BIOLOGICAL TECHNICAL REPORT

FOOTHILL PARKWAY EXTENSION PROJECT SITE

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TABLE OF CONTENTS

Section **Page**

1.0 Introduction 1
1.1 Project Location and Description 1
1.2 Regional Environmental Setting 2
1.2.1 Climate 2
2.0 Survey Methodologies 3
2.1 Vegetation Mapping and General Plant Surveys 3
2.2 General Wildlife Surveys 4
2.3 Focused Surveys 4
2.3.1 Special Status Plant Species 4
2.3.2 Arroyo Toad 5
2.3.3 Burrowing Owl 5
2.3.4 Least Bell's Vireo 6
2.4 Native Tree Survey 6
3.0 Existing Biological Resources 7
3.1 Vegetation Types 7
3.1.1 Coastal Sage Scrub 8
3.1.2 Coastal Sage Scrub/Chaparral 8
3.1.3 Coastal Sage Scrub/Ruderal 8
3.1.4 California Buckwheat-Scalebroom Alluvial Scrub 8
3.1.5 Chaparral 8
3.1.6 Non-native Grassland 8
3.1.7 Fremont Cottonwood-Willow Riparian Woodland 9
3.1.8 Willow Riparian Woodland 9
3.1.9 Western Sycamore-Coast Live Oak Alluvial Scrub 9
3.1.10 Coast Live Oak Woodland 9
3.1.11 Mule Fat Scrub 9
3.1.12 Mule Fat Scrub-Willow Riparian Woodland 9
3.1.13 Ruderal 10
3.1.14 Ornamental 10
3.1.15 Ornamental/Developed 10
3.1.16 Disturbed 10
3.1.17 Developed/Ruderal 10
3.1.18 Developed 10
3.2 Wildlife 11
3.2.1 Fish 11
3.2.2 Amphibians 11
3.2.3 Reptiles 11
3.2.4 Birds 11
3.2.5 Mammals 12
3.2.6 Wildlife Movement 13
3.3 Special Status Biological Resources 15
3.3.1 Definitions of Special Status Biological Resources 16
3.3.2 Special Status Plants 19
3.3.3 Special Status Wildlife 26
3.4 Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) 48
4.0 Project Impacts 49
4.1 Introduction 49
4.2 Significance Criteria 50
4.3 Direct Impacts 50

TABLE OF CONTENTS
(Continued)

Section **Page**

4.3.1 Plant and Vegetation Type Impacts 50
4.3.2 Wildlife Impacts 53
4.3.3 Special Status Biological Resource Impacts 54
4.4 Urban/Wildlands Interface (Indirect Impacts) 62
4.4.1 Urban and Stormwater Runoff (Drainage) 63
4.4.2 Toxic Material 63
4.4.3 Lighting 63
4.4.4 Noise 63
4.4.5 Exotic Plant and Animal Infestations 63
4.4.6 Trampling and Unauthorized Recreational Use (Barriers) 64
4.4.7 Grading/Land Development 64
4.4.8 Construction Impacts 64
4.4.9 Trash/Debris 64
4.4.10 Dust 65
4.5 Public/Quasi-public Lands 65
5.0 Mitigation Measures 65
6.0 Consistency With the MSHCP 74
6.1 Criteria Areas/Cores and Linkages 74
6.2 Riparian/Riverine Resources 74
6.3 Vernal Pools/Fairy Shrimp 75
6.4 USACE/RWQCB/CDFG Jurisdictional Areas 75
6.5 Urban Wildlands Interface 75
6.6 Narrow Endemic/Criteria Area Plant Species 75
6.7 Additional Survey Needs Species 75
6.8 Public/Quasi-public Lands 75
7.0 Level of Significance After Mitigation 76
8.0 References 76

LIST OF TABLES

Table **Page**

1 Vegetation Types on the Project Site 7
2 Special Status Plant Species Known to Occur in the Project Vicinity 21
3 Special Status Wildlife Species Known to Occur in the Project Vicinity 26
4 Vegetation Impacts of the Proposed Project 51
5 Potential Additional Impacts Resulting From Widening of Mabey Canyon Road 53
6 Special Status Plant Species MSHCP Status/Impacts 55
7 Special Status Wildlife Species MSHCP Status/Impacts 56
8 Mitigation Required for Project Impacts 67

LIST OF EXHIBITS

Exhibit		Follows Page
1	Regional Location	1
2	Local Vicinity	1
3	Aerial Photograph	1
4	Biological Resources	7
5	Soils	7
6	Special Status Biological Resources	23
7	Special Status Wildlife Species Locations	41
8	Project Impact	49

APPENDICES

A Plant and Wildlife Compendia
B Special Status Plant Species
C Arroyo Toad
D Burrowing Owl
E Least Bell's Vireo
F Native Tree Survey
G Jurisdictional Delineation

1.0 INTRODUCTION

This Biological Technical Report has been prepared to support California Environmental Quality Act (CEQA) documentation for the proposed Foothill Parkway Extension project (hereafter referred to as the proposed project). This information has been reported in accordance with accepted scientific and technical standards that are consistent with the requirements of the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), and the western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

1.1 PROJECT LOCATION AND DESCRIPTION

The proposed project is located in the southern portion of the City of Corona (Exhibit 1). The approximately 150-acre project site is located along the northeastern base of the Santa Ana Mountains on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle (Exhibit 2). The proposed project transects both private and public properties within the City of Corona and County of Riverside, and is located immediately adjacent to the Cleveland National Forest (Exhibit 3). Existing and surrounding land uses consist of agriculture, residential development and open space, including the adjacent Cleveland National Forest.

The proposed alignment traverses undeveloped terrain generally in an east-west direction; would cross the Mabey Canyon Debris Basin; and would traverse a 108-inch Metropolitan Water District (MWD) feeder line southeast of Paseo Grande. The survey area includes the proposed alignment and a 100-foot buffer around it. Topography through the alignment generally ranges from gently sloping terraces transected by ravines in the eastern and western portions of the alignment to steep mountainous terrain in the central portion of the alignment. Portions of Wardlow Wash and Mabey Canyon drainage are on the project site; multiple unnamed blue-line streams also enter the project site from canyons to the west in the Cleveland National Forest. Elevations range from approximately 800 to 1,300 feet above mean sea level (msl).

The proposed project would involve the extension of Foothill Parkway as a 4-lane roadway, from its existing terminus approximately 500 feet west of Skyline Drive to Green River Road; a distance of approximately 2 miles. At Skyline Drive, the roadway would veer to the west into unincorporated Riverside County and continue in an east-west direction along the City/County boundary. The alignment would then curve to the north and connect with Green River Road in the vicinity of Paseo Grande. A bridge structure is incorporated into the roadway design to protect the 108-inch Metropolitan Water District feeder line located southeast of Paseo Grande. Roadway improvements would require right-of-way acquisition for roadway improvements, slopes, and drainage facilities. The proposed project also includes three new signalized intersections. Green River Road in the vicinity of Paseo Grande is paved as a two-lane roadway and would be improved to four lanes from Paseo Grande to Tanglewood Drive as part of the proposed project.

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Regional Location

Exhibit 1

Foothill Parkway Extenson, Riverside County, California

N W E S

10 5 0 10 Miles

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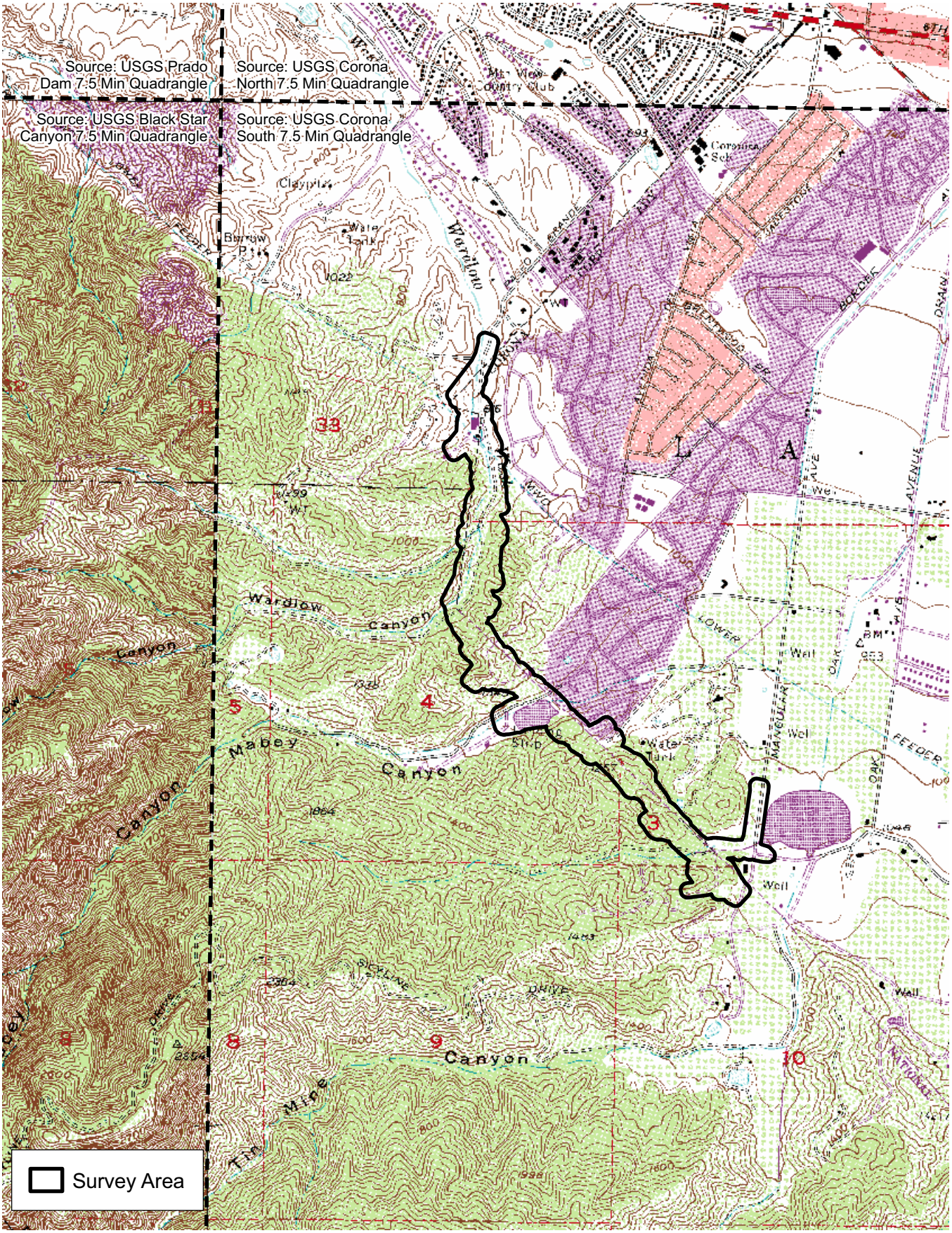

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Local Vicinity

Exhibit 2

Foothill Parkway Extenson, Riverside County, California

N W E S

2,000 1,000 0 2,000 Feet

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Aerial Photograph

Exhibit 3

Foothill Parkway Expansion

N W E S

1,600 800 0 1,600 Feet

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The primary purpose of the Foothill Parkway Westerly Extension project is to complete a critical east/west connection from its current terminus, approximately 500 feet west of Skyline Drive to Green River Road. The roadway extension would alleviate existing traffic congestion on the local circulation network and accommodate traffic generated by approved and planned development in south Corona. The operation goal for the roadway is to achieve a level of service (LOS) "D" which has been adopted by the City as the standard for local streets and arterial highways. It is the City's goal to identify the most cost-effective improvements that would be compatible with existing and future adjoining improvements along Foothill Parkway.

The following objectives were incorporated into project design to minimize impacts on biological resources:

- Provide a roadway design that is sensitive to the environmental resources and minimizes, to the extent feasible, impacts to sensitive plant and wildlife species, while providing adequate geometric design to minimize safety hazards and maximize operational efficiency;
- Develop a roadway design that is compatible with the provisions of the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP); and
- Avoid impacts to the Cleveland National Forest.

1.2 REGIONAL ENVIRONMENTAL SETTING

The proposed project is location at the northeastern base of the Santa Ana Mountains, which comprise the northwestern extent of the Peninsular Ranges. The Santa Ana River Canyon separates the Santa Ana Mountains from Chino Hills. The 567,000-acre Cleveland National Forest is located immediately adjacent to the west of the project site. Prado Flood Control Basin (hereafter referred to as Prado Basin) and the Santa Ana River are located approximately 1.5 miles north of the project site. Chino Hills State Park is located approximately 1.9 miles northwest of the project site. Fresno Canyon, within the Cleveland National Forest, is located approximately 1.5 miles west of the project site. Sierra Peak, also within the Cleveland National Forest is located approximately 2 miles west of the project site.

The project site is located within the Temescal Canyon Area Plan of the Western Riverside MSHCP area; however, the project site is not located in the designated Criteria Area.

1.2.1 <u>Climate</u>

Southern California experiences a Mediterranean climate, characterized by mild, rainy winters and hot, dry summers. There can also be dramatic differences in rainfall from year to year. Consequently, the vegetation types consist of drought-tolerant, woody, shrubs and trees, and annual, fall-sprouting grasses (World Climate 2003).

The temperature is moderated by the coastal influence of the Pacific Ocean, making for mild conditions through most of the year. The stable atmosphere creates cloudless conditions, giving the dry summer subtropical climate many days of sunshine (Ritter 2003).

The most distinguishing characteristic of a Mediterranean climate is its seasonal precipitation. In southern California, precipitation is characterized by brief, intense storms between November and March. It is not unusual for a majority of the annual precipitation to fall during a few storms over a close span of time. Rainfall patterns are subject to extreme variations from year to year and longer term wet and dry cycles. Average annual rainfall for the Cleveland National Forest is 15 to 35 inches (USFS 2005).

2.0 SURVEY METHODOLOGIES

The data provided in this report is derived from general and focused surveys of all or portions of the project site conducted by BonTerra Consulting in 1999–2000 and 2006–2008. In addition, other pertinent information was obtained from studies and other documentation prepared by biologists who have previously conducted research in the immediate vicinity of the project site, including a Habitat Assessment and focused survey reports prepared for the adjacent Far West Housing project (Gonzales Environmental Consulting 2006).

BonTerra Consulting conducted a literature search to identify special status plants, wildlife, and habitats known to occur in the vicinity of the project site. Sources reviewed include the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2006, 2007, and 2008), CDFG's California Natural Diversity Database (CNDDB) (CDFG 2006a, 2007a), and compendia of special status species published by the USFWS and CDFG.

2.1 VEGETATION MAPPING AND GENERAL PLANT SURVEYS

Vegetation mapping and general plant surveys were conducted on October 25 and November 3, 1999, by BonTerra Consulting Senior Biologist Brian Daniels and Senior Botanist Sandra Leatherman. These surveys were updated to reflect current conditions on June 6, 2006, by Ms. Leatherman and BonTerra Consulting Ecologist Amber Oneal. Additional mapping was conducted on August 1, 2007, by Ms. Leatherman and Ms. Oneal to accommodate minor changes in project design. More detailed mapping of riparian vegetation types was conducted by Ms. Leatherman and BonTerra Consulting Ecologist Jennifer Pareti on April 22, 2008. The purpose of the surveys was to describe the vegetation present on the project site and evaluate the potential of the habitats to support special status species. All plant species observed were recorded in field notes and are listed in Table A-1 of Appendix A.

Plant species were identified in the field or collected for later identification. Plants were identified using taxonomic keys in Hickman (1993), Munz (1974), and Abrams (1923–1951, 1960). Taxonomy follows Hickman (1993) or current scientific journals for scientific and common

names. Vegetation on the project site was classified into vegetation types based on the Riverside County MSHCP.

2.2 GENERAL WILDLIFE SURVEYS

General wildlife surveys were conducted concurrently with the vegetation mapping in 1999. These surveys were updated to reflect current conditions on May 15, 2006, by Mr. Daniels and Ms. Oneal. General observations of wildlife were also noted during all focused surveys in 2000 and 2006, during the additional vegetation mapping on August 1, 2007, and during focused surveys in 2008. All wildlife species observed were recorded in field notes and are listed in Table A-2 of Appendix A.

During the surveys, each vegetation type was evaluated for its potential to support special status species that are known or expected to occur in the region. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic signs, including scat, footprints, scratch-outs, dust bowls, burrows, and trails. Taxonomy and nomenclature for wildlife generally follows Stebbins (2003) for amphibians and reptiles, American Ornithologists Union (1998) for birds, and Baker et al. (2003) for mammals.

2.3 FOCUSED SURVEYS

Focused survey reports, documenting the surveys described below, are included in their entirety for reference as Appendices B through E.

2.3.1 Special Status Plant Species

Spring botanical surveys were conducted on the project site on April 24 and 27 and June 7, 2000, by Ms. Leatherman and David Bramlet, Consulting Biologist. Spring botanical surveys were repeated on June 22, 2006, by Ms. Leatherman and BonTerra Consulting Botanist Andrea Warniment. Prior to the 2006 surveys, a known reference population of the focal species was visited to ensure timing of the survey was appropriate. During the surveys, all areas of the project site containing native habitats potentially suitable for special status plant species having the potential to occur on the project site, as determined in previous biological surveys, were sampled using meandering transects. Field notes were taken during the surveys. The location of each special status plant population found on the project site was mapped using a geographic positioning system (GPS) unit. Voucher specimens were collected and deposited in the Rancho Santa Ana Botanic Garden or University of California, Riverside to ensure accuracy in the identification. Results of the special status plant surveys are included in Appendix B.

Focused surveys to quantify and flag intermediate mariposa lilies (*Calochortus weedii* var. *intermedius*) and Coulter's matilija poppy (*Romneya coulteri*) in preparation for proposed mitigation activities were conducted on May 15 and 22, 2008, by Ms. Leatherman, Ms. Pareti,

and BonTerra Consulting Ecologist Allison Rudalevige. Prior to the flagging, a known location of the intermediate mariposa lily and Coulter's matilija poppy within the survey area, were monitored to ensure the plants were blooming. The entire area was then surveyed using meandering transects, concentrating on locations where these species had been observed during previous surveys in 2000 and 2006. The intermediate mariposa lilies were flagged directly adjacent to the plant with green, yellow, or orange pin flags. Red and white striped flagging was placed on the large shrubby Coulter's matilija poppy. One location of each species could not be flagged due to steep slopes and dense vegetation. GPS points for each location were recorded in the field. Results of these surveys are also included in Appendix B.

2.3.2 Arroyo Toad

Focused surveys for the arroyo toad (*Bufo californicus*) were conducted on the project site on March 17, 28, and 29; April 28; May 18; June 5; and July 3, 2000, by Consulting Biologist Brian Leatherman. Focused surveys for the arroyo toad followed the guidelines developed by the USFWS (1999). Surveys were conducted along creek margins in the riparian woodland vegetation. The current USFWS guidelines require that six surveys be conducted at least seven days apart during the breeding season (generally between March 15 and July 1). Each survey includes a daytime and nighttime component. Daytime surveys are primarily spent searching for eggs, larvae, and juveniles within and along the stream margins. Nighttime surveys, which are conducted between one hour after dusk and midnight, are primarily for detection and identification of calling adults in suitable breeding locations along the stream, and for foraging individuals in the adjacent riparian area. All surveys were conducted under suitable weather conditions. Results of the arroyo toad surveys are included in Appendix C.

These surveys were not updated during the current surveys because this species is covered by the Western Riverside MSHCP.

2.3.3 Burrowing Owl

Focused surveys for burrowing owl followed the Burrowing Owl Survey Instructions for the Western Riverside MSHCP Area (County of Riverside 2006). These guidelines outline a survey methodology that includes a habitat assessment, a focused burrow survey, and four focused owl surveys. A habitat assessment for burrowing owl (*Athene cunicularia*) was conducted on May 4, 2006, by Mr. Daniels and Ms. Oneal. A burrow survey within the area considered to be suitable for the species (i.e., Mabey Canyon debris basin) was conducted by Ms. Oneal and Ms. Rudalevige on June 27, 2006. Focused surveys were conducted within suitable habitat on the project site on July 11 and 25, and August 3 and 10, 2006, by Ms. Oneal with assistance from Ms. Rudalevige, Ms. Pareti, and Intern Beth Cecil. The burrow survey and focused surveys were conducted by walking in transects to ensure 100 percent visual coverage of suitable habitat on the project site. The focused surveys were conducted during the breeding season (March 1 to August 31) either in the morning from one hour before sunrise to two hours after sunrise or in the evening from two hours before sunset to one hour after sunset. The first two

focused surveys were conducted in the morning, and the last two visits were conducted in the evening. Results of the burrowing owl surveys are included in Appendix D.

Focused surveys for this species were repeated following the same methodology in 2008. The burrow survey was conducted by Ms. Oneal on April 21 and May 2, 2008. Focused owl surveys were conducted by Ms. Oneal on May 12, June 2, 12, and 23, 2008. All surveys were conducted within two hours of sunrise. The results of these surveys are also included in Appendix D.

2.3.4 Least Bell's Vireo

Focused surveys for the least Bell's vireo (*Vireo bellii pusillus*) were conducted on the project site on April 13; May 5, 12, and 22; June 1, 16, and 27; and July 10, 2000, by Mr. Leatherman. Surveys were repeated on May 4, 15, and 26; June 5, 15, and 27; and July 11 and 25, 2006, by Mr. Daniels and Ms. Oneal, with assistance from Ms. Rudalevige and Ms. Cecil. Focused surveys for least Bell's vireo followed guidelines developed by the USFWS (1999). The guidelines require that at least eight surveys be conducted from April 10 to July 31 with a ten-day interval between each site visit. Surveys were conducted within and along the edge of riparian woodland. Taped vocalizations were not used. All surveys were conducted under suitable weather conditions and during early morning hours when bird activity is at a peak. Results of the surveys are included in Appendix E.

Focused surveys for this species were repeated in 2008 following the same methodology. A total of eight surveys were conducted on April 11, 21; May 2, 12, 22; and June 2, 12, and 23, 2008. All surveys were conducted by Ms. Oneal. The results of these surveys are also included in Appendix E.

2.4 NATIVE TREE SURVEY

The project site was surveyed by BonTerra Consulting Certified Arborist David Hughes with the assistance of Ecologist Kimberly Oldehoeft and Botanist Andrea Edwards on December 5 and 14, 2007, and January 11, 29, and 30, 2008. The survey area was defined as the proposed impact area for the project with an additional 100-foot buffer area. Each tree that was surveyed was mapped on a 100-scale (1″=100′) aerial photograph in the field. In addition, each tree location was recorded using a hand-held geographic position system (GPS) device.

Native tree species assessed during this survey included coast live oak (*Quercus agrifolia*), scrub oak (*Quercus berberidifolia*), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), and black willow (*Salix goodingii*). During the survey, each tree was tagged and the following data were collected: trunk diameter at breast height (dbh), tree height, canopy width, aesthetics, and overall health. The data collected are included in Appendix F.

3.0 EXISTING BIOLOGICAL RESOURCES

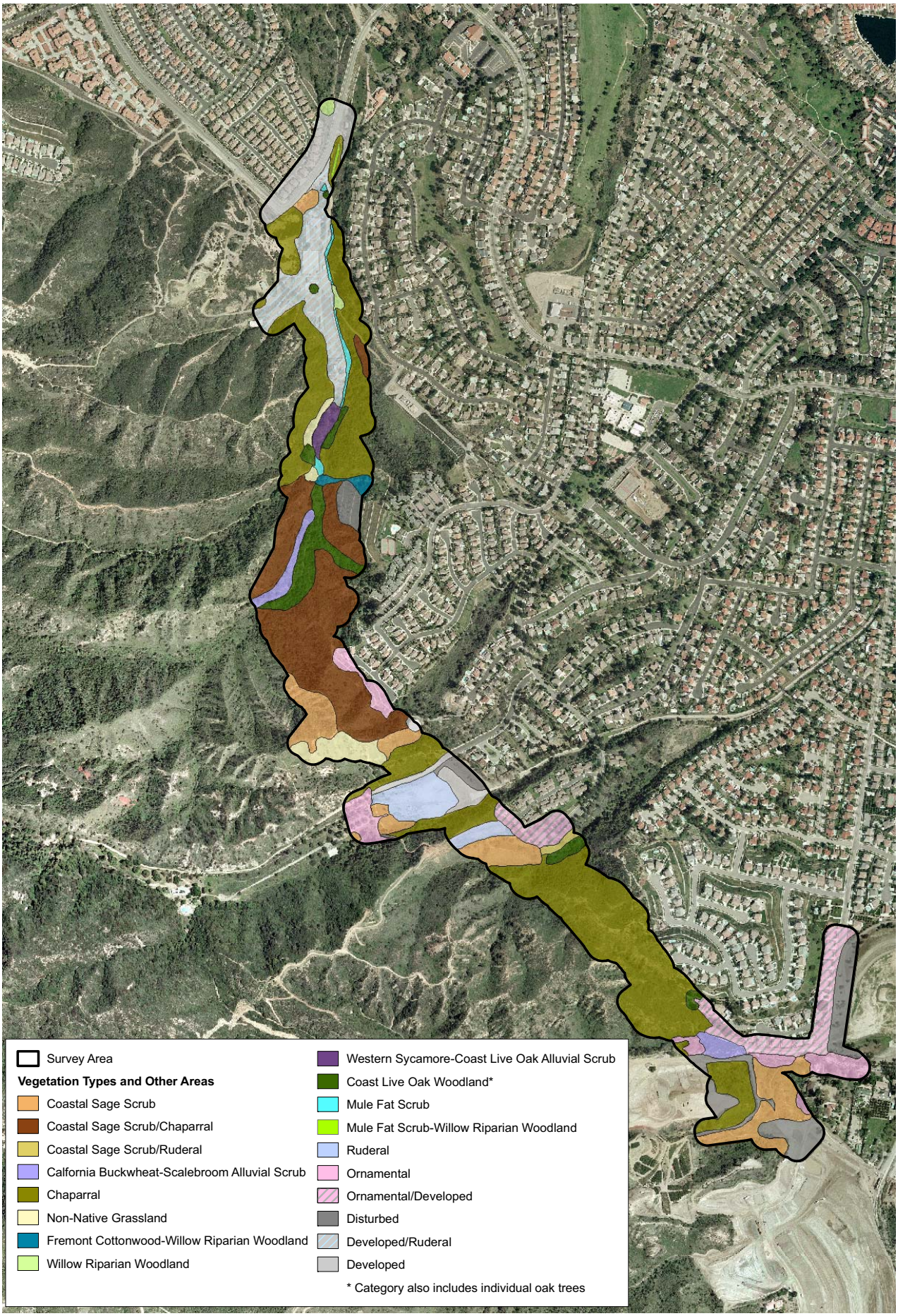
This section describes the biological resources that occur or potentially occur on the project site. Vegetation types, wildlife populations and movement patterns, special status vegetation types, and special status plant and wildlife species, either known to occur or potentially occurring in the project site, are discussed below.

3.1 VEGETATION TYPES

Eighteen vegetation types and other areas occur on the project site (Exhibit 4; Table 1). Vegetation types and other areas mapped on the project site include coastal sage scrub, coastal sage scrub/chaparral, coastal sage scrub/ruderal, California buckwheat-scalebroom alluvial scrub, chaparral, non-native grassland, Fremont cottonwood-willow riparian woodland, willow riparian woodland, western sycamore-coast live oak alluvial scrub, coast live oak woodland, mule fat scrub, mule fat scrub-willow riparian woodland, ruderal, ornamental, ornamental/developed, disturbed, developed/ruderal and developed areas. Soil types on the project site include Cieneba sandy loam, Garretson gravelly very fine sandy loam, Soboba gravelly loamy sand, Yorba gravelly and cobbly sandy loam, Cortina gravelly coarse sandy loam, Perkins gravelly loam, and Terrace escarpments (Exhibit 5).

TABLE 1
VEGETATION TYPES ON THE PROJECT SITE

Vegetation Type	Existing (Acres)
Coastal Sage Scrub	14.00
Coastal Sage Scrub/Chaparral	22.54
Coastal Sage Scrub/Ruderal	0.47
California Buckwheat-Scalebroom Alluvial Scrub	2.67
Chaparral	47.92
Non-native Grassland	3.65
Fremont Cottonwood-Willow Riparian Woodland	0.75
Willow Riparian Woodland	0.52
Western Sycamore-Coast Live Oak Alluvial Scrub	0.97
Coast Live Oak Woodland	5.93
Mule Fat Scrub	0.87
Mule Fat Scrub-Willow Riparian Woodland	0.13
Ruderal	5.11
Ornamental	6.90
Ornamental/Developed	8.80
Disturbed	10.39
Developed/Ruderal	9.50
Developed	7.48
Total	**148.60**



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Vegetation Types

Exhibit 4

Foothill Parkway Extension, Riverside County, California

N W E S

800 400 0 800 Feet

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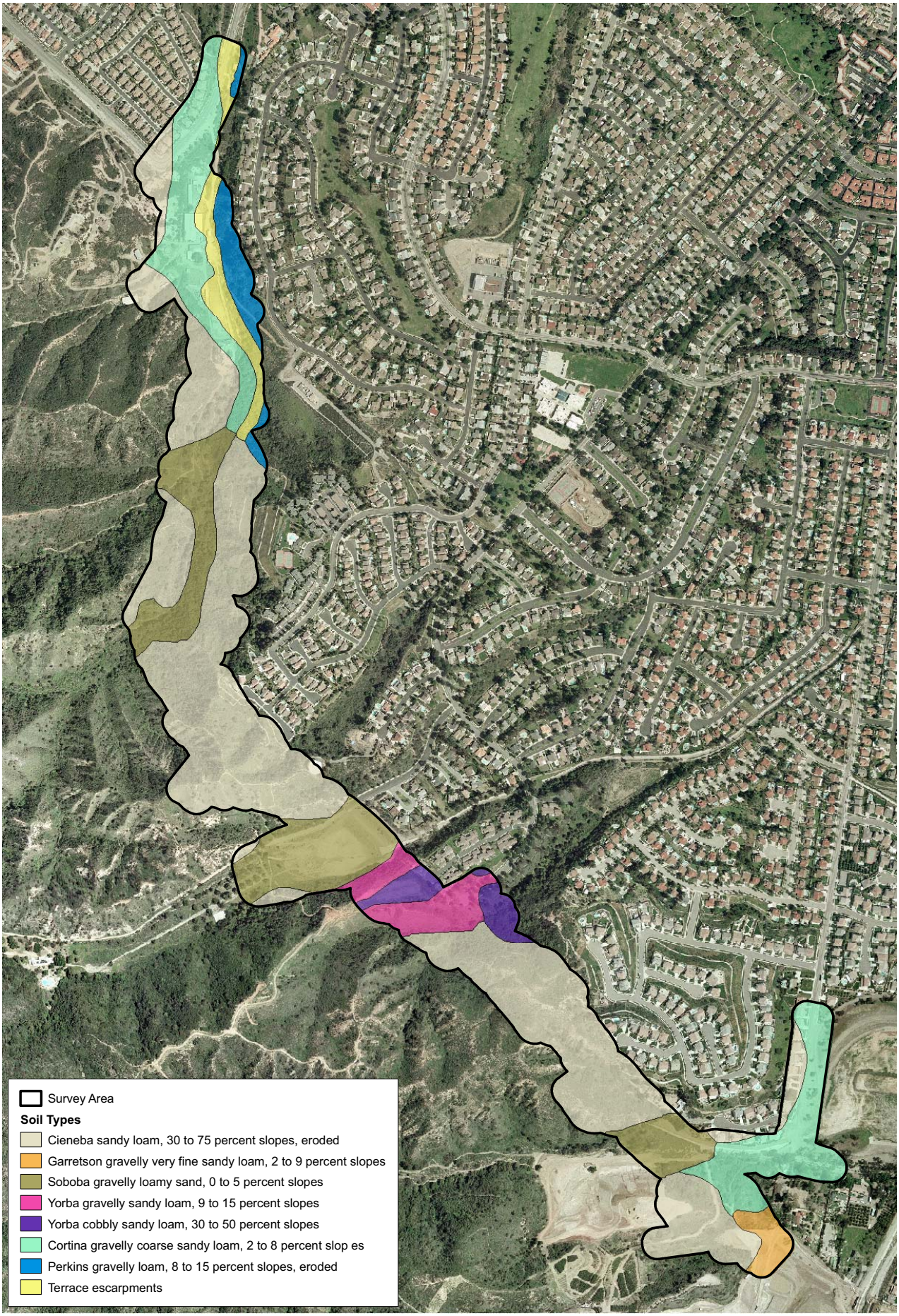

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Soil Types

Exhibit 5

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

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3.1.1 Coastal Sage Scrub

Coastal sage scrub on the project site consists of California sagebrush-California buckwheat sage scrub. This vegetation type occurs throughout the project site in pockets in the chaparral and in isolated patches. This vegetation contains a mix of shrubs and herbaceous species. The dominant native perennial species on the project site include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), orange-bush monkey flower (*Mimulus aurantiacus*), giant wild rye (*Leymus condensatus*), and deerweed (*Lotus scoparius*).

3.1.2 Coastal Sage Scrub/Chaparral

Coastal sage scrub/chaparral vegetation occurs in the northern half of the project site. The coastal sage scrub/chaparral is a mixture of chaparral with pockets of sage scrub species that are too small to delineate on the vegetation map. This vegetation type includes chamise (*Adenostoma fasciculatum*), hoaryleaf ceanothus (*Ceanothus crassifolius*), laurel sumac (*Malosma laurina*), scrub oak, California sagebrush, and California buckwheat.

3.1.3 Coastal Sage Scrub/Ruderal

Coastal sage scrub/ruderal vegetation occurs in the central portion of the project site. This area is directly adjacent to a road and residences and contains a mixture of sage scrub species, ornamental species and ruderal species. This area is dominated by California sagebrush, rock rose (*Cistus purpureus*), tocalote (*Centaurea melitensis*), and ripgut brome (*Bromus diandrus*).

3.1.4 California Buckwheat-Scalebroom Alluvial Scrub

Alluvial areas occur in the middle of the northern portion of the project site and in the southern portion of the project site. Disturbed alluvial scrub occurs adjacent to the debris basin at the end of Mabey Canyon on the project site. This area has been previously disturbed by fire suppression and debris basin maintenance. Alluvial areas are dominated by scale-broom (*Lepidospartum squamatum*) and California buckwheat.

3.1.5 Chaparral

Chaparral vegetation occurs throughout the project site, covering much of the southern half of the project site. This vegetation type is a mix of chaparral species including chamise, hoaryleaf ceanothus, laurel sumac, scrub oak, hairy lilac (*Ceanothus oliganthus*), toyon (*Heteromeles arbutifolia*), sugar bush (*Rhus ovata*), and Our Lord's candle (*Yucca whipplei*).

3.1.6 Non-native Grassland

Non-native grasslands occur in the central and northern portions of the project site. These areas are dominated by black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), and red brome (*Bromus madritensis*).

3.1.7 Fremont Cottonwood-Willow Riparian Woodland

Fremont cottonwood-willow riparian woodland occurs in the northern portion of the project site in Wardlow Wash. This vegetation type is co-dominated by Fremont cottonwood, black willow, narrow-leaved willow (*Salix exigua*), lance-leaved willow (*Salix lucida*), mule fat (*Baccharis salifolia*), and western false indigo (*Amorpha fruticosa*). The active stream channel in this vegetation type is rocky with little vegetation.

3.1.8 Willow Riparian Woodland

Willow riparian woodland occurs in the northern portion of the project site; one patch is north of Paseo Grande and one patch is located along the narrow portion of the wash adjacent to the horse stables. This vegetation type is dominated by a mix of black willow and lance-leaved willow with mule fat occurring in the understory.

3.1.9 Western Sycamore-Coast Live Oak Alluvial Scrub

Western sycamore-coast live oak alluvial scrub occurs in Wardlow Wash in the northern portion of the project site. This vegetation type is adjacent to the intermittent steam that has a rocky bottom. The dominant species are coast live oak and western sycamore. The understory is moderate in quality and contains western false indigo, mule fat, California brickellbush (*Brickellia california*), thickleaf yerba santa (*Eriodictyon crassifolium*), scale-broom, and tarragon (*Artemisia dracunculus*).

3.1.10 Coast Live Oak Woodland

Coast live oak woodland vegetation occurs in two small patches in the northern and central portions of the project site. These areas are dominated by coast live oak. Other species present in this area include toyon, laurel sumac, and poison oak (*Toxicodendron diversilobium*). In addition to the woodlands, this vegetation category also includes a few individual coast live oak trees that occur within the horse stables.

3.1.11 Mule Fat Scrub

Mule fat scrub occurs in the drainage adjacent to the horse stables in the northern portion of the project site. This vegetation type is dominated by mule fat with scattered upland species including scale-broom, California sagebrush, and California buckwheat. The banks adjacent to this vegetation type were burned during the fire in Fall 1999.

3.1.12 Mule Fat Scrub-Willow Riparian Woodland

Mule fat scrub-willow riparian woodland occurs in the northern portion of the project site along the drainage adjacent to the horse stables, just south of Paseo Grande. This vegetation type is dominated by mule fat scrub with scattered mature willows.

3.1.13 Ruderal

Ruderal vegetation occurs in patches along the alignment with the largest ruderal area being the existing Mabey Canyon Debris Basin. Species present in ruderal areas include non-native species and weedy native species. On the project site, these species include tree tobacco (*Nicotiana glauca*), Bermuda grass (*Cydnodon dactylon*), telegraph weed (*Heterotheca grandifolia*), black mustard, Russian thistle, red brome, and castor bean (*Ricinus communis*).

3.1.14 Ornamental

Ornamental vegetation occurs in the southern half of the project site. These areas include residential areas, green belts, and nurseries. The species present include ornamental pines (*Pinus* sp.), crawling acacia (*Acacia redolens*), California fan palm (*Washingtonia filifera*), and hottentot fig (*Carpobrotus edulis*).

3.1.15 Ornamental/Developed

Ornamental/Developed areas occur in the southern half of the project site and consist of developed areas with ornamental vegetation interspersed. These areas are primarily residential development.

3.1.16 Disturbed

The area mapped as disturbed occurs at the southern end of the project site. This area was being graded at the time of the 2006 vegetation mapping. No vegetation was present in these areas during the vegetation mapping.

3.1.17 Developed/Ruderal

Developed/ruderal areas occur in the northern portion of the project site and consist of the horse stable and associated facilities. These areas have permanent buildings, portable trailers, horse corrals and dirt roads. There is scattered non-native weedy vegetation throughout this area. Common species include tree tobacco, telegraph weed, and non-native grasses (*Bromus* spp.).

3.1.18 Developed

Developed areas occur in the central and southern portions of the project site. These areas consist of the concrete areas in the Mabey Canyon Debris Basin, a concrete-lined channel, existing paved roads, and residential and water district structures.

3.2 WILDLIFE

Wildlife species observed or expected to occur on the project site are discussed below.

3.2.1 Fish

Most creeks and waterways in southern California are subject to periods of high water flow in winter and spring and little to no flow during late summer and fall. The streams on the project site are ephemeral and flow primarily after periods of rain. No running water and no substantial ponding was observed on the project site. Therefore, no fish species are expected to occur on the project site.

3.2.2 Amphibians

Amphibians require moisture for at least a portion of their life cycle and many require standing or flowing water for reproduction. Terrestrial species may or may not require standing water for reproduction. These species are able to survive in dry areas by aestivating (i.e., remaining beneath the soil in burrows or under logs and leaf litter, and emerging only when temperatures are low and humidity is high). Many of these species' habitats are associated with water and they emerge to breed once the rainy season begins. Soil moisture conditions can remain high throughout the year in some habitat types depending on factors such as amount of vegetation cover, elevation, and slope aspect.

No amphibian species were observed during the surveys. However, the ephemeral streams on the project site have the potential to support species such as the western toad (*Bufo boreas*) and Pacific treefrog (*Pseudacris* [*Hyla*] *regilla*).

3.2.3 Reptiles

Reptilian diversity and abundance typically varies with vegetation type and character. Many species prefer only one or two vegetation types; however, most species will forage in a variety of habitats. Most species occurring in open areas use rodent burrows for cover, protection from predators, and refuge during extreme weather conditions.

Reptile species observed or expected to occur in most habitats on the project site include western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), western skink (*Eumeces skiltonianus*), southern alligator lizard (*Elgaria multicarinata*), California whipsnake (*Masticophis lateralis*), gopher snake (*Pituophis catenifer*), common kingsnake (*Lampropeltis getula*), and western rattlesnake (*Crotalus oreganus*).

3.2.4 Birds

A variety of bird species are expected to be residents on the project site, using the habitats throughout the year. Other species are present only during certain seasons. For example, the

white-crowned sparrow (*Zonotrichia leucophrys*) is expected to occur on the project site during the winter season and will then migrate north in the spring to breed during the summer.

The coastal sage scrub and chaparral vegetation types on the project site support an avifauna that is comprised of species adapted to dense, low vegetation. Although large numbers of individuals can often be found inhabiting these vegetation types, species diversity is usually low to moderate, depending on the season. A relatively high proportion of the birds breeding in these habitats are year-round residents. Bird species that are common residents of coastal sage scrub and chaparral habitats observed on the project site include California quail (*Callipepla californica*), Bewick's wren (*Thryomanes bewickii*), wrentit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), spotted towhee (*Pipilo maculatus*), and California towhee (*Pipilo crissalis*). During the winter months, coastal sage scrub and chaparral vegetation provides habitat for a variety of species that migrate from breeding grounds further north. Winter residents of coastal sage scrub and chaparral habitats observed on the project site include hermit thrush (*Catharus guttatus*) and white-crowned sparrow.

Riparian habitats are extremely important to birds, providing food, cover, and breeding habitat for a wide variety of species throughout the year. Species observed that are residents of this habitat on the project site include mourning dove (*Zenaida macroura*), black-chinned hummingbird (*Archilochus alexandri*), Anna's hummingbird (*Calypte anna*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), and song sparrow (*Melospiza melodia*). Riparian areas provide important foraging habitat for a large number and variety of passerines (song birds) during spring and fall migration. Migrating passerine species observed on the project site include Pacific-slope flycatcher (*Empidonax difficilis*), black-throated gray warbler (*Dendroica nigrescens*), Townsend's warbler (*Dendroica townsendi*), and Wilson's warbler (*Wilsonia pusilla*).

The turkey vulture (*Cathartes aura*), a scavenger, was observed on the project site. Raptors (birds of prey) observed on the project site include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). These raptors may also nest on the project site.

3.2.5 Mammals

As with other taxonomic groups, the presence of different vegetation types on the project site offers mammals a variety of habitats. This variety, in turn, is expected to support a relatively high diversity and abundance of mammals on the project site.

Small, ground-dwelling mammals observed on the project site include California ground squirrel (*Spermophilus beecheyi*) and desert cottontail (*Sylvilagus audubonii*). Other small mammals expected to occur on the project site include deer mouse (*Peromyscus maniculatus*), California

pocket mouse (*Perognathus californicus*), woodrat (*Neotoma* sp.), and pocket gopher (*Thomomys bottae*).

Bats occur throughout most of southern California and may use any portion of the project site as foraging habitat. The riparian forest and oak woodland vegetation types on the project site provide potential roosting opportunities. Most of the bats that could potentially occur on the project site are inactive during the winter and either hibernate or migrate, depending on the species. Bats were incidentally observed foraging over the Mabey Canyon Debris Basin during the burrowing owl evening surveys. Identification of bat species requires equipment to measure the frequency of the calls; therefore, the bats were not identified. However, several bat species would be expected to occur on the project site include big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus*), western pipistrelle (*Pipistrellus hesperus*), and hoary bat (*Lasiurus cinereus*).

Large mammals observed on the project site included mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), and bobcat (*Felis rufus*). Other large mammals expected to occur on project site include the gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), common raccoon (*Procyon lotor*), and mountain lion (*Puma* [*Felis*] *concolor*).

3.2.6 Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated “islands” of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967; Soule 1987; Harris and Gallagher 1989; Bennett 1990). Corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events, such as fire or disease, will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other necessary resources (Noss 1983; Farhig and Merriam 1985; Simberloff and Cox 1987; Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (e.g., foraging for food or water, defending territories, or searching for mates, breeding areas, or cover). A number of terms such as “wildlife corridor,” “travel route,” “habitat linkage,” and “wildlife crossing” have been used in various wildlife movement studies to refer to areas in which wildlife move from one

area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows:

- *Travel route* – a landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and to provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It contains adequate food, water, and/or cover while moving between habitat areas and provides a relatively direct link between target habitat areas.

- *Wildlife corridor* – a piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors, often referred to as "habitat or landscape linkages," can provide both transitory and resident habitat for a variety of species.

- *Wildlife crossing* – a small, narrow area, relatively short in length and generally constricted in nature that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent "choke points" along a movement corridor, which may impede wildlife movement and increase the risk of predation.

It is important to note that in a large open space area in which there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and provide a variety of travel routes (e.g., canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates and will not need to cross into other large open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles such as roads and highways, the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

The project site is bordered to the south and west by the Cleveland National Forest. The areas to the north and east of the proposed road extension are developed. The project site itself is primarily undeveloped, and thus, all drainages (i.e., Wardlow, Mabey, and Tin Mine canyons) and ridgelines would be expected to function as local travel routes for wildlife.

Wardlow Wash functions as a regional wildlife corridor between the Cleveland National Forest and Prado Basin. On the project site (i.e., upstream of Paseo Grande), Wardlow Wash has a wide, uninterrupted connection with the Cleveland National Forest. Downstream of the project site, the drainage continues north and west along Palisades Drive until it comes to the railroad tracks adjacent to State Route 91 (SR-91) and State Highway 71 (Corona Expressway). SR-91 is a significant barrier to wildlife movement, but there are two locations where functional wildlife crossings may exist. The first is the railway crossing that passes under SR-91 where the drainage bends to the west, while the second is near the Corona Expressway. The railway crossing under SR-91 is fairly wide and open, with open space surrounding both sides of the crossing with limited obstruction (i.e., barbed wire fence) on the north side of the freeway and no obstructions on the south. As a result, this railroad undercrossing may serve as a wildlife crossing, especially for some of the larger mammal species.

Barriers to wildlife movement along Wardlow Wash are present north (i.e., downstream) of the project site. Three streets, Paseo Grande, Serfas Club Drive, and Palisades Drive, cross the wash. All three are fairly small streets and may allow some movement of wildlife over them, although Palisades Drive is substantially elevated. The drainage crosses under each of these three roads and is open to free movement of wildlife. The crossing under Paseo Grande and Serfas Club Drive are six-foot diameter culverts that are probably not large enough for the larger mammal species such as mountain lion and deer although these species likely cross the roads. The adjacent developments may also decrease use of this wash by some wildlife species. Open space along Wardlow Wash is very narrow in stretches, and indirect effects of urban habitats (e.g., night lighting, noise, and general human activity) may reduce the quality of the habitat for wildlife movement.

Although Wardlow Wash is considered a regional wildlife corridor, the Western Riverside MSHCP has not identified Wardlow Wash for long-term preservation as a “linkage.” Fresno Canyon, approximately 1.5 miles west of the project site, is the closest linkage (Proposed Constraine Linkage 2) identified for preservation in the Western Riverside MSHCP. Fresno Canyon provides a riparian connection between the Prado Basin/Santa Ana River (Existing Core A) and the Cleveland National Forest (Existing Core B).

3.3 SPECIAL STATUS BIOLOGICAL RESOURCES

The following section addresses special status biological resources observed, reported, or that have the potential to occur on the project site. These resources include plant and wildlife species that have been afforded special status and/or recognition by federal and state resource agencies, as well as private conservation organizations. In general, the principal reason an

individual taxon (i.e., species, subspecies, or variety) is given such recognition is the documented or perceived decline or limitations of its population size, geographic range, and/or distribution resulting in most cases from habitat loss. Tables 2 and 3 provide a summary of special status plant and wildlife species known to occur in the project vicinity including information on the status, likelihood for occurrence, and definitions for the various status designations. In addition, special status biological resources include vegetation types and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. These resources have been defined by federal, state, and local government conservation programs. Sources used to determine the special status of biological resources are as follows:

- **Plants** – *Electronic Inventory of Rare and Endangered Vascular Plants of California*. (CNPS 2006); CNDDB (CDFG 2006a); various Federal Register notices from the USFWS regarding listing status of plant species; and List of Special Vascular Plants, Bryophytes, and Lichens (CDFG 2006c).

- **Wildlife** – California Wildlife Habitat Relationships Database System (CDFG 1991); CNDDB (CDFG 2006a); various Federal Register notices from the USFWS regarding listing status of wildlife species; and List of Special Animals (CDFG 2006b).

- **Habitats** – CNDDB (CDFG 2006a).

3.3.1 Definitions of Special Status Biological Resources

A **federally Endangered species** is one facing extinction throughout all, or a significant portion of, its geographic range. A **federally Threatened species** is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The presence of any federally Threatened or Endangered species on a project site generally imposes severe constraints on development, particularly if development would result in “take” of the species or its habitat. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct. Harm in this sense can include any disturbance of habitats used by the species during any portion of its life history.

Proposed species or **Candidate species** are those officially proposed by the USFWS for addition to the federal Threatened and Endangered species list. Because proposed species may soon be listed as Threatened or Endangered, these species could become listed prior to or during implementation of a proposed development project.

The State of California considers an **Endangered species** as one whose prospects of survival and reproduction are in immediate jeopardy, a **Threatened species** as one present in such small numbers throughout its range that it is likely to become an Endangered species in the near future in the absence of special protection or management, and a **Rare species** as one present in such small numbers throughout its range that it may become Endangered if its

present environment worsens. Rare species applies to California native plants. State Threatened and Endangered species are fully protected against take unless an incidental take permit is obtained from the wildlife agencies.

California Species of Special Concern is an informal designation used by the CDFG for some declining wildlife species that are not state Candidates. This designation does not provide legal protection but signifies that these species are recognized as special status by the CDFG. Recently CDFG downlisted several species from Species of Special Concern to the **Watch List**. Although not considered special status, these species are being tracked by the CNDDB.

Species that are **California Fully Protected** and **Protected** include those protected by special legislation for various reasons, such as the mountain lion and white-tailed kite (*Elanus leucurus*). Fully Protected species may not be taken or possessed at any time. California Protected species include those species that may not be taken or possessed at any time except under special permit from the department issued pursuant to Sections 650 and 670.7 of the California Code of Regulations, or Section 2081 of the Fish and Game Code.

A species that is considered a **Special Animal** is one that is tracked by the CNDDB. Species of **Local Concern** are those that have no official status with the resource agencies, but are being watched because either there is a unique population in the region, or the species is declining in the region.

The CNPS is a local resource conservation organization that has developed an inventory of California's special status plant species (CNPS 2006). This inventory is a summary of information on the distribution, rarity, and endangerment of California's vascular plants, and is comprised of four lists. CNPS presumes that **List 1A** plant species are extinct in California because they have not been seen in the wild for many years. CNPS considers **List 1B** plants as Rare, Threatened, or Endangered throughout their range. **List 2** plant species are considered Rare, Threatened, or Endangered in California but more common in other states. **List 3** is a "review" list of plants for which more information is needed, and **List 4** is a "watch" list of plants that have limited distribution. CNPS also assigns a threat code extension to the List categories (CNPS 2006). An extension of **.1** is assigned to plants that are considered to be "seriously endangered" in California with over 80 percent of the occurrences threatened or with a high degree and immediacy of threat. Extension **.2** indicates the plant is "fairly endangered" in California (between 20 and 80 percent of the occurrences threatened). Extension **.3** is assigned to plants that are considered "not very endangered" in California with less than 20 percent of occurrences threatened. The absence of a threat code extension indicates plants lacking any threat information. The CNPS List categories and threat code extensions are summarized in Table 2.

Vegetation Types

Vegetation types or communities that support concentrations of special status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife are considered to be special status with the resource agencies. Although these vegetation types are not afforded legal protection unless they support protected species, potential impacts on them may increase concerns and mitigation suggestions by the resource agencies.

Coastal Sage Scrub

Coastal sage scrub vegetation types on the project site include coastal sage scrub, coastal sage scrub/chaparral, and coastal sage scrub/ruderal. These vegetation types are declining throughout southern California and support many special status plant and wildlife species. This vegetation type is a habitat covered by the MSHCP.

Riparian

Riparian vegetation on the project site includes California buckwheat-scalebroom alluvial scrub, Fremont cottonwood-willow riparian woodland, willow riparian woodland, western sycamore-coast live oak alluvial scrub, coast live oak woodland, mule fat scrub, and mule fat scrub-willow riparian woodland. In general, riparian vegetation can provide important biological functions for an ecosystem such as cover and water sources for wildlife, filtration of runoff water and groundwater recharge, and flood control and sediment stabilization. As a result, the resource agencies often consider these vegetation types to be important resources.

Riparian vegetation on the project site, or portions of this vegetation type, may be subject to permit conditions as regulated by the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the Clean Water Act. The riparian areas may also require a Streambed Alteration Agreement under Section 1601 of the California Fish and Game Code. In addition, the USACE would require a Section 401 Water Quality Certification, or a waiver thereof from the Regional Water Quality Control Board (RWQCB). A jurisdictional delineation was conducted by RBF Consulting in 2007 and is included in Appendix G. Per the delineation, a total of 4.63 acres of waters of the U.S. are under the jurisdiction of USACE, 4.66 acres are under the jurisdiction of the RWQCB, and 9.77 acres of streambed are under the jurisdiction of CDFG. A native tree survey determined that 64 western sycamores, 4 Fremont cottonwoods, and 6 black willows are present within riparian areas within the survey area. The survey also included oak trees, as described below.

Riparian vegetation types provide habitat for species associated with Riparian/Riverine areas as described in Section 6.1.2 of the MSHCP. If the riparian vegetation types on the project site support riparian species listed in Section 6.1.2 (e.g., least Bell's vireo, southwestern willow flycatcher), or if the riparian area provides functions and values to downstream habitat areas potentially occupied by these species, avoidance of these vegetation types is required, If

avoidance is not practicable, a Determination of Biologically Equivalent or Superior Preservation (DBESP) is required in accordance with Section 6.1.2 of the MSHCP.

Coast Live Oak Woodland

Coast live oak woodlands are declining throughout California due to residential, commercial and industrial development. Oak woodlands are an important resource in California providing aesthetic, cultural, economic, and environmental value, in addition to wildlife habitat. Individual trees require mitigation and will be incorporated into the riparian revegetation mitigation. A native tree survey determined that 181 coast live oak and 17 scrub oaks are present within the survey area.

3.3.2 Special Status Plants

Eighteen special status plant species are known to occur in the vicinity of the project. These species and their potential for occurrence are discussed below and summarized in Table 2. The special status plant survey reports are included in Appendix B.

Chaparral Sand-verbena (*Abronia villosa* var. *aurita)*

Chaparral sand-verbena is a CNPS List 1B.1 species. It typically blooms between January and September (CNPS 2006). This annual herb occurs in sandy places, primarily in coastal sage scrub and chaparral habitats (Munz 1974), and is found below approximately 5,250 feet above msl (Baldwin et al. 2002). In California, this species is known from Orange, Riverside, San Bernardino, and San Diego counties (CNPS 2006). In the vicinity of the project site, this species has historically been reported from Corona (CDFG 2006a, 1934 record), and Santa Ana River in sandy soils. Suitable habitat for chaparral sand-verbena is not present on the project site and this species was not observed during focused plant surveys.

Munz's Onion (*Allium munzii*)

Munz's onion is a federally Endangered species, a state Threatened species, and a CNPS List 1B.1 species. It typically blooms between March and May (CNPS 2006). This bulbiferous perennial herb occurs in grassy openings in coastal sage scrub at elevations between 980 and 2,950 feet above msl (Hickman 1993). In some areas, California junipers occur with it in the grassland or shrubland matrix, and the vegetation type is described as juniper woodland (e.g., Boyd 1983). This species occurs only on upland clay soils in western Riverside County (CNPS 2006). In the vicinity of the project site, this species has been reported from Temescal Valley (UCJEPS 2006).

On June 7, 2005, the USFWS published a final rule designating critical habitat for Munz's onion (USFWS 2005). This designation includes 176 acres within the Cleveland National Forest at Elsinore Peak in western Riverside County, California. The project site is not located within the

final critical habitat designation for this species. Suitable habitat for Munz's onion is not present on the project site and this species was not observed during focused plant surveys.

Braunton's Milk-vetch (*Astragalus brauntonii)*

Braunton's milk-vetch is a federally Endangered species and a CNPS List 1B.1 species. It typically blooms between February and July (CNPS 2006). This perennial herb occurs in disturbed areas in carbonate soils in chaparral at elevations below 1,500 feet above msl (Munz 1974). It occurs in Los Angeles, Orange, Riverside, and Ventura counties (CNPS 2006).

TABLE 2
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status			Results*
	USFWS	CDFG	CNPS	
Abronia villosa var. *aurita* chaparral sand-verbena	–	–	1B.1	No suitable habitat; not observed during focused surveys
Allium munzii Munz's onion	FE	ST	1B.1	No suitable habitat; not observed during focused surveys
Astragalus brauntonii Braunton's milk-vetch	FE	–	1B.1	No suitable habitat; not observed during focused surveys
Atriplex coulteri Coulter's saltbush	–	–	1B.2	No suitable habitat; not observed during focused surveys
Baccharis malibuensis Malibu baccharis	–	–	1B.1	Suitable habitat; not observed during focused surveys
Calochortus plummerae Plummer's mariposa lily	–	–	1B.2	Suitable habitat; not observed during focused surveys
Calochortus weedii var. *intermedius* intermediate mariposa lily	–	–	1B.2	Suitable habitat; observed during focused surveys
Chorizanthe polygonoides var. *longispina* long-spined spineflower	–	–	1B.2	Suitable habitat; not observed during focused surveys
Chorizanthe xanti var. *leucotheca* white-bracted spineflower	–	–	1B.2	No suitable habitat; not observed during focused surveys
Cupressus forbesii Tecate cypress	–	–	1B.1	No suitable habitat; not observed during focused surveys
Dudleya multicaulis many-stemmed dudleya	–	–	1B.2	No suitable habitat; not observed during focused surveys
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	FE	SE	1B.1	No suitable habitat; not observed during focused surveys
Lepechinia cardiophylla heart-leaved pitcher sage	–	–	1B.2	No suitable habitat; not observed during focused surveys
Nolina cismontana chaparral nolina	–	–	1B.2	Suitable habitat; not observed during focused surveys
Phacelia suaveolens ssp. *keckii* Santiago Peak phacelia	–	–	1B.3	No suitable habitat; not observed during focused surveys
Romneya coulteri Coulter's matilija poppy	–	–	4.2	Suitable habitat; observed during focused surveys
Senecio aphanactis rayless ragwort	–	–	2.2	Suitable habitat; not observed during focused surveys
Sidalcea neomexicana Salt Spring checkerbloom	–	–	2.2	No suitable habitat; not observed during focused surveys

LEGEND:

Federal (USFWS)
FE Endangered
FT Threatened
PE Proposed Endangered
PT Proposed Threatened

State (CDFG)
SE Endangered
ST Threatened
SR Rare
PE/T Proposed Endangered/Threatened

California Native Plant Society (CNPS) List Categories
List 1A Plants Presumed Extinct in California
List 1B Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
List 3 Plants About Which We Need More Information – A Review List
List 4 Plants of Limited Distribution – A Watch List

California Native Plant Society (CNPS) Threat Code Extensions
None Plants lacking any threat information
.1 Seriously Endangered in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 Fairly Endangered in California (20–80% of occurrences threatened)
.3 Not very Endangered in California (less than 20% of occurrences threatened or no current threats known)

* The surveys were only conducted during the blooming periods of the species with potential to occur on the project site that are not covered by the MSHCP.

In the vicinity of the project site, this species has been reported near Claymont Clay Mine and on the ridge between Coal and Gypsum canyons (CDFG 2006a). Suitable habitat for Braunton's milk-vetch is not present on the project site and this species was not observed during focused plant surveys.

On November 14, 2006, the USFWS published the final rule designating critical habitat for Braunton's milk-vetch (USFWS 2006). This designation includes approximately 3,300 acres in Ventura, Los Angeles, and Orange Counties, California. This designation includes 589 acres in State land (Chino Hills State Park and California Department of Fish and Game—Coal Canyon Ecological Reserve) and 243 acres of private land. The project site is not located within the final critical habitat designation for this species.

