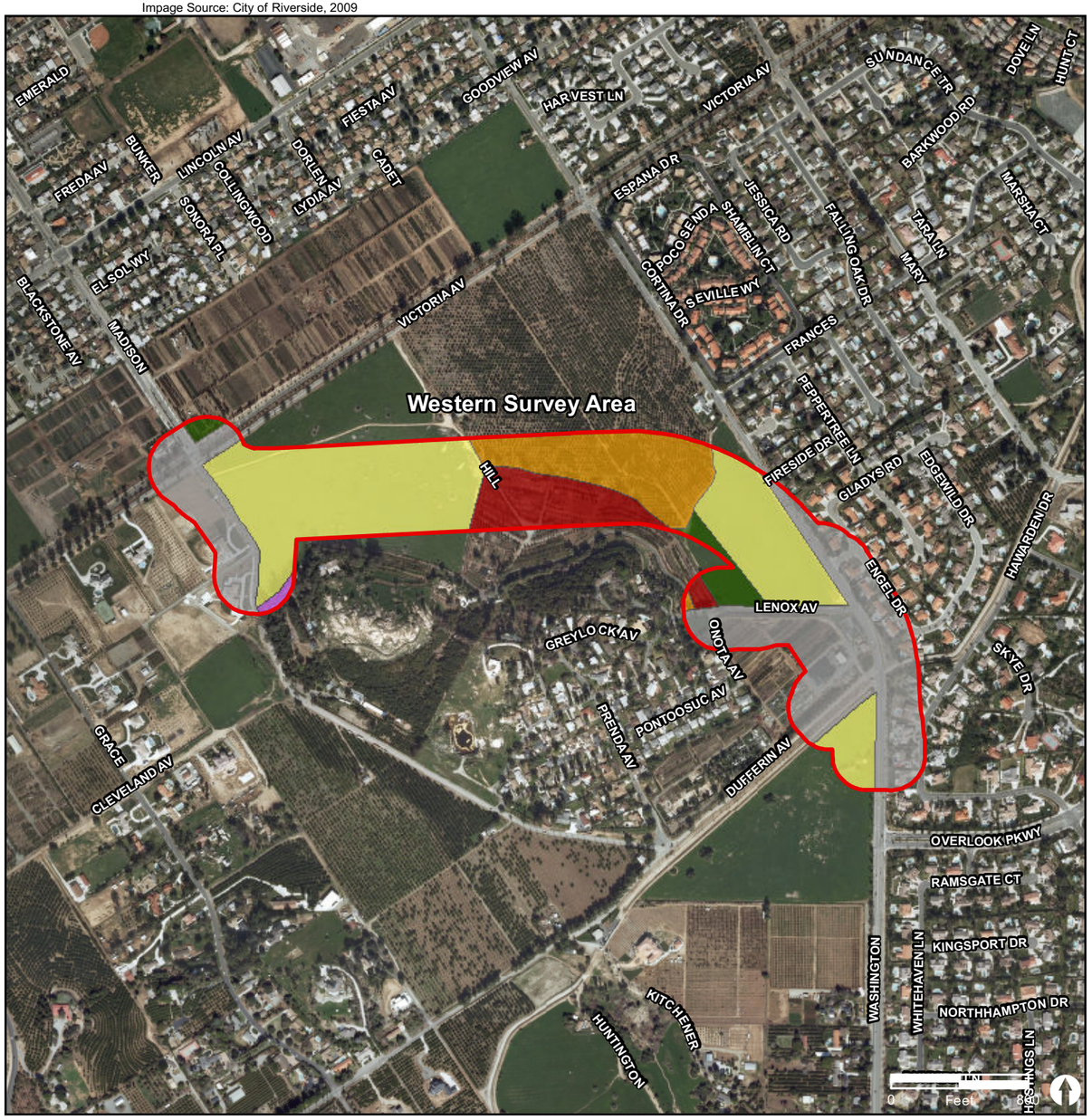
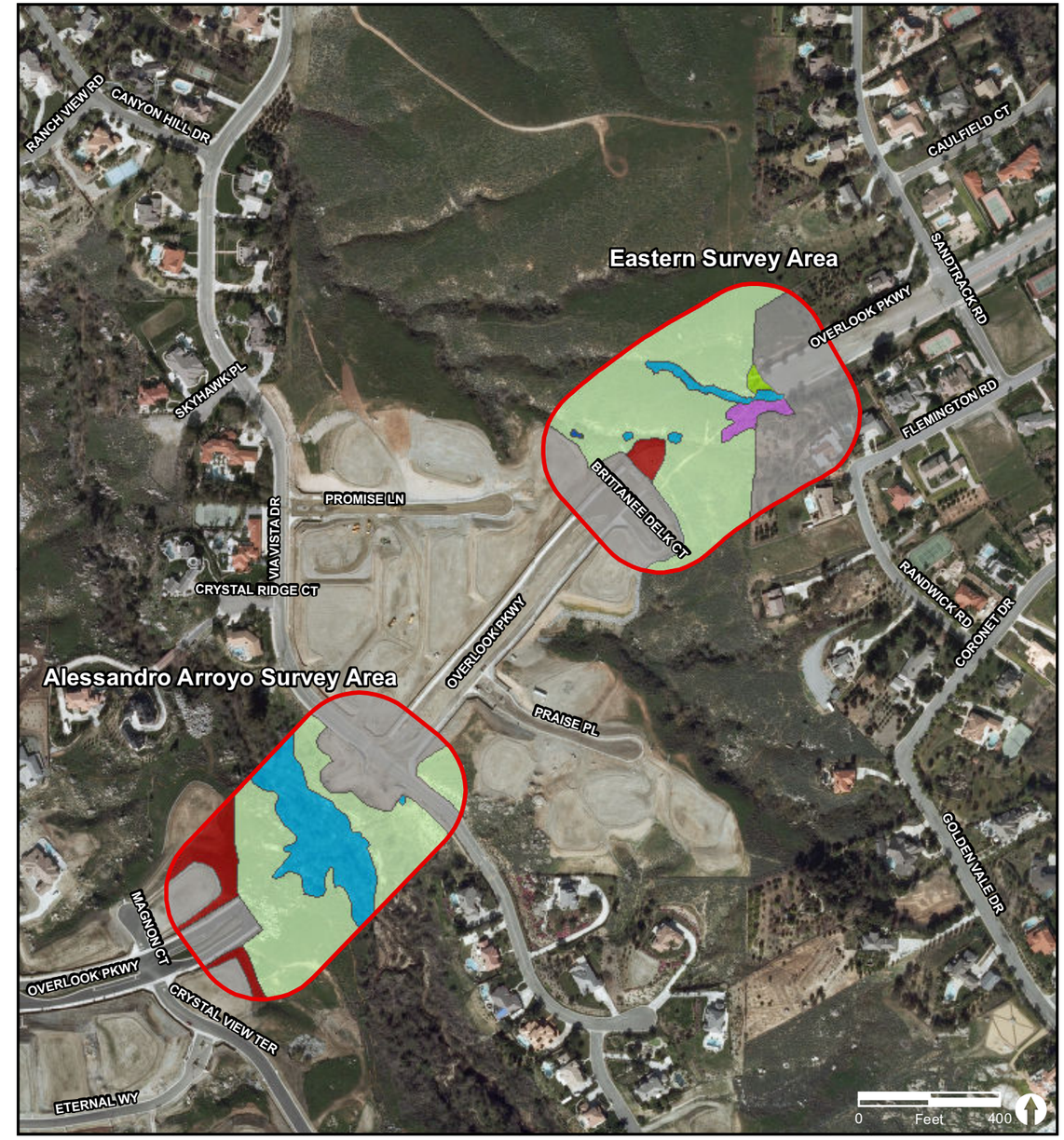
FIGURE 4

Soil Types within the Study Area

Impage Source: City of Riverside, 2009





Study Area

Vegetation Communities

- Southern Willow Scrub
- Fresh Water Marsh
- Riversidian Sage Scrub
- Disturbed Riversidian Sage Scrub
- Non-native Grassland
- Disturbed
- Active Agricultural Field
- Orchard
- Ornamental
- Developed

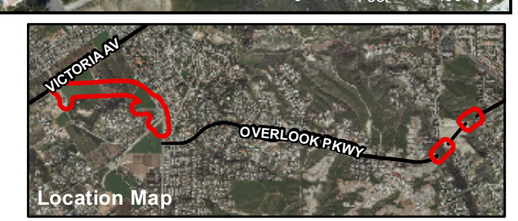


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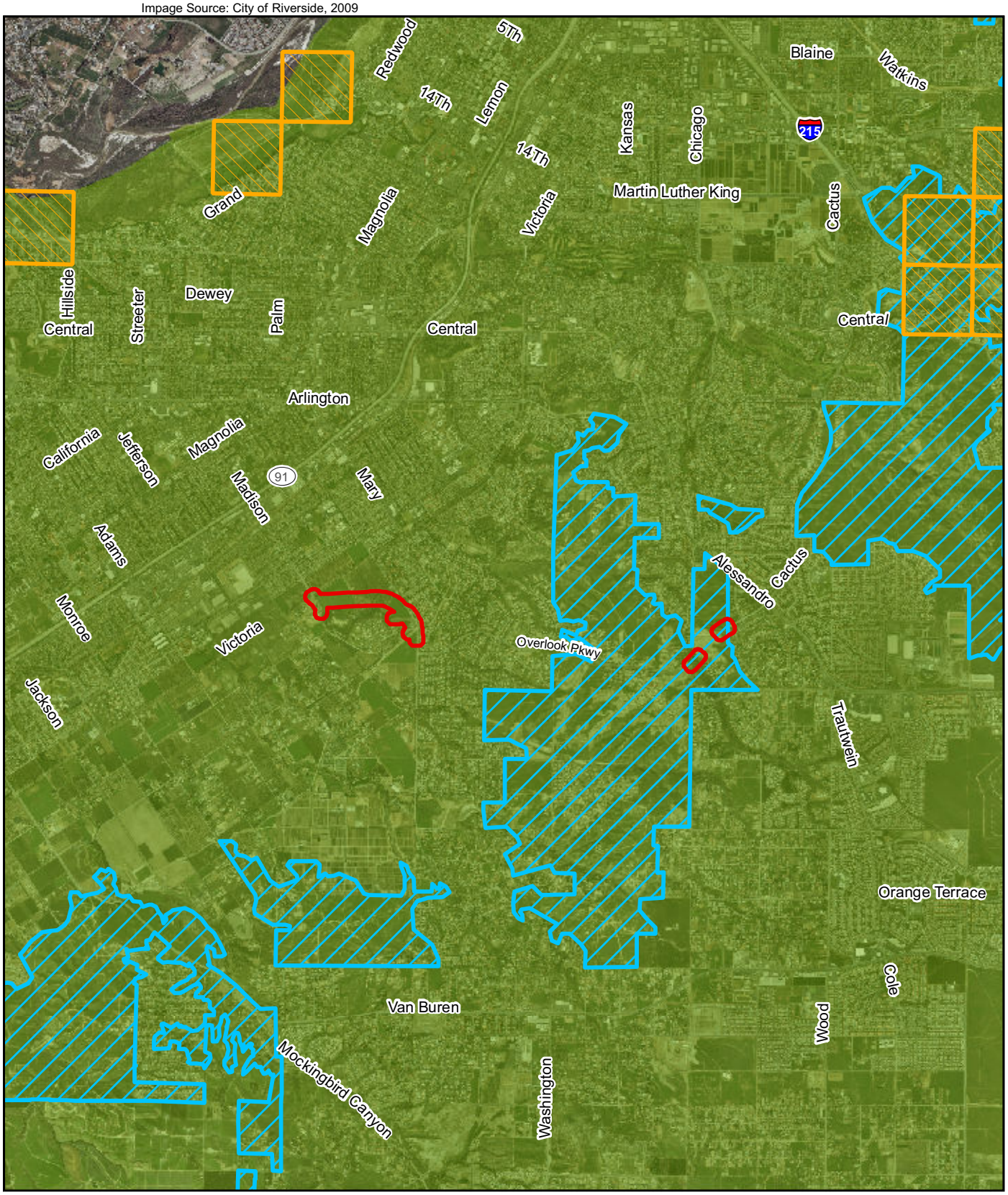
FIGURE 5

Existing Biological Resources

Impage Source: City of Riverside, 2009



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Study Area

WRC MSHCP Criteria Cell

California Gnatcatcher Critical Habitat

Stephen's Kangaroo Rat Fee Area

FIGURE 6

Project in Relation to WRC MSHCP Criteria Cells and HCP Habitats for Sensitive Species

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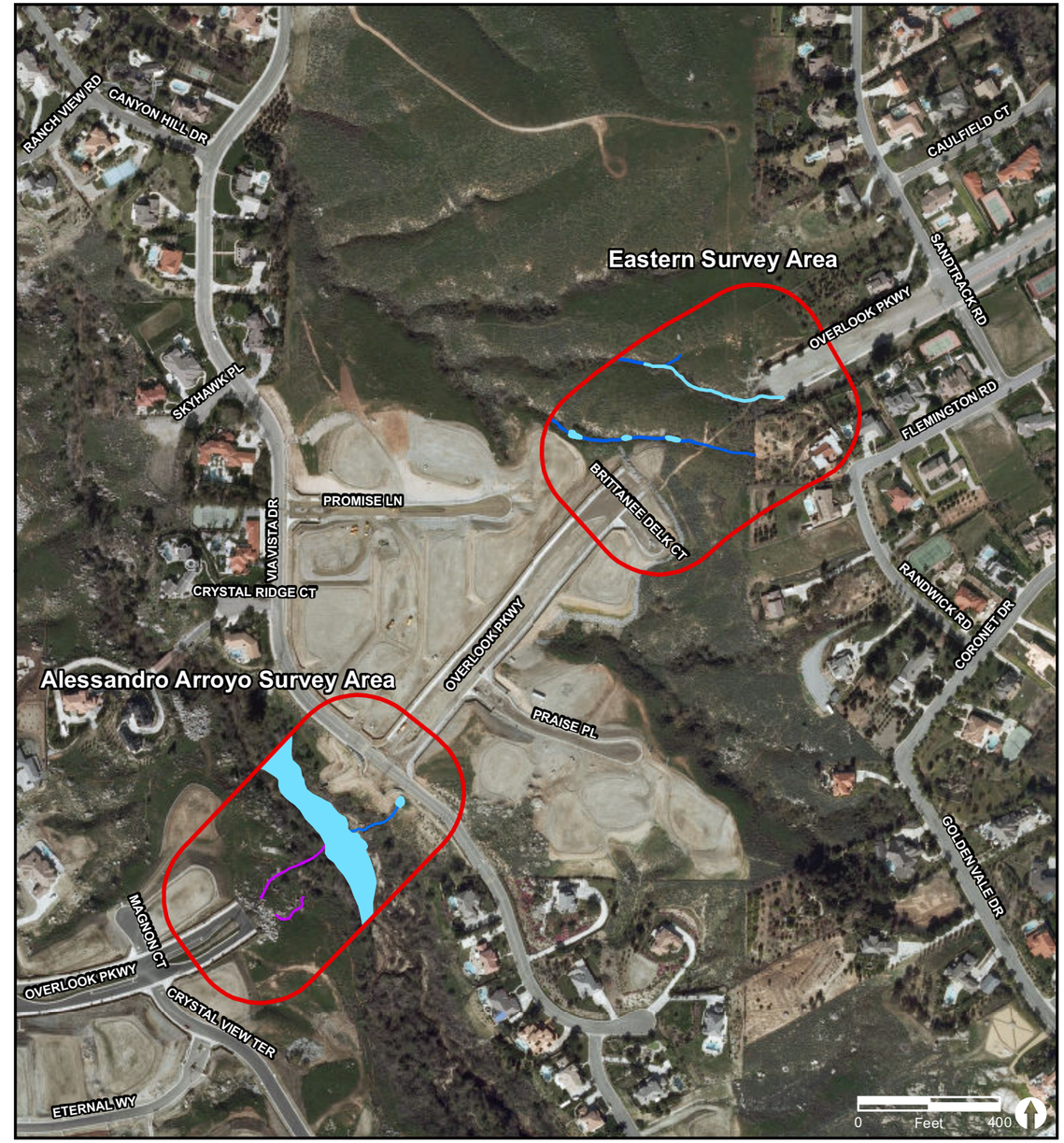
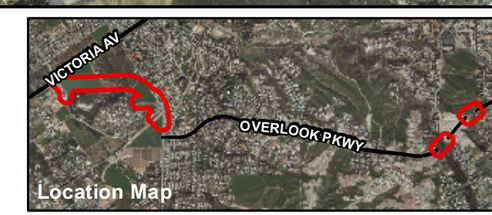
Image Source: City of Riverside, 2009





Study Area
ACOE Non-wetland Waters of the US
ACOE Wetlands
Erosive Features

RECON

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FIGURE 7

ACOE Jurisdictional Resources

Image Source: City of Riverside, 2009

Study Area
CDFG Wetland
CDFG Streambed

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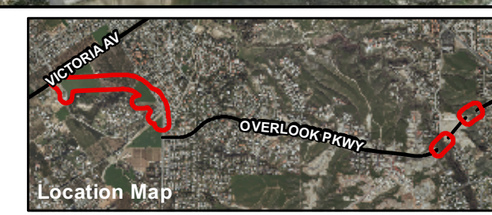
FIGURE 8

CDFG Jurisdictional Resources

Impage Source: City of Riverside, 2009



Study Area
RWQCB Waters of the State

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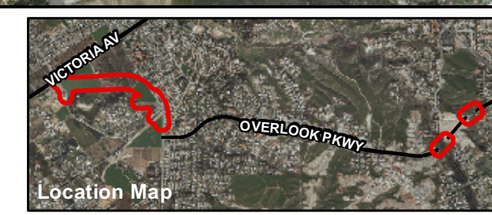
FIGURE 9

RWQCB Jurisdictional Resources

Image Source: City of Riverside, 2009



Study Area
WRCMSHCP Riparian/Riverine

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FIGURE 10

WRCMSHCP Riparian/Riverine Jurisdictional Resources

Image Source: City of Riverside, 2009

Study Area
Permanent Impacts
Temporary Impacts
Vacated Roads
Shading Impacts

Vegetation Communities
Southern Willow Scrub
Fresh Water Marsh
Riversidian Sage Scrub
Disturbed Riversidian Sage Scrub
Active Agricultural Field
Non-native Grassland
Disturbed
Orchard
Ornamental
Developed

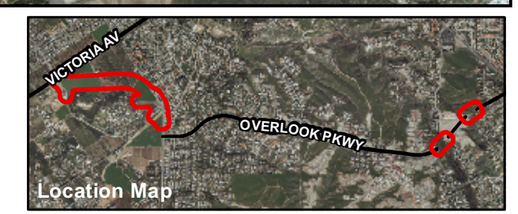

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FIGURE 11

Impacts to Biological Resources

Image Source: City of Riverside, 2009

Study Area
Permanent Impacts
Temporary Impacts
Vacated Roads
Shading Impacts
ACOE Non-wetland Waters of the US
ACOE Wetlands
Erosive Features

RECON

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FIGURE 12

Impacts to ACOE Jurisdictional Resources

Image Source: City of Riverside, 2009

Study Area
Permanent Impacts
Temporary Impacts
Vacated Roads
Shading Impacts
CDFG Wetland
CDFG Streambed

RECON

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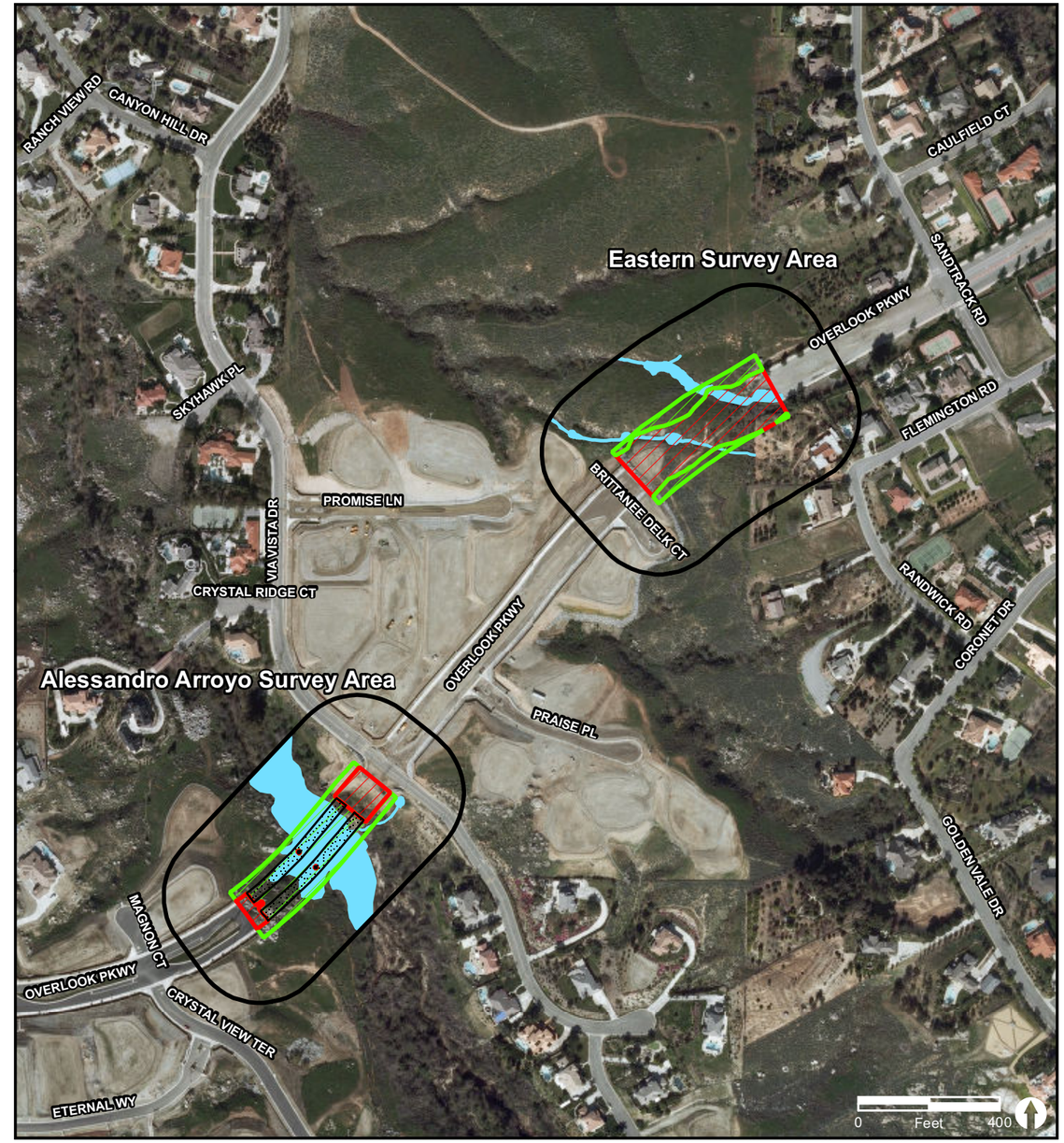
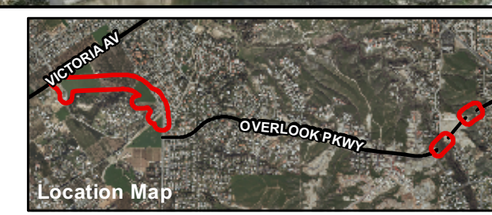
FIGURE 13

Impacts to CDFG Jurisdictional Resources

Image Source: City of Riverside, 2009





Study Area
Permanent Impacts
Temporary Impacts
Vacated Roads
Shading Impacts
RWQCB Waters of the State