Coulter's Saltbush (*Atriplex coulteri*)

Coulter's saltbush is a CNPS List 1B.2 species. It typically blooms between March and October (CNPS 2006). This perennial herb occurs in alkaline or clay soils in coastal shrubland openings at elevations below 165 feet above msl (Hickman 1993). This species is perhaps native only to the southern coast of California (Hickman 1993). It is found in Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and San Diego counties, the Channel Islands, and Baja California, Mexico (CNPS 2006). In the vicinity of the project site, this species has historically been reported from Chino Creek, south of Ontario (CDFG 2006a). Suitable habitat for Coulter's saltbush is not present on the project site and this species was not observed during focused plant surveys.

Malibu Baccharis (*Baccharis malibuensis*)

Malibu baccharis is a CNPS List 1B.1 species. It typically blooms in August (CNPS 2006). This deciduous shrub occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland (CNPS 2006). This species occurs in Los Angeles and Orange counties (CNPS 2006). In the vicinity of the project site, this species has been reported from Fremont Canyon, north of Santiago Creek (CDFG 2006a). Suitable habitat for Malibu baccharis is present on the project site, but this species was not observed during focused plant surveys.

Plummer's Mariposa Lily (*Calochortus plummerae*)

Plummer's mariposa lily is a CNPS List 1B.2 species. It typically blooms between May and July (CNPS 2006). This perennial herb occurs in dry rocky places and brush below approximately 5,000 feet above msl, in chaparral, coastal sage scrub, and yellow pine forest vegetation types (Munz 1974, Roberts et al. 2004). This species occurs in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties (CNPS 2006). In the vicinity of the project site, this species has been reported from between Oak Flat and Pleasants Peak, and near Fremont Canyon (CDFG 2006a). Suitable habitat for Plummer's mariposa lily is present on the project site, but this species was not observed during focused plant surveys.Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*)

Intermediate mariposa lily is a CNPS List 1B.2 species. It typically blooms between May and July (CNPS 2006). This bulbiferous perennial herb occurs in coastal sage scrub and valley grassland on dry rocky open slopes (Munz 1974, Hickman 1993). It is known to occur in Los Angeles, Orange, and Riverside counties (CNPS 2006). In the vicinity of the project site, this species has been reported from the east mouth of Hagador Canyon and near the intersection of Chase Road and Mangular Avenue in Corona (CDFG 2006a). Intermediate mariposa lily was observed in four locations during the 2006 focused surveys on the project site; a total of 16 individuals were observed (Exhibit 6). Surveys conducted in 2000 yielded a higher number of individuals; a total of 350 lilies were observed in 11 locations. The higher numbers in 2000 are thought to be because the project site was burned in a large fire in approximately 1999 and the habitat was more open during the surveys in 2000. Pre-construction surveys for this species were conducted in May 2008 to flag all intermediate mariposa lilies within the proposed impact footprint. A total of 303 intermediate mariposa lilies were flagged in 30 locations.

Long-spined Spineflower (*Chorizanthe polygonoides* var. *longispina*)

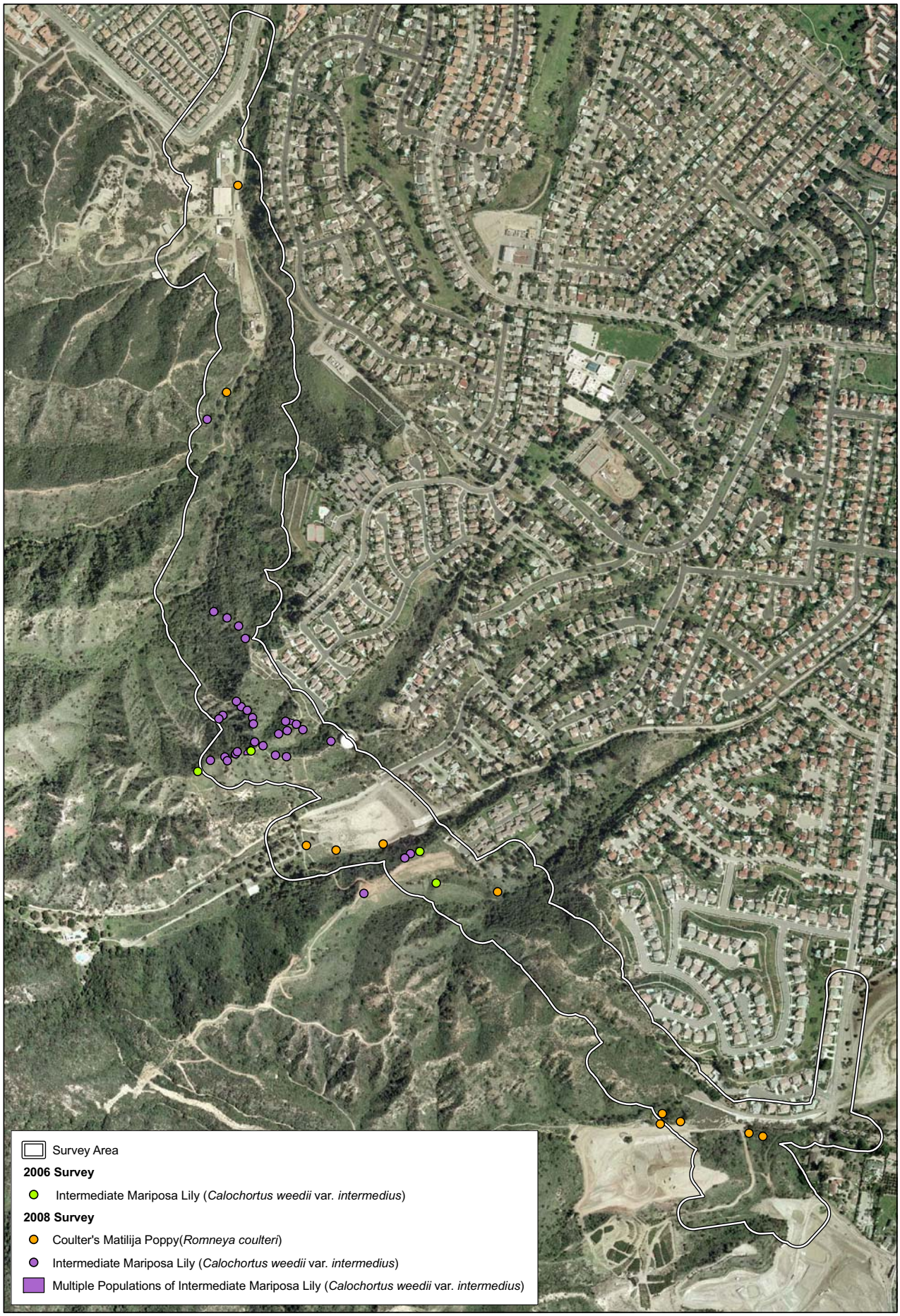
Long-spined spineflower is a CNPS List 1B.2 species. It typically blooms between April and July (CNPS 2006). This annual herb occurs on heavy clay soils in the chaparral, coastal sage scrub, meadows, and native grassland. It may also occur in some areas on sandy or sandy loam soils (Reveal 1989), though these occurrences are difficult to substantiate. It generally occurs below 4,600 feet above msl (CNPS 2006). It occurs in western Riverside and San Diego counties, south to near Ensenada, Baja California, Mexico (Boyd 1983, Banks 1999, CNPS 2001, CDFG 2003, Roberts et al. 2004). In the vicinity of the project site, this species has been reported from Gypsum Canyon (CDFG 2006a). Limited suitable habitat for long-spined spineflower is present on the project site, but this species was not observed during focused plant surveys.

White-bracted Spineflower (*Chorizanthe xanti* var. *leucotheca*)

White-bracted spineflower is a CNPS List 1B.2 species. It typically blooms between April and June (CNPS 2006). This annual herb occurs in creosote bush and desert scrub at elevations between 980 and 3,940 feet above msl (Hickman 1993, Munz 1974). It occurs in Los Angeles, Riverside, and San Bernardino counties (CNPS 2006). In the vicinity of the project site, this species has historically been reported from Temescal Canyon, but the identification is not certain (CDFG 2006a). Suitable habitat for white-bracted spineflower is not present on the project site and this species was not observed during focused plant surveys.

Tecate Cypress (*Cupressus forbesii*)

Tecate cypress is a CNPS List 1B.1 species. This evergreen tree occurs on dry slopes in chaparral at elevations between 1,500 and 5,000 feet above msl (Hickman 1993). It occurs in Orange, Riverside, and San Diego counties south to Baja California, Mexico (CNPS 2006). In the vicinity of the project site, this species has been reported near Sierra Peak and on the



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Special Status Plant Species Locations

Exhibit 6

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/Biotech/ex6_ssplants_071508.pdf

western slope of Fremont Canyon (CDFG 2006a). Suitable habitat for Tecate Cypress is not present on the project site and this species was not observed during focused plant surveys.

Many-stemmed Dudleya (*Dudleya multicaulis*)

Many-stemmed dudleya is a CNPS List 1B.2 species. It typically blooms between April and July (CNPS 2006). This perennial herb, from a corm, occurs in heavy, often clayey, soils in coastal sage scrub, chaparral, and coastal plains at elevations below 2,000 feet above msl (Hickman 1993, Munz 1974). It occurs in Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties (CNPS 2006). In the vicinity of the project site, this species has been reported west of Prado Basin, in the hills east of Fresno Canyon, on the eastern slope of Gypsum Canyon, and near Sierra Peak (CDFG 2006a). Suitable habitat for many-stemmed dudleya is not present on the project site and this species was not observed during focused plant surveys.

Santa Ana River Woollystar (*Eriastrum densifolium* ssp. *sanctorum*)

Santa Ana River woollystar is a federal and state Endangered species and a CNPS List 1B.1 species. It typically blooms between May and September (CNPS 2006). This perennial herb occurs in gravelly river beds and coastal sage scrub along the Santa Ana River at elevations below 1,500 feet above msl (Hickman 1993, Munz 1974). It occurs in Orange, Riverside, and San Bernardino counties (CNPS 2006). In the vicinity of the project site, this species has historically been reported near the junction of Weir Canyon Road and the Riverside freeway (CDFG 2006a). Suitable habitat for Santa Ana River woollystar not present on the project site and this species was not observed during focused plant surveys.

Heart-leaved Pitcher Sage (*Lepechinia cardiophylla*)

Heart-leaved pitcher sage is a CNPS List 1B.2 species. It typically blooms between April and July (CNPS 2006). This shrub occurs on dry slopes in chaparral at elevations between 2,000 and 4,000 feet above msl (Hickman 1993). It occurs in Orange, Riverside, and San Diego counties south to Baja California, Mexico (CNPS 2006). In the vicinity of the project site, this species has been reported near the radio facility in the Santa Ana Mountains on Sierra Peak, on Pleasants Peak, and near Beeks Place (CDFG 2006a). Suitable habitat for heart-leaved pitcher sage is not present on the project site and this species was not observed during focused plant surveys.

Chaparral Nolina (*Nolina cismontana*)

Chaparral nolina is a CNPS List 1B.2 species. It typically blooms between May and July (CNPS 2006). This evergreen shrub is generally associated with sandstone or gabbro soils in chaparral and coastal scrub from 130 to 4,185 feet above msl (CNPS 2006). This species occurs in Los Angeles, Orange, San Diego, and Ventura counties (CNPS 2006). In the vicinity of the project site, this species has been reported near the upper Coal Canyon Ecological

Reserve, the head of Gypsum Canyon, and the ridge above the west form of Fremont Canyon (CDFG 2006a). Suitable habitat for chaparral nolina is present on the project site but this species was not observed during focused plant surveys.

Santiago Peak Phacelia (*Phacelia suaveolens* ssp. *keckii*)

Santiago Peak phacelia is a CNPS List 1B.3 species. It typically blooms between May and June (CNPS 2006). This annual herb occurs in open chaparral and close-cone pine forests at elevations between 3,280 and 5,250 feet above msl (Hickman 1993, Munz 1974). It occurs in the Santa Ana Mountains of Orange and Riverside counties (CNPS 2006). In the vicinity of the project site, this species has been reported from Pleasants Peak (CDFG 2006a). Suitable habitat for Santiago Peak phacelia is not present on the project site and this species was not observed during focused plant surveys.

Coulter's Matilija Poppy (*Romneya coulteri*)

Coulter's matilija poppy is a CNPS List 4.2 species. It typically blooms between March and July (CNPS 2006). This perennial herb occurs in dry washes and canyons in chaparral and coastal sage scrub (Hickman 1993, Munz 1974). It occurs in Los Angeles, Orange, Riverside, and San Diego counties (CNPS 2006). In the vicinity of the project site, this species has been reported near Prado Basin and between Tin Mine Canyon and Santiago Peak (UCJEPS 2006). Coulter's matilija poppy was observed in a few scattered locations along Wardlow Wash within coastal sage scrub/chaparral habitat in the central portion of the project site. Pre-construction surveys for this species were conducted in May 2008 to flag all Coulter's matilija poppy locations within the proposed impacts footprint. A total of 66 Coulter's matilija poppies were flagged in 11 locations (Exhibit 6).

Rayless Ragwort (*Senecio aphanactis*)

Rayless ragwort is a CNPS List 2.2 species. It typically blooms between January and April (CNPS 2006). This annual herb occurs in dry open places in coastal sage scrub and chaparral vegetation (Munz 1974) at elevations below 1,300 feet above msl (Hickman 1993). This species is known from scattered locations in western California, from the San Francisco Bay area south through the coast and Central Valley, into Baja California, Mexico (Hickman 1993). This species is known to occur in the Jurupa Hills (Roberts et al. 2004). Limited suitable habitat for rayless ragwort is present on the project site, but this species was not observed during focused plant surveys.

Salt Spring Checkerbloom (*Sidalcea neomexicana*)

Salt Spring checkerbloom is a CNPS List 2.2 species. It typically blooms between March and June (CNSP 2006). This perennial herb occurs in alkali springs and marshes in coastal sage scrub, chaparral, and creosote bush scrub at elevations below 4,920 feet above msl (Hickman 1993, Munz 1974). In California, this species occurs in Los Angeles, Orange,

Riverside, and San Bernardino counties (Munz 1974). It also occurs throughout the southwestern states, mainland Mexico, and Baja California, Mexico (Hickman 1993). In the vicinity of the project site, this species has historically been reported from Chino Creek south of Ontario (CDFG 2006a, 1917 record). Suitable habitat for Salt Spring checkerbloom is not present on the project site and this species was not observed during focused plant surveys.

3.3.3 Special Status Wildlife

Fifty-four special status wildlife species are known to occur in the project vicinity. These species and their potential for occurrence are discussed below and summarized in Table 3. Note that these species are listed taxonomically.

TABLE 3
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Invertebrates			
Euphydryas editha quino Quino checkerspot butterfly	FE	–	Not expected to occur; no suitable habitat.
Amphibians			
Taricha torosa torosa Coast Range newt	–	SSC	Limited potential to occur; suitable terrestrial habitat; no suitable breeding habitat.
Spea [*Scaphiopus*] *hammondii* western spadefoot	–	SSC	Limited potential to occur; suitable terrestrial habitat; limited suitable breeding habitat.
Bufo californicus arroyo toad	FE	SSC	Not expected to occur; not observed during 2000 focused surveys; no suitable breeding habitat.
Reptiles			
Emys [*Clemmys*] *marmorata pallida* southwestern pond turtle	–	SSC	Not expected to occur; no suitable habitat.
Coleonyx variegatus abbotti San Diego banded gecko	–	SA	May occur; limited suitable habitat.
Phrynosoma coronatum [*blainvillii* population coast [San Diego] horned lizard	–	SSC	Expected to occur; suitable habitat.
Aspidoscelis [*Cnemidophorus*] *hyperythra* [*beldingi*] [Belding's] orange-throated whiptail	–	SSC	Expected to occur; suitable habitat.
Aspidoscelis [*Cnemidophorus*] *tigris stejnegeri* [*multiscutatus*] coastal western whiptail	–	SA	Observed; suitable habitat.
Anniella pulchra pulchra silvery legless lizard	–	SSC	Expected to occur; suitable habitat.
Charina [*Lichanura*] *trivirgata* rosy boa	–	SA	Expected to occur; suitable habitat.
Diadophis punctatus [*modestus*] [San Bernardino] ringneck snake	–	SA	May occur; suitable habitat.
Lampropeltis zonata California mountain kingsnake	–	SSC	May occur; suitable habitat.

TABLE 3 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Salvadora hexalepis virgultea coast patch-nosed snake	–	SSC	May occur; suitable habitat.
Thamnophis hammondii two-striped garter snake	–	SSC	Limited potential to occur; limited suitable habitat.
Crotalus ruber ruber northern red diamond rattlesnake	–	SSC	Expected to occur; suitable habitat.
Birds			
Accipiter cooperii Cooper's hawk	–	WL	Observed foraging; suitable foraging habitat; expected to occur for nesting; suitable nesting habitat.
Accipiter striatus sharp-shinned hawk	–	WL	May occur for foraging; suitable foraging habitat; not expected to occur for nesting; outside known breeding range.
Aquila chrysaetos golden eagle	–	WL, FP	May occur for foraging; suitable foraging habitat; limited potential to occur for nesting; potentially suitable nesting habitat.
Buteo regalis ferruginous hawk	–	WL	May occur for foraging; suitable foraging habitat; not expected to occur for nesting; outside breeding range.
Buteo swainsoni Swainson's hawk	–	ST	May occur for foraging as a rare migrant; suitable foraging habitat; not expected to occur for nesting; outside breeding range.
Circus cyaneus northern harrier	–	SSC	Observed foraging; suitable foraging habitat; not expected to occur for nesting; no suitable nesting habitat.
Elanus leucurus white-tailed kite	–	FP	May occur for foraging; suitable foraging habitat; may occur for nesting; suitable nesting habitat.
Falco columbarius merlin	–	WL	May occur for foraging; potentially suitable foraging habitat; not expected to occur for nesting; outside breeding range.
Falco mexicanus prairie falcon	–	WL	May occur for foraging; suitable foraging habitat; not expected to occur for nesting; no suitable nesting habitat.
Falco peregrinus anatum American peregrine falcon	–*	SE, FP	Limited potential for foraging; potentially suitable foraging habitat; not expected to occur for nesting; no suitable nesting habitat.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FC	SE	Not expected to occur; no suitable habitat.
Asio otus long-eared owl	–	SSC	May occur for foraging; potentially suitable foraging habitat; may occur for nesting; suitable nesting habitat.
Athene cunicularia burrowing owl	–	SSC	Not expected to occur; not observed during 2006 or 2008 focused surveys of the project site; limited suitable habitat.
Empidonax traillii extimus southwestern willow flycatcher	FE	SE	Not expected to occur; no suitable habitat.
Lanius ludovicianus loggerhead shrike	–	SSC	May occur; potentially suitable habitat.

TABLE 3 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Vireo bellii pusillus least Bell's vireo	FE	SE	May occur; not observed during 2000 or 2006 focused surveys of the project site; one migrant observed on one visit during the 2008 focused surveys; suitable habitat.
Eremophila alpestris actia California horned lark	–	WL	May occur; limited suitable habitat.
Campylorhynchus brunneicapillus cactus wren	–	SSC	Limited potential to occur; limited suitable habitat.
Polioptila californica californica coastal California gnatcatcher	FT	SSC	May occur; suitable habitat.
Dendroica petechia brewsteri yellow warbler	–	SSC	Observed on the project site; suitable habitat.
Icteria virens yellow-breasted chat	–	SSC	May occur; suitable habitat.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	–	WL	Observed on the project site; suitable habitat.
Amphispiza belli belli Bell's sage sparrow	–	WL	Expected to occur; suitable habitat.
Agelaius tricolor tricolored blackbird	–	SSC	Not expected to occur; no suitable habitat.
Mammals			
Antrozous pallidus pallid bat	–	SSC	May occur for foraging; suitable foraging habitat; may occur for roosting; potentially suitable roosting habitat.
Corynorhinus townsendii pallescens pale big-eared bat	–	SSC	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.
Euderma maculatum spotted bat	–	SSC	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.
Lasiurus xanthinus western yellow bat	–	SA	May occur for foraging; potentially suitable foraging habitat; may occur for roosting; potentially suitable roosting habitat.
Myotis ciliolabrum small-footed myotis	–	SA	May occur for foraging; potentially suitable foraging habitat; may occur for roosting; potentially suitable roosting habitat.
Myotis yumanensis Yuma myotis	–	SA	May occur for foraging; potentially suitable habitat; limited potential for roosting; limited roosting habitat.
Eumops perotis western mastiff bat	–	SSC	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.
Nyctinomops femorosaccus pocketed free-tailed bat	–	SSC	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.
Nyctinomops macrotis big free-tailed bat	–	SSC	May occur for foraging; potentially suitable foraging habitat; limited potential for roosting; limited roosting habitat.
Lepus californicus bennettii San Diego black-tailed jackrabbit	–	SSC	May occur; potentially suitable habitat.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	–	SSC	May occur; suitable habitat.
Dipodomys stephensi Stephens' kangaroo rat	FE	ST	Not expected to occur; no suitable habitat.

TABLE 3 (Continued)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE PROJECT VICINITY

Species	Status		Likelihood of Occurrence
	USFWS	CDFG	
Neotoma lepida intermedia San Diego desert woodrat	–	SSC	Not expected to occur; no suitable habitat.
Onychomys torridus ramona southern grasshopper mouse	–	SSC	May occur; potentially suitable habitat.

LEGEND:

Federal (USFWS)
FE Endangered
FT Threatened
FC Candidate

State (CDFG)
SE Endangered
ST Threatened
SCC Species of Special Concern
WL Watch List - a species that was formerly considered a Species of Special Concern, and is being tracked by the CNDDB.
SA Special Animal - a species tracked by the CNDDB.
FP Fully Protected

* The American peregrine falcon was delisted by the USFWS in 1999.

Invertebrates

Quino Checkerspot (*Euphydryas editha quino*)

Quino checkerspot is a federally Endangered species. This butterfly is associated with meadow habitats or clearings in scrub or chaparral vegetation types. Other habitat characteristics are clay soils with low-growing herbaceous annuals that include the larval host plants dwarf plantain (*Plantago erecta*) and owl's clover (*Castilleja exserta*). Throughout its range, the Quino checkerspot is restricted to areas that support its larval host plants (Mattoni et al. 1997). This butterfly is known from southern San Diego County, western Riverside County, and northwestern Baja California, Mexico (USFWS 1999). This species is currently distributed in the southern and eastern portions of western Riverside County. Dudek (2003) states that key populations include all currently known populations including those in the vicinity of Aguanga, Anza, Cactus Valley, Gavilan Hills, Menifee, Murrieta Hot Springs, Sage, Vail Lake, Wildomar, Wilson Valley, Paloma Valley, Kolb Creek, and Lake Skinner Reserve. Suitable host plants for this species were not observed on the project site and the project site is north of known locations in western Riverside County. Therefore, Quino checkerspot is not expected to occur on the project site.

On April 15, 2002, the USFWS published the final rule on critical habitat for Quino checkerspot. This final rule designated as critical habitat a total of 171,605 acres of land in Riverside and San Diego counties, California. On January 17, 2008, the USFWS published a proposed rule to revise the designation of critical habitat to exclude areas covered by the San Diego Multiple Species Conservation Plan's City of Chula Vista Subarea Plan and non-federal land within the Western Riverside MSHCP. The proposed revision designates 98,487 acres in San Diego and Riverside counties as critical habitat. The project site is not located in designated critical habitat for this species.

Amphibians

Coast Range Newt (*Taricha torosa torosa*)

Coast range newt is a California Species of Special Concern. It occurs in terrestrial habitats including grasslands, woodlands and forests, but requires ponds, reservoirs and slow-moving streams for breeding. This species occurs along the coast of California from Mendocino County south to Mexico from sea level to 6,000 feet above msl (Stebbins 2003). Coast range newt occurs in coastal drainages of the westernmost portions of Riverside County including lands adjacent to the Cleveland National Forest southeast of Lake Elsinore, along Highway 74, southwest of Corona, and at the Santa Rosa Plateau (Dudek 2003). In the vicinity of the project site, this species has been reported from two locations; however, the location information is sensitive (CDFG 2006a). Dudek (2003) states that key populations include those in the Santa Ana Mountains from the Santa Ana River south to the Santa Margarita River. Suitable terrestrial habitat for this species is present on the project site; however, no suitable breeding habitat is present on the project site. Therefore, coast range newt has limited potential to occur on the project site.

Western Spadefoot (*Spea* [*Scaphiopus*] *hammondii*)

Western spadefoot is a California Species of Special Concern. This species inhabits grassland, coastal sage scrub, and other habitats with open sandy, gravelly soils. The western spadefoot is primarily a species of the lowlands, frequenting washes, floodplains of rivers, alluvial fans, and alkali flats (Stebbins 2003). The western spadefoot breeds in quiet streams, vernal pools, and temporary ponds. This species is rarely observed outside of the breeding season. This species occurs in the Great Valley and bordering foothills, in the Coast Ranges from Monterey Bay south to Baja California, Mexico (Stebbins 2003). From the Santa Clara River valley in Los Angeles and Ventura counties southward, an estimated 80 percent of habitat for this species has been lost (Stebbins 2003). Western spadefoot is found in numerous scattered locations widely distributed throughout western Riverside County, east of the San Jacinto Mountains and desert regions. In the vicinity of the project site, this species has been reported from just north of McBride Wash and north of Weir Canyon (CDFG 2006a). Suitable terrestrial habitat for this species is present on the project site; however, breeding habitat is limited due to the lack of suitable hydrology. Therefore, western spadefoot has a limited potential to occur on the project site.

Arroyo Toad (*Bufo californicus*)

Arroyo toad is a federally Endangered species and a California Species of Special Concern. This toad only occurs in streams of southwestern California and northwestern Baja California, Mexico (USFWS 1994). In California, it primarily occurs along the Coast Ranges from San Luis Obispo County south to San Diego County, but also occurs at a few locations on the western edge of the desert (Jennings and Hayes 1994). The arroyo toad is generally found in semi-arid

regions near washes or intermittent streams (Zeiner et al. 1988). However, this species has highly specialized habitat requirements such as breeding pools within approximately 300 feet of juvenile and adult habitat, which consists of shoreline with stable, sandy terraces (Jennings and Hayes 1994). In the vicinity of the project site, this species has been reported near Silverado Canyon in the Cleveland National Forest (CDFG 2006a). Dudek (2003) states that key locations for this species include Bautista Creek, Wilson Creek, Los Alamos Creek, Temecula Creek, Arroyo Seco, Tenaja Creek, the San Jacinto River, and Vail Lake. Arroyo toad is not expected to occur on the project site due to lack of suitable habitat (i.e., hydrology), and because it was not observed during focused surveys conducted in 2000.

On April 13, 2005, the USFWS published a final rule designating critical habitat for arroyo toad (USFWS 2005). This final rule designated 11,695 acres in Santa Barbara, Ventura, Los Angeles, San Bernardino, and Riverside counties as critical habitat. The project site is not located in designated critical habitat for this species.

Reptiles

Southwestern Pond Turtle (*Emys* [*Clemmys*] *marmorata pallida*)

Southwestern pond turtle is a California Species of Special Concern. The southwestern pond turtle occurs primarily in freshwater rivers, streams, lakes, ponds, vernal pools, and seasonal wetlands requiring basking sites such as logs, banks, or other suitable areas above water level. This subspecies of the western pond turtle (Emys [Clemmys] marmorata) occurs from approximately the San Francisco Bay area south through the Coast Ranges to northern Baja California, Mexico (Stebbins 2003). The western pond turtle is estimated to be in decline throughout 75 to 80 percent of its range (Stebbins 2003). The current range is similar to the historic range, but populations have become fragmented by agriculture and urban development. In addition to loss of habitat, this species is also threatened by grazing, non-native species, and disease (Jennings and Hayes 1994). In the vicinity of the project site, this species has been reported from multiple locations; however, the location information is sensitive (CDFG 2006a). Dudek (2003) states that key locations for this species include the Santa Ana Mountains, Cleveland National Forest, and the Santa Ana River Regional Park. Southwestern pond turtle is not expected to occur on the project site due to lack of suitable habitat.

San Diego Banded Gecko (*Coleonyx variegates abbotti*)

San Diego banded gecko is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. This species is found in granite or rocky outcrops in coastal scrub, chaparral, and desert habitats below 5,000 feet. This lizard occurs in the coastal region of southern California, from southeast Ventura County south to northwest Baja California, Mexico (Stebbins 2003, Zeiner et al. 1988). In the vicinity of the project site, this species has been

reported from the east side of Norco (CDFG 2006a). Limited suitable habitat for this species is present on the project site. Therefore, San Diego banded gecko may occur on the project site.

Coast [San Diego] Horned Lizard (*Phrynosoma coronatum* [*blainvillii* population])

Coast [San Diego] horned lizard (*blainvillii* population) is a California Species of Special Concern. The two former subspecies of the coast horned lizard, (*P. c. blainvillei* and *P. c. frontale*) have recently been eliminated in current scientific literature, such as Stebbins (2003), based on current scientific studies on this species. Coast horned lizard is a small, spiny, somewhat rounded lizard that occurs in scrubland, grassland, coniferous forests, and broadleaf woodland vegetation types. The coast horned lizard prefers open areas for basking and loose, friable soil for burrowing (Stebbins 2003). The coast horned lizard occurs throughout much of California, west of the desert and Cascade-Sierra highlands south to Baja California, Mexico (Stebbins 2003). However, many of the populations in lowland areas have been reduced or eliminated due to urbanization and agricultural expansion (Stebbins 2003). Three factors have contributed to its decline: loss of habitat, overcollecting, and the introduction of exotic ants. In the vicinity of the project site, this species has been reported from Gypsum Canyon, just east of the mouth of Hagador Canyon, and the ridge between Blind and Fremont canyons (CDFG 2006a). Suitable habitat for this species occurs on the project site; therefore, coast horned lizard is expected to occur on the project site.

[Belding's] Orange-throated Whiptail (*Aspidoscelis* [*Cnemidophorus*] *hyperytha* [*beldingi*])

[Belding's] orange-throated whiptail is a California Species of Special Concern. The two former subspecies of the orange-throated whiptail, (*C. c. hyperythrus* and *C. c. beldingi*) have recently been eliminated in current scientific literature, such as Stebbins (2003), based on current scientific studies on this species. The orange-throated whiptail occurs in washes, and in open areas of sage scrub and chaparral with gravelly soils, often with rocks. It prefers the well-drained friable soil on slopes with a southern exposure that are barren or only sparsely covered with vegetation. This species occurs below 2,000 feet above msl in the western Peninsula Ranges from Orange and San Bernardino counties south to Baja California, Mexico (Stebbins 2003). Approximately 75 percent of the former range has been lost to development and remaining populations are highly fragmented (Stebbins 2003). In the vicinity of the project site, this species has been reported near Gypsum Canyon Road, Wardlow Canyon, the Chino Hills, in the vicinity of Weir Canyon, and near Scully Hill north of the Santa Ana River (CDFG 2006a). Suitable habitat for this species occurs on the project site. Therefore, orange-throated whiptail is expected to occur on the project site.

Coastal Western Whiptail (*Aspidoscelis* [*Cnemidophorus*] *tigris stejnegeri* [*multiscutatus*])

Coastal western whiptail is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. It is a moderately large, slender lizard typically found in open scrub, chaparral, and woodland vegetation types in semi-arid areas or where vegetation is sparse. It occurs in areas where the ground is firm soil, sandy, or rocky (Stebbins 2003). The subspecies occurs from Ventura County south to Baja California, Mexico (Stebbins 2003). This species is threatened by loss of habitat and possibly road-kills (Fisher and Rochester 2000). In the vicinity of the project site, this species has been reported near Weir Canyon (CDFG 2006a). Suitable habitat for this species occurs on the project site. Coastal western whiptail was observed on the project site.

Silvery Legless Lizard (*Anniella pulchra pulchra*)

Silvery legless lizard is a California Species of Special Concern. It is a small, secretive lizard that spends most of its life beneath the soil, under stones, logs, debris, or in leaf litter. The silvery legless lizard requires areas with loose, sandy soil, moisture, warmth and plant cover. It occurs in chaparral, pine-oak woodland, beach, and riparian vegetation types at elevations ranging from sea level to approximately 5,100 feet above msl (Stebbins 2003). The silvery legless lizard occurs in the Coast, Transverse, and Peninsular ranges from Contra Costa County south to Baja California, Mexico (Stebbins 2003). This species is naturally rare since it specializes in substrates with a high sand content, but is also threatened by grazing, off-road vehicle activity, sand mining, beach erosion, excessive recreational use of coastal dunes, and the introduction of exotic plants (Jennings and Hayes 1994). Suitable habitat for this species occurs on the project site. Therefore, silvery legless lizard is expected to occur on the project site.

Rosy Boa (*Charina* [*Lichanura*] *trivirgata*)

Rosy boa is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. The rosy boa typically inhabits rocky, chaparral covered slopes and canyons up to approximately 6,790 feet above msl. The rosy boa is a rather secretive snake that is found from the deserts to the coast, but it is generally uncommon throughout its southern California range. The coastal subspecies (*C. t. roseofusca*) occurs in the San Gabriel, San Bernardino, and Peninsular ranges from Los Angeles County south to Baja California, Mexico (Stebbins 2003). Population declines in this subspecies are attributable to habitat loss and overcollecting; the rosy boa is now quite rare in much of its historic range. Suitable habitat for this species occurs on the project site. Therefore, rosy boa is expected to occur on the project site.

[San Bernardino] Ringneck Snake (*Diadophis punctatus* [*modestus*])

[San Bernardino] ringneck snake is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. The most recent scientific literature, Stebbins (2003), has eliminated subspecies designations, including southern California subspecies *D. p. modestus* and *D. p. similes*. The ringneck snake inhabits moist habitats including woodlands, forests, grasslands, and chaparral (Stebbins 2003). It occurs at elevations from sea level to 7,200 feet above msl (Stebbins 2003). This species is difficult to detect due to its secretive behavior. The ringneck snake is widespread in California west of the Sierra-Cascade crest, absent only from the Central Valley and the deserts. This species is threatened by loss of habitat. Suitable habitat for this species occurs on the project site. Therefore, ringneck snake is expected to occur on the project site.

California Mountain Kingsnake (*Lampropeltis zonata*)

California mountain kingsnake is a California Species of Special Concern. This species occurs primarily in mixed woods, including coniferous forest, woodland, and chaparral ranging in elevation from sea level to high in the mountains. The California kingsnake occurs throughout the length of the state in the Sierras, Cascades, Coast Ranges, and San Bernardino, San Gabriel, and San Jacinto mountains. In the vicinity of the project site, this species has been reported from two locations; however the location information is sensitive (CDFG 2006a). Suitable habitat for this species occurs on the project site. Therefore, California mountain kingsnake may occur on the project site.

Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*)

Coast patch-nosed snake is a California Species of Special Concern. It inhabits open sandy areas and rocky outcrops in scrub, chaparral, grassland, and woodland vegetation types. It occurs from sea level to approximately 7,000 feet above msl (Stebbins 2003). The coast patch-nosed snake ranges along the coast of California from San Luis Obispo County south into Baja California, Mexico. This species is threatened by development, grazing, and fire control (Jennings and Hayes 1994). In the vicinity of the project site, this species has been reported from Weir Canyon (CDFG 2006a). Suitable habitat for this species occurs on the project site. Therefore, coast patch-nosed snake may occur on the project site.

Two-striped Garter Snake (*Thamnophis hammondii*)

Two-striped garter snake is a California Species of Special Concern. It occurs primarily in wetlands and is found in freshwater marsh and riparian habitats with perennial water. The two-striped garter snake feeds on small fishes, frogs, and tadpoles. The two-striped garter snake occurs from Monterey County south to Rio Rosario in Baja California, Mexico. It is considered locally rare in southwestern California. In the vicinity of the project site, this species has been

reported near the mouth of Fremont Canyon (CDFG 2006a). Limited amounts of suitable habitat for this species occur on the project site. Therefore, two-striped garter snake has a limited potential to occur on the project site.

Northern Red-Diamond Rattlesnake (*Crotalus ruber ruber*)

Northern red-diamond rattlesnake is a California Species of Special Concern. It inhabits open scrub, chaparral, woodland, and grassland vegetation types. This species ranges from approximately Orange and San Bernardino counties south to Baja California, Mexico at elevations from sea level to about 5,000 feet above msl (Stebbins 2003). This species is threatened by development and human disturbance (Jennings and Hayes 1994). In the vicinity of the project site, this species has been reported from Brown Canyon, the City of Corona near the east end of Upper Drive, and near Weir Canyon (CDFG 2006a). Suitable habitat for this species occurs on the project site. Therefore, northern red-diamond rattlesnake is expected to occur on the project site.

Birds

Cooper's Hawk (*Accipiter cooperi*)

Cooper's hawk is a CDFG Watch List species. Both resident and migratory populations exist in Riverside County. Wintering Cooper's hawks are often seen in wooded urban areas and native woodland vegetation types. Preferred nesting habitats are oak and riparian woodlands dominated by sycamores and willows. Cooper's hawks in the region prey on small birds and rodents that live in woodland, scrub, and chaparral vegetation types. This species is threatened by habitat destruction, direct or indirect human disturbance at nests, and possibly pesticides (Remsen 1978). In the vicinity of the project site, this species has been reported north of Walnut Canyon Reservoir in Anaheim Hills (CDFG 2006a). Suitable foraging and nesting habitat is present for this species on the project site. This species was observed foraging on the project site, and it is expected to nest on the project site.

Sharp-shinned Hawk (*Accipiter striatus*)

Sharp-shinned hawk is a CDFG Watch List species. It is a fairly common species throughout Riverside County that prefers woodland vegetation types, but can also be found in virtually any habitat as it passes through the area during migration (Dudek 2003). Some individuals probably winter in the County. The primary breeding range for this species is high elevation forests in the western United States and boreal forests in Canada and Alaska. Dudek (2003) states that sharp-shinned hawks have been repeatedly recorded in the San Jacinto Mountains during the summer months, however, there are no confirmed records of breeding in western Riverside County. This species has been reported from a large variety of habitats within the western and central portions of western Riverside County, including Prado Basin, the Santa Ana River, and

the Santa Ana Mountains (Dudek 2003). Suitable foraging habitat for this species occurs on the project site but the project site is outside the known breeding range of this species. Therefore, sharp-shinned hawk may forage on the project site but is not expected to nest on the project site.

Golden Eagle (*Aquila chrysaetos*)

Golden eagle is a California Fully Protected species, a CDFG Watch List species, and is also protected by the federal Bald Eagle Act. Habitat for this species generally consists of grasslands, deserts, savannas, and early successional stages of forest and shrub habitats. Broad expanses of open country are required for foraging while nesting is primarily restricted to rugged mountainous areas with large trees or on cliffs (Johnsgard 1990). The golden eagle is an uncommon resident throughout southern California, except in the Colorado Desert and Colorado River where it is a casual winter visitor (Garrett and Dunn 1981). In the vicinity of the project site, this species has been reported from the Chino Hills in Brush Canyon and north of Aliso Canyon (CDFG 2006a). Suitable foraging and potentially suitable nesting habitat for this species occurs on the project site. Therefore, golden eagle may forage on the project site, and it has a limited potential to occur for nesting.

Ferruginous Hawk (*Buteo regalis*)

Ferruginous hawk is a CDFG Watch List species. It occupies open, dry habitats such as grasslands, shrublands, rangelands, and plowed agricultural fields. This raptor only occurs as a winter resident in California (Bechard and Schmutz 1995). Along the coast of southern California it is rare to uncommon during the winter season (Garrett and Dunn 1981). Dudek (2003) states that ferruginous hawks are found in suitable habitat throughout western Riverside County, including Prado Basin. Suitable foraging habitat for this species occurs on the project site but the project site is outside the breeding range of this species. Therefore, ferruginous hawk may forage on the project site, but it is not expected to nest on the project site.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a state Threatened species. It forages over the grassland and ruderal vegetation types during migration to and from South America, primarily feeding on small rodents, reptiles, and some insects within these habitats. It is a very rare migrant along the coast of southern California (Garrett and Dunn 1981). This species formerly bred along the coast in southern California, but breeding is now mostly limited to the Sacramento and San Joaquin valleys, extreme northeast California, and Mono and Inyo counties (England et al. 1997). This species is threatened by loss of habitat, habitat deterioration on the South American wintering grounds, human disturbance at nest sites, shooting, and possibly pesticides (Remsen 1978). Dudek (2003) states that this species has been recorded from very few locations within the central portion of western Riverside County. Migratory stopovers or

observations in flight include locations along the Santa Ana River at Prado Basin (Dudek 2003). Suitable foraging habitat for this species occurs on the project site but the project site is outside the breeding range of this species. Therefore, Swainson's hawk may forage on the project site as a rare migrant, but it is not expected to nest on the project site.

Northern Harrier (*Circus cyaneus*)

Northern harrier is a California Species of Special Concern. It is a regular winter migrant in marshes and fields throughout southern California, but is very scarce as a local breeder (Garrett and Dunn 1981). Breeding habitat includes prairie, savannah, slough, wet meadow, and marsh vegetation types. Northern harrier can be expected at any month of the year and can be seen foraging in grassland, scrub, and riparian vegetation types. While once a relatively common species during fall, winter, and spring in undeveloped areas of the County, the northern harrier population is now greatly reduced and localized in distribution. This species is threatened by loss of habitat, pesticides (Ehrlich et al. 1988), and loss of suitable breeding habitat (Grinnell and Miller 1944). Dudek (2003) states that this species occurs predominantly within the Riverside lowlands and San Jacinto foothills, but also occurs in the chaparral dominated areas of the Santa Ana Mountains. Suitable foraging habitat for this species occurs on the project site, but there is no suitable nesting habitat on the project site. This species was observed foraging on the project site, but it would not be expected to nest on the project site due to lack of suitable nesting habitat.

White-tailed Kite (*Elanus leucurus*)

White-tailed kite is a California Fully Protected species. Kites nest primarily in oaks, willows, and sycamores, and forage in grassland and scrub vegetation types. White-tailed kites show strong site fidelity to nest groves and trees. This species is an uncommon to locally fairly common resident in coastal southern California, and a rare visitor and local nester on the western edge of the deserts (Garrett and Dunn 1981). Many populations in North America have declined in the 1980s and 1990s, including those in southern California (Dunk 1995). Dudek (2003) states that Prado Basin/Santa Ana River is one of the core areas for this species. Suitable foraging and nesting habitat for this species is present on the project site. Therefore, white-tailed kite may occur for foraging and nesting on the project site.

Merlin (*Falco columbarius*)

Merlin is a CDFG Watch List species. In California, the merlin prefers vast open space areas such as estuaries, grasslands, and deserts where it hunts small flocking birds such as sandpipers, larks, sparrows, and pipits. In Riverside County, merlin are uncommon winter migrants. Dudek (2003) states that this species has been recorded from Prado Basin and the Santa Ana River. Potentially suitable foraging habitat for this species occurs on the project site

but the project site is outside the breeding range of this species. Therefore, merlin may forage on the project site, but it is not expected to nest on the project site.

Prairie Falcon (*Falco mexicanus*)

Prairie falcon is a CDFG Watch List species. Preferred foraging habitats include grassland and scrub vegetation types. Prairie falcons nest almost exclusively on cliffs (Clark and Wheeler 1987). It is an uncommon year-round resident in the interior of southern California (Garrett and Dunn 1981). The prairie falcon is an increasingly scare winter resident and very rare summer resident along the coast of southern California (Unitt 1984, Lehman 1994, Hamilton and Willick 1996). Dudek (2003) states that this species has been reported from the Santa Ana Mountains during the wintering season. Suitable foraging habitat is present on the project site, but no suitable nesting habitat is present. Therefore, prairie falcon may forage on the project site, but it is not expected to nest on the project site.

American Peregrine Falcon (*Falco peregrinus anatum*)

American peregrine falcon is a state Endangered species and a California Fully Protected species that, due to recent population gains, was delisted from the federal list of Endangered species by the USFWS (1999). As a delisted species, the peregrine falcon will continue to be periodically monitored until 2015 (USFWS 2006). No such delisting has been proposed by the state. Peregrine falcons prey almost exclusively on birds and use a variety of habitats, particularly wetlands and coastal areas. This falcon is still a rare summer resident in southern California, although it is more common during migration and the winter season. For nesting, this falcon prefers inaccessible areas such as provided by cliffs, high building ledges, bridges, or other such structures. Dudek (2003) states that this species has been observed near Prado Basin. Potentially suitable foraging habitat is present on the project site, but no suitable nesting habitat is present. Therefore, American peregrine falcon has a limited potential to forage on the project site, but is not expected to nest on the project site.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

Western yellow-billed cuckoo is a state Endangered species and is a federal Candidate for listing by the USFWS. The western yellow-billed cuckoo requires broad areas of old-growth riparian habitats dominated by willows and cottonwoods with dense understory vegetation. California's population was once estimated to be over 15,000 pairs; but in less than a hundred years, it has declined to less than 30 pairs (Hughes 1999). Along the coast, breeding cuckoos currently persist along the Santa Ana River, in Riverside County, and perhaps along the San Luis Rey River in San Diego County (Zeiner et al. 1990). Transients are rarely observed away from known breeding populations (Garrett and Dunn 1981). The Santa Ana River, specifically Prado Basin, is the only area in the region with riparian woodlands extensive enough to support breeding western yellow-billed cuckoos and a few birds have persisted there until recently. In

the vicinity of the project site, this species has been reported from Prado Basin (CDFG 2006a). Western yellow-billed cuckoo is not expected to occur on the project site due to lack of suitable habitat.

Long-eared Owl (*Asio otus*)

Long-eared owl is a California Species of Special Concern. This owl hunts mostly at night over grasslands and other open habitats (Marks et al. 1994). Nesting occurs in dense trees such as oaks and willows where it occupies stick nests of other species, particularly raptors and corvids (Marks et al. 1994, Bloom 1994). This species is an uncommon resident in the deserts, and is quite rare coastally (Garrett and Dunn 1981). Long-eared owls have declined throughout California due to urban and agricultural development (Bloom 1999). In the vicinity of the project site, this species has historically been reported near the entrance to Carbon Canyon and in Weir Canyon (CDFG 2006a). Suitable foraging and nesting habitat for this species occurs on the project site. Therefore, long-eared owl may occur on the project site for foraging and nesting.

Burrowing Owl (*Athene cunicularia*)

Burrowing owl is a California Species of Special Concern. Although, the burrowing owl was recently proposed as a state Candidate for listing, CDFG determined that the species did not warrant listing in consideration of its population throughout the state. However, this species is considered a species of local concern because it is much less common in southern California than in the Central Valley. In southern California, burrowing owls breed and forage in grasslands and prefer flat to low rolling hills in treeless terrain. They are small owls that nest in burrows, typically in open habitats most often along banks and roadsides. In the vicinity of the project site, this species has been reported from the Prado Basin and along Chino Creek (CDFG 2006a). Although most of the vegetation on the project site is too dense for the burrowing owl, limited suitable habitat for this species is present on the project site in the Mabey Canyon Debris Basin. Focused surveys for the burrowing owl were conducted in spring/summer 2006 and repeated in spring/summer 2008, and this species was not observed. Therefore, burrowing owl is not expected to occur on the project site due to lack of detection during focused surveys. However, there is a limited potential for the burrowing owl to move onto the project site in the future.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Southwestern willow flycatcher is a federally and state Endangered species. This subspecies was once considered a common breeder in coastal southern California. However, this subspecies has declined drastically due to a loss of breeding habitat and nest parasitism by the brown-headed cowbird (*Molothrus ater*). This species occurs in riparian habitats along rivers, streams, or other wetlands where dense growths of willows, baccharis (*Baccharis* sp.), arrowweed (*Pluchea* sp.), tamarisk (*Tamarix* sp.), or other plants are present, often with a

scattered overstory of cottonwood (*Populus* sp.) (USFWS 1995). In the vicinity of the project site, this species has been reported from Gypsum Canyon north of Featherly Regional Park, along the Santa Ana River, and the Prado Basin (CDFG 2006a). The riparian habitat on the project site is not considered extensive enough to support this species. Therefore, southwestern willow flycatcher is not expected to occur on the project site due to lack of suitable habitat.

On October 19, 2005, the USFWS published a final rule designating critical habitat for the southwestern willow flycatcher (USFWS 2005). This final rule designated 120,824 acres in Arizona, California, Nevada, New Mexico, and Utah as critical habitat. Of that, 17,212 acres were designated in Kern, Santa Barbara, San Bernardino, and San Diego counties, California. The project site is not located in designated critical habitat for this species.

Loggerhead Shrike (*Lanius ludovicianus*)

Loggerhead shrike is a California Species of Special Concern. Shrikes inhabit grasslands and other dry, open habitats (Yosef 1996). They can often be found perched on fences and posts from which prey items (e.g., large insects, small mammals, lizards) can be seen. This species was widely distributed across North America but has declined throughout most of its range in recent decades (Yosef 1996). It was considered to be a fairly common year-round resident in southern California (Garrett and Dunn 1981), but has recently shown declines in its California population (Small 1994, Hamilton and Willick 1996). Dudek (2003) states that core areas for this species occur along I-15 from Prado Basin to Temecula. Suitable habitat for this species is present on the project site. Therefore, loggerhead shrike may occur on the project site.

Least Bell's Vireo (*Vireo bellii pusillus*)

Least Bell's vireo is a federal and state Endangered species. This species was formerly considered to be a common breeder in riparian habitats throughout the Central Valley and other low elevation river systems in California and Baja California, Mexico (Franzreb 1989). It is now a rare and local summer resident of southern California's lowland riparian woodlands. The least Bell's vireo breeds primarily in riparian habitats dominated by willows with dense understory vegetation (USFWS 1986). A dense shrub layer two to ten feet above ground is the most important habitat characteristic for this species (Goldwasser 1981, Franzreb 1989). While destruction of lowland riparian habitats has played a large role in driving this species to its present precarious situation, brood parasitism by brown-headed cowbirds is the most important factor in its decline (Garrett and Dunn 1981). Local cowbird control programs have been very effective in maintaining some populations (Small 1994); the species has begun to recover. The least Bell's vireo population in the Prado Basin in western Riverside County is the second largest within its range (Dudek 2003). In the vicinity of the project site, this species has been reported from multiple locations along the Santa Ana River, a tributary of the Santa Ana River near Gypsum Canyon, and the Prado Basin (CDFG 2006a). Suitable habitat for this species is present along Wardlow Wash on the project site. Focused surveys for the least Bell's vireo were

conducted in spring/summer 2000 and 2006, and this species was not observed. Focused surveys for the least Bell's vireo were repeated in spring/summer 2008. One individual LBV was observed during the April 21, 2008 survey visit (Exhibit 7). This bird was singing from a laurel sumac on a slope above an area of mule fat scrub. The vireo was not observed on any subsequent survey visits, despite persistent searches in this and other areas on the following visits. It is believed that this vireo was using the project site for dispersal but that it bred off site, perhaps along the Santa Ana River or within the Prado Basin. Therefore, the project site was not occupied for breeding; this is consistent with previous surveys conducted in 2000 and 2006, which also had negative survey results. However, the project site does provide dispersal habitat for this species and potentially suitable breeding habitat.

On February 2, 1994, the USFWS published a final critical habitat for the least Bell's vireo, designating approximately 37,560 acres of land in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties, California (USFWS 1994). The project site is not located in designated critical habitat for this species.

California Horned Lark (*Eremophila alpestris actia*)

California horned lark is a CDFG Watch List species. This species requires open habitats such as grasslands or agricultural fields that support little to no vegetation or short vegetation. This lark is found along the coast of northern California, in the San Joaquin Valley, in the Coast Ranges south of San Francisco Bay, and in southern California west of the deserts (Grinnell and Miller 1944). The horned lark occurs from Alaska and the Canadian arctic south to Mexico, with the northern populations strongly migratory and the southern populations primarily year-round residents (Beason 1995). Along the southern California coast, Garrett and Dunn (1981) found this species to be a common migrant and winter resident that remains to breed locally. In the vicinity of the project site, this species has been reported between Bedford Wash, and Brown Canyon (CDFG 2006a). Limited suitable habitat for this species is present on the project site. Therefore, California horned lark may occur on the project site.

Cactus Wren (*Campylorhynchus brunneicapillus*)

Cactus wren is a California Species of Special Concern. Some authorities consider the taxonomic status of cactus wrens in the southwestern U.S. to be uncertain (Proudfoot et al. 2000). Coastal populations of the cactus wren are found in southern California from San Diego County north to Ventura County (Garrett and Dunn 1981) and are declining due to loss of habitat. Except for the Banning Pass area west of Palm Springs, the coastal populations of cactus wren appear to be isolated from interior populations. On the coastal slope of southern California, cactus wrens inhabit coastal sage scrub and alluvial sage scrub habitats that have sufficient amounts prickly pear cactus and/or cholla (*Opuntia* spp.). In the vicinity of the project site, this species has been reported from Blind Canyon and Gypsum Canyon (CDFG 2006a).

D:/Projects/RBF/J307/ex_ssWildlife_ssPlants_part2_071508.mxd

Special Status Wildlife Species Locations

Exhibit 7

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/Biotech/ex7_sswildlife_071508.pdf

Limited amounts of suitable habitat for this species occur on the project site. Therefore, cactus wren has a limited potential to occur on the project site.

Coastal California Gnatcatcher (*Polioptila californica californica*)

Coastal California gnatcatcher is a federally Threatened species and a California Species of Special Concern. This species occurs in most of Baja California, Mexico's arid regions, but this subspecies is extremely localized in the United States where it predominantly occurs in coastal regions of highly urbanized Los Angeles, Orange, Riverside, and San Diego counties (Atwood 1992). In California, this subspecies is an obligate resident of coastal sage scrub vegetation types. Brood parasitism by brown-headed cowbirds and loss of habitat to urban development has been cited as causes of the coastal California gnatcatcher population decline (Unitt 1984; Atwood 1990). In the vicinity of the project site, this species has been reported from southern Corona near Foothill Drive, one mile southwest of Prado Basin, and near Gypsum Canyon (CDFG 2006a). Suitable habitat for this species occurs on the project site. Therefore, coastal California gnatcatcher may occur on the project site.

On December 19, 2007, the USFWS published a final rule revising critical habitat for the coastal California gnatcatcher. The revised critical habitat designates 197,303 acres of land in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties, California (USFWS 2007). The project site is within the revised critical habitat for this species.

Yellow Warbler (*Dendroica petechia brewsteri*)

Yellow warbler is a California Species of Special Concern. The western yellow warbler is the subspecies of yellow warbler that breeds in southern California (Dunn and Garrett 1997); most yellow warblers are migrants. This subspecies occurs in coastal areas from northwestern Washington south to western Baja California, Mexico (Dunn and Garrett 1997). In southern California, western yellow warblers breed locally in riparian woodlands but during migration they can forage in a variety of different habitat types. This species is threatened by loss of habitat and nest parasitism by brown-headed cowbirds (Remsen 1978). In the vicinity of the project site, this species has been reported from Prado Basin (CDFG 2006a; Dudek 2003). Suitable habitat for this species is present on the project site, and this species was observed on the project site.

Yellow-breasted Chat (*Icteria virens*)

Yellow-breasted chat is a California Species of Special Concern. For nesting, this species requires dense, brushy tangles near water and riparian woodlands supporting a thick understory. This species occurs as an uncommon and local summer resident in southern California along the coast and in the deserts (Garrett and Dunn 1981). This large warbler was once a fairly common summer resident in riparian woodlands throughout California, but is now

much reduced in numbers, especially in southern California (Remsen 1978). This species is threatened by loss of habitat and possibly nest parasitism by the brown-headed cowbird (Remsen 1978). In the vicinity of the project site, this species has been reported from the Santa Ana River and Prado Basin (CDFG 2006a). Suitable habitat for this species is present on the project site. Therefore, yellow-breasted chat may occur on the project site.

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

Southern California rufous-crowned sparrow is a CDFG Watch List species. In coastal southern California, rufous-crowned sparrows are considered fairly common in scrub vegetation types and other habitats with grasses and widely spaced low shrubs. They also prefer slopes with rock outcroppings. This subspecies is present throughout the year in southern California. This species is threatened by loss of habitat due to development. In the vicinity of the project site, this species has been reported from west of Fresno Canyon and south of Bedford Wash (CDFG 2006a). Suitable habitat for this species is present on the project site, and this species was observed on the project site.

Bell's Sage Sparrow (*Amphispiza belli belli*)

Bell's sage sparrow is a CDFG Watch List species. This coastal subspecies is an uncommon to fairly common local resident in the interior foothills of coastal southern California. Bell's sage sparrow breeds in low, dense chamise chaparral and in dry scrub vegetation types, often with stands of cactus (Garrett and Dunn 1981). This species is threatened by loss of habitat due to development and likely nest parasitism by the brown-headed cowbird (Ehrlich et al. 1988). In the vicinity of the project site, this species has been reported near Lake Point Drive between Indiana Avenue and La Sierra Avenue (CDFG 2006a). Suitable habitat for this species occurs on the project site. Therefore, Bell's sage sparrow is expected to occur on the project site.

Tricolored Blackbird (*Agelaius tricolor*)

Tricolored blackbird is a California Species of Special Concern. These colonially nesting birds prefer to breed in marsh vegetation of bulrushes (*Scirpus* sp.) and cattails and have also been recorded nesting in willows, blackberries, and mustard (Beedy et al. 1991). During winter months, they are often found foraging in wet pastures, agricultural fields, and seasonal wetlands. Tricolored blackbirds are nomadic, wandering during the nonbreeding season and occupying colony sites intermittently (Unitt 1984). In the vicinity of the project site, this species has historically been reported near Norco (CDFG 2006a). Dudek (2000) states that there are no known key locations due to the nomadic behavior of this species, but notes that it has been recorded along the Santa Ana River. Tricolored blackbird is not expected to occur on the project site due to lack of suitable habitat.

Mammals

Pallid Bat (*Antrozous pallidus*)

Pallid bat is a California Species of Special Concern. It occurs in a wide variety of habitats including grasslands, shrublands, and woodlands, but is most common in open habitats with rocky areas for roosting (Zeiner et al. 1990). Roosting habitat consists of caves, crevices, mines, and occasionally hollow trees and buildings (Whitaker 1980, Zeiner et al. 1990). This species occurs throughout California except for the high Sierra Nevada from Shasta to Kern counties and in the northwestern portion of the state (Zeiner et al. 1990). The pallid bat is very sensitive to disturbance at its roosting sites (CDFG 2004). In the vicinity of the project site, this species has been reported from Blind Canyon, north of Santiago Reservoir (CDFG 2006a). Suitable foraging and potentially suitable roosting habitats for this species occur on the project site. Therefore, pallid bat may occur for foraging and roosting on the project site.

Pale Big-eared Bat (*Corynorhinus townsendii pallescens*)

Pale big-eared bat is a California Species of Special Concern. The pale big-eared bat is one of two subspecies of the Townsend's big-eared bat that occurs throughout most of California (Williams 1986). The Townsend's big-eared bat, including both subspecies, is considered an uncommon year-round resident throughout much of California (Zeiner et al. 1990). The pale big-eared bat occurs in the southern part of the state and occupies a variety of habitats including oak woodlands, arid deserts, grasslands, and high-elevation forests and meadows (Hall 1981). Known roosting sites in California include mine tunnels, limestone caves, lava tubes, buildings, and other man-made structures (Williams 1986). The roosts, especially larger breeding colonies, are especially susceptible to disturbance (Williams 1986). Suitable foraging habitat for this species occurs on the project site. Limited suitable roosting habitat is present at the horse stables on the project site. Therefore, pale big-eared bat may occur for foraging and it has a limited potential to roost on the project site.

Spotted Bat (*Euderma maculatum*)

Spotted bat is a California Species of Special Concern. It is a rare species that is very striking in appearance but poorly known. This species may be considered one of North America's rarest mammals (Zeiner et al. 1990). Although more widespread in the deserts of southern California, the range of the spotted bat includes parts of the coastal slope of the Transverse and Peninsular mountain ranges from Ventura to San Diego County. The spotted bat occurs in a range of habitats from arid desert and grasslands through mixed conifer forests (Zeiner et al. 1990). This species forages near open water and known roosting habitat for this species consists of rock crevices, which naturally limits their distribution. Threats to this species include loss of habitat due to development. Suitable foraging habitat for this species occurs on the

project site. Limited suitable roosting habitat is present on the project site. Therefore, spotted bat may occur for foraging and it has a limited potential to roost on the project site.

Western Yellow Bat (*Lasiurus xanthinus*)

Western yellow bat is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. Little is known about its habitat, but it is known to roost in leafy vegetation (Best et al. 1998). This species is associated with dry thorny vegetation of the Mexican Plateau, coastal western Mexico, and the deserts of the southwestern United States (Best et al. 1998). In the vicinity of the project site, this species has been reported in the cities of Norco and Corona (CDFG 2006a). Potentially suitable foraging and roosting habitats for this species occurs on the project site. Therefore, western yellow bat may occur for foraging and roosting on the project site.

Small-footed Myotis (*Myotis ciliolabrum*)

Small-footed myotis is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. This species feeds among trees or over brush, and roosts in cavities of cliffs, trees, or rocks and in caves or mineshafts. It occurs throughout much of the western United States, occupying a variety of habitats. In California, it occurs from Contra Costa County southward along the coast, on the east and west sides of the Sierra Nevada, and in the Great Basin and desert habitats from Modoc to Kern and San Bernardino counties (Zeiner et al. 1990). Threats to this species include human disturbance in caves and mines used for roosting. Potentially suitable foraging and roosting habitat for this species occurs on the project site. Therefore, small-footed myotis may occur for foraging and roosting on the project site.

Yuma Myotis (*Myotis yumanensis*)

Yuma myotis is not formally listed by the resource agencies, but is tracked by the CNDDB as a CDFG Special Animal. This relatively small bat occurs statewide and is closely associated with water and wooded canyon bottoms throughout its range. Caves and old buildings are preferred roosting habitats, with roosts numbering up to 2,000 individuals. Threats to this species include loss of foraging habitat (riparian zones and open water) and human disturbance in caves and mines used for roosting. This species has also opportunistically used artificial ponds and Spanish tile roofs (Remington 2000). A recent status review has found that this species is relatively common and it may be removed from the special status list (Stephenson and Calcarone 1999). Potentially suitable foraging habitat for this species occurs on the project site. Limited suitable roosting habitat is present at the horse stables on the project site. Therefore, Yuma myotis may occur for foraging and roosting on the project site.

Western Mastiff Bat (*Eumops perotis*)

Western mastiff bat is a California Species of Special Concern. The western mastiff bat is found in many open semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban (Zeiner et al. 1990). The subspecies that occurs in southern California is the California mastiff bat (*Eumops perotis californicus*). The western mastiff bat is a very wide-ranging and high-flying insectivore that typically forages in open areas with high cliffs. This species roosts in small colonies in crevices on cliff faces. It occurs in the southeastern San Joaquin Valley and Coastal Ranges from Monterey County southward through southern California, and from the coast eastward to the Colorado Desert (Zeiner et al. 1990). Threats to this species include loss of habitat due to development, drainage of marshes, and conversion of land to agriculture (Williams 1986). In the vicinity of the project site, this species has been reported near Fremont and Blind canyons and the City of Norco (CDFG 2006a). Suitable foraging habitat for this species occurs on the project site. Limited suitable roosting habitat is present on the project site. Therefore, western mastiff bat may occur for foraging and it has a limited potential to roost on the project site.

Pocketed Free-tailed Bat (*Nyctinomops femorosaccus*)

Pocketed free-tailed bat is a California Species of Special Concern. This species is known to occur in areas with ponds, streams, or arid deserts that provide suitable foraging habitats for this species. It primarily roosts in crevices in rugged cliffs, slopes, and tall rocky outcrops (Best et al. 1998). This bat occurs in the southwestern United States to south-central Mexico (Best et al. 1998). Suitable foraging habitat for this species occurs on the project site. Limited suitable roosting habitat is present on the project site. Therefore, pocketed free-tailed bat may occur for foraging and it has a limited potential to roost on the project site.

Big Free-tailed Bat (*Nyctinomops macrotis*)

The big free-tailed bat is a California Species of Special Concern. This species feeds primarily on moths caught while flying over water sources in suitable habitat in the southwestern United States. This species prefers rugged, rocky terrain and roosts in crevices in high cliffs or rocky outcrops (Zeiner et al. 1990). Potentially suitable foraging habitat for this species occurs on the project site. Limited suitable roosting habitat is present on the project site. Therefore, big free-tailed bat may occur for foraging and it has a limited potential to roost on the project site.

San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)

San Diego black-tailed jackrabbit is a California Species of Special Concern. The San Diego subspecies of the widespread black-tailed jackrabbit is restricted to the Pacific slope from Santa Barbara County south to northwestern Baja California, Mexico. This nocturnal species prefers relatively open areas with sparse shrub cover. Threats to this species include loss of habitat to

agriculture and development (Stephenson and Calcarone 1999). Potentially suitable habitat for this species occurs on the project site. Therefore, San Diego black-tailed jackrabbit may occur on the project site.

Northwestern San Diego Pocket Mouse (*Chaetodipus fallax fallax*)

Northwestern San Diego pocket mouse is a California Species of Special Concern. This species occupies a variety of habitats including chaparral, coastal sage scrub, and grassland. The range of this subspecies is from southwest San Bernardino County south to northern Baja California, Mexico. Threats to this species include loss of habitat due to development. In the vicinity of the project site, this species has been reported from the southwestern edge of La Sierra, between Cleveland National Forest and Upper Drive (CDFG 2006a). Suitable habitat for this species occurs on the project site. Therefore, northwestern San Diego pocket mouse may occur on the project site.

Stephens' Kangaroo Rat (*Dipodomys stephensi*)

Stephens' kangaroo rat is a federally Endangered and state Threatened species. It typically occupies lands described as disturbed annual grassland, with a relatively sparse cover of both shrubs and herbaceous vegetation. Habitats occupied by Stephens' kangaroo rat characteristically occur on level to gently sloping terrain, although the species has occasionally been found on relatively steep slopes (e.g., Montgomery 1990, M.J. O'Farrell, pers. comm.). Soils in habitats harboring Stephens' kangaroo rat are typically loamy in nature, while soils dominated by clay or sand very rarely contain this species (Price and Endo 1989, M.J. O'Farrell 1990, O'Farrell and Uptain 1987). This species is known to occur widely in Riverside County, and in a few localities in southwestern San Bernardino County (RCHCA 1995). In the vicinity of the project site, this species has been reported from south of Norco, in Hidden Valley, near the junction of Cajalco Road and Temescal Canyon Road (CDFG 2006a). Dudek (2003) states that this species occurs in a patchy distribution in western Riverside County, ranging from the Corona/Norco Hills in the west to the Anza Valley in the east, the Temecula area in the south, and the Badlands in the north. Stephens' kangaroo rat is not expected to occur on the project site due to lack of suitable habitat.

San Diego Desert Woodrat (*Neotoma lepida intermedia*)

San Diego desert woodrat is a California Species of Special Concern. This species occupies arid areas with sparse vegetation; especially those comprised of cactus and other thorny plants. The San Diego subspecies is restricted to the Pacific slope in a range that stretches from San Luis Obispo south to northwestern Baja California, Mexico (Hall and Kelson 1959). Threats to this species include the loss of habitat due to development. San Diego desert woodrat is not expected to occur on the project site due to lack of suitable habitat.

Southern Grasshopper Mouse (*Onychomys torridus ramona*)

Southern grasshopper mouse is a California Species of Special Concern. It is a territorial, predatory rodent of grassland and sparse scrub vegetation types that prefers sandy soils. It occurs along the coast of southern California from Los Angeles County south through San Diego County (Hall and Kelson 1959). Threats to this species include the loss of habitat due to development. Potentially suitable habitat for this species occurs on the project site. Therefore, southern grasshopper mouse may occur on the project site.

3.4 WESTERN RIVERSIDE MULTIPLE SPECIES HABITAT CONSERVATION PLAN (MSHCP)

This Western Riverside MSHCP is a comprehensive, multi-jurisdictional plan that focuses on conservation of species and their associated habitats in western Riverside County. This MSHCP will allow Riverside County 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 state and federal Endangered Species Acts. The MSHCP Plan Area encompasses 1.26 million acres in western Riverside County. The City of Corona is a permittee under the MSHCP, and therefore, must comply with the requirements of the MSHCP.

This MSHCP has 146 “Covered Species” (including 14 Narrow Endemic plant species). Of the 146 “covered species,” 118 species (including 13 of the 14 Narrow Endemic plant species) are considered “adequately conserved” within the MSHCP. A Covered Species is considered adequately conserved when enough habitat for that species (i.e., geographic area, soils and/or habitat that supports, or has the potential to support, the Covered Species) has been acquired, or designated for acquisition, into the MSHCP “Criteria Area” (i.e., Reserve). For species not deemed adequately conserved, additional dedication and/or purchase of conservation land may be required, as determined on a case-by-case basis. A Narrow Endemic species has a limited geographic distribution (e.g., Santa Rosa Plateau or San Jacinto River Valley), an affinity for a particular soil-type (e.g., Domino, Travers, or Willow), and/or is restricted to a specific habitat (e.g., coastal sage scrub, vernal pools).

The project site is located within the MSHCP Temescal Canyon Area Plan, but is not within an area designated to be incorporated into the MSHCP Criteria Area. The target conservation acreage range for the Temescal Canyon Area Plan is 29,555 to 31,870 acres. The conservation area for this area plan will be composed of approximately 26,070 acres of existing Public/Quasi-Public lands and 3,485 to 5,800 acres of additional reserve lands. Approximately 11.7 acres of Public/Quasi-Public lands are located in the survey area comprised of the Mabey Canyon Debris Basin and Kroonen Channel. These areas are under the ownership of the Riverside County Flood Control District and as Public/Quasi-Public lands, they will be managed in a manner consistent with the MSHCP.

The MSHCP requires that project sites be evaluated for a number of factors to assess how they meet the criteria identified in the MSHCP. As part of this evaluation, the project site has been assessed for riparian/riverine resources (and associated species), vernal pools (and associated species), areas under the jurisdiction of the USACE and/or CDFG, urban/wildlands interface issues, and potential for burrowing owl. A field visit with the USFWS and CDFG was conducted on March 20, 2008, to discuss potential impacts on riparian/riverine resources. Compliance with the MSHCP will be addressed as part of the impact analysis and summarized in Section 6.0.

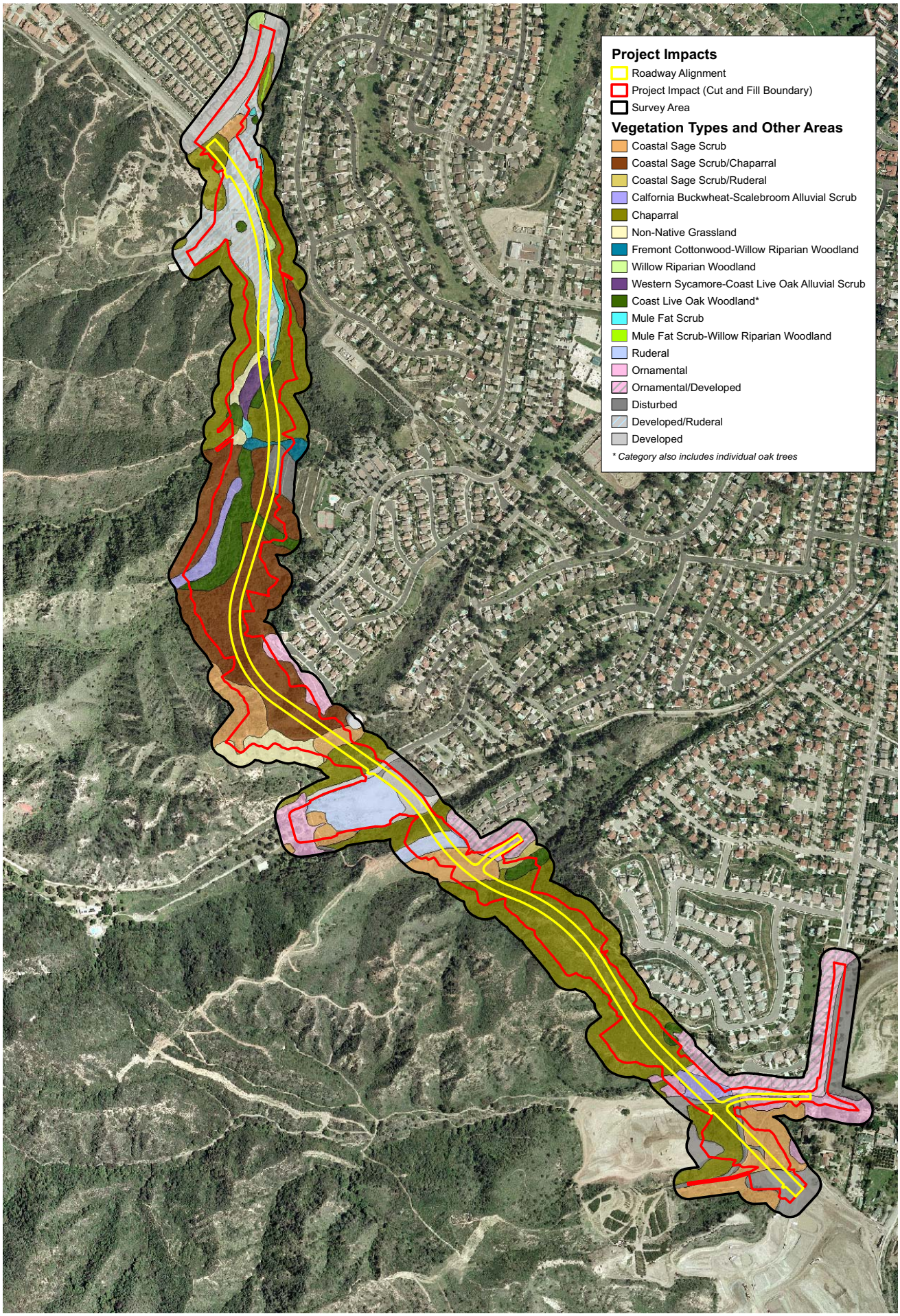
4.0 PROJECT IMPACTS

4.1 INTRODUCTION

The determination of impacts in this analysis is based on a comparison of maps depicting project grading limits and maps of biological resources on the project site. All construction activities, including staging and equipment areas, are assumed to be within the limits of grading identified on Exhibit 8. Should any of the impact areas extend beyond the limits shown, additional analysis may be required. Both direct and indirect impacts on biological resources have been evaluated. Direct impacts are those that involve the initial loss of habitats due to grading, construction, and construction-related activities. Indirect impacts are those that would be related to impacts on the adjacent remaining habitat due to construction activities (e.g., noise, dust) or operation of the project (e.g., human activity, indirect lighting).

Biological impacts associated with the proposed project were evaluated with respect to the following special status biological issues:

- federally or state Endangered or Threatened species of plant or wildlife;
- non-listed species that meet the criteria in the definition of Rare or Endangered in the California Environmental Quality Act (CEQA) Guidelines (i.e., Section 15380);
- species designated as California Species of Special Concern;
- streambeds, wetlands, and their associated vegetation;
- habitats suitable to support a federally or state Endangered or Threatened species of plant or wildlife;
- habitat, other than wetlands, considered special status by regulatory agencies (USFWS, CDFG) or resource conservation organizations;
- criteria in the Western Riverside MSHCP; and
- other species or issues of concern to regulatory agencies, or conservation organizations



D:/Projects/RBF/J307/Ex_proj_impacts_042308.mxd

Project Impacts

Exhibit 8

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/Biotech/ex8_impacts_071508.pdf

The actual and potential occurrence of these resources on the project site was correlated with the following significance criteria to determine whether the impacts of the proposed project on these resources would be considered significant.

4.2 SIGNIFICANCE CRITERIA

The criteria for determining significant impacts on biological resources were developed in accordance with the state CEQA Guidelines. Section 15065(a) of the CEQA Guidelines states that a project may have a significant effect on the environment if "…the project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species…." An evaluation of whether an impact on biological resources would be significant must consider both the resource itself and how that resource fits into a regional or local context. Significant impacts would be those that would diminish, or result in the loss of, an important biological resource or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally adverse but not significant because, although they would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis.

4.3 DIRECT IMPACTS

The impacts in the section below are also analyzed with regards to the MSHCP. This project is not in an area designated for incorporation into the MSHCP Criteria Area but it requires assessments for riparian/riverine resources (and associated species), vernal pools (and associated species), areas under the jurisdiction of the USACE and/or CDFG, urban/wildlands interface issues, and burrowing owl. An assessment for species not covered by the MSHCP is also included.

4.3.1 Plant and Vegetation Type Impacts

Approximately 79.40 acres of native and non-native vegetation types and other areas would be impacted by the proposed project. These impacts are discussed below, summarized in Table 4, and illustrated in Exhibit 8.

TABLE 4
VEGETATION IMPACTS OF THE PROPOSED PROJECT

Vegetation Type	Impacts (Acres)
Coastal Sage Scrub	7.25
Coastal Sage Scrub/Chaparral	14.02
Coastal Sage Scrub/Ruderal	0.15
California Buckwheat-Scalebroom Alluvial Scrub	2.42
Chaparral	22.84
Non-native Grassland	1.76
Fremont Cottonwood-Willow Riparian Woodland	0.40
Willow Riparian Woodland	0.25
Western Sycamore-Coast Live Oak Alluvial Scrub	0.97
Coast Live Oak Woodland	5.06
Mule Fat Scrub	0.78
Mule Fat Scrub-Willow Riparian Woodland	0.00
Ruderal	4.81
Ornamental	2.20
Ornamental/Developed	1.97
Disturbed	3.96
Developed/Ruderal	7.31
Developed	3.25
Total	**79.40**

Coastal Sage Scrub, Coastal Sage Scrub/Chaparral, Coastal Sage Scrub/Ruderal

The proposed project would impact 7.25 acres of coastal sage scrub, 14.02 acres of coastal sage scrub/chaparral, and 0.15 acre of coastal sage scrub/ruderal vegetation. Coastal sage scrub vegetation is proposed for conservation within the MSHCP Criteria Area; however, the project site is not located within the Criteria Area. Impacts on these vegetation types are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

Chaparral

The proposed project would impact 22.84 acres of chaparral vegetation. Chaparral vegetation is considered to be relatively common in the region. Chaparral vegetation is proposed for conservation within the MSHCP Criteria Area; however, the project site is not located within the Criteria Area. Impacts on this vegetation type are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

Non-native Grassland

The proposed project would impact 1.76 acres of non-native grassland. Impacts on non-native grassland vegetation are considered adverse but less than significant because these areas are considered to have a lower biological value than native vegetation types and are relatively

common in the region. Grassland vegetation is proposed for conservation within the MSHCP Criteria Area; however, the project site is not located within the Criteria Area. Impacts on this vegetation type are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

Riparian

The proposed project would impact 9.88 acres of riparian vegetation types (2.42 acres of California buckwheat-scalebroom alluvial scrub, 0.40 acre of Fremont cottonwood-willow riparian woodland, 0.25 acre of willow riparian woodland, 0.97 acre of western sycamore-coast live oak alluvial scrub, 5.06 acre of coast live oak woodland, 0.78 acre of mule fat scrub). Riparian vegetation is generally considered high quality because it provides habitat for many native plant and wildlife species. In addition, it provides functions and values that contribute to habitat quality downstream that is occupied by special status species. Impacts on riparian vegetation would be considered significant.

Riparian areas and their associated streambeds are also under the jurisdiction of the USACE, RWQCB, and CDFG. A total of 4.63 acres (3.01 acres temporary; 1.62 acres permanent) of "waters of the U.S." under the jurisdiction of USACE, 4.66 acres (3.01 acres temporary; 1.65 acres permanent) under the jurisdiction of the RWQCB, and 9.77 acres (3.01 acres temporary; 6.76 acres permanent) of streambed under the jurisdiction of CDFG would be impacted by the proposed project (RBF Consulting 2007). Implementation of Mitigation Measure #1 would reduce impacts to riparian vegetation to less than significant.

The proposed project would impact 55 western sycamores, 3 Fremont cottonwoods, and 6 black willows within riparian areas that would be impacted by the proposed project. Impacts on oaks are discussed below. Impacts on native trees within the riparian forest vegetation type would be considered significant. Implementation of Mitigation Measures #1 and #2 would reduce the impact on native trees to less than significant.

Coast Live Oak Woodland

The proposed project would impact coast live oak woodland vegetation. Most of these woodlands are located along drainages on the project site, and therefore, oak impacts have been included in the discussion of riparian vegetation types above. The proposed project would impact 113 coast live oaks and 17 scrub oaks that occur within the riparian and oak woodland vegetation types. Impacts on oak trees would be considered significant. Implementation of Mitigation Measure #2 would reduce the impact on oak trees to less than significant.

Ruderal, Ornamental, Ornamental/Developed, Disturbed, Developed/Ruderal, Developed

The proposed project would impact 2.20 acres of ornamental vegetation and 1.97 acres of ornamental/developed areas. The proposed project would also impact 4.81 acres of ruderal vegetation, 3.96 acres of disturbed, 7.31 acres of developed/ruderal, and 3.25 acres of

developed areas. These areas generally have low biological value because they are composed of unvegetated areas or are vegetated with non-native species. These areas generally provide limited habitat for native plant and wildlife species, although they may occasionally be used by native species. Therefore, impacts on these areas would not be considered significant and no mitigation would be required.

Potential Additional Impacts

Mabey Canyon Road may need to be widened to connect with the proposed Foothill Parkway. The widening of Mabey Canyon Road may result in an additional impact of 0.96 acre of native vegetation and 0.80 acre of non-native vegetation and other areas as shown in Table 5 below.

TABLE 5
POTENTIAL ADDITIONAL IMPACTS RESULTING FROM WIDENING OF MABEY CANYON ROAD

Vegetation Type	Impacts (Acres)
Coastal Sage Scrub	0.13
California Buckwheat-Scalebroom Alluvial Scrub	0.06
Chaparral	0.77
Ornamental	0.15
Ornamental/Developed	0.37
Developed	0.28
Total	**1.76**

4.3.2 Wildlife Impacts

To assess impacts on wildlife, the total impact on particular vegetation types that provide habitat for wildlife was assessed. Exhibit 7 illustrates the vegetation types (i.e., wildlife habitat) that would be impacted as a result of proposed project construction. The following discussion of wildlife impacts focuses on the common species occurring on the project site.

General Habitat Loss and Wildlife Loss

Construction of the proposed project would result in the loss of approximately 54.14 acres of native habitat that provide valuable nesting, foraging, roosting, and denning opportunities for a wide variety of wildlife species. In addition, implementation of the proposed project would result in the loss of 22.01 acres of non-native habitats that provide lower quality wildlife habitat. However, these non-native habitats do provide nesting, foraging, roosting, and denning opportunities for some species. The widening of Mabey Canyon Road may result in a loss of an additional 0.96 acre of native habitat and 0.52 acre of non-native habitat.

Removing or altering habitats on the project site would result in the loss of small mammals, reptiles, amphibians, and other slow-moving animals that live in the proposed project's direct impact area. More mobile wildlife species that are now using the project site would be forced to

move into the remaining areas of open space, which would consequently increase competition for available resources in those areas. This situation would result in the loss of individuals that cannot successfully compete.

The loss of native and non-native habitats that provide wildlife habitat is considered an adverse impact. However, the project site has not been identified as an area to be conserved by the MSHCP (i.e., it is not located within the Criteria Area). Therefore, impacts on these vegetation types are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

Wildlife Movement and Habitat Fragmentation

The project site is bordered to the south and west by the Cleveland National Forest. The areas to the north and east of the proposed road extension are developed. The proposed project would extend a road along the edge of existing and proposed development. The proposed project would remove local travel routes within the direct impact area; however, few native habitat areas would be located northeast of the proposed alignment. Therefore, the proposed project would not be expected to substantially impact wildlife movement along local travel routes. In addition, there are several local travel routes remaining to the southwest of the alignment. Therefore, impacts on local wildlife movement would be considered less than significant and no mitigation would be required.

The MSHCP could not preserve all important biological resources; some are preserved while others are allowed to be developed. Fresno Canyon, located 1.5 miles west of the project site, was identified for preservation by the MSHCP to maintain the linkage between the Cleveland National Forest and the Santa Ana River/Prado Basin while Wardlow Wash has not been identified for long-term preservation. Thus, although Wardlow Wash functions as a regional wildlife corridor between the Cleveland National Forest and the Santa Ana River/Prado Basin and impacts on wildlife movement along Wardlow Wash are considered significant, the impact is considered mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required. However, it is recommended that the base of the manufactured slope of the road be vegetated with native species to retain potential for some wildlife movement in Wardlow Wash. In addition, it is recommended that the culvert conveying water from Wardlow Wash under Paseo Grande remain large enough to allow for continued movement of wildlife species. The existing 8-foot culvert is sufficient for movement of medium-sized wildlife. This recommendation is included as Recommendation #1.

4.3.3 Special Status Biological Resource Impacts

Construction of the proposed project would potentially result in impacts to special status plant species occurring on the project site. In addition, the proposed project would result in the loss of habitat for special status wildlife species observed or with potential to occur on the project site.

Potential impacts on wildlife species were evaluated by determining the impacts on habitat that the species is known or expected to occupy.

Plants

A total of 18 special status plant species are known to occur in the vicinity of the project site. The MSHCP coverage and 2006 survey results are shown in Table 6. Sixteen species were not observed on the project site, and therefore, would not be impacted by the proposed project. Therefore, no mitigation would be required.

The intermediate mariposa lily was observed during the 2000, 2006, and 2008 focused surveys. A total of 303 individuals were observed in 30 locations during the pre-construction surveys conducted in May 2008. Impacts on this CNPS List 1B.2 species would be considered significant under CEQA. This species is not covered by the MSHCP until its species specific objectives are met. These objectives include preservation of a certain number of localities of this species, which includes the populations know from the Sierra Peak area (Dudek 2000). Implementation of Mitigation Measure #3 would reduce impacts on intermediate mariposa lily to less than significant.

Coulter's matilija poppy was observed in scattered locations along Wardlow Wash during the 2006 and 2008 focused surveys. Although it is considered a special status species (i.e., CNPS List 4.2), impacts on this species often do not typically meet the significance criteria under CEQA. However this species is not covered by the MSHCP until its species specific objectives are met, therefore the City of Corona considers impacts on this species significant (Coletta per. comm. 2006). A total of 66 individuals were observed in 11 locations during the pre-construction surveys conducted in May 2008. Impacts on Coulter's matilija poppy would be reduced to less than significant with the implementation of Mitigation Measure #3.

TABLE 6
SPECIAL STATUS PLANT SPECIES
MSHCP STATUS/IMPACTS

Species	Plant Observed During 2006 Focused Surveys?	MSHCP Status
Abronia villosa var. *aurita* chaparral sand-verbena	No	Not Covered
Allium munzii Munz's onion	No	Narrow Endemic Species
Astragalus brauntonii Braunton's milk-vetch	No	Not Covered
Atriplex coulteri Coulter's saltbush	No	Not Covered
Baccharis malibuensis Malibu baccharis	No	Not Covered
Calochortus plummerae Plummer's mariposa lily	No	Species Specific Objectives

TABLE 6 (Continued)
SPECIAL STATUS PLANT SPECIES
MSHCP STATUS/IMPACTS

Species	Plant Observed During 2006 Focused Surveys?	MSHCP Status
Calochortus weedii var. *intermedius* intermediate mariposa lily	Yes	Species Specific Objectives
Chorizanthe polygonoides var. *longispina* long-spined spineflower	No	Covered
Chorizanthe xanti var. *leucotheca* white-bracted spineflower	No	Not Covered
Cupressus forbesii Tecate cypress	No	Not Covered
Dudleya multicaulis many-stemmed dudleya	No	Narrow Endemic
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	No	Covered
Lepechinia cardiophylla heart-leaved pitcher sage	No	Additional Survey Area Criteria Area Species
Nolina cismontane chaparral nolina	No	Not Covered
Phacelia suaveolens ssp. *Keckii* Santiago Peak phacelia	No	Not Covered
Romneya coulteri Coulter's matilija poppy	Yes	Species Specific Objectives
Senecio aphanactis rayless ragwort	No	Not Covered
Sidalcea neomexicana Salt Spring checkerbloom	No	Not Covered

Wildlife

A total of 54 wildlife species known to occur in the vicinity of the project site. The MSHCP coverage and the species potential for occurrence are shown in Table 7. These species are discussed by taxon below.

TABLE 7
SPECIAL STATUS WILDLIFE SPECIES
MSHCP STATUS/IMPACTS

Species	Likelihood of Occurrence	MSHCP Status
Invertebrates		
Euphydryas editha quino Quino checkerspot butterfly	Not expected to occur; no suitable habitat.	Covered Species Adequately Conserved
Amphibians		
Taricha torosa torosa Coast Range newt	Limited potential to occur; suitable terrestrial habitat; no suitable breeding habitat.	Covered Species Adequately Conserved
Spea [*Scaphiopus*] *hammondii* western spadefoot	Limited potential to occur; suitable terrestrial habitat; limited suitable breeding habitat.	Covered Species Adequately Conserved

TABLE 7 (Continued)
SPECIAL STATUS WILDLIFE SPECIES
MSHCP STATUS/IMPACTS

Species	Likelihood of Occurrence	MSHCP Status
Bufo californicus arroyo toad	Not expected to occur; not observed during 2000 focused surveys; no suitable breeding habitat.	Additional Survey Area: Amphibian Species Survey Areas
Reptiles		
Emys [*Clemmys*] *marmorata pallida* southwestern pond turtle	Not expected to occur; no suitable habitat.	Covered Species Adequately Conserved
Coleonyx variegatus abbotti San Diego banded gecko	May occur; limited suitable habitat.	Covered Species Adequately Conserved
Phrynosoma coronatum [*blainvillii* population coast [San Diego] horned lizard	Expected to occur; suitable habitat.	Covered Species Adequately Conserved
Aspidoscelis [*Cnemidophorus*] *hyperythra* [*beldingi*] [Belding's] orange-throated whiptail	Expected to occur; suitable habitat.	Covered Species Adequately Conserved
Aspidoscelis [*Cnemidophorus*] *tigris stejnegeri* [*multiscutatus*] coastal western whiptail	Observed; suitable habitat.	Covered Species Adequately Conserved
Anniella pulchra pulchra silvery legless lizard	Expected to occur; suitable habitat.	Not Covered
Charina [*Lichanura*] *trivirgata* rosy boa	Expected to occur; suitable habitat.	Not Covered
Diadophis punctatus [*modestus*] [San Bernardino] ringneck snake	May occur; suitable habitat.	Not Covered
Lampropeltis zonata California mountain kingsnake	May occur; suitable habitat.	Covered Species Adequately Conserved when MOU with U.S. Forest Service established
Salvadora hexalepis virgultea coast patch-nosed snake	May occur; suitable habitat.	Not Covered
Thamnophis hammondii two-striped garter snake	Limited potential to occur; limited suitable habitat.	Not Covered
Crotalus ruber ruber northern red diamond rattlesnake	Expected to occur; suitable habitat.	Covered Species Adequately Conserved
Birds		
Accipiter cooperii Cooper's hawk	Observed foraging; suitable foraging habitat; expected to occur for nesting; suitable nesting habitat.	Covered Species Adequately Conserved
Accipiter striatus sharp-shinned hawk	May occur for foraging; suitable foraging habitat; not expected to occur for nesting; outside known breeding range.	Covered Species Adequately Conserved
Aquila chrysaetos golden eagle	May occur for foraging; suitable foraging habitat; limited potential to occur for nesting; potentially suitable nesting habitat.	Covered Species Adequately Conserved
Buteo regalis ferruginous hawk	May occur for foraging; suitable foraging habitat; not expected to occur for nesting; outside breeding range.	Covered Species Adequately Conserved

TABLE 7 (Continued)
SPECIAL STATUS WILDLIFE SPECIES
MSHCP STATUS/IMPACTS

Species	Likelihood of Occurrence	MSHCP Status
Buteo swainsoni Swainson's hawk	May occur for foraging as a rare migrant; suitable foraging habitat; not expected to occur for nesting; outside breeding range.	Covered Species Adequately Conserved
Circus cyaneus northern harrier	Observed foraging; suitable foraging habitat; not expected to occur for nesting; no suitable nesting habitat.	Covered Species Adequately Conserved
Elanus leucurus white-tailed kite	May occur for foraging; suitable foraging habitat; may occur for nesting; suitable nesting habitat.	Covered Species Adequately Conserved
Falco columbarius merlin	May occur for foraging; potentially suitable foraging habitat; not expected to occur for nesting; outside breeding range.	Covered Species Adequately Conserved
Falco mexicanus prairie falcon	May occur for foraging; suitable foraging habitat; not expected to occur for nesting; no suitable nesting habitat.	Covered Species Adequately Conserved
Falco peregrinus anatum American peregrine falcon	Limited potential for foraging; potentially suitable foraging habitat; not expected to occur for nesting; no suitable nesting habitat.	Covered Species Adequately Conserved
Coccyzus americanus occidentalis western yellow-billed cuckoo	Not expected to occur; no suitable habitat.	Riparian/Riverine/Vernal Pools
Asio otus long-eared owl	May occur for foraging; potentially suitable foraging habitat; may occur for nesting; suitable nesting habitat.	Not Covered
Athene cunicularia burrowing owl	Not expected to occur; not observed during 2006 or 2008 focused surveys; limited suitable habitat.	Additional Survey Area: Burrowing Owl Survey Areas
Empidonax traillii extimus southwestern willow flycatcher	Not expected to occur; no suitable habitat.	Riparian/Riverine/Vernal Pools
Lanius ludovicianus loggerhead shrike	May occur; potentially suitable habitat.	Covered Species Adequately Conserved
Vireo bellii pusillus least Bell's vireo	May occur; not observed during 2000 or 2006 focused surveys of the project site; one migrating individual observed in 2008; suitable habitat.	Riparian/Riverine/Vernal Pools
Eremophila alpestris actia California horned lark	May occur; limited suitable habitat.	Covered Species Adequately Conserved
Campylorhynchus brunneicapillus cactus wren	Limited potential to occur; limited suitable habitat.	Covered Species Adequately Conserved
Polioptila californica californica coastal California gnatcatcher	May occur; suitable habitat.	Covered Species Adequately Conserved
Dendroica petechia brewsteri yellow warbler	Observed on the project site; suitable habitat.	Covered Species Adequately Conserved

TABLE 7 (Continued)
SPECIAL STATUS WILDLIFE SPECIES
MSHCP STATUS/IMPACTS

Species	Likelihood of Occurrence	MSHCP Status
Icteria virens yellow-breasted chat	May occur; suitable habitat.	Covered Species Adequately Conserved
Aimophila ruficeps canescens southern California rufous-crowned sparrow	Observed on the project site; suitable habitat.	Covered Species Adequately Conserved
Amphispiza belli belli Bell's sage sparrow	Expected to occur; suitable habitat.	Covered Species Adequately Conserved
Agelaius tricolor tricolored blackbird	Not expected to occur; no suitable habitat.	Covered Species Adequately Conserved
Mammals		
Antrozous pallidus pallid bat	May occur for foraging; suitable foraging habitat; may occur for roosting; potentially suitable roosting habitat.	Not Covered
Corynorhinus townsendii pallescens pale big-eared bat	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.	Not Covered
Euderma maculatum spotted bat	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.	Not Covered
Lasiurus xanthinus western yellow bat	May occur for foraging; potentially suitable foraging habitat; may occur for roosting; potentially suitable roosting habitat.	Not Covered
Myotis ciliolabrum small-footed myotis	May occur for foraging; potentially suitable foraging habitat; may occur for roosting; potentially suitable roosting habitat.	Not Covered
Myotis yumanensis Yuma myotis	May occur for foraging; potentially suitable habitat; limited potential for roosting; limited roosting habitat.	Not Covered
Eumops perotis western mastiff bat	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.	Not Covered
Nyctinomops femorosaccus pocketed free-tailed bat	May occur for foraging; suitable foraging habitat; limited potential for roosting; limited roosting habitat.	Not Covered
Nyctinomops macrotis big free-tailed bat	May occur for foraging; potentially suitable foraging habitat; limited potential for roosting; limited roosting habitat.	Not Covered
Lepus californicus bennettii San Diego black-tailed jackrabbit	May occur; potentially suitable habitat.	Covered Species Adequately Conserved
Chaetodipus fallax fallax northwestern San Diego pocket mouse	May occur; suitable habitat.	Covered Species Adequately Conserved

TABLE 7 (Continued)
SPECIAL STATUS WILDLIFE SPECIES
MSHCP STATUS/IMPACTS

Species	Likelihood of Occurrence	MSHCP Status
Dipodomys stephensi Stephens' kangaroo rat	Not expected to occur; no suitable habitat.	Covered Species Adequately Conserved
Neotoma lepida intermedia San Diego desert woodrat	Not expected to occur; no suitable habitat.	Covered Species Adequately Conserved
Onychomys torridus ramona southern grasshopper mouse	May occur; potentially suitable habitat.	Not Covered

Invertebrates

Quino checkerspot is not expected to occur on the project site due to lack of suitable habitat. Therefore, there would be no impact on this species and no mitigation would be required.

Amphibians

Arroyo toad is not expected to occur on the project site due to lack of suitable habitat. In addition, the project site is outside the additional survey area for this species per the MSHCP. Therefore, there would be no impact on this species and no mitigation would be required.

Coast Range newt and western spadefoot have a limited potential to occur on the project site. Both of these species are considered Covered Species Adequately Conserved. Impacts on these species are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

Reptiles

Southwestern pond turtle is not expected to occur on the project site due to lack of suitable habitat. Therefore, there would be no impact on this species and no mitigation would be required.

San Diego banded gecko, coast horned lizard, orange-throated whiptail, coastal western whiptail, California mountain kingsnake, and northern red diamond rattlesnake were observed or have potential to occur on the project site. These six species are all considered Covered Species Adequately Conserved. Impacts on these species are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

Silvery legless lizard, rosy boa, ringneck snake, coast patch-nosed snake, and two-striped garter snake may occur on the project site and are not covered by the MSHCP. Although populations of these species are declining in the region, impacts on these species would not be expected to appreciably affect the overall population of these species. Therefore, impacts on these species would be considered adverse, but less than significant. Therefore, no mitigation would be required.

Birds

Western yellow-billed cuckoo, southwestern willow flycatcher, and tricolored blackbird are not expected to occur on the project site due to lack of suitable habitat. Therefore, there would be no impact on these species and no mitigation would be required.

Suitable habitat is present on the project site for the least Bell's vireo. This species was not observed during the 2000 or 2006 focused surveys. The least Bell's vireo was observed on only one visit and was therefore considered a migrant using the project site for dispersal. The project site was not occupied for breeding in 2008, though the project site does contain potentially suitable breeding habitat that could be occupied in the future. Any impact on this species would be considered significant. Implementation of Mitigation Measure #4 would reduce this impact to less than significant.

Although suitable habitat is present on the project site, burrowing owl was determined to be absent from the project site at this time because it was not detected during the 2006 or 2008 focused surveys. However, suitable habitat is present on the project site, and the project site is located within the additional survey area for this species; therefore, burrowing owl may move into the project site prior to the start of construction. Any impact on an active burrowing owl burrow would be considered a potentially significant impact. Per MSHCP requirements, a pre-construction survey for burrowing owl would be required to confirm absence of this species from the project impact area prior to the start of construction. Implementation of Mitigation Measure #5 would be required to reduce this potential impact to less than significant.

Loggerhead shrike, California horned lark, cactus wren, coastal California gnatcatcher, yellow warbler, yellow-breasted chat, southern California rufous-crowned sparrow, and Bell's sage sparrow were observed or have potential to occur on the project site. These eight species are all considered Covered Species Adequately Conserved. Impacts on these species are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

The proposed project would result in the loss of suitable foraging habitat for a variety of raptor species including the Cooper's hawk, sharp-shinned hawk, golden eagle, ferruginous hawk, Swainson's hawk, northern harrier, white-tailed kite, merlin, prairie falcon, American peregrine falcon, and long-eared owl. The loss of approximately 76 acres of foraging habitat for these raptor species would cumulatively contribute to the ongoing regional and local loss of foraging habitat. With exception of the long-eared owl, these raptor species are all considered Covered Species Adequately Conserved. Impacts on foraging habitat for Covered Species is considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required for these species. Impacts on foraging habitat for the long-eared owl would be considered adverse, but would not be expected to appreciably affect the overall population of these species given the amount of potentially suitable foraging habitat in the

immediate vicinity. Therefore, impacts on long-eared owl would be considered adverse, but less than significant. Therefore, no mitigation would be required.

Cooper's hawk, golden eagle, white-tailed kite, and long-eared owl also have potential to nest on the project site. The loss of an active nest of these species, or any common raptor species, would be considered a violation of the California *Fish and Game Code,* Sections 3503, 3503.5, and 3513. Therefore, the loss of any active raptor nest would be considered significant. Impacts on active raptor nests would be reduced to less than significant with the implementation of Mitigation Measure #6.

Mammals

Stephens' kangaroo rat and San Diego desert woodrat are not expected to occur on the project site due to lack of suitable habitat. Therefore, there would be no impact on these species and no mitigation would be required.

San Diego black-tailed jackrabbit and northwestern San Diego pocket mouse have potential to occur on the project site. These species are both considered Covered Species Adequately Conserved. Impacts on these species are considered adverse but mitigated by the City of Corona's participation in the MSHCP. Therefore, no mitigation would be required.

Several bat species have potential to forage and roost on the project site: pallid bat, pale big-eared bat, spotted bat, western yellow bat, small-footed myotis, Yuma myotis, western mastiff bat, pocketed free-tailed bat, and big free-tailed bat. None of these species are covered by the MSHCP. The loss of foraging habitat for these bats would cumulatively contribute to the ongoing regional loss of foraging habitat for these species. This is considered an adverse, but less–than-significant impact because a relatively substantial amount of foraging habitat for these species is available in the project vicinity.

Southern grasshopper mouse has potential to occur on the project site. Impacts on habitat for this species would be considered adverse, but would not be expected to appreciably affect the overall population of these species given the amount of potentially suitable foraging habitat in the immediate vicinity. Therefore, impacts on southern grasshopper mouse would be considered adverse, but less than significant. Therefore, no mitigation would be required.

4.4 URBAN/WILDLANDS INTERFACE (INDIRECT IMPACTS)

Indirect impacts are addressed by guidelines in Section 6.1.4 of the MSHCP. Development in proximity to the MSHCP Conservation Area may result in edge effects that could adversely affect biological resources in the MSHCP Conservation Area. To minimize these edge effects, the MSHCP provides guidelines for drainage, toxics, lighting, noise, invasives, barriers, and grading/land development. The proposed project is adjacent to the Cleveland National Forest, which is a Conservation Area protected by the MSHCP.

4.4.1 Urban and Stormwater Runoff (Drainage)

Impacts on biological resources in the vicinity of the project site could occur as a result of changes in water quality. During construction, runoff carrying excessive silt or petroleum residues from construction equipment could potentially impact water quality and, in turn, affect plant and wildlife species using the habitats adjacent to the proposed project. During operation, runoff carrying petroleum residues from vehicles using the proposed alignment could also potentially impact water quality and associated species. Impacts on drainage would be considered potentially significant. These impacts would be reduced to less than significant with incorporation of Mitigation Measure #7.

4.4.2 Toxic Material

The proposed project would not use toxic chemicals or generate toxic byproducts. Therefore, there would be no impacts as a result of the proposed project, and no mitigation would be required.

4.4.3 Lighting

Lighting of the proposed alignment would be limited to proposed intersections. Some night lighting may also be used during construction of the proposed project. This lighting would inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife adjacent to these areas. Of greatest concern is the affect on small ground-dwelling animals that use the darkness to hide from predators, and on owls that are specialized night foragers. In addition, night lighting could deter wildlife movement adjacent to the proposed alignment. Night lighting could inhibit wildlife from using the habitat adjacent to lighted areas. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #8 would reduce this impact to less than significant.

4.4.4 Noise

Noise levels on the project site would increase substantially over present levels during construction of the proposed project. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. In addition, noise impacts would also increase over present levels when the land use is converted from open space to a road. Wildlife species stressed by noise may disperse from the habitat in the vicinity of the proposed alignment. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #9 would reduce this impact to less than significant.

4.4.5 Exotic Plant and Animal Infestations

The proposed project includes landscaping adjacent to the proposed road and may include the planting of ornamental species, some of which are invasive. Seeds from invasive species may

escape to natural areas and degrade the native vegetation. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #10 of the Biological Technical Report would reduce this impact to a less than significant level.

The proposed project would not create new areas of permanent water, therefore, it would not increase the likelihood of an exotic fish or amphibian infestation. The new roadway is an extension of existing development rather than an introduction of new development; therefore, it would not be expected to introduce non-native mammal or bird populations though it may bring them closer to the natural areas in the Cleveland National Forest than they currently inhabit. This impact would be considered adverse, but is expected to be less than significant with the City's participation in the Western Riverside MSHCP. Therefore, no mitigation would be required.

4.4.6 Trampling and Unauthorized Recreational Use (Barriers)

The proposed project would increase human activity along the proposed road; this may include unauthorized public access to adjacent natural areas or illegal dumping. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #11 of the Biological Technical Report would reduce this impact to a less than significant level.

4.4.7 Grading/Land Development

The proposed project has been designed to avoid grading into the Cleveland National Forest (within the MSHCP Conservation Area). Therefore, there would be no impact as a result of grading and/or land development; no mitigation would be required.

4.4.8 Construction Impacts

Construction of the proposed project may result in several indirect impacts on biological resources. These impacts could include increased runoff that may: affect water quality, increase dust accumulation on surrounding vegetation, impact nesting birds, increase fire danger, and spread exotic species. This impact would be considered adverse and potentially significant because the proposed alignment is located adjacent to the Cleveland National Forest. Mitigation Measure #12 of the Biological Technical Report would reduce this impact to a less than significant level.

4.4.9 Trash/Debris

Construction activities could introduce trash or other construction material debris into the survey area. Construction Minimization Measures (Section 7.5.3 of the Western Riverside MSHCP; Mitigation Measure #12 of the Biological Technical Report) prohibit depositing trash on native habitat.

4.4.10 Dust

Vegetation clearing activities, grading, and other construction activities may generate dust that could settle on the leaves of trees, shrubs, and herbs. The respiratory function of the plants in the adjacent areas could be impaired if dust accumulation is excessive. These impacts would be reduced to a less than significant level with incorporation of Construction Minimization Measures (Section 7.5.3 of the Western Riverside MSHCP; Mitigation Measure #12 of the Biological Technical Report).

4.5 PUBLIC/QUASI-PUBLIC LANDS

Public/Quasi-Public lands are lands within public or private ownership that are expected to be managed for open space value and/or in a manner that contributes to the conservation of Covered Species. The proposed project would impact a total of 8.27 acres of Public/Quasi-Public lands within the Mabey Canyon Debris Basin and Kroonen channel, owned by the Riverside County Flood Control District. Of this impact, 2.28 acres would be permanently impacted (Kroonen Channel), while 5.99 acres of the impact would be temporarily impacted (Mabey Canyon Debris Basin) because the basin would be shifted back to accommodate the road. This impact would be considered a significant impact on the assembly of the MSHCP reserve, and would require purchase and dedication of an equivalent amount of land into the MSHCP Reserve per Section 7.2.2 of the MSHCP. Implementation of Mitigation Measure #13 would reduce this impact to less than significant.

5.0 MITIGATION MEASURES

The City of Corona is a participant in the MSHCP. As such, impacts covered by the MSHCP are considered fully mitigated by the City's participation in the MSHCP. This section addresses mitigation for impacts that are not covered by the MSHCP, and measures that are required by the MSHCP.

Mitigation Measure #1 – Riparian

The City of Corona will obtain all appropriate permits for impacts on USACE and CDFG jurisdictional areas. Mitigation for the loss of jurisdictional areas will consist of restoration of riparian habitat at no less than a 2:1 ratio to ensure no net loss of habitat. Any creation of habitat will be in kind and proportional to project impacts. Native trees within the riparian habitat will be replaced as follows per the City (Coletta 2008): coast live oaks 4:1; sycamore 3:1; cottonwood 3:1; willow 2:1; and scrub oak 2:1. Prior to issuance of a grading permit, a detailed restoration program will be prepared for approval by the USACE and CDFG with the following items:

- *Responsibilities and qualifications of the personnel to implement and supervise the plan.* The responsibilities of the landowner, specialists, and maintenance personnel that would supervise and implement the plan will be specified.

- *Site selection*. The site for the mitigation will be determined in coordination with the City of Corona and the resource agencies. The site will either be located on the project site in a dedicated open space area or land will be purchased off the site.
- *Site preparation and planting implementation.* The site preparation will include: (1) protection of existing native species, (2) trash and weed removal, (3) native species salvage and reuse (i.e., duff), (4) soil treatments (i.e., imprinting, decompacting), (5) temporary irrigation installation, (6) erosion control measures (i.e., rice or willow wattles), (7) seed mix application, and (8) container species.
- *Schedule*. A schedule will be developed which includes planting to occur in late fall and early winter, between October 1 and January 30.
- *Maintenance plan/guidelines.* The maintenance plan will include: (1) weed control, (2) herbivory control, (3) trash removal, (4) irrigation system maintenance, (5) maintenance training, and (6) replacement planting.
- *Monitoring plan.* The monitoring plan will include: (1) qualitative monitoring (i.e., photographs and general observations), (2) quantitative monitoring (i.e., randomly placed transects), (3) performance criteria as approved by the resource agencies, (4) monthly reports for the first year, and reports ever other month thereafter, and (5) annual reports for five years, which will be submitted to the resource agencies on an annual basis. The site will be monitored and maintained for five years to ensure successful establishment of riparian habitat within the restored and created areas.
- *Long-term preservation.* Long-term preservation of the site will also be outlined in the conceptual mitigation plan to ensure the mitigation site is not impacted by future development.

In addition, the City of Corona will submit the Determination of Biologically Equivalent or Superior Preservation (DBESP) to the USFWS and CDFG with the proposed Mitigation Plan for review. The resource agencies will review the project for consistency with Section 6.1.2 of the MSHCP (i.e., Riparian/Riverine).

Mitigation Measure #2 – Native Trees

A native tree survey was prepared to quantify the impacts on coast live oak trees that would be impacted by the proposed project as well as the impacts on native trees within riparian areas. The report outlined the mitigation requirements for removal of native trees. The mitigation plan for native trees will include the following measures:

a. Prior to grading, orange snow fencing will be installed around trees (outside the dripline) that would not be impacted by construction. Fencing will be in place and inspected by a qualified Biological Monitor prior to commencement of grading. This

fencing will remain in place throughout the entire period of construction and will be periodically checked by the Biological Monitor.

b. For each native tree removed, trees will be replaced at a ratio determined by the City of Corona (Table 7).

TABLE 8
MITIGATION REQUIRED FOR PROJECT IMPACTS

Species	Quantity Impacted	Replacement Ratio	Mitigation Requirement
Quercus agrifolia coast live oak	113	4:1	452
Quercus berberidifolia scrub oak	17	2:1	34
(*Platanus racemosa*) western sycamore	55	3:1	165
(*Populus fremontii*) Fremont cottonwood	3	3:1	9
(*Salix goodingii*) black willow	6	2:1	12
		Total	**672**

c. The Landscape Architect will design the replacement trees into the riparian revegetation to replace the habitat value of the woodlands and trees removed by the proposed project. At least 5.06 acres of replacement habitat will be planted to compensate for the loss of riparian and oak woodland habitat. The planting plan will be reviewed by a qualified Biologist and to ensure that the replacement trees are located in such a way to provide comparable habitat quality.

d. All replacement trees should be located in the riparian and oak woodland revegetation areas if possible. If spacing requirements cannot accommodate the number of replacement trees, the trees may be planted adjacent to the proposed road as a transition to open space.

e. Planting specification will consider the following:

- Newly planted trees will be planted above grade and maintained for five years (including irrigation, weed control, herbivore protections, and replacement).
- Amending the backfill soil with wood shavings, oak leaf-mold, etc. is not recommended when the existing soil is high in natural organic matter with a sandy loam texture.
- Recommendations for the need of planting amendments and drainage systems will be based on soil tests of this project and approved by the City of Corona.

- Any City-approved work within the driplines of saved trees, including branch removal, will be under the inspection of a qualified Arborist.

Landscaping requiring irrigation will not be planted within the dripline of oaks due to the susceptibility of native oaks to root rot caused by excessive unseasonable irrigation. The design and installation of landscape irrigation systems outside the dripline of the oaks will be such that the area within the dripline is not wetted during operation of the system. In addition, surface runoff from impermeable surfaces will be directed away from oaks; where natural topography has been altered, provisions should be made for drainage away from the trunks of oaks so that water will not pond or collect within the dripline of any oak.

Mitigation Measure #3 – Special Status Plant Species

If construction occurs after fall 2008, pre-construction survey during the peak flowering period for the intermediate mariposa lily and Coulter's matilija poppy, approximately March through June, will be conducted by the project biologist the spring prior to construction. The limits of each plant location within the impact area will be clearly delineated with brightly colored flagging.

The plants will be mitigated by transplantation (for matilija poppy), bulb collection (mariposa lily), and seed collection (both matilija poppy and mariposa lily). The plants, seeds or bulbs will then be placed into a suitable mitigation site in the undeveloped portion of the project site or at an approved off-site location. A qualified biologist will be selected by the applicant to prepare and implement the mitigation plan. The detailed mitigation plan will include the following requirements and be approved by the City of Corona prior to issuance of the grading permit:

- Seed ripeness will be monitored every two weeks by a qualified biologist and/or a qualified seed collector at the existing locations of lilies and poppies to determine when the seeds are ready for collection. A qualified seed collector will collect all of the seeds from the plants to be impacted when the seeds are ripe. The seeds will be cleaned and stored by a qualified nursery or institution with appropriate storage facilities.

- Following the seed collection, the bulbs/plants will be removed by bulb/plant collection, block transplantation method, or root cuttings, whichever is believed to be the most successful method for each species. The bulbs/plants will either be transplanted directly or stored by a qualified nursery or institution with appropriate storage facilities. If the bulbs/plants are collected and the block transplantation method is not used, then the top 12 inches of topsoil from the lily/poppy locations will be scraped, stockpiled, and used at the selected mitigation site.

- The mitigation site will be located in dedicated open space on the project site or at an off-site mitigation site. The mitigation site will not be within the road easement and will not be located in a fuel modification zone. The mitigation site will not attempt to enhance

existing populations and will not be impacted by any pesticides or herbicides used on adjacent properties.

- The lily/poppy mitigation site will be prepared for seeding as described in a conceptual restoration plan.

- The topsoil will be respread in the selected location as approved by the project biologist. Approximately 60 to 80 percent of the seeds and bulbs/plants collected will be spread/placed in the fall following soil preparation. The remainder of the seed and bulbs/plants will be kept in storage for subsequent seeding, if necessary.

- A detailed maintenance and monitoring plan will be developed by a qualified biologist. The plan will include detailed descriptions of maintenance appropriate for the mitigation site, monitoring requirements, and annual report requirements, and will have the full authority to suspend any operation in the study area which is, in the qualified biologist's opinion, not consistent with the restoration plan. Any disputes regarding the consistency of an action with the restoration plan will be resolved by the City of Corona and the biologist.

- The performance criteria for intermediate mariposa lily and Coulter's matilija poppy will be 80 percent of transplanted bulbs/plants established within the mitigation site producing leaves each year of the long-term maintenance and monitoring program.

- If the performance criteria is not achieved following the first season, remediation measures will be implemented prior to seeding with the remaining contingency of seed and bulbs. Remedial measures will include at a minimum: soils testing, control of invasive species, soil amendments, and physical disturbance (to provide scarification of the seed) of the planted areas by raking or similar actions. Additional mitigation measures may be suggested as determined appropriate by the project biologist.

Mitigation Measure #4 – Least Bell's Vireo

The habitat creation included in Mitigation Measure #1 will be required to mitigate for impacts on the least Bell's vireo. In addition, the following conditions will apply:

- Vegetation clearing activities will occur during the non-breeding season (September 16 to March 14). If the construction is scheduled to occur during the breeding season, a pre-construction protocol survey will be conducted the spring/summer prior to construction to confirm the absence of this species from the impact area and vicinity (i.e., within 500 feet) prior to the start of construction activities.

- The 2008 focused survey results will be provided to the USACE, USFWS, and CDFG for consideration during jurisdictional permitting and review of the revised DBESP.

Mitigation Measure #5 – Burrowing Owl

Pursuant to Objective 6 for burrowing owl in the MSHCP, a pre-construction burrowing owl survey will be conducted prior to issuance of a grading permit to verify the presence or absence of the owl on the project site. Thirty days prior to the onset of construction activities, a qualified Biologist will survey within 500 feet of the project site for the presence of any active owl burrows. Any active burrow found during survey efforts will be mapped on the construction plans. If no active burrows are found, no further mitigation would be required. Results of the surveys will be provided to the City of Corona.

If nesting activity is present at an active burrow, the active site will be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the *California Fish and Game Code.* Nesting activity for burrowing owl in the region normally occurs between March and August. To protect the active burrow, the following restrictions to construction activities will be required until the burrow is no longer active (as determined by a qualified Biologist): (1) clearing limits will be established within a 500-foot buffer around any active burrow, unless otherwise determined by a qualified Biologist and (2) access and surveying will be restricted within 300 feet of any active burrow, unless otherwise determined by a qualified Biologist. Any encroachment into the buffer area around the active burrow will only be allowed if the Biologist determines that the proposed activity will not disturb the nest occupants. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest.

If an active burrow is observed during the non-nesting season, the nest site will be monitored by a qualified Biologist; when the raptor is away from the nest, the Biologist will either actively or passively relocate the burrowing owl based on direction from the WRC RCA. The Biologist will then remove the burrow so the burrowing owl cannot return to the burrow.

Mitigation Measure #6 – Nesting Raptors

Seven days prior to the onset of construction activities during the raptor nesting season (February 1 to June 30), a qualified Biologist will survey within 500 feet of the project impact area for the presence of any active raptor nests (common or special status). Any nest found during survey efforts will be mapped on the construction plans. If no active nests are found, no further mitigation would be required. Results of the surveys will be provided to the CDFG.

If nesting activity is present at any raptor nest site, the active site will be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the California *Fish and Game Code.* To protect any nest site, the following restrictions to construction activities are required until nests are no longer active as determined by a qualified Biologist: 1) clearing limits will be established within a 500 foot buffer around any occupied nest, unless otherwise determined by a qualified Biologist and 2) access and surveying will be restricted within 300 feet of any occupied nest, unless otherwise determined by a qualified Biologist. Any encroachment into the buffer area around the known nest will only be allowed if the Biologist determines that the

proposed activity will not disturb the nest occupants. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest.

If an active nest is observed during the non-nesting season, the nest site will be monitored by a qualified Biologist, and when the raptor is away from the nest, the Biologist will flush any raptor to open space areas. A qualified Biologist, or construction personnel under the direction of the qualified Biologist, will then remove the nest site so raptors cannot return to a nest.

Mitigation Measure #7 – Drainage

Proposed Developments in proximity to the MSHCP Conservation Area will incorporate measures, including measures required through the National Pollutant Discharge Elimination System (NPDES) requirements, to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. In particular, measures will be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Stormwater systems will be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. Regular maintenance will occur to ensure effective operations of runoff control systems.

Mitigation Measure #8 – Night Lighting

Night lighting will be directed away from the MSHCP Conservation Area to protect species within the MSHCP Conservation Area from direct night lighting. Shielding will be incorporated in project designs to ensure ambient lighting in the MSHCP Conservation Area is not increased.

Mitigation Measure #9 – Noise

Proposed noise generating land uses affecting the MSHCP Conservation Area will incorporate setbacks, berms or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards.

Mitigation Measure 10 – Invasives

When approving landscape plans for proposed landscaping adjacent to the MSHCP Conservation Area, Permittees will consider the invasive, non-native plant species listed in the MSHCP and will require revisions to landscape plans (subject to the limitations of their jurisdiction) to avoid the use of invasive species for the landscaping adjacent to the MSHCP Conservation Area. Considerations in reviewing the applicability of this list will include proximity of planting areas to the MSHCP Conservation Areas, species considered in the planting plans,

resources being protected within the MSHCP Conservation Area and their relative sensitivity to invasion, and barriers to plant and seed dispersal, such as walls, topography and other features.