RECON

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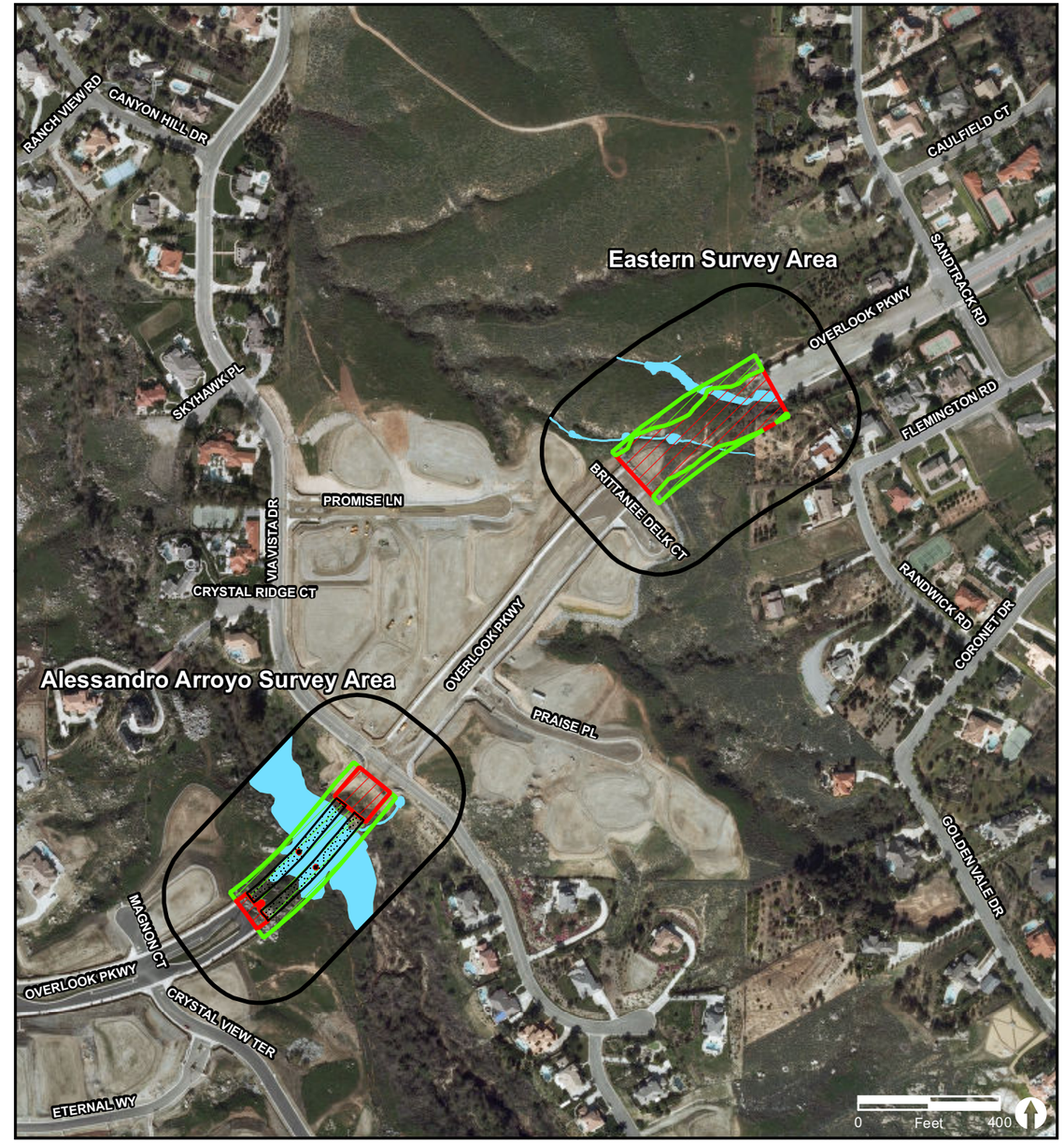
FIGURE 14

Impacts to RWQCB Jurisdictional Resources

Image Source: City of Riverside, 2009



Study Area
Permanent Impacts
Temporary Impacts
Vacated Roads
Shading Impacts
WRCMSHCP Riparian/Riverine

RECON

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FIGURE 15

Impacts to WRCMSHCP Riparian/Riverine Jurisdictional Resources

ATTACHMENT 2

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ATTACHMENT 2
ASSESSOR'S PARCEL NUMBERS WITHIN THE STUDY AREA

Eastern Survey Area								
268180002	268180001	268140006	268020001	268140007	268020002	268020003	268140008	268040013

Alessandro Arroyo Survey Area								
268320025	243380016	243380013	268320026	268320033	243380033	268320032	243380034	243590002
243590004	268320014	243590001						

Western Survey Area								
237100006	242020001	237062034	231260048	237100008	237110012	241230009	237211003	237090006
237100012	242020009	237050031	237100002	237100007	237110003	237211001	237220003	237062033
237110001	237211004	237220001	237110014	237100015	237100001	237211002	237220002	237110009
237050023								

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ATTACHMENT 3

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BIOLOGICAL REPORT SUMMARY SHEET

(Submit two copies to the County)

Applicant Name: City of Riverside
Assessor's Parcel Number (APN): The 49 APNs are listed in the Biological Techniquel Report
APN cont. : Township 3 South, Range 4 West and Township 3 South, Range 5 West
Site Location: Section: 3, 7, 10, 11, 12 **Township:** 3 South **Range:** 4 West and 5 West
Site Address: Crystal View Terrace/ Green Orchard Place/Overlook Parkway
Related Case Number(s): _____ **PDB Number:** _____

CHECK SPECIES SURVEYED FOR	SPECIES or ENVIRONMENTAL ISSUE OF CONCERN	(Circle Yes, No or N/A regarding species findings on the referenced site)		
X	Arroyo Southwestern Toad	Yes	No	N/A
X	Blueline Stream(s)	Yes	No	N/A
	Coachella Valley Fringed-Toed Lizard	Yes	No	N/A
X	Coastal California Gnatcatcher	Yes	No	N/A
	Coastal Sage Scrub	Yes	No	N/A
	Delhi Sands Flower-Loving Fly	Yes	No	N/A
	Desert Pupfish	Yes	No	N/A
	Desert Slender Salamander	Yes	No	N/A
	Desert Tortoise	Yes	No	N/A
	Flat-Tailed Horned Lizard	Yes	No	N/A
X	Least Bell's Vireo	Yes	No	N/A
	Oak Woodlands	Yes	No	N/A
	Quino Checkerspot Butterfly	Yes	No	N/A
	Riverside Fairy Shrimp	Yes	No	N/A
	Santa Ana River Woolystar	Yes	No	N/A
	San Bernardino Kangaroo Rat	Yes	No	N/A
	Slender Horned Spineflower	Yes	No	N/A
X	Stephen's Kangaroo Rat	Yes	No	N/A
	Vernal Pools	Yes	No	N/A
X	Wetlands	Yes	No	N/A

CHECK SPECIES SURVEYED FOR	SPECIES or ENVIRONMENTAL ISSUE OF CONCERN	(Circle Yes, No or N/A regarding species findings on the referenced site)		
X	Other Western Burrowing Owl	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A

Species of concern shall be any unique, rare, endangered, or threatened species. It shall include species used to delineate wetlands and riparian corridors. It shall also include any hosts, perching, or food plants used by any animals listed as rare, endangered, threatened or candidate species by either State, or Federal regulations, or for Riverside County as listed by the California Department of Fish and Game Natural Diversity Data Base (NDDB).

I declare under penalty of perjury that the information provided on this summary sheet is in accordance with the information provided in the biological report.

_____

Signature and Company Name Report Date

_____

10(a) Permit Number (if applicable) Permit Expiration Date

County Use Only

Received by:_____**Date:**_____

PD-B#_____

ATTACHMENT 4

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LEVEL OF SIGNIFICANCE CHECKLIST
For Biological Resources
(Submit Two Copies)

Case Number: _____Lot/Parcel No. See Biotec **_____EA Number_____**

Wildlife & Vegetation

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

(Check the level of impact the applies to the following questions)

a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan?
9 9 X 9 9

b) Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?
9 X 9 9 9

c) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Wildlife Service?
9 X 9 9 9

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?
9 9 X 9 9

e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?
9 X 9 9 9

f) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
9 X 9 9 9

g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
9 9 X 9 9

Source: CGP Fig. VI.36-VI.40

Findings of Fact:

C: There is potential for raptors to nest in mature trees and non-native grassland within the study area.
Focused surveys for least Bell's vireo were conducted within the Alessandro Arroyo Survey Area and this species was not detected.

E/F) Unavoidable impacts to jurisdictional wetlands and waters of the US will occur as a result of project implementation.

Proposed Mitigation:

See biotec for mitigation measures.

Monitoring Recommended:

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ATTACHMENT 5

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ATTACHMENT 5
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

Scientific Name	Common Name	Origin	Eastern Survey Area	Alessandro Arroyo Survey Area	Western Survey Area	Sensitivity Status
ANGIOSPERMS: DICOTS						
ADOXACEAE	**ADOXA FAMILY**					
Sambucus nigra [=*mexicana*] L. ssp. *caerulea* (Raf.) Bolli	blue elderberry	N	X	X	X	-
ANACARDIACEAE	**SUMAC OR CASHEW FAMILY**					
Schinus molle	Peruvian pepper tree	I			X	-
ASTERACEAE	**SUNFLOWER FAMILY**					
Artemisia californica	California sagebrush	N	X	X		-
Baccharis salicifolia (Ruiz & Pav.) Pers.	mule fat, seep-willow	N	X		X	-
Conyza canadensis (L.) Cronquist	horseweed	N			X	-
Encelia farinosa A. Gray ex Torr.	brittlebush, incienso	N	X	X	X	-
Helianthus gracilentus A. Gray	slender sunflower	N				
Heterotheca grandiflora Nutt.	telegraph weed	N	X			-
Holocarpha virgata (A. Gray) D.D. Keck ssp. *elongata* D.D. Keck	graceful tarplant	N			X	CNPS 4.2
BORAGINACEAE	**BORAGE FAMILY**					
Amsinckia menziesii (Lehm.) A. Nelson & J.F. Macbr.	rancher's fireweed	N		X	X	-
Phacelia sp.	phacelia	N		X		-
BRASSICACEAE (CRUCIFERAE)	**MUSTARD FAMILY**					
Hirschfeldia incana	short-pod mustard	I		X		-
Sisymbrium sp.	mustard	I	X		X	-

ATTACHMENT 5
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Origin	Eastern Survey Area	Alessandro Arroyo Survey Area	Western Survey Area	Sensitivity Status
ANGIOSPERMS: DICOTS						
CACTACEAE	**CACTUS FAMILY**					
Cylindropuntia californica (Torr. & A. Gray) F.M. Knuth var. *parkeri* (J.M. Coult.) Pinkava	cane/valley cholla	N	X			-
Opuntia ficus-indica (L.) Mill.	Indian fig	I	X			
Opuntia littoralis (Engelm.) Cockerell.	shore cactus	N	X			
CHENOPODIACEAE	**GOOSEFOOT FAMILY**					
Salsola tragus L.	Russian thistle, tumbleweed	I			X	-
CLEOMACEAE	**SPIDERFLOWER FAMILY**					
Isomeris arborea Nutt.	bladderpod	N	X			
CUCURBITACEAE	**GOURD FAMILY**					
Marah macrocarpus (Greene) Greene	wild cucumber	N			X	-
EUPHORBIACEAE	**SPURGE FAMILY**					
Croton [=*Eremocarpus*] *setigerus* Hook.	dove weed	N	X			
Ricinus communis	castor bean	I		X	X	-
FABACEAE (LEGUMINOSAE)	**LEGUME FAMILY**					
Cercidium floridum	Palo verde	N	X		X	-
FAGACEAE	**OAK FAMILY**					
Quercus agrifolia Née	coast live oak, encina	N			X	-
GERANIACEAE	**GERANIUM FAMILY**					
Erodium cicutarium (L.) L'Hér. ex Aiton	red-stemmed filaree	I		X	X	-
Erodium moschatum	green-stemmed filaree	I			X	-

ATTACHMENT 5
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Origin	Eastern Survey Area	Alessandro Arroyo Survey Area	Western Survey Area	Sensitivity Status
ANGIOSPERMS: DICOTS						
LAMIACEAE	**MINT FAMILY**					
Marrubium vulgare L.	horehound	I	X		X	-
MALVACEAE	**MALLOW FAMILY**					
Malva parviflora L.	cheeseweed, little mallow	I			X	-
MORACEAE	**MULBERRY FAMILY**					
Ficus sp.	fig tree	I			X	-
MYRTACEAE	**MYRTLE FAMILY**					
Eucalyptus sp.	gum tree	I			X	-
POLYGONACEAE	**BUCKWHEAT FAMILY**					
Eriogonum fasciculatum Benth. var. *foliolosum* (Nutt.) S. Stokes ex Abrams	inland California buckwheat	N	X	X		-
SALICACEAE	**WILLOW FAMILY**					
Salix lasiolepis	Arroyo willow	N	X		X	
SOLANACEAE	**NIGHTSHADE FAMILY**					
Datura wrightii Regel	Jimson weed, thorn-apple, tolguacha	N			X	-
Lycopersicon esculentum L.	tomato	I			X	-
Nicotiana glauca Graham	tree tobacco	I	X	X	X	-
TAMARICACEAE	**TAMARISK FAMILY**					
Tamarix ramosissima Ledeb.	saltcedar	I		X		-
ULMACEAE	**ELM FAMILY**					
Ulmus parvifolia	Chinese elm	I			X	-
URTICACEAE	**NETTLE FAMILY**					
Urtica dioica L. ssp. *holosericea* (Nutt.) Thorne	hoary nettle	N	X			
Urtica urens	dwarf nettle	I			X	-

ATTACHMENT 5
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Origin	Eastern Survey Area	Alessandro Arroyo Survey Area	Western Survey Area	Sensitivity Status
ANGIOSPERMS: DICOTS						
ANGIOSPERMS: MONOCOTS						
ARECACEAE	**PALM TREES**					
Phoenix canariensis	Canary Island palm	I			X	-
Washington robusta	Mexican fan palm	I	X			-
CYPERACEAE	**SEDGE FAMILY**					
Carex sp.	sedge sp.	N		X		-
PLANTAGINACEAE	**PLANTAIN FAMILY**					
Veronica anagallis-aquatica L.	water speedwell	I	X			
POACEAE (GRAMINEAE)	**GRASS FAMILY**					
Arundo donax L.	giant reed	I		X		-
Avena sp.	wild oat	I			X	-
Bromus diandrus Roth	ripgut grass	I		X	X	-
Bromus madritensis L. ssp. *rubens* (L.) Husnot	red brome	I	X	X		-
Hordeum murinum L.	wild barley	I			X	-
Leptochloa uninervia (J. Presl) Hitchc. & Chase	Mexican sprangletop	N			X	-
Leymus condensatus (C. Presl) Á. Löve	giant rye grass	N		X		-
Pragmites austalis	common reed	I			X	-
Schismus barbatus (L.) Thell.	Mediterranean schismus	I	X		X	-
TYPHACEAE	**CATTAIL FAMILY**					
Typha sp.	cattail	N	X	X		-

SOURCES: Jepson Online Interchange <http://ucjeps.berkeley.edu/interchange.html> (2010); K. N. Brenzel (editor), *Sunset Western Garden Book* (Sunset Publishing, Menlo Park, CA, 2001); USDA Plants Database <http://plants.usda.gov/> (2008).

ORIGIN
N = Native to locality
I = Introduced species from outside locality

ATTACHMENT 5
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
(continued)

SENSITIVITY STATUS

FEDERAL CANDIDATES AND LISTED PLANTS

FE = Federally listed endangered
FT = Federally listed threatened
FC = Federal candidate for listing as endangered or threatened

STATE LISTED PLANTS

CE = State listed endangered
CR = State listed rare
CT = State listed threatened

CALIFORNIA NATIVE PLANT SOCIETY LISTS

1A = Species presumed extinct.
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
2 = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.
3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

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PHOTOGRAPH 1
Disturbed Riversidean Sage Scrub and Southern Willow Scrub in Foreground, Riversidean Sage Scrub in Background within Eastern Survey Area, Facing Southwest

PHOTOGRAPH 2
Southern Willow Scrub in Foreground with Disturbed Habitat Shown in the Background within the Alessandro Arroyo Survey Area, Facing Southwest

PHOTOGRAPH 3
Southern Willow Scrub within Alessandro Arroyo Survey Area, Facing East

PHOTOGRAPH 4
Freshwater Marsh within the Eastern Survey Area, Facing West

PHOTOGRAPH 5
Ornamental Vegetation in Background and Riversidean Sage Scrub in Foreground within Eastern Survey Area, Facing Southeast

PHOTOGRAPH 6
Riversidean Sage Scrub within the Eastern Survey Area, Facing South

PHOTOGRAPH 7
Riversidean Sage Scrub Located on West Side
of Alessandro Arroyo Survey Area, Facing Northeast

PHOTOGRAPH 8
Riversidean Sage Scrub Located on East Side of
Alessandro Arroyo Survey Area, Facing Northeast

PHOTOGRAPH 9
Non-Native Grassland on Eastern Side
of the Western Survey Area, Facing North

PHOTOGRAPH 10
Non-Native Grassland on Western Side
of the Western Survey Area, Facing North

PHOTOGRAPH 11
Disturbed Land within Eastern Survey Area, Facing Northeast

PHOTOGRAPH 12
Disturbed Land within Western Survey Area with
Orchard in the Background, Facing North

PHOTOGRAPH 13
Active Agricultural Land within Western Survey Area, Facing North

PHOTOGRAPH 14
Ornamental Vegetation within Western Survey Area, Facing Northeast

PHOTOGRAPH 15
Gage Canal within the Western
Survey Area, Facing Southwest

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ATTACHMENT 7

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ATTACHMENT 7
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
INVERTEBRATES (Nomenclature from Erikson and Belk 1999, Milne and Milne 1980, Mattoni 1990, and Opler and Wright 1990)				
APIDAE	**APID BEES**			
Apis mellifera	honey bee	SWS	-	O
FORMICIDAE	**ANTS**			
Pogonomyrmex sp.	Harvester ants	RSS	-	O
PAPILIONIDAE	**PARNASSIANS & SWALLOWTAILS**			
Papilio zelicaon	anise swallowtail	RSS, SWS	-	O
PIERIDAE	**WHITES & SULPHURS**			
Anthocharis sara	Sara or Pacific orangetip	NNG	-	O
Pontia protodice	common or checkered white	RSS	-	O
NYMPHALIDAE	**BRUSH-FOOTED BUTTERFLIES**			
Vanessa cardui	Painted lady	NNG	-	O
REPTILES (Nomenclature from Crother 2001 and Crother et. al. 2003)				
IGUANIDAE	**IGUANID LIZARDS**			
Sceloporus occidentalis	Western fence lizard	NNG	-	O
Sceloporus orcutti	Granite spiny lizard	RSS	-	O
TEIIDAE	**WHIPTAIL LIZARDS**			
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	RSS	CSC	O
BIRDS (Nomenclature from American Ornithologists' Union 1998)				
ODONTOPHORIDAE	**NEW WORLD QUAIL**			
Callipepla californica californica	California quail	SWS	-	V

ATTACHMENT 7
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
ACCIPITRIDAE	**HAWKS, KITES, & EAGLES**			
Buteo jamaicensis	Red-tailed hawk	F, SWS	-	O
FALCONIDAE	**FALCONS & CARACARAS**			
Falco sparverius sparverius	American kestrel	URB, SWS	-	O
CHARADRIIDAE	**LAPWINGS & PLOVERS**			
Charadrius vociferus vociferus	Killdeer	AA, NNG, URB	-	V, O
COLUMBIDAE	**PIGEONS & DOVES**			
Zenaida macroura marginella	Mourning dove	AA, NNG, URB, SWS	-	V, O
CUCULIDAE	**CUCKOOS & ROADRUNNERS**			
Geococcyx californianus	greater roadrunner	RSS	-	V, O
APODIDAE	**SWIFTS**			
Aeronautes saxatalis	white-throated swift	SWS	-	V, O
TROCHILIDAE	**HUMMINGBIRDS**			
Calypte anna	Anna's hummingbird	AA, NNG, SWS	-	V, O
PICIDAE	**WOODPECKERS & SAPSUCKERS**			
Melanerpes formicivorus bairdi	Acorn woodpecker	URB	-	V, O
Picoides nuttallii	Nuttall's woodpecker	URB, SWS	-	V
TYRANNIDAE	**TYRANT FLYCATCHERS**			
Empidonax difficilis	Pacific slope flycatcher	SWS	-	V, O
Myiarchus cinerascens cinerascens	ash-throated flycatcher	SWS	-	V, O
Sayornis nigricans semiatra	Black phoebe	AA, NNG, URB, SWS	-	V, O
Sayornis saya	Say's phoebe	AA, NNG	-	V, O
Tyrannus verticalis	western kingbird	SWS	-	V, O
Tyrannus vociferans vociferans	Cassin's kingbird	AA	-	O
VIREONIDAE	**VIREOS**			
Vireo huttoni huttoni	Hutton's vireo	SWS	-	V

ATTACHMENT 7
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
CORVIDAE	**CROWS, JAYS, & MAGPIES**			
Aphelocoma californica	Western scrub-jay	DIST	-	V, O
Corvus brachyrhynchos hesperis	American crow	SWS	-	V, O
Corvus corax clarionensis	common raven	F, SWS	-	V, O
HIRUNDINIDAE	**SWALLOWS**			
Petrochelidon pyrrhonota tachina	cliff swallow	SWS	-	V, O
AEGITHALIDAE	**BUSHTIT**			
Psaltriparus minimus minimus	bushtit	SWS	-	V, O
TROGLODYTIDAE	**WRENS**			
Salpinctes obsoletus obsoletus	rock wren	SWS	-	V
Thryomanes bewickii	Bewick's wren	SWS	-	V
Troglodytes aedon parkmanii	house wren	SWS	-	V, O
TURDIDAE	**THRUSHES**			
Sialia mexicana occidentalis	Western bluebird	DIST	-	O
MIMIDAE	**MOCKINGBIRDS & THRASHERS**			
Mimus polyglottos polyglottos	Northern mockingbird	ORN, SWS	-	V, O
STURNIDAE	**STARLINGS & MYNAS**			
Sturnus vulgaris	European starling (I)	SWS	-	V, O
PTILOGONATIDAE	**SILKY FLYCATCHERS**			
Phainopepla nitens lepida	phainopepla	SWS	-	V, O
PARULIDAE	**WOOD WARBLERS**			
Geothlypis trichas	common yellowthroat	SWS	-	V, O
Vermivora celata	Orange-crowned warbler	DEV, SWS	-	V

ATTACHMENT 7
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
EMBERIZIDAE	**EMBERIZIDS**			
Chondestes grammacus strigatus	Lark sparrow	URB	-	O
Melospiza lincolnii	Lincoln's sparrow	NNG	MSHCP (breeding)	O
Melospiza melodia	song sparrow	SWS	-	V, O
Pipilo crissalis	California towhee	DIST, SWS	-	V, O
Pipilo maculatus	spotted towhee	SWS	-	V, O
Zonotrichia leucophrys	White-crowned sparrow	DIST	-	V, O
CARDINALIDAE	**CARDINALS & GROSBEAKS**			
Pheucticus melanocephalus maculatus	black-headed grosbeak	SWS	-	V
ICTERIDAE	**BLACKBIRDS & NEW WORLD ORIOLES**			
Icterus bullockii	Bullock's oriole	SWS	-	V, O
Icterus cucullatus nelsoni	hooded oriole	SWS	-	V, O
FRINGILLIDAE	**FINCHES**			
Carduelis psaltria hesperophilus	Lesser goldfinch	DIST, SWS	-	V, O
Carpodacus mexicanus frontalis	House finch	URB, SWS	-	V, O
MAMMALS (Nomenclature from Baker et al. 2003)				
LEPORIDAE	**RABBITS & HARES**			
Sylvilagus audubonii	Desert cottontail	NNG	-	O
PROCYONIDAE	**PROCYONIDS**			
Procyon lotor	Northern raccoon	NNG	-	T

ATTACHMENT 7
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Habitats

AA = Active agricultural fields
DIST = Disturbed land
F = Flying overhead
NNG = Non-native grassland
ORN = Ornamental vegetation
RSS = Riversidian sage scrub
SWS = Southern willow scrub
URB = Urban/Developed

Evidence of Occurrence

V = Vocalization
O = Observed
T = Track

Status

BEPA = Bald and Golden Eagle Protection Act
FC = Federal candidate for listing (taxa for which the U.S. Fish and Wildlife Service on file sufficient information on biological vulnerability and threat(s) to support proposals to list as endangered or threatened; development and publication of proposed rules for these taxa are anticipated)
CFP = California fully protected species
CSC = California Department of Fish and Game species of special concern
FE = Listed as endangered by the federal government

FPT = Federally proposed threatened
FSS = Federal (BLM or USFS) sensitive species
FT = Listed as threatened by the federal government
MSHCP = Multiple Species Habitat Conservation Plan target species list
PSE = Proposed as endangered by the state of California
SCT = California candidate for listing as threatened
SDC = City of San Diego Resource Protection Ordinance “Sensitive Species”
SE = Listed as endangered by the state of California
ST = Listed as threatened by the state of California
* = Taxa listed with an asterisk fall into one or more of the following categories:
• Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
• Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
• Population(s) in California that may be peripheral to the major portion of a taxon’s range, but which are threatened with extirpation within California
• Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

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ATTACHMENT 8

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ATTACHMENT 8
SENSITIVE PLANT SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Scientific / Common Name	Sensitivity Code & Status	Habitat Preference/ Requirements	Observed On Site?	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
		ANGIOSPERMS: DICOTS			
ASTERACEAE	**SUNFLOWER FAMILY**				
Ambrosia pumila San Diego ambrosia	FE, 1B	Perennial herb; chaparral, coastal sage scrub, valley and foothill grassland, creek beds, vernal pools, often in disturbed areas; blooms May–Sept.; elevation less than 1,400 feet. Many occurrences extirpated in San Diego County.	No	Unlikely	This species was not observed and is not expected to occur as it is a perennial herb and would have been apparent at the time of the surveys. There are no known occurrences in the project vicinity (State of California 2010c).
BERBERIDACEAE	**BARBERRY FAMILY**				
Berberis [=*Mahonia*] *nevinii* Nevin's barberry	FE, CE, 1B, NE,	Evergreen shrub; chaparral, cismontane woodland, coastal sage scrub, riparian scrub, sandy or gravelly; blooms March–April; elevation 1,000–2,700 feet.	No	Unlikely	This species was not observed and is not expected to occur as it is a perennial shrub and would have been apparent at the time of the surveys. This species has been observed within two-miles of the western survey area (State of California 2010c).