Mitigation Measure #11 – Barriers

Where appropriate, barriers will be placed in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping in the MSHCP Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage and/or other appropriate mechanisms.

Mitigation Measure #12 – Construction Minimization Measures

The following Construction Minimization Measures (Section 7.5.3 of the MSHCP) will be implemented during project construction to minimize impacts on biological resources during construction:

- Plans for water pollution and erosion control will be prepared for all Discretionary Projects involving the movement of earth in excess of 50 cubic yards. The plans will describe sediment and hazardous materials control, dewatering or diversion structures, fueling and equipment management practices, use of plant material for erosion control. Plans will be reviewed and approved by the City prior to construction.

- Timing of construction activities will consider seasonal requirements for breeding birds and migratory non-resident species. Habitat clearing will be avoided during species active breeding season defined as March 1 to June 30.

- Sediment and erosion control measures will be implemented until such time soils are determined to be successfully stabilized.

- Short-term stream diversions will be accomplished by use of sand bags or other methods that will result in minimal instream impacts. Short-term diversions will consider effects on wildlife.

- Silt fencing or other sediment trapping materials will be installed at the downstream end of construction activities to minimize the transport of sediments off-site.

- Settling ponds where sediment is collected will be cleaned in a manner that prevents sediment from re-entering the stream or damaging/disturbing adjacent areas. Sediment from settling ponds will be removed to a location where sediment cannot re-enter the stream or surrounding drainage area. Care will be exercised during removal of silt fencing to minimize release of debris or sediment into streams.

- No erodible materials will be deposited into water courses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.

- The footprint of disturbance will be minimized to the maximum extent Feasible. Access to sites will occur on pre-existing access routes to the greatest extent possible.

- Equipment storage, fueling and staging areas will be sited on non-sensitive upland Habitat types with minimal risk of direct discharge into riparian areas or other sensitive Habitat types.

- The limits of disturbance, including the upstream, downstream and lateral extents, will be clearly defined and marked in the field. Monitoring personnel will review the limits of disturbance prior to initiation of construction activities.

- During construction, the placement of equipment within the stream or on adjacent banks or adjacent upland Habitats occupied by Covered Species that are outside of the project footprint will be avoided.

- Exotic species removed during construction will be properly handled to prevent sprouting or regrowth.

- Training of construction personnel will be provided.

- Ongoing monitoring and reporting will occur for the duration of the construction activity to ensure implementation of best management practices.

- When work is conducted during the fire season (as identified by the Riverside County Fire Department) adjacent to coastal sage scrub or chaparral vegetation, appropriate fire-fighting equipment (e.g., extinguishers, shovels, water tankers) shall be available on the site during all phases of project construction to help minimize the chance of human-caused wildfires. Shields, protective mats, and/or other fire preventative methods shall be used during grinding, welding, and other spark-inducing activities. Personnel trained in fire hazards, preventative actions, and responses to fires shall advise contractors regarding fire risk from all construction-related activities.

- Active construction areas shall be watered regularly to control dust and minimize impacts to adjacent vegetation.

- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances shall occur only in designated areas within the proposed grading limits of the project site. These designated areas shall be clearly marked and located in such a manner as to contain run-off.

- Waste, dirt, rubble, or trash shall not be deposited in the Conservation Area or on native habitat.

Mitigation Measure #13 – Public/Quasi-Public Land

The DBESP report will include replacement Public/Quasi-Public land permanently impacted by the proposed project through the purchase of equivalent or superior quality habitat at a 1:1 ratio that will be dedicated in fee title or conservation easement to the Western Riverside County Regional Conservation Authority. The resource agencies will review the proposed acquisition to ensure that the lands to be acquired by the City of Corona are of equivalent or superior quality to the Public/Quasi-Public lands impacted by the proposed project. The dedicated lands will be managed by the Western Riverside County Regional Conservation Authority in a manner that is consistent with the goals of the MSHCP.

Recommendation #1 – Wildlife Movement

It is recommended that the base of the manufactured slope west of the constructed roadway be vegetated with native species to encourage the continued use of Wardlow Wash for wildlife movement. This area may count toward the mitigation requirement for riparian vegetation (Mitigation Measure #1), oak tree replacement (Mitigation Measure #2), and special status plant relocation (Mitigation Measure #3) if determined to be appropriate for these mitigation areas.

The culvert under Paseo Grande should be designed following guidelines in Section 7.5.2 of the MSHCP. Guidelines in Section 7.5.2 recommend a width of at least five feet to allow for passage by medium-sized wildlife. The existing 8-foot culvert under Paseo Grande exceeds these minimum requirements. In addition, the crossing should be designed in a manner which allows a dry crossing under most circumstances. This may include designing an elevated bench above the normal high water line or providing a textured gentle slope up the side of the culvert/undercrossing. Barriers to small terrestrial wildlife movement should be encouraged along new and modified roadways, so that they are guided toward appropriate undercrossings.

6.0 CONSISTENCY WITH THE MSHCP

This section provides a summary of the project's compliance with the MSHCP. These issues have all been addressed within various sections of this Biological Technical Report.

6.1 CRITERIA AREAS/CORES AND LINKAGES

The project site is not located in an area identified to be incorporated into the Criteria Area or any areas identified as providing Linkages for wildlife movement. The project site is adjacent to the Cleveland National Forest, which is part of the Criteria Area per the MSHCP.

6.2 RIPARIAN/RIVERINE RESOURCES

The MSHCP recommends avoidance of riparian/riverine habitat (Section 6.1.2 of the MSHCP). A Draft DBESP report has been reviewed by the resource agencies. Comments have been

received and incorporated herein. The DBESP will be resubmitted following completion of the Riparian Mitigation Plan described in Mitigation Measure #1.

Focused surveys for least Bell's vireo were conducted within areas of suitable habitat on the project site in 2000, 2006, and 2008. No least Bell's vireo were observed on the project site in 2000 and 2006. In 2008, the least Bell's vireo was observed on only one visit and was therefore considered a migrant using the project site for dispersal. The project site was not occupied for breeding in 2008, though the project site does contain potentially suitable breeding habitat that could be occupied in the future. Results of the survey will be incorporated into the revised DBESP.

6.3 VERNAL POOLS/FAIRY SHRIMP

No vernal pools or ponding areas that may support special status fairy shrimp are present on the project site.

6.4 USACE/RWQCB/CDFG JURISDICTIONAL AREAS

A total of 4.63 acres (3.01 acres temporary; 1.62 acres permanent) of waters under the jurisdiction of USACE, 4.66 acres (3.01 acres temporary; 1.65 acres permanent) under the jurisdiction of the RWQCB, and 9.77 (3.01 acres temporary; 6.76 acres permanent) acres of waters under the jurisdiction of CDFG would be impacted by the proposed project. Mitigation Measure #1 addresses impacts on jurisdictional areas.

6.5 URBAN WILDLANDS INTERFACE

Urban/wetlands interface issues were addressed in Section 4.4. Mitigation Measures #7 to #12 provide for measures to minimize indirect impacts on the adjacent Cleveland National Forest.

6.6 NARROW ENDEMIC/CRITERIA AREA PLANT SPECIES

The project site is located outside of areas identified for Narrow Endemic and Criteria Area plant species. Therefore, no surveys for these species were required.

6.7 ADDITIONAL SURVEY NEEDS SPECIES

The project site is located within the additional survey area for the burrowing owl. Suitable habitat for burrowing owl is present on the project site. Focused surveys for burrowing owl were conducted in spring/summer 2006 and 2008 and determined that burrowing owl are absent from the project site at this time. Mitigation Measure #5 requires that a pre-construction survey be conducted prior to construction.

6.8 PUBLIC/QUASI-PUBLIC LANDS

The proposed project would impact a total of 8.27 acres (3.28 acres permanent, 5.99 acres temporary) of Public/Quasi-Public lands within the Mabey Canyon Debris Basin and Kroonen

channel, owned by the Riverside County Flood Control District. Mitigation Measure #13 addresses impacts on public/quasi-public lands.

7.0 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the recommended measures will mitigate biological impacts to a level that is considered less than significance.

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APPENDIX A
PLANT AND WILDLIFE COMPENDIA

PLANT COMPENDIUM

Species
PINACEAE - PINE FAMILY
Pinus sp. pine
FLOWERING PLANTS
CLASS DICOTYLEDONES (DICOTS)
AIZOACEAE - FIG-MARIGOLD FAMILY
*Aptenia cordifolia** red apple ice plant
*Carpobrotus edulis** hottentot fig
ANACARDIACEAE - SUMAC FAMILY
Malosma laurina laurel sumac
Rhus integrifolia lemonadeberry
Rhus ovata sugar bush
Rhus trilobata skunkbush
*Schinus molle** Peruvian pepper tree
*Schinus terebinthifolius** Brazilian pepper tree
Toxicodendron diversilobum western poison oak
APIACEAE (UMBELLIFERAE) - CARROT FAMILY
*Foeniculum vulgare** sweet fennel
APOCYNACEAE - DOGBANE FAMILY
*Vinca major** greater periwinkle
ASCLEPIADACEAE - MILKWEED FAMILY
Sarcostemma cynanchoides ssp. *hartwegii* climbing milkweed
ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY
Achillea millefolium common yarrow
Acourtia microcephala sacapellote
Ambrosia psilostachya western ragweed
Artemisia californica California sagebrush
Artemisia douglasiana mugwort
Artemisia dracunculus tarragon
Baccharis pilularis coyote brush
Baccharis salicifolia mule fat

PLANT COMPENDIUM
(Continued)

Species
Bebbia juncea var. *juncea* smooth sweetbush
Brickellia californica California brickellbush
*Centaurea melitensis** tocalote
*Cirsium vulgare** bull thistle
Conyza canadensis common horseweed
Corethrogyne filaginifolia var. *bernardina* common sand aster
Cynara cardunculus* cardoon/globe artichoke
Encelia californica bush sunflower
Encelia farinosa brittlebush
Ericameria pinifolia pine-bush
Erigeron foliosus fleabane daisy
Eriophyllum confertiflorum golden yarrow
Gnaphalium bicolor bicolored everlasting/Bioletti's cudweed
Gnaphalium californicum California everlasting
Gnaphalium canescens everlasting
Gutierrezia sp. matchweed
Helianthus gracilentus slender sunflower
Hemizonia fasciculata fascicled tarweed
Heterotheca grandiflora telegraph weed
Isocoma menziesii var. *vernonioides* coastal goldenbush
*Lactuca serriola** prickly lettuce
Lepidospartum squamatum scale-broom
Lessingia filaginifolia California aster
Malacothrix saxatilis var. *tenuifolia* cliff malacothrix
*Silybum marianum** milk thistle
*Sonchus oleraceus** common sow-thistle

PLANT COMPENDIUM
(Continued)

Species
Stephanomeria exigua wreath plant
Stephanomeria virgata ssp. *virgata* tall wreath plant
Tetradymia comosa cotton thorn
Uropappus lindleyi silver puffs
Xanthium strumarium var. *canadense* cocklebur
BORAGINACEAE - BORAGE FAMILY
Amsinckia menziesii rancher's fiddleneck
BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY
*Brassica nigra** black mustard
*Hirschfeldia incana** shortpod mustard
*Raphanus sativus** wild radish
CACTACEAE - CACTUS FAMILY
Opuntia littoralis coastal prickly pear
CAPRIFOLIACEAE - HONEYSUCKLE FAMILY
Lonicera subspicata var. *denudata* southern honeysuckle
Sambucus mexicana Mexican elderberry
CHENOPODIACEAE - GOOSEFOOT FAMILY
*Chenopodium album** lamb's quarters
*Salsola tragus** Russian thistle
CONVOLVULACEAE - MORNING-GLORY FAMILY
Calystegia macrostegia morning-glory
CRASSULACEAE - STONECROP FAMILY
Dudleya lanceolata lance-leaved dudleya/coastal live-forever
CUCURBITACEAE - GOURD FAMILY
Cucurbita foetidissima coyote melon/calabazilla
Marah macrocarpus wild cucumber/man-root
CUSCUTACEAE - DODDER FAMILY
Cuscuta californica California dodder
EUPHORBIACEAE - SPURGE FAMILY
Chamaesyce sp. spurge

PLANT COMPENDIUM
(Continued)

Species
*Ricinus communis**   castor bean
FABACEAE (LEGUMINOSAE) - LEGUME FAMILY
Amorpha fruticosa   western false indigo
Lotus purshianus   Spanish clover
Lotus scoparius   deerweed/California broom
Lupinus bicolor   miniature lupine
*Medicago polymorpha**   California burclover
*Melilotus indica**   sourclover
*Spartium junceum**   Spanish broom
FAGACEAE - OAK/BEECH FAMILY
Quercus agrifolia   coast live oak
Quercus berberidifolia   scrub oak/California scrub oak
GERANIACEAE - GERANIUM FAMILY
*Erodium cicutarium**   red-stemmed filaree
HYDROPHYLLACEAE - WATERLEAF FAMILY
Eriodictyon crassifolium   thick-leaf yerba santa
Phacelia cicutaria   caterpillar phacelia
Phacelia minor   canterbury bell
JUGLANDACEAE - WALNUT FAMILY
Juglans californica   southern California black walnut
LAMIACEAE (LABIATAE) - MINT FAMILY
*Marrubium vulgare**   common horehound
Salvia apiana   white sage
Salvia leucophylla   purple sage
Salvia mellifera   black sage
MALVACEAE - MALLOW FAMILY
Malacothamnus densiflorus   many-flowered bushmallow
Malacothamnus fasciculatus   chaparral bushmallow

PLANT COMPENDIUM
(Continued)

Species
MYRTACEAE - MYRTLE FAMILY
Eucalyptus sp.* gum
NYCTAGINACEAE - FOUR-O'CLOCK FAMILY
Mirabilis californica wishbone bush / California wishbone bush
ONAGRACEAE - EVENING PRIMROSE FAMILY
Epilobium canum California fuchsia
PAPAVERACEAE - POPPY FAMILY
Eschscholzia californica California poppy
Romneya coulteri Coulter's matilija poppy
PLATANACEAE - SYCAMORE FAMILY
Platanus racemosa western sycamore
POLYGONACEAE - BUCKWHEAT FAMILY
Eriogonum fasciculatum California buckwheat
*Rumex crispus** curly dock
RHAMNACEAE - BUCKTHORN FAMILY
Ceanothus crassifolius var. *crassifolius* thick-leaved lilac
Ceanothus cuneatus buck bush
Ceanothus oliganthus hairy lilac
Rhamnus crocea spiny redberry
Rhamnus ilicifolia holly-leaf redberry
ROSACEAE - ROSE FAMILY
Adenostoma fasciculatum chamise
Cercocarpus betuloides mountain mahogany
Heteromeles arbutifolia toyon/Christmas berry
RUBIACEAE - MADDER FAMILY
Galium angustifolium narrow-leaved bedstraw
Galium aparine goosegrass
SALICACEAE - WILLOW FAMILY
Populus fremontii ssp. *fremontii* Fremont cottonwood
Salix sp. willow

PLANT COMPENDIUM
(Continued)

Species
Salix exigua narrow-leaved willow
Salix gooddingii black willow
Salix lucida ssp. *lasiandra* lance-leaved willow
SCROPHULARIACEAE - FIGWORT FAMILY
Keckiella antirrhinoides ssp. *antirrhinoides* yellow bush-penstemon
Keckiella cordifolia heart-leaved bush-penstemon
Mimulus aurantiacus bush monkeyflower
Scrophularia californica California figwort
SOLANACEAE - NIGHTSHADE FAMILY
Datura wrightii jimson weed
*Nicotiana glauca** tree tobacco
Solanum douglasii Douglas' nightshade
Solanum xanti chaparral nightshade
TAMARICACEAE - TAMARISK FAMILY
*Tamarix ramosissima** Mediterranean tamarisk
CLASS MONOCOTYLEDONES (MONOCOTS)
ARECACEAE (PALMAE) - PALM FAMILY
*Washingtonia robusta** Mexican fan palm
LILIACEAE - LILY FAMILY
Calochortus weedii var. *intermedius* intermediate mariposa lily
Chlorogalum pomeridianum wavy-leaved soap plant
Yucca whipplei Our Lord's candle
POACEAE [GRAMINEAE] - GRASS FAMILY
*Avena barbata** slender wild oat
Avena sp.* wild oat
*Bromus diandrus** ripgut grass
*Bromus hordeaceus** soft chess
Bromus madritensis ssp. *rubens** foxtail chess
*Cynodon dactylon** Bermuda grass

PLANT COMPENDIUM
(Continued)

Species
*Lamarckia aurea**   goldentop grass
Leymus condensatus   giant wild rye
*Lolium perenne**   perennial ryegrass
Melica imperfecta   small-flowered melic grass
Nassella lepida   foothill needlegrass
Nassella pulchra   purple needlegrass
*Polypogon monspeliensis**   annual beard grass
*Schismus barbatus**   Mediterranean schismus
Stipa coronata var. *coronata*   giant needlegrass
Vulpia myuros *   foxtail fescue
TYPHACEAE - CATTAIL FAMILY
Typha domingensis   southern cattail
* non-native species

WILDLIFE COMPENDIUM

Species
Reptiles
PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS
Sceloporus occidentalis western fence lizard
Uta stansburiana side-blotched lizard
SCINCIDAE - SKINKS
Eumeces skiltonianus western skink
TEIIDAE - WHIPTAIL LIZARDS
Aspidoscelis [*Cnemidophorus*] *tigris* western whiptail
COLUBRIDAE - COLUBRID SNAKES
Pituophis catenifer gopher snake
Birds
ODONTOPHORIDAE - QUAILS
Oreortyx pictus mountain quail
Callipepla californica California quail
PHALACROCORACIDAE - CORMORANTS
Phalacrocorax auritus double-crested cormorant
CATHARTIDAE - NEW WORLD VULTURES
Cathartes aura turkey vulture
ACCIPITRIDAE - HAWKS
Circus cyaneus northern harrier
Accipiter striatus sharp-shinned hawk
Accipiter cooperii Cooper's hawk
Buteo lineatus red-shouldered hawk
Buteo jamaicensis red-tailed hawk
FALCONIDAE - FALCONS
Falco sparverius American kestrel
CHARADRIIDAE - PLOVERS
Charadrius vociferus killdeer
COLUMBIDAE - PIGEONS & DOVES
Columba livia rock pigeon *
Zenaida macroura mourning dove

WILDLIFE COMPENDIUM
(Continued)

Species
Columba fasciata band-tailed pigeon
CUCULIDAE - CUCKOOS & ROADRUNNERS
Geococcyx californianus greater roadrunner
TYTONIDAE - BARN OWLS
Tyto alba barn owl
CAPRIMULGIDAE - GOATSUCKERS
Chordeiles acutipennis lesser nighthawk
APODIDAE - SWIFTS
Aeronautes saxatalis white-throated swift
TROCHILIDAE - HUMMINGBIRDS
Archilochus alexandri black-chinned hummingbird
Calypte anna Anna's hummingbird
Calypte costae Costa's hummingbird
Selasphorus sasin Allen's hummingbird
PICIDAE - WOODPECKERS
Melanerpes formicivorus acorn woodpecker
Picoides nuttallii Nuttall's woodpecker
Picoides villosus hairy woodpecker
Picoides pubescens downy woodpecker
Colaptes auratus northern flicker
TYRANNIDAE - TYRANT FLYCATCHERS
Contopus sordidulus western wood-pewee
Empidonax hammondii Hammond's flycatcher
Empidonax wrightii gray flycatcher
Empidonax difficilis Pacific-slope flycatcher
Sayornis nigricans black phoebe
Sayornis saya Say's phoebe
Myiarchus cinerascens ash-throated flycatcher
Tyrannus vociferans Cassin's kingbird

WILDLIFE COMPENDIUM
(Continued)

Species
Tyrannus verticalis western kingbird
VIREONIDAE - VIREOS
Vireo gilvus warbling vireo
Vireo bellii pusillus least Bell's vireo
CORVIDAE - JAYS & CROWS
Aphelocoma californica western scrub-jay
Corvus brachyrhynchos American crow
Corvus corax common raven
HIRUNDINIDAE - SWALLOWS
Stelgidopteryx serripennis northern rough-winged swallow
Petrochelidon pyrrhonota cliff swallow
Hirundo rustica barn swallow
PARIDAE - TITMICE
Baeolophus inornatus oak titmouse
AEGITHALIDAE - BUSHTITS
Psaltriparus minimus bushtit
SITTIDAE - NUTHATCHES
Sitta carolinensis white-breasted nuthatch
TROGLODYTIDAE - WRENS
Salpinctes obsoletus rock wren
Thryomanes bewickii Bewick's wren
Troglodytes aedon house wren
REGULIDAE - KINGLETS
Regulus calendula ruby-crowned kinglet
TURDIDAE - THRUSHES & ROBINS
Catharus ustulatus Swainson's thrush
Catharus guttatus hermit thrush
TIMALIIDAE - WRENTITS
Chamaea fasciata wrentit

WILDLIFE COMPENDIUM
(Continued)

Species
MIMIDAE - THRASHERS
Mimus polyglottos northern mockingbird
Toxostoma redivivum California thrasher
STURNIDAE - STARLINGS
Sturnus vulgaris European starling*
MOTACILLIDAE - PIPITS
Anthus rubescens American pipit
PTILOGONATIDAE - SILKY-FLYCATCHERS
Phainopepla nitens phainopepla
PARULIDAE - WARBLERS
Vermivora celata orange-crowned warbler
Vermivora ruficapilla Nashville warbler
Dendroica petechia yellow warbler
Dendroica coronata yellow-rumped warbler
Dendroica nigrescens black-throated gray warbler
Dendroica townsendi Townsend's warbler
Dendroica occidentalis hermit warbler
Oporornis tolmiei MacGillivray's warbler
Wilsonia pusilla Wilson's warbler
THRAUPIDAE - TANAGERS
Piranga ludoviciana western tanager
EMBERIZIDAE - SPARROWS & JUNCOS
Pipilo maculatus spotted towhee
Pipilo crissalis California towhee
Aimophila ruficeps rufous-crowned sparrow
Spizella passerina chipping sparrow
Chondestes grammacus lark sparrow
Amphispiza bilineata black-throated sparrow
Spizella atrogularis black-chinned sparrow

WILDLIFE COMPENDIUM
(Continued)

Species
Passerella iliaca fox sparrow
Melospiza melodia song sparrow
Zonotrichia leucophrys white-crowned sparrow
Zonotrichia atricapilla golden-crowned sparrow
Junco hyemalis dark-eyed junco
CARDINALIDAE - GROSBEAKS & BUNTINGS
Pheuticus melanocephalus black-headed grosbeak
Passerina amoena lazuli bunting
ICTERIDAE - BLACKBIRDS
Icterus cucullatus hooded oriole
Icterus bullockii Bullock's oriole
FRINGILLIDAE - FINCHES
Carpodacus mexicanus house finch
Carduelis psaltria lesser goldfinch
Mammals
LEPORIDAE - HARES & RABBITS
Sylvilagus audubonii desert cottontail
SCIURIDAE - SQUIRRELS
Spermophilus beecheyi California ground squirrel
MURIDAE - MICE, RATS, AND VOLES
Neotoma sp. woodrat
CANIDAE - WOLVES & FOXES
Canis latrans coyote
CERVIDAE - DEER
Odocoileus hemionus mule deer
* introduced species

APPENDIX B
SPECIAL STATUS PLANT SPECIES

Bonterra
CONSULTING
An Environmental Planning/Resource Management Corporation

July 26, 2000

Mr. Gary Warkentin
Robert Bein, William Frost & Associates
14725 Alton Parkway
Irvine, CA 92618

Subject: Spring Botanical Surveys on the Foothill Parkway Project Site, in the City of Corona, Riverside County, California

Dear Mr. Warkentin:

This letter report presents the findings of a spring botanical survey on the proposed Foothill Parkway project site. The project site is located in between the eastern terminus of Green River Road and the western terminus of Foothill Parkway, in the City of Corona, Riverside County as shown on Exhibits 1 and 2. Presently, land uses on the site consist of open space, agriculture, residential, and United States Forest Service (USFS) property. The proposed project is the conversion of the existing uses to an extension of Foothill Parkway.

The project site is situated at the northeastern base of the Santa Ana Mountains. The topography of the site is variable with the western portion of the project site consisting of steep slopes and the eastern portion of the project site consisting of gently sloping hills. Elevations on the project site range from approximately 800 to 1,300 feet above mean sea level (msl). The project site is found on the Corona South U.S. Geological Survey 7.5 minute quadrangle map.

Background Information

Spring botanical surveys were conducted to determine presence or absence of special status plant species known to occur in the vicinity as listed in Table 1. Thirteen vegetation types occur on the project site including: southern cottonwood-willow riparian, southern coast live oak riparian forest, California sycamore-coast live oak, California sagebrush-California buckwheat sage scrub, disturbed Riversidian alluvial fan sage scrub, mule fat scrub, mule fat scrub/laurel sumac, chamise/ceanothus chaparral, coastal sage chaparral scrub, burnt coastal sage chaparral scrub, agriculture, developed/ornamental, and disturbed/ruderal. Background information on the vegetation types, including locations, and on each of the special status plant species known from the vicinity is included in the Biological Technical Report. Background on the species known to occur on the project site is listed below.

Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*)

Intermediate mariposa lily is a CNPS List 1B species. It typically blooms from May to June. This lily is a bulbous perennial herb found from sea level to 2,000 feet above msl in chaparral, coastal sage scrub, valley and foothill grassland communities, as well as rocky outcrops (CNPS 2000). This species occurs in Los Angeles, Riverside,

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and Orange counties and is threatened by development, road construction, and fuel modification (CNPS 2000).

Matilija Poppy (*Romneya coulteri*)

Matilija poppy is a CNPS List 4 species that typically blooms March through July. It is a rhizomatous perennial shrub that often forms dense clonal clumps in coastal sage scrub and chaparral. The poppy is known to occur in Los Angeles, Riverside, Orange, and San Diego counties (CNPS 2000). This species occurs in scattered localities throughout Riverside County. This poppy is threatened by urbanization, road widening, and flood control.

Methods

The spring botanical surveys were conducted on April 24, 27 and June 7, 2000 by Sandra Leatherman of BonTerra Consulting and David Bramlet, Biological Consultant. All areas on the project site containing native habitats, as determined in previous biological surveys, were surveyed for the special status plant species. The surveys were conducted using meandering transects.

Plant species were identified in the field or collected for future identification. Plants were identified using keys in Hickman (1993), Munz (1974), or Abrams (1923, 1960). Taxonomy follows Hickman (1993) for scientific and common names. Voucher specimens of intermediate mariposa lily were collected by David Bramlet and will be placed in Rancho Santa Ana Botanical Garden or University of California at Riverside herbarium.

Survey Results

Two special status plant species were observed during the survey of the project site: intermediate mariposa lily and matilija poppy. The locations of these species and their associated species are listed below and shown on Exhibit 3.

Intermediate mariposa lily

Ten locations of intermediate mariposa lily were observed on the project site. The locations and associated species are listed below.

Location 1: Approximately 150 intermediate mariposa lily plants were found at this location. This location is southwest of the intersection of Mangular Avenue and Chase Drive on a burnt east-facing slope. Ninety percent of the plants observed were blooming. Associated species include: chamise (*Adenostoma fasciculatum*), deerweed (*Lotus scoparius*), yellow bush-penstemon (*Keckiella antirrhinoides*), golden yarrow (*Eriophyllum confertiflorum*), mock parsley (*Apiastrum angustifolium*), chaparral nightshade (*Solanum xanti*), alkali lotus (*Lotus salsuginosus*), tocalote (*Centaurea melitensis*), shortpod mustard (*Hirschfeldia incana*), white snapdragon (*Antirrhinum coulterianum*), laurel sumac (*Malosma laurina*), and splendid mariposa lily (*Calochortus splendens*).

Location 2: Approximately ten intermediate mariposa lily plants were found at this location. This location is also southwest of the intersection of Mangular Avenue and Chase Drive on a northeast-facing slope that was burnt during the last season. Forty percent of the plants observed were blooming. Associated species include: Tejon cryptantha (*Cryptantha microstachys*), California fluffweed (*Filago californica*), chamise, chaparral nightshade, California everlasting (*Gnaphalium californicum*), golden yarrow, black sage (*Salvia mellifera*), saw-toothed goldenbush (*Hazardia squarrosa*), deerweed, red brome (*Bromus madritensis* ssp. *rubens*), laurel sumac, foxtail fescue (*Vulpia myuros*), and tocalote.

Location 3: Approximately seven intermediate mariposa lily plants were found at this location. This location is also southwest of the intersection of Mangular Avenue and Chase Drive on an east-facing slope that was burnt during the last season. One hundred percent of the plants observed were blooming. Associated species include: tocalote, deerweed, turkish rugging (*Chorizanthe staticoides*), black sage, and Our Lord's candle (*Yucca whipplei*).

Location 4: Approximately ten intermediate mariposa lily plants, five of which were blooming, were found at this location. This location is northeast of the terminus of Condor Court on a west-facing slope in openings in the chaparral/sage scrub. Associated species include: tocalote, fascicled tarweed (*Hemizonia fasciculata*), short-pod mustard, tall wreath plant (*Stephanomeria virgata*), caterpillar phacelia (*Phacelia cicutaria*), red brome, California fluffweed, deerweed, Mediterranean schismus (*Schismus barbatus*), Russian thistle (*Salsola tragus*), black sage, common groundsel (*Senecio vulgaris*), and California chicory (*Rafinesquia californica*).

Location 5: Approximately 50 intermediate mariposa lily plants were found at this location. This location is directly east of Mabey Canyon Debris Basin growing on the plateau and on the north-facing slope. Associated species include: mountain mahogany (*Cercocarpus betuloides*), slender sunflower (*Helianthus gracilentus*), tocalote, common horseweed (*Conyza canadensis*), fascicled tarweed, California everlasting, California scrub oak (*Quercus berberidifolia*), California fluffweed, black sage, weedy cudweed (*Gnaphalium luteo-album*), foxtail fescue, California rush rose (*Helianthemum scoparium*), red-stemmed filaree (*Erodium cicutarium*), short-pod mustard, white sage (*Saliva apiana*), and vinegar weed (*Trichostema lanceolatum*).

Location 6: Approximately 20 intermediate mariposa lily plants were found at this location. This location is directly south of the water reservoir between the terminus of Chisholm Trail and Mabey Canyon Road on a northeast-facing slope. Associated species include: black sage, chamise, laurel sumac, golden yarrow, California buckwheat (*Eriogonum faciculatum*), California sagebrush (*Artemisia californica*), and purple needlegrass (*Nassella pulchra*).

Location 7: Approximately 18 intermediate mariposa lily plants were found at this location. The location is on a ridge and an east-facing slope directly south of Chisholm Trail. Associated species include: chamise, deerweed, purple needlegrass, California sagebrush, slender sunflower, black sage, thick-leaved lilac (*Ceanothus crassifolius*) and Our Lord's candle.

Location 8: Approximately 14 intermediate mariposa lily plants were found at this location. The location is on the ridge and an east-facing slope directly south of Chisholm Trail. Associated species include: chamise, deerweed, purple needlegrass, California sagebrush, slender sunflower, black sage, thick-leaved lilac and Our Lord's candle.

Location 9: Approximately 21 intermediate mariposa lily plants were found at this location. The location is on a ridge and an east-facing slope directly south of Chisholm Trail. Associated species include: southern rosinweed (*Osmadenia tenella*), California sagebrush, California buckwheat, deerweed, tocalote, short-pod mustard, red brome, black sage, Our Lord's candle, purple needlegrass, lanceleaf dudleya (*Dudleya lanceolata*), golden yarrow, laurel sumac, and blue-eyed grass (*Sisyrinchium bellum*).

Location 10: Approximately 43 intermediate mariposa lily plants occur at this location. This location is southwest of the terminus of Chisholm Trail. Associated species include: California sagebrush, California buckwheat, black sage, tocalote, blue dicks (*Dichlostemma pulchellum*), caterpillar phacelia, and red brome.

Location 11: Approximately seven intermediate mariposa lily plants occur at this location. This location is on an east-facing slope in the beginning of Wardlow Canyon. Associated species include: laurel sumac, California buckwheat, California sagebrush, black sage, and wild cucumber (*Marah macrocarpus*).

Matilija Poppy

Ten locations of Matilija Poppy were observed on the project site. The locations and associated species are listed below.

Location 1: Approximately five matilija poppy plants occur in the is location along the dirt road in Mabey Canyon. The matilija poppies were not blooming during the first survey but were in one hundred percent bloom during the second set of surveys. Associate species include: laurel sumac, California sagebrush, California buckwheat, wild cucumber, and black sage.

Location 2: Approximately five matilija poppy plants occur in this location west of the intersection of Lincoln Avenue and Chase Drive. The matilija poppies are growing on of a pile of dirt dumped in an empty lot.

Location 3: Approximately 85 matilija poppy plants occur at this location west of Skyline Drive directly north of an existing nursery. These plants occur on a north-facing slope that was burnt last season. Associated species include: common groundsel, wild cucumber, lemonade berry (*Rhus integrifolia*), laurel sumac, and yellow-bush penstemon.

Location 4: Approximately three matilija poppy plants occur in this location southeast of the intersection of Mangular Avenue and Chase Drive on an east-facing burnt slope. Associated species include deerweed, laurel sumac, and wild cucumber.

Location 5: Approximately 35 matilija poppy plants occur southeast of the intersection of Mangular Avenue and Chase Drive. Associated species include: bush sunflower (*Encelia californica*), wild cucumber, scale broom (*Lepidospartum squamatum*), deerweed, laurel sumac, and cobweb thistle (*Cirsium occidentale*).

Location 6: Approximately 40 matilija poppy plants occur in this location downstream from location 5. Associated species include: bush sunflower, wild cucumber, scale broom, deerweed, laurel sumac, and cobweb thistle.

Location 7: Approximately 20 matilija poppy plants occur in this location downstream from location 5 and 6. Associated species include: bush sunflower, wild cucumber, scale broom, deerweed, laurel sumac, and cobweb thistle.

Location 8: Approximately 32 matilija poppy plants occur in this location directly south of the current terminus of Border Avenue. These poppies are at the base of a burnt slope. Associated species include: laurel sumac, wild cucumber, and yellow-bush penstemon.

Location 9: Approximately seven matilija poppy plants occur in this location in the drainage directly west of Border Avenue. These species occur in the bottom of the drainage under a coast live oak tree (*Quercus agrifolia*) and mixed in with mule fat (*Baccharis salicifolia*).

Recommendations

Intermediate Mariposa Lily

Impacts on the intermediate mariposa lily can be mitigated to a level less than significant by one of the following options.

1. Avoidance - All populations of the intermediate mariposa lily shall be avoided to the extent possible.

2. Compensation - If avoidance is not possible then offsite purchase of mitigation sites shall be researched to determine the feasibility of this option. The mitigation sites shall be open space that contain substantial populations of intermediate mariposa lily and shall be dedicated in perpetuity.

3. If avoidance and compensation are not viable options, then a mitigation program as listed below shall be conducted.

   To compensate for the loss of the intermediate mariposa lily a plan that provides for the establishment of species by transplantation and seeding shall be developed and implemented by a qualified biologist, selected by the applicant. The detailed mitigation plan shall be approved by the appropriate agencies prior to issuance of a grading permit and shall include the following requirements discussed below:

   - Procedures for determining a suitable mitigation site to transplant the bulbs and broadcast lily seeds shall be determined. Field surveys shall be conducted to identify the proposed mitigation site and locate suitable locations for the transplant effort. Proposed sites should not contain an existing population of the intermediate mariposa lily. The site shall be marked in the field with stakes and flagging.

   - A pre-construction survey during the peak flowering period, approximately March through June, shall be conducted by the project biologist. The limits of each impacted lily location will be clearly delineated with lath and brightly colored flagging. These localities will be monitored once every two weeks, following the end of the flowering period, to determine the suitable time for seed collection. A qualified seed collector will collect all of the seeds from the plants to be impacted when the seeds are ripe. The seeds will be cleaned and stored by a qualified nursery or institution with appropriate storage facilities. Following the seed collection, the bulbs will be dug up and stored by a qualified nursery or institution with appropriate storage facilities. The top 12 inches of topsoil from the lily locations will be scraped, stockpiled, and used in the selected mitigation site.

   - Detailed procedures for implementing the transplantation of the intermediate mariposa lily will be described in the plan. This will include, but will not be limited to: 1) trash/weed removal, 2) respreading of native lily topsoil, 3) soils treatments, and 4) irrigation system modification/repair erosion control.

   - Approximately 60 percent of the seeds and bulbs shall be spread/placed at the selected site in the fall following site preparation. Forty percent of the seed and bulbs shall be kept in storage for supplemental planting, in the event of future plant failure.

- A detailed maintenance and monitoring plan will be developed by a qualified biologist. The plan will include detailed descriptions of appropriate maintenance measures, monitoring requirements, and annual report requirements. The project biologist shall have full authority to suspend any operation on the mitigation site which is, in the qualified biologist's opinion, not consistent with the restoration plan. Any disputes regarding the consistency of an action with the restoration plan shall be resolved by the applicant and the biologist.

- The mitigation plan shall provide a series of performance criteria to evaluate the success of the transplantation effort. This shall include requirements for a minimum of 60 percent germination of the number of plants collected. The performance criteria should also include percent cover, density, and seed production requirements. This criteria will be developed by the project biologist using a reference population for density. The monitoring period for the impacts shall be five years or until the site is determined a success in coordination with the resource agencies.

- If after the five-year period at least 60 percent of the total number of plants removed by the project have not become established at the mitigation site, then additional mitigation will be required. If after the five-year period at least 80 percent of the total number of plants removed had not developed on the mitigation site, then the material held in storage shall be reseeded/planted into the mitigation. However, the mitigation effort would be considered successful and no additional monitoring would be required.

With implementation of the above program, impacts on the intermediate mariposa lily would be mitigated to a less than significant level.

Matilija Poppy

Impacts on the Matilija poppy should be avoided, if possible. Any impacts to this species would be considered adverse; however, not significant under CEQA due to the large distribution and number of locations of this species. Therefore no mitigation is necessary.

BonTerra Consulting has appreciated the opportunity to assist on this project. If you have any comments or questions, please call Kathleen Brady or Sandy Leatherman at (714) 444-9199.

Sincerely,

BONTERRA CONSULTING

Kathleen Brady
Principal

Sandra J. Leatherman
Senior Biologist

R:\Projects\RBF\J035 Letter-072600.wpd

cc: Steve Enna, City of Corona

Attachment: Table 1
Exhibits 1 and 2

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TABLE 1
SPECIAL STATUS PLANT SPECIES
IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
Allium munzii[3,*] Munz's onion	FE	ST	List 1B	Limited Potential; Not Observed
Astragalus brauntonii Braunton's milk-vetch	FE	—	List 1B	Limited Potential; Not Observed
Calochortus catalinae Catalina mariposa lily	—	—	List 4	Limited Potential; Not Observed
Calochortus plummerae Plummer's mariposa lily	SOC	—	List 1B	Limited Potential; Not Observed
Calochortus weedii var. *intermedius* intermediate mariposa lily	SOC	—	List 1B	Observed
Caulanthus simulans Payson's jewel flower	SOC	—	List 4	Limited Potential; Not Observed
Cupressus forbesii Tecate cypress	SOC	—	List 1B	No Potential
Dudleya multicaulis many-stemmed dudleya	SOC	—	List 1B	Limited Potential; Not Observed
Harpagonella palmeri Palmer's grapplinghook	—	—	List 4	Limited Potential; Not Observed
Hemizonia pungens ssp. *laevis* smooth tarplant	SOC	—	List 1B	No Potential
Hordeum intercedens vernal barley	—	—	List 3	Limited Potential; Not Observed
Lepichinia cardiophylla heart-leaved pitcher sage	SOC	—	List 1B	Not Expected
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	—	—	List 1B	Limited Potential; Not Observed
Phacelia suaveolens ssp. *keckii* Santiago Peak phacelia	SOC	—	List 1B	Not Expected
Romneya coulteri matilija poppy	—	—	List 4	Observed

TABLE 1 (continued)
SPECIAL STATUS PLANT SPECIES
IN THE VICINITY OF THE PROJECT SITE

Species	Status[1]			Likelihood for Occurrence
	USFWS	CDFG	CNPS	

STATUS DEFINITIONS[1]

USFWS

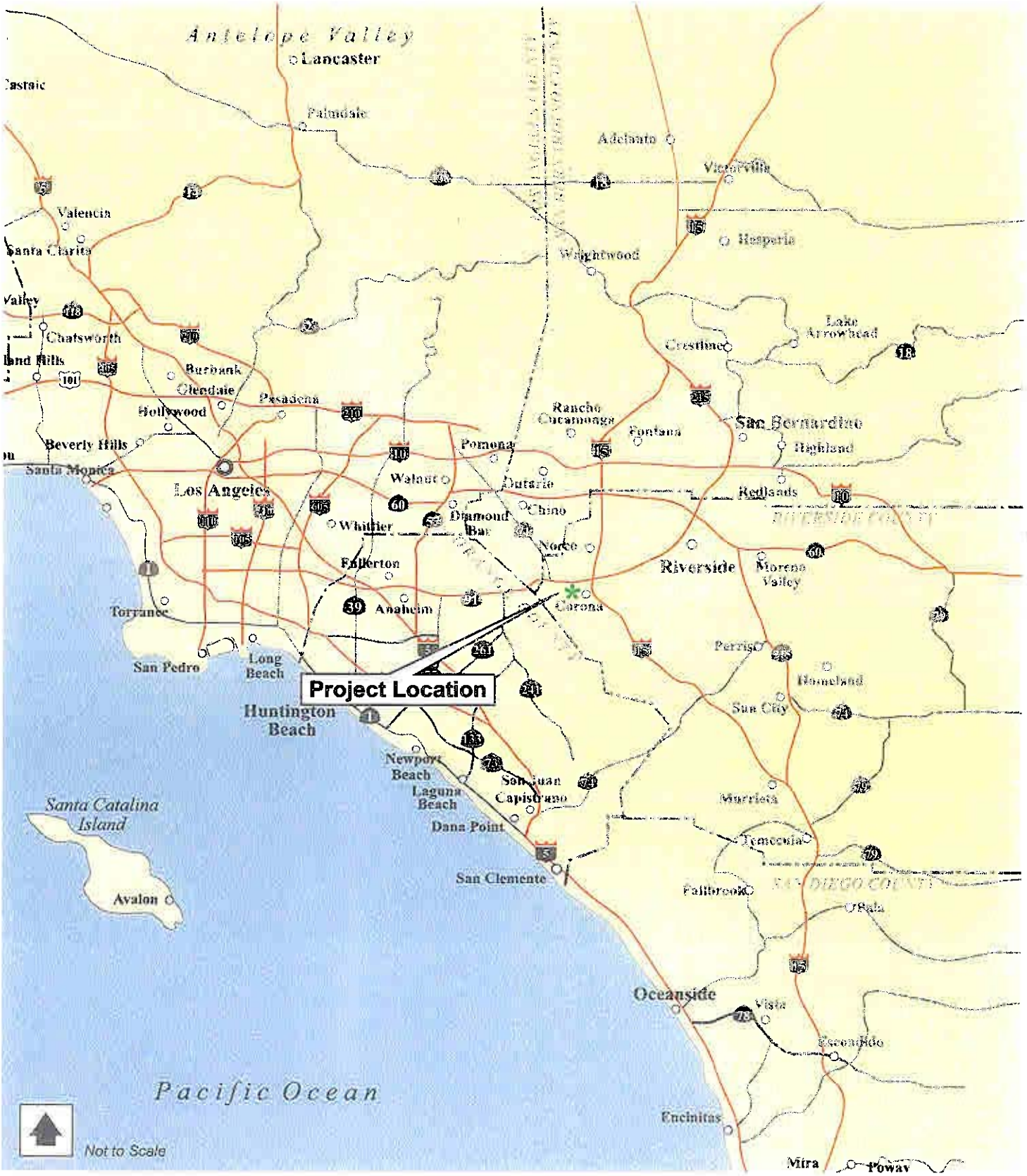
FE: Species designated as endangered under the federal Endangered Species Act. Endangered = "any species in danger of extinction throughout all or a significant portion of its range."
FT: Species designated as threatened under the Federal Endangered Species Act. Threatened = "species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
FPE: Proposed for federal listing as Endangered.
FPT: Proposed for federal listing as Threatened.
C: Candidate for federal listing as Threatened or Endangered.
SOC: Species of Concern

CDFG

ST: Threatened = "a species that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this Act" (California Endangered Species Act).
SE: Endangered = "a species is endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes."

CNPS

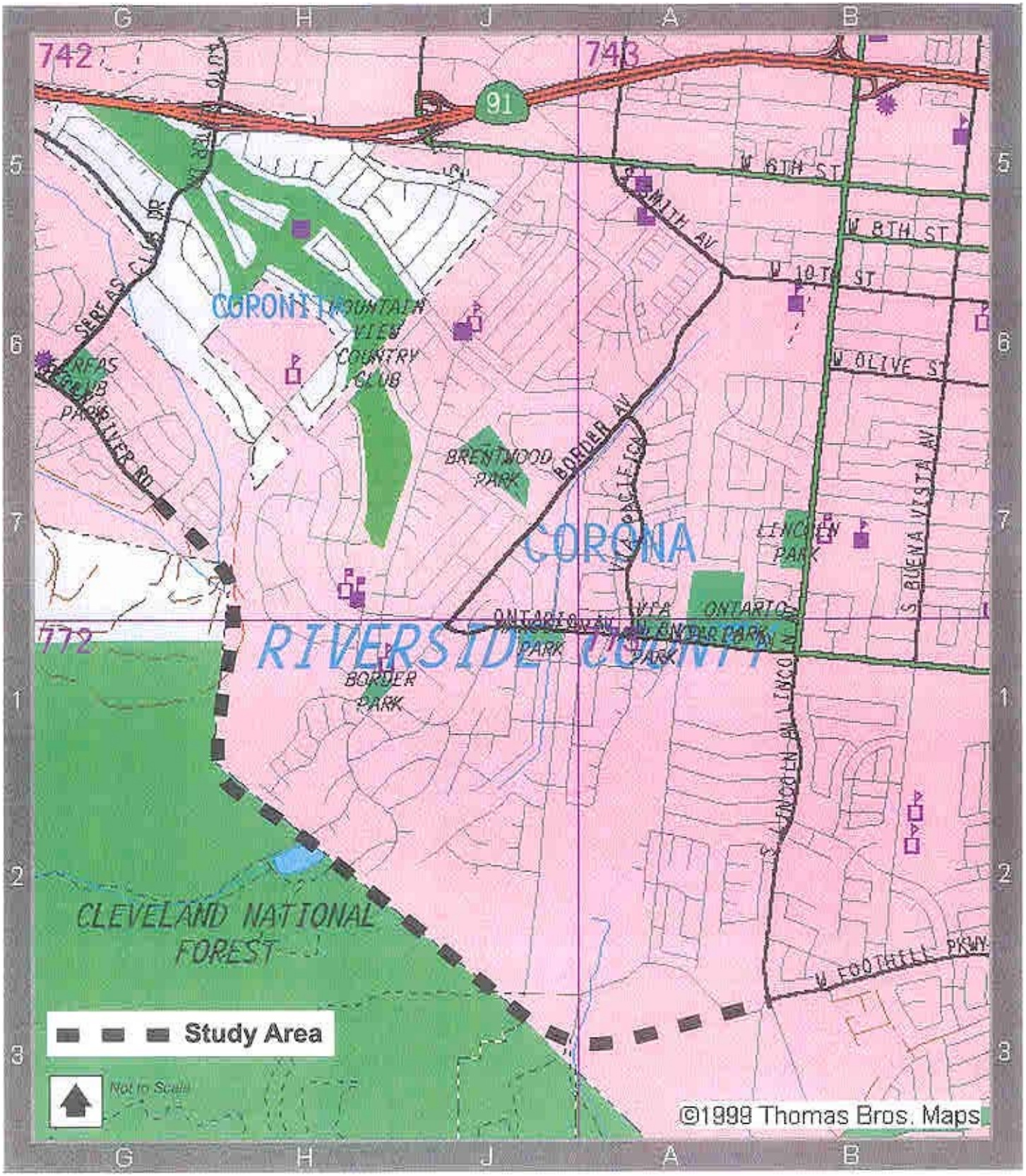
1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
3 Plants About Which We Need More Information- A Review List
4 Plants of Limited Distribution - A Watch List



Regional Location Map Exhibit 1

Foothill Parkway Extension
DRAFT - Biological Technical Report

BonTerra CONSULTING

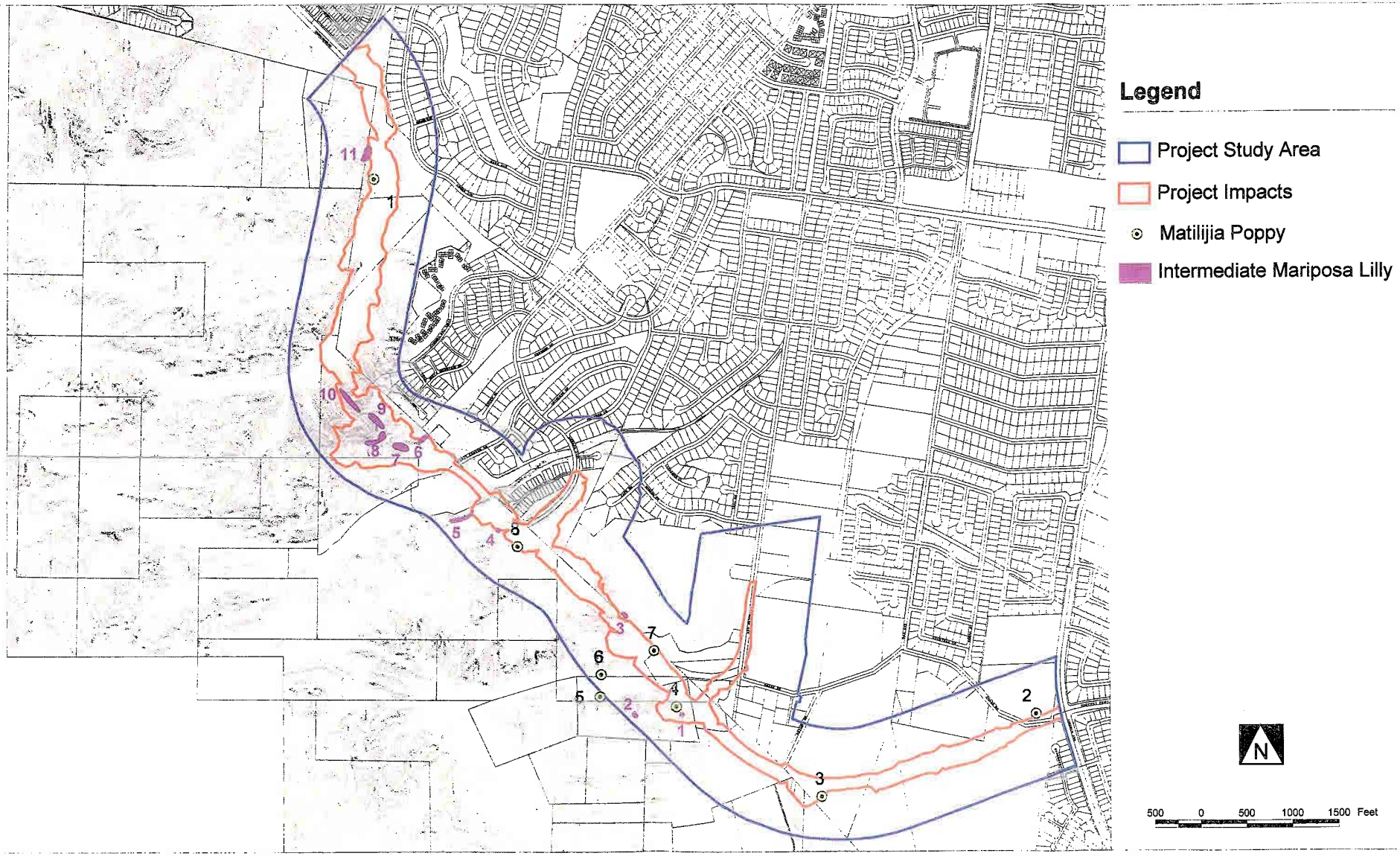


Local Vicinity Map

Exhibit 2

Foothill Parkway Extension
DRAFT - Biological Technical Report

BonTerra CONSULTING



Special Status Species Plant Locations

Foothill Parkway Extension

Scale: 1" = 1000'

Exhibit 3

BonTerra CONSULTING

BonTerra CONSULTING

Celebrating Ten 1996-2006

October 3, 2006

Mr. Bruce Grove
RBF Consulting
14725 Alton Parkway
Irvine, CA 92618-2027

Subject: Results of Special Status Plant Surveys for the Foothill Parkway Extension, City of Corona and Unincorporated Riverside County, California

Dear Mr. Grove:

This letter report presents the findings of special status plant surveys conducted for the Foothill Parkway Extension located on the eastern slope of the Santa Ana Mountains in the City of Corona, Riverside County, California. The approximately 93-acre survey area is located along the southwestern edge of the City of Corona and unincorporated Riverside County, California (Exhibits 1 and 2). The survey area is located between the termini of Paseo Grande and Mangular Avenue, southwest of Ontario Avenue. Surrounding land uses include residential development to the north and east, and open space (Cleveland National Forest) to the south and west. The survey area is located within the Multiple Species Habitat Conservation Plan (MSHCP) Temescal Canyon Area Plan, but is not within a designated MSHCP Criteria Area. Therefore, focused surveys for most of the covered species are not required. However, focused surveys for special status plants not currently covered by the MSHCP that could be significant under California Environmental Quality Act (CEQA) are required.

The survey area is located on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle map at Township 3S, Range 7W, Sections 33 and 34 and Township 4S, Range 7W, Sections 3, 4, and 10. Elevations on the survey area range from approximately 800 to 1,200 feet above mean sea level (msl).

METHODS

Prior to the field surveys, a literature review was conducted to identify special status plants known from the survey area vicinity. This included a review of Prado Dam, Black Star Canyon, Corona North, and Corona South, California USGS 7.5-minute quadrangles in the California Natural Diversity Database (CDFG 2006) and the California Native Plant Society's Inventory (CNPS 2006). Table 1 lists special status plant species known to occur in the vicinity of the survey area. The surveys were only done for the species with potential to occur on the survey area that are not fully covered by the MSHCP. These

species are the intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) and Plummer's mariposa lily (*Calochortus plummerae*).

Special status plant surveys were conducted on June 22, 2006, by BonTerra Consulting Botanists Sandra Leatherman and Andrea Warniment. Meandering transects were used to search the entire survey area. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification using keys in Hickman (1993) and Munz (1974). Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names. A known reference population of intermediate mariposa lily was visited at the end of Border Road in Corona on June 20, 2006. Intermediate mariposa lily was observed flowering at this reference population.

SITE DESCRIPTION

Vegetation types and other areas mapped on the survey area include coastal sage scrub, alluvial, coastal sage scrub/chaparral, coastal sage scrub/ruderal, chaparral, non-native grassland, riparian forest, oak woodland, agriculture, ruderal, ornamental, developed/ruderal, disturbed, and developed areas (Exhibit 3). Soil types within the survey area include Cieneba sandy loam, Garretson gravelly very fine sandy loam, Soboba gravelly loamy sand, Yorba gravelly and cobbly sandy loam, Cortina gravelly coarse sandy loam, Perkins gravelly loam, and Terrace escarpments (Exhibit 4).

SURVEY RESULTS

Two special status plant species were observed during the surveys. The results of these observations are discussed below. A list of all plants observed within the survey area during focused botanical surveys can be found in Attachment A.

TABLE 1
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE SURVEY AREA VICINITY

Species	Status			Results*
	USFWS	CDFG	CNPS	
Abronia villosa var. *aurita* chaparral sand-verbena	–	–	1B.1	Not observed during focused surveys
Allium munzii Munz's onion	FE	ST	1B.1	Not observed during focused surveys
Astragalus brauntonii Braunton's milk-vetch	FE	–	1B.1	Not observed during focused surveys
Atriplex coulteri Coulter's saltbush	–	–	1B.2	Not observed during focused surveys
Baccharis malibuensis Malibu baccharis	–	–	1B.1	Not observed during focused surveys
Calochortus plummerae Plummer's mariposa lily	–	–	1B.2	Not observed during focused surveys
***Calochortus weedii* var. *intermedius* intermediate mariposa lily**	–	–	**1B.2**	**Observed during focused surveys**
Centromadia pungens ssp. *laevis* smooth tarplant	–	–	1B.1	Not observed during focused surveys
Chorizanthe polygonoides var. *longispina* long-spined spineflower	–	–	1B.2	Not observed during focused surveys

TABLE 1 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE SURVEY AREA VICINITY

Species	Status			Results*
	USFWS	CDFG	CNPS	
Chorizanthe xanti var. *leucotheca* white-bracted spineflower	–	–	1B.2	Not observed during focused surveys
Cupressus forbesii Tecate cypress	–	–	1B.1	Not observed during focused surveys
Dudleya multicaulis many-stemmed dudleya	–	–	1B.2	Not observed during focused surveys
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	FE	SE	1B.1	Not observed during focused surveys
Lepechinia cardiophylla heart-leaved pitcher sage	–	–	1B.2	Not observed during focused surveys
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	–	–	1B.2	Not observed during focused surveys
Nolina cismontana chaparral nolina	–	–	1B.2	Not observed during focused surveys
Phacelia suaveolens ssp. *keckii* Santiago Peak phacelia	–	–	1B.3	Not observed during focused surveys
***Romneya coulteri* Coulter's matilija poppy**	–	–	**4.2**	**Observed during focused surveys**
Senecio aphanactis rayless ragwort	–	–	2.2	Not observed during focused surveys
Sidalcea neomexicana Salt Spring checkerbloom	–	–	2.2	Not observed during focused surveys
Symphyotrichum defoliatum San Bernardino aster	–	–	1B.2	Not observed during focused surveys

LEGEND:

Federal (USFWS)
FE Endangered
FT Threatened
PE Proposed Endangered
PT Proposed Threatened

State (CDFG)
SE Endangered
ST Threatened
SR Rare
PE/T Proposed Endangered/Threatened

California Native Plant Society (CNPS) List Categories
List 1A Plants Presumed Extinct in California
List 1B Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
List 3 Plants About Which We Need More Information – A Review List
List 4 Plants of Limited Distribution – A Watch List

California Native Plant Society (CNPS) Threat Code Extensions
None Plants lacking any threat information
.1 Seriously Endangered in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 Fairly Endangered in California (20–80% of occurrences threatened)
.3 Not very Endangered in California (less than 20% of occurrences threatened or no current threats known)

* The surveys were only conducted during the blooming periods of the species with potential to occur on the survey area that are not covered by the MSHCP.

Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*)

Intermediate mariposa lily is a CNPS List 1B.2 species. This bulbiferous herb typically blooms between June and July and typically occurs in coastal sage scrub and valley grassland on dry

rocky open slopes (Munz 1974, Hickman 1993). It is known to occur in Los Angeles, Orange, and Riverside counties (CNPS 2006). Intermediate mariposa lily was found in four locations (Exhibit 5 and Attachment B).

Location 1:
Two plants were observed, one in fruit and one in flower. Associated species include: deerweed (*Lotus scoparius*) and California buckwheat (*Eriogonum fasciculatum*). The lilies were growing in clay soils, and this location had burnt recently.

Location 2:
Two plants were observed, one in flower and one in a vegetative state. Associated species and soils were the same as those at Location 1, but also included black sage (*Salvia mellifera*) and black mustard (*Brassica nigra*).

Location 3:
Three plants were observed, all in flower. Associated species and soils were the same as those at Location 2.

Location 4:
Nine plants were observed, eight in flower and one in a vegetative state. Associated species and soils were the same as those at Location 2.