ATTACHMENT 8
SENSITIVE PLANT SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA
(continued)

Scientific / Common Name	Sensitivity Code & Status	Habitat Preference/ Requirements	Observed On Site?	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
BRASSICACEAE	**MUSTARD FAMILY**				
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	1B	Annual herb; coastal sage scrub, chaparral; blooms Jan.–July; elevation less than 1,700 feet.	No	Unlikely	This species is not expected to occur as suitable habitats are not present within the survey areas. This species has been observed within two-miles of the eastern survey area (State of California 2010c).
Nasturtium [=*Rorippa*] *gambellii* Gambel's water cress	FE, CT, 1B	Perennial herb; marshes and swamps; blooms April–Sept.; elevation less than 1,100 feet.	No	Unlikely	There are no known occurrences in the project vicinity (State of California 2010c) and no suitable habitat is present.
LILIACEAE					
Brodiaea filifolia Thread-leaved brodiaea	FT, CE, 1B, NE	Perennial herb (bulbiferous); cismontane woodland, coastal sage scrub, playas, valley and foothill grassland, vernal pools, often clay; blooms March–June; elevation less than 4,000 feet.	No	Unlikely	There are no known occurrences in the project vicinity (State of California 2010c) and no suitable habitat or clay soils are present within the survey areas.

ATTACHMENT 8
SENSITIVE PLANT SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA
(continued)

Scientific / Common Name	Sensitivity Code & Status	Habitat Preference/ Requirements	Observed On Site?	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
POLEMONIACEAE	**PHLOX FAMILY**				
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woolly-star	FE, CE, 1B, NE	Perennial herb; alluvial-fans	No	Unlikely	This species is not expected to occur as it is a perennial herb and would have been apparent at the time of the surveys. However, Hanford coarse sandy loam, an alluvial fan soil, is present within the Alessandro Arroyo Survey Area which provides suitable soil conditions. There are no known occurrences in the project vicinity (State of California 2010c)
Navarretia fossalis Spreading navarretia	FT, 1B, MSHCP	Annual herb; freshwater-marsh, vernal-pools	No	Unlikely	There are no known occurrences in the project vicinity (State of California 2010c) and no suitable habitat is present.

ATTACHMENT 8
SENSITIVE PLANT SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA
(continued)

Scientific / Common Name	Sensitivity Code & Status	Habitat Preference/ Requirements	Observed On Site?	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
POLYGONACEAE	**BUCKWHEAT FAMILY**				
Chorizanthe parryi var. *parryi* Parry's spineflower	1B	Open Chaparral, Coastal Sage Scrub, sandy soils	No	Likely	Parry's spineflower was not observed during the surveys; however, there is potential for this species to occur within the Riversidean sage scrub within the Alessandro Arroyo and Eastern Survey Areas. This species has been observed within two-miles of the western survey area (State of California 2010c).
Dodecahema leptoceras Slender-horned spineflower	FE, CE, 1B, MSHCP	Annual herb; chaparral, cismontane woodland, coastal sage scrub, alluvial fans and sandy areas; blooms April–June; elevation 600–2,500 feet.	No	Likely	Slender-horned spineflower was not observed during the surveys; however, there is potential for this species to occur within the Riversidean sage scrub within the Alessandro Arroyo and Eastern Survey Areas and within the Alessandro Arroyo due to suitable soils. There are no known occurrences in the project vicinity (State of California 2010c).

ATTACHMENT 8
SENSITIVE PLANT SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA
(continued)

Scientific / Common Name	Sensitivity Code & Status	Habitat Preference/ Requirements	Observed On Site?	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
POACEAE	**GRASS FAMILY**				
Orcuttia californica California Orcutt grass	FE, CE, 1B, MSHCP	Annual herb; vernal pools; blooms April–August; elevation 50–2,200 feet.	No	Unlikely	There are no known occurrences in the project vicinity (State of California 2010c) and no suitable habitat is present.

CALIFORNIA NATIVE PLANT SOCIETY LIST
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing

SENSITIVITY CODES

FEDERAL CANDIDATES AND LISTED PLANTS
FE = Federally listed endangered
FT = Federally listed threatened

STATE LISTED PLANTS
CE = State listed endangered
CT = State listed threatened

COUNTY OF WESTERN RIVERSIDE
NE = Narrow endemic
MSHCP = Multiple Species Habitat Conservation Program covered species

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ATTACHMENT 9

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ATTACHMENT 9
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Species	Status	Habitat/Comments	Occurrence
FAIRY SHRIMP (Nomenclature from Eriksen and Belk 1999)			
ANOSTRACANS	**FAIRY SHRIMP**		
Vernal pool fairy shrimp *Branchinecta lynchi*	FT, MSHCP	Vernal pools.	This species is not expected to occur. No suitable vernal pool habitat is present.
Riverside fairy shrimp *Streptocephalus woottoni*	FE, MSHCP, *	Vernal pools.	This species is not expected to occur. No suitable vernal pool habitat is present.
AMPHIBIANS (Nomenclature from Crother 2001 and Crother et al. 2003)			
BUFONIDAE	**TRUE TOADS**		
Arroyo toad *Bufo californicus*	FE, CSC, MSCP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas. Migrant and winter visitor.	This species has a low potential to occur within the Alessandro Arroyo Survey Area due to the stream being culverted upstream of the survey area, which alters flows and reduces the habitat quality for this species. Additionally, the nearest occurrence of arroyo toad is 17 miles southwest of the Alessandro Arroyo Survey Area.
REPTILES (Nomenclature from Crother 2001 and Crother et al. 2003)			
TEIIDAE	**WHIPTAIL LIZARDS**		
Belding's orange-throated whiptail *Aspidoscelis hyperythra beldingi*	CSC, *	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.	This species was not observed within the survey area; however, there is potential for this species to use the coastal sage scrub within the eastern survey area.

ATTACHMENT 9
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA
(continued)

Species	Status	Habitat/Comments	Occurrence
BIRDS (Nomenclature from American Ornithologists' Union 1998, 7th ed. and Unitt 2004)			
ACCIPITRIDAE HAWKS, KITES, & EAGLES			
Cooper's hawk (nesting) *Accipiter cooperi*	CSC, MSCP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas. Migrant and winter visitor.	This species has a moderate potential to occur within the western survey area due to the presence of mature trees which are suitable for nesting.
Strigidae	Tyrannidae		
Western burrowing owl (burrow sites & some wintering sites) *Athene cunicularia hypugaea*	FSS, BCC, CSC, MSHCP	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	Western burrowing owl is not expected to occur within the survey area due to the absence of suitable burrow habitat.
TYRANNIDAE	**TYRANT FLYCATCHERS**		
Southwestern willow flycatcher (nesting) *Empidonax traillii extimus*	FE, SE, MSHCP, *	Nesting restricted to willow thickets. Also occupies other woodlands. Uncommon migrant. Extremely localized breeding in the San Luis Rey, Santa Margarita, and Tijuana Rivers.	This species is not expected to occur. This species requires dense, multi-tiered riparian habitat, which is not present within the survey areas.
VIREONIDAE	**VIREOS**		
Least Bell's vireo (nesting) *Vireo bellii pusillus*	FE, SE, BCC, MSHCP, *	Willow riparian woodlands. Migrant and summer resident.	Although there is moderate-high potential for least Bell's vireo to occur within the Alessandro Arroyo Survey Area as suitable riparian habitat is present; protocol surveys were conducted in Spring 2011 and results were negative. However, this species has been observed within one-mile of the survey area (State of California 2010b).

ATTACHMENT 9
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA
(continued)

Species	Status	Habitat/Comments	Occurrence
SYLVIIDAE	**GNATCATCHERS**		
Coastal California gnatcatcher *Polioptila californica californica*	FT, CSC, MSHCP, *	Coastal sage scrub, maritime succulent scrub. Resident.	This species has a moderate potential to occur in the Riversidian age scrub east within the eastern portion of the survey area. This species has been observed within one mile of the eastern and western survey areas (State of California 2010b).
MAMMALS (Nomenclature from Baker et al. 2003 and Hall 1981)			
HETEROMYIDAE	**POCKET MICE & KANGAROO RATS**		
San Bernardino kangaroo rat *Dipodomys merriami parvus*	FE, ST, MSHCP	Open coastal sage scrub, Riversidean alluvian fan sage scrub, or grasslands; fine, alluvial sands.	San Bernardino kangaroo rat is not expected to occur. No suitable soils or habitats are present within the survey areas. This species has been observed within one-mile of the survey area (State of California 2010b).
Stephens' kangaroo rat *Dipodomys stephensi*	FE, ST, MSHCP	Open coastal sage scrub or grassland.	This species is not expected to occur as suitable habitat is not present within the survey areas. This species has been observed within one-mile of the eastern survey area and two-miles within the western survey area (State of California 2010b).

ATTACHMENT 9
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE STUDY AREA
(continued)

Species	Status	Habitat/Comments	Occurrence
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	CSC	Sparse, disturbed coastal sage scrub or grasslands with sandy soils.	There is low potential for Northwestern San Diego pocket mouse to occur within the sparse Riversidian sage scrub within the western portion of the eastern survey area, but was not observed. This species has been known to occur within two-miles of the western survey area (State of California 2010b).
Pocketed free-tailed bat *Nyctinomops femorosaccus*	CSC	Normally roost in crevice in rocks, slopes, cliffs. Leave roosts well after dark.	This species has a low potential to occur within the survey area due to the lack of appropriate roosting habitat. This species has been known to occur within two-miles of the western survey area (State of California 2010b).

FEDERAL/STATE LISTED

FE = Federally listed endangered
FSS = Federal (BLM and USFS) sensitive species
FT = Federally listed threatened
FD = Federally delisted, species monitored for five years after delisting
SE = State listed endangered
ST = State listed threatened

ATTACHMENT 9
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR
WITHIN THE STUDY AREA
(continued)

OTHER

BCC = U.S. Fish and Wildlife Service Birds of Conservation Concern species
BEPA = Bald and Golden Eagle Protection Act
CFP = California Department of Fish and Game fully protected species
CSC = California Department of Fish and Game species of special concern
MSHCP = County of Western Riverside Multiple Species Habitat Conservation Program covered species
* = Taxa listed with an asterisk fall into one or more of the following categories:

- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

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APPENDICES

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APPENDIX A

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JURISDICTIONAL DELINEATION REPORT FOR CRYSTAL VIEW TERRACE/ GREEN ORCHARD PLACE/ OVERLOOK PARKWAY PROJECT CITY OF RIVERSIDE, CALIFORNIA

CASE No. 11-0050
Within 49 APNs (listed within Attachment 2)

Total Area Surveyed: 100.76 acres

Location: USGS 7.5-minute topographic map,
Township 03 South, Range 04 West and Township 03 South,
Range 05 West of the United States Geological Survey (USGS)
7.5-minute topographic map, Riverside East & Riverside West
quadrangles

Prepared For:
CITY OF RIVERSIDE
COMMUNITY DEVELOPMENT DEPARTMENT
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Principal Investigator/Preparer:
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BIOLOGIST
bprocsal@reconenvironmental.com

Wetland delineations were conducted by Beth Procsal, Mike Nieto, Erin McKinney, Italia Gray, and Anna Bennett on February 11 and November 16, 2011.

Wetland habitat and jurisdictional waters were mapped within the study area.

RECON NUMBER 6103
April 28, 2012

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ATTACHMENT

1: Wetland Delineation Data Sheets

1.0 Summary of Findings

RECON biologists performed routine wetland delineations within the 11.05-acre Eastern Survey Area, 10.32-acre Alessandro Arroyo Survey Area, and 79.39-acre Western Survey Area for the Crystal View Terrace/Green Orchard Place/Overlook Parkway Project (Project) in the city of Riverside. Methods for delineating wetlands followed guidelines set forth by the U.S. Army Corps of Engineers (ACOE; 1987), including the recently published *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (ACOE 2008).

The ACOE, California Department of Fish and Game (CDFG), and California Regional Water Quality Control Board (RWQCB) jurisdictional waters were all delineated within all survey areas.

The Eastern Survey Area ACOE jurisdictional waters of the U.S. total 0.11 acre, including 0.06 acre of wetland and 0.05 acre of non-wetland waters. The Alessandro Arroyo Survey Area ACOE jurisdictional waters of the U.S. total 0.94 acre, including 0.93 acre of ACOE wetlands and 0.01 of ACOE non-wetland waters. The Western Survey Area ACOE jurisdictional waters of the U.S. total 0.19 acre of non-wetland waters.

CDFG jurisdictional resources for the Eastern Survey Area total 0.31 acre, which include 0.26 acre of wetlands and 0.05 acre of streambed. For the Alessandro Arroyo Survey Area, CDFG jurisdictional resources total 1.78 acres, which include 1.77 acres of wetlands and 0.01 acre of streambed. For the Western Survey Area, CDFG jurisdictional resources include 0.19 acre of streambed.

RWQCB jurisdictional waters of the state total 0.31 and 1.78 acres at the Eastern and Alessandro Arroyo survey areas, respectively. These acreages primarily consist of riparian habitat and unvegetated streambed. RWQCB jurisdictional waters total 0.19 acre within the Western Survey Area, which consists of the unvegetated Gage Canal.

Each of the agencies will verify this delineation during the permitting process. Under a no-net-loss to wetlands policy, the agencies will require that impacts be avoided and minimized to the greatest extent practicable and that any unavoidable impacts be mitigated.

Impacts to jurisdictional resources on-site would require a permit under Section 404 of the Clean Water Act (CWA) from ACOE and a Section 401 water quality certification from the RWQCB. In addition, a Section 1600 Streambed Alteration Agreement would also need to be authorized by CDFG.

2.0 Introduction

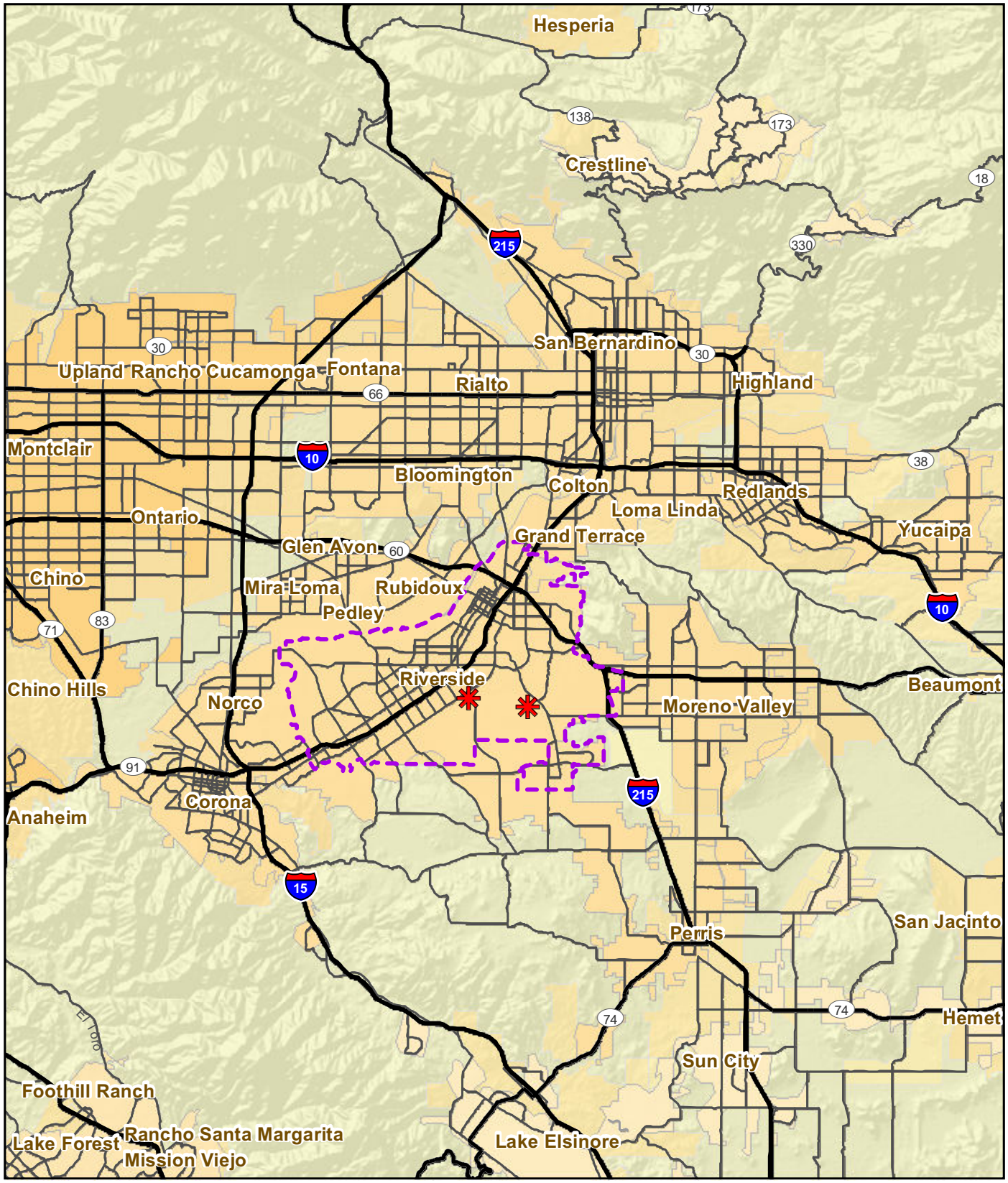
This report describes the results of a wetland delineation conducted for the proposed Project. Three survey areas were evaluated: the Eastern, Alessandro Arroyo, and Western survey areas (study area), located in western Riverside County in the city of Riverside, in southern California (Figure 1). The Project involves four circulation scenarios for Crystal View Terrace, Green Orchard Place, and Overlook Parkway. Overlook Parkway is an east–west arterial from Washington Street to Alessandro Boulevard; however, it is not connected in two locations. The study area is located in the U.S. Geological Survey (USGS) 7.5-minute topographical map Riverside East and Riverside West quadrangles, in the city of Riverside (Figure 2; USGS 1980a and 1980b).

The scenarios involve one or more of the following: traffic control devices, construction of a fill crossing along Overlook Parkway, a bridge over the Alessandro Arroyo, and the construction of a new road (Proposed C Street) approximately one mile from the intersection of Overlook Parkway and Washington Street north and west ending at the intersection of Madison Street and Victoria Avenue. The proposed limits of the roads, bridge, and an adjacent area of 200 feet were surveyed (Figure 3). The acreages for each survey area are listed in Table 1.

TABLE 1
ACREAGES SURVEYED PER SURVEY AREA

Location	Acres
Eastern Survey Area	11.05
Alessandro Arroyo Survey Area	10.32
Western Survey Area	79.39
Total Acres Surveyed	**100.76**

The Eastern Survey Area is located where there is a break in Overlook Parkway between the intersections of Sandtrack Road and Overlook Parkway, and Brittanee Delk Court and Overlook Parkway. The Alessandro Arroyo Survey Area is located at another break in Overlook Parkway, between the intersections of Crystal View Terrace and Overlook Parkway, and Via Vista Drive and Overlook Parkway. The Western Survey Area is located south of Victoria Avenue and west of Washington Street (see Figure 3).



Study Area

Riverside City Limit

RECON

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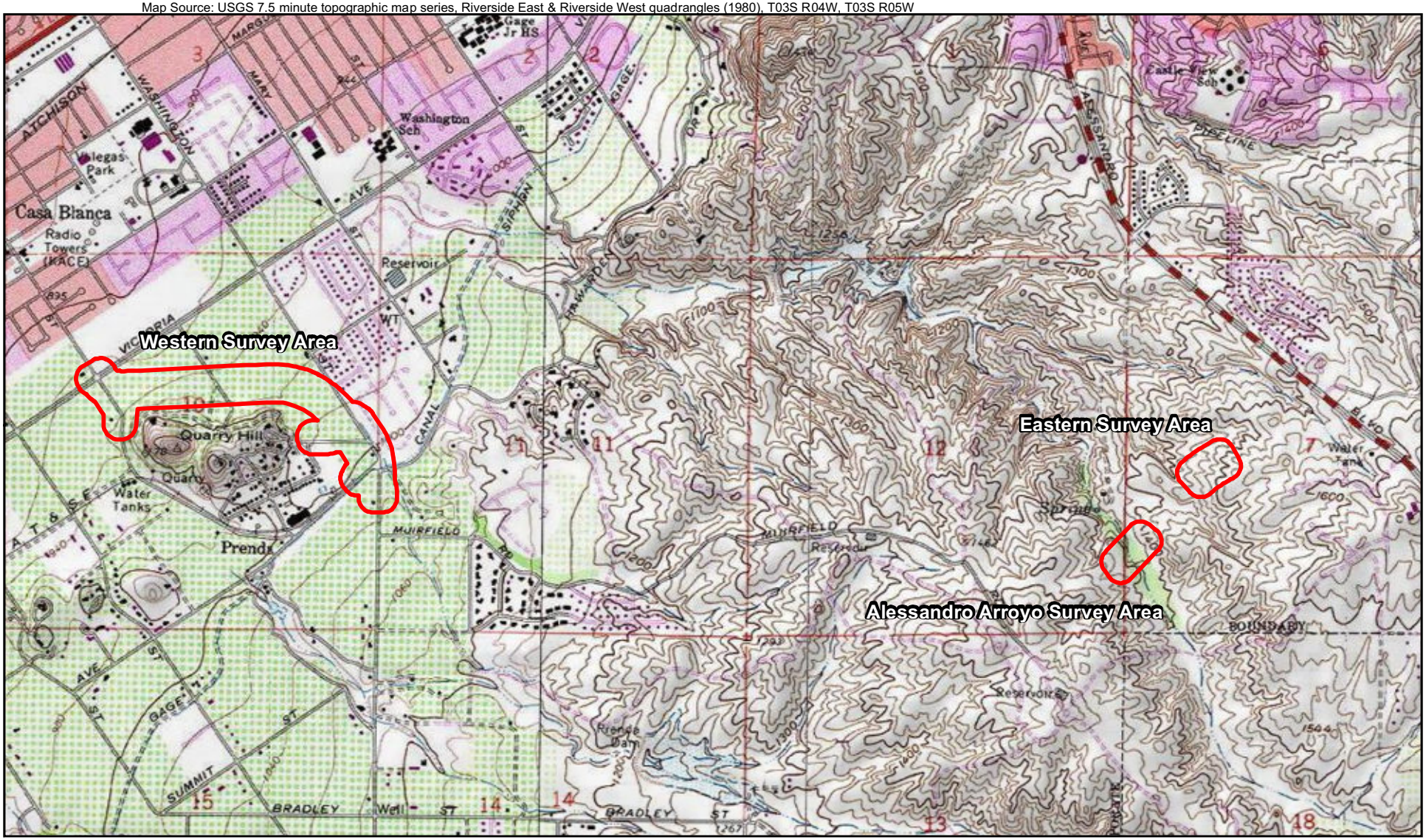
FIGURE 1

Regional Location

Map Source: USGS 7.5 minute topographic map series, Riverside East & Riverside West quadrangles (1980), T03S R04W, T03S R05W



0 Feet 2,000

Study Area

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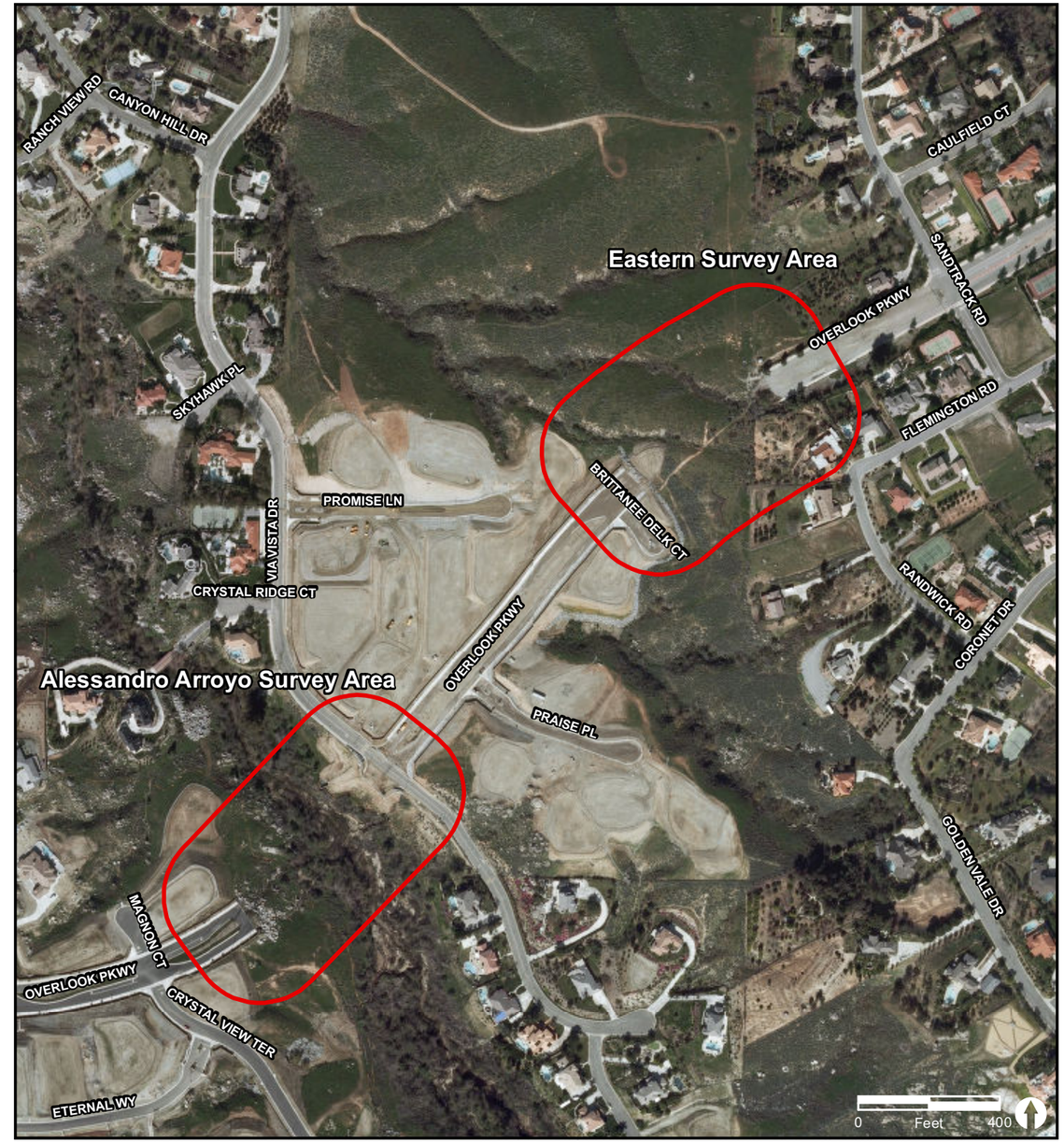
FIGURE 2

Location of Study Area on USGS Map

Image Source: City of Riverside, 2009



Study Area

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FIGURE 3

Study Area on Aerial Photograph

The Eastern Survey Area consists of upland habitat with two south-to-north flowing drainages, approximately two to four feet wide. Upland species occupy the top of the banks at the southern drainage. The survey area consists of rolling hills of Riversidian sage scrub, with private residences to the southeast and open undeveloped land to the north. Overlook Parkway is located at both ends of the survey area (see Figure 3). The Alessandro Arroyo Survey Area consists of the Alessandro Arroyo, a vegetated watercourse, and adjacent upland habitat. The drainage contains evenly dispersed riparian vegetation and is bounded by several steep terraces. The arroyo is relatively constricted on the east and west banks by manufactured slopes supporting Overlook Parkway and is surrounded by relatively recent residential and commercial development. A 20-mile concrete-lined waterway, known as the Gage Canal, is located within the southeastern tip of Western Survey Area within the study area (see Figure 3). This canal conveys waters from the ground water from the Riverside North and South Basins and the Bunker Hill Basin to local agricultural fields.

Elevation for Eastern Survey Area ranges from 1,420 to 1,500 feet above mean sea level (amsl), with the lowest spots occurring in the drainages and the highest areas on rolling hilltops. The elevation within the canyon in the Alessandro Arroyo Survey Area ranges from approximately 1,360 to 1,420 feet amsl, with the lowest elevation at the bottom of the arroyo and the highest elevation along the developed roads terminating at either side of the arroyo. The elevation for the Western Survey Area ranges from 880 to 1,040 feet amsl, which accounts for the gradual changes throughout the survey area.

3.0 Methods

RECON biologists performed a routine delineation within the Alessandro Arroyo Survey Area on February 11, 2011, and within the Western and Eastern survey areas on November 16, 2011. Field survey times, dates, and weather conditions are presented in Table 2.

TABLE 2
SURVEY DATES, TIMES, AND WEATHER CONDITIONS

Date	Surveyors	Location	Beginning Conditions	Ending Conditions
02/11/2011	Mike Nieto Anna Bennett	Alessandro Arroyo	9:00a.m.; 64˚F; wind 0–2 mph; 0% cloud cover	3:00p.m.; 68˚F; wind 2 mph; 0% cloud cover
11/16/2011	Beth Procsal Italia Gray	Eastern Survey Area and Western Survey Areas	9:15a.m.; 60˚F; wind 0–2 mph; 0% cloud cover	12:45p.m.; 72˚F; wind 0–1 mph; 0% cloud cover

°F = degrees Fahrenheit; mph = mile per hour; % = percent

The wetland delineations were performed according to the guidelines set forth by ACOE (1987, 2008). A wetland delineation is used to identify and map the extent of the wetlands and waters of the U.S. and provide information regarding jurisdictional issues. Prior to conducting the delineations, aerial photographs and the USGS Riverside East quadrangle map were examined to aid in the determination of potential waters of the U.S. on-site. Once on-site, the parcel of land was examined to determine the presence of any indicators of wetlands, including wetland vegetation, hydric soils, and hydrology. Soil test pits were located: (1) within potential wetland areas and (2) in or adjacent to the spot where the boundary between wetland and upland was inferred (based on changes in the topography, hydrology, and composition of the vegetation). While in the field, the survey areas were also examined for potential ACOE non-wetland waters of the U.S, CDFG, and RWQCB jurisdictional waters.

The survey areas were traversed on foot, with biologists walking meandering transects to attain complete coverage of the survey area. Aerial photographs and Trimble sub-meter global positioning system (GPS) field verification were used to map the lateral upstream/downstream extent of the drainage. Field data was later digitized into ArcGIS. The width of each drainage, noted at the ordinary high water mark (OHWM), was measured at intermittent locations in the field where transitions were apparent. The width and length of non-wetland waters were analyzed in ArcGIS to provide approximate acreage.

3.1 ACOE Resource Definitions

3.1.1 Wetlands

As stated in the federal regulations for the CWA (Environmental Protection Agency [EPA], 40 CFR 230.3 and CE, 33 CFR 328.3), wetlands are defined as:

> Those areas that are inundated or saturated by surface or groundwater 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.

3.1.1.1 Normal Circumstances

The definition of a wetland includes the phrase “under normal circumstances” because there are situations in which the vegetation of a wetland has been removed or altered as a result of recent natural events or human activities (ACOE 1987).

To describe these altered conditions, ACOE included definitions for atypical situations and problem areas. They are as follows:

> Atypical situation: . . . refers to areas in which one or more parameters (vegetation, soil, and/or hydrology) have been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators of the parameter (ACOE 1987).
>
> Problem areas: . . . wetland types in which wetland indicators of one or more parameters may be periodically lacking due to normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events. Representative examples of problem areas include seasonal wetlands, wetlands on drumlins, prairie potholes, and vegetated flats (ACOE 1987).

Atypical situations and problem areas may lack one or more of the three criteria and still be considered wetlands if background information on the previous condition of the area and field observations indicate that the missing wetland criteria were present before the disturbance and would occur at the site under normal circumstances. Additional delineation procedures would be employed if normal circumstances did not occur on a site.

3.1.1.2 Wetland Parameters

Wetlands are delineated using three parameters: hydrophytic vegetation, wetland hydrology, and hydric soils. According to ACOE, indicators for all three parameters must be present to qualify as a wetland.

a. Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content” (ACOE 1987). The potential wetland areas were surveyed by walking throughout the site and making observations of those areas exhibiting characteristics of jurisdictional waters or wetlands. Vegetation units with the potential to be wetlands were examined, and data for each vegetation stratum (i.e., tree, shrub, herb, and vine) were recorded on the datasheet provided in the 2008 Arid Supplement (ACOE 2008). The percent absolute cover of each species present was visually estimated and recorded.

The wetland indicator status of each species recorded was determined by using the *1996 National List of Vascular Plant Species that Occur in Wetlands* provided by the United States Fish and Wildlife Service (USFWS; 1997). An obligate (OBL) indicator status refers to plants that have a 99 percent probability of occurring in wetlands under natural conditions. A facultative wet (FACW) indicator status refers to plants that occur in wetlands (67–99 percent probability), but are occasionally found in non-wetlands. A facultative (FAC) indicator status refers to plants that are equally likely to occur in

wetlands or non-wetlands (estimated probability 34–66 percent). Facultative upland (FACU) species are more often found in upland sites. Upland (UPL) species have a high probability to occur in upland sites. An NI indicator status refers to species that have insufficient data available to determine an indicator status at this time for the local region. Plants with an indicator status of NI are not included in the dominance test. Species not on the list are presumed to have a status of UPL.

Dominant species with an indicator status of not listed in the 1997 list were evaluated as either wetland or upland indicator species based on local professional knowledge of where the species is most often observed in habitats characteristic in southern California. Plant species nomenclature follows that contained in *The Jepson Manual* (Hickman 1993).

There are three indicators or tests to determine hydrophytic vegetation on a site: the dominance test, prevalence index, and morphological adaptations. For the dominance test, the 50/20 rule is used. The 50/20 rule is a repeatable and objective procedure for selecting dominant plant species and is recommended when data are available for all species in the community (ACOE 2008). When completing the field data form, the surveyor determines the absolute cover for each species recorded within a vegetation stratum. Dominant species are those plants that individually or collectively contribute more than 50 percent of the total vegetative cover within each vegetation stratum plus those species that, by themselves, comprise 20 percent or more of the total cover within each vegetation stratum. If greater than 50 percent of the dominant species within each vegetation stratum are OBL, FACW, or FAC species, the vegetation is dominated by hydrophytic species and the site passes the dominance test.

If the site fails the dominance test, and positive indicators of hydric soils and/or wetland hydrology are present, it is necessary to apply the prevalence index. The prevalence index is a weighted-average wetland indicator status of all plant species at a test site, where each indicator status category is given a numeric code and weighting by percent cover (ACOE 2008). If a prevalence index is 3.0 or less, the hydrophytic vegetation criterion is considered fulfilled.

If a site fails the prevalence index and positive indicators of hydric soils and/or wetland hydrology are present, it is necessary to assess the presence or absence of morphological adaptations. To apply this indicator, morphological features must be observed on more than 50 percent of the individuals of a FACU species living in an area where indicators of hydric soil and wetland hydrology are present (ACOE 2008). Once this indicator is applied, the dominance test and/or the prevalence index are/is recalculated using a FAC indicator status of this species (ACOE 2008).

b. Hydric Soils

A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (ACOE 1987). Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds (ACOE 2008). The hydric soil criterion is considered fulfilled at a location if soils in the area can be inferred to have a high groundwater table, evidence of prolonged soil saturation, or any indicators suggesting a long-term reducing environment in the upper 18 inches of the soil profile.

Sample points were selected within potential wetland areas, and the location of the boundary between upland and wetland was inferred based on changes in the composition of the vegetation and topography. Sample points were dug to a depth of at least 18 inches or to a depth necessary to determine soil color, evidence of soil saturation, depth to groundwater, and indicators of a reducing soil environment (e.g., mottling, gleying, and sulfidic odor). Hydric soil indicators are presented in three groups in the Arid Supplement (ACOE 2008): “all soils,” “sandy soils,” and “loamy and clayey soils.” Indicators applicable to all soil textures are indicated as A1 through A10 on the datasheet and include histosols, histic epipedon, stratified layers, and muck, among others. Indicators in sandy soils are noted as S1 through S6 and include sandy gleyed matrix, sandy redox, and stripped matrix. F1 (loamy mucky mineral) through F9 (vernal pools) are indicators of hydric conditions within loamy and clayey soils. A complete description of each of the hydric soil indicators is provided in the 2008 Arid Supplement.

c. Wetland Hydrology

The presence of wetland hydrology indicators confirm that inundation or saturation has occurred on a site, but may not provide information about the timing, duration, or frequency of the event. Hydrology features are generally the most ephemeral of the three wetland parameters (ACOE 2008).

In the 2008 Arid Supplement, wetland hydrology indicators are divided into four groups. Those that are determined based on direct observation are in Group A. These include the presence of surface water, a high water table, and saturation. Water marks, drift deposits, surface soil cracks, and other indicators of flooding or ponding fall within Group B. Group C consists of indicators that provide indirect evidence that a site was saturated recently, such as the presence of sulfidic odors or oxidized rhizoshperes along living roots. Finally, Group D consists of vegetation and soil features that indicate recent wet conditions, such as the FAC-neutral test or a shallow aquitard (ACOE 2008). These indicators are further classified as primary or secondary indicators.

Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. The wetland hydrology

criterion is considered fulfilled at a location if, based upon the conclusions inferred from the field observations, an area has a high probability of being periodically inundated or has soils saturated to the surface for a sufficient period of time during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (ACOE 1987). If at least one primary indicator or at least two secondary indicators are found at a sample point, the wetland hydrology criterion is considered fulfilled.

3.1.2 Non-wetland Jurisdictional Waters

The ACOE also requires the delineation of non-wetland jurisdictional waters. These waters must have strong hydrology indicators such as the presence of seasonal flows and an ordinary high watermark. An ordinary high watermark is defined as:

> . . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR Part 328.3).

Areas delineated as non-wetland jurisdictional waters may lack wetland vegetation or hydric soil characteristics. Hydric soil indicators may be missing because topographic position precludes ponding and subsequent development of hydric soils. Absence of wetland vegetation can result from frequent scouring due to rapid water flow. These types of jurisdictional waters are delineated by the lateral and upstream/downstream extent of the ordinary high watermark of the particular drainage or depression.

3.2 ACOE Regulatory Jurisdiction

ACOE, through the authority of Section 404 of the CWA and Section 10 of the Rivers and Harbors Act, is the primary agency involved in wetland regulation. The EPA has the authority to veto any decision by ACOE on permit issuance, as the EPA has the final authority over enforcement of wetland regulations.

3.2.1 Regulatory Definitions

In accordance with Section 404 of the CWA, ACOE regulates the discharge of dredged and/or fill material into waters of the United States. The term “waters of the United States” is defined as [33 CFR Part 328.3(a)]:

1. All waters currently used, or used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters 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: (1) which could be used by interstate or foreign travelers for recreational or other purposes; or (2) from which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or (3) which are used or could be used for industries in interstate commerce;

4. All other impoundments of waters otherwise defined as waters of the U.S. under the definition;

5. Tributaries of waters identified above;

6. The territorial seas; and

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in the paragraphs above. The definition of "adjacent" follows:

   "Adjacent wetlands are defined as wetlands that are bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands'[40 CFR Part 230.3 (b)]."

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 jurisdictional 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 the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

The limits of ACOE regulation over tidal waters of the United States extend to the high tide line. The high tide line is the intersection of the land with the water's surface at the maximum height reached by a rising tide, not including storm surges which exceed the normal or predicted reach of the tide (Wetland Training Institute 2001).

Within areas delineated as jurisdictional waters of the U.S. and adjacent wetlands, all activities resulting in the discharge of fill material require a permit from ACOE. Discharge of fill material relates to the following activities: the building of any structure or impoundment requiring rock, sand, dirt, or other material necessary for construction; site-development fills for recreational, industrial, and/or commercial uses; causeways or road fills, including bridges; dams and dikes; pier and/or dock construction; artificial islands; and property protection and/or reclamation devices such as riprap, seawalls, and breakwaters (33 CFR 323.2[f]).

3.2.2 Permits

ACOE has a general permit program (Nationwide Permits) in place to cover minor fills, given that "general conditions" can be met (ACOE 1991). If the proposed impacts are greater than the threshold limits of the nationwide permits (0.1 acre or 300 linear feet) or the "general conditions" cannot be satisfied, a CWA individual permit would need to be processed through the ACOE.

3.3 CDFG Jurisdiction

Under Sections 1600–1607 of the Fish and Game Code, CDFG regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFG has jurisdiction over riparian habitats (e.g., southern willow scrub) associated with watercourses. CDFG jurisdictional resources are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider.

3.4 RWQCB Jurisdiction

The RWQCB has jurisdiction over all waters of the U.S and waters of the state as defined by both the CWA and the California Porter-Cologne Water Quality Control Act. Impacts to waters of the U.S. are authorized under the CWA Section 404 which requires as one of its conditions that a Section 401 State Water Quality Certification be issued by the RWQCB. Impacts to waters of the State are authorized under a general waste discharge program.

4.0 Results of Field Data

A total of ten vegetation communities/land cover types were documented within the survey areas, including areas with and without hydrophytic vegetation. The data (including vegetation, soils, and hydrology) collected at each soil test pit were recorded on to a *Wetland Determination Data Form—Arid West Region* form. The wetland data forms are provided in Attachment 1.

4.1 Vegetation

Ten vegetation communities were mapped within the study area, including southern willow scrub, freshwater marsh, Riversidean sage scrub, disturbed Riversidean sage scrub, non-native grassland, disturbed land, active agricultural land, orchard, ornamental vegetation, and developed land (Table 3, Figure 4).

TABLE 3
VEGETATION COMMUNITIES/LAND COVER TYPES
WITHIN THE STUDY AREA (acres)

Vegetation Communities/ Land Cover Types	Eastern Survey Area	Alessandro Arroyo Survey Area	Western Survey Area	TOTAL in Study Area
Southern willow scrub	0.25	1.77	-	**2.02**
Freshwater marsh	0.01	-	-	**0.01**
Riversidean sage scrub	5.45	4.46	-	**9.91**
Disturbed Riversidean Sage Scrub	0.07	-	-	**0.07**
Non-native grassland	-	-	31.25	**31.25**
Disturbed land	0.20	0.80	6.93	**7.93**
Active agricultural land	-	-	2.51	**2.51**
Orchard	-	-	10.01	**10.01**
Ornamental vegetation	0.25	-	0.43	**0.68**
Developed	4.82	3.29	28.26	**36.37**
TOTAL acres	**11.05**	**10.32**	**79.39**	**100.76**

The vegetation communities with hydrophytic vegetation are described in Section 4.1.1 of this report. Areas with hydrophytic vegetation, in general, were considered potential jurisdictional areas. Areas dominated by hydrophytic plant species satisfy the hydrophytic vegetation criteria, one of the three criteria necessary to be identified as an ACOE wetland.

Locations without hydrophytic vegetation were considered upland unless evidence suggested that a wetland or other jurisdictional water might occur at the particular location.

4.1.1 Areas with Hydrophytic Vegetation

Two vegetation communities with hydrophytic vegetation, southern willow scrub and freshwater marsh, were observed within the Eastern and Alessandro Arroyo Survey areas. There is a total of 0.25 acre of southern willow scrub and 0.01 acre of freshwater marsh within the Eastern Survey Area, and 1.77 acres of southern willow scrub within the Alessandro Arroyo Survey Area (see Table 3).

4.1.1.1 Southern Willow Scrub – 2.02 acres

Southern willow scrub is a dense riparian community dominated by broad-leafed, winter-deciduous willow trees (*Salix* spp.). This vegetation community is typically found along major drainages, but also occurs in smaller drainages. The density of the willows typically prevents a dense understory of smaller plants from growing. The representative species typically grows in loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. This community requires repeated flooding to prevent succession to a community dominated by sycamores (*Platanus racemosa*) and/or cottonwoods (*Populus* sp.) (Holland 1986).

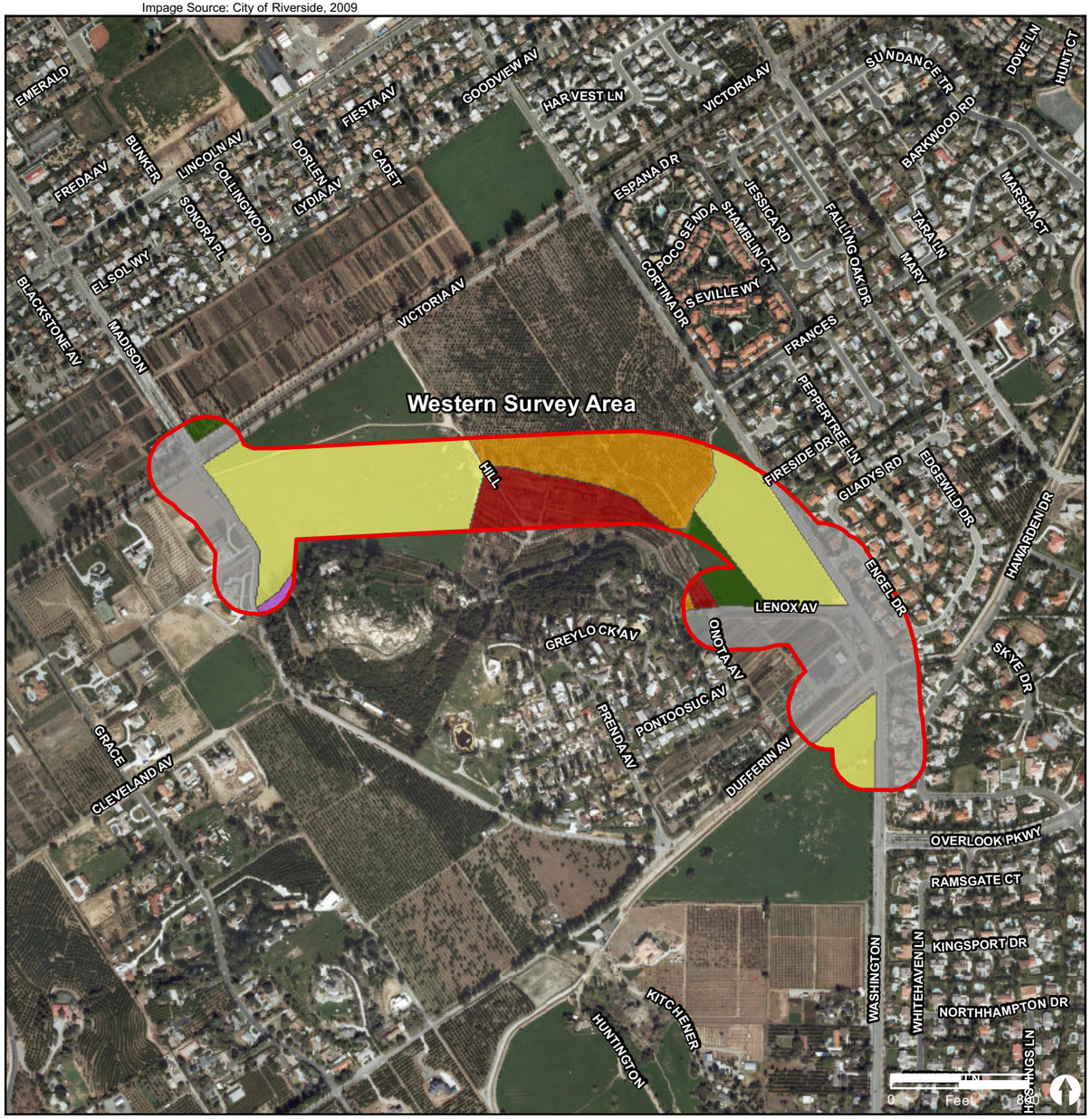
Southern willow scrub, dominated by arroyo willow and mule fat (*Baccharis salicifolia*, FACW), occurs within the majority of the northern drainage within the Eastern Survey Area. This vegetation begins at the northern terminus of Overlook Parkway and ends near the northern parameter of the survey area. Within the southern drainage, southern willow scrub occurs as scattered individual plants, including blue elderberry trees.

A strip of southern willow scrub occurs within the Alessandro Arroyo Survey Area adjacent to the active streambed and on the lowest tier of the cut terraces. The southern willow scrub present adjacent and within the streambed is relatively sparse and is dominated by arroyo willow (*Salix lasiolepis*, FACW). There is very little understory present on-site within the streambed. This is likely accounted for by the prevalence of recently deposited sandy alluvial deposits throughout the streambed.

Southern willow scrub also occurs on the first terrace of the arroyo, but with a significantly different species composition than the willow scrub observed directly adjacent to the streambed. The terrace southern willow scrub is dominated by blue elderberry (*Sambucus nigra* ssp. *caerulea*, FAC), arroyo willow, and castor bean (*Ricinus communis*, FACU).