Coulter's Matilija Poppy (*Romneya coulteri*)

Coulter's matilija poppy is a CNPS List 4.2 species. This perennial typically blooms between May and July and occurs in dry washes and canyons in chaparral and coastal sage scrub (Munz 1974). It is known to occur in Los Angeles, Orange, Riverside, and San Diego counties (CNPS 2006). Coulter's matilija poppy was found in a few locations along the main trail within coastal sage scrub/chaparral habitat in the central portion of the survey area.

Please contact Amber Oneal at (714) 444-9199 if you have any questions or comments.

Sincerely,

BONTERRA CONSULTING

Joan P Kelly for
Amber S. Oneal
Project Manager/Ecologist

Lindsay Massetti for
Sandra J. Leatherman
Senior Botanist/Project Manager

Enclosures: Exhibit 1 – Regional Location
Exhibit 2 – Local Vicinity
Exhibit 3 – Vegetation Types
Exhibit 4 – Soil Types
Exhibit 5 — Special Status Plant Species Locations
Attachment A – Plant Compendium
Attachment B – California Natural Diversity Database Field Survey Form

REFERENCES

California Department of Fish and Game (CDFG). 2006. *California Natural Diversity Database.* Natural Heritage Division, Sacramento, California.

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Munz, P.A. 1974. *A Flora of Southern California.* University of California Press, Berkeley, California.

Regional Location

Exhibit 1

Foothill Parkway Extension, Riverside County, California

N W E S

10 5 0 10 Miles

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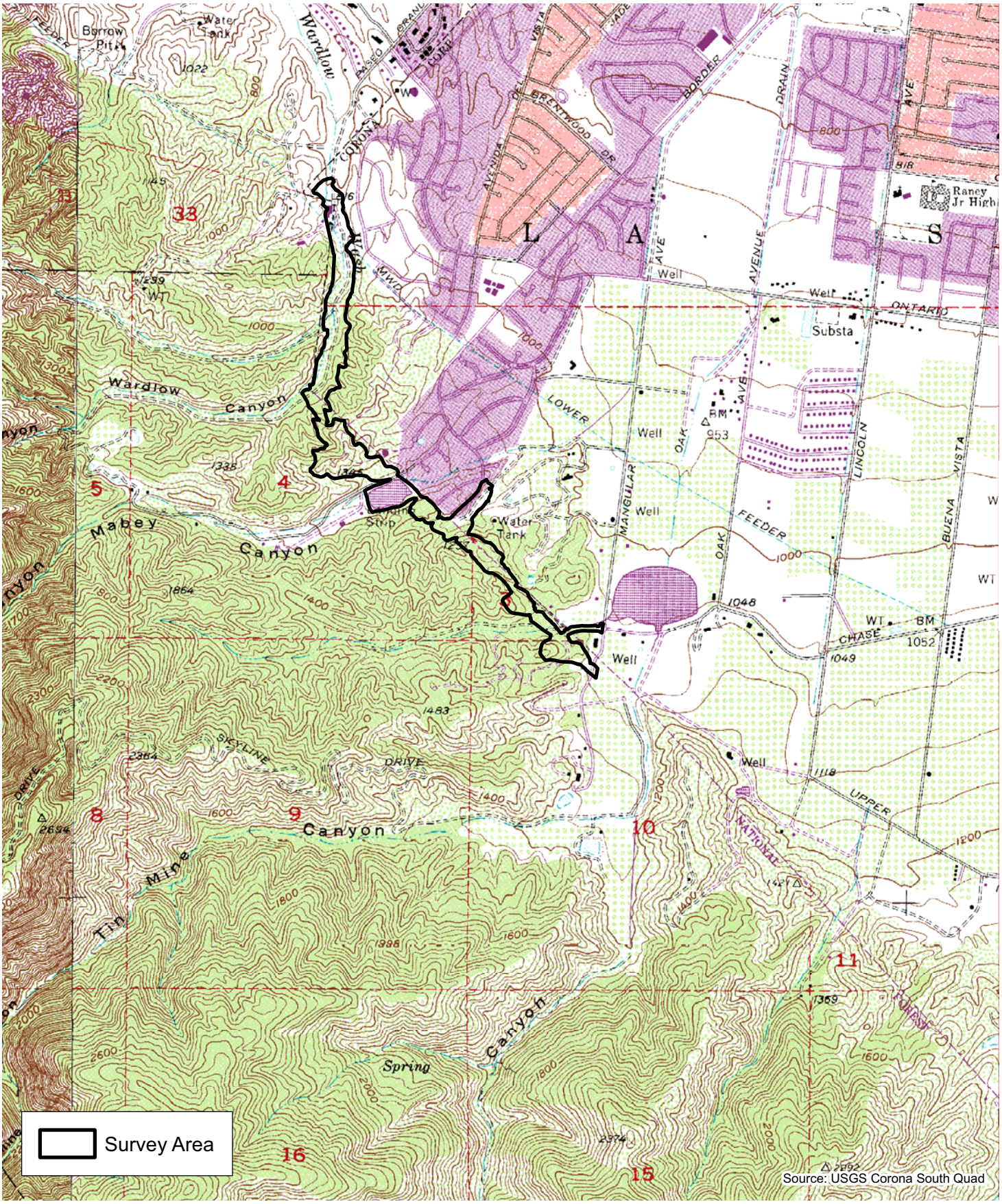

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Local Vicinity

Exhibit 2

Foothill Parkway Extension, Riverside County, California

N W E S

2,000 1,000 0 2,000 Feet

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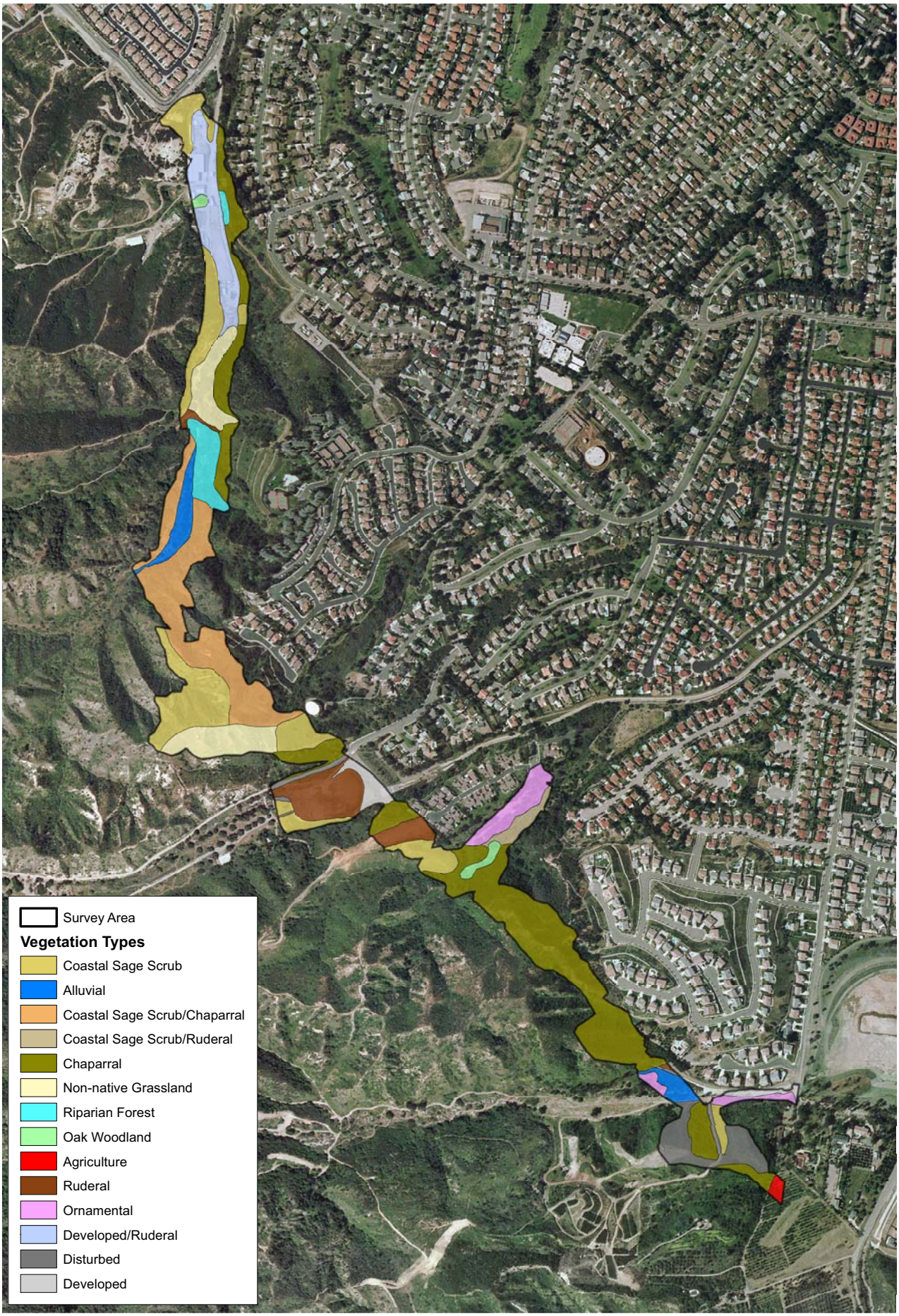

Vegetation Types

Exhibit 3

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

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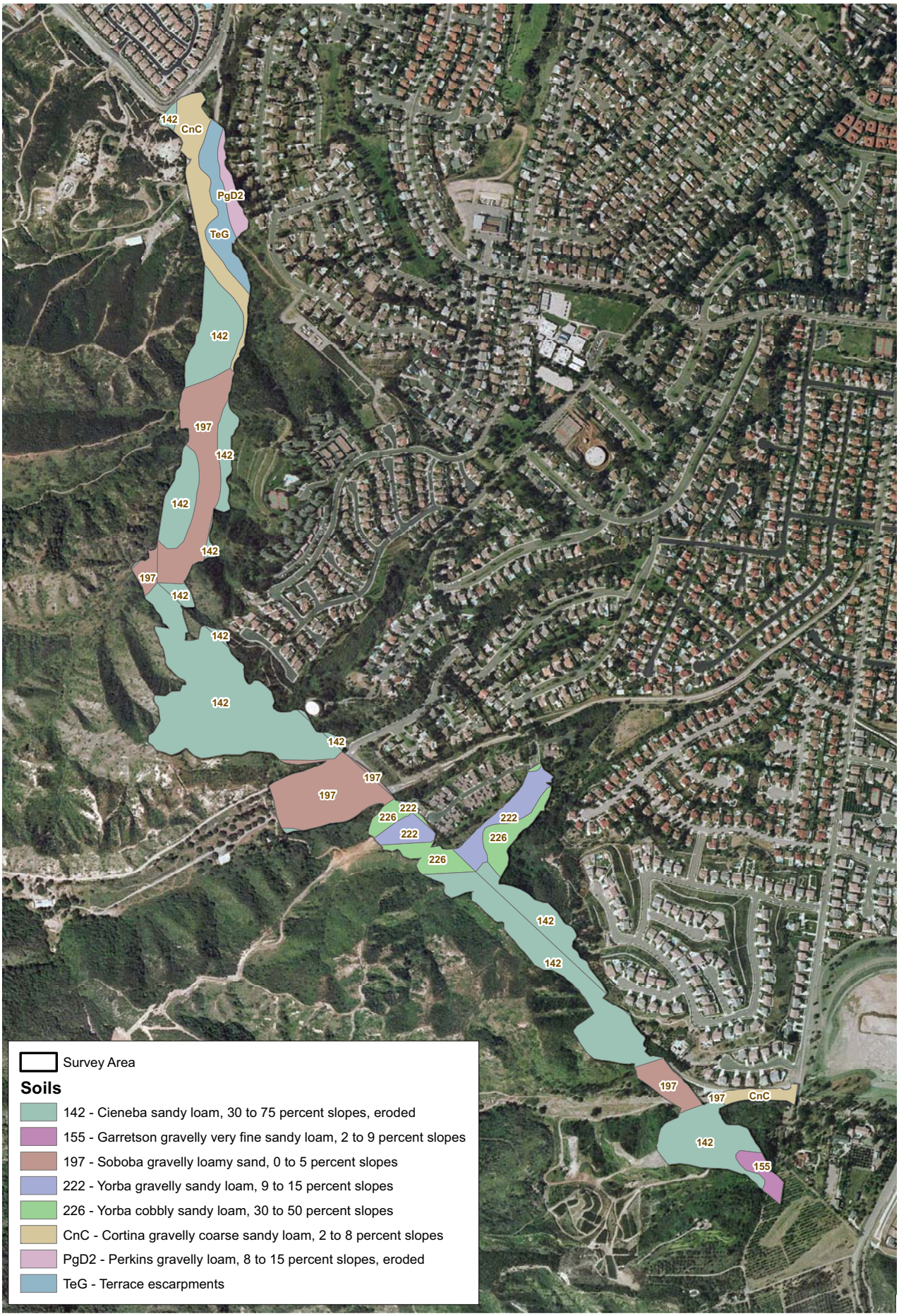

Soil Types

Exhibit 4

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

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Special Status Plant Species Locations

Exhibit 5

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

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ATTACHMENT A
PLANT SPECIES OBSERVED IN THE SURVEY AREA

FLOWERING PLANTS
CLASS DICOTYLEDONES (DICOTS)
AIZOACEAE - FIG-MARIGOLD FAMILY
*Aptenia cordifolia**   red apple ice plant
ANACARDIACEAE - SUMAC FAMILY
Malosma laurina   laurel sumac
Rhus ovata   sugar bush
Rhus trilobata   skunkbush
Toxicodendron diversilobum   western poison oak
ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY
Ambrosia psilostachya   western ragweed
Artemisia californica   California sagebrush
Artemisia douglasiana   mugwort
Artemisia dracunculus   tarragon
Baccharis salicifolia   mule fat
Brickellia californica   California brickellbush
*Centaurea melitensis**   tocalote
*Cirsium vulgare**   bull thistle
Conyza canadensis   common horseweed
Encelia californica   bush sunflower
Encelia farinosa   brittlebush
Erigeron foliosus   fleabane daisy
Eriophyllum confertiflorum   golden yarrow
Gnaphalium californicum   California everlasting
Gnaphalium canescens   everlasting
Gutierrezia sp.   matchweed
Helianthus gracilentus   slender sunflower
Hemizonia fasciculata   fascicled tarweed
*Lactuca serriola**   prickly lettuce
Lepidospartum squamatum   scale-broom

ATTACHMENT A
PLANT SPECIES OBSERVED IN THE SURVEY AREA
(Continued)

FLOWERING PLANTS
Lessingia filaginifolia California aster
Malacothrix saxatilis cliff malacothrix
*Silybum marianum** milk thistle
*Sonchus oleraceus** common sow-thistle
Stephanomeria virgata tall wreath plant
Tetradymia comosa cotton thorn
BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY
*Brassica nigra** black mustard
*Hirschfeldia incana** shortpod mustard
CACTACEAE - CACTUS FAMILY
Opuntia littoralis coastal prickly pear
CAPRIFOLIACEAE - HONEYSUCKLE FAMILY
Lonicera subspicata southern honeysuckle
Sambucus mexicana blue elderberry
CHENOPODIACEAE - GOOSEFOOT FAMILY
*Chenopodium album** lamb's quarters
*Salsola tragus** Russian thistle
CONVOLVULACEAE - MORNING-GLORY FAMILY
Calystegia macrostegia morning-glory
CUCURBITACEAE - GOURD FAMILY
Marah macrocarpus wild cucumber / man-root
CUSCUTACEAE - DODDER FAMILY
Cuscuta californica California dodder
EUPHORBIACEAE - SPURGE FAMILY
Chamaesyce sp. spurge
FABACEAE (LEGUMINOSAE) - LEGUME FAMILY
Amorpha fruticosa western false indigo
Lotus purshianus Spanish clover
Lotus scoparius deerweed / California broom
*Medicago polymorpha** California burclover
FAGACEAE - OAK / BEECH FAMILY
Quercus agrifolia coast live oak

ATTACHMENT A
PLANT SPECIES OBSERVED IN THE SURVEY AREA
(Continued)

FLOWERING PLANTS
Quercus berberidifolia scrub oak / California scrub oak
GERANIACEAE - GERANIUM FAMILY
*Erodium cicutarium** red-stemmed filaree
HYDROPHYLLACEAE - WATERLEAF FAMILY
Eriodictyon crassifolium thick-leaf yerba santa
Phacelia cicutaria caterpillar phacelia
JUGLANDACEAE - WALNUT FAMILY
Juglans californica southern California black walnut
LAMIACEAE (LABIATAE) - MINT FAMILY
*Marrubium vulgare** common horehound
Salvia apiana white sage
Salvia mellifera black sage
MALVACEAE - MALLOW FAMILY
Malacothamnus fasciculatus chaparral bushmallow
MYRTACEAE - MYRTLE FAMILY
Eucalyptus sp.* gum
PAPAVERACEAE - POPPY FAMILY
Eschscholzia californica California poppy
Romneya coulteri **Coulter's matilija poppy**
PLATANACEAE - SYCAMORE FAMILY
Platanus racemosa western sycamore
POLYGONACEAE - BUCKWHEAT FAMILY
Eriogonum fasciculatum California buckwheat
*Rumex crispus** curly dock
RHAMNACEAE - BUCKTHORN FAMILY
Ceanothus cuneatus buck bush
Ceanothus oliganthus hairy lilac
Rhamnus ilicifolia holly-leaf redberry
ROSACEAE - ROSE FAMILY
Adenostoma fasciculatum chamise
Cercocarpus betuloides mountain mahogany
Heteromeles arbutifolia toyon / Christmas berry

ATTACHMENT A
PLANT SPECIES OBSERVED IN THE SURVEY AREA
(Continued)

FLOWERING PLANTS
RUBIACEAE - MADDER FAMILY
Galium angustifolium narrow-leaved bedstraw
Galium aparine goosegrass
SALICACEAE - WILLOW FAMILY
Populus fremontii ssp. *fremontii* Fremont cottonwood
Salix gooddingii black willow
SCROPHULARIACEAE - FIGWORT FAMILY
Keckiella antirrhinoides yellow bush-penstemon
Keckiella cordifolia heart-leaved bush-penstemon
Mimulus aurantiacus bush monkeyflower
Scrophularia californica California figwort
SOLANACEAE - NIGHTSHADE FAMILY
Datura wrightii jimson weed
*Nicotiana glauca** tree tobacco
Solanum douglasii Douglas' nightshade
Solanum xanti chaparral nightshade
CLASS MONOCOTYLEDONES (MONOCOTS)
LILIACEAE - LILY FAMILY
Calochortus weedii* var. *intermedius **intermediate mariposa lily**
Yucca whipplei Our Lord's candle
POACEAE [GRAMINEAE] - GRASS FAMILY
Avena sp.* wild oat
*Bromus diandrus** ripgut grass
*Bromus hordeaceus** soft chess
Bromus madritensis ssp. *rubens** foxtail chess
*Lamarckia aurea** goldentop grass
Leymus condensatus giant wild rye
* indicates non-native species

ATTACHMENT B
CALIFORNIA NATURAL DIVERSITY DATABASE FIELD SURVEY FORM

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95814
Fax: (916) 324-0475 email: WHDAB@dfg.ca.gov

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work *mm/dd/yyyy:* 06/22/2006

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Calochortus weedii var. intermedius*

Common Name: Intermediate Mariposa Lily

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 16 Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: S. Leatherman, BonTerra Consulting
Address: 151 S. Kalmus Drive, Suite E-200
Costa Mesa, CA 92626
E-mail Address: sleatherman@bonterraconsulting.com
Phone: (714) 444-9199

Plant Information

Phenology: 13 % vegetative, 81 % flowering, 6 % fruiting

Animal Information

_____ # adults, _____ # juveniles, _____ # larvae, _____ # egg masses, _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Riverside County Landowner / Mgr.: Private
Quad Name: Corona South, California Elevation: 1250 ft
T____ R __ Sec ____ , ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): USGS map
T____ R __ Sec ____ , ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____
Datum: NAD27☐ NAD83☑ WGS84 ☐ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: Easting/Longitude 443337 Northing/Latitude 3745907

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Found in four locations on clay soils (16 total plants). Associated species include: deerweed / California broom (Lotus scoparius), California buckwheat (Eriogonum fasciculatum), black sage (Salvia mellifera), and black mustard (Brassica nigra).

Other rare taxa seen at THIS site on THIS date:

Site Information Overall site quality: ☐ Excellent ☐ Good ☑ Fair ☐ Poor

Current / surrounding land use: Residential and open space.

Visible disturbances:

Threats: Site development.

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: Familiar with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☑
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? ☑ yes ☐ no

BonTerra CONSULTING

COSTA MESA PASADENA TEMECULA

T: (714) 444-9199 F: (714) 444-9599 | 151 Kalmus Drive, Suite E-200
www.BonTerraConsulting.com | Costa Mesa, CA 92626

July 17, 2008

Mr. Gary Warkentin
RBF Consulting
14725 Alton Parkway
Irvine, California 92618-2027

VIA EMAIL AND MAIL
Garyw@rbf.com

Subject: Results of Pre-Construction Surveys and Flagging for Intermediate Mariposa Lily and Coulter's Matilija Poppy for the Foothill Parkway Extension, City of Corona and Unincorporated Riverside County, California

Dear Mr. Warkentin:

This Letter Report presents the findings of the pre-construction surveys and flagging for the intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) and Coulter's matilija poppy (*Romneya coulteri*) for the Foothill Parkway Extension project located on the eastern slope of the Santa Ana Mountains in the city of Corona in Riverside County, California. The approximate 148-acre survey area is located along the southwestern edge of the city of Corona and unincorporated Riverside County (Exhibits 1 and 2), between the termini of Paseo Grande and Mangular Avenue, and southwest of Ontario Avenue. Surrounding land uses include a residential development to the north and east, and open space (Cleveland National Forest) to the south and west. The survey area is located within the Multiple Species Habitat Conservation Plan (MSHCP) Temescal Canyon Area Plan, but is not within a designated MSHCP Criteria Area.

The U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle map shows the survey area at Township 3S, Range 7W, Sections 33 and 34, and at Township 4S, Range 7W, Sections 3, 4, and 10. Elevations on the survey area range from approximately 800 to 1,200 feet above mean sea level (msl).

This survey was conducted in order to satisfy Mitigation Measure #3 of the Draft Biological Technical Report prepared for the project (BonTerra Consulting 2008). The purpose of the survey was to determine the number of individuals of each special status plant species within the proposed impact footprint, and to mark each individual so that they can be relocated to the mitigation site as described in the mitigation plan (BonTerra Consulting, in preparation).

METHODS

Prior to the field surveys, a literature review was conducted to identify the previous locations of intermediate mariposa lily and Coulter's matilija poppy in the survey area. The literature review included the California Natural Diversity Data Base (CNDDB) (CDFG 2008) of the Prado Dam, Black Star Canyon, Corona North, and Corona South California USGS 7.5-minute quadrangle maps, and a review of previous special status plant reports prepared by BonTerra Consulting in 2000 and 2006 (BonTerra Consulting 2000 and 2006).

Prior to flagging, BonTerra Consulting had been monitoring a known location of the intermediate mariposa lily and Coulter's matilija poppy within the survey area to ensure the plants were blooming. On May 15, 2008 and May 22, 2008, BonTerra Consulting Botanist Sandra Leatherman and Ecologists Jennifer Pareti and Allison Rudalevige observed that the plants were blooming and flagged each individual plant. The team then surveyed the area using meandering transects, concentrating on previously known locations. They flagged all locations of the intermediate mariposa lily and Coulter's matilija poppy except for two populations (one population of each species), which were inaccessible because of steep slopes and a high density of vegetation. The intermediate mariposa lilies were flagged directly adjacent to the plant with green, yellow, or orange pin flags; the color of flagging per location is listed below. Red and white striped flagging was placed on the large shrubby Coulter's matilija poppy. Global Positioning System (GPS) points were recorded in the field and Universal Transverse Mercator Grid (UTM) coordinates are included below in Tables 1 and 2 for each intermediate mariposa lily and Coulter's matilija poppy within the survey area.

All plant species observed were recorded in field notes and are included in Attachment A. Plant species were identified in the field or collected for subsequent identification using keys in Hickman (1993) and Munz (1974). Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names. Attachment B contains CNDDB forms for each special status plant location.

SITE DESCRIPTION

Vegetation types and other areas mapped in the survey area include coastal sage scrub, coastal sage scrub/chaparral, coastal sage scrub/ruderal, California buckwheat-scalebroom alluvial scrub, chaparral, non-native grassland, Fremont cottonwood-willow riparian woodland, willow riparian woodland, western sycamore-coast live oak alluvial scrub, coast live oak woodland, mule fat scrub, mule fat scrub-willow riparian woodland, ruderal, ornamental, ornamental/developed, disturbed, developed/ruderal, and developed areas (Exhibit 3). Soil types within the survey area include Cieneba sandy loam, Garretson gravelly very fine sandy loam, Soboba gravelly loamy sand, Yorba gravelly and cobbly sandy loam, Cortina gravelly coarse sandy loam, Perkins gravelly loam, and Terrace escarpments (Exhibit 4).

SURVEY RESULTS

Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*)

The intermediate mariposa lily is a California Native Plant Society (CNPS) List 1B.2 species. This bulbiferous herb typically blooms between June and July and typically occurs in coastal sage scrub and valley grassland on dry rocky open slopes (Munz 1974; Hickman 1993). It is known to occur in Los Angeles, Orange, and Riverside counties (CNPS 2008). A total of 303 intermediate mariposa lilies were observed in 30 locations in the survey area (Exhibit 5a). Table 1 below lists the number of plants, phenology, associated species, aspect, UTM coordinates, and flagging color for each location. All locations were flagged with pin flags with the exception of location 30, where the steepness of the surrounding slopes and the density of the vegetation did not allow for flagging.

Coulter's Matilija Poppy (*Romneya coulteri*)

Coulter's matilija poppy is a CNPS List 4.2 species. This perennial typically blooms between May and July and occurs in dry washes and canyons in chaparral and coastal sage scrub (Munz 1974). It is known to occur in Los Angeles, Orange, Riverside, and San Diego counties (CNPS

2008). A total of 66 Coulter's matilija poppies were observed in 11 locations (Exhibit 5b). Table 2 below lists the number of plants, phenology, associated species, and aspect/slope of each location. Each of these locations was flagged with red and white striped flagging except location 6, due to the steepness of the surrounding slopes and the density of the vegetation.

A complete list of plant species observed during the surveys is included in Appendix A. Observations of the intermediate mariposa lily and Coulter's matilija poppy will be reported to the CNDDB (Appendix B).

Please contact Sandy Leatherman at (714) 444-9199 if you have any questions or comments.

Sincerely,

BONTERRA CONSULTING

Amber SOneal for

Melissa A. Howe
Associate Principal, Restoration Services

Sandra J. Leatherman
Senior Botanist/Project Manager

Enclosures: Exhibit 1 – Regional Location
Exhibit 2 – Local Vicinity
Exhibit 3 – Vegetation Types
Exhibit 4 – Soil Types
Exhibit 5 – Special Status Plant Species Locations
Attachment A – Plant Compendium
Attachment B – California Natural Diversity Database Field Survey Form

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TABLE 1
INTERMEDIATE MARIPOSA LILY
LOCATION DATA

Population Number	Number of Plants	Phenology*	Associated Species**	Aspect	UTM (NAD 83)		Flagging Color
					Easting	Northing	
1	1	100% Flower	1	South	443244	3745871	Bright Green
2	3	33% Vegetative, 66% Flower	2	Ridgeline	443274	3745878	Bright Green
3	1	90% Vegetative, 10% Flower	3	Ridgeline	443279	3745870	Bright Green
4	2	75% Vegetative, 25% Flower	4	Northeast	443297	3745884	Bright Green
5	1	100% Vegetative	4	West	443300	3745889	Bright Green
6	37	100% Vegetative	4	North	443325	3745891	Bright Green
7	7	100% Vegetative	5	Southwest	443337	3745909	Bright Green
8	17	85% Vegetative, 15% Flower	6	Ridgeline	443334	3745947	Bright Green
9	5	100% Vegetative	7	Ridgeline	443321	3745975	Bright Green
10	3	66% Vegetative, 33% Flower	7	Ridgeline	443309	3745983	Bright Green
11	4	100% Vegetative	7	Ridgeline	443298	3745994	Bright Green
12	1	100% Flower	7	Ridgeline	443270	3745965	Bright Green
13	1	100% Flower	7	Ridgeline	443262	3745957	Bright Green
14	46	90% Vegetative, 10% Flower	8	Northeast	443495	3745911	Dark Green
15	3	100% Flower	9	Northeast	443403	3745879	Dark Green
16	3	100% Flower	10	Northeast	443380	3745881	Dark Green
17	4	50% Vegetative, 50% Flower	11	Northeast	443354	3745901	3-Dark Green, 1-Bright Green
18	16	12% Vegetative, 88% Flower	12	East	443437	3745935	Yellow
19	11	65% Vegetative, 35% Flower	13	Flat	443661	3745676	Orange
20	8	90% Vegetative, 10% Flower	14	West	443387	3745926	Dark Green
21	7	58% Vegetative, 42% flower	15	East	443649	3745667	Yellow
22	2	50% Vegetative, 50% Flower	16	Ridgeline	443332	3745960	Yellow
23	3	100% Flower	17	Ridgeline	443317	3746125	Yellow
24	33	15% Vegetative, 85% Flower,	17	Ridgeline	443303	3746151	Yellow
25	9	100% Flower	17	Ridgeline	443279	3746168	Yellow
26	10	10% Vegetative, 80% Flower, 10% Fruit	12	Southeast	443251	3746181	Yellow

TABLE 1 (Continued)
INTERMEDIATE MARIPOSA LILY
LOCATION DATA

Population Number	Number of Plants	Phenology*	Associated Species**	Aspect	UTM (NAD 83)		Flagging Color
27	39	15% Vegetative, 75% Flower, 10% Fruit	18	Southeast	443404	3745933	Dark Green and Yellow
28	23	8% Vegetative, 35% Flower, 57% Fruit	18	Southeast	443401	3745952	Dark Green and Yellow
29	1	100% Flower	19	Ridgeline	443423	3745946	Yellow
30	2	100% Flower	20	East	443414	3745951	Not Flagged; Not Accessible
Total	**303**				443564	3745593	

* **Phenology:**
Vegetative – all plants were in bud during the surveys
Flowering – at least one stem was flowering
Fruit – no flowers or buds during the surveys

** **Associated Species:** Other species occurring in the same area as the target species, as noted below.
1 tocalote (*Centaurea melitensis*), white-stemmed filaree (*Erodium cicutarium*), red brome (*Bromus madritensis rubens*), short-pod mustard (*Hirschfeldia incana*), and wreath plant (*Stephanomeria exigua*)
2 deerweed (*Lotus scoparius*), short-pod mustard, blue dicks (*Dichelostemma capitatum*), tocalote, and California buckwheat (*Eriogonum fasiculatum*)
3 chamise (*Adenostoma fasciculatum*), tocalote, foothill needlegrass (*Nassella lepida*), and short-pod mustard
4 red brome, tocalote, short-pod mustard, canterbury bells (*Phacelia minor*), and ripgut brome (*Bromus diandrus*)
5 red brome, sliver puffs (*Uropappus lindleyi*), and California buckwheat
6 deerweed, California buckwheat, short-pod mustard, and osmadenia (*Osmadenia tenella*)
7 tocalote, foxtail fescue (*Vulpia myuros*), short-pod mustard, wild oat (*Avena* sp.), canterbury bells, and Our Lord's candle (*Yucca whipplei*)
8 black sage (*Salvia mellifera*), California sagebrush (*Artemisia californica*), chamise, laurel sumac (*Malosma laurina*), and wavy leaved soap plant (*Chlorogalum pomeridianum*)
9 chamise, California buckwheat, California sagebrush, canterbury bells, blue dicks, and tocalote
10 short-pod mustard, tocalote, canterbury bells, California lilac (*Ceanothus* sp.), and California buckwheat
11 wild oat, tocalote, deerweed, red brome, and short-pod mustard
12 yellow-bush penstemmon (*Keckiella antirrhinoides*), chamise, black sage, tocalote, and Our Lord's candle
13 California buckwheat, deerweed, and black sage
14 California sagebrush, red brome, golden stars (*Bloomeria crocea*), ripgut brome, and foothill needlegrass
15 thickleaf yerba santa (*Eriodictyon crassifolium*), deerweed, fasiculed tarplant (*Hemizonia fasciculata*), California buckwheat, and black sage
16 California buckwheat, California sagebrush, tocalote, red brome, and wild oat
17 Our Lord's candle, caterpillar phacelia (*Phacelia cicutaria*), California buckwheat, California bush sunflower (*Encelia californica*), and black sage
18 California sagebrush, black sage, California buckwheat, deerweed, Our Lord's candle, and red brome
19 California buckwheat, red brome, tocalote, and deerweed
20 California lilac, chamise, Our Lord's candle, and laurel sumac

COULTER'S MATILIJA POPPY
LOCATION DATA

Population Number	Number of Plants	Phenology*	Associated Species**	Aspect	UTM (NAD 83)		Flagging Color
					Easting	Northing	
1	1	100% Flower	1	Flat	444366	3745093	Red and White Stripe
2	8	100% Flower	1	Flat	444395	3745086	Red and White Stripe
3	4	100% Flower	2	Flat	444181	3745112	Red and White Stripe
4	3	100% Flower	3	Flat	444223	3745117	Red and White Stripe
5	1	100% Flower	3	Flat	444186	3745134	Red and White Stripe
6	16	100% Flower	4	Flat	443843	3745596	Not flagged; not accessible
7	15	100% Flower	5	Flat	443506	3745684	Red and White Stripe
8	1	100% Flower	6	Slight Slope/Northeast Facing	443444	3745693	Red and White Stripe
9	9	100% Flower	7	Slight Slope/North Facing	443604	3745696	Red and White Stripe
10	5	100% Flower	8	Flat	443278	3746639	Red and White Stripe
11	3	100% Flower	9	Flat	443302	3747071	Red and White Stripe
Total	**66**						

* **Phenology:**
Vegetative – all plants were in bud during the surveys
Flowering – at least one stem was flowering
Fruit – no flowers or buds during the surveys

** **Associated Species:** Other species occurring in the same area as the target species, as noted below.
1 bush mallow (*Malacothamnus fasciculatus*), wild cucumber (*Marah macrocarpus*), black sage, California sagebrush, and gum tree (*Eucalyptus* sp.)
2 California buckwheat, black sage, gum tree, bush mallow, and coastal prickly pear (*Opuntia littoralis*)
3 scalebroom (*Lepidospartum squamatum*), California sagebrush, California bush, deerweed, and red brome
4 black sage, California sagebrush, laurel sumac, giant wild rye (*Leymus condensatus*)
5 California sagebrush, sweet bush (*Bebbia juncea* var. *aspera*), and red brome
6 California sagebrush, black sage, laurel sumac, and slender sunflower (*Helianthus gracilentus*)
7 laurel sumac, California sagebrush, thickleaf yerba santa (*Eriodictyon crassifolium*), chamise, and tocalote
8 laurel sumac, red brome, and black mustard (*Brassica nigra*)
9 chamise, laurel sumac, mule fat (*Baccharis salicifolia*), and coast live oak (*Quercus agrifolia*)

REFERENCES

BonTerra Consulting. 2000. *Spring Botanical Surveys on the Foothill Parkway Project Site, in the City of Corona, Riverside County, California.* Costa Mesa, CA: BonTerra Consulting.

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BonTerra Consulting. 2008 (May 12). *Biological Technical Report for the Foothill Parkway Extension Project Site.* Costa Mesa, CA: BonTerra Consulting.California Department of Fish and Game (CDFG). 2008 (May). California Natural Diversity Database. Records of Occurrence for Prado Dam, Black Star Canyon, Corona North, and Corona South, California USGS 7.5-minute quadrangles, Sacramento, CA: CDFG, Natural Heritage Division.

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Hickman, J.C., Ed. 1993. *The Jepson Manual of Higher Plants of California*. Berkeley, CA: University of California Press.

Munz, P.A. 1974. *A Flora of Southern California*. Berkeley, CA: University of California Press.

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Regional Location

Exhibit 1

Foothill Parkway Extension Pre-Construction Plant Surveys

N W E S

10 5 0 10 Miles

BonTerra CONSULTING

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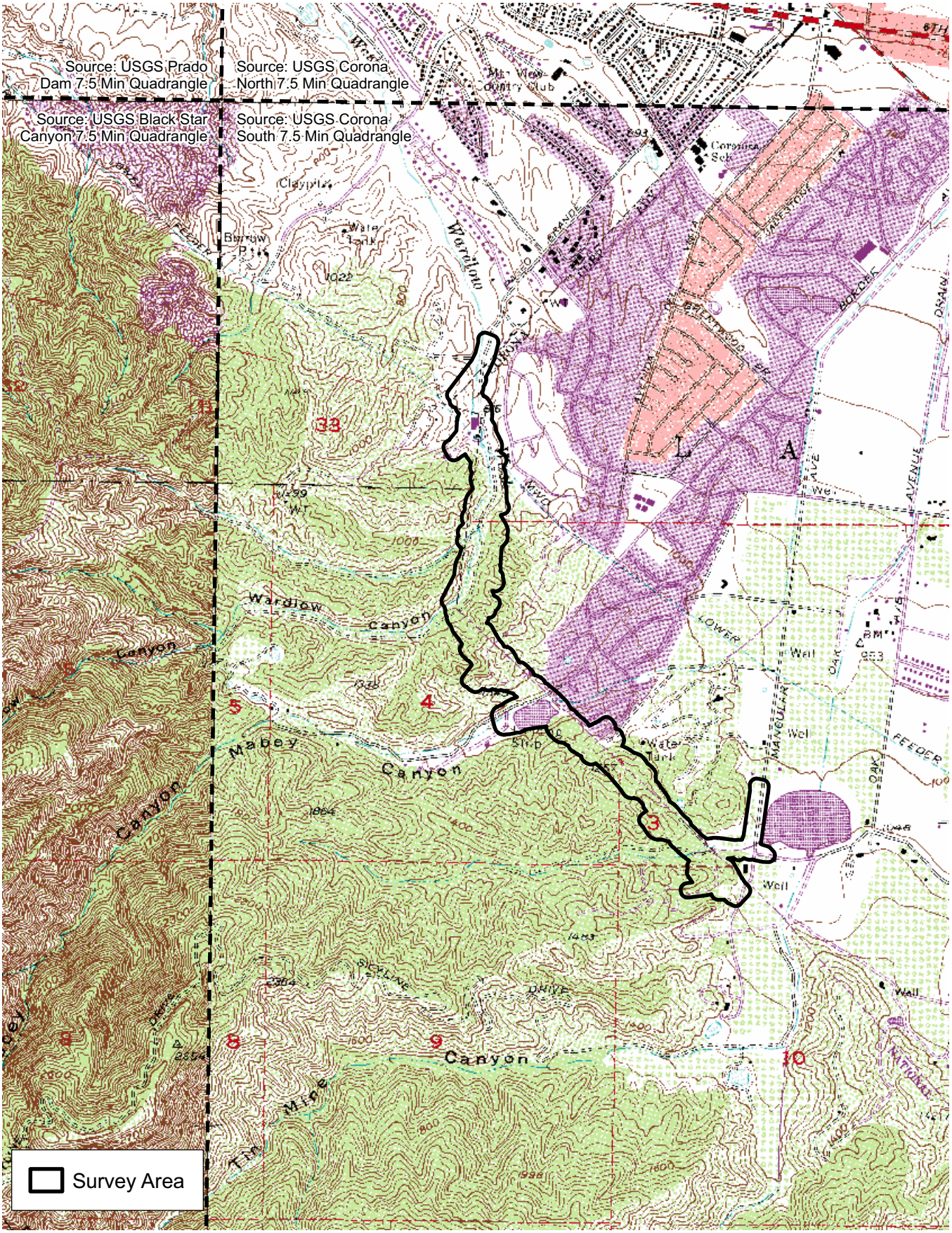

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Local Vicinity

Exhibit 2

Foothill Parkway Extenson Pre-Construction Plant Surveys

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

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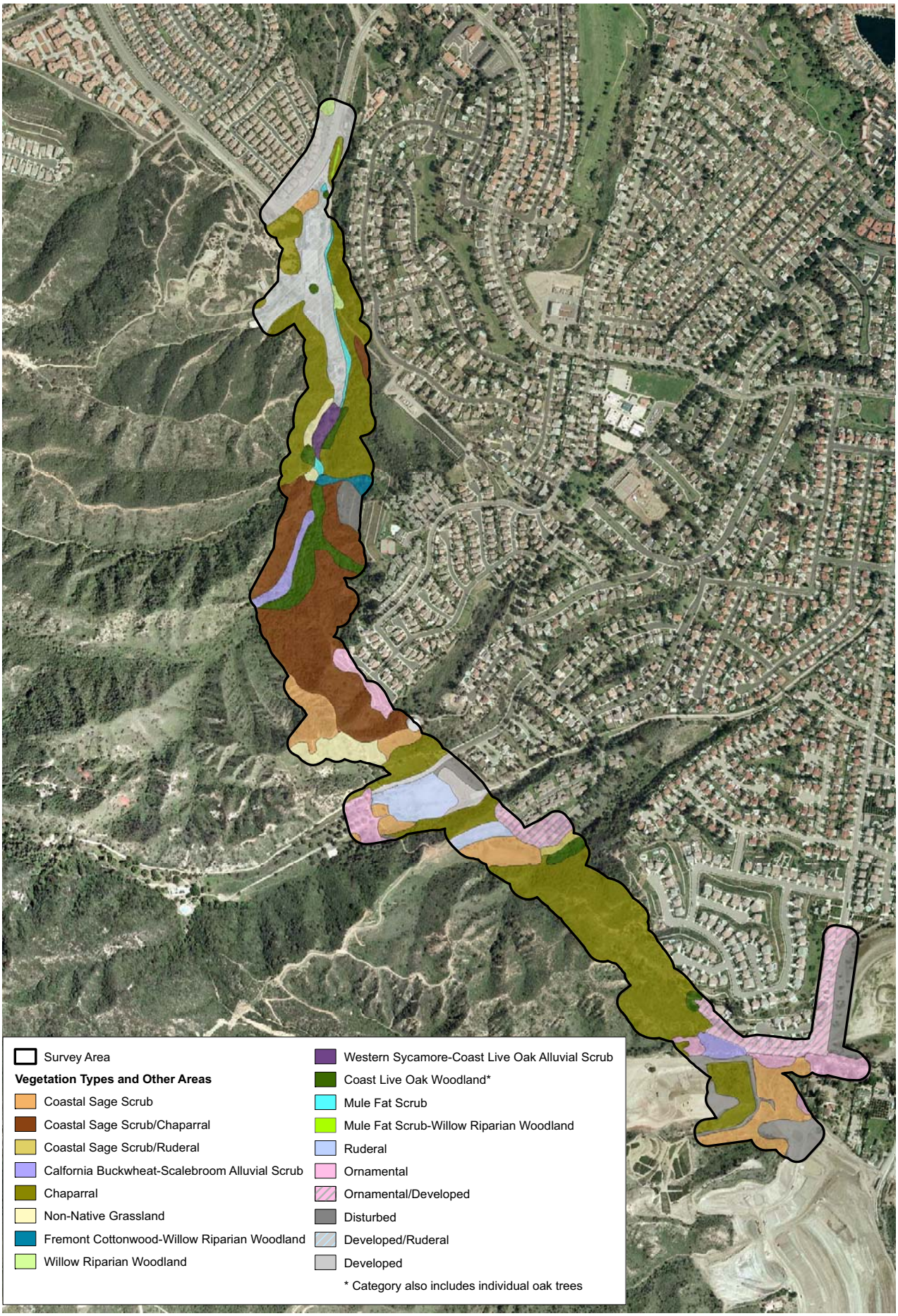

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Vegetation Types

Exhibit 3

Foothill Parkway Extension Pre-Construction Plant Surveys

N W E S

800 400 0 800 Feet

BonTerra CONSULTING

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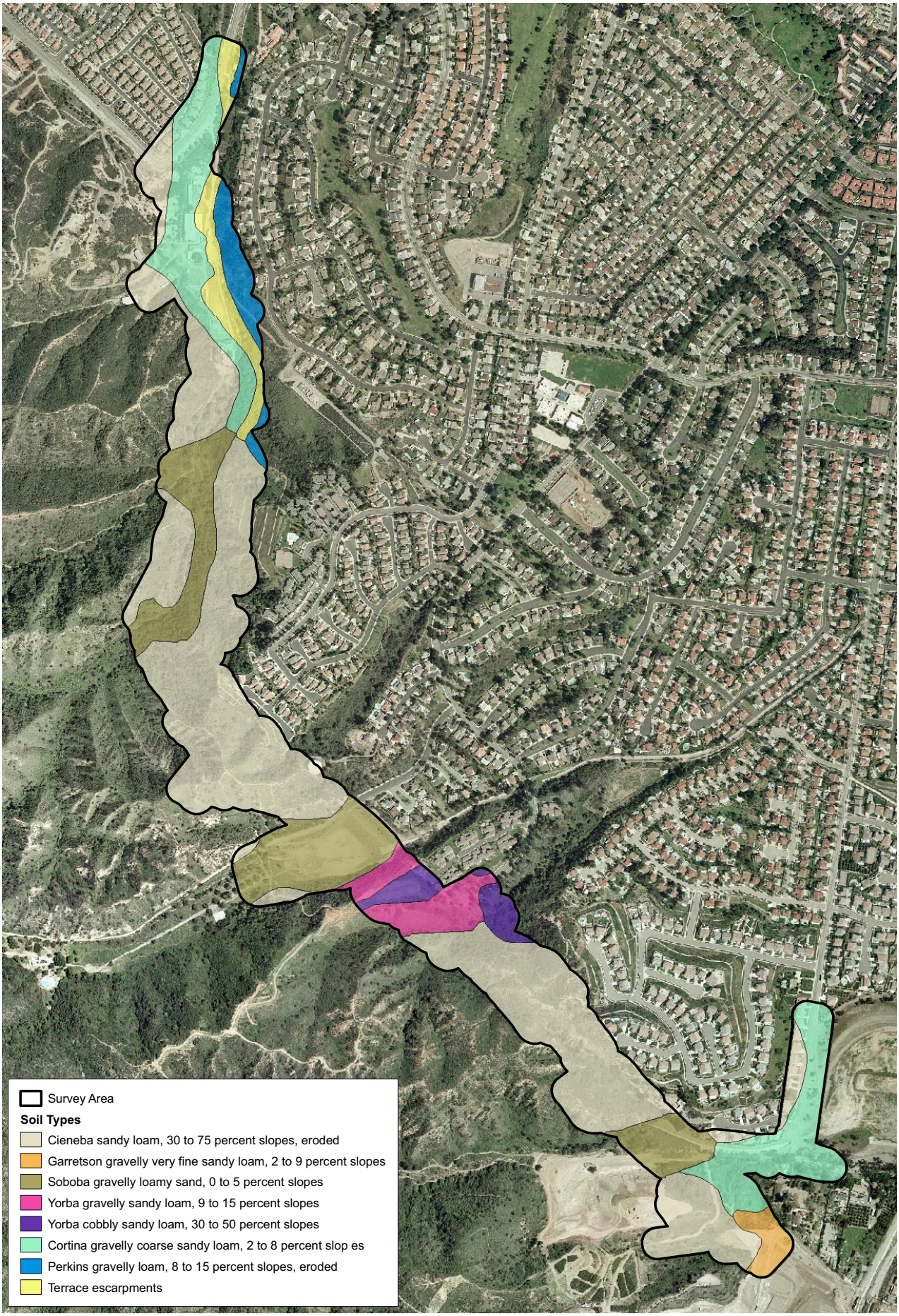

Soil Types

Exhibit 4

Foothill Parkway Extension Pre-Construction Plant Surveys

N W E S

600 300 0 600 Feet

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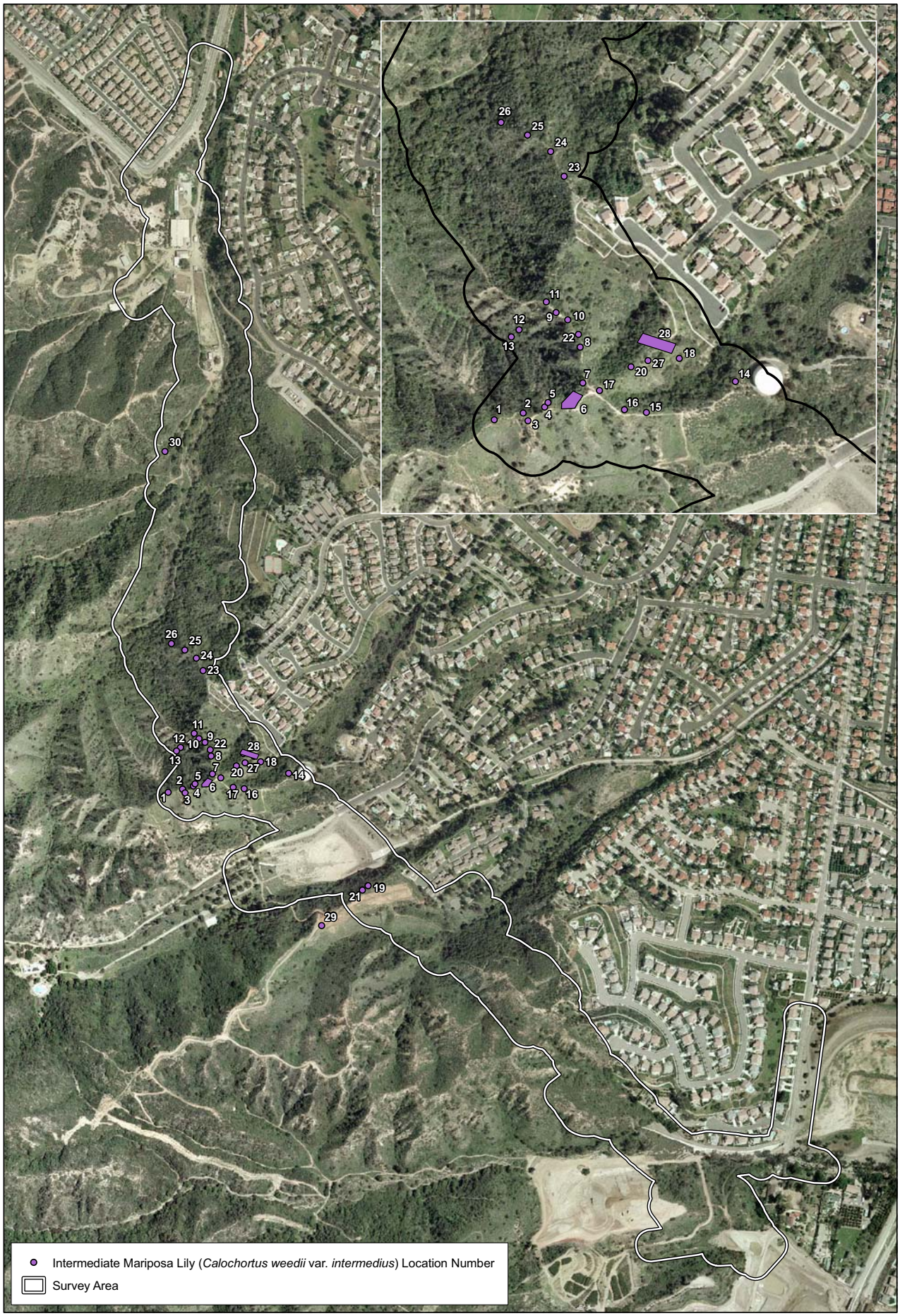

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Special Status Plant Locations

Exhibit 5a

Foothill Parkway Extension Pre-Construction Plant Surveys

N W E S

600 300 0 600 Feet

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Special Status Plant Locations

Exhibit 5b

Foothill Parkway Extension Pre-Construction Plant Surveys

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

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ATTACHMENT A

PLANT COMPENDIUM

PLANT SPECIES OBSERVED ON THE FOOTHILL PARKWAY PROJECT SITE

Species
PINACEAE - PINE FAMILY
Pinus sp. pine
FLOWERING PLANTS
CLASS DICOTYLEDONES (DICOTS)
AIZOACEAE - FIG-MARIGOLD FAMILY
*Aptenia cordifolia** red apple ice plant
*Carpobrotus edulis** hottentot fig
ANACARDIACEAE - SUMAC FAMILY
Malosma laurina laurel sumac
Rhus integrifolia lemonadeberry
Rhus ovata sugar bush
Rhus trilobata skunkbush
*Schinus molle** Peruvian pepper tree
*Schinus terebinthifolius** Brazilian pepper tree
Toxicodendron diversilobum western poison oak
APIACEAE (UMBELLIFERAE) - CARROT FAMILY
*Foeniculum vulgare** sweet fennel
APOCYNACEAE - DOGBANE FAMILY
*Vinca major** greater periwinkle
ASCLEPIADACEAE - MILKWEED FAMILY
Sarcostemma cynanchoides ssp. *hartwegii* climbing milkweed
ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY
Achillea millefolium common yarrow
Acourtia microcephala sacapellote
Ambrosia psilostachya western ragweed
Artemisia californica California sagebrush
Artemisia douglasiana mugwort
Artemisia dracunculus tarragon
Baccharis pilularis coyote brush

PLANT SPECIES OBSERVED ON THE FOOTHILL PARKWAY PROJECT SITE (Continued)

Species
Baccharis salicifolia mule fat
Bebbia juncea var. *juncea* smooth sweetbush
Brickellia californica California brickellbush
*Centaurea melitensis** tocalote
*Cirsium vulgare** bull thistle
Conyza canadensis common horseweed
Corethrogyne filaginifolia var. *bernardina* common sand aster
Cynara cardunculus* cardoon/globe artichoke
Encelia californica bush sunflower
Encelia farinosa brittlebush
Ericameria pinifolia pine-bush
Erigeron foliosus fleabane daisy
Eriophyllum confertiflorum golden yarrow
Gnaphalium bicolor bicolored everlasting/Bioletti's cudweed
Gnaphalium californicum California everlasting
Gnaphalium canescens everlasting
Gutierrezia sp. matchweed
Helianthus gracilentus slender sunflower
Hemizonia fasciculata fascicled tarweed
Heterotheca grandiflora telegraph weed
Isocoma menziesii var. *vernonioides* coastal goldenbush
*Lactuca serriola** prickly lettuce
Lepidospartum squamatum scale-broom
Lessingia filaginifolia California aster
Malacothrix saxatilis var. *tenuifolia* cliff malacothrix

PLANT SPECIES OBSERVED ON THE FOOTHILL PARKWAY PROJECT SITE (Continued)

Species
*Silybum marianum**   milk thistle
*Sonchus oleraceus**   common sow-thistle
Stephanomeria exigua   wreath plant
Stephanomeria virgata ssp. *virgata*   tall wreath plant
Tetradymia comosa   cotton thorn
Uropappus lindleyi   silver puffs
Xanthium strumarium var. *canadense*   cocklebur
BORAGINACEAE - BORAGE FAMILY
Amsinckia menziesii   rancher's fiddleneck
BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY
*Brassica nigra**   black mustard
*Hirschfeldia incana**   shortpod mustard
*Raphanus sativus**   wild radish
CACTACEAE - CACTUS FAMILY
Opuntia littoralis   coastal prickly pear
CAPRIFOLIACEAE - HONEYSUCKLE FAMILY
Lonicera subspicata var. *denudata*   southern honeysuckle
Sambucus mexicana   Mexican elderberry
CHENOPODIACEAE - GOOSEFOOT FAMILY
*Chenopodium album**   lamb's quarters
*Salsola tragus**   Russian thistle
CONVOLVULACEAE - MORNING-GLORY FAMILY
Calystegia macrostegia   morning-glory
CRASSULACEAE - STONECROP FAMILY
Dudleya lanceolata   lance-leaved dudleya/coastal live-forever
CUCURBITACEAE - GOURD FAMILY
Cucurbita foetidissima   coyote melon/calabazilla
Marah macrocarpus   wild cucumber/man-root

PLANT SPECIES OBSERVED ON THE FOOTHILL PARKWAY PROJECT SITE (Continued)

Species
CUSCUTACEAE - DODDER FAMILY
Cuscuta californica California dodder
EUPHORBIACEAE - SPURGE FAMILY
Chamaesyce sp. spurge
*Ricinus communis** castor bean
FABACEAE (LEGUMINOSAE) - LEGUME FAMILY
Amorpha fruticosa western false indigo
Lotus purshianus Spanish clover
Lotus scoparius deerweed/California broom
Lupinus bicolor miniature lupine
*Medicago polymorpha** California burclover
*Melilotus indica** sourclover
*Spartium junceum** Spanish broom
FAGACEAE - OAK/BEECH FAMILY
Quercus agrifolia coast live oak
Quercus berberidifolia scrub oak/California scrub oak
GERANIACEAE - GERANIUM FAMILY
*Erodium cicutarium** red-stemmed filaree
HYDROPHYLLACEAE - WATERLEAF FAMILY
Eriodictyon crassifolium thick-leaf yerba santa
Phacelia cicutaria caterpillar phacelia
Phacelia minor canterbury bell
JUGLANDACEAE - WALNUT FAMILY
Juglans californica southern California black walnut
LAMIACEAE (LABIATAE) - MINT FAMILY
*Marrubium vulgare** common horehound
Salvia apiana white sage
Salvia leucophylla purple sage

PLANT SPECIES OBSERVED ON THE FOOTHILL PARKWAY PROJECT SITE (Continued)

Species
Salvia mellifera black sage
MALVACEAE - MALLOW FAMILY
Malacothamnus densiflorus many-flowered bushmallow
Malacothamnus fasciculatus chaparral bushmallow
MYRTACEAE - MYRTLE FAMILY
Eucalyptus sp.* gum
NYCTAGINACEAE - FOUR-O'CLOCK FAMILY
Mirabilis californica wishbone bush / California wishbone bush
ONAGRACEAE - EVENING PRIMROSE FAMILY
Epilobium canum California fuchsia
PAPAVERACEAE - POPPY FAMILY
Eschscholzia californica California poppy
Romneya coulteri **Coulter's matilija poppy**
PLATANACEAE - SYCAMORE FAMILY
Platanus racemosa western sycamore
POLYGONACEAE - BUCKWHEAT FAMILY
Eriogonum fasciculatum California buckwheat
*Rumex crispus** curly dock
RHAMNACEAE - BUCKTHORN FAMILY
Ceanothus crassifolius var. *crassifolius* thick-leaved lilac
Ceanothus cuneatus buck bush
Ceanothus oliganthus hairy lilac
Rhamnus crocea spiny redberry
Rhamnus ilicifolia holly-leaf redberry
ROSACEAE - ROSE FAMILY
Adenostoma fasciculatum chamise
Cercocarpus betuloides mountain mahogany
Heteromeles arbutifolia toyon/Christmas berry

PLANT SPECIES OBSERVED ON THE FOOTHILL PARKWAY PROJECT SITE (Continued)

Species
RUBIACEAE - MADDER FAMILY
Galium angustifolium narrow-leaved bedstraw
Galium aparine goosegrass
SALICACEAE - WILLOW FAMILY
Populus fremontii ssp. *fremontii* Fremont cottonwood
Salix sp. willow
Salix exigua narrow-leaved willow
Salix gooddingii black willow
Salix lucida ssp. *lasiandra* lance-leaved willow
SCROPHULARIACEAE - FIGWORT FAMILY
Keckiella antirrhinoides ssp. *antirrhinoides* yellow bush-penstemon
Keckiella cordifolia heart-leaved bush-penstemon
Mimulus aurantiacus bush monkeyflower
Scrophularia californica California figwort
SOLANACEAE - NIGHTSHADE FAMILY
Datura wrightii jimson weed
*Nicotiana glauca** tree tobacco
Solanum douglasii Douglas' nightshade
Solanum xanti chaparral nightshade
TAMARICACEAE - TAMARISK FAMILY
*Tamarix ramosissima** Mediterranean tamarisk
CLASS MONOCOTYLEDONES (MONOCOTS)
ARECACEAE (PALMAE) - PALM FAMILY
*Washingtonia robusta** Mexican fan palm
LILIACEAE - LILY FAMILY
Calochortus weedii* var. *intermedius **intermediate mariposa lily**
Chlorogalum pomeridianum wavy-leaved soap plant
Yucca whipplei Our Lord's candle