In addition to the southern willow scrub associated with the streambed of Alessandro Arroyo, a small stand of southern willow scrub occurs east and upslope of the main drainage on a small shelf near Overlook Parkway. It is likely that reduced water velocities and the partial ponding of runoff from Overlook Parkway have created mesic conditions, allowing the water-dependent vegetation to thrive at this location. Arroyo willow forms the canopy, and the understory vegetation is composed of herbaceous

Impage Source: City of Riverside, 2009



Study Area

Vegetation Communities

- Southern Willow Scrub
- Fresh Water Marsh
- Riversidian Sage Scrub
- Disturbed Riversidian Sage Scrub
- Non-native Grassland
- Disturbed
- Active Agricultural Field
- Orchard
- Ornamental
- Developed

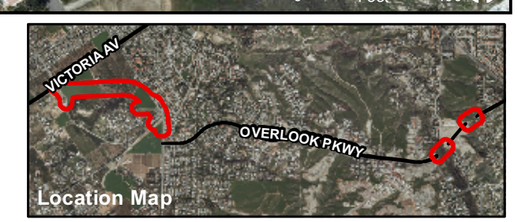


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FIGURE 4

Existing Biological Resources

emergent vegetation such as southern cattail (*Typha domingensis*, OBL) and tall umbrella sedge (*Cyperus eragrostis*, FACW).

4.1.1.2 Freshwater Marsh – 0.01 acre

Freshwater marsh is a wetland vegetation community that occurs within relatively shallow, open bodies of freshwater with little flow. This vegetation is frequently observed around the lakeshore fringe of ponds and around seeps and springs. All wetland habitats have been greatly reduced throughout their entire range and continue to decline as a result of urbanization.

Approximately 0.01 acre of freshwater marsh habitat occurs at the northwestern corner of the Eastern Survey Area. This vegetation community is dominated by southern cattail.

4.1.2 Areas Lacking Hydrophytic Vegetation

Areas within the survey areas lacking hydrophytic vegetation include Riversidean sage scrub, disturbed Riversidean sage scrub, non-native grassland, disturbed land, active agricultural land, orchard, ornamental vegetation, and developed land. These areas are generally considered uplands.

4.2 Soils

A total of 15 soil types are present with the study area (Figure 5). All but two soil types are typically used for irrigated citrus, dryland grain, pasture, and range purposes. These two soil types are the Hanford coarse sandy loam and Greenfield sandy loam, which are alluvial soils often associated with drainages and creek beds (U.S. Department of Agriculture 1971). The Hanford coarse sandy loam, 2 to 8 percent slopes, occurs within the streambed of the Alessandro Arroyo. The Greenfield sandy loam, 2 to 8 percent slopes, eroded, is found within upland habitats within the Western Survey Area, including non-native grassland and orchard. The remaining soil types are described below.

In the Eastern Survey Area Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded, and Fallbrook sandy loam, 8 to 15 percent slopes, eroded were mapped (U.S. Department of Agriculture 1971) (see Figure 5). Hydric soil indicators observed within the Eastern Survey Area include depleted matrix.

Five soil types are mapped on the Alessandro Arroyo Survey Area. In addition to the Hanford coarse sandy loam, 2 to 8 percent slopes, Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded; Cieneba sandy loam, 15 to 50 percent slopes, eroded; Cieneba sandy loam, 8 to 15 percent slopes, eroded; and Vista coarse sandy loam, 8 to 15

percent slopes, eroded were mapped (U.S. Department of Agriculture 1971) (see Figure 5). Redox dark surface was observed within the Alessandro Arroyo Survey Area. Additionally, there were problematic soil conditions present within a few pit locations and surrounding soil strata in the Alessandro Arroyo Survey Area. These problematic conditions appeared to be the result of recently deposited sandy alluvium, which had not had time to develop hydric indicators. Colors present within the matrix were derived from parent granitic material (multi-colored sand grains). As strong wetland vegetation and hydrology indicators are present, hydric soils were assumed.

In addition to Greenfield sandy loam, 2 to 8 percent slopes, eroded, eight soil types are mapped on the Western Survey Area, including: Arlington fine sandy loam, 2 to 8 percent slopes; Arlington loam, 2 to 5 percent slopes; Arlington loam, deep, 5 to 15 percent slopes; Bonsall fine sandy loam, 8 to 15 percent slopes; Buren fine sandy loam, 8 to 15 percent slopes, eroded; Delhi fine sand, 2 to 15 percent slopes, wind-eroded; Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded; and Vista coarse sandy loam, 15 to 35 percent slopes, eroded (U.S. Department of Agriculture 1971) (see Figure 5).

4.3 Hydrology

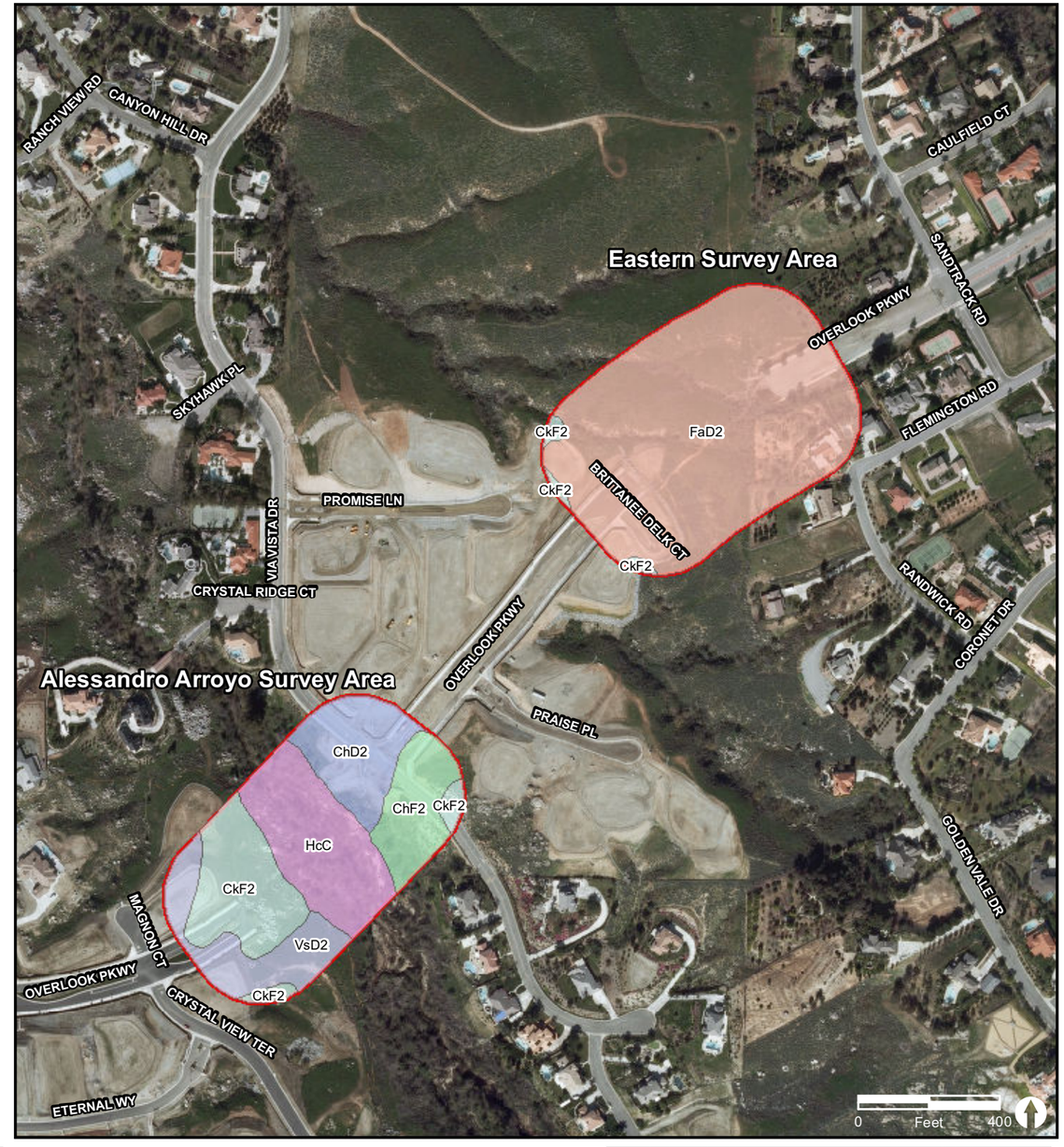
The Eastern Survey Area contains two unnamed drainages which flow into the Santa Ana River and eventually to the Pacific Ocean. The drainages receive urban run-off from adjacent residences to the east and the southern drainage receives water from run-off from natural rain events.

The Alessandro Arroyo Survey Area contains a vegetated waterway known as the Alessandro Arroyo, which is within the Santa Ana River watershed. The arroyo drains southern Riverside foothills and adjacent residential developments into the Santa Ana River, which flows into the Pacific Ocean near Huntington Beach, California. Other than the natural drainage of the canyon, the majority of the water that enters the canyon comes into the site as storm water during the wet season and from urban runoff from residential housing surrounding the canyon. The steep, erosive terracing and the observation of downed mature trees in the floodplain indicate that the arroyo carries heavy flows. The drainage flows south to north across sandy substrate and was observed to have a braided flow pattern. The Alessandro Arroyo drains into the Santa Ana River and, ultimately, the Pacific Ocean.

The Western Survey Area contains the Gage Canal which, in the survey area, is a concrete-lined canal that brings water to the local agricultural fields from the ground water from the Riverside North and South Basins and the Bunker Hill Basin.

Wetland hydrology indicators when observed in the survey areas included surface water, water marks, drift deposits, water-stained leaves, hydrogen sulfide odor, and saturation.

Image Source: City of Riverside, 2009



Study Area

Soils

- AoC - Arlington fine sandy loam, deep, 2 to 8 percent slopes
- ApB - Arlington loam, 2 to 5 percent slopes
- ArD - Arlington loam, deep, 5 to 15 percent slopes
- BdD - Bonsall fine sandy loam, 8 to 15 percent slopes
- BuD2 - Buren fine sandy loam, 8 to 15 percent slopes, eroded
- ChD2 - Cieneba sandy loam, 8 to 15 percent slopes, eroded
- ChF2 - Cieneba sandy loam, 15 to 50 percent slopes, eroded
- CkF2 - Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
- DaD2 - Delhi fine sand, 2 to 15 percent slopes, wind-eroded
- FaD2 - Fallbrook sandy loam, 8 to 15 percent slopes, eroded
- FkD2 - Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded
- GyC2 - Greenfield sandy loam, 2 to 8 percent slopes, eroded
- HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
- VsD2 - Vista coarse sandy loam, 8 to 15 percent slopes, eroded
- VsF2 - Vista coarse sandy loam, 15 to 35 percent slopes, eroded

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FIGURE 5

Soil Types within the Study Area

5.0 Wetland Delineation

ACOE, CDFG, and RWQCB will verify this wetland delineation during the permit review process to make a final jurisdictional determination with respect to Section 404 of the CWA, Section 1600–1607 of the Fish and Game Code, and the California Porter–Cologne Water Quality Control Act. Table 4 summarizes the acreage of jurisdictional resources delineated according to ACOE, CDFG, and RWQCB jurisdiction.

TABLE 4
EXISTING JURISDICTIONAL WATERS (acres)

Jurisdictional Waters	Eastern Survey Area	Alessandro Arroyo Survey Area	Western Survey Area
ACOE			
Wetlands	0.06	0.93	0.00
Non-wetland waters of the U.S.	0.05	0.01	0.19
Total ACOE	**0.11**	**0.94**	**0.19**
CDFG			
Wetland	0.26	1.77	0.00
Streambed	0.05	0.01	0.19
Total CDFG	**0.31**	**1.78**	**0.19**
RWQCB	**0.31**	**1.78**	**0.19**

5.1 ACOE Jurisdictional Waters of the U.S.

5.1.1 Wetland and Non-wetland Waters

The Eastern Survey Area ACOE jurisdictional areas total 0.11 acre, which includes 0.06 acre of ACOE wetlands and 0.05 acre of ACOE non-wetland waters of the U.S. (Figure 6). The non-wetland waters within the Eastern Survey Area consist of the southern drainage and a northwestern tip of the northern drainage, which are unvegetated, but contain an OHWM. The ACOE wetland areas are vegetated with arroyo willow and mule fat.

ACOE jurisdiction area within the Alessandro Arroyo Survey Area totals 0.94 acre, which includes 0.93 acre of ACOE wetlands and 0.01 acre of ACOE non-wetland waters of the U.S. Non-wetland waters within this survey area are composed of the unvegetated channel of an unnamed drainage on the east canyon slope of the survey area (see Figure 6). The ACOE wetlands include areas vegetated with wetland species such as arroyo willow.

ACOE jurisdiction area within the Western Survey Area totals 0.19 acre ACOE non-wetland waters of the U.S.

5.1.2 Potential Exemptions

There are two significant erosive features present within the Alessandro Arroyo Survey Area. Both features drain runoff from the western side of Overlook Parkway (see Figure 6). Runoff flows east from Overlook Parkway through riprap at the base of the road and has cut large rills into the surrounding soil. These two large rills eventually drain into the Alessandro Arroyo. As the rills are likely erosive features carrying water from an existing paved road and do not contain significant wetland vegetation, they may be considered exempt from ACOE, CDFG, and RWCQB jurisdiction.

5.2 CDFG Jurisdictional Waters of the State

A total of 0.31 acre of CDFG jurisdictional areas occur within the Eastern Survey Area, which includes 0.05 acre of CDFG streambed and 0.26 acre of CDFG wetland (Figure 7). The CDFG wetlands include all of the southern willow scrub and pocket of cattails located on the northern end of the southern drainage.

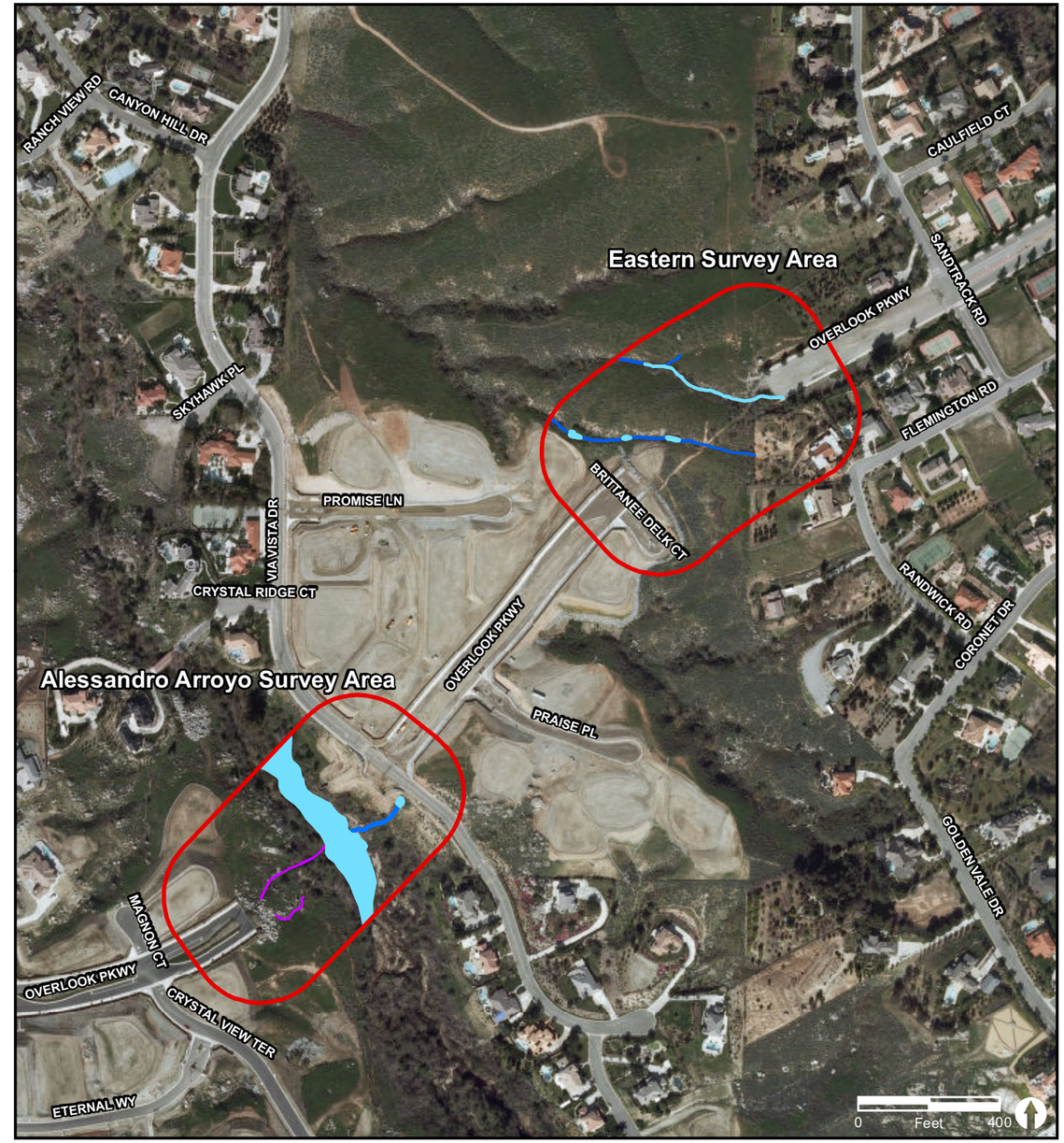
A total of 1.78 acres of CDFG jurisdictional areas occur within the Alessandro Arroyo Survey Area, which includes 0.01 acre of CDFG streambed and 1.77 acres of CDFG wetland (see Figure 7). This acreage consists of riparian habitat dominated by willows and mule fat, associated with the Alessandro Arroyo.

A total of 0.19 acre of CDFG jurisdictional areas occur within the Western Survey Area, as CDFG streambed.

5.3 RWQCB Jurisdictional Resources

The RWQCB takes jurisdiction over all waters of the state and all waters of the United States as mandated by both the federal CWA and the California Porter–Cologne Water Quality Control Act. A total of 0.31 and 1.78 acres is within the RWQCB jurisdiction within the Eastern and Alessandro Arroyo survey areas, respectively (Figure 8). Impacts to jurisdictional resources would require consultation with RWQCB. A total of 0.19 acre is within the RWQCB jurisdiction at the Western Survey Area.

Impage Source: City of Riverside, 2009



Study Area
ACOE Non-wetland Waters of the US
ACOE Wetlands
Erosive Features

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FIGURE 6

ACOE Jurisdictional Resources

Image Source: City of Riverside, 2009

Study Area
CDFG Wetland
CDFG Streambed

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FIGURE 7

CDFG Jurisdictional Resources

6.0 Regulatory Issues

ACOE, CDFG, and RWQCB wetlands are regulated by the federal, state, and local governments under a no-net-loss policy, and all impacts are considered significant and should be avoided to the greatest extent possible. Unavoidable and authorized impacts would require mitigation through habitat creation, enhancement, or preservation as determined by a qualified restoration biologist in consultation with the regulatory agencies during the permitting process. Impacts to ACOE, CDFG, and RWQCB jurisdictional waters would require a Section 404 permit authorization from ACOE, a 1600 Streambed Alteration Agreement from CDFG, a 401 State Water Quality Certification from RWQCB. Additionally, according to Section 6.1.2 of the Western Riverside County Multiple Species Habitat Conservation Plan, impacts to riparian/riverine habitats require a Determination of Biologically Equivalent or Superior Preservation (DBESP) when project alternatives that would avoid sensitive riparian/riverine resources are not feasible. The goal of the DBESP is to demonstrate that, with implementation of the proposed project design features and mitigation measures, the proposed project would result in an alternative that is biologically equivalent or superior to complete avoidance of impacts to riparian/riverine resources within the study area and to ensure the replacement of any lost functions and values of habitat as it relates to covered species. A separate DBESP has been prepared for this project.

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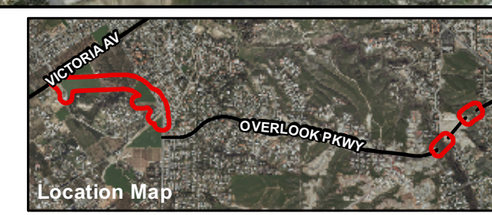
Image Source: City of Riverside, 2009



Study Area
RWQCB Waters of the State

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FIGURE 8

RWQCB Jurisdictional Resources

7.0 References Cited

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1980b Riverside East quadrangle 7.5-minute topographic map.

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ATTACHMENT 1

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway /Alessandro Arroyo Survey Area City/County: City of Riverside Sampling Date: 2/11/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-1

Investigator(s): Michael Nieto, Anna Bennett Section, Township, Range: Riverside East, S7, T3S, R4W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 7

Subregion (LRR): LRR-C Lat: 33.91896 Long: -117.34875 Datum: WGS 1984

Soil Map Unit Name: CkF2 NWI classification: ____

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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 X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: ____)			
1. *Eriogonum fasciculatum foliolosum*	13	Y	UPL
2. *Encelia farinosa*	10	Y	UPL
3. *Artemesia californica*	5	N	UPL
4.			
5.			
	28	= Total Cover	

Herb Stratum (Plot size: ____)			
1. *Bromus diandrus*	10	Y	UPL
2. *Bromus madritensis*	10	Y	UPL
3. *Amsinkia sp.*	1	N	UPL
4. *Hirschfeldia incana*	>1	N	UPL
5. *Erodium cicutarium*	>1	N	UPL
6.			
7.			
8.			
	22	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1. *N/A*			
2.			
	0	= Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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	43	x 5 =	215
Column Totals:	43 (A)		215 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Riversidian sage scrub community on western side of arroyo slope.

SOIL

Sampling Point: SP-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
0-11	10YR3/4	100					sandy loam	
12-16	10YR 2/1	10					sand	
	10YR 4/4	85					sand	
	10YR 5/6	5					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: -

Depth (inches): -

Hydric Soil Present? Yes ___ No X

Remarks: Dark colors below 12" are parent material derived (granite chunks)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ 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 ___ No X Depth (inches): ___

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

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: none

Remarks: No wetland hydrology observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Alessandro Arroyo Survey Area City/County: City of Riverside Sampling Date: 2/11/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-2

Investigator(s): Michael Nieto, Anna Bennett Section, Township, Range: Riverside East, S7, T3S, R4W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 33.91935 Long: -117.348193 Datum: WGS 1984

Soil Map Unit Name: HcC NWI classification: ____

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

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

Are Vegetation ____, Soil X, or Hydrology ____ naturally problematic? Y (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: Sample point taken on small terrace above active streambed (8" above active stream bed). Floodplain has several significant terraces with evidence of high water flows and erosion. As a result, hydric soil determination was problematic (see soil remarks below).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	25	Y	FACW
2. *Nicotiana glauca*	1	N	FAC
3.			
4.			
	26	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. *N/A*			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: ____)			
1. *Hirschfeldia incana*	1	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 73 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	25	x 2 =	50
FAC species	1	x 3 =	3
FACU species		x 4 =	
UPL species	1	x 5 =	5
Column Totals:	27 (A)		58 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- X Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Vegetation located on a small (8"), sandy terrace above streambed.

SOIL

Sampling Point: SP-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
0-3	10YR 3/2	100					silty clay loam	
3-10	10YR 2/2	20					loamy sand	
	10YR 4/4	10					loamy sand	
	10YR 8/2	40					loamy sand	
	10YR 5/3	30					loamy sand	
10-16	10YR 8/2	40					sandy	
	10YR 2/1	35						
	10YR 5/4	25						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: -

Depth (inches): -

Hydric Soil Present? Yes X No ___

Remarks: Large erosional terraces and mature downed trees are present within Allessandro arroyo and inidicative of a brief high volume flows. The soil within the pit location and surrounding soil strata appear to have be the result of recently deposited sandy alluvium, in which case has not had time to develop hydric indicators. Colors present in matrix were derived from parent mineral material (multi-colored sand grains). As the situation is problematic and strong wetland vegetation and hydrology indicators are present, hydric soil is assumed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- X Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- X 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 ___ No X Depth (inches): ___

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

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Alessandro Arroyo Survey Area City/County: City of Riverside Sampling Date: 2/11/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-3

Investigator(s): Michael Nieto, Anna Bennet Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 33.91937 Long: -117.34808 Datum: WGS 1984

Soil Map Unit Name: HcC NWI classification: _____

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

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

Are Vegetation _____, Soil X, or Hydrology _____ naturally problematic? Y (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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Sample taken within southern willow scrub vegetation taken on a small terrace (1 inch) above active stream bed. Floodplain has several significant terraces with evidence of high water flows and significant erosion. As a result, hydric soil determination was problematic (see soil remarks below)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	25	Y	FACW
2.			
3.			
4.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1. *Arundo donax*	1	Y	FAC
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: _____)			
1. *N/A*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1. *N/A*			
2.			
		= Total Cover	

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Majority of bareground is deposited sandy alluvium from adjacent active stream bed.