PLANT SPECIES OBSERVED ON THE FOOTHILL PARKWAY PROJECT SITE (Continued)

Species
POACEAE [GRAMINEAE] - GRASS FAMILY
*Avena barbata**   slender wild oat
Avena sp.*   wild oat
*Bromus diandrus**   ripgut grass
*Bromus hordeaceus**   soft chess
Bromus madritensis ssp. *rubens**   foxtail chess
*Cynodon dactylon**   Bermuda grass
*Lamarckia aurea**   goldentop grass
Leymus condensatus   giant wild rye
*Lolium perenne**   perennial ryegrass
Melica imperfecta   small-flowered melic grass
Nassella lepida   foothill needlegrass
Nassella pulchra   purple needlegrass
*Polypogon monspeliensis**   annual beard grass
*Schismus barbatus**   Mediterranean schismus
Stipa coronata var. *coronata*   giant needlegrass
Vulpia myuros *   foxtail fescue
TYPHACEAE - CATTAIL FAMILY
Typha domingensis   southern cattail
** non-native species*   **Bold** = special status species

ATTACHMENT B

CALIFORNIA NATURAL DIVERSITY DATABASE FIELD SURVEY FORM

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 05/22/2008

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Calochortus weedii var. intermedius*

Common Name: Intermediate mariposa lily

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 303 Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: TBD Number RSA Museum / Herbarium

Reporter: Sandy Leatherman
Address: 151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626
E-mail Address: sleatherman@bonterraconsulting.com
Phone: (714) 444-9199

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

See Attached Table

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

See Attached

County: Riverside Landowner / Mgr.: County of Riverside, City of Corona, Private
Quad Name: Corona South Elevation: 800-1,200 ft.
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): GPS
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ GPS Make & Model etrex Vista HCX
DATUM: NAD27 ☐ NAD83 ☑ WGS84 ☐ Horizontal Accuracy 10-20 ft. meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: See Attached

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

See Attached

Other rare taxa seen at THIS site on THIS date: Romneya coulteri
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Residential/Open Space

Visible disturbances: fuel modification

Threats: Proposed Road

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☑ Compared with specimen housed at: RSA
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: Familiar with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☑
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

INTERMEDIATE MARIPOSA LILY
LOCATION DATA

Population Number	Number of Plants	Phenology*	Associated Species**	Aspect	UTM (NAD 83)		Flagging Color
					Easting	Northing	
1	1	100% Flower	1	South	443244	3745871	Bright Green
2	3	33% Vegetative, 66% Flower	2	Ridgeline	443274	3745878	Bright Green
3	1	90% Vegetative, 10% Flower	3	Ridgeline	443279	3745870	Bright Green
4	2	75% Vegetative, 25% Flower	4	Northeast	443297	3745884	Bright Green
5	1	100% Vegetative	4	West	443300	3745889	Bright Green
6	37	100% Vegetative	4	North	443325	3745891	Bright Green
7	7	100% Vegetative	5	Southwest	443337	3745909	Bright Green
8	17	85% Vegetative, 15% Flower	6	Ridgeline	443334	3745947	Bright Green
9	5	100% Vegetative	7	Ridgeline	443321	3745975	Bright Green
10	3	66% Vegetative, 33% Flower	7	Ridgeline	443309	3745983	Bright Green
11	4	100% Vegetative	7	Ridgeline	443298	3745994	Bright Green
12	1	100% Flower	7	Ridgeline	443270	3745965	Bright Green
13	1	100% Flower	7	Ridgeline	443262	3745957	Bright Green
14	46	90% Vegetative, 10% Flower	8	Northeast	443495	3745911	Dark Green
15	3	100% Flower	9	Northeast	443403	3745879	Dark Green
16	3	100% Flower	10	Northeast	443380	3745881	Dark Green
17	4	50% Vegetative, 50% Flower	11	Northeast	443354	3745901	3-Dark Green, 1-Bright Green
18	16	12% Vegetative, 88% Flower	12	East	443437	3745935	Yellow
19	11	65% Vegetative, 35% Flower	13	Flat	443661	3745676	Orange
20	8	90% Vegetative, 10% Flower	14	West	443387	3745926	Dark Green
21	7	58% Vegetative, 42% flower	15	East	443649	3745667	Yellow
22	2	50% Vegetative, 50% Flower	16	Ridgeline	443332	3745960	Yellow
23	3	100% Flower	17	Ridgeline	443317	3746125	Yellow
24	33	15% Vegetative, 85% Flower,	17	Ridgeline	443303	3746151	Yellow
25	9	100% Flower	17	Ridgeline	443279	3746168	Yellow
26	10	10% Vegetative, 80% Flower, 10% Fruit	12	Southeast	443251	3746181	Yellow
27	39	15% Vegetative, 75% Flower, 10% Fruit	18	Southeast	443404	3745933	Dark Green and Yellow
28	23	8% Vegetative, 35% Flower, 57% Fruit	18	Southeast	443401	3745952	Dark Green and Yellow

INTERMEDIATE MARIPOSA LILY
LOCATION DATA
(Continued)

Population Number	Number of Plants	Phenology*	Associated Species**	Aspect	UTM (NAD 83)		Flagging Color
29	1	100% Flower	19	Ridgeline	443423	3745946	Yellow
30	2	100% Flower	20	East	443414	3745951	Not Flagged; Not Accessible
Total	**303**				443564	3745593	

* **Phenology:**
Vegetative – all plants were in bud during the surveys
Flowering – at least one stem was flowering
Fruit – no flowers or buds during the surveys

** **Associated Species:** Other species occurring in the same area as the target species, as noted below.

1 tocalote (*Centaurea melitensis*), white-stemmed filaree (*Erodium cicutarium*), red brome (*Bromus madritensis rubens*), short-pod mustard (*Hirschfeldia incana*), and wreath plant (*Stephanomeria exigua*)
2 deerweed (*Lotus scoparius*), short-pod mustard, blue dicks (*Dichelostemma capitatum*), tocalote, and California buckwheat (*Eriogonum fasiculatum*)
3 chamise (*Adenostoma fasciculatum*), tocalote, foothill needlegrass (*Nassella lepida*), and short-pod mustard
4 red brome, tocalote, short-pod mustard, canterbury bells (*Phacelia minor*), and ripgut brome (*Bromus diandrus*)
5 red brome, sliver puffs (*Uropappus lindleyi*), and California buckwheat
6 deerweed, California buckwheat, short-pod mustard, and osmadenia (*Osmadenia tenella*)
7 tocalote, foxtail fescue (*Vulpia myuros*), short-pod mustard, wild oat (*Avena* sp.), canterbury bells, and Our Lord's candle (*Yucca whipplei*)
8 black sage (*Salvia mellifera*), California sagebrush (*Artemisia californica*), chamise, laurel sumac (*Malosma laurina*), and wavy leaved soap plant (*Chlorogalum pomeridianum*)
9 chamise, California buckwheat, California sagebrush, canterbury bells, blue dicks, and tocalote
10 short-pod mustard, tocalote, canterbury bells, California lilac (*Ceanothus* sp.), and California buckwheat
11 wild oat, tocalote, deerweed, red brome, and short-pod mustard
12 yellow-bush penstemmon (*Keckiella antirrhinoides*), chamise, black sage, tocalote, and Our Lord's candle
13 California buckwheat, deerweed, and black sage
14 California sagebrush, red brome, golden stars (*Bloomeria crocea*), ripgut brome, and foothill needlegrass
15 thickleaf yerba santa (*Eriodictyon crassifolium*), deerweed, fasiculed tarplant (*Hemizonia fasciculata*), California buckwheat, and black sage
16 California buckwheat, California sagebrush, tocalote, red brome, and wild oat
17 Our Lord's candle, caterpillar phacelia (*Phacelia cicutaria*), California buckwheat, California bush sunflower (*Encelia californica*), and black sage
18 California sagebrush, black sage, California buckwheat, deerweed, Our Lord's candle, and red brome
19 California buckwheat, red brome, tocalote, and deerweed
20 California lilac, chamise, Our Lord's candle, and laurel sumac

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 05/22/2008

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Romneya coulteri*

Common Name: Coulter's matilija poppy

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 66 Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: TBD Number RSA Museum / Herbarium

Reporter: Sandy Leatherman
Address: 151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626
E-mail Address: sleatherman@bonterraconsulting.com
Phone: (714) 444-9199

Plant Information

Phenology: ____% vegetative ____% flowering ____% fruiting

See Attached

Animal Information

adults ____ # juveniles ____ # larvae ____ # egg masses ____ # unknown ____

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

See Attached

County: Riverside Landowner / Mgr.: County of Riverside, City of Corona, Private
Quad Name: Corona South Elevation: 800-1,200 ft.
T____ R____ Sec ____, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): GPS
T____ R____ Sec ____, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model etrex Vista HCX
DATUM: NAD27 ☐ NAD83 ☑ WGS84 ☐ Horizontal Accuracy 10-20 ft. meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: See Attached

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

See Attached

Other rare taxa seen at THIS site on THIS date: Calorchortus weedii var. intermedius
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Residential/Open Space

Visible disturbances: fuel modification

Threats: Proposed Road

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☑ Compared with specimen housed at: RSA
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: familiar with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☑
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

TABLE 2
COULTER'S MATILIJA POPPY
LOCATION DATA

Population Number	Number of Plants	Phenology*	Associated Species**	Aspect	UTM (NAD 83)		Flagging Color
					Easting	Northing	
1	1	100% Flower	1	Flat	444366	3745093	Red and White Stripe
2	8	100% Flower	1	Flat	444395	3745086	Red and White Stripe
3	4	100% Flower	2	Flat	444181	3745112	Red and White Stripe
4	3	100% Flower	3	Flat	444223	3745117	Red and White Stripe
5	1	100% Flower	3	Flat	444186	3745134	Red and White Stripe
6	16	100% Flower	4	Flat	443843	3745596	Not flagged; not accessible
7	15	100% Flower	5	Flat	443506	3745684	Red and White Stripe
8	1	100% Flower	6	Slight Slope/Northeast Facing	443444	3745693	Red and White Stripe
9	9	100% Flower	7	Slight Slope/North Facing	443604	3745696	Red and White Stripe
10	5	100% Flower	8	Flat	443278	3746639	Red and White Stripe
11	3	100% Flower	9	Flat	443302	3747071	Red and White Stripe
Total	**66**						

* **Phenology:**
Vegetative – all plants were in bud during the surveys
Flowering – at least one stem was flowering
Fruit – no flowers or buds during the surveys

** **Associated Species:** Other species occurring in the same area as the target species, as noted below.
1 bush mallow (*Malacothamnus fasciculatus*), wild cucumber (*Marah macrocarpus*), black sage, California sagebrush, and gum tree (*Eucalyptus* sp.)
2 California buckwheat, black sage, gum tree, bush mallow, and coastal prickly pear (*Opuntia littoralis*)
3 scalebroom (*Lepidospartum squamatum*), California sagebrush, California bush, deerweed, and red brome
4 black sage, California sagebrush, laurel sumac, giant wild rye (*Leymus condensatus*)
5 California sagebrush, sweet bush (*Bebbia juncea* var. *aspera*), and red brome
6 California sagebrush, black sage, laurel sumac, and slender sunflower (*Helianthus gracilentus*)
7 laurel sumac, California sagebrush, thickleaf yerba santa (*Eriodictyon crassifolium*), chamise, and tocalote
8 laurel sumac, red brome, and black mustard (*Brassica nigra*)
9 chamise, laurel sumac, mule fat (*Baccharis salicifolia*), and coast live oak (*Quercus agrifolia*)

APPENDIX C
ARROYO TOAD

BonTerra
CONSULTING
An Environmental Planning/Resource Management Corporation

September 11, 2000

Mr. Doug Krofta
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

Subject: Results of Arroyo Southwestern Toad Surveys on the Foothill Parkway Extension Project Site, City of Corona, Riverside County, California

Dear Mr. Krofta:

This letter reports the results of focused surveys to evaluate the presence or absence of the federally endangered arroyo southwestern toad (*Bufo microscaphus californicus*) (toad) along the stream in Wardlow Canyon on the eastern slope of the Santa Ana Mountains in Corona, Riverside County, California (Exhibit 1). The proposed project is the extension of Foothill Parkway from the end of Green River Road to Lincoln Avenue and Chase Road. This would result in the fill of Wardlow Canyon at its mouth and the removal of the riparian woodland in the project footprint. The riparian habitat is composed of mixed woodland that extends along most of the impact area within the canyon. Habitat extends up Wardlow Canyon where most of this small watershed occurs on the Cleveland National Forest.

BACKGROUND

The arroyo southwestern toad was listed as an endangered species by the U.S. Fish and Wildlife Service (USFWS) effective January 17, 1995 (USFWS 1994), and is considered a species of special concern by the California Department of Fish and Game (CDFG) (CDFG 2000). This rather uniformly warty, stocky toad has a light-colored stripe across the head that includes the eyelids. The parotoid glands are oval-shaped, widely separated, and pale toward the front. The underside is usually buff-colored and unspotted, and the cranial crests are absent or weak. Early descriptions of the habitat requirements for the arroyo toad are based on detailed life history studies conducted over a period of years by Sweet (1992, 1993). Much of that work was conducted in the Los Padres National Forest in Santa Barbara County. Subsequent to his work, additional studies of populations in other portions of the range have resulted in a somewhat broader habitat description (e.g., Griffin et al. 1999). It can generally be said that the arroyo toad frequents third order (or larger) washes, streams, and arroyos in semi-arid parts of the southwest. Stream substrates range from sands to small cobble, with sandy banks grown to mule fat (*Baccharis salicifolia*), willows (*Salix* spp.), cottonwoods (*Populus* spp.), or sycamores (*Platanus racemosa*). It breeds in small backwater pools that form along the stream margins usually in relatively shallow water (four inches).

[illegible] Katrina Drive
Suite E-200
[illegible]
[illegible] 92008
[illegible]
[illegible]

On June 8, 2000, the USFWS published a proposal to designate 478,400 acres of land as critical habitat for the Endangered arroyo toad. These lands encompass portions of Monterey, Santa Barbara, Ventura, Los Angeles, San Bernardino, Orange, Riverside, and San Diego Counties in California. The critical habitat designation would cover not only riparian habitat used by the toad, but also upland areas within a 25-meter (80-foot) elevation range and no more than 1.5 kilometers (0.9 mile) from the stream. Critical habitat refers to specific geographic areas that are essential for the conservation of a Threatened or Endangered species and that may require special management considerations. These areas do not necessarily have to be occupied by the species at the time of designation. A critical habitat designation does not set up a preserve or refuge, and only applies to situations where Federal funding or a Federal permit is involved. A Section 7 consultation with USFWS is required for any action that is likely to result in the adverse modification or destruction of proposed critical habitat. The project site is not located in an area that has been designated as critical habitat.

EXISTING HABITAT

Stream habitat in the upstream half of the project area consists of rock and cobble substrates in a canyon setting. The floodplain (canyon bottom) is relatively narrow, and supports an open mixed riparian woodland including coast live oak (*Quercus agrifolia*), western sycamore, Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix lasiolepis*), and mule fat. The streambed averages approximately ten feet wide. The banks are relatively steep, in some places consisting of abrupt five to seven foot drop-offs. Annual scouring of the floodplain does not occur, or rarely occurs, because this is a small watershed. Shrub and herbaceous cover in the canyon bottom is relatively high. Portions of the stream margin support dense patches of mule fat and indigo (*Amorpha* sp.) that obscure the location of the streambed.

The lower half of the project area consists of highly modified habitat. The current landowner maintains recreational horse riding stables, arenas, and associated facilities. Several trailers for the residents are also present in the vicinity of the stables. The streambed has been "pushed" to the north side of the canyon against the hills by placement of fill over the years for a dirt road that provides access for residents and patrons. During the course of the focused toad surveys, a substantial amount of fill was placed for extending the dirt road up the canyon, where the trail for horseback riding begins. The modified streambed is generally straight through this area and well below the height of the adjacent canyon bottom, averaging five to ten feet. Vegetation along most of this portion of the stream consists of dense mule fat.

The slopes of the canyon in the project area are relatively steep and support a diverse chaparral vegetation type. A residential development occurs along the ridge on the south side of the canyon.

METHODS

Prior to conducting the focused survey, a search was conducted of the most recent version of the California Natural Diversity Data Base (CDFG 2000b, Corona USGS quadrangle) and other relevant available documents (e.g., Campbell et al. 1996; USFWS 1999a; USFWS 2000) to determine if and to what extent the toad occurs on the project site or in the vicinity.

Focused surveys for the toad along the creek margins in the riparian woodland were conducted by Brian Leatherman, a wildlife biologist who has conducted numerous surveys for the toad. Survey methods followed the guidelines developed by the U.S. Fish and Wildlife Service (USFWS 1999b). The guidelines require that six surveys be conducted at least seven days apart during the breeding season (generally between March 15 and July 1). Each survey includes a daytime and nighttime component. Daytime surveys are primarily for eggs, larvae, and juveniles within and along the

stream margins. Nighttime surveys, which are to be conducted between one hour after dusk and midnight, are primarily for detection and identification of calling adults in suitable breeding locations along the stream and for foraging individuals in the adjacent riparian area. Surveys are to be conducted under suitable weather conditions.

Most of the stream within the project area was dry by the time the first survey was conducted on March 17, 2000. By the third survey (on April 28) only a 40-foot section of stream with about one inch of water remained within the project area. A small pool of water, located just beyond the project area up the canyon, was all that remained on the fourth survey (on May 18). Because the daytime surveys are for searching for egg masses, larvae, and juveniles along the stream margins, the final two daytime surveys were canceled because no surface water was present. The final two nighttime surveys were conducted to search for foraging adults along the dry stream channel and adjacent riparian woodland. Survey dates, times, and weather data for the surveys are shown in Table 1.

TABLE 1
SUMMARY OF SURVEY DATA AND CONDITIONS FOR ARROYO SOUTHWESTERN TOAD SURVEYS

Date	Times	Air Temp.	Wind (mph)	Cloud Cover; Moon Phase (Night)
17 March	1000-1430	75-82	3-7	
	1915-2045	60-56	1-3	Clear; three-quarter moon
28 March	1930-2130	56-54	2-4	50% cumulus clouds; no moon
29 March	0930-1215	60-63	3-5	
28 April	1300-1500	74-75	1-3	
	2000-2200	59	4-7	Clear; quarter moon
18 May	1000-1300	70-80	1-3	
	2100-2300	61		Full moon, but below canyon horizon
5 June	Day Survey Canceled			
	2100-2300	62-58	0-1	Clear; quarter moon
3 July	Day Survey Canceled			
	2115-2300	63-62	0-1	Clear; no moon

Surveys were conducted by walking slowly and methodically within and along the edge of the stream. All of the stream margins were surveyed during the diurnal surveys. However, during the nighttime surveys, areas where vegetation was too dense to access were surveyed by listening from an adjacent area for calling adults. All habitat was surveyed twice during each visit, once upstream and once downstream. The focus of the surveys was on the detection and identification of arroyo southwestern toads, but all wildlife observed or detected on the project site were documented. Identifications were made with the aid of 10 X 42 power binoculars and a six-volt Wizard Nite Lite during the night surveys.

RESULTS

The arroyo toad was not observed or detected in the stream habitat on the project site during the focused surveys. Based on a review of the USGS quadrangle maps for the stream and the subsequent field surveys, the stream in Wardlow Canyon appears to be a second order stream and

the watershed does not appear to be large enough to sustain surface flows for the complete breeding cycle of the arroyo toad. Very little surface water was present in the stream when the first survey was conducted. Stream morphology and sediments do not suggest that suitable breeding pools and riffles form when water is present. The banks are incised and the substrates are composed primarily of large cobble (three- to 12-inch range). Based on the negative survey results, presence of only marginally suitable habitat, lack of known populations in the region, high levels of disturbance observed, and professional experience and judgement, the arroyo southwestern toad is likely absent from the study area at this time.

Sincerely,

BONTERRA CONSULTING

Ann M. Johnston

Ann M. Johnston
Associate Principal, Biological Services

R:\Projects\RBF\Archived Files\J035\J035 Toad Survey-091100.wpd

Enclosure: Exhibit 1

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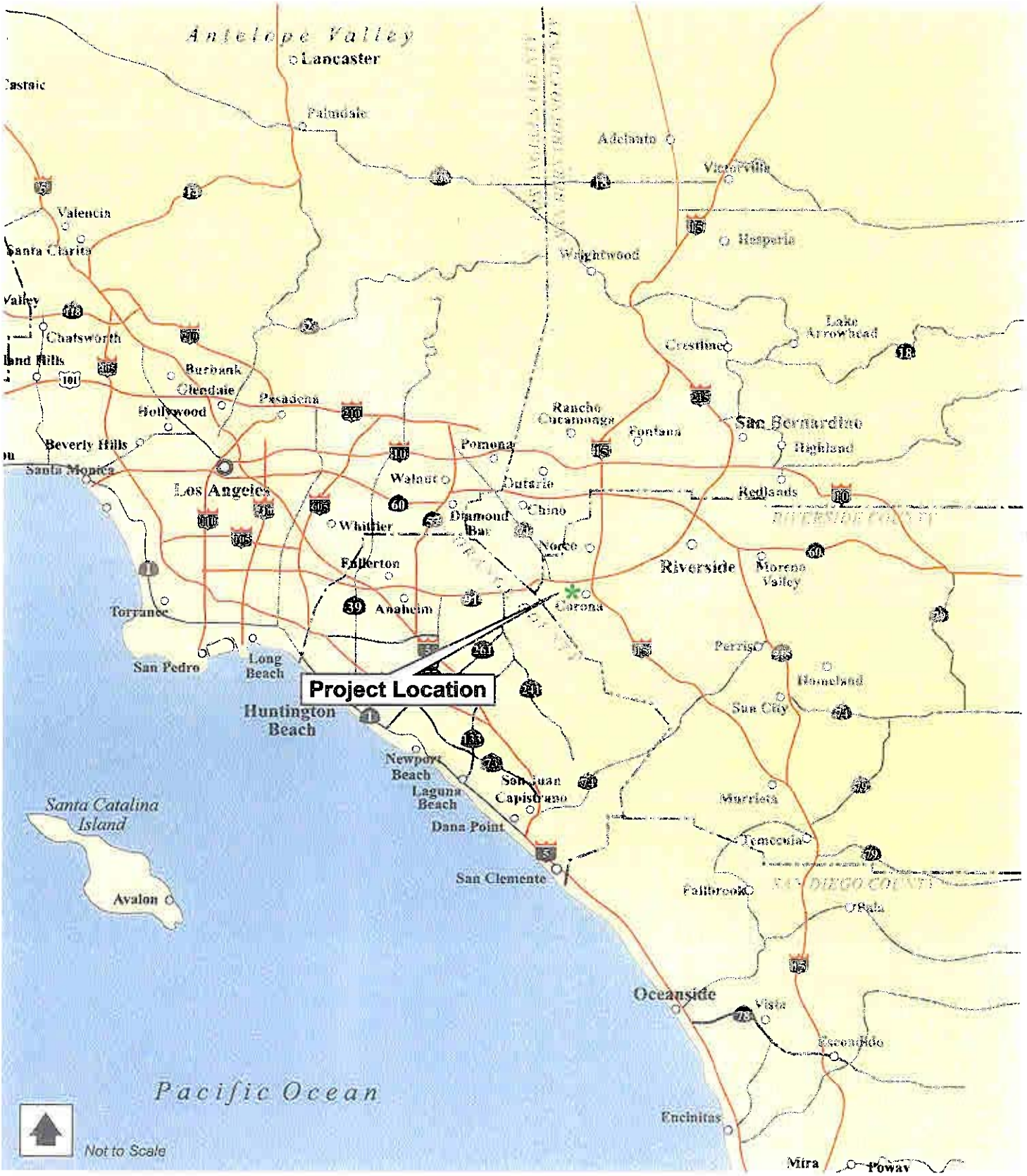

Regional Location Map Exhibit 1

Foothill Parkway Extension
DRAFT - Biological Technical Report

BonTerra CONSULTING

APPENDIX D
BURROWING OWL

Focused Burrowing Owl Surveys for Foothill Parkway Extension (93-Acre Property, Total Area Surveyed: 6.4-Acres) Paseo Grande to Mangular Avenue in Riverside County Corona South USGS 7.5-Minute Series Map Township 3, 4S, Range 7W, Sections 3, 4, 10, 33, 34

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Surveys Conducted By:
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Allison Rudalevige
Jennifer Pareti
Beth Cecil

Surveys Conducted On:
June 27, July 11 and 25, August 3 and 10, 2006

Report Date:
September 29, 2006

CERTIFICATION

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

DATE: 9/29/06 SIGNED: Amber S Oneal

TABLE OF CONTENTS

Project Location and Description 1
Background 1
Survey Methods 2
Survey Results 3
Conclusions 3
References 4

LIST OF TABLES

1 Survey Conditions 3

LIST OF EXHIBITS

Follows Page

1 Regional Location 1
2 Local Vicinity 1
3 Vegetation Types 1
4 Burrow Locations 3
5 Site Photographs 3

Appendices

A Wildlife Compendia

This letter report presents the results of focused surveys for burrowing owl (*Athene cunicularia*) on the Foothill Parkway Extension project site in the City of Corona and unincorporated Riverside County, California. The purpose of the survey was to determine the presence or absence of burrowing owl on the project site in accordance with guidelines provided in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

The project site is located within the MSHCP Temescal Canyon Area Plan, but is not within a designated MSHCP Criteria Area. According to the Riverside County Integrated Project (RCIP) Conservation Summary Report Generator, a Habitat Assessment was required for burrowing owl. The assessment determined that suitable habitat for the burrowing owl was present on the project site and, as a result, focused surveys were required.

Project Location and Description

The approximately 93-acre project site is located along the southwestern edge of the City of Corona and unincorporated Riverside County, California (Exhibits 1 and 2). The project site is located between the termini of Paseo Grande and Mangular Avenue, southwest of Ontario Avenue. Surrounding land uses include residential development to the north and east and open space (Cleveland National Forest) to the south and west.

The project site is located on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle map at Township 3S, Range 7W, Sections 33 and 34 and Township 4S, Range 7W, Sections 3, 4, and 10. Elevations on the project site range from approximately 800 to 1,200 feet above mean sea level (msl). Vegetation types and other areas mapped on the project site include of coastal sage scrub, alluvial, coastal sage scrub/chaparral, coastal sage scrub/ruderal, chaparral, non-native grassland, riparian forest, oak woodland, agriculture, ruderal, ornamental, developed/ruderal, disturbed, and developed areas (Exhibit 3).

Background

Burrowing Owl (*Athene cunicularia*)

Burrowing owl is a California Species of Special Concern. Although the burrowing owl was recently proposed as a state Candidate for listing, the California Department of Fish and Game (CDFG) determined that the species did not warrant listing in consideration of its overall population in California. In particular, the burrowing owl is still considered to be common in the Imperial Valley where nearly 70 percent of its California population resides (Patten et al. 2003). Elsewhere in California, this species has declined dramatically and is considered a species of Local Concern in many regions. A widespread species throughout the western United States, the burrowing owl has declined due to habitat modification, poisoning of its prey items, shooting, and human disturbance (Remsen 1978).

Burrowing owl is a grassland specialist that occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level-to-gently-sloping areas characterized by sparse vegetation and bare ground (Haug et al. 1993, Dechant et al. 1999). Burrowing owls in Florida excavate their own burrows, but western burrowing owls are dependant upon the presence of burrowing mammals such as ground squirrels, whose burrows are used for roosting and nesting (Haug et al. 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks, debris,

Regional Location

Exhibit 1

Foothill Parkway Extension, Riverside County, California

N W E S

10 5 0 10 Miles

BonTerra CONSULTING

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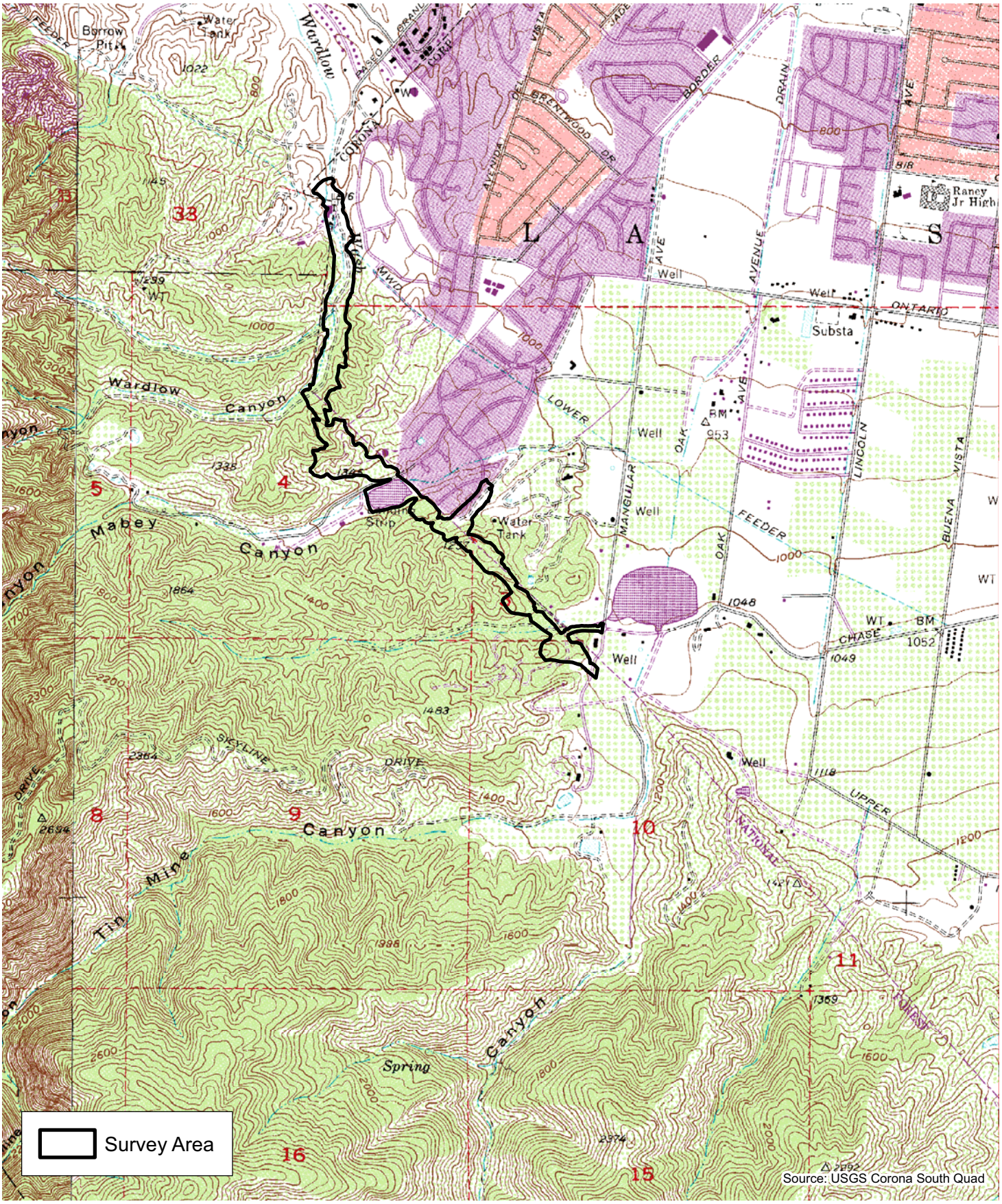

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Local Vicinity

Exhibit 2

Foothill Parkway Extension, Riverside County, California

N W E S

2,000 1,000 0 2,000 Feet

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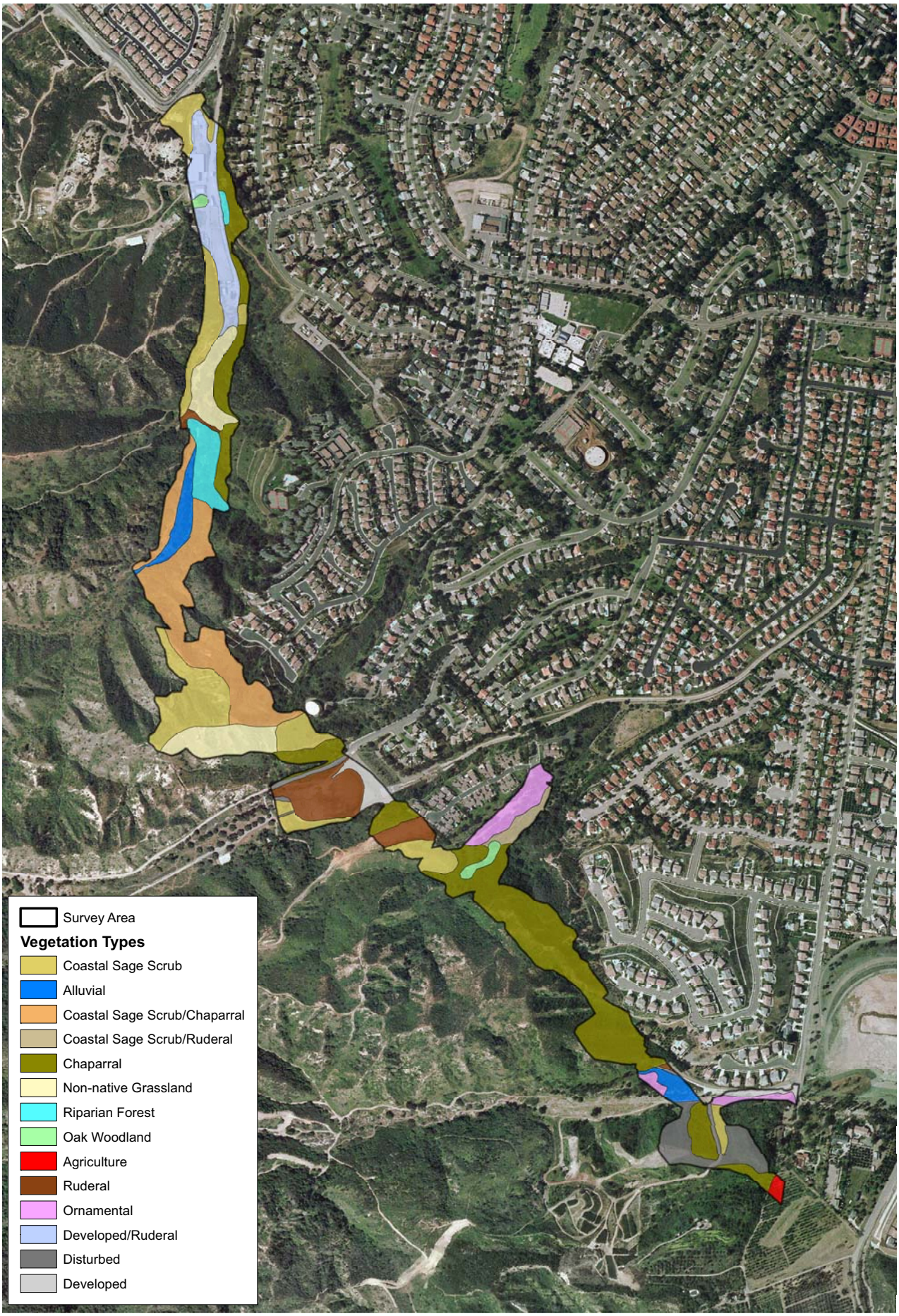

Vegetation Types

Exhibit 3

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

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or large, heavy objects such as abandoned cars, concrete blocks or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators.

Burrowing owls often use "satellite," or non-nesting burrows, moving chicks into them from the nesting burrow, presumably to reduce the risk of predation (Desmond and Savidge 1998) and possibly to avoid nest parasites (Dechant et al. 1999). One pair may use up to ten satellite burrows (James and Seabloom 1968). Individual burrowing owls have a moderate-to-high site fidelity to previously-used burrow complexes, often using the same burrows for nesting year after year.

Survey Methods

Surveys on the project site followed the Burrowing Owl Survey Instructions for the Western Riverside MSHCP Area (County of Riverside 2006). The Western Riverside MSHCP survey instructions are the most current protocol described for the species. The guidelines outline a survey methodology that has been officially approved by the CDFG and U.S. Fish and Wildlife Service (USFWS).

The first step, habitat assessment, identifies whether the project site provides suitable habitat for the species. This determination is made by a biologist that is knowledgeable in burrowing owl habitat, ecology, and identification. The biologist conducts the assessment by walking the survey area (which should include land within an approximately 500-foot buffer area if it is accessible) to visually inspect the project site and assess its potential for burrowing owls. The habitat assessment was conducted by BonTerra Consulting Senior Biologist Brian Daniels and Ecologist Amber Oneal on May 4, 2006. The entire project site was surveyed for suitable burrowing owl habitat.

The second step, burrow survey, identifies suitable burrow(s) and the location(s) of occupied burrow(s). The burrow survey is accomplished by a biologist with the qualifications identified in the first step by walking through suitable habitat within the survey area via transects no more than approximately 100 feet apart in order to ensure 100 percent visual coverage of the ground surface. If no potentially active burrows are detected, then no focused owl surveys are required. The focused burrow survey was conducted by Ms. Oneal and BonTerra Consulting Ecologist Allison Rudalevige on June 27, 2006.

If potentially active burrows are detected, the burrows must be recorded and mapped, including geographic positioning system (GPS) coordinates. Four surveys that focus on owls must be conducted on four separate days during the owl's breeding season (March 1 to August 31). These surveys are conducted in the same manner as the burrow survey to ensure 100 percent visual coverage of the ground surface. The first survey may be conducted concurrently with the burrow survey. Focused owl surveys should be conducted in the morning one hour before sunrise to two hours after sunrise or in the early evening two hours before sunset to one hour after sunset; these surveys are called crepuscular surveys. The location of any owls observed, including numbers of pairs and juveniles, and any behavior such as courtship and mating should be recorded. Four crepuscular surveys were conducted on July 11, 25, August 3, and 10, 2006. All four crepuscular surveys were conducted by Ms. Oneal, who was assisted by BonTerra Consulting Ecologists Allison Rudalevige and Jennifer Pareti, and Intern Beth Cecil. Survey dates, personnel, times, and weather conditions for the focused burrowing owl surveys are shown in Table 1.

TABLE 1
SURVEY CONDITIONS FOR
BURROWING OWL FOCUSED SURVEYS

Date	Survey Personnel	Time Period	Weather Conditions			Notes
			Temp. (ºF)	Wind (mph)	Cloud Cover	
June 27, 2006	Amber Oneal Allison Rudalevige	0815-0930	70	0-5	overcast	Burrow Survey
July 11, 2006	Amber Oneal Allison Rudalevige	0530-0700	63	0-5	clear	Crepuscular Survey
July 25, 2006	Amber Oneal Beth Cecil	0540-0700	80	0-5	clear	Crepuscular Survey
August 3, 2006	Amber Oneal Jennifer Pareti	1900-2045	85	0-5	clear	Crepuscular Survey
August 10, 2006	Amber Oneal Jennifer Pareti	1845-2030	85	0-5	clear	Crepuscular Survey

Survey Results

Habitat Assessment

The entire project site was surveyed for suitable burrowing owl habitat. The majority of the project site was considered to be unsuitable for the burrowing owl due to steep topography or extensive cover of vegetation (e.g., chaparral). However, suitable burrowing owl habitat was observed in the Mabey Canyon Debris Basin (approximately 6.4 acres) located adjacent to Mabey Canyon Road in the approximate center of the project site. Focused burrow and owl surveys were recommended for this portion of the project site.

Burrow Survey

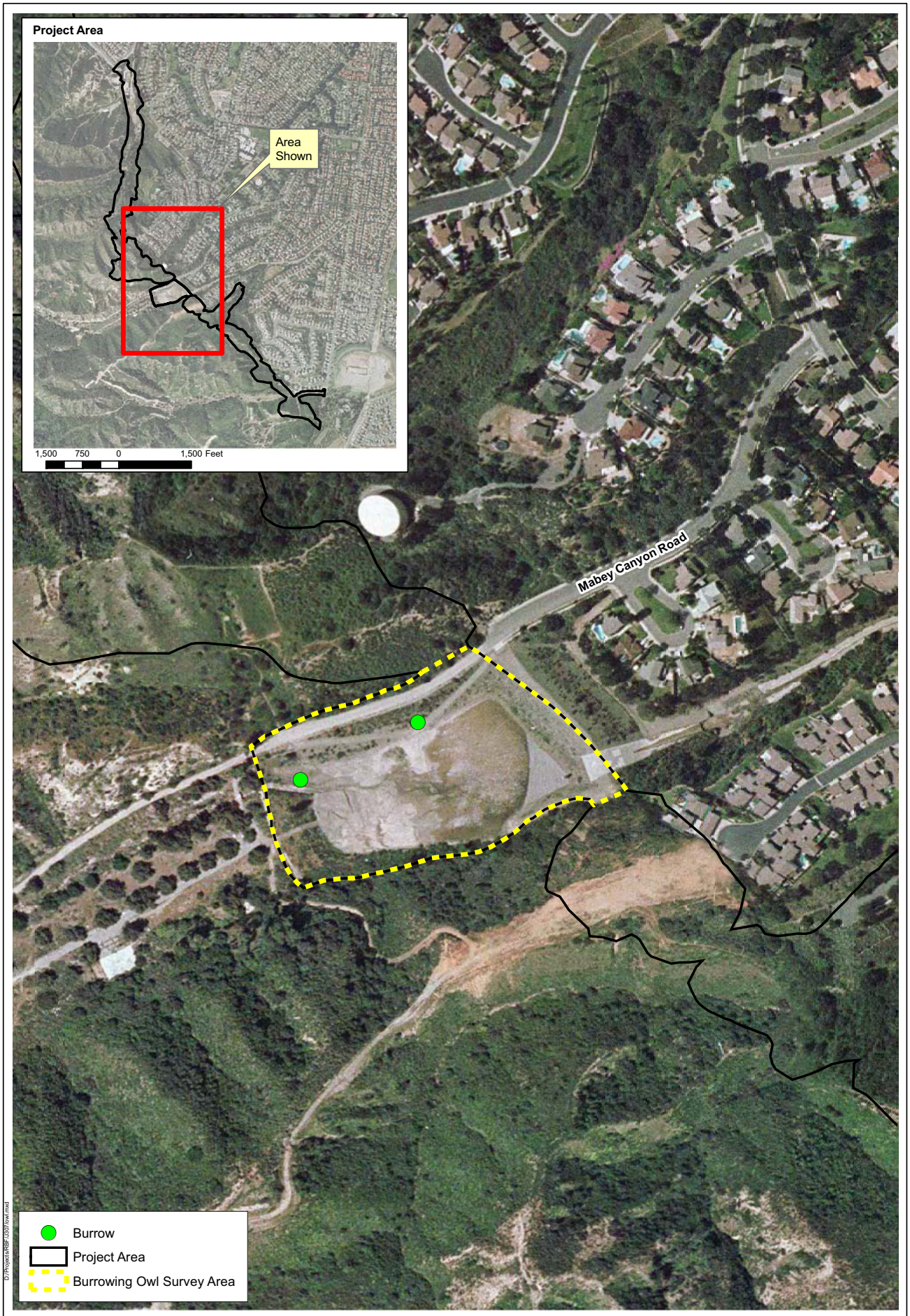
The California ground squirrel (*Spermophilus beecheyi*) was observed on the project site and their burrows were observed at two locations in the burrowing owl survey area (Exhibits 4 and 5). Approximately nine burrows were observed on the northern slope of the debris basin. Approximately eight burrows were observed on the incised banks at the upstream end of the debris basin. No evidence of burrowing owl was observed during the burrow survey, but the burrows were of suitable size and did not appear to be currently occupied by ground squirrels.

Crepuscular Surveys

No burrowing owls or evidence of their presence were observed during the four crepuscular surveys. A complete list of wildlife species observed during the surveys is included in Appendix A.

Conclusions

Pre-construction surveys should be conducted by a qualified biologist within 30 days prior to ground disturbance. Pre-construction surveys can be conducted year-round. If burrowing owl are present within or immediately adjacent to the direct impact area, additional avoidance or minimization measures may be recommended based on the timing and nature of construction activities.



Burrow Locations

Exhibit 4

Foothill Parkway Extension, Riverside County, California

N W E S

200 100 0 200 Feet

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Debris basin adjacent to Mabey Canyon Road. Arrows show burrow locations.

Representative burrows on the north slope of the debris basin.

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Site Photographs

Exhibit 5a

Foothill Parkway Extension, Riverside County, California

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Representative burrow in the incised bank at the upstream end of the debris basin near the concrete channel.

Representative burrows in the incised bank at the upstream end of the debris basin near the concrete channel.

Site Photographs

Exhibit 5b

Foothill Parkway Extension, Riverside County, California

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R:/Projects/RBF/J307/Graphics/Ex-5b_sp_BUOW_091306.pdf

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ATTACHMENT A

WILDLIFE COMPENDIUM

ATTACHMENT A
WILDLIFE COMPENDIUM

BIRDS
ODONTOPHORIDAE - QUAILS
Oreortyx pictus mountain quail
Callipepla californica California quail
CATHARTIDAE - NEW WORLD VULTURES
Cathartes aura turkey vulture
ACCIPITRIDAE - HAWKS
Accipiter cooperii Cooper's hawk
Buteo jamaicensis red-tailed hawk
FALCONIDAE - FALCONS
Falco sparverius American kestrel
COLUMBIDAE - PIGEONS & DOVES
Zenaida macroura mourning dove
Columba fasciata band-tailed pigeon
CUCULIDAE - CUCKOOS & ROADRUNNERS
Geococcyx californianus greater roadrunner
TYTONIDAE - BARN OWLS
Tyto alba barn owl
CAPRIMULGIDAE - GOATSUCKERS
Chordeiles acutipennis lesser nighthawk
TROCHILIDAE - HUMMINGBIRDS
Archilochus alexandri black-chinned hummingbird
Calypte anna Anna's hummingbird
Calypte costae Costa's hummingbird
Selasphorus sasin Allen's hummingbird
PICIDAE - WOODPECKERS
Melanerpes formicivorus acorn woodpecker
Picoides nuttallii Nuttall's woodpecker
TYRANNIDAE - TYRANT FLYCATCHERS
Contopus sordidulus western wood-pewee
Empidonax hammondii Hammond's flycatcher

ATTACHMENT A
WILDLIFE COMPENDIUM (Continued)

Empidonax wrightii gray flycatcher
Empidonax difficilis Pacific-slope flycatcher
Sayornis nigricans black phoebe
Sayornis saya Say's phoebe
Myiarchus cinerascens ash-throated flycatcher
Tyrannus vociferans Cassin's kingbird
Tyrannus verticalis western kingbird
Vireo gilvus warbling vireo
CORVIDAE - JAYS & CROWS
Aphelocoma californica western scrub-jay
Corvus brachyrhynchos American crow
Corvus corax common raven
HIRUNDINIDAE - SWALLOWS
Stelgidopteryx serripennis northern rough-winged swallow
Petrochelidon pyrrhonota cliff swallow
Hirundo rustica barn swallow
PARIDAE - TITMICE
Baeolophus inornatus oak titmouse
AEGITHALIDAE - BUSHTITS
Psaltriparus minimus bushtit
SITTIDAE - NUTHATCHES
Sitta carolinensis white-breasted nuthatch
TROGLODYTIDAE - WRENS
Salpinctes obsoletus rock wren
Thryomanes bewickii Bewick's wren
Troglodytes aedon house wren
TURDIDAE - THRUSHES & ROBINS
Catharus ustulatus Swainson's thrush
Catharus guttatus hermit thrush
TIMALIIDAE - WRENTITS
Chamaea fasciata wrentit

ATTACHMENT A
WILDLIFE COMPENDIUM (Continued)

MIMIDAE - THRASHERS
Mimus polyglottos northern mockingbird
Toxostoma redivivum California thrasher
STURNIDAE - STARLINGS
Sturnus vulgaris European starling *
PTILOGONATIDAE - SILKY-FLYCATCHERS
Phainopepla nitens phainopepla
PARULIDAE - WARBLERS
Vermivora celata orange-crowned warbler
Vermivora ruficapilla Nashville warbler
Dendroica petechia yellow warbler
Dendroica coronata yellow-rumped warbler
Dendroica nigrescens black-throated gray warbler
Dendroica townsendi Townsend's warbler
Dendroica occidentalis hermit warbler
Oporornis tolmiei MacGillivray's warbler
Wilsonia pusilla Wilson's warbler
EMBERIZIDAE - SPARROWS & JUNCOS
Pipilo maculatus spotted towhee
Pipilo crissalis California towhee
Aimophila ruficeps rufous-crowned sparrow
Spizella passerina chipping sparrow
Amphispiza bilineata black-throated sparrow
Spizella atrogularis black-chinned sparrow
Chondestes grammacus lark sparrow
Melospiza melodia song sparrow
Zonotrichia leucophrys white-crowned sparrow
CARDINALIDAE - GROSBEAKS & BUNTINGS
Pheuticus melanocephalus black-headed grosbeak
Passerina amoena lazuli bunting

ATTACHMENT A
WILDLIFE COMPENDIUM (Continued)

ICTERIDAE - BLACKBIRDS
Icterus cucullatus hooded oriole
Icterus bullockii Bullock's oriole
FRINGILLIDAE - FINCHES
Carpodacus mexicanus house finch
Carduelis psaltria lesser goldfinch
MAMMALS
LEPORIDAE - HARES & RABBITS
Sylvilagus audubonii desert cottontail
SCIURIDAE - SQUIRRELS
Spermophilus beecheyi California ground squirrel
CERVIDAE - DEERS
Odocoileus hemionus mule deer
* introduced species

Focused Burrowing Owl Surveys for Foothill Parkway Extension (148-Acre Property, Total Area Surveyed: 6.4 Acres) Paseo Grande to Mangular Avenue in Riverside County Corona South USGS 7.5-Minute Series Map Township 3, 4S, Range 7W, Sections 3, 4, 10, 33, 34

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Surveys Conducted By:
Amber Oneal

Surveys Conducted On:
Burrow Survey – April 21 and May 2, 2008
Owl Surveys – May 12, June 2, 12, and 23, 2008

Report Date:
July 17, 2008

CERTIFICATION

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

DATE: 7/17/08 SIGNED: Amber S Oneal

TABLE OF CONTENTS

Project Location and Description 1
Background 1
Survey Methods 2
Survey Results 2
Conclusions 3
References 4

LIST OF EXHIBITS

Exhibit **Follows Page**

1 Regional Location 1
2 Local Vicinity 1
3 Vegetation Types 1
4 Burrow Locations 3

Appendices

A Site Photos
B Wildlife Compendia
C CNDDB Forms

This Letter Report presents the results of focused surveys for the burrowing owl (*Athene cunicularia*) on the Foothill Parkway Extension project site in the city of Corona and unincorporated Riverside County, California. The survey's purpose is to determine the presence or absence of the burrowing owl in the survey area in accordance with guidelines provided in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

The project site is located within the MSHCP Temescal Canyon Area Plan, but is not within a designated MSHCP Criteria Area. The Riverside County Integrated Project (RCIP) Conservation Summary Report Generator requires a Habitat Assessment for the burrowing owl. The assessment determined that suitable habitat for the burrowing owl was present on the project site and, as a result, focused surveys are required.

Project Location and Description

The approximate 148-acre survey area is located along the southwestern edge of the city of Corona and unincorporated Riverside County, California (Exhibits 1 and 2). The survey area is located between the termini of Paseo Grande and Mangular Avenue, southwest of Ontario Avenue. Surrounding land uses include residential development to the north and east, and open space (Cleveland National Forest) to the south and west.

The project site is located on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle map at Township 3S, Range 7W, Sections 33 and 34, and at Township 4 South, Range 7 West, Sections 3, 4, and 10. Elevations on the project site range from approximately 800 to 1,200 feet above mean sea level. Vegetation types and other areas mapped on the project site include coastal sage scrub, coastal sage scrub/chaparral, coastal sage scrub/ruderal, California buckwheat-scalebroom alluvial scrub, chaparral, non-native grassland, Fremont cottonwood-willow riparian woodland, willow riparian woodland, western sycamore-coast live oak alluvial scrub, coast live oak woodland, mule fat scrub, mule fat scrub-willow riparian woodland, ruderal, ornamental, ornamental/developed, disturbed, developed/ruderal, and developed areas (Exhibit 3).

Background

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is a California Species of Special Concern. Although the burrowing owl was recently proposed as a State Candidate for listing, the California Department of Fish and Game (CDFG) determined that the species did not warrant listing when it considered the burrowing owl's overall population in California. In particular, the burrowing owl is still considered to be common in the Imperial Valley where nearly 70 percent of its California population resides (Patten et al. 2003). Elsewhere in California, however, this species has declined dramatically and is considered a species of Local Concern in many regions. A widespread species throughout the western United States, the burrowing owl has declined due to habitat modification, poisoning of its prey items, shooting, and human disturbance (Remsen 1978).

The burrowing owl is a grassland specialist that occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with well-drained, level to gently sloping areas characterized by sparse vegetation and bare ground (Haug et al. 1993; Dechant et al. 1999). Burrowing owls in Florida excavate their own burrows, but western burrowing owls depend upon the presence of burrowing mammals such as ground squirrels, whose burrows are used for roosting and nesting (Haug et al. 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks, debris, or large, heavy

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Regional Location

Exhibit 1

Foothill Parkway Extenson, Riverside County, California

N W E S

10 5 0 10 Miles

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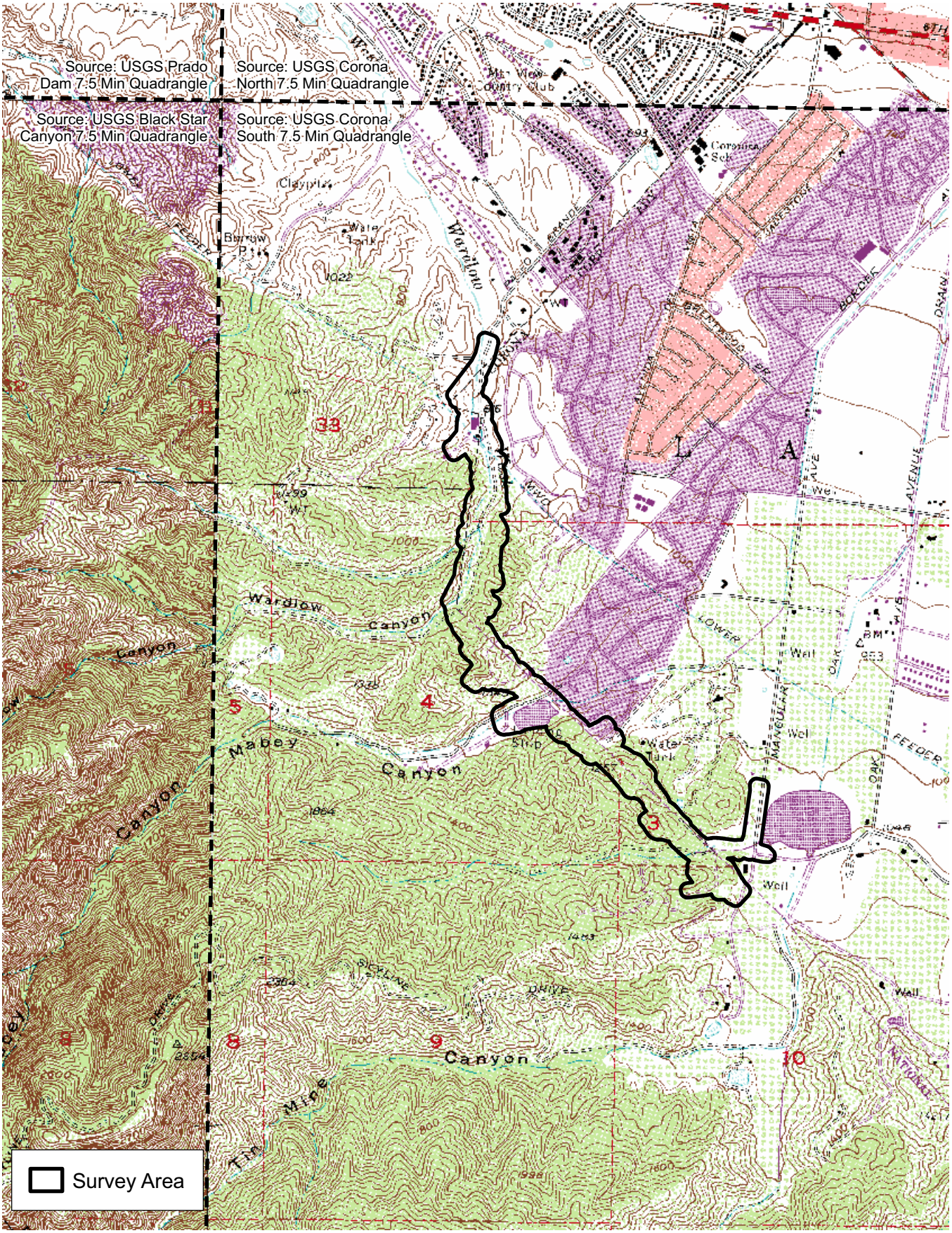
R:/Projects/RBF/J307/Graphics/BUOW/ex1_RL_071508.pdf



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Local Vicinity

Exhibit 2

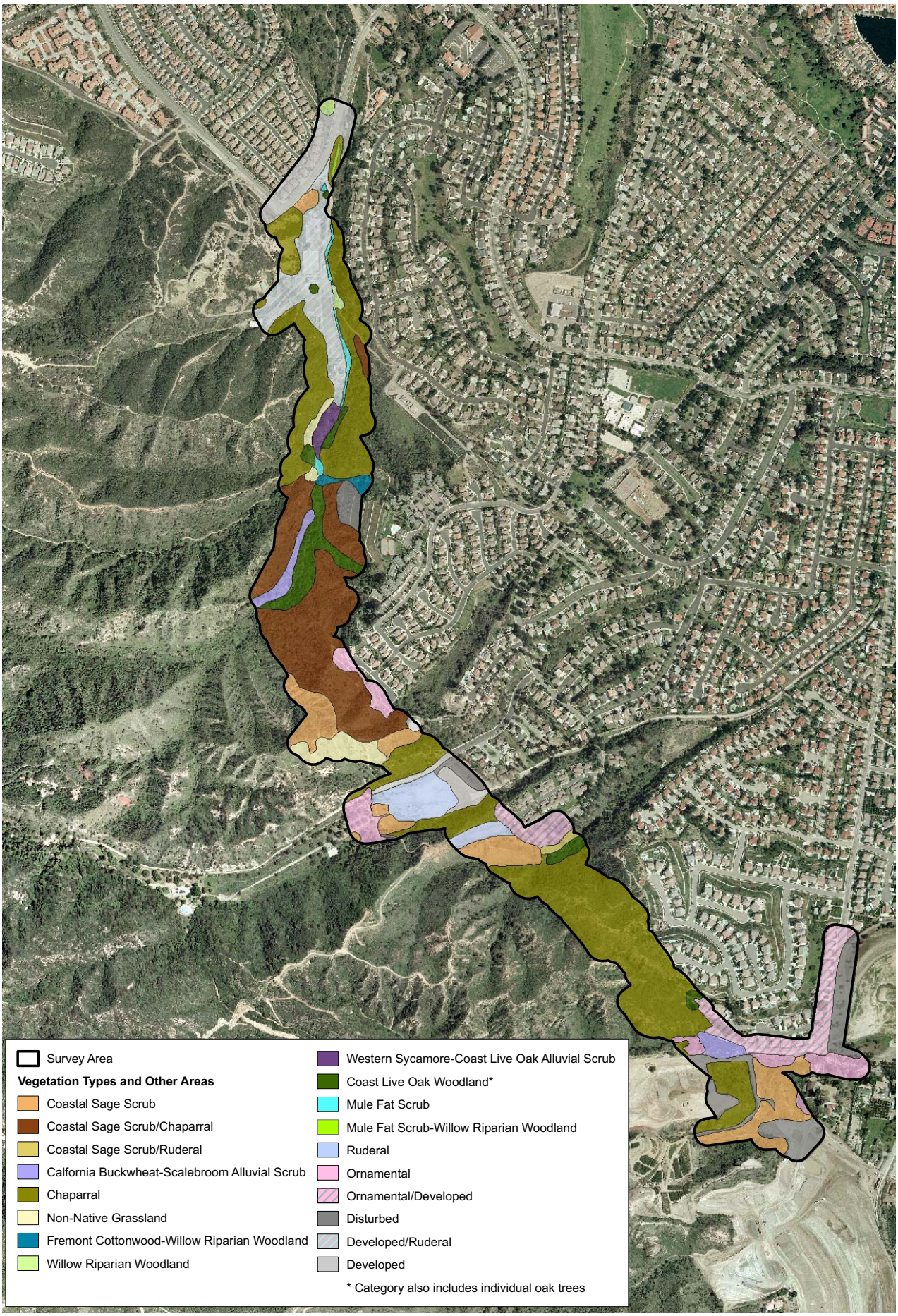
Foothill Parkway Extenson, Riverside County, California

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/BUOW/ex2_LV_071508.pdf



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Vegetation Types

Exhibit 3

Foothill Parkway Extension, Riverside County, California

N W E S

800 400 0 800 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/BUOW/ex3_veg_071508.pdf

objects such as abandoned cars, concrete blocks, or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse and may inhibit excavation by predators.