SOIL

Sampling Point: SP-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
0-16+	5Y8/2	40					sand	
	7.5YR5/8	25						
	2.5YR2.5/1	15						
	10YR4/4	20						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: -

Depth (inches): -

Hydric Soil Present? Yes X No ___

Remarks: Large erosional terraces and mature downed trees are present within Allessandro arroyo and inidicative of a brief high volume flows. The soil within the pit location and surrounding soil strata appear to be the result of recently deposited sandy alluvium, in which case has not had time to develop hydric indicators. Colors present in matrix were derived from parent granitic material (multi-colored sand grains). As the situation is problematic and strong wetland vegetation and hydrology indicators are present, hydric soil is assumed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

X Water Marks (B1) (**Riverine**)
X Sediment Deposits (B2) (**Riverine**)
X 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 ___ No X Depth (inches): ___

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

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Adjacent stream bed is sandy and has formed braided channels.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Alessandro Arroyo Survey Area City/County: City of Riverside Sampling Date: 2/11/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-4

Investigator(s): Michael Nieto, Anna Bennett Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concex Slope (%): 2-5

Subregion (LRR): LRR-C Lat: 33.91972 Long: -117.34765 Datum: WGS 1984

Soil Map Unit Name: ChF2 NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Sample was taken from a small patch of willows and rushes on the west-facing slope of the arroyo, immediately west of Via Vista

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	25	Y	FACW
2. *Nicotiana glauca*	5	N	FAC
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. *Tamarix ramosissima*	1	Y	FAC
2.			
3.			
4.			
5.			
	1	= Total Cover	
Herb Stratum (Plot size: _____)			
1. *Typha domingensis*	1	Y	OBL
2. *Carex eragrostis*	1	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. *N/A*			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % 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:

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP-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
0-6	7.5 YR3/2	30	7.5 YR4/6	5	C	PL	loamy sand	Many roots
	7.5 YR3/3	66						
6-10	10 YR3/4	58	5 YR5/8	2	C	PL	sandy Loam	
	10 YR2/1	40						
								water below 10"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: -

Depth (inches): -

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
X 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 Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

X Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
X Drift Deposits (B3) (**Riverine**)
X 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 X No ___ Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Alessandro Arroyo Survey Area City/County: City of Riverside Sampling Date: 2/11/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-5

Investigator(s): Michael Nieto, Anna Bennett Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR): LRR-C Lat: 33.91924 Long: -117.34844 Datum: WGS 1984

Soil Map Unit Name: HcC NWI classification: ____

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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 X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Sambucus mexicana*	10	Y	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. *Nicotiana glauca*	1	Y	FAC
2. *Leymus condensatus*	2	Y	FACU
3. *Ricinus comminus*	2	Y	FACU
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: ____)			
1. *Hirschfeldia incana*	<1	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	<1	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 85 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	11	x 3 =	33
FACU species	4	x 4 =	16
UPL species	1	x 5 =	5
Column Totals:	16 (A)		54 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: SP-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
0-7.5	7.5 YR8.5/1	35					sand	
	5 YR6/3	20						
	10 YR2/1	35						
	7.5 YR3/4	10						
7.5-10	10 YR3/4	70					silt/loam	
	7.5 YR2.5/2	30						
10-16	same as 0 - 7.5" layer						sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: -

Depth (inches): -

Hydric Soil Present? Yes ___ No X

Remarks: Matrix colors from granitic parent material. Silt/loam layer (7.5-10) contained striated deposits

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
X 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 ___ No X Depth (inches): ___

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

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Eastern Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-6

Investigator(s): Italia Gray, Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 8-15

Subregion (LRR): LRR-C Lat: 33.92326 Long: -117.34519 Datum: WGS 1984

Soil Map Unit Name: FaD2 NWI classification: ____

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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 X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks: This sample point was taken within upland vegetation ~ 50 feet north of the drainage

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 1000sf)			
1. *Encelia farinosa*	10	Y	UPL
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 1000sf)			
1. *Vulpia myuros*	3	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1. *N/A*			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	2 (A)		10 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Sampling area is open Riversidian sage scrub.

SOIL

Sampling Point: SP-6

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
0-8	10YR 4/3	100					sandy loam	dry soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: upland soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ 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 ___ No X Depth (inches): _____

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

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Upland site ~ 50 feet north of the drainage

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Eastern Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-7

Investigator(s): Italia Gray, Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 8-15

Subregion (LRR): LRR-C Lat: 33.92312 Long: -117.34510 Datum: WGS 1984

Soil Map Unit Name: FaD2 NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 100sf)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	75	Y	OBL
2. *Baccharis salicifolia*	10	N	FACW
3. *Salix lasiolepis*	10	N	FACW
4.			
	95	= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1. *N/A*			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Herb Stratum (Plot size: _____)			
1. *N/A*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1. *N/A*			
2.			
	0	= Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Sample point was taken within channel

SOIL

Sampling Point: SP-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
0-10	10YR 3/1	100					loamy sand	uniform coloration

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ 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)
X Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
X 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 ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 9

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Eastern Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-8

Investigator(s): Italia Gray, Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): none Slope (%): 8-15

Subregion (LRR): LRR-C Lat: 33.92295 Long: -117.34472 Datum: WGS 1984

Soil Map Unit Name: FaD2 NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 100sf)			
1. *Baccharis salicifolia*	75	Y	FACW
2.			
3.			
4.			
5.			
	75	= Total Cover	
Herb Stratum (Plot size: _____)			
1. *Urtica dioica*	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. *N/A*			
2.			
	0	= Total Cover	

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP-8

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
0-16	10YR 3/1	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: -

Depth (inches): -

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

X Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
X 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 ___ No X Depth (inches): ___

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

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No standing water. Ordinary high water mark visible on rocks.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Eastern Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-9

Investigator(s): Italia Gray, Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 8-15

Subregion (LRR): LRR-C Lat: 33.92278 Long: -117.34475 Datum: WGS 1984

Soil Map Unit Name: FaD2 NWI classification: ____

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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 X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks: This sample point was taken within upland vegetation ~ 50 feet north of the drainage

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 1000sf)			
1. *Encelia farinosa*	10	Y	UPL
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 1000sf)			
1. *Vulpia myuros*	3	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1. *N/A*			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	2 (A)		10 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Sampling area is open Riversidian sage scrub.

SOIL

Sampling Point: SP-9

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
0-8	10YR 4/3	100					sandy loam	dry soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: upland soil, no hydric indictors observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ 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 ___ No X Depth (inches): _____

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

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Upland site ~ 55 feet north of the drainage. No wetland hydrology indictors observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Eastern Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-10

Investigator(s): Italia Gray, Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): none Slope (%): 8-15

Subregion (LRR): LRR-C Lat: 33.92257 Long: -117.34493 Datum: WGS 1984

Soil Map Unit Name: FaD2 NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 N	**Is the Sampled Area within a Wetland?**	**Yes** _____ **No** X
Hydric Soil Present?	Yes	No N		
Wetland Hydrology Present?	Yes	No N		

Remarks: Within the southern drainage

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 100sf)			
1. *hirschfeldia incana*	5	N	UPL
2. *Heterotheca graminifolia*	2	N	UPL
3.			
4.			
5.			
	7	= Total Cover	

Herb Stratum (Plot size: _____)			
1. *N/A*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1. *N/A*			
2.			
	0	= Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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	7	x 5 =	35
Column Totals:	7 (A)		35 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: SP-10

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
0-12	10YR 4/3	100					loamy sand	uniform in color

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: -

Depth (inches): -

Hydric Soil Present? Yes ___ No X

Remarks: No hydric soil indictors observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ 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 ___ No X Depth (inches): ___

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

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Eastern Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-11

Investigator(s): Italia Gray, Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): none Slope (%): 8-15

Subregion (LRR): LRR-C Lat: 33.92259 Long: -117.34594 Datum: WGS 1984

Soil Map Unit Name: FaD2 NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1. *Typha domingensis*	50	Y	OBL
2. *Helianthus gracilentus*	8	N	UPL
3. *Urtica dioica*	15	N	FACW
4.			
5.			
	73	= Total Cover	

Herb Stratum (Plot size: _____)			
1. *N/A*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP-11

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
0-8	7YR 2/0	100					loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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)
X 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)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Dead organic matter in soil with strong odor.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
X Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
X Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ 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 ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Eastern Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-12

Investigator(s): Italia Gray, Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 8-15

Subregion (LRR): LRR-C Lat: 33.92274 Long: -117.34591 Datum: WGS 1984

Soil Map Unit Name: FaD2 NWI classification: ____

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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 X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks: This sample point was taken within upland vegetation ~ 50 feet north of the drainage

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 1000sf)			
1. *Encelia farinosa*	15	Y	UPL
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 1000sf)			
1. *Vulpia myuros*	3	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1. *N/A*			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	2 (A)		10 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Sampling area is open Riversidian sage scrub.

SOIL

Sampling Point: SP-12

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
0-8	10YR 4/3	100					sandy loam	dry soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: upland soil, no hydric soil indictors observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ 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 ___ No X Depth (inches): _____

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

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Upland site ~ 50 feet north of the drainage. No wetland hydrology indictors observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Overlook Parkway/Western Survey Area City/County: City of Riverside Sampling Date: 11/16/2011

Applicant/Owner: City of Riverside State: CA Sampling Point: SP-13

Investigator(s): Beth Procsal Section, Township, Range: Riverside East, S7, T35, R4W

Landform (hillslope, terrace, etc.): Gage Canal Local relief (concave, convex, none): concave Slope (%): n/a

Subregion (LRR): LRR-C Lat: 33.9.22223 Long: -117.38366 Datum: _____

Soil Map Unit Name: concrete-lined NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? Y (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 X	**Is the Sampled Area within a Wetland?**	**Yes**	**No** X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks: Although water is present within the Gage Canal, the canal does not support wetland vegetation. The Gage Canal is a man-made, concrete-lined canal.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

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

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: No wetland vegetation observed within the canal.

SOIL

Sampling Point: SP-13

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 Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: No soil pit was dug as the canal is concrete-lined.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

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 Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ 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): ~6

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

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

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: none

Remarks: Although indicators of hydrology exist, the water does not support a wetland as wetland vegetation and hydric soils are absent.

APPENDIX B

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CRYSTAL VIEW TERRACE/GREEN ORCHARD PLACE/OVERLOOK PARKWAY PROJECT (P11-0050) FOR THE CITY OF RIVERSIDE, CALIFORNIA

DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

Prepared by:

RECON Environmental, Inc.

1927 Fifth Avenue

San Diego, California 92101

April 27, 2012

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1.0 Introduction

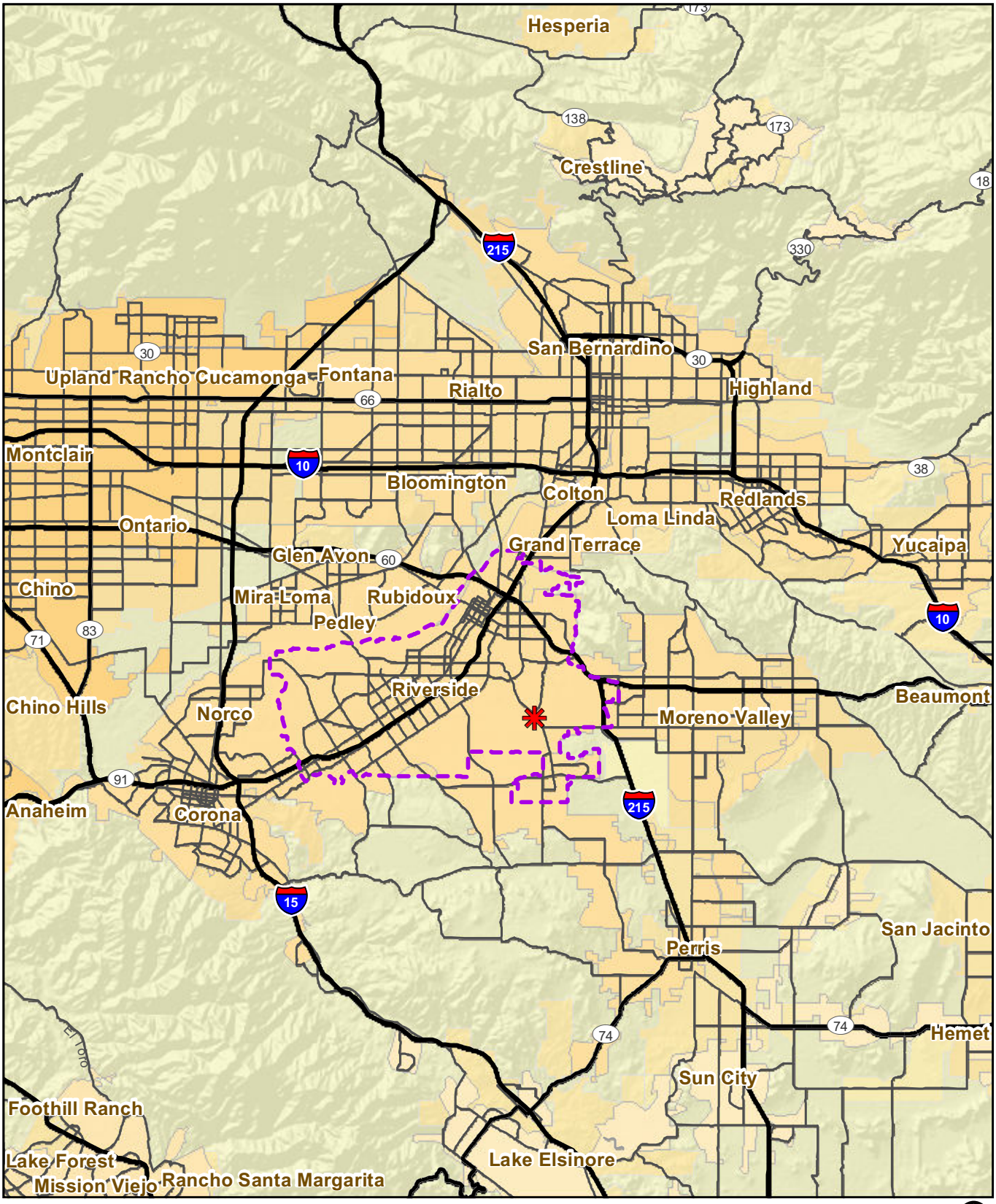
The Crystal View Terrace/Green Orchard Place/Overlook Parkway Project (project) proposed by the City of Riverside (City; P11-0050) involves the evaluation of four circulation scenarios associated with Overlook Parkway, including vehicular circulation issues associated with gates installed on Crystal View Terrace and Green Orchard Place, the connection of Overlook Parkway east of Alessandro Boulevard, and a future connection to SR-91 west of Washington Avenue. The proposed project is subject to compliance with the avoidance and minimization requirements identified for riparian/riverine areas pursuant to Section 6.1.2 of the Western Riverside County Multiple Species Habitat Conservation Plan (hereafter referred to as MSHCP; County of Riverside 2003). Scenario 3, one of four scenarios evaluated under the proposed project, would impact riparian/riverine areas within two areas referred to as the Eastern Survey Area and the Alessandro Arroyo Survey Area. Therefore, the Eastern and Alessandro Arroyo Survey Areas are evaluated due to the presence of riparian/riverine areas. A Determination of Biologically Equivalent or Superior Preservation (DBESP) is required when project alternatives that would avoid sensitive riparian/riverine areas are not feasible. The goal of the DBESP is to demonstrate that, with implementation of the proposed project design features and mitigation measures, the proposed project would result in an alternative that is biologically equivalent or superior to complete avoidance of impacts to riparian/riverine areas on site.

1.1 Project Location

The Eastern and Alessandro Arroyo Survey Areas are located in the City of Riverside, California (Figure 1). These survey areas cover approximately 21.37 acres and are located within Township 03 South, Range 04 West and Township 03 South, Range 05 West of the United States Geological Survey (USGS) Riverside East quadrangle (Figure 2). An aerial photograph of these two survey areas is shown in Figure 3.

Eastern Survey Area - Located where there is a break in Overlook Parkway between Sandtrack Road and Brittanee Delk Court, including a 200-foot buffer surrounding the bridge design.

Alessandro Arroyo Survey Area - Located where there is a break in Overlook Parkway between Crystal View Terrace and Via Vista Drive, including a 200-foot buffer surrounding the bridge design.



0 Miles 5

Study Area

Riverside City Limit

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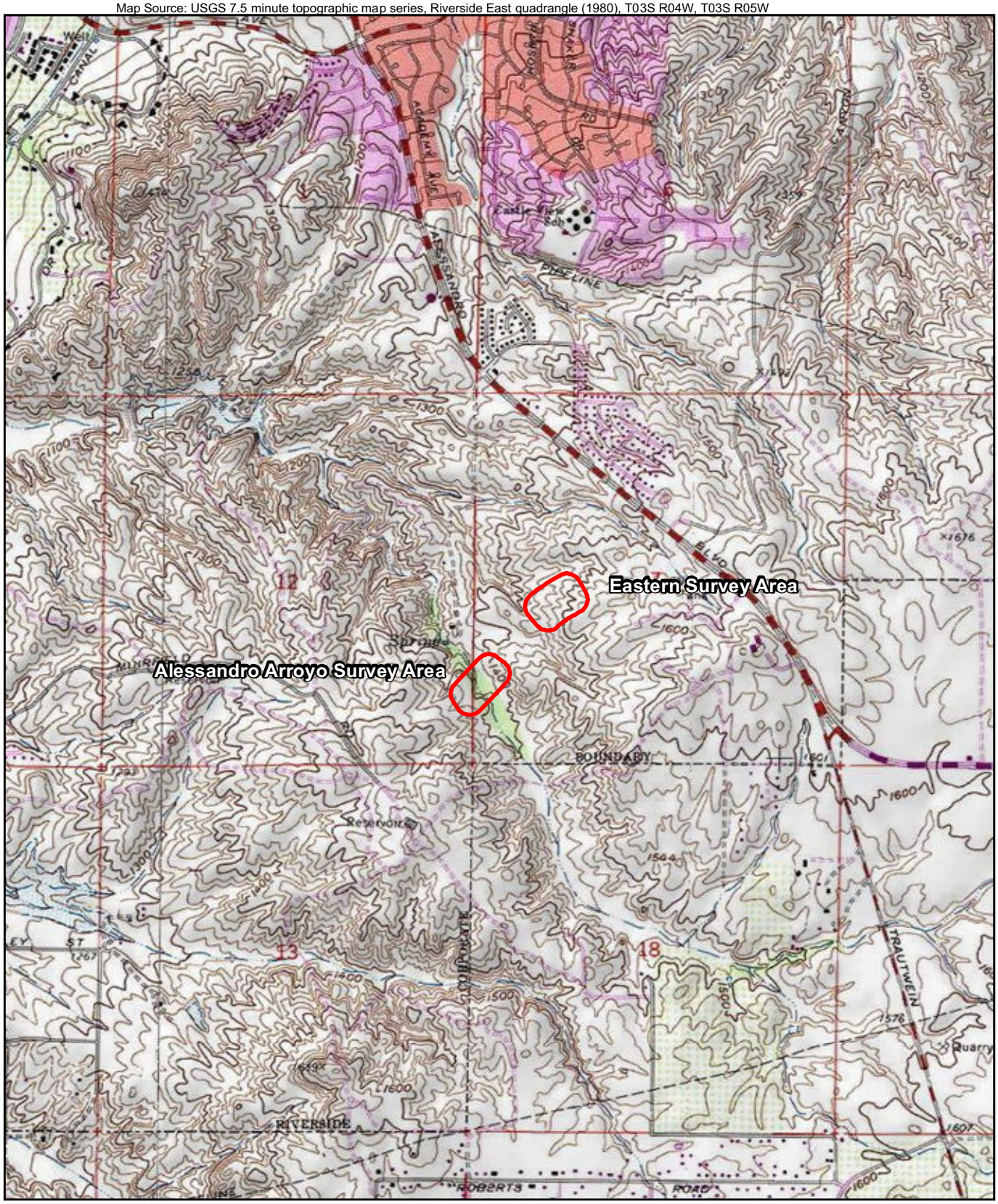
FIGURE 1

Regional Location

Map Source: USGS 7.5 minute topographic map series, Riverside East quadrangle (1980), T03S R04W, T03S R05W



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Study Area

FIGURE 2

Location of Study Area on USGS Map

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Image Source: City of Riverside, 2009

0 Feet 400

Study Area

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FIGURE 3

Study Area on Aerial Photograph

1.2 Project Description

The project involves the evaluation of four circulation scenarios associated with Overlook Parkway. Overlook Parkway runs east-west from Washington Street to Alessandro Boulevard and is a planned roadway in the City's General Plan 2025 (City of Riverside 2007); however, Overlook Parkway is not connected between Brittanee Delk Court and Sandtrack Road and over the Alessandro Arroyo between Crystal View Terrace and Via Vista Drive. In addition, Overlook Parkway does not extend west past Washington Street; therefore, a direct connection to State Route 91 (SR-91) does not exist from Overlook Parkway. As a result of the approval of two separate tract maps, gates at Crystal View Terrace and Green Orchard Place were installed to address cut-through traffic until Overlook Parkway was completed across the Alessandro Arroyo.

Under the proposed project, the City is analyzing four scenarios to resolve potential vehicular circulation issues associated with gates installed on Crystal View Terrace and Green Orchard Place in the city of Riverside. The connection of Overlook Parkway easterly to Alessandro Boulevard and a new roadway for access to SR-91 are considered. At this time, no preferred alternative has been selected.

Scenario 1 — Both Crystal View Terrace and Green Orchard Place gates would remain in place and be closed until Overlook Parkway is connected to the east across the Alessandro Arroyo, to Alessandro Boulevard, and a connection westerly of Washington Street is built.

Scenario 2 — The gates at both Crystal View Terrace and Green Orchard Place would be permanently removed, and there would be no connection of Overlook Parkway across the Alessandro Arroyo, easterly to Alessandro Boulevard, or a connection westerly of Washington Street. However, the Overlook Parkway connection would remain on the Master Plan of Roadways of the General Plan 2025 for future consideration. The City would be required to approve an amendment to Policy CCM-4.4 in the City General Plan 2025, along with project conditions related to the gates for two projects.

Scenario 3 — The gates at Crystal View Terrace and Green Orchard Place would be removed, and Overlook Parkway would be connected between Via Vista Drive and Sandtrack Road with the construction of a fill crossing and over the Alessandro Arroyo with a bridge crossing, allowing for a through connection to Alessandro Boulevard. The connection to the SR-91 would not be considered and would be removed from the Master Plan of Roadways in the General Plan 2025.

Scenario 4 — Both Crystal View Terrace and Green Orchard Place gates would be removed and Overlook Parkway would be connected east across Alessandro Arroyo and to Alessandro Boulevard. In addition, a roadway (the Proposed C Street) would be

constructed approximately one mile from the intersection of Overlook Parkway and Washington Street north and west, ending at the intersection of Madison Street and Victoria Avenue.

Both Scenarios 3 and 4 include proposed riparian/riverine crossings that would connect portions of Overlook Parkway: one crossing would consist of a fill crossing between Sandtrack Road and Brittanee Delk Court (approximately 465 linear feet) with culverts beneath Overlook Parkway, and the other would include two 33.5-foot-wide bridges, separated by a 31-foot-wide gap, over the Alessandro Arroyo. For the fill crossing, grading operations would include excavating soil from the southerly side of the proposed roadway and compacting the removed material on the northerly side to provide the final subgrade elevations. The grading would include 2:1 cut slopes on the southerly side and variable slope fills on the northerly side of the new roadway (2:1 max). For the bridges, abutments are proposed where each bridge structure would meet the existing roadway of Overlook Parkway. Retaining walls are proposed at the outside corners of each bridge to accommodate the existing slopes and reduce the permanent impacts to the vegetation associated with regrading. In addition, a rock slope protection area would be installed to protect the abutment slope against scour.

In addition to the connection of Overlook Parkway, Scenario 4 proposes the construction of the Proposed C Street. The alignment for the Proposed C Street would begin north of the intersection of Overlook Parkway and Washington Street and continue north and west, ending at the intersection of Madison Street and Victoria Avenue. The proposed alignment would accommodate four travel lanes within an 80-foot right-of-way. The roadway cross section would be graded to accommodate sidewalks, curb and gutter, and an area for laying of pavement material. To accommodate the new alignment, other components are required, including cul-de-sacs and vacated roads. Unlike the fill crossing and bridges in the Eastern Survey Area and Alessandro Arroyo Survey Area, riparian and riverine resources do not exist along the Proposed C Street alignment.

Scenarios 1 and 2 involve the resolution of vehicular circulation issues for the gates at Crystal View Terrace and Green Orchard Place, but do not involve any construction or ground-disturbing activities; therefore, there would be no impacts to biological resources. Because no impacts would occur under Scenarios 1 or 2, this DBESP does not analyze Scenarios 1 or 2 further.

1.3 Why Avoidance is not Feasible under Scenarios 3 and 4

Under Scenarios 3 and 4, connection of the existing portions of Overlook Parkway would require the proposed road to cross riparian/riverine areas, making avoidance infeasible. Five alternative designs for the bridge over Alessandro Arroyo have been investigated to date, and the currently proposed project uses the design that minimized biological impacts. The proposed design features two narrow bridges (as opposed to one wide one) that minimize shading of the riparian vegetation underneath.

2.0 Description of Biological Information Available for the Study Area Including the Results of Resource Mapping

2.1 Methods

Fieldwork conducted for the proposed project included a general biological survey, vegetation mapping, and a jurisdictional delineation. Additionally, a literature review was conducted and a habitat assessment was performed based on the results from the Riverside County Integrated Project's (RCIP) Conservation Summary Report Generator.

2.1.1 Literature Review

In addition to conducting biological field surveys, RECON performed a review of existing literature, including a search of the California Natural Diversity Database (State of California 2010a-d) and review of the MSHCP (County of Riverside 2003). RECON staff also reviewed the following sources: California Native Plant Society (CNPS; 2001), State of California (2010a-d), and Holland (1986).

Nomenclature used in this report follows Hickman (1993) for plant species, American Ornithologists' Union (1998) for birds, Jones et al. (1997) for mammals, Crother (2008) for amphibians and reptiles, and Mattoni (1990) and Opler and Wright (1999) for butterflies.

2.1.2 General Biological Survey

A general biological investigation of the survey areas was conducted by RECON biologists on February 11, 2011 and July 19, 2011. All plant species within the survey areas were identified in the field or collected for later identification using a taxonomic key. The surveyors assessed the habitat within the survey area for potential to support sensitive plant and animal species. Vegetation communities were mapped on a one-inch-equals-1,100-feet aerial photograph of the project vicinity. Field survey times, dates, and weather conditions are presented in Table 1.

TABLE 1
SURVEY DATES, TIMES, AND WEATHER CONDITIONS

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
02/11/2011	Beth Procsal Mike Nieto Anna Bennett	General Biological, Wetland Delineation	9:00a.m.; 64˚F; wind 0-2 mph; 0% cloud cover	3:00p.m.; 68˚F; wind 2 mph; 0% cloud cover
07/19/2011	Beth Procsal Erin McKinney	General Biological	9:30a.m.; 76˚F; wind 0–1 mph; 0% cloud cover	11:30a.m.; 85˚F; winds 0–2 mph; 0% cloud cover
11/16/2011	Beth Procsal Italia Gray	Wetland Delineation	9:15a.m.; 60˚F; wind 0–2 mph; 0% cloud cover	12:45p.m.; 72˚F; winds 0–1 mph; 0% cloud cover

Note: °F = degrees Fahrenheit; mph = mile per hour; % = percent

2.1.3 Habitat Assessments

The Conservation Summary Report Generator on the RCIP website identified sensitive species potentially occurring within the survey area and that would require a habitat assessment. Based on this report generator, no habitat assessment was required for sensitive plant species; however, a habitat assessment was required for western burrowing owl (*Athene cunicularia hypugaea*), a California species of special concern and MSHCP covered species. The habitat assessment was conducted during the general surveys on February 11, 2011 and July 19, 2011.

2.1.4 Riparian/Riverine/Vernal Pools and Fairy Shrimp Habitat Methods

A jurisdictional delineation, following the U.S. Army Corps of Engineers (ACOE; 2008) guidelines, was performed within the Alessandro Arroyo Survey Area by RECON biologists Mike Nieto and Anna Bennett concurrently with the general biological survey on February 11, 2011, and within the Eastern Survey Area by RECON biologists Italia Gray and Beth Procsal on November 16, 2011 (RECON 2012a). Prior to conducting the delineation, the biologists reviewed a 1:1,200 aerial photograph and the USGS Riverside

East 7.5-minute USGS quadrangle to identify potential jurisdictional areas within the site. All potential jurisdictional features were assessed for the presence of the three ACOE wetland parameters: hydrology, vegetation, and soils.

Per MSHCP Section 6.1.2, the survey area was assessed for riparian/riverine areas, vernal pools, and fairy shrimp, including Riverside fairy shrimp (*Streptocephalus woottoni*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*). MSHCP Section 6.1.2 describes the process through which protection of riparian/riverine areas, vernal pools, and listed fairy shrimp species should occur within the MSHCP Plan Area. Guidelines for determining whether or not these resources exist on-site are described as follows.

- **Riparian/Riverine Areas** include "lands which contain habitat dominated by trees, shrubs, persistent emergents or emergent mosses and lichen, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year." Under the MSHCP, riparian/riverine areas also include drainages with upland (non-riparian/riverine) vegetation and unvegetated drainages, provided they drain into areas supporting downstream habitat values for Covered Species in areas described for conservation under the MSHCP (or areas already conserved). The study area was evaluated for areas meeting this definition during an assessment of riparian/riverine areas performed on February 11, 2011 and November 16, 2011.

- **Vernal Pools** are described by the MSHCP as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season." The study area was evaluated for areas meeting this definition during the assessment performed on February 11, 2011 and November 16, 2011.

- **Fairy Shrimp Habitat**, as described under Section 6.1.2 of the MSHCP, is habitat for Riverside, vernal pool, or Santa Rosa fairy shrimp, and includes ephemeral pools, artificially created habitat such as tire ruts and stock ponds, and/or other features determined appropriate by a qualified biologist. The study area was evaluated for areas meeting this definition during the assessment performed on February 11, 2011 and November 16, 2011.

2.2 Existing Conditions

2.2.1 Environmental Setting

The existing portion of Overlook Parkway is a broad road with one lane in each direction (eastbound and westbound), a planted center median, sidewalks, and a bike lane. The surrounding area consists of single-family homes. The density of existing homes is generally greater along the western stretch of Overlook Parkway, but there are a large number of homes under construction in the east. The survey area is not identified as a core or linkage habitat area by the MSHCP, and is not located within a Criteria Cell. The nearest Criteria Cell is located approximately 2.5 miles southwest of the study area.

The Alessandro Arroyo drains a large area within the City of Riverside, but empties into a storm drain approximately 0.5 mile north of Overlook Parkway. Flows from the drainages on-site drain into the Santa Ana River, which flows into the Pacific Ocean near Huntington Beach, California.

2.2.2 Land Uses On-site

Overlook Parkway is an existing roadway in a largely developed and urbanized area of the City. Undeveloped land occurs in the Eastern and Alessandro Arroyo survey areas, but the remainder of the study area is characterized by roads or existing or proposed residential development.

2.2.3 Soils

Soils underlying the Eastern Survey Area are characterized primarily by Fallbrook sandy loam, 8 to 15 percent slopes, eroded, with small areas of Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded. The Alessandro Arroyo Survey Area contains five soil types, including: Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded; Cieneba sandy loam, 15 to 50 percent slopes, eroded; Cieneba sandy loam, 8 to 15 percent slopes, eroded; Hanford coarse sandy loam, 2 to 8 percent slopes; and Vista coarse sandy loam, 8 to 15 percent slopes, eroded (U.S. Department of Agriculture 1971).

Characteristics of these soils are summarized below from the *Soil Survey of Western Riverside Area, California* (U.S. Department of Agriculture 1971).

Fallbrook series soils consist of well-drained soils that lie on uplands between 700 and 3,500 feet above mean sea level (amsl). Fallbrook sandy loam, 8 to 15 percent slopes, eroded underlies the majority of the Eastern Survey Area.

Cieneba series soils consist of excessively drained soils on uplands. These soils are coarse-grained and derived from igneous parent material. Cieneba rocky sandy loam, 15

to 50 percent slopes, eroded is found on steep aspects and contains a significant proportion of rocky out crops. Cieneba sandy loam, 8 to 15 percent slopes, eroded, and Cieneba sandy loam, 15 to 50 percent slopes, eroded, are similar soil types with a thick sandy loam surface layer and with few rocky outcrops. Cieneba series soils are found on both the east and west canyon slopes of Alessandro Arroyo.

Hanford series soils originally developed on alluvial fans, and consist of well-drained soils derived from granitic parent material. Hanford coarse sandy loam, 2 to 8 percent slopes, is a gently sloping soil type found on alluvial fans. It occurs within the streambed of the Alessandro Arroyo.

Vista series soils are well-drained and typically occur on uplands. Vista soils developed on weathered granite and granodiorite. Vista coarse sandy loam, 8 to 15 percent slopes, eroded is a rolling upland soil typically used for irrigated citrus orchards. Vista series soils can be found on the west canyon slope of the Alessandro Arroyo.

2.2.4 Typography and Hydrology

The Eastern Survey Area consists generally of northwest-facing slopes between approximately 1,400 and 1,520 feet amsl. Topography in the Alessandro Arroyo Survey Area is varied and ranges from approximately 1,360 feet amsl within the arroyo to 1,440 on the slopes to either side. The arroyo begins in a residential neighborhood off Mission Grove Parkway, flows northwesterly, enters an underground storm drain south of Victoria Avenue, and flows through the city and into the Santa Ana River and Prado Dam Basin.

2.3 Riparian/Riverine Resources

As discussed in Section 2.2.3, above, riparian/riverine areas include:

> ". . . lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year."

Artificially created wetlands, such as those created for the purpose of providing wetland habitat or resulting from human actions or from the alteration of natural stream courses, are not considered riparian/riverine areas.

Vegetation communities/land use types that occur in the study area include southern willow scrub, freshwater marsh, Riversidean sage scrub, disturbed Riversidean sage scrub, disturbed land, ornamental vegetation, and developed (Table 2, Figure 4). Riparian/riverine areas include all southern willow scrub and freshwater marsh, as well

Image Source: City of Riverside, 2009

0 Feet 400

Study Area

Vegetation Communities

- Southern Willow Scrub
- Fresh Water Marsh
- Riversidian Sage Scrub
- Disturbed Riversidian Sage Scrub
- Disturbed
- Ornamental
- Developed

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FIGURE 4

Existing Biological Resources

as unvegetated drainage, which runs through areas mapped as Riversidean sage scrub (see Table 2, Figure 5). No vernal pools or fairy shrimp habitat occurs within the survey areas.

A total of 41 plant species were identified within the study area (Attachment 1), including 18 native (44 percent) and 23 introduced (56 percent) species. The wildlife observed within the study area is typical of urban communities within the city of Riverside. A complete list of the species detected is provided in Attachment 2.

TABLE 2
VEGETATION COMMUNITIES AND LAND COVER TYPES (acres)

Vegetation Communities/ Land Cover Types	Eastern Survey Area	Alessandro Arroyo Survey Area	Total
Southern willow scrub*	0.25	1.77	2.02
Freshwater marsh*	0.01	0.00	0.01
Riversidean sage scrub*	5.45	4.46	9.91
Disturbed Riversidean sage scrub	0.07	0.00	0.07
Disturbed land	0.20	0.80	1.00
Ornamental vegetation	0.25	0.00	0.25
Developed	4.82	3.29	8.11
TOTAL	11.05	10.32	21.37

* Riparian/Riverine resources include all southern willow scrub and freshwater marsh, as well as 0.05 acre of unvegetated drainage that occurs within Riversidean sage scrub.

2.3.1 Riparian/Riverine Descriptions

Southern Willow Scrub – A total of 2.02 acres of southern willow scrub occurs within the study area, including 0.25 acre within the Eastern Survey Area and 1.77 acres within Alessandro Arroyo Survey Area (see Figure 5). The southern willow scrub within the Eastern Survey Area is dominated by arroyo willow (*Salix lasiolepis*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Within the Alessandro Arroyo Survey Area, the southern willow scrub is multi-tiered, with areas of stream emerging from the willow canopy. Southern willow scrub is considered a riparian/riverine area.

Freshwater Marsh – Approximately 0.01 acre of freshwater marsh habitat occurs at the northwestern corner of the Eastern Survey Area (see Figure 5). Within the study area, this vegetation community is characterized by a small patch of cattail (*Typha domingensis*) along a small drainage. Freshwater marsh is considered a riparian/riverine area.

Image Source: City of Riverside, 2009

Study Area

WRCMSHCP Riparian/Riverine

Southern Willow Scrub

Fresh Water Marsh

Non-vegetated Drainage

0 Feet 400

FIGURE 5

WRCMSHCP
Riparian/Riverine Areas

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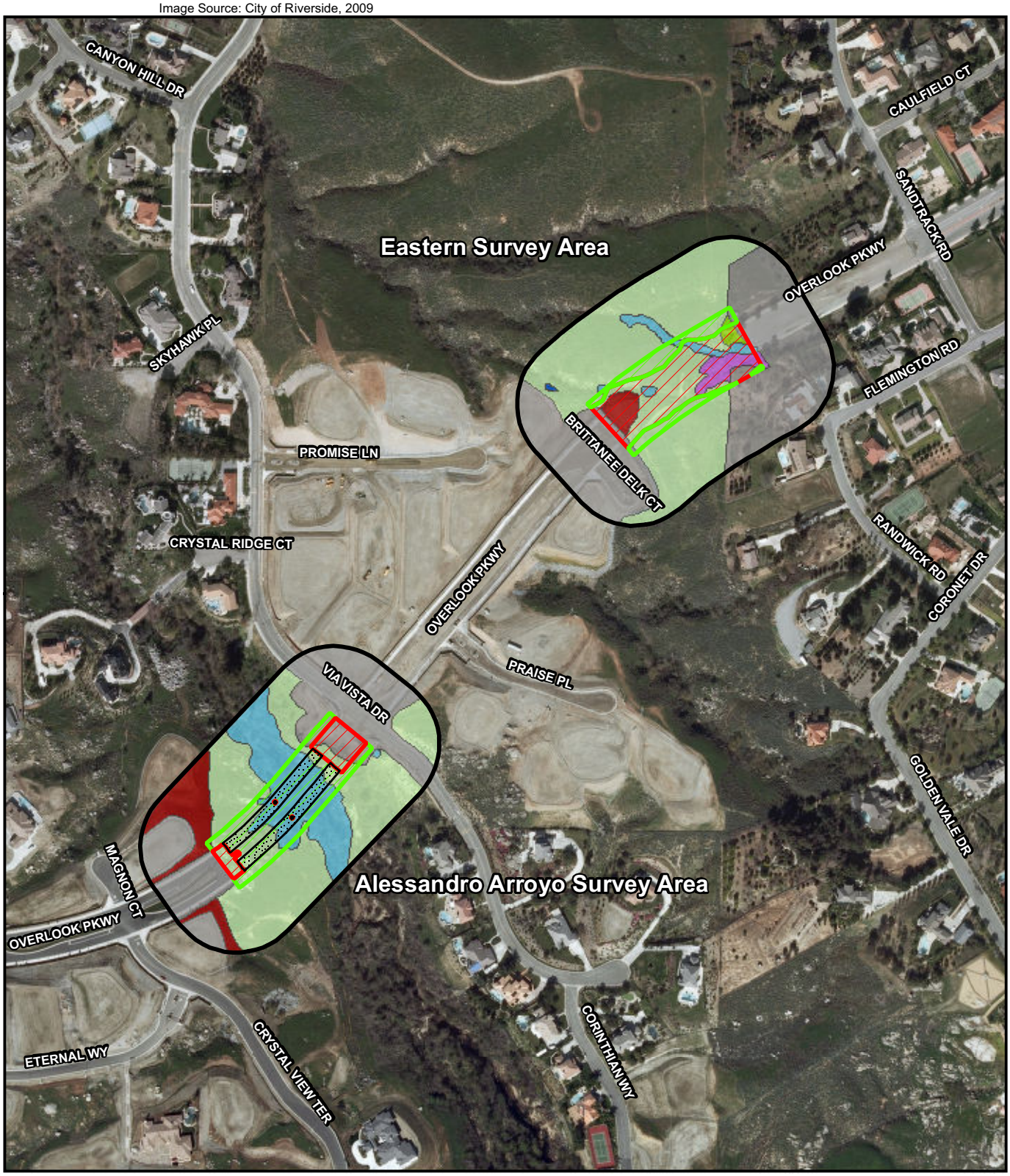
Image Source: City of Riverside, 2009



0 Feet 400

Study Area
Shading Impacts
Permanent Impacts
Temporary Impacts

Vegetation Communities

Southern Willow Scrub
Fresh Water Marsh
Riversidian Sage Scrub
Disturbed Riversidian Sage Scrub
Disturbed
Ornamental
Developed

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FIGURE 6

Impacts to Biological Resources

Riversidean Sage Scrub (Including Disturbed) – High-quality Riversidean sage scrub, dominated by California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), and California buckwheat (*Eriogonum fasciculatum*), occupies the majority of the Eastern and Alessandro Arroyo Survey Areas. Shrub cover in these areas is greater than 50 percent and averages two to three feet in height. Areas mapped as disturbed Riversidean sage scrub have approximately 20 percent shrub cover and a large proportion of non-native grasses. Approximately 5.52 acres of Riversidean sage scrub, which includes 0.07 acre of disturbed Riversidean sage scrub, occur in the Eastern Survey Area, and 4.46 acres of Riversidean sage scrub occur in the Alessandro Arroyo Survey Area (see Figure 4). Riversidean sage scrub is not considered a riparian/riverine area.

Disturbed Land – Disturbed land occurs on the northeastern end of the Eastern Survey Area, on the western end of the Alessandro Arroyo Survey Area. Vegetation in these areas is minimal and is dominated by invasive herbaceous species such as red-stemmed filaree (*Erodium cicutarium*), Russian thistle (*Salsola tragus*), and wild barley (*Hordeum murinum*). Much of the disturbed land within the study area is a result of grading activities. Approximately 0.20 acre of disturbed land occurs in the Eastern Survey Area and 0.80 acre in the Alessandro Arroyo Survey Area (see Figure 4). Disturbed land is not considered a riparian/riverine area.

Ornamental Vegetation – Approximately 0.25 acre of ornamental vegetation, dominated by Indian fig (*Opuntia ficus-indica*), occurs in the middle portion of the Eastern Survey Area (see Figure 4). Ornamental vegetation is not considered a riparian/riverine area.

Developed – The business lots, roadways, and private and residential development throughout the site are classified as developed land. Approximately 4.82 acres occur within the Eastern Survey Area, and 3.29 acres occur within the Alessandro Arroyo Survey Area (see Figure 4). Developed areas are not considered riparian/riverine areas.

2.3.1.1 Unvegetated Drainages

Several unvegetated drainages, totaling 0.05 acre, occur within the Eastern and Alessandro Arroyo survey areas (see Figure 5). They flow primarily through Riversidean sage scrub, and connect with patches of southern willow scrub and freshwater marsh. Within the Alessandro Arroyo Survey Area, the drainage is largely braided and flows through the southern willow scrub. The drainages are considered riparian/riverine areas as they connect downstream with the Santa Ana River.

2.3.2 Species Functions and Values Assessment

Protection of riparian/riverine and vernal pool areas is important to conservation of the following listed species, per Section 6.1.2 of the MSHCP:

Amphibians

- Arroyo toad (*Anaxyrus californicus*)
- mountain yellow-legged frog (*Rana muscosa*)
- California red-legged frog (*Rana aurora draytonii*)

Birds

- bald eagle (*Haliaeetus leucocephalus*)
- least Bell's vireo (*Vireo bellii pusillus*)
- peregrine falcon (*Falco peregrinus*)
- southwestern willow flycatcher (*Empidonax traillii extimus*)
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Fish

- Santa Ana sucker (*Catostomus santaanae*)

Invertebrates

- Riverside fairy shrimp (*Streptocephalus woottoni*)
- vernal pool fairy shrimp (*Branchinecta lynchi*)

Plants

- Brand's phacelia (*Phacelia stellaris*)
- California Orcutt grass (*Ocurttia californica*)
- California black walnut (*Juglans californica*)
- Coulter's matilija poppy (*Romneya coulteri*
- Engelmann oak (*Quercus engelmannii*)
- Fish's milkwort (*Polygala cournuta* var. *fishiae*)
- graceful tarplant (*Holocarpha virgata*)
- lemon lily (*Lilium parryi*)
- Mojave tarplant (*Deinandra mohavensis*)
- mud nama (*Nama stenocarpum*)
- ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*)
- Orcutt's brodiaea (*Brodiaea orcuttii*)
- Parish's meadowfoam (*Limnanthes gracilis* var. *parishii*)
- prostrate navarretia (*Navarretia prostrate*)
- San Diego button-celery (*Eryngium aristulatum* var. *parishii*)

- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*)
- San Miguel savory (*Satureja chandleri*)
- Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*)
- slender-horned spine flower (*Dodecahema leptoceras*)
- smooth tarplant (*Centromadia pungens*)
- spreading navarretia (*Navarretia fossalis*)
- thread-leaved brodiaea (*Brodiaea filifolia*)
- vernal barley (*Hordeum intercedens*)

Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon known ranges and habitat preferences for the species (Jennings and Hayes 1994; State of California 2010a–d; CNPS 2001), the MSHCP (County of Riverside 2003), and species occurrence records from other sites in the vicinity of the survey area.

2.3.2.1 Amphibians

Although the Alessandro Arroyo Survey Area includes a slow-moving stream with sandy channels, the area is surrounded to the east and west by existing development, and the stream itself is culverted upstream of the survey area, altering flows and reducing the habitat quality for arroyo toads. Due to these site conditions, coupled with a lack of known arroyo toad occurrences within the Santa Ana watershed, there is a low likelihood of arroyo toad occurring within the study area; therefore, surveys were not conducted for this species. Additionally, the nearest occurrence of arroyo toad is 17 miles southwest of the Alessandro Arroyo Survey Area.

Mountain yellow-legged frog and California red-legged frog generally require persistent water from March to mid-June, which does not occur on-site, and are not generally found in developed areas.

No amphibians were detected during any survey; however, species commonly found in urbanized areas, such as Pacific treefrog (*Pseudacris regilla*), are likely to occur within or adjacent the riparian areas.

2.3.2.2 Birds

The southern willow scrub present within the survey area has potential to support nesting least Bell's vireos; however, no vireos were detected during the general biological surveys. The western yellow-billed cuckoo and southwestern willow flycatcher generally require larger stands of mature multi-tiered riparian vegetation for nesting habitat and are not expected to occur within the survey area. The survey area has very low potential to support bald eagle or peregrine falcon. These species require stands of

trees for roosting and cliff ledges for nesting. The proposed project would not impact these species.

2.3.2.3 Fish

The Santa Ana sucker has a very limited range and, within the Santa Ana River watershed, is only known from downstream areas in Orange County. The study area lies outside the known range of this species, so it is not expected to occur.

2.3.2.4 Invertebrates/Crustaceans

The study area does not support vernal pools; therefore, it does not support habitat for Riverside, vernal pool, or Santa Rosa fairy shrimp.

2.3.2.5 Plants

A sensitive plant habitat assessment was not recommended by the Conservation Summary Report Generator (RCIP 2011); however, one Group 2 MSHCP species, graceful tarplant, was observed.

Graceful tarplant is also a CNPS List 4 species (CNPS 2001), and approximately 50-75 individuals were observed scattered within the Riversidean sage scrub vegetation in the Eastern Survey Area. All individuals were observed outside riparian/riverine areas.

2.3.2.6 Additional Special-status Wildlife Surveys

A burrow and habitat assessment was conducted for the burrowing owl, a state California species of special concern and MSHCP covered species. No burrowing owls or suitable burrows were detected during surveys of the site. The habitat within the survey area is characterized by relatively low-density Riversidean sage scrub hillsides with southern willow scrub in the traversing drainages. The study area does not contain sufficient open habitat or appropriate burrow sites to support western burrowing owl. Focused western burrowing owl surveys are not required.

2.3.3 Ecological Processes Functions and Values Assessment

The riparian/riverine areas within the survey areas act as riparian linkages to the Santa Ana River and contribute to the habitat requirements of both resident and migrant species within the Santa Ana River watershed. They collect flows from adjacent residential developments and vegetated hillsides and drain into the Santa Ana River, which flows into the Pacific Ocean near Huntington Beach, California.

The Eastern Survey Area contains two unnamed drainages. The northern drainage contains a narrow strip of moderate quality southern willow scrub, while the southern drainage is largely unvegetated, but contains a small patch of freshwater marsh characterized by cattail. The Alessandro Arroyo contains a patch of high-quality southern willow scrub that is dense, multi-tiered, and supports a native understory.

These riparian/riverine areas collect flows from adjacent foothills and residential developments and drain into the Santa Ana River. Other than the natural drainage of the canyon, the majority of flows enter the site as storm water or urban runoff. The Alessandro Arroyo is steep and has eroded terraces and several downed mature trees, suggesting it carries heavy flows.