Burrowing owls often use "satellite," or non-nesting, burrows and move chicks into them from the nesting burrow, presumably to reduce the risk of predation (Desmond and Savidge 1998) and possibly to avoid nest parasites (Dechant et al. 1999). One pair of burrowing owls may use up to ten satellite burrows (James and Seabloom 1968). Individual burrowing owls have a moderate-to-high site fidelity to previously used burrow complexes, and often use the same burrows for nesting year after year.

Survey Methods

Surveys on the project site followed the *Burrowing Owl Survey Instructions for the Western Riverside MSHCP Area* (Riverside County 2006). The Western Riverside MSHCP Survey Instructions are the most current protocol described for the species. The guidelines outline a survey methodology that has been officially approved by the CDFG and U.S. Fish and Wildlife Service (USFWS).

During habitat assessment, (the first step), a Biologist, who is knowledgeable in burrowing owl habitat, ecology and identification, identifies whether the project site provides a suitable habitat for the species. The Biologist conducts the assessment by walking the survey area (which should include land within an approximate 500-foot buffer area if it is accessible) to visually inspect the project site and assess its potential as habitat for burrowing owls. BonTerra Consulting Ecologist Amber Oneal conducted the habitat assessment on April 11, 2008, when she surveyed the entire project site for suitable burrowing owl habitat.

For the second step, the burrow survey, a Biologist (with the qualifications described in step one) identifies suitable burrow(s) and the location(s) of occupied burrow(s). The Biologist conducts the survey by walking through suitable habitat within the survey area via transects no more than approximately 100 feet apart in order to ensure 100 percent visual coverage of the ground surface. If the Biologist does not observe any potentially active burrows, then focused owl surveys are not required. Ms. Oneal conducted the focused burrow survey on April 21 and May 2, 2008.

If potential burrows are detected, the burrows must be recorded and mapped using a geographic positioning system (GPS). Four surveys that focus on owls must be conducted on four separate days during the owl's breeding season (March 1 to August 31). These surveys are conducted in the same manner as the burrow survey to ensure 100 percent visual coverage of the ground surface. The first survey may be conducted concurrently with the burrow survey. Focused owl surveys should be conducted in the morning one hour before sunrise to two hours after sunrise or in the early evening two hours before sunset to one hour after sunset; these surveys are called crepuscular surveys. The location of any owls observed (including numbers of pairs and juveniles) and any behavior (such as courtship and mating) should be recorded. Ms. Oneal conducted four crepuscular surveys within two hours after sunrise on May 12, June 2, 12, and 23, 2008.

Survey Results

Habitat Assessment

Ms. Oneal surveyed the entire project survey area for suitable burrowing owl habitat. The majority of the project survey area was considered to be unsuitable for the burrowing owl due to steep topography or extensive cover of vegetation (e.g., chaparral). However, she observed suitable burrowing owl habitat (approximately 6.4 acres) in the Mabey Canyon Debris Basin, located adjacent to Mabey Canyon Road in the approximate center of the project survey area. Focused burrow surveys were recommended for this portion of the project survey area.

Burrow Survey

Ms. Oneal observed the California ground squirrel (*Spermophilus beecheyi*) in the survey area and observed their burrows at two locations in the burrowing owl survey area (Exhibit 4). Three potential burrows were observed on the northern slope of the debris basin. Two burrows were observed on the incised banks at the upstream end of the debris basin, and one burrow was observed near the middle of the basin on a slope mapped as California buckwheat-scalebroom alluvial scrub. Ms. Oneal found no evidence of the burrowing owl during the burrow survey, but the burrows were of suitable size and did not appear to be currently occupied by ground squirrels. Representative photos are included in Appendix A.

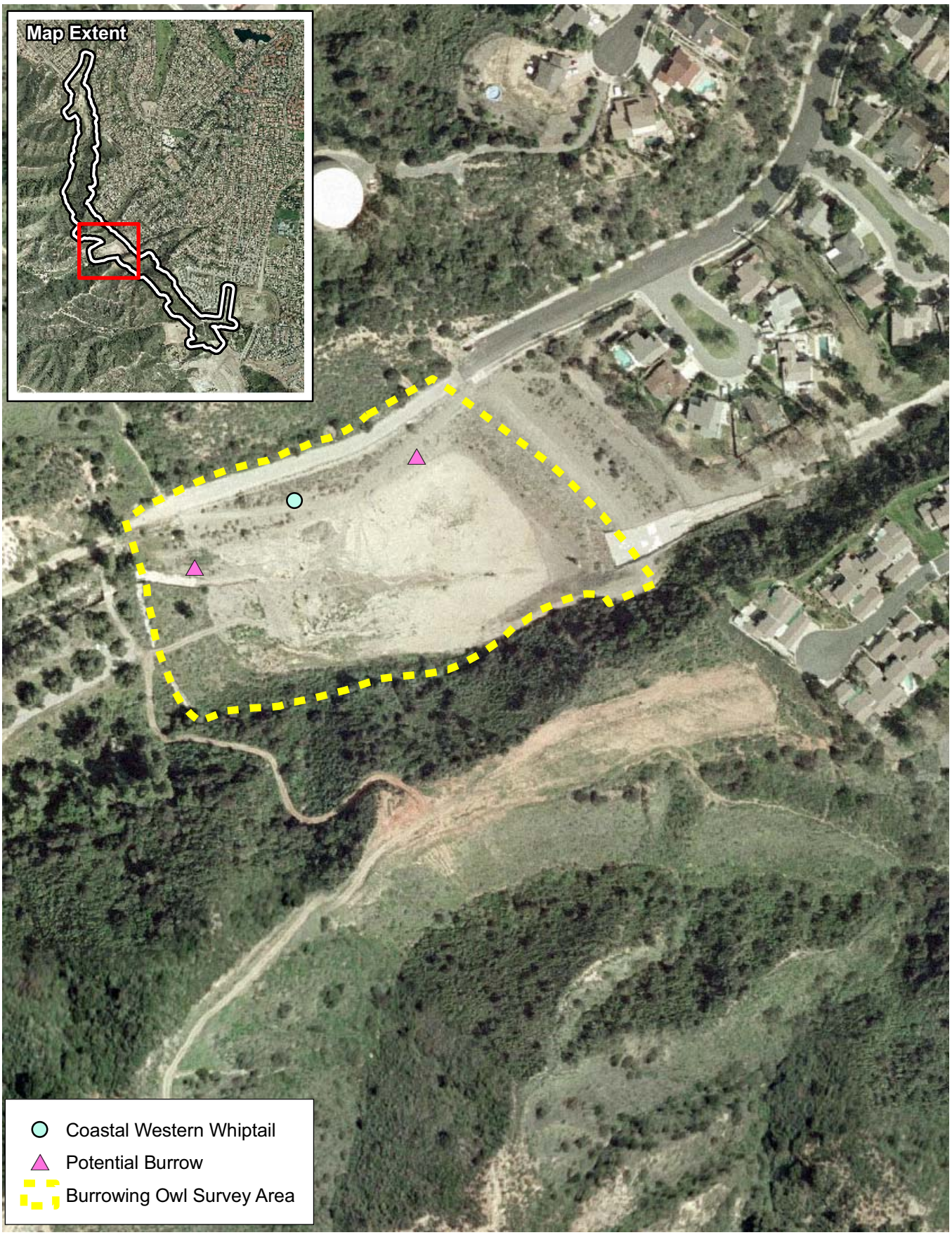
Crepuscular Surveys

No burrowing owls or evidence of their presence were observed during the four crepuscular surveys, nor were they observed during least Bell's vireo protocol surveys conducted from April to June 2008. This is consistent with surveys previously conducted in 2006, which also had negative findings for this species (BonTerra Consulting 2006).

A complete list of wildlife species observed during the surveys is included in Appendix B. Coastal western whiptail (*Aspidoscelis tigris stejnegeri*), a CDFG Special Animal, was incidentally observed in the California buckwheat-scalebroom alluvial scrub on the northern slope of the Mabey Canyon Debris Basin. This observation will be reported to the California Natural Diversity Data Base (CNDDB) (Appendix C).

Conclusions

Although the burrowing owl was not observed during the current surveys, a qualified Biologist should conduct a pre-construction survey for this species within 30 days prior to ground disturbance, as required by the MSHCP. Pre-construction surveys can be conducted year-round. If burrowing owls are present within or immediately adjacent to the direct impact area, additional avoidance or minimization measures consistent with the MSHCP may be recommended based on the timing and nature of construction activities.



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Special Status Wildlife

Exhibit 4

Foothill Parkway Extension, Riverside County, California

N W E S

200 100 0 200 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/BUOW/ex4_buow_071508.pdf

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APPENDIX A

SITE PHOTOS

Overview of the burrowing owl survey area within Mabey Canyon Debris Basin. Habitat is ruderal. Photo taken from east towards the northwest.

View of potential burrow on the slope of the debris basin. Photo taken from the south towards the north.

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Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

BonTerra CONSULTING

R:/Projects/rbf/J307/Graphics/BUOW/AppA_buo_SP_071508.pdf

APPENDIX B

WILDLIFE COMPENDIUM

WILDLIFE SPECIES DETECTED DURING SURVEYS

Species
Reptiles
PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS
Sceloporus occidentalis western fence lizard
Uta stansburiana side-blotched lizard
TEIIDAE - WHIPTAIL LIZARDS
Aspidoscelis [Cnemidophorus] tigris western whiptail
COLUBRIDAE - COLUBRID SNAKES
Pituophis catenifer gopher snake
Birds
ODONTOPHORIDAE - QUAILS
Callipepla californica California quail
ACCIPITRIDAE - HAWKS
Buteo lineatus red-shouldered hawk
Buteo jamaicensis red-tailed hawk
CHARADRIIDAE - PLOVERS
Charadrius vociferus killdeer
COLUMBIDAE - PIGEONS & DOVES
Columba livia rock pigeon*
Zenaida macroura mourning dove
CUCULIDAE - CUCKOOS & ROADRUNNERS
Geococcyx californianus greater roadrunner
APODIDAE - SWIFTS
Aeronautes saxatalis white-throated swift
TROCHILIDAE - HUMMINGBIRDS
Archilochus alexandri black-chinned hummingbird
Calypte anna Anna's hummingbird
Calypte costae Costa's hummingbird
PICIDAE - WOODPECKERS
Melanerpes formicivorus acorn woodpecker
Picoides nuttallii Nuttall’s woodpecker
Picoides pubescens downy woodpecker

WILDLIFE SPECIES DETECTED DURING SURVEYS (Continued)

Species
Colaptes auratus northern flicker
TYRANNIDAE - TYRANT FLYCATCHERS
Empidonax difficilis Pacific-slope flycatcher
Sayornis nigricans black phoebe
Sayornis saya Say's phoebe
Myiarchus cinerascens ash-throated flycatcher
Tyrannus verticalis western kingbird
VIREONIDAE - VIREOS
Vireo bellii pusillus least Bell's vireo
Vireo gilvus warbling vireo
CORVIDAE - JAYS & CROWS
Aphelocoma californica western scrub-jay
Corvus brachyrhynchos American crow
Corvus corax common raven
HIRUNDINIDAE - SWALLOWS
Stelgidopteryx serripennis northern rough-winged swallow
Petrochelidon pyrrhonota cliff swallow
Hirundo rustica barn swallow
PARIDAE - TITMICE
Baeolophus inornatus oak titmouse
AEGITHALIDAE - BUSHTITS
Psaltriparus minimus bushtit
SITTIDAE - NUTHATCHES
Sitta carolinensis white-breasted nuthatch
TROGLODYTIDAE - WRENS
Thryomanes bewickii Bewick's wren
Troglodytes aedon house wren
TIMALIIDAE - WRENTITS
Chamaea fasciata wrentit

WILDLIFE SPECIES DETECTED DURING SURVEYS (Continued)

Species
MIMIDAE - THRASHERS
Mimus polyglottos northern mockingbird
Toxostoma redivivum California thrasher
STURNIDAE - STARLINGS
Sturnus vulgaris European starling *
PTILOGONATIDAE - SILKY-FLYCATCHERS
Phainopepla nitens phainopepla
PARULIDAE - WARBLERS
Vermivora celata orange-crowned warbler
Dendroica petechia yellow warbler
Dendroica nigrescens black-throated gray warbler
Wilsonia pusilla Wilson's warbler
THRAUPIDAE - TANAGERS
Piranga ludoviciana western tanager
EMBERIZIDAE - SPARROWS & JUNCOS
Pipilo maculatus spotted towhee
Pipilo crissalis California towhee
Aimophila ruficeps rufous-crowned sparrow
Melospiza melodia song sparrow
CARDINALIDAE - GROSBEAKS & BUNTINGS
Pheuticus melanocephalus black-headed grosbeak
Passerina amoena lazuli bunting
ICTERIDAE - BLACKBIRDS
Icterus bullockii Bullock's oriole
FRINGILLIDAE - FINCHES
Carpodacus mexicanus house finch
Carduelis psaltria lesser goldfinch
Mammals
LEPORIDAE - HARES & RABBITS
Sylvilagus audubonii desert cottontail

WILDLIFE SPECIES DETECTED DURING SURVEYS (Continued)

Species
SCIURIDAE - SQUIRRELS
Spermophilus beecheyi California ground squirrel
MURIDAE - MICE, RATS, AND VOLES
Neotoma sp. woodrat
CANIDAE - WOLVES & FOXES
Canis latrans coyote
* introduced species

APPENDIX C

CNDDB FORMS

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 05/02/2008

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Aspidoscelis tigris stejnegeri*

Common Name: coastal western whiptail

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 1 Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Amber Oneal, BonTerra Consulting
Address: 151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626
E-mail Address: aoneal@bonterraconsulting.com
Phone: (714) 444-9199

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

# adults	# juveniles	# larvae	# egg masses	# unknown
1				

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Riverside Landowner / Mgr.: Riverside County Flood Control

Quad Name: Corona South Elevation: 1128 ft

T____ R____ Sec ____, ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐

T____ R____ Sec ____, ____ ¼ of _____ ¼, Meridian: H☐ M☐ S☐

Source of Coordinates (GPS, topo. map & type): GPS

GPS Make & Model Garmin eTrek Legend

DATUM: NAD27 ☐ NAD83 ☑ WGS84 ☐

Horizontal Accuracy 10 ft meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐

Coordinates: 11S 0443511, 3745762

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Observed on side slope of the Mabey Canyon Debris Basin. Habitat is mostly bare ground with scattered scalebroom (Lepidospartum squamatum). Bottom of the basin is regularly maintained and consists of ruderal vegetation. Soil is rocky and sandy.

Other rare taxa seen at THIS site on THIS date: None
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☐ Good ☑ Fair ☐ Poor

Immediate AND surrounding land use: Flood control, Cleveland National Forest, and residential

Visible disturbances: Flood control maintenance

Threats: Proposed road extension

Comments: Large individual

Determination: *(check one or more, and fill in blanks)*

- ☐ Keyed (cite reference): Stebbins 2003
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☑ Other: Familiarity with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☑
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

APPENDIX E
LEAST BELL'S VIREO

BonTerra
CONSULTING
An Environmental Planning/Resource Management Consultant

September 11, 2000

Mr. Doug Krofta
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

Subject: Results of Focused Presence/Absence Surveys for the Least Bell's Vireo on the Foothill Parkway Extension Project Site, City of Corona, Riverside County, California

Dear Mr. Krofta:

This letter reports the results of focused surveys to evaluate the presence or absence of the federally endangered least Bell's vireo (LBV) along riparian habitat in Wardlow Canyon on the eastern slope of the Santa Ana Mountains in Corona, Riverside County, California (Exhibit 1). The proposed project is the extension of Foothill Parkway from the end of Green River Road to Lincoln Avenue and Chase Road. This would result in the fill of Wardlow Canyon at its mouth and the removal of the riparian woodland in the project footprint. The riparian habitat is composed of mixed woodland that extends along most of the impact area within the canyon. Habitat extends up Wardlow Canyon where most of this small watershed occurs on the Cleveland National Forest.

BACKGROUND

The LBV was formerly more common and widespread, but is now a rare and local summer resident of Southern California's lowland riparian woodlands (Grinnell and Miller 1944 and Garrett and Dunn 1981). The substantial population decline of the LBV over the latter half of the 20th century is attributable to the loss and degradation of riparian habitats and, perhaps more importantly, brood parasitism by the brown-headed cowbird (*Molothrus ater*). As a result, the LBV was listed by the California Department of Fish and Game (CDFG) as endangered on October 2, 1980, and by the USFWS as endangered on May 2, 1986.

The Bell's vireo is a neotropical migrant that breeds in central and southwestern North America from northern Mexico to southern California, Nevada, and Utah, and east to Louisiana, and north to North Dakota, Wisconsin, and Indiana in the central U.S. (A.O.U. 1998). The winter range of this vireo, although not well known, is believed to be the west coast of Central America from southern Sonora south to northwest Nicaragua, including the cape region of Baja California (Brown 1993). Of the four Bell's vireo subspecies, only two breed in California: the LBV and the Arizona Bell's vireo (*V. b. arizonae*), which occurs in the Colorado River Valley (Garrett and Dunn 1981 and Rosenberg et al. 1991). The LBV formerly was considered a common breeder in riparian habitats throughout the Central Valley and other low elevation riverine systems in California and Baja California (Franzreb 1989). Presently, the LBV has been eliminated from much of its historical range, including the Central Valley (Franzreb 1989 and Brown 1993).

131 Kalmus Drive
Suite E 200
Costa Mesa
California 92626
[illegible]

Breeding habitat of LBV is primarily willow-dominated riparian habitats that support a dense understory of willows (*Salix* spp.). Other shrubs, such as mule fat (*Baccharis salicifolia*) and California rose (*Rosa californica*), are often a component of the understory (Goldwasser 1981). The LBV is often found in areas that include trees such as willow, western sycamore (*Platanus racemosa*), or cottonwood (*Populus* spp.), particularly where the canopy is within or immediately adjacent to an understory layer of vegetation (Salata 1983). Generally, the LBV nests in early successional stages of riparian habitats, with vireo nest sites frequently located in willows that are between four and ten years of age (RECON 1988 and Franzreb 1989). The most critical factor in habitat structure is the presence of a dense understory shrub layer from 0.6 meters to three meters above ground (Goldwasser 1981, Salata 1983 and Franzreb 1989).

EXISTING HABITAT

The riparian habitat on the project is composed of an open mixed riparian woodland including coast live oak (*Quercus agrifolia*), western sycamore, Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix lasiolepis*), and mule fat. Large laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), and indigo (*Amorpha* sp.) make up portions of the canopy and shrub layers. Overstory trees are scattered along the canyon bottom or occur in small patches, but do not form a continuous canopy. Patches consist of either a single species (e.g., coast live oak) or many species. Because of the lack of a continuous canopy, the understory consists of common chaparral species, as well as the more typical riparian species. The best LBV habitat consists of an approximate 100-foot stretch of willow-dominated woodland with sufficient understory of shrubby willows, mule fat, and other riparian shrubs and herbs. This habitat appears to be supported by runoff from an up-slope housing development on the ridge to the south. The natural slopes adjacent to the project area support a diverse chaparral community.

METHODS

Prior to conducting the focused survey, the most recent version of the California Natural Diversity Data Base (CDFG 2000, Corona USGS quadrangle) and other relevant available documents (including those listed above) were reviewed to determine if, and to what extent, LBV occur on the project site or in the vicinity.

Focused surveys for LBV in the willow riparian habitat were conducted by Brian Leatherman, senior wildlife biologist, who has conducted numerous surveys for LBV. Survey methods followed the guidelines developed by the U.S. Fish and Wildlife Service (USFWS 1999). Eight surveys were conducted at least ten days apart between April 10 and July 31. Surveys were conducted between dawn and 11:00 a.m. under suitable weather conditions. Survey dates, times, and weather data for the focused LBV surveys are shown in Table 1.

Surveys were conducted by walking slowly and methodically within and along the edge of the riparian woodland. Emphasis was placed on the portions that supported groups of willows. Taped vocalizations of the species were not used during the surveys. All surveys were conducted in the morning hours when vireos are most active. Because of the small size of the survey area, all habitat was surveyed at least twice during each visit. The area of habitat surveyed is well below the amount recommended in the 1999 guidelines. The focus of the surveys was on the detection and identification of LBV, but all wildlife observed or detected on the project site were documented. Identifications were made with the aid of 10 X 42 power binoculars.

TABLE 1
SUMMARY OF SURVEY DATA AND CONDITIONS
FOR LEAST BELL'S VIREO SURVEYS

Date	Times	Air Temperature	Wind	Cloud Cover
April 13, 2000	0620 – 0900	50 – 64	1 – 3 mph	Foggy, burning off
May 5, 2000	0600 – 1030	58 – 64	3 – 5 mph	100% low morning clouds
May 12, 2000	0630 – 0930	56 – 67	2 – 5 mph	Clear
May 22, 2000	0845 – 1045	70 – 82	0 – 2 mph	Clear
June 1, 2000	0700 – 1030	66 – 66	1 – 3 mph	100% low morning clouds
June 16, 2000	0600 – 0930	64	0 – 2 mph	100% low morning clouds
June 27, 2000	0700 – 1000	72	1 – 3 mph	Clear
July 10. 2000	0600 – 0900	62 – 68	0 – 1 mph	100% low morning clouds

RESULTS

No LBV were observed or detected in the riparian woodland on the project site during the focused surveys. The riparian woodland along Wardlow Canyon surveyed for LBV is only marginally suitable for LBV, but its proximity to one of the largest remaining breeding populations in the southwest (behind Prado Dam), and the presence of small pockets of willows, warrants conducting focused surveys. The success of the Prado Dam population, which has increased from 19 pairs in 1986 to 195 pairs in 1996 (USFWS 1998), has led to the reestablishment of LBV in suitable riparian habitat in the region that for years was unoccupied. However, based on the negative survey results, presence of only marginally suitable habitat, and professional judgement, the least Bell's vireo is likely absent from the study area at this time.

Please feel free to contact Ann Johnston at (714) 444-9199 if you have questions or comments.

Sincerely,
BONTERRA CONSULTING

Ann M. Johnston

Ann M. Johnston
Associate Principal, Biological Services

R:\Projects\RBF\Archived Files\J035\J035 LBV Survey-091100.wpd

cc: Gary Warkentin, RBF Consulting

Enclosures: Exhibit 1

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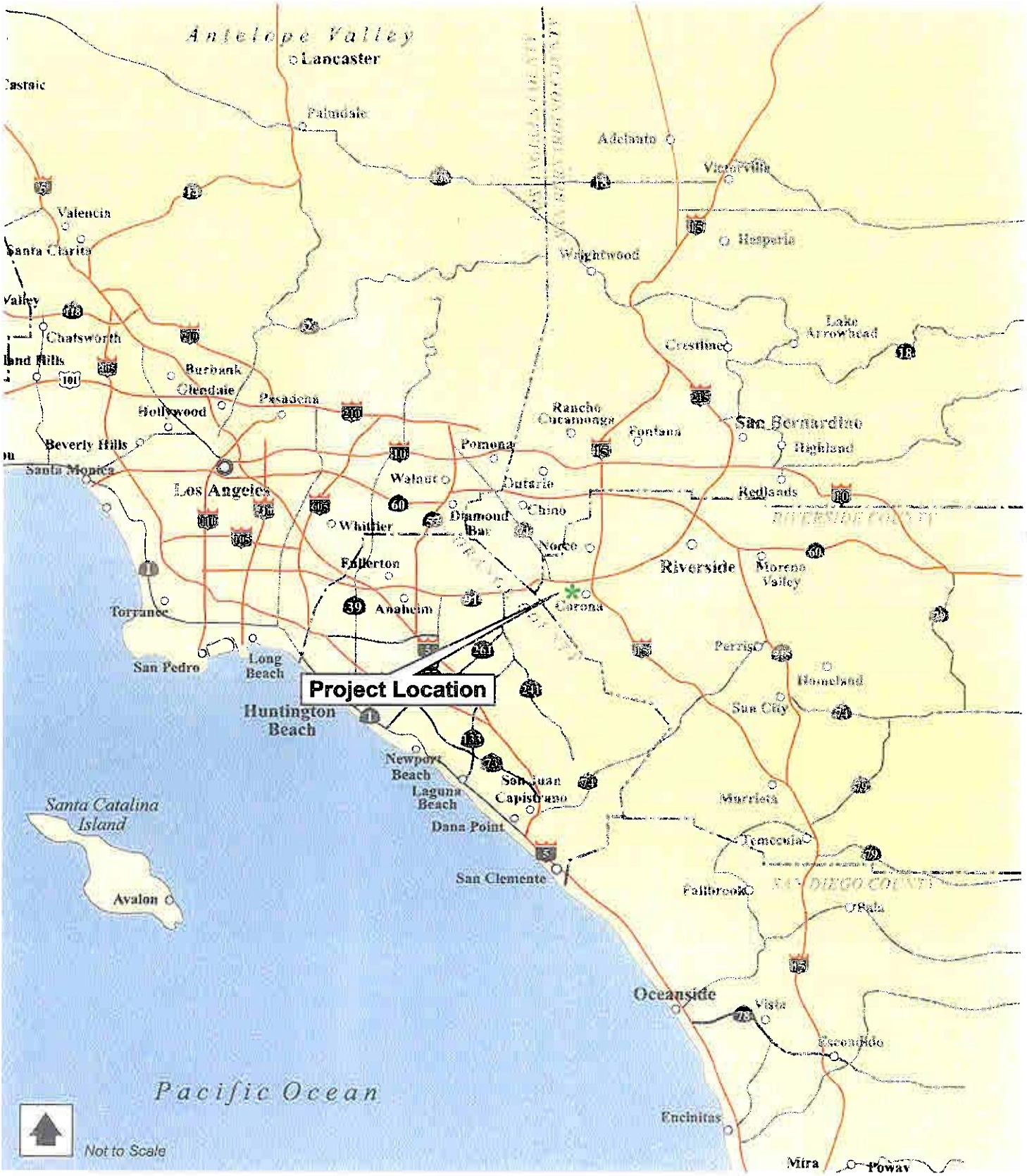

Regional Location Map Exhibit 1

Foothill Parkway Extension
DRAFT - Biological Technical Report

BonTerra CONSULTING

BonTerra
CONSULTING
An Environmental Planning & Resource Management Corporation

Celebrating Ten
1996-2006

September 29, 2006

Mr. Daniel Marquez
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, California 92011

Subject: Results of Focused Presence/Absence Surveys for the Least Bell's Vireo on the Foothill Parkway Extension Project Site, City of Corona and Unincorporated Riverside County

Dear Mr. Marquez:

This letter report presents the results of focused surveys to determine the presence or absence of the least Bell's vireo (*Vireo bellii pusillus*) (LBV) on the Foothill Parkway Extension project site in the City of Corona and unincorporated Riverside County, California. Surveys were conducted according to guidelines established by the U.S. Fish and Wildlife Service (USFWS).

PROJECT LOCATION AND DESCRIPTION

The approximately 93-acre project site is located along the southwestern edge of the City of Corona and unincorporated Riverside County, California (Exhibits 1 and 2). The project site is located between the termini of Paseo Grande and Mangular Avenue, southwest of Ontario Avenue. Surrounding land uses include residential development to the north and east, and open space (Cleveland National Forest) to the south and west. The project site is located within the Multiple Species Habitat Conservation Plan (MSHCP) Temescal Canyon Area Plan, but is not within a designated MSHCP Criteria Area.

The project site is located on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle map at Township 3S, Range 7W, Sections 33 and 34 and Township 4S, Range 7W, Sections 3, 4, and 10. Elevations on the project site range from approximately 800 to 1,200 feet above mean sea level (msl). Vegetation types and other areas mapped on the project site include coastal sage scrub, alluvial, coastal sage scrub/chaparral, coastal sage scrub/ruderal, chaparral, non-native grassland, riparian forest, oak woodland, agriculture, ruderal, ornamental, developed/ruderal, disturbed, and developed areas (Exhibit 3).

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Suite E-200
Costa Mesa
California 92626
(714) 444-9199
FAX: 444-9599 Fax
www.bonterraconsulting.com

Suitable habitat for the least Bell's vireo is limited to a relatively narrow drainage in the northern third of the project site. Mule fat (*Baccharis salicifolia*) occurs in the drainage that extends along the edge of the horse stables at the northern end of the project site. Further upstream (south), there is a wider area of riparian forest that consists of a mix of mature willows (*Salix* sp.), sycamores (*Platanus racemosa*), and coast live oak (*Quercus agrifolia*) trees with some mule fat in the understory. Both of these areas are mapped as riparian forest. Photos of potentially suitable habitat on the project site are shown in Exhibit 4.

BACKGROUND

The LBV was formerly more common and widespread, but is now a rare and local summer resident of southern California's lowland riparian woodlands (Grinnell and Miller 1944, Garrett and Dunn 1981). The substantial population decline of this species over the latter half of the twentieth century is attributable to the loss and degradation of riparian habitats and, perhaps more importantly, brood parasitism by the brown-headed cowbird (*Molothrus ater*). As a result, the LBV was listed by the California Department of Fish and Game (CDFG) as Endangered on October 2, 1980, and by the USFWS as Endangered on May 2, 1986.

Least Bell's Vireo

Bell's vireo is a Neotropical migrant that breeds in central and southwestern North America from northern Mexico to southern California, Nevada, and Utah, east to Louisiana, and north to North Dakota, Wisconsin, and Indiana in the central U.S. (AOU 1998). The winter range of the Bell's vireo, although not well known, is believed to be the west coast of Central America from southern Sonora south to northwestern Nicaragua, including the cape region of Baja California, Mexico (Brown 1993). Of the four Bell's vireo subspecies, only two breed in California. The LBV and the Arizona Bell's vireo (*V. b. arizonae*) breed in the Colorado River Valley (Garrett and Dunn 1981, Rosenberg et al. 1991). The LBV was formerly considered a common breeder in riparian habitats throughout the Central Valley and other low elevation riverine systems in California and Baja California, Mexico (Franzreb 1989). Presently, the LBV has been eliminated from much of its historical range (Franzreb 1989, Brown 1993).

Breeding habitat of LBV is primarily riparian habitats dominated by willows (*Salix* spp.) with dense understory vegetation. Shrubs such as mule fat and California rose (*Rosa californica*) are often a component of the understory (Goldwasser 1981). The LBV is often found in areas that include trees such as willow, sycamore, or cottonwood (*Populus* spp.), particularly where the canopy is within or immediately adjacent to an understory layer of vegetation (Salata 1983). The LBV generally nests in early successional stages of riparian habitats, with nest sites frequently located in willows that are between four and ten years of age (RECON 1988, Franzreb 1989). The most critical factor in habitat structure is the presence of a dense understory shrub layer from approximately two-to-ten feet above the ground (Goldwasser 1981, Salata 1983, Franzreb 1989).

On February 2, 1994, the USFWS issued their final determination of critical habitat for the LBV (USFWS 1994). Approximately 37,560 acres were identified as critical habitat in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. The nearest designated critical habitat for this species is approximately 1.7 miles away at Prado Basin, a major population of this species. The survey area is not located in the designated critical habitat area for this species.

SURVEY METHODOLOGY

A total of eight surveys for the LBV were conducted on May 4, 15, and 26; June 5, 15, and 27; and July 11 and 25, 2006. All surveys followed the recommended USFWS guidelines for the species. Updated guidelines for LBV surveys were issued on April 8, 1999, and require that at least eight

surveys be conducted from April 10 to July 31 with a ten-day interval between each site visit. The surveys were conducted by BonTerra Consulting Senior Biologist Brian Daniels (USFWS permit number TE-821401-2) and Ecologist Amber Oneal; Ecologist Allison Rudalevige and Intern Beth Cecil also assisted with some of the surveys (Table 1).

TABLE 1
SURVEY DATES AND PERSONNEL

Survey Date	Survey Personnel
May 4, 2006	Brian Daniels
May 15, 2006	Brian Daniels Amber Oneal
May 26, 2006	Brian Daniels
June 5, 2006	Brian Daniels
June 15, 2006	Amber Oneal Allison Rudalevige
June 27, 2006	Amber Oneal Allison Rudalevige
July 11, 2006	Amber Oneal Allison Rudalevige
July 25, 2006	Amber Oneal Beth Cecil

Riparian habitats were systematically surveyed by walking slowly and methodically along their margins. As the LBV survey protocol does not require the playback of LBV vocalizations, no taped vocalizations of LBV were used during these surveys. All surveys were conducted under optimal weather conditions and during early morning hours when bird activity is at a peak. Numbers were recorded for all bird species detected during the survey including any notable observations of special status species or other birds.

SURVEY RESULTS

No LBV were observed during the focused surveys. This is consistent with previous surveys conducted in 2000, which also had negative survey results.

A complete list of wildlife species observed during the surveys is included in Appendix A. Yellow warbler (*Dendroica petechia brewsteri*), a California Species of Special Concern was observed foraging on the project site. This observation will be reported to the California Natural DiversityData Base (CNDDB) (Appendix B).

BonTerra Consulting has appreciated the opportunity to assist on this project. If you have any comments or questions, please call Amber Oneal at (714) 444-9199.

Sincerely,
BONTERRA CONSULTING

Amber S Oneal

Amber S. Oneal
Project Manager/Ecologist

I certify that the information in this survey report and enclosed exhibits fully and accurately present my work.

Brian E. Daniels
Senior Biologist (TE-821401-2)

Amber S. Oneal
Project Manager/Ecologist

Enclosures: Exhibits 1, 2, 3, and 4;
Attachment A – Wildlife Compendium
Attachment B – CNDDB Form

cc: Bruce Grove, RBF Consulting

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Regional Location

Exhibit 1

Foothill Parkway Extension, Riverside County, California

N W E S

10 5 0 10 Miles

BonTerra CONSULTING

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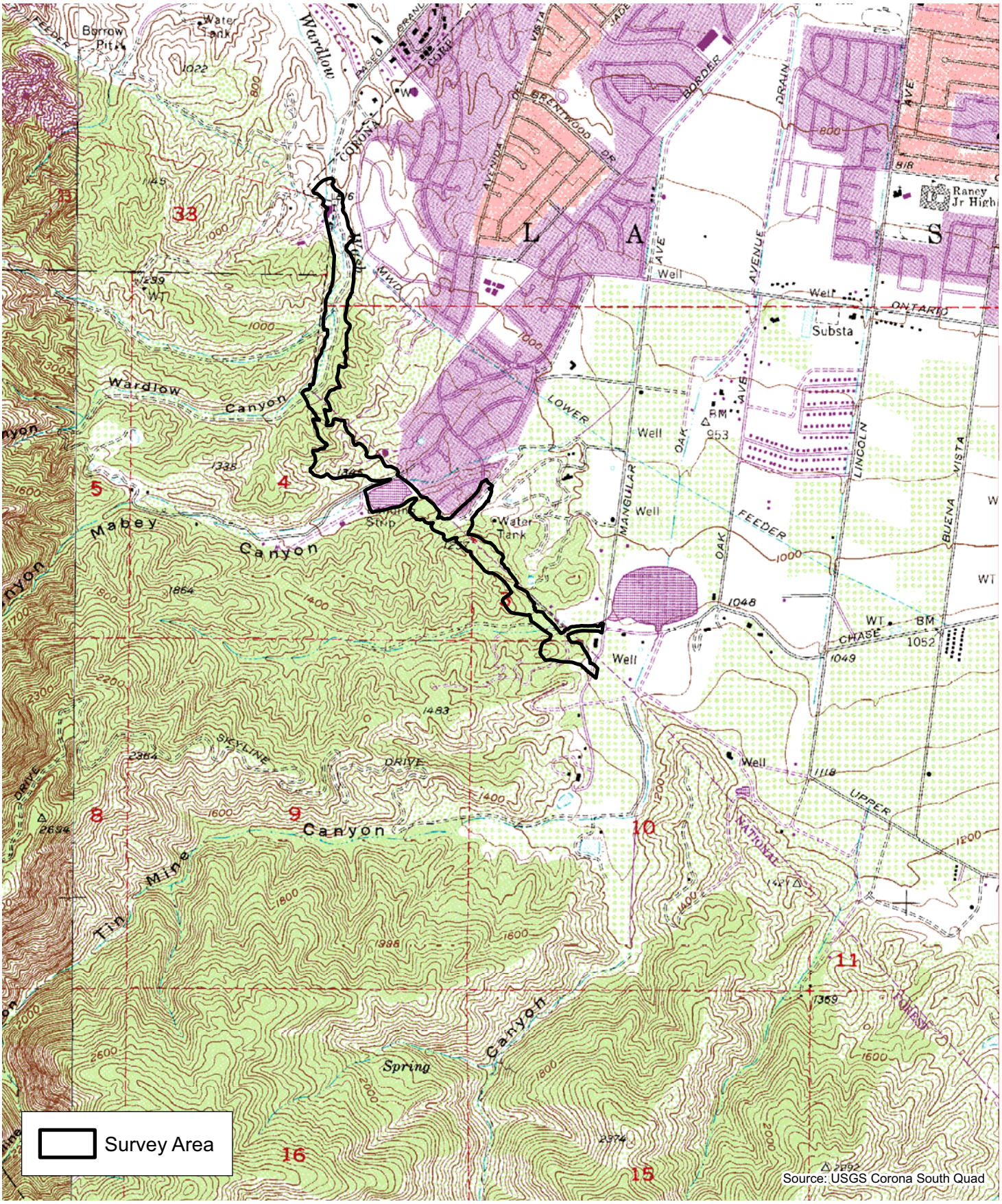

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Local Vicinity

Exhibit 2

Foothill Parkway Extension, Riverside County, California

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

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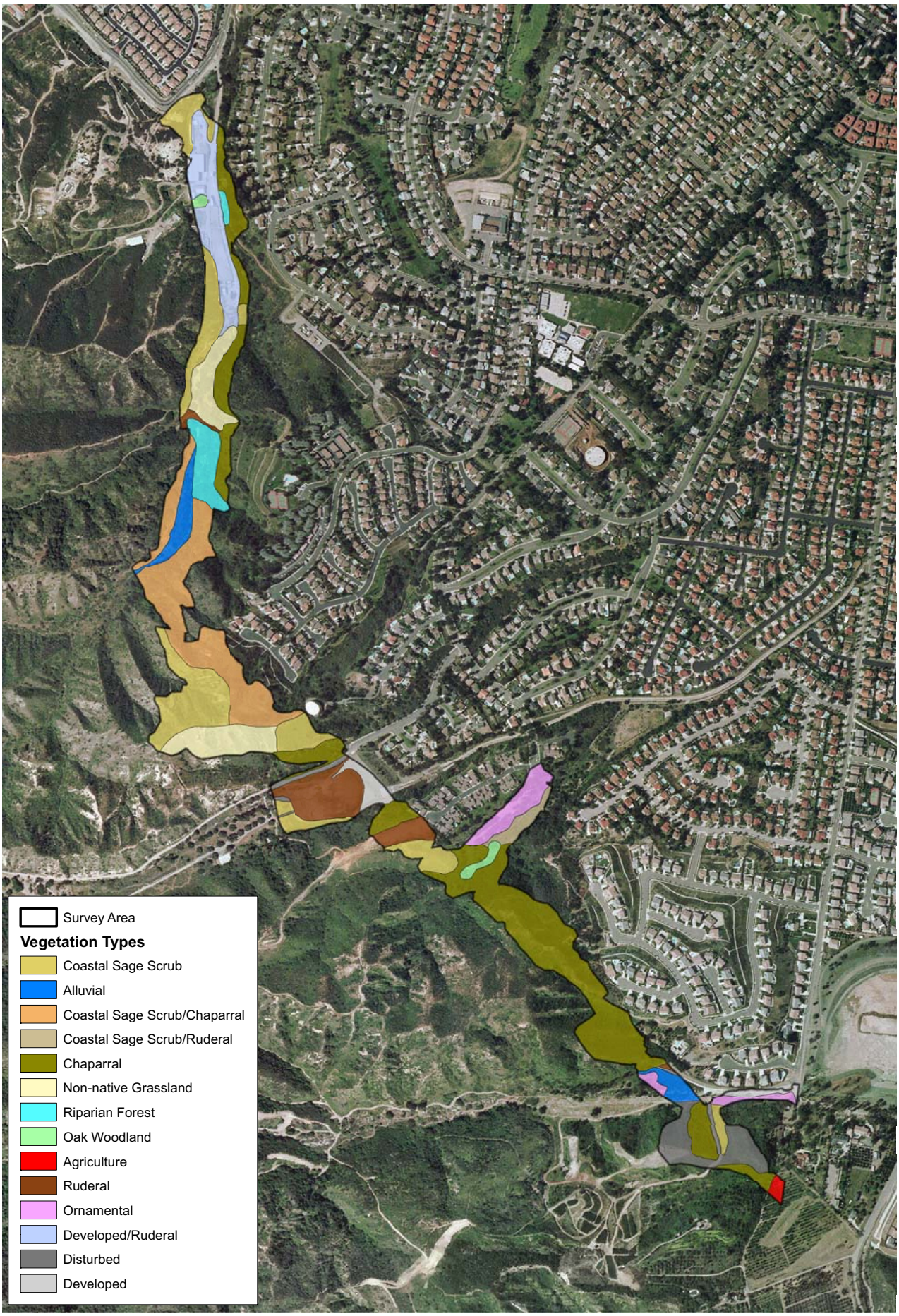

Vegetation Types

Exhibit 3

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

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Riparian vegetation on the project site.

Riparian vegetation on the project site.

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Site Photographs

Exhibit 4

Foothill Parkway Extension, Riverside County, California

BonTerra CONSULTING

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ATTACHMENT A

WILDLIFE COMPENDIUM

ATTACHMENT A
WILDLIFE COMPENDIUM

BIRDS
ODONTOPHORIDAE - QUAILS
Oreortyx pictus mountain quail
Callipepla californica California quail
CATHARTIDAE - NEW WORLD VULTURES
Cathartes aura turkey vulture
ACCIPITRIDAE - HAWKS
Accipiter cooperii Cooper's hawk
Buteo jamaicensis red-tailed hawk
FALCONIDAE - FALCONS
Falco sparverius American kestrel
COLUMBIDAE - PIGEONS & DOVES
Zenaida macroura mourning dove
Columba fasciata band-tailed pigeon
CUCULIDAE - CUCKOOS & ROADRUNNERS
Geococcyx californianus greater roadrunner
TYTONIDAE - BARN OWLS
Tyto alba barn owl
CAPRIMULGIDAE - GOATSUCKERS
Chordeiles acutipennis lesser nighthawk
TROCHILIDAE - HUMMINGBIRDS
Archilochus alexandri black-chinned hummingbird
Calypte anna Anna's hummingbird
Calypte costae Costa's hummingbird
Selasphorus sasin Allen's hummingbird
PICIDAE - WOODPECKERS
Melanerpes formicivorus acorn woodpecker
Picoides nuttallii Nuttall's woodpecker
TYRANNIDAE - TYRANT FLYCATCHERS
Contopus sordidulus western wood-pewee
Empidonax hammondii Hammond's flycatcher
Empidonax wrightii gray flycatcher

ATTACHMENT A
WILDLIFE COMPENDIUM (Continued)

Empidonax difficilis Pacific-slope flycatcher
Sayornis nigricans black phoebe
Sayornis saya Say's phoebe
Myiarchus cinerascens ash-throated flycatcher
Tyrannus vociferans Cassin's kingbird
Tyrannus verticalis western kingbird
Vireo gilvus warbling vireo
CORVIDAE - JAYS & CROWS
Aphelocoma californica western scrub-jay
Corvus brachyrhynchos American crow
Corvus corax common raven
HIRUNDINIDAE - SWALLOWS
Stelgidopteryx serripennis northern rough-winged swallow
Petrochelidon pyrrhonota cliff swallow
Hirundo rustica barn swallow
PARIDAE - TITMICE
Baeolophus inornatus oak titmouse
AEGITHALIDAE - BUSHTITS
Psaltriparus minimus bushtit
SITTIDAE - NUTHATCHES
Sitta carolinensis white-breasted nuthatch
TROGLODYTIDAE - WRENS
Salpinctes obsoletus rock wren
Thryomanes bewickii Bewick's wren
Troglodytes aedon house wren
TURDIDAE - THRUSHES & ROBINS
Catharus ustulatus Swainson's thrush
Catharus guttatus hermit thrush
TIMALIIDAE - WRENTITS
Chamaea fasciata wrentit

ATTACHMENT A
WILDLIFE COMPENDIUM (Continued)

MIMIDAE - THRASHERS
Mimus polyglottos northern mockingbird
Toxostoma redivivum California thrasher
STURNIDAE - STARLINGS
Sturnus vulgaris European starling *
PTILOGONATIDAE - SILKY-FLYCATCHERS
Phainopepla nitens phainopepla
PARULIDAE - WARBLERS
Vermivora celata orange-crowned warbler
Vermivora ruficapilla Nashville warbler
Dendroica petechia yellow warbler
Dendroica coronata yellow-rumped warbler
Dendroica nigrescens black-throated gray warbler
Dendroica townsendi Townsend's warbler
Dendroica occidentalis hermit warbler
Oporornis tolmiei MacGillivray's warbler
Wilsonia pusilla Wilson's warbler
EMBERIZIDAE - SPARROWS & JUNCOS
Pipilo maculatus spotted towhee
Pipilo crissalis California towhee
Aimophila ruficeps rufous-crowned sparrow
Spizella passerina chipping sparrow
Amphispiza bilineata black-throated sparrow
Spizella atrogularis black-chinned sparrow
Chondestes grammacus lark sparrow
Melospiza melodia song sparrow
Zonotrichia leucophrys white-crowned sparrow
CARDINALIDAE - GROSBEAKS & BUNTINGS
Pheuticus melanocephalus black-headed grosbeak
Passerina amoena lazuli bunting

ATTACHMENT A
WILDLIFE COMPENDIUM (Continued)

ICTERIDAE - BLACKBIRDS
Icterus cucullatus hooded oriole
Icterus bullockii Bullock's oriole
FRINGILLIDAE - FINCHES
Carpodacus mexicanus house finch
Carduelis psaltria lesser goldfinch
MAMMALS
LEPORIDAE - HARES & RABBITS
Sylvilagus audubonii desert cottontail
SCIURIDAE - SQUIRRELS
Spermophilus beecheyi California ground squirrel
CERVIDAE - DEERS
Odocoileus hemionus mule deer
* introduced species

ATTACHMENT B

CNDDB FORM

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95814
Fax: (916) 324-0475 email: WHDAB@dfg.ca.gov

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work *mm/dd/yyyy:* 05/15/2006

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Dendroica petechia*

Common Name: Yellow warbler

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 2 Subsequent Visit? ☐ yes ☑ no
Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Brian Daniels/Amber Oneal, BonTerra Consultin
Address: 151 Kalmus Dr. Suite E-200
Costa Mesa, CA 92626
E-mail Address: aoneal@bonterraconsulting.com
Phone: (714) 444-9199

Plant Information

Phenology: ____ % vegetative ____ % flowering ____ % fruiting

Animal Information

# adults	# juveniles	# larvae	# egg masses	# unknown
2				

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☑ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Orange Landowner / Mgr.: City of Corona and private
Quad Name: Corona South Elevation: 800-1,200 ft
T 3S R 7W Sec ____ , ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): Topozone.cor
T 4S R 7W Sec ____ , ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____
Datum: NAD27☑ NAD83☐ WGS84☐ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10☐ UTM Zone 11☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: Easting/Longitude 443354 Northing/Latitude 3746224

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Observed in riparian forest, which is a mix of willows (Salix spp.), syacmores (Platanus racemosa), and coast live oak (Quercus agrifolia) with mule fat understory (Baccharis salicifolia).

Other rare taxa seen at THIS site on THIS date:
None

Site Information Overall site quality: ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Current / surrounding land use: Cleveland National Forest to the southwest, residential development to the northeast

Visible disturbances: Horse trail

Threats: proposed road

Comments:

Determination: *(check one or more, and fill in blanks)*
- ☐ Keyed (cite reference): _____
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☐ Other: Visual observation and call

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? ☐ yes ☐ no

BonTerra CONSULTING

COSTA MESA PASADENA TEMECULA

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www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

July 17, 2008

Ms. Sandy Marquez
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, California 92011

VIA EMAIL AND MAIL
sandy_marquez@fws.gov

Subject: Results of Focused Presence/Absence Surveys for the Least Bell's Vireo on the Foothill Parkway Extension Project Site, City of Corona and Unincorporated Riverside County

Dear Ms. Marquez:

This Letter Report presents the results of focused surveys to determine the presence or absence of the least Bell's vireo (*Vireo bellii pusillus*) (LBV) on the Foothill Parkway Extension project site in the city of Corona and unincorporated Riverside County, California. Surveys were conducted according to guidelines established by the U.S. Fish and Wildlife Service (USFWS).

PROJECT LOCATION AND DESCRIPTION

The approximate 150-acre project site is located along the southwestern edge of the city of Corona and unincorporated Riverside County, California (Exhibits 1 and 2). The project site is located between the termini of Paseo Grande and Mangular Avenue, southwest of Ontario Avenue. Surrounding land uses include residential development to the north and east, and open space (Cleveland National Forest) to the south and west. The project site is located within the Multiple Species Habitat Conservation Plan (MSHCP) Temescal Canyon Area Plan, but is not within a designated MSHCP Criteria Area.

The project site is located on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle map at Township 3S, Range 7W, Sections 33 and 34 and at Township 4S, Range 7W, Sections 3, 4, and 10. Elevations on the project site range from approximately 800 to 1,200 feet above mean sea level. Vegetation types and other areas mapped on the project site include coastal sage scrub, coastal sage scrub/chaparral, coastal sage scrub/ruderal, California buckwheat-scalebroom alluvial scrub, chaparral, non-native grassland, Fremont cottonwood-willow riparian woodland, willow riparian woodland, western sycamore-coast live oak alluvial scrub, coast live oak woodland, mule fat scrub, mule fat scrub-willow riparian woodland, ruderal, ornamental, ornamental/developed, disturbed, developed/ruderal, and developed areas (Exhibit 3).

Suitable habitat for the LBV is limited to a relatively narrow area of riparian vegetation along Wardlow Wash in the northern portion of the project site. An area of willow riparian woodland occurs north (downstream) of Paseo Grande and an area of mule fat scrub-willow riparian woodland occurs just south (upstream) of Paseo Grande; these areas are dominated by mature willows (*Salix* spp.), though there is little understory in either area. Mule fat (*Baccharis salicifolia*) occurs along much of the drainage extending along the edge of the horse stables at the northern end of the project site south into Wardlow Canyon. Further south (upstream), there is a wider area of riparian forest that consists of a mix of mature willows, western sycamore (*Platanus*

racemosa), Fremont cottonwood (*Populus fremontii*), and coast live oak (*Quercus agrifolia*), with mule fat in the understory. These areas are mapped as western sycamore-coast live oak alluvial scrub and Fremont cottonwood-willow riparian woodland. Representative photos of riparian habitat on the project site are included in Appendix A.

The project was previously surveyed for LBV in spring/summer 2000 and spring/summer 2006, and no LBV were observed (BonTerra Consulting 2000, 2006).

BACKGROUND

The LBV was formerly more common and widespread, but is now a rare and local summer resident of Southern California's lowland riparian woodlands (Grinnell and Miller 1944; Garrett and Dunn 1981). The substantial population decline of this species over the latter half of the twentieth century is attributed to the loss and degradation of riparian habitats and, perhaps more importantly, brood parasitism by the brown-headed cowbird (*Molothrus ater*). As a result, the LBV was listed by the California Department of Fish and Game (CDFG) as Endangered on October 2, 1980, and by the USFWS as Endangered on May 2, 1986.

Least Bell's Vireo

Bell's vireo is a Neotropical migrant that breeds in central and southwestern North America from northern Mexico to Southern California, Nevada, and Utah, east to Louisiana, and north to North Dakota, Wisconsin, and Indiana in the central U.S. (AOU 2006). The winter range of the Bell's vireo, although not well known, is believed to be the west coast of Central America from southern Sonora south to northwestern Nicaragua, including the cape region of Baja California, Mexico (Brown 1993). Of the four Bell's vireo subspecies, only two breed in California. The LBV and the Arizona Bell's vireo (*V. b. arizonae*) breed in the Colorado River Valley (Garrett and Dunn 1981; Rosenberg et al. 1991). Though the LBV was formerly considered a common breeder in riparian habitats throughout the Central Valley and other low elevation riverine systems in California and Baja California, Mexico (Franzreb 1989), presently, the LBV has been eliminated from much of its historical range (Franzreb 1989; Brown 1993).

Breeding habitat of the LBV is primarily riparian habitats dominated by willows (*Salix* spp.) with dense understory vegetation. Shrubs such as mule fat (*Baccharis salicifolia*) and California rose (*Rosa californica*) are often a component of the understory (Goldwasser 1981). The LBV is often found in areas that include trees such as willow, western sycamore (*Platanus racemosa*), or cottonwood (*Populus* spp.), particularly where the canopy is within or immediately adjacent to an understory layer of vegetation (Salata 1983). The LBV generally nests in early successional stages of riparian habitats, with nest sites frequently located in willows that are between four and ten years of age (RECON 1988; Franzreb 1989). The most critical factor in habitat structure is the presence of a dense understory shrub layer from approximately two to ten feet above the ground (Goldwasser 1981; Salata 1983; Franzreb 1989).

On February 2, 1994, the USFWS issued their final determination of critical habitat for the LBV (USFWS 1994), identifying approximately 37,560 acres as critical habitat in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. The nearest designated critical habitat for this species is approximately 1.7 miles away at Prado Basin, where there is a major population of this species. The project site is not located in the designated critical habitat area for this species.

SURVEY METHODOLOGY

A total of eight surveys for the LBV were conducted on April 11, 21; May 2, 12, 22; and June 2, 12, and 23, 2008. All surveys followed the recommended USFWS guidelines for the species. Updated guidelines for LBV surveys were issued on April 8, 1999, and require that at least eight surveys be conducted from April 10 to July 31 with a ten-day interval between each site visit. BonTerra Consulting Ecologist Amber Oneal conducted the surveys.

Ms. Oneal systematically surveyed the riparian habitats by walking slowly and methodically along their margins. As the LBV survey protocol does not require the playback of LBV vocalizations, she did not use any taped LBV vocalizations during these surveys. However, "pishing" sounds were used to elicit responses from any vireos present. All surveys were conducted under optimal weather conditions (i.e., between 55 and 95 degrees Fahrenheit, wind speeds 0 to 15 miles per hour) and during early morning hours when bird activity is at a peak. Ms. Oneal recorded all bird species detected during the survey, including notable observations of Special Animals (Appendix B).

SURVEY RESULTS

One individual LBV was observed during the April 21, 2008, survey visit (Exhibit 4). This bird was singing from a laurel sumac (*Malosma laurina*) on a slope above an area of mule fat scrub (see photo of the location in Appendix B). The vireo was not observed on any subsequent survey visits, despite persistent searches in this and other areas on the following visits. It is believed that this vireo was using the project site for dispersal but that it bred off site, perhaps along the Santa Ana River or within the Prado Basin. Therefore, the project site was not occupied for breeding; this is consistent with previous surveys conducted in 2000 and 2006, which also had negative survey results. However, the project site does provide dispersal habitat for this species and potentially suitable breeding habitat.

A complete list of wildlife species observed during the surveys is included in Appendix A. Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), a CDFG Special Animal, was observed in the coastal sage scrub/chaparral along the upper portion of Wardlow Wash in the survey area. The least Bell's vireo and Southern California rufous-crowned sparrow observations will be reported to the California Natural Diversity Data Base (CNDDB) (Appendix C). Yellow warbler (*Dendroica petechia*), a California Species of Special Concern, was observed on only one survey visit and was therefore considered a migrant. A CNDDB form will not be submitted for yellow warbler because this species was not observed breeding in the survey area.

BonTerra Consulting appreciates the opportunity to assist on this project. If you have any comments or questions, please call Amber Oneal at (714) 444-9199.

Sincerely,
BONTERRA CONSULTING

Amber S Oneal

Amber S. Oneal
Senior Project Manager/Ecologist

I certify that the information in this survey report and enclosed exhibits fully and accurately presents my work.