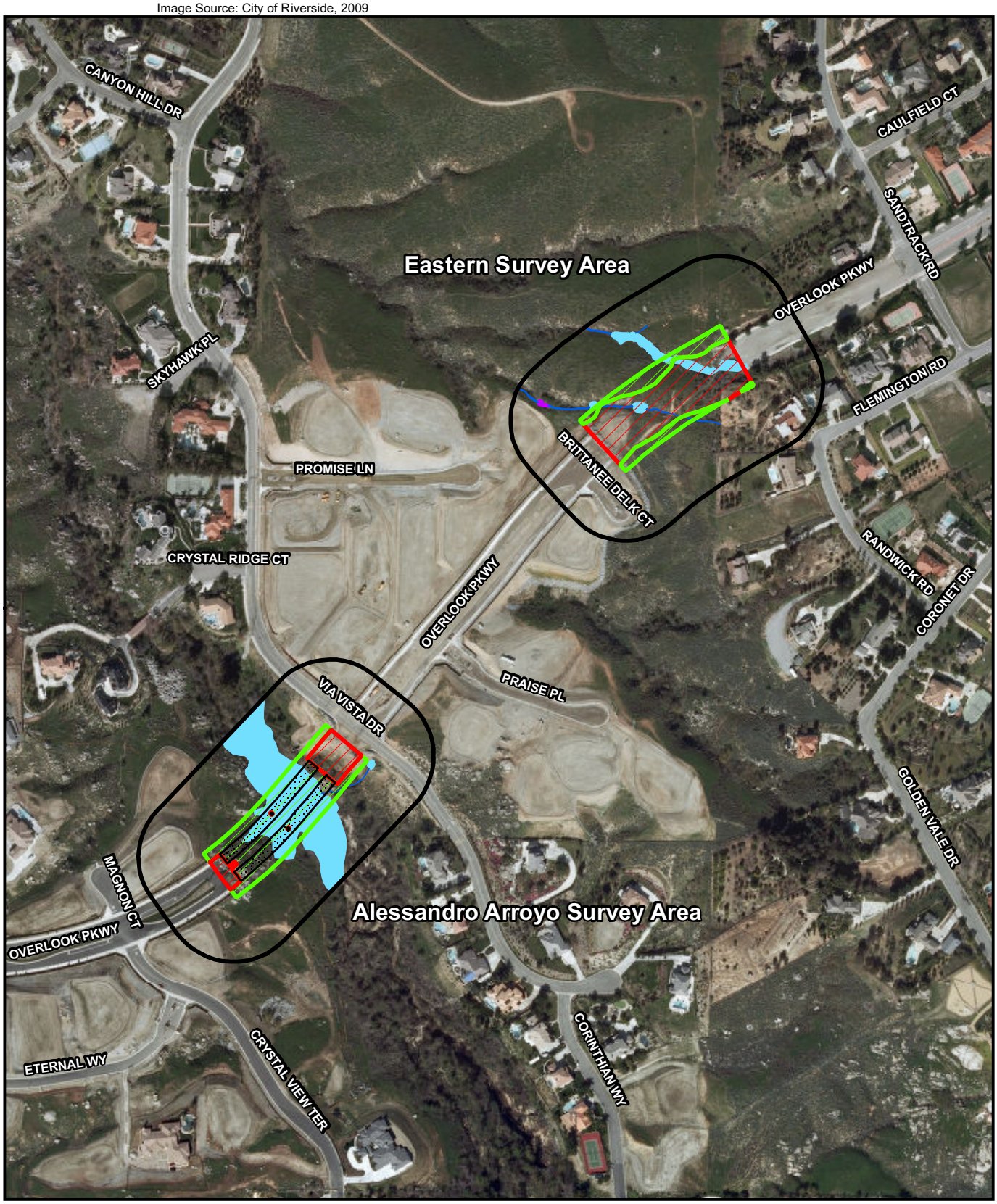
The riparian/riverine areas within the Alessandro Arroyo Survey Area are relatively small and constrained by residential development, and the arroyo is culverted numerous times to the north and south. Regardless, this feature is part of a significant riparian corridor connecting habitat along the canyons and ridgelines to the north with undeveloped land to the southeast. The Alessandro Arroyo likely provides some nutrient removal, sediment retention, and toxic substance filtration functions, although these functions are limited due to constraints from adjacent urban development.

3.0 Unavoidable Impacts to Riparian/Riverine Areas Associated with the Project, Including Direct and Indirect Effects

3.1 Direct Effects to Riparian/Riverine Functions and Values

The proposed project would impact approximately 4.00 acres of vegetation, including 0.90 acre of riparian/riverine areas (Table 3, Figure 6). Permanent impacts to riparian/riverine areas total 0.14 acre, and include 0.12 acre of southern willow scrub and 0.02 acre of unvegetated drainage (mapped within Riversidean sage scrub). Temporary impacts to riparian/riverine areas consist of 0.78 acre of southern willow scrub (Figure 7). Freshwater marsh would not be impacted. Project impacts to upland vegetation communities are also presented in Table 3.

Image Source: City of Riverside, 2009



Study Area
Shading Impacts
Permanent Impacts
Temporary Impacts

WRCMSHCP Riparian/Riverine
Southern Willow Scrub
Fresh Water Marsh
Non-vegetated Drainage

0 Feet 400

FIGURE 7

Impacts to WRCMSHCP Riparian/Riverine Areas

RECON

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The southern willow scrub that would be impacted is suitable nesting and foraging habitat for least Bell's vireo. Least Bell's vireo was not detected during the focused surveys.

Graceful tarplant, which is a Group 2 species, but is not a riparian/riverine species, would be impacted by the project. Approximately 50-75 graceful tarplant individuals are found within the temporary impact footprint. Implementation of the measures provided in the MSHCP and associated Implementing Agreement, plan-wide, adequately addresses any potential impacts to these species. Thus, by virtue of this coverage and the fact that the site is not located in any identified Criteria Cell, impacts to this species, if present, are reduced to less than significant through the MSHCP, and no species-specific mitigation is required.

There is low to moderate potential for arroyo toad to occur within Alessandro Arroyo. The project includes a bridge over the arroyo, which would minimize impacts to potential arroyo toad habitat within the Alessandro Arroyo Survey Area. The proposed project would cause temporary impacts to 0.76 acre of southern willow which may potentially support arroyo toad breeding habitat. Impacts to suitable upland habitat include 0.68 acre of temporary impacts and 0.16 acre of permanent impacts to Riversidean sage scrub (see Table 3). Arroyo toad is not historically known to occur within the Santa Ana watershed, which includes the Alessandro Arroyo. Coupled with the site conditions, this species is not expected to occur within the study area; therefore, no impacts to this species are anticipated.

No other species listed in Section 6.1.2 of the MSHCP were observed or are expected to occur within the study area.

TABLE 3
IMPACTS TO VEGETATION COMMUNITIES AND LAND COVER TYPES (acres)

Vegetation Community	Total Existing	Impacts				
		Eastern Survey Area		Alessandro Arroyo Survey Area		Total Impacts
		Temp	Perm	Temp	Perm	
Southern willow scrub[1]	2.02	0.02	0.12	0.76	<0.01 (77 square feet)	0.90
Freshwater Marsh[1]	0.01	--	--	--	--	--
Riversidean sage scrub[1]	9.91	0.46	0.81[2]	0.68	0.16	2.11
Disturbed Riversidean Sage scrub	0.07	0.01	0.06			
Disturbed land	1.00	--	0.20	--	--	0.20
Ornamental vegetation	0.25	--	0.23	--	--	0.23
Developed	8.11	0.03	0.15	0.09	0.22	0.49
TOTAL	**21.37**	**0.52**	**1.57**	**1.53**	**0.38**	**4.00**

[1] Riparian/Riverine resources include all southern willow scrub and freshwater marsh, as well as 0.05 acre of drainage that occurs within Riversidean sage scrub.
[2] Includes 0.02 acre of permanent impact to unvegetated drainage considered a riparian/riverine area.

3.2 Indirect Effects to Riparian/Riverine Functions and Values

Potential indirect impacts to riparian/riverine areas that may be caused by road construction projects include construction noise and urban runoff.

Construction noise has potential to impact wildlife by displacing them from nests. The only species listed in MSHCP Section 6.1.2 with potential to occur in the study area is least Bell's vireo, and protocol surveys for this species were negative. Therefore, no indirect impacts from construction noise are expected to occur.

Urban runoff from the proposed road construction could cause increased erosion, sedimentation, or pollution of riparian/riverine areas downstream of the project. To prevent indirect impacts from urban runoff, the project will implement construction Best Management Practices (BMPs) as part of a Stormwater Pollution Prevention Plan for the project. As a result, the project is not expected to cause indirect impacts from urban runoff.

3.3 Rationale Why Avoidance is not Possible

Overlook Parkway is identified as a Master Plan of Roadways Road in the Circulation & Community Mobility Element in the City of Riverside's General Plan 2025 (City of Riverside 2007). As such, completion of Overlook Parkway is required to meet the requirements of that plan. Scenarios 3 and 4 would address traffic circulation issues. As discussed in Section 1.2, Scenarios 1 and 2 would not implement the circulation goals of the General Plan 2025 as adopted; however, these scenarios, if selected, would not impact riverine or riparian areas and are therefore not addressed in this DBESP. Because existing segments of Overlook Parkway are already in place, there are no feasible alternatives that would allow completion of the Circulation and Community Mobility Element Road but avoid riparian/riverine crossings in the Eastern and Alessandro Arroyo survey areas.

4.0 Project Design Features/Mitigation Measures that Reduce Direct and Indirect Effects

4.1 Mitigation for Direct Effects

As discussed in the Draft Biological Technical Report (RECON 2012b), prior to impacting waters of the U.S., the City is required to notify the ACOE Section 404 Nationwide Permit Program, procure a Streambed Alteration Agreement from the California Department of Fish and Game (CDFG; Section 1602), and obtain a water quality certification (Clean Water Act Section 401) from the Regional Water Quality Control Board (RWQCB) in accordance with the state and federal regulations.

In accordance with the MSHCP, impacts to Riversidean sage scrub, non-native grassland, disturbed land, ornamental vegetation, and developed land would be considered less than significant and would not require mitigation, as no MSHCP covered (breeding) species or state or federally listed endangered or threatened species were observed within the three project impacts areas.

Temporary impacts to 0.78 acre of southern willow scrub would require mitigation through habitat creation, enhancement, and/or preservation at a minimum 1:1 ratio. Permanent impacts to 0.12 acre of southern willow scrub and 0.02 acre of unvegetated drainage would require mitigation at a minimum of 2:1 ratio (including 1:1 creation) to ensure no net loss of riparian/riverine resources. All mitigation listed above for state and federal waters is subject to the approval of by the regulatory agencies. To further minimize impacts to riparian/riverine areas, it is recommended that the unvegetated

Survey Area be culverted to allow continued flow and prevent potentially isolating jurisdictional areas to the south of the proposed road crossing.

Mitigation would occur with creation, enhancement, or preservation of riparian/riverine resources at a location to be determined in consultation with the ACOE, CDFG, and City of Riverside. It may be possible to conduct southern willow scrub enhancement within the Alessandro Arroyo Survey Area outside the bridge footprint. With implementation of the approved mitigation measures, the net effect of the project on riparian/riverine areas would be equivalent or superior to the existing conditions.

4.2 Mitigation for Indirect Effects

As discussed in Section 3.2 above and in the Draft Biological Technical Report (RECON 2012b), the project is not expected to result in indirect impacts to riparian/riverine areas or to species listed in Section 6.1.3 of the MSHCP.

5.0 Findings

The riparian/riverine areas on-site (southern willow scrub, freshwater marsh, and the unvegetated drainages) are heavily constrained by development, and no riparian/riverine animal species were detected. Only one sensitive species, graceful tarplant, was detected on-site, but it was not located in an area meeting the definition of riparian/riverine areas.

Potential indirect impacts, including noise impacts to riparian/riverine species and urban runoff, are not expected to occur as a result of project implementation. Noise impacts to riparian/riverine species would not occur because such species were not detected in the survey area. Impacts from urban runoff would be prevented by implementation of construction BMPs as part of a Stormwater Pollution Prevention Plan.

With implementation of the measures discussed in Section 4.1, the project would mitigate all temporary and permanent impacts to riparian/riverine areas, including southern willow scrub and unvegetated drainage. Mitigation would occur with creation, enhancement, or preservation of riparian/riverine habitat at a location to be determined in consultation with the City, ACOE, and CDFG. Therefore, the net effect of the project on riparian/riverine areas would be equivalent or superior to the existing conditions.

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ATTACHMENTS

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ATTACHMENT 1

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ATTACHMENT 1
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

Scientific Name	Common Name	Origin	Alessandro Arroyo Survey Area	Eastern Survey Area	Sensitivity Status
ANGIOSPERMS: DICOTS					
ADOXACEAE	**ADOXA FAMILY**				
Sambucus nigra [=*mexicana*] L. ssp. *caerulea* (Raf.) Bolli	blue elderberry	N	X	X	-
ASTERACEAE	**SUNFLOWER FAMILY**				
Artemisia californica	California sagebrush	N	X	X	-
Baccharis salicifolia (Ruiz & Pav.) Pers.	mule fat, seep-willow	N		X	-
Encelia farinosa A. Gray ex Torr.	brittlebush, incienso	N	X	X	-
Heterotheca grandiflora Nutt.	telegraph weed	N		X	-
Holocarpha virgata (A. Gray) D.D. Keck ssp. *elongata* D.D. Keck	graceful tarplant	N			CNPS 4.2
BORAGINACEAE	**BORAGE FAMILY**				
Amsinckia menziesii (Lehm.) A. Nelson & J.F. Macbr.	rancher's fireweed	N	X		-
Phacelia sp.	phacelia	N	X		-
BRASSICACEAE (CRUCIFERAE)	**MUSTARD FAMILY**				
Hirschfeldia incana	short-pod mustard	I	X		-
Sisymbrium sp.	mustard	I		X	-

ATTACHMENT 1
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Origin	Alessandro Arroyo Survey Area	Eastern Survey Area	Sensitivity Status
ANGIOSPERMS: DICOTS					
CACTACEAE	**CACTUS FAMILY**				
Cylindropuntia californica (Torr. & A. Gray) F.M. Knuth var. *parkeri* (J.M. Coult.) Pinkava	cane/valley cholla	N		X	-
Opuntia ficus-indica (L.) Mill.	Indian fig	I		X	-
Opuntia littoralis (Engelm.) Cockerell.	shore cactus	N		X	-
CLEOMACEAE	**SPIDERFLOWER FAMILY**				
Isomeris arborea Nutt.	bladderpod	N		X	-
CUCURBITACEAE	**GOURD FAMILY**				
EUPHORBIACEAE	**SPURGE FAMILY**				
Croton [=*Eremocarpus*] *setigerus* Hook.	dove weed	N		X	
Ricinus communis	castor bean	I	X		-
FABACEAE (LEGUMINOSAE)	**LEGUME FAMILY**				
Cercidium floridum	Palo verde	N		X	-
GERANIACEAE	**GERANIUM FAMILY**				
Erodium cicutarium (L.) L'Hér. ex Aiton	red-stemmed filaree	I	X		-
LAMIACEAE	**MINT FAMILY**				
Marrubium vulgare L.	horehound	I		X	-
POLYGONACEAE	**BUCKWHEAT FAMILY**				
Eriogonum fasciculatum Benth. var. *foliolosum* (Nutt.) S. Stokes ex Abrams	inland California buckwheat	N	X	X	-
SALICACEAE	**WILLOW FAMILY**				
Salix lasiolepis	Arroyo willow	N		X	

ATTACHMENT 1
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Origin	Alessandro Arroyo Survey Area	Eastern Survey Area	Sensitivity Status
ANGIOSPERMS: DICOTS					
SOLANACEAE	**NIGHTSHADE FAMILY**				
Nicotiana glauca Graham	tree tobacco	I	X	X	-
URTICACEAE	**NETTLE FAMILY**				
Urtica dioica L. ssp. *holosericea* (Nutt.) Thorne	hoary nettle	N		X	-
ANGIOSPERMS: MONOCOTS					
ARECACEAE	**PALM TREES**				
Washington robusta	Mexican fan palm	I		X	-
CYPERACEAE	**SEDGE FAMILY**				
Carex sp.	sedge sp.	N	X		-
PLANTAGINACEAE	**PLANTAIN FAMILY**				
Veronica anagallis-aquatica L.	water speedwell	I		X	
POACEAE (GRAMINEAE)	**GRASS FAMILY**				
Arundo donax L.	giant reed	I	X		-
Bromus diandrus Roth	ripgut grass	I	X		-
Bromus madritensis L. ssp. *rubens* (L.) Husnot	red brome	I	X	X	-
Leymus condensatus (C. Presl) Á. Löve	giant rye grass	N	X		-
Schismus barbatus (L.) Thell.	Mediterranean schismus	I		X	-
TYPHACEAE	**CATTAIL FAMILY**				
Typha sp.	cattail	N	X	X	-

SOURCES: Jepson Online Interchange <http://ucjeps.berkeley.edu/interchange.html> (2010); K. N. Brenzel (editor), *Sunset Western Garden Book* (Sunset Publishing, Menlo Park, CA, 2001); USDA Plants Database <http://plants.usda.gov/> (2008).

ATTACHMENT 1
PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
(continued)

ORIGIN

N = Native to locality
I = Introduced species from outside locality

SENSITIVITY STATUS

FEDERAL CANDIDATES AND LISTED PLANTS

FE = Federally listed endangered
FT = Federally listed threatened
FC = Federal candidate for listing as endangered or threatened

STATE LISTED PLANTS

CE = State listed endangered
CR = State listed rare
CT = State listed threatened

CALIFORNIA NATIVE PLANT SOCIETY LISTS

1A = Species presumed extinct.
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
2 = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.
3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

ATTACHMENT 2

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ATTACHMENT 2
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
INVERTEBRATES (Nomenclature from Erikson and Belk 1999, Milne and Milne 1980, Mattoni 1990, and Opler and Wright 1990)				
APIDAE	**APID BEES**			
Apis mellifera	honey bee	SWS	-	O
FORMICIDAE	**ANTS**			
Pogonomyrmex sp.	Harvester ants	RSS	-	O
PAPILIONIDAE	**PARNASSIANS & SWALLOWTAILS**			
Papilio zelicaon	anise swallowtail	RSS, SWS	-	O
PIERIDAE	**WHITES & SULPHURS**			
Anthocharis sara	Sara or Pacific orangetip	NNG	-	O
Pontia protodice	common or checkered white	RSS	-	O
NYMPHALIDAE	**BRUSH-FOOTED BUTTERFLIES**			
Vanessa cardui	Painted lady	NNG	-	O
REPTILES (Nomenclature from Crother 2001 and Crother et. al. 2003)				
IGUANIDAE	**IGUANID LIZARDS**			
Sceloporus occidentalis	Western fence lizard	NNG	-	O
Sceloporus orcutti	Granite spiny lizard	RSS	-	O
TEIIDAE	**WHIPTAIL LIZARDS**			
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	RSS	CSC	O
BIRDS (Nomenclature from American Ornithologists' Union 1998)				
ODONTOPHORIDAE	**NEW WORLD QUAIL**			
Callipepla californica californica	California quail	SWS	-	V

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
ACCIPITRIDAE	**HAWKS, KITES, & EAGLES**			
Buteo jamaicensis	Red-tailed hawk	F, SWS	-	O
FALCONIDAE	**FALCONS & CARACARAS**			
Falco sparverius sparverius	American kestrel	URB, SWS	-	O
CHARADRIIDAE	**LAPWINGS & PLOVERS**			
Charadrius vociferus vociferus	Killdeer	AA, NNG, URB	-	V, O
COLUMBIDAE	**PIGEONS & DOVES**			
Zenaida macroura marginella	Mourning dove	AA, NNG, URB, SWS	-	V, O
CUCULIDAE	**CUCKOOS & ROADRUNNERS**			
Geococcyx californianus	greater roadrunner	RSS	-	V, O
APODIDAE	**SWIFTS**			
Aeronautes saxatalis	white-throated swift	SWS	-	V, O
TROCHILIDAE	**HUMMINGBIRDS**			
Calypte anna	Anna's hummingbird	AA, NNG, SWS	-	V, O
PICIDAE	**WOODPECKERS & SAPSUCKERS**			
Melanerpes formicivorus bairdi	Acorn woodpecker	URB	-	V, O
Picoides nuttallii	Nuttall's woodpecker	URB, SWS	-	V
TYRANNIDAE	**TYRANT FLYCATCHERS**			
Empidonax difficilis	Pacific slope flycatcher	SWS	-	V, O
Myiarchus cinerascens cinerascens	ash-throated flycatcher	SWS	-	V, O
Sayornis nigricans semiatra	Black phoebe	AA, NNG, URB, SWS	-	V, O
Sayornis saya	Say's phoebe	AA, NNG	-	V, O
Tyrannus verticalis	western kingbird	SWS	-	V, O
Tyrannus vociferans vociferans	Cassin's kingbird	AA	-	O

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
VIREONIDAE	**VIREOS**			
Vireo huttoni huttoni	Hutton's vireo	SWS	-	V
CORVIDAE	**CROWS, JAYS, & MAGPIES**			
Aphelocoma californica	Western scrub-jay	DIST	-	V, O
Corvus brachyrhynchos hesperis	American crow	SWS	-	V, O
Corvus corax clarionensis	common raven	F, SWS	-	V, O
HIRUNDINIDAE	**SWALLOWS**			
Petrochelidon pyrrhonota tachina	cliff swallow	SWS	-	V, O
AEGITHALIDAE	**BUSHTIT**			
Psaltriparus minimus minimus	bushtit	SWS	-	V, O
TROGLODYTIDAE	**WRENS**			
Salpinctes obsoletus obsoletus	rock wren	SWS	-	V
Thryomanes bewickii	Bewick's wren	SWS	-	V
Troglodytes aedon parkmanii	house wren	SWS	-	V, O
TURDIDAE	**THRUSHES**			
Sialia mexicana occidentalis	Western bluebird	DIST	-	O
MIMIDAE	**MOCKINGBIRDS & THRASHERS**			
Mimus polyglottos polyglottos	Northern mockingbird	ORN, SWS	-	V, O
STURNIDAE	**STARLINGS & MYNAS**			
Sturnus vulgaris	European starling (I)	SWS	-	V, O
PTILOGONATIDAE	**SILKY FLYCATCHERS**			
Phainopepla nitens lepida	phainopepla	SWS	-	V, O
PARULIDAE	**WOOD WARBLERS**			
Geothlypis trichas	common yellowthroat	SWS	-	V, O
Vermivora celata	Orange-crowned warbler	DEV, SWS	-	V

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Scientific Name	Common Name	Occupied Habitat	Status	Evidence of Occurrence
EMBERIZIDAE	**EMBERIZIDS**			
Chondestes grammacus strigatus	Lark sparrow	URB	-	O
Melospiza lincolnii	Lincoln's sparrow	NNG	MSHCP (breeding)	O
Melospiza melodia	song sparrow	SWS	-	V, O
Pipilo crissalis	California towhee	DIST, SWS	-	V, O
Pipilo maculatus	spotted towhee	SWS	-	V, O
Zonotrichia leucophrys	White-crowned sparrow	DIST	-	V, O
CARDINALIDAE	**CARDINALS & GROSBEAKS**			
Pheucticus melanocephalus maculatus	black-headed grosbeak	SWS	-	V
ICTERIDAE	**BLACKBIRDS & NEW WORLD ORIOLES**			
Icterus bullockii	Bullock's oriole	SWS	-	V, O
Icterus cucullatus nelsoni	hooded oriole	SWS	-	V, O
FRINGILLIDAE	**FINCHES**			
Carduelis psaltria hesperophilus	Lesser goldfinch	DIST, SWS	-	V, O
Carpodacus mexicanus frontalis	House finch	URB, SWS	-	V, O
MAMMALS (Nomenclature from Baker et al. 2003)				
LEPORIDAE	**RABBITS & HARES**			
Sylvilagus audubonii	Desert cottontail	NNG	-	O
PROCYONIDAE	**PROCYONIDS**			
Procyon lotor	Northern raccoon	NNG	-	T

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED/DETECTED WITHIN THE STUDY AREA
(continued)

Habitats

AA = Active agricultural fields
DIST = Disturbed land
F = Flying overhead
NNG = Non-native grassland
of
ORN = Ornamental vegetation
RSS = Riversidian sage scrub
SWS = Southern willow scrub
URB = Urban/Developed

Evidence of Occurrence

V = Vocalization
O = Observed
T = Track

Status

BEPA = Bald and Golden Eagle Protection Act
FC = Federal candidate for listing (taxa for which the U.S. Fish and Wildlife Service on file sufficient information on biological vulnerability and threat(s) to support proposals to list as endangered or threatened; development and publication

proposed rules for these taxa are anticipated)
CFP = California fully protected species
CSC = California Department of Fish and Game species of special concern
FE = Listed as endangered by the federal government

FPT = Federally proposed threatened
FSS = Federal (BLM or USFS) sensitive species
FT = Listed as threatened by the federal government
MSHCP = Multiple Species Habitat Conservation Plan target species list
PSE = Proposed as endangered by the state of California
SCT = California candidate for listing as threatened
SDC = City of San Diego Resource Protection Ordinance “Sensitive Species”
SE = Listed as endangered by the state of California
ST = Listed as threatened by the state of California
* = Taxa listed with an asterisk fall into one or more of the following categories:
• Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
• Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
• Population(s) in California that may be peripheral to the major portion of a taxon’s range, but which are threatened with extirpation within California
• Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

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