Amber S. Oneal
Senior Project Manager/Ecologist

Enclosures: Exhibits 1, 2, 3, and 4;
Attachment A – Site Photos
Attachment B – Wildlife Compendium
Attachment C – CNDDB Forms

cc: Gary Warkentin, RBF Consulting

R:\Projects\RBF\J307\LBV-071708.doc

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Regional Location

Exhibit 1

Foothill Parkway Extenson, Riverside County, California

N W E S

10 5 0 10 Miles

BonTerra CONSULTING

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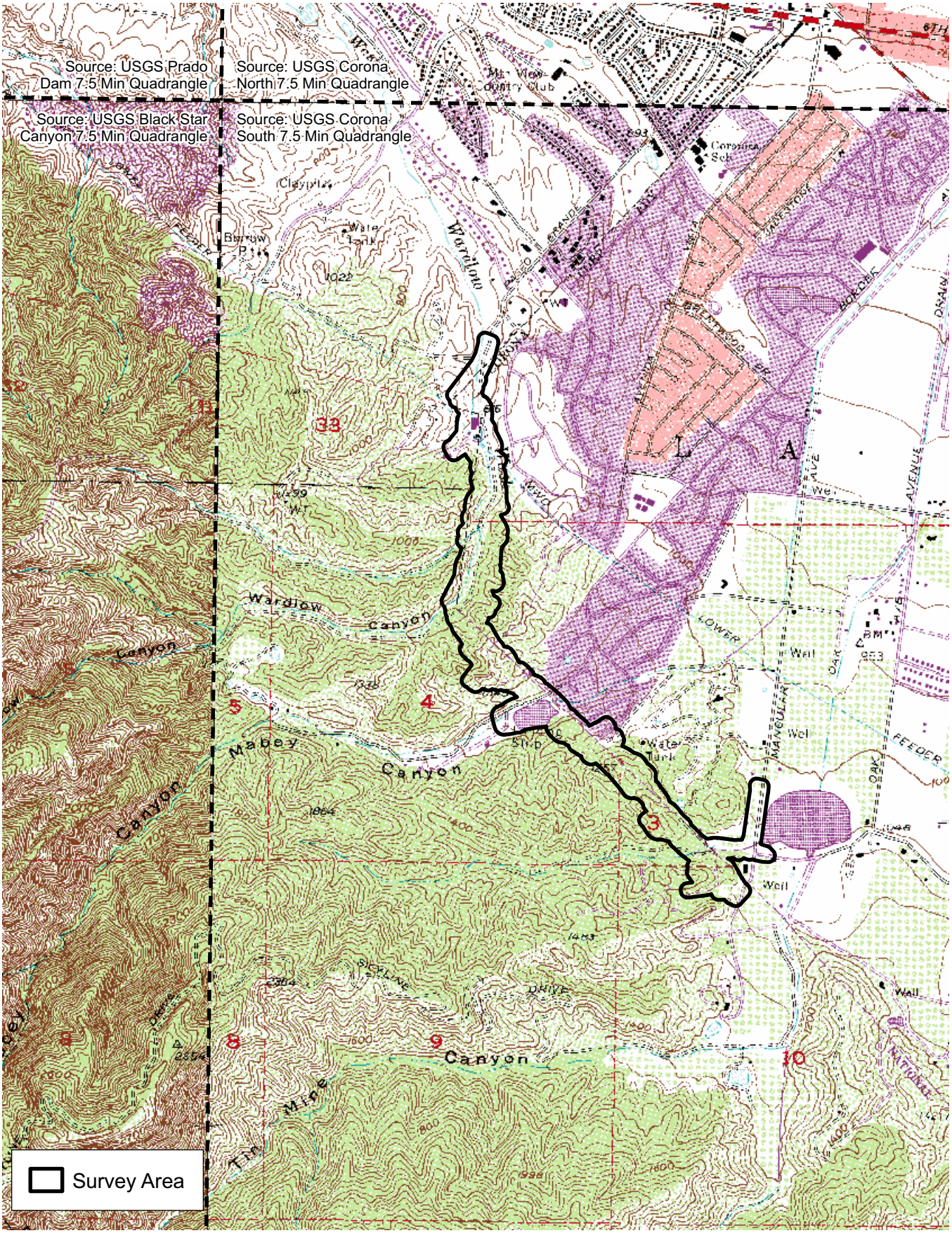

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Local Vicinity

Exhibit 2

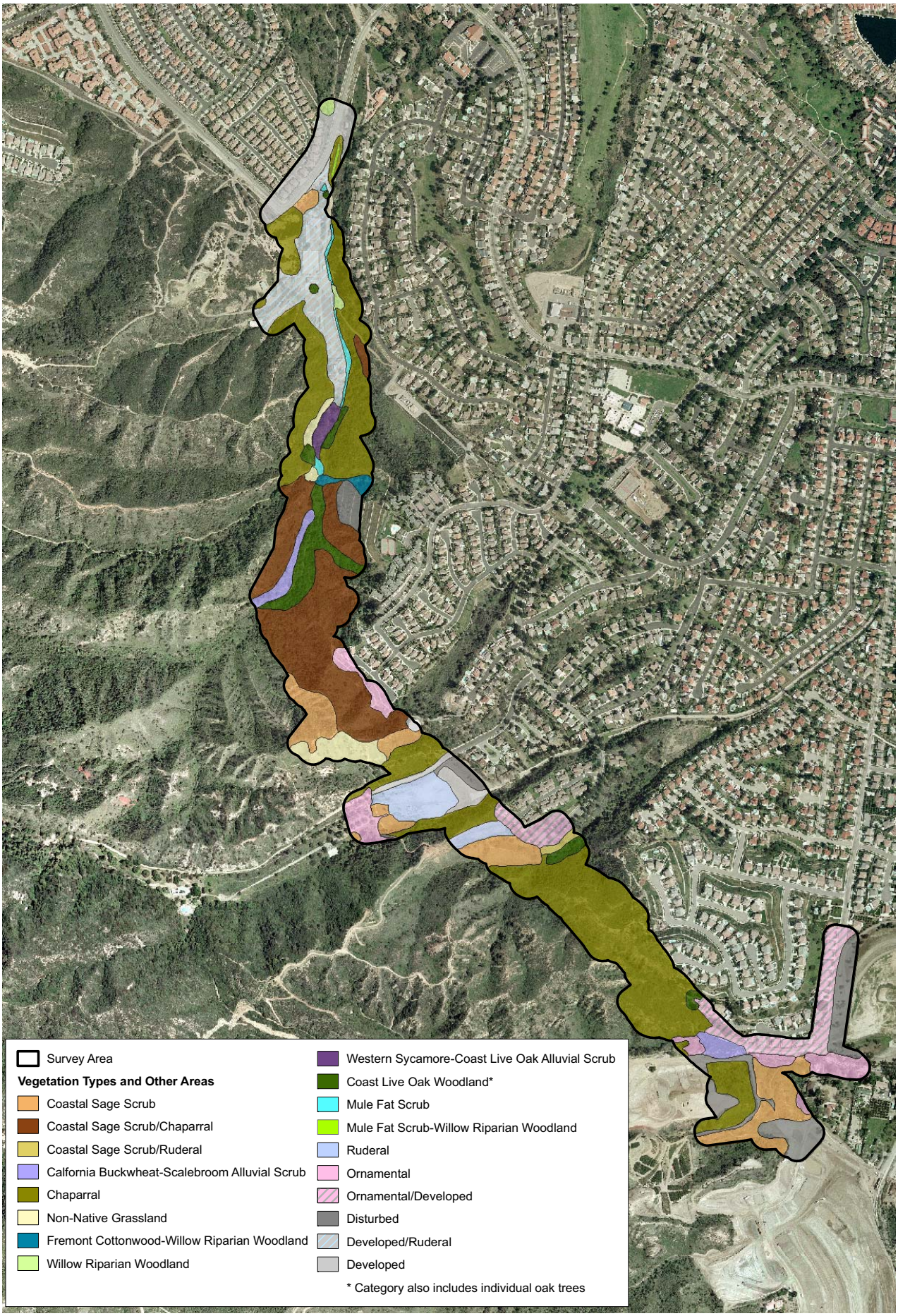
Foothill Parkway Extenson, Riverside County, California

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/LBV/ex2_LV_071508.pdf



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Vegetation Types

Exhibit 3

Foothill Parkway Extension, Riverside County, California

N W E S

800 400 0 800 Feet

BonTerra CONSULTING

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D:/Projects/RBF/J307/ex_lbv_071508.mxd

Special Status Wildlife Locations

Exhibit 4

Foothill Parkway Extension, Riverside County, California

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/LBV/ex_LBV_071508.pdf

ATTACHMENT A

SITE PHOTOS

View of mule fat scrub-willow riparian woodland along Wardlow Wash just south (upstream) of Paseo Grande. Photo taken from the south, facing northeast (downsteam).

Typical view of mule fat scrub along Wardlow Wash adjacent to the horse stables. The drainage in this area is narrow and the mule fat (*Baccharis salicifolia*) is limited in extent. Photo taken from the north, facing southeast (upstream).

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Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

BonTerra CONSULTING

R:/Projects/rbf/J307/Graphics/LBV/AppA_SP_071508.pdf

View of mule fat scrub along the base of a chaparral slope just south of the horse stables. This is the location where the least Bell's vireo was observed during the April 21, 2008 survey visit (but not on any subsequent visits). Photo taken from the south, facing northwest (downstream).

View of western sycamore-coast live oak alluvial scrub and mule fat scrub in Wardlow Wash approximately where an unnamed side canyon splits off to the west . This area is a mixture of many different riparian trees including western sycamore (*Platanus racemosa)*, Fremont cottonwood (*Populous fremontii*), willows (*Salix* spp.), and coast live oak (*Quercus agrifolia*); the understory is comprised of mule fat. Existing development is located at the ridgeline. Photo taken from the north, facing southeast (upstream).

D:/Projects/rbf/J307/Graphics/AppA2_SP_071508.ai

Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

BonTerra CONSULTING

R:/Projects/rbf/J307/Graphics/LBV/AppA2_SP_071508.pdf

View of the side drainage extending from the development to Wardlow Wash; this area is mapped as Fremont cottonwood-willow riparian woodland. This photo is another view of the habitat shown in the previous photo. Photo taken from the west, facing east.

View of the same side drainage shown in the previous photo taken from the ridgeline down towards Wardlow Wash. Photo taken from the east, facing west.

D:/Projects/rbf/J307/Graphics/AppA3_SP_071508.ai

Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

BonTerra CONSULTING

R:/Projects/rbf/J307/Graphics/LBV/AppA3_SP_071508.pdf

View of mule fat along the upper portion of Wardlow Wash. Photo taken from the north facing southeast (upstream).

View of mule fat along the upper portion of Wardlow Wash, a little upstream of the photo sown above. Photo taken from the north facing south (upstream).

D:/Projects/rbf/J307/Graphics/AppA4_SP_071508.ai

Site Photographs

Appendix A

Foothill Parkway Extension, Riverside County, California

BonTerra CONSULTING

R:/Projects/rbf/J307/Graphics/LBV/AppA4_SP_071508.pdf

ATTACHMENT B

WILDLIFE COMPENDIUM

WILDLIFE SPECIES DETECTED DURING SURVEYS

Species
Reptiles
PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS
Sceloporus occidentalis western fence lizard
Uta stansburiana side-blotched lizard
TEIIDAE - WHIPTAIL LIZARDS
Aspidoscelis [Cnemidophorus] tigris western whiptail
COLUBRIDAE - COLUBRID SNAKES
Pituophis catenifer gopher snake
Birds
ODONTOPHORIDAE - QUAILS
Callipepla californica California quail
ACCIPITRIDAE - HAWKS
Buteo lineatus red-shouldered hawk
Buteo jamaicensis red-tailed hawk
CHARADRIIDAE - PLOVERS
Charadrius vociferus killdeer
COLUMBIDAE - PIGEONS & DOVES
Columba livia rock pigeon *
Zenaida macroura mourning dove
CUCULIDAE - CUCKOOS & ROADRUNNERS
Geococcyx californianus greater roadrunner
APODIDAE - SWIFTS
Aeronautes saxatalis white-throated swift
TROCHILIDAE - HUMMINGBIRDS
Archilochus alexandri black-chinned hummingbird
Calypte anna Anna's hummingbird
Calypte costae Costa's hummingbird
PICIDAE - WOODPECKERS
Melanerpes formicivorus acorn woodpecker
Picoides nuttallii Nuttall’s woodpecker
Picoides pubescens downy woodpecker

WILDLIFE SPECIES DETECTED DURING SURVEYS (Continued)

Species
Colaptes auratus northern flicker
TYRANNIDAE - TYRANT FLYCATCHERS
Empidonax difficilis Pacific-slope flycatcher
Sayornis nigricans black phoebe
Sayornis saya Say's phoebe
Myiarchus cinerascens ash-throated flycatcher
Tyrannus verticalis western kingbird
VIREONIDAE - VIREOS
Vireo bellii pusillus least Bell's vireo
Vireo gilvus warbling vireo
CORVIDAE - JAYS & CROWS
Aphelocoma californica western scrub-jay
Corvus brachyrhynchos American crow
Corvus corax common raven
HIRUNDINIDAE - SWALLOWS
Stelgidopteryx serripennis northern rough-winged swallow
Petrochelidon pyrrhonota cliff swallow
Hirundo rustica barn swallow
PARIDAE - TITMICE
Baeolophus inornatus oak titmouse
AEGITHALIDAE - BUSHTITS
Psaltriparus minimus bushtit
SITTIDAE - NUTHATCHES
Sitta carolinensis white-breasted nuthatch
TROGLODYTIDAE - WRENS
Thryomanes bewickii Bewick's wren
Troglodytes aedon house wren
TIMALIIDAE - WRENTITS
Chamaea fasciata wrentit

WILDLIFE SPECIES DETECTED DURING SURVEYS (Continued)

Species
MIMIDAE - THRASHERS
Mimus polyglottos northern mockingbird
Toxostoma redivivum California thrasher
STURNIDAE - STARLINGS
Sturnus vulgaris European starling *
PTILOGONATIDAE - SILKY-FLYCATCHERS
Phainopepla nitens phainopepla
PARULIDAE - WARBLERS
Vermivora celata orange-crowned warbler
Dendroica petechia yellow warbler
Dendroica nigrescens black-throated gray warbler
Wilsonia pusilla Wilson's warbler
THRAUPIDAE - TANAGERS
Piranga ludoviciana western tanager
EMBERIZIDAE - SPARROWS & JUNCOS
Pipilo maculatus spotted towhee
Pipilo crissalis California towhee
Aimophila ruficeps rufous-crowned sparrow
Melospiza melodia song sparrow
CARDINALIDAE - GROSBEAKS & BUNTINGS
Pheuticus melanocephalus black-headed grosbeak
Passerina amoena lazuli bunting
ICTERIDAE - BLACKBIRDS
Icterus bullockii Bullock's oriole
FRINGILLIDAE - FINCHES
Carpodacus mexicanus house finch
Carduelis psaltria lesser goldfinch
Mammals
LEPORIDAE - HARES & RABBITS
Sylvilagus audubonii desert cottontail

WILDLIFE SPECIES DETECTED DURING SURVEYS (Continued)

Species
SCIURIDAE - SQUIRRELS
Spermophilus beecheyi California ground squirrel
MURIDAE - MICE, RATS, AND VOLES
Neotoma sp. woodrat
CANIDAE - WOLVES & FOXES
Canis latrans coyote
* introduced species

ATTACHMENT C

CNDDB FORMS

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 04/21/2008

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Vireo bellii pusillus*

Common Name: least Bell's vireo

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 1 Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Amber Oneal, BonTerra Consulting
Address: 151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626
E-mail Address: aoneal@bonterraconsulting.com
Phone: (714) 444-9199

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

# adults	# juveniles	# larvae	# egg masses	# unknown
1				

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Riverside Landowner / Mgr.: City of Corona/Cleveland National Forest
Quad Name: Corona South Elevation: 838 ft
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐
Source of Coordinates (GPS, topo. map & type): GPS
GPS Make & Model Garmin eTrek Legend
DATUM: NAD27 ☐ NAD83 ☑ WGS84 ☐
Horizontal Accuracy 10 ft meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: 11S 0443282, 3746686

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Individual male least Bell's vireo observed along Wardlow Canyon. Habitat along Wardlow Wash is mule fat scrub with adjacent steep slopes comprised of a burnt chaparral species (fire was several years ago).

Other rare taxa seen at THIS site on THIS date: None
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☐ Good ☑ Fair ☐ Poor

Immediate AND surrounding land use: Open space in the Cleveland National Forest

Visible disturbances:

Threats: Proposed road extension

Comments: Singing male observed on only one visit of the protocol surveys; therefore, individual was considered a migrant moving through to an unknown offsite area. Habitat was not occupied for breeding.

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: Visiual and aural familiarity with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☑
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work (mm/dd/yyyy): 06/02/2008

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Aimophila ruficeps canescens*

Common Name: southern California rufous-crowned sparrow

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 2 Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Amber Oneal, BonTerra Consulting
Address: 151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626
E-mail Address: aoneal@bonterraconsulting.com
Phone: (714) 444-9199

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

# adults	# juveniles	# larvae	# egg masses	# unknown
2				

☑ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

County: Riverside Landowner / Mgr.: City of Corona/Cleveland National Forest
Quad Name: Corona South Elevation: 976 ft
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐
Source of Coordinates (GPS, topo. map & type): GPS
GPS Make & Model Garmin eTrek Legend
DATUM: NAD27 ☐ NAD83 ☑ WGS84 ☐
Horizontal Accuracy 10 ft meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: 11S 0443058, 3746096

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Pair of rufous-crowned sparrows observed along Wardlow Canyon. Habitat along Wardlow Wash is mule fat scrub with adjacent steep slopes comprised of a mix of coastal sage scrub and chaparral species. Dominant species on the slopes consist of California sagebrush (Artemisia californica), brittlebush (Encelia farinosa), laurel sumac (Malosma laurina), and yerba santa (Eriodictyon crassifolia).

Other rare taxa seen at THIS site on THIS date: None
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☑ Excellent ☐ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Open space in the Cleveland National Forest

Visible disturbances:

Threats: Proposed road extension

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: Visiual and aural familiarity with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☑
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

APPENDIX F
NATIVE TREE SURVEY

FOOTHILL PARKWAY EXTENSION PROJECT NATIVE TREE SURVEY

Prepared for

Bruce Grove
RBF Consulting
14725 Alton Parkway
Irvine, California 92618
T: (949) 472-3505

Prepared by

BonTerra Consulting
Amber S. Oneal, Senior Project Manager/Ecologist
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www.BonTerraConsulting.com

February 15, 2008

TABLE OF CONTENTS

Section		Page
Section 1.0	**Introduction**	**1**
1.1	Project Location and Description	1
1.2	Background	1
Section 2.0	**Methodology**	**3**
2.1	Tree Tags	3
2.2	Diameter	3
2.3	Height and Canopy	3
2.4	Aesthetics	3
2.5	Health	4
Section 3.0	**Results**	**5**
3.1	Project Impacts	6
Section 4.0	**Mitigation Required**	**7**
Section 5.0	**References**	**9**

TABLES

Table		Page
1	Native Tree Mitigation Required by the City of Corona	2
2	Summary of Tree Quantity and Size for Trees Within the Survey Area	5
3	Average of Aesthetic and Health Ratings for Trees Within The Survey Area	5
4	Summary of Tree Quantity and Size for Trees Within the Impact Area	6
5	Average of Aesthetic and Health Ratings for Trees Within the Impact Area	6
6	Mitigation Required for Project Impacts	7

EXHIBITS

Exhibit		Follows Page
1	Regional Location	1
2	Local Vicinity	1
3	Project Site Map	1
4	Native Tree Locations	5
5	Native Tree Locations	5
6	Native Tree Locations	5
7	Native Tree Locations	5
8	Native Tree Locations	5
9	Native Tree Locations	5
10	Native Tree Locations	5
11	Native Tree Locations	5

SECTION 1.0 INTRODUCTION

The purpose of this report is to quantify the native trees on the Foothill Parkway Extension project site (hereafter referred to as "the project site") to determine the impact that the proposed project would have on native trees and to determine the mitigation required for these impacts.

1.1 PROJECT LOCATION AND DESCRIPTION

The proposed project is located in the southern portion of the City of Corona (Exhibit 1). The approximately 150-acre project site is located along the northeastern base of the Santa Ana Mountains on the U.S. Geological Survey (USGS) Corona South 7.5-minute quadrangle (Exhibit 2). The proposed project transects both private and public properties within the City of Corona and County of Riverside, and is located immediately adjacent to the Cleveland National Forest (Exhibit 3). Existing and surrounding land uses consist of agriculture, residential development and open space, including the adjacent Cleveland National Forest.

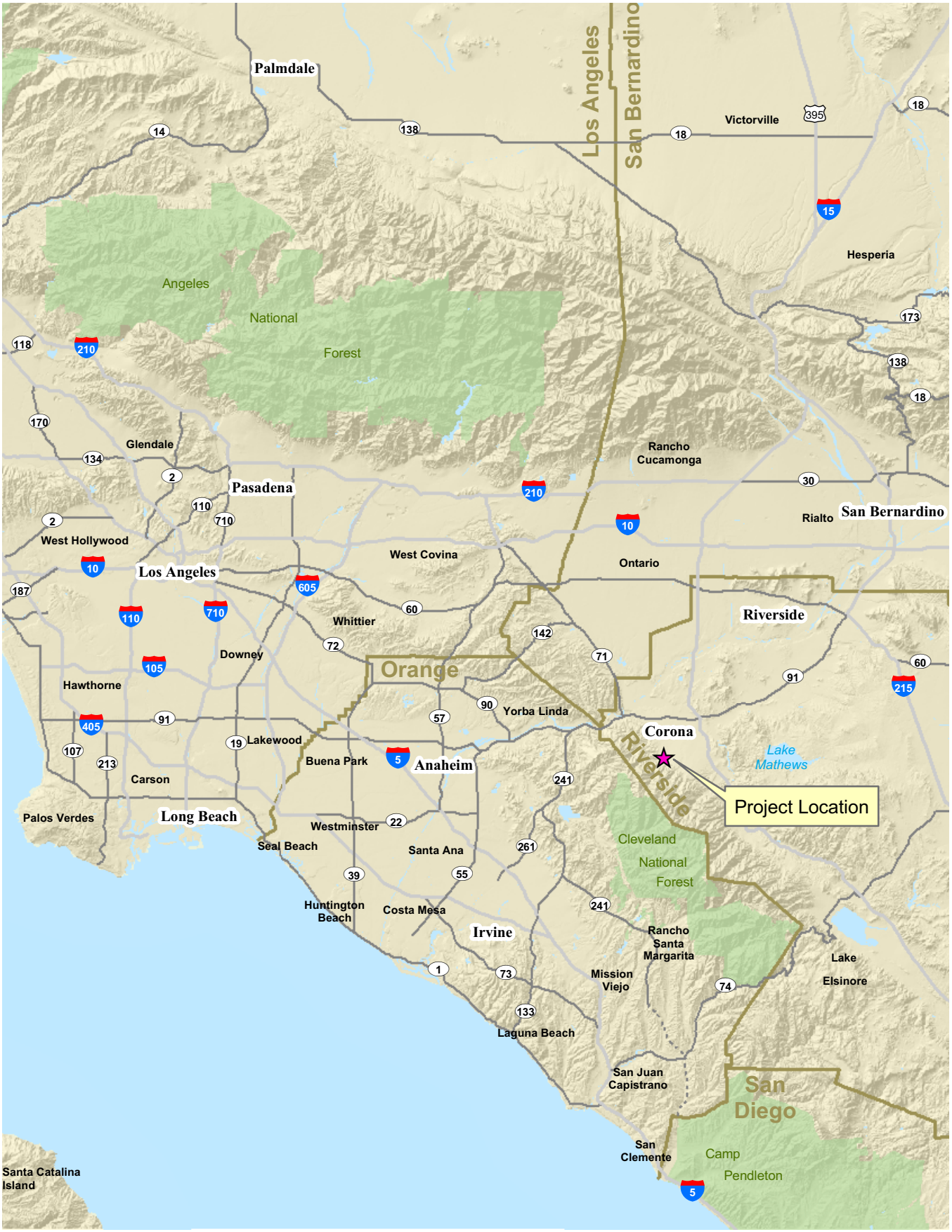
The proposed alignment traverses undeveloped terrain generally in an east-west direction; would cross the Mabey Canyon Debris Basin; and would traverse a 108-inch Metropolitan Water District (MWD) feeder line southeast of Paseo Grande. The survey area includes the proposed alignment and a 100-foot buffer around it. Topography through the alignment generally ranges from gently sloping terraces transected by ravines in the eastern and western portions of the alignment to steep mountainous terrain in the central portion of the alignment. Portions of Wardlow Wash and Mabey Canyon drainage are on the project site; multiple unnamed blue-line streams also enter the project site from canyons to the west in the Cleveland National Forest. Elevations range from approximately 800 to 1,300 feet above mean sea level (msl).

The proposed project would involve the extension of Foothill Parkway as a 4-lane roadway, from its existing terminus approximately 500 feet west of Skyline Drive to Green River Road; a distance of approximately 2 miles. At Skyline Drive, the roadway would veer to the west into unincorporated Riverside County and continue in an east-west direction along the City/County boundary. The alignment would then curve to the north and connect with Green River Road in the vicinity of Paseo Grande. A bridge structure is incorporated into the roadway design to protect the 108-inch Metropolitan Water District feeder line located southeast of Paseo Grande. Roadway improvements would require right-of-way acquisition for roadway improvements, slopes, and drainage facilities. The proposed project also includes three new signalized intersections. Green River Road in the vicinity of Paseo Grande is paved as a two-lane roadway and would be improved to four lanes from Paseo Grande to Tanglewood Drive as part of the proposed project.

The project site largely consists of canyons surrounded by steep slopes. The canyon bottom areas are dominated by ephemeral drainages that support oak and sycamore woodland, while the canyon slopes consist of chaparral, oak woodland, coastal sage scrub, and mixed coastal sage scrub/chaparral. Other vegetation types include non-native grassland as well as ruderal, ornamental, disturbed, and developed areas.

1.2 BACKGROUND

Riverside County has established guidelines that apply to developments that would impact oak woodlands (1993). These guidelines require that the impact on oak trees be evaluated and quantified, and that the project provide mitigation consistent with the California Environmental Quality Act, and applicable State or County codes and ordinances. Although Riverside County has a native tree ordinance (Ordinance 559), this ordinance is applicable only to areas higher



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Regional Location

Exhibit 1

Native Tree Survey for the Foothill Parkway Extension Project

N W E S

10 5 0 10 Miles

BonTerra CONSULTING

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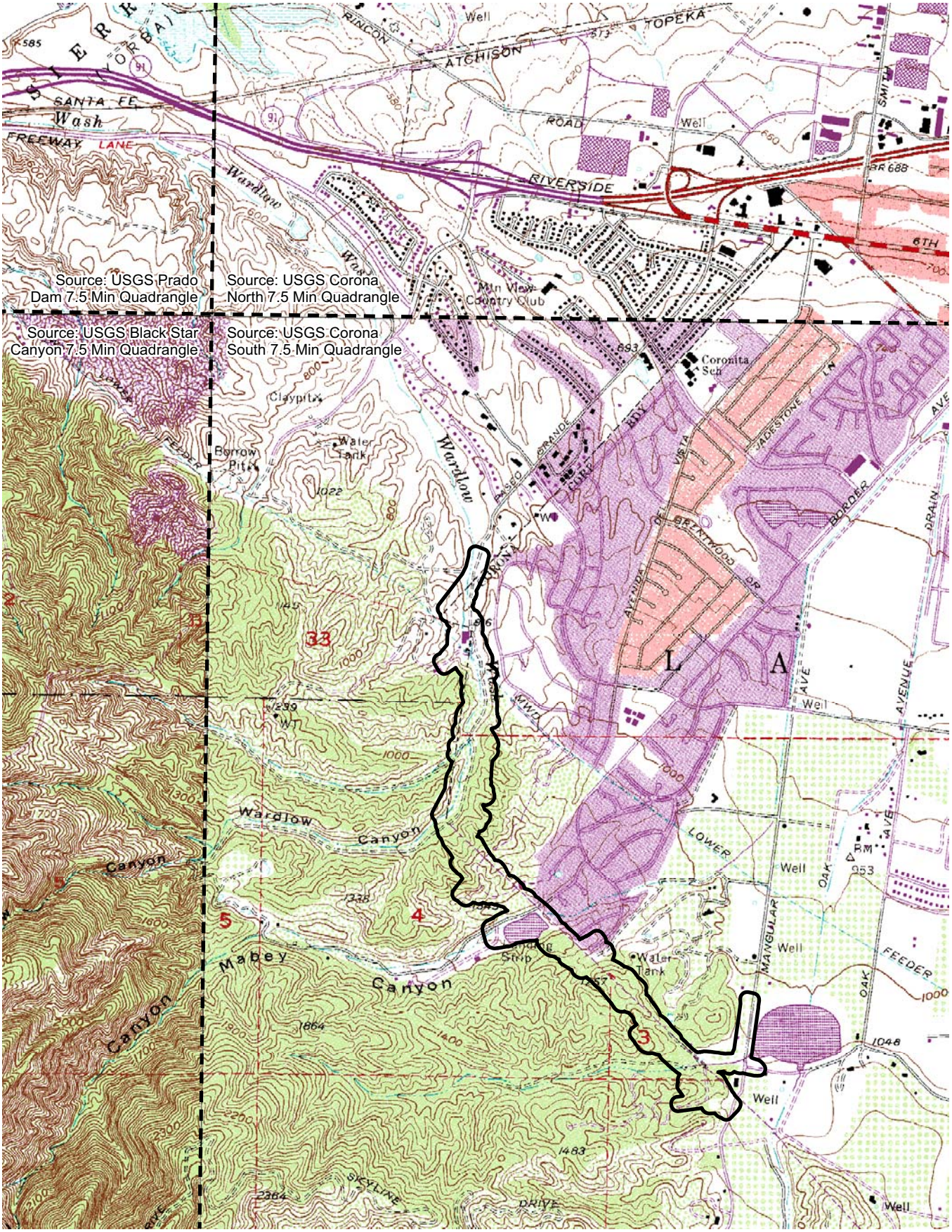


Regional Location

Exhibit 2

Native Tree Survey for the Foothill Parkway Extension Project

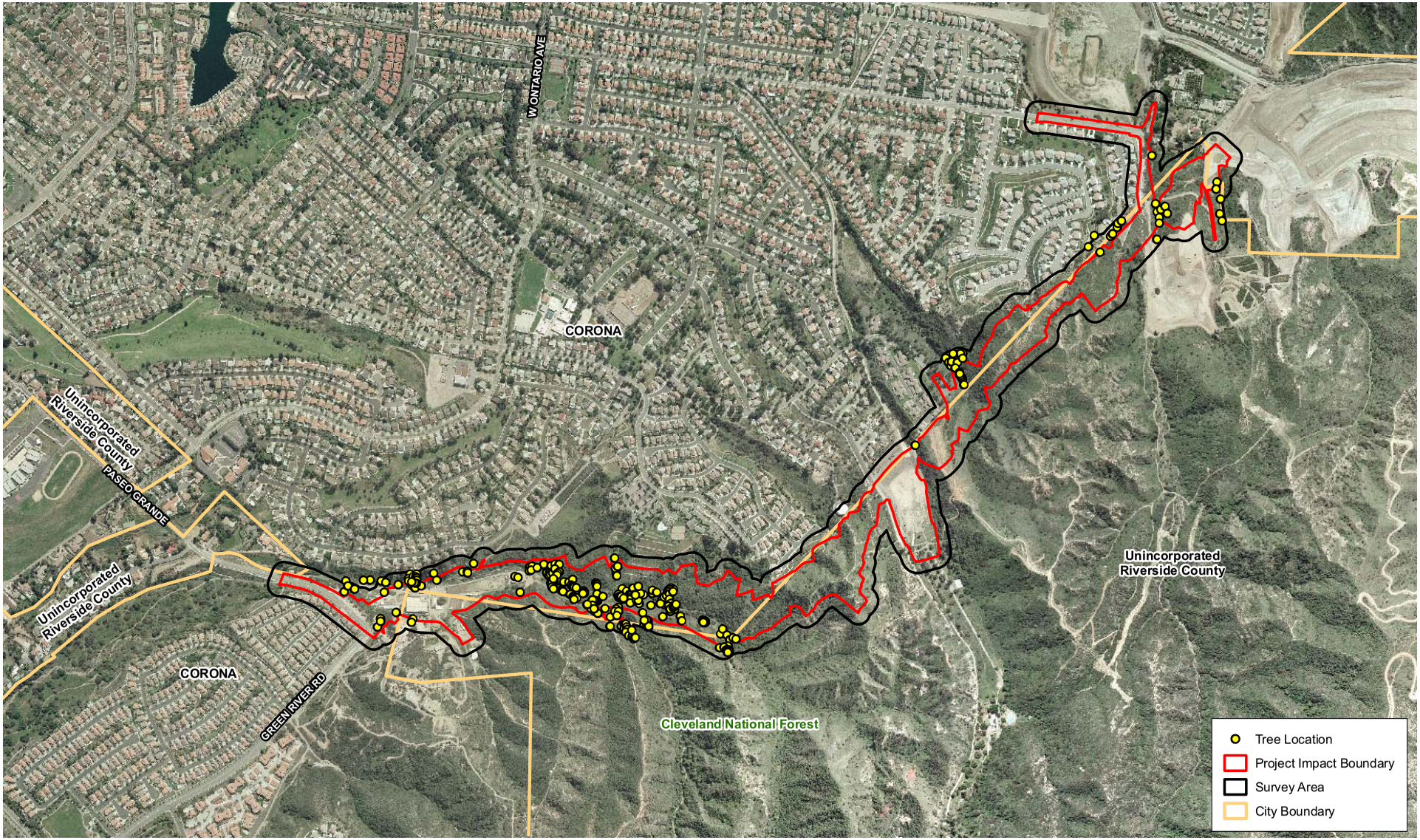
N
W E
S

2,000 1,000 0 2,000
Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/Bio/Ex2_LV_020508.pdf

D:/Projects/RBF/J307/Ex_LV_020508.mxd



Project Site Map

Exhibit 3

Native Tree Survey for the Foothill Parkway Extension Project

800 400 0 800 Feet

BonTerra CONSULTING

R:/Projects/RBF/J307/Graphics/Bio/Ex3_ProjSite_021508.pdf

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than 5,000 feet in elevation. The project site is located well below this elevation; therefore, the ordinance is not applicable to the project site. Additionally, the City of Corona does not have a tree ordinance. Therefore, the Lead Agency (City of Corona) is responsible for establishing an appropriate mitigation ratio for the proposed project (Table 1; Coletta 2008).

TABLE 1
NATIVE TREE MITIGATION REQUIRED BY THE CITY OF CORONA

Species	Total
(*Quercus agrifolia*) Coast live oak	4:1
(*Quercus berberidifolia*) Scrub oak	2:1
(*Platanus racemosa*) California sycamore	3:1
(*Populus fremontii*) Fremont cottonwood	3:1
(*Salix goodingii*) Black willow	2:1

The California Department of Fish and Game (CDFG) may also require mitigation in their Streambed Alteration Agreement for impacts on trees within their jurisdiction.

SECTION 2.0 METHODOLOGY

The project site was surveyed by BonTerra Consulting Certified Arborist David Hughes with the assistance of Ecologist Kimberly Oldehoeft and Botanist Andrea Edwards on December 5 and 14, 2007, and January 11, 29, and 30, 2008. The survey area was defined as the proposed impact area for the project with an additional 100-foot buffer area. Each tree that was surveyed was mapped on a 100-scale (1″=100′) aerial photograph in the field. In addition, each tree location was recorded using a hand-held geographic position system (GPS) device.

Native tree species assessed during this survey included coast live oak (*Quercus agrifolia*), scrub oak (*Quercus berberidifolia*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), and black willow (*Salix goodingii*). During the survey, each tree was tagged and the following data were collected: trunk diameter at breast height (dbh), tree height, canopy width, aesthetics, and overall health. The data collected are included in Appendix A.

2.1 TREE TAGS

Each tree that was assessed was individually tagged with an aluminum tag bearing the tree number. Trees not able to be tagged (e.g., trees located on extremely steep slopes) were given identifying numbers on the tree map but were not tagged.

2.2 DIAMETER

Using a diameter tape, measurements were taken at four and one-half feet above mean natural grade; multiple trunks were measured separately. The diameter of the largest two trunks was combined to determine the total diameter of each tree. In addition, the total number of trunks was recorded. The diameter was estimated for trees that were not accessible (e.g., surrounded by poison oak or located on a steep slope). Oak trees greater than one inch dbh throughout the survey area were assessed. Within streambed areas, native trees (sycamore, cottonwood, and willow) greater than two inches dbh were also assessed.

2.3 HEIGHT AND CANOPY

The height of each tree was estimated from mean natural grade to the highest branch. Also, the diameter of each tree's canopy was estimated at its widest point.

2.4 AESTHETICS

Each tree assessed was inspected and compared to an archetype tree (considered excellent on all points mentioned below) of the same species. Tree aesthetics were evaluated with respect to overall form and symmetry, crown balance, branching pattern, and broken branches.

The trees were rated on a scale of 1 to 5, as follows:

1: Very Poor
2: Poor
3: Fair
4: Good
5: Excellent

2.5 HEALTH

The health of each tree was assessed based on visual evidence of vigor, such as the amount of foliage; leaf color and size; presence of branch or twig dieback; severity of insect infestation; the presence of disease; heart rot; fire damage; mechanical damage; amount of new growth; appearance of bark; and rate of callous development over wounds. The tree's structural integrity was also evaluated with respect to branch attachment, branch placement, root health, and stability. In addition, the health assessment considered such elements as the presence of decay, weak branch attachments, and the presence of exposed roots due to soil erosion.

The trees were rated on the 1 to 5 scale, noted above.

SECTION 3.0 RESULTS

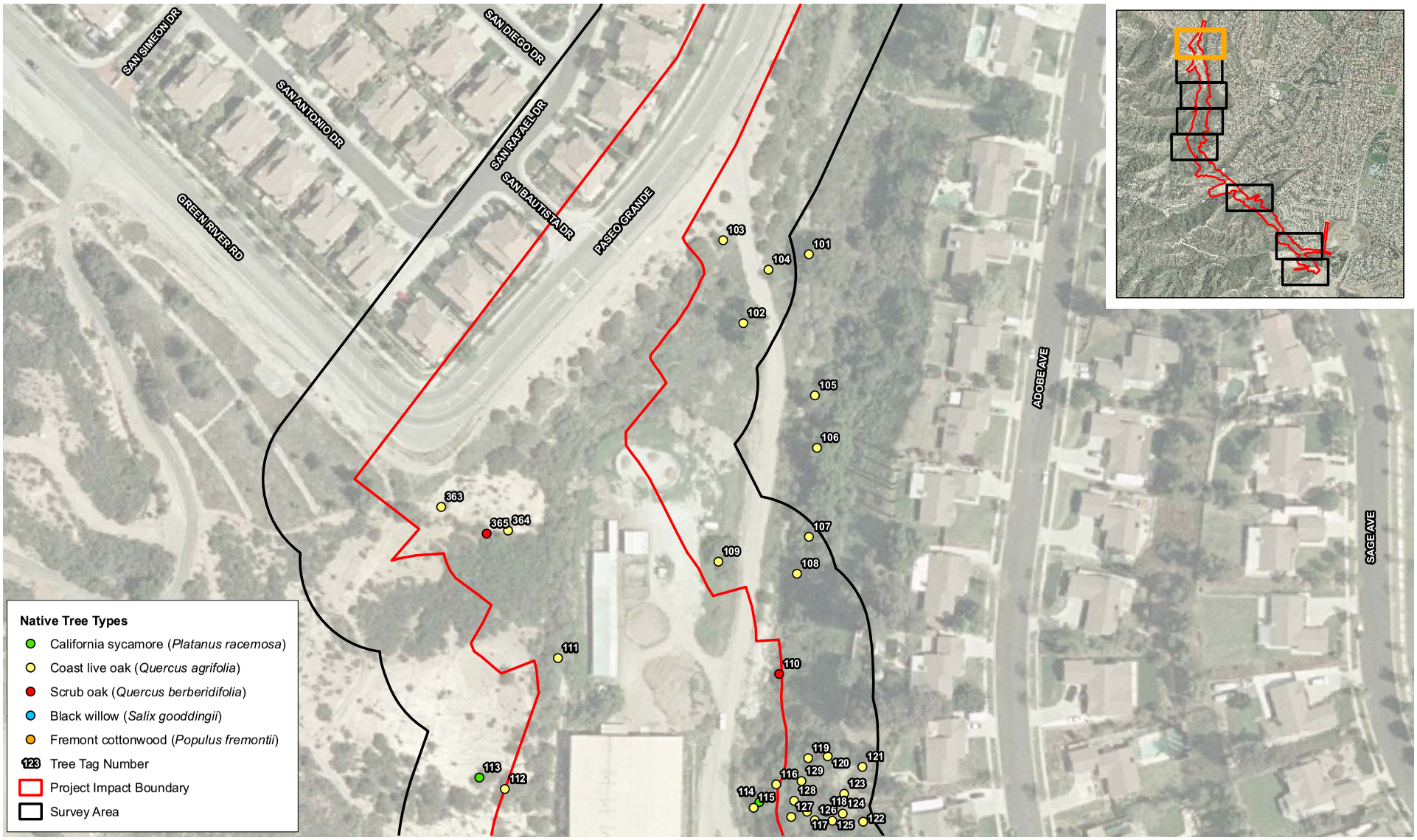
A total of 272 native trees are present on the project site: 181 coast live oaks, 17 scrub oaks, 64 California sycamores, 4 Fremont cottonwoods, and 6 black willows (Exhibits 4 through 11). A summary of tree size, aesthetics, and health ratings are provided in Tables 2 and 3.

TABLE 2
SUMMARY OF TREE QUANTITY AND SIZE FOR TREES WITHIN THE SURVEY AREA

Species	Tree Size (dbh)						Total
	2 – 5.9″	6 – 14.9″	15 – 19.9″	20 – 24.9″	25 – 29.9″	>30″	
(*Quercus agrifolia*) Coast live oak	11	57	38	25	22	28	181
(*Quercus berberidifolia*) Scrub oak	5	12	—	—	—	—	17
(*Platanus racemosa*) California sycamore	6	39	10	7	2	—	64
(*Populus fremontii*) Fremont cottonwood	—	3	1	—	—	—	4
(*Salix goodingii*) Black willow	—	—	3	1	2	—	6
						TOTAL	**272**

TABLE 3
AVERAGE OF AESTHETIC AND HEALTH RATINGS FOR TREES WITHIN THE SURVEY AREA

Species	Health (%)					Aesthetics (%)				
	1	2	3	4	5	1	2	3	4	5
(*Quercus agrifolia*) Coast live oak	3	15	18	19	45	2	10	20	20	48
(*Quercus berberidifolia*) Scrub oak	0	12	6	41	41	0	0	47	24	29
(*Platanus racemosa*) California sycamore	0	5	4	9	82	0	0	7	20	73
(*Populus fremontii*) Fremont cottonwood	0	0	0	33	67	0	0	0	67	33
(*Salix goodingii*) Black willow	0	0	0	0	100	0	0	0	33	67



Native Tree Locations

Exhibit 4

Native Tree Survey for the Foothill Parkway Extension Project

N W E S

100 50 0 100 Feet

BonTerra CONSULTING

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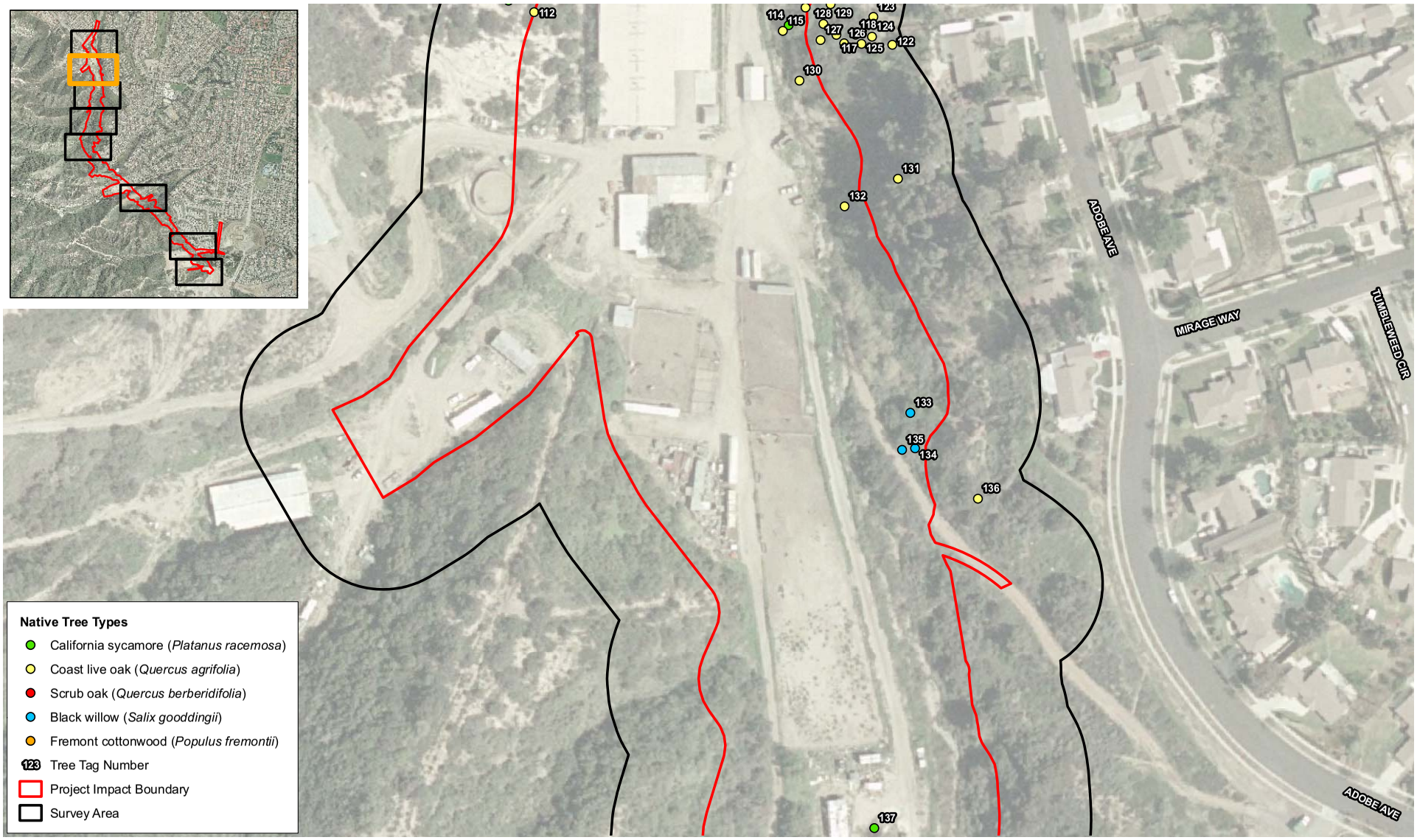

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Native Tree Locations

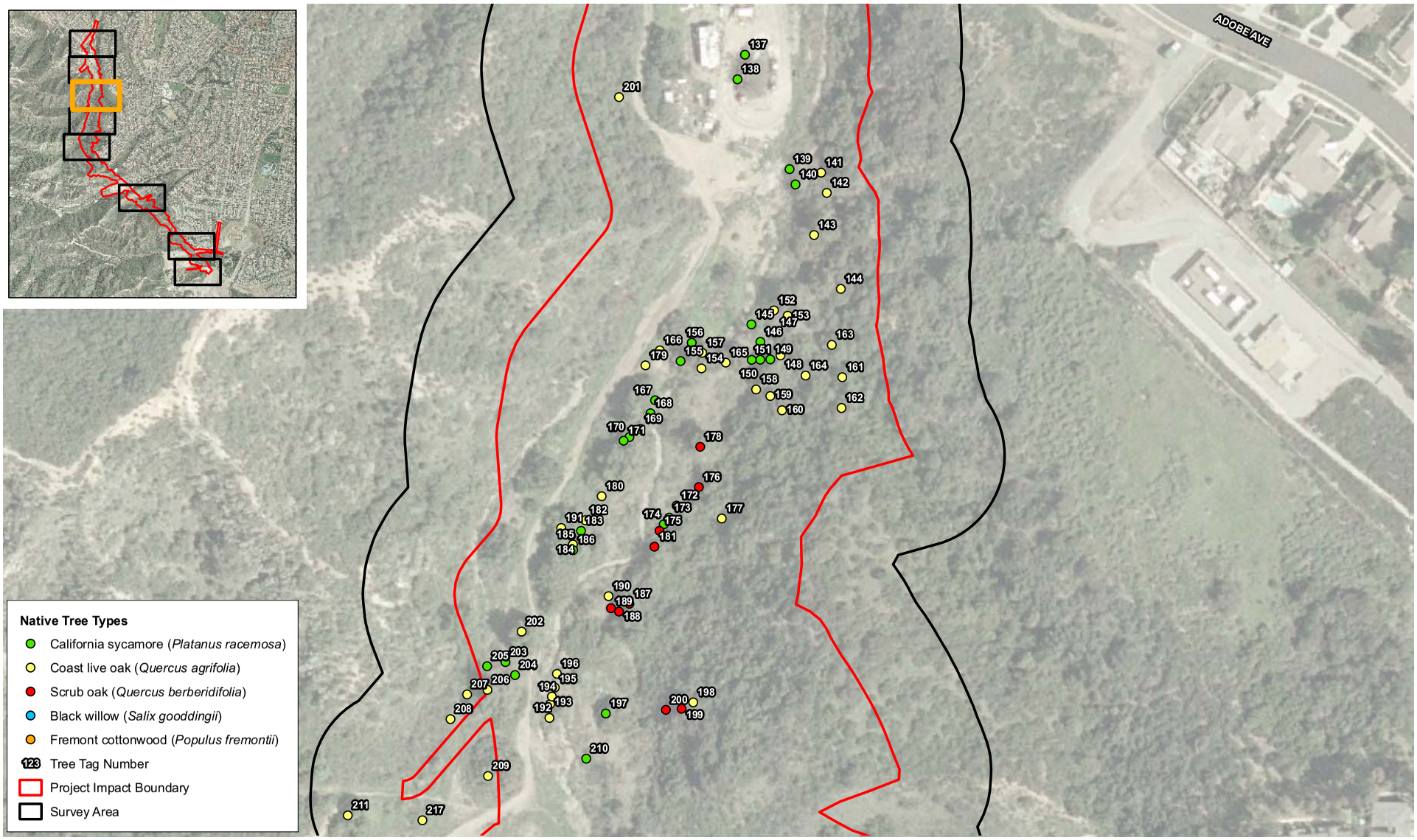
Exhibit 5

Native Tree Survey for the Foothill Parkway Extension Project

N W E S 100 50 0 100 Feet

BonTerra CONSULTING

PAS R:/Projects/RBF/J307/Graphics/Bio/Ex4-11_trees_mapbook_021508.pdf



Native Tree Locations

Exhibit 6

Native Tree Survey for the Foothill Parkway Extension Project

N W E S

100 50 0 100 Feet

BonTerra CONSULTING

PAS R:/Projects/RBF/J307/Graphics/Bio/Ex4-11_trees_mapbook_021508.pdf

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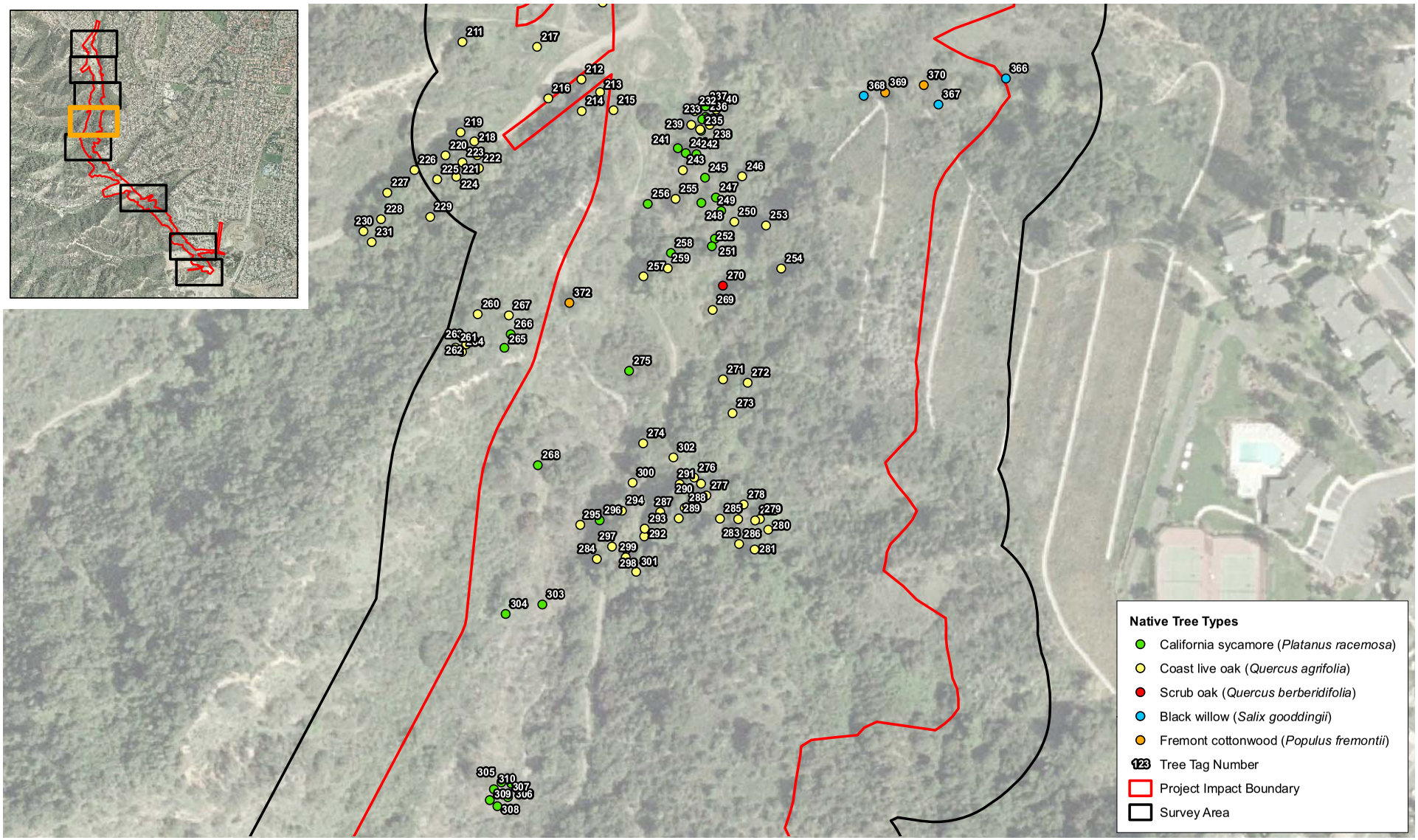

Native Tree Locations

Exhibit 7

Native Tree Survey for the Foothill Parkway Extension Project

N W E S

100 50 0 100 Feet

BonTerra CONSULTING

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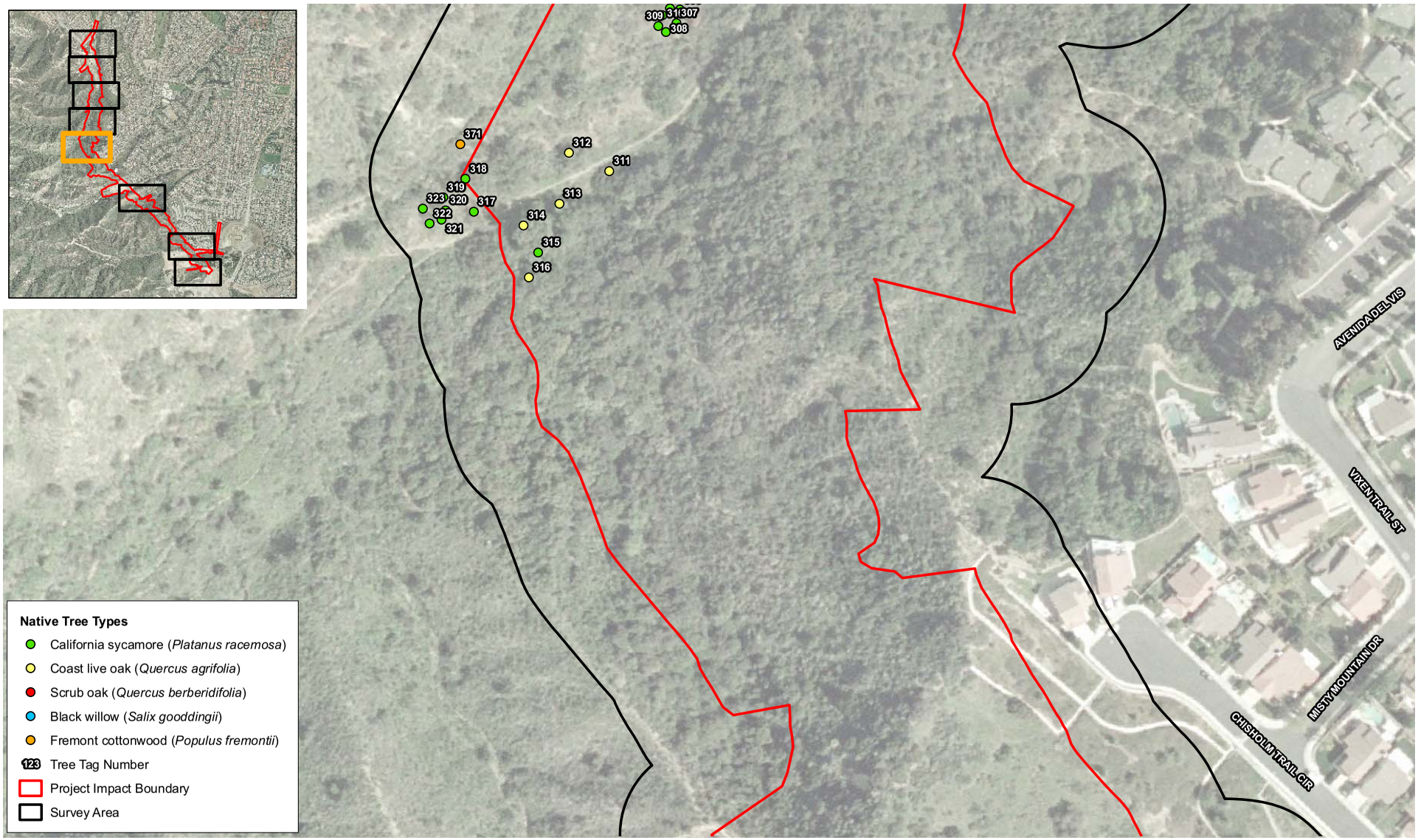

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Native Tree Locations

Exhibit 8

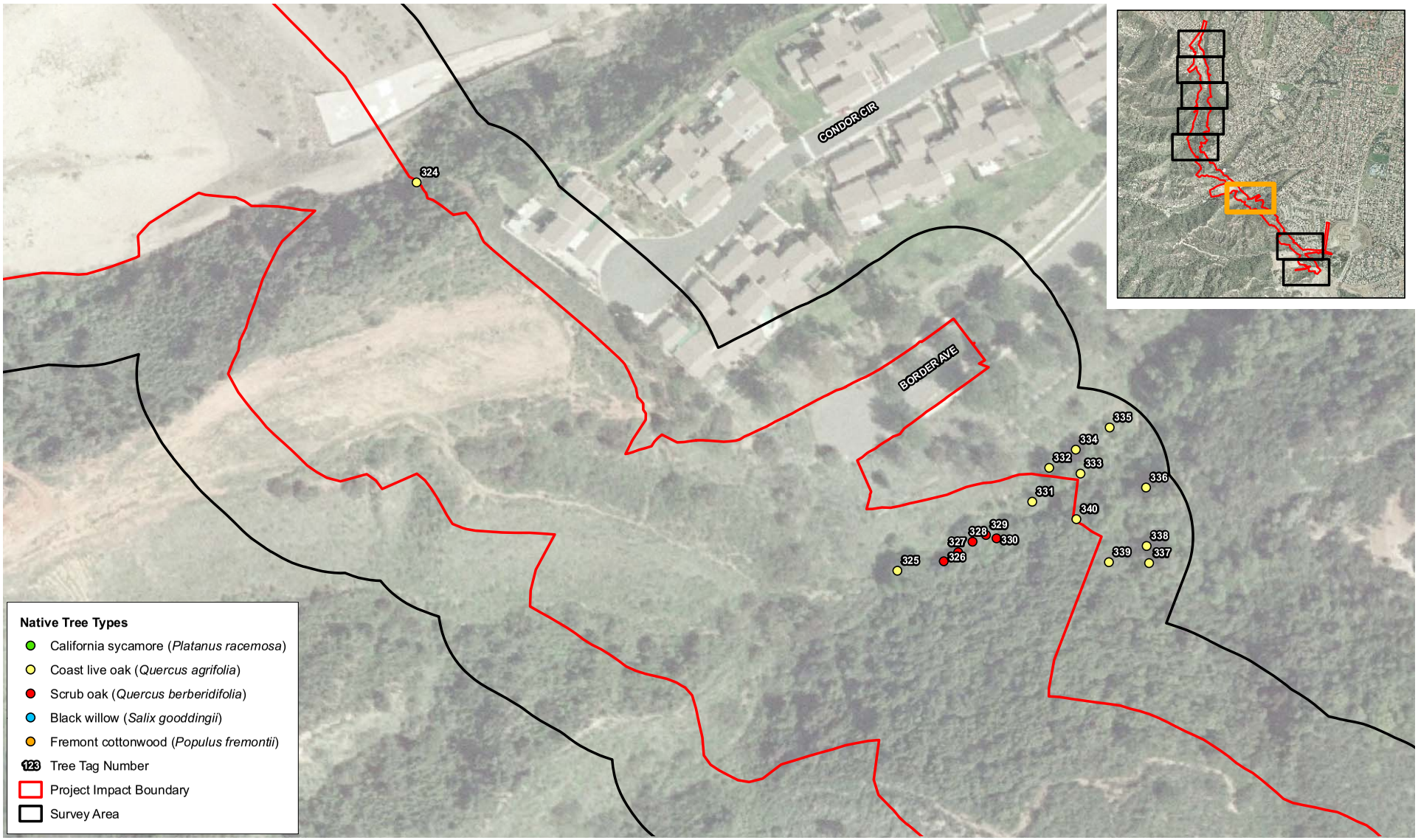
Native Tree Survey for the Foothill Parkway Extension Project

N W E S

100 50 0 100 Feet

BonTerra CONSULTING

PAS R:/Projects/RBF/J307/Graphics/Bio/Ex4-11_trees_mapbook_021508.pdf



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Native Tree Locations

Exhibit 9

Native Tree Survey for the Foothill Parkway Extension Project

N W E S

100 50 0 100 Feet

BonTerra CONSULTING

PAS R:/Projects/RBF/J307/Graphics/Bio/Ex4-11_trees_mapbook_021508.pdf

Native Tree Locations

Exhibit 10

Native Tree Survey for the Foothill Parkway Extension Project

N W E S

100 50 0 100 Feet

BonTerra CONSULTING

PAS R:/Projects/RBF/J307/Graphics/Bio/Ex4-11_trees_mapbook_021508.pdf

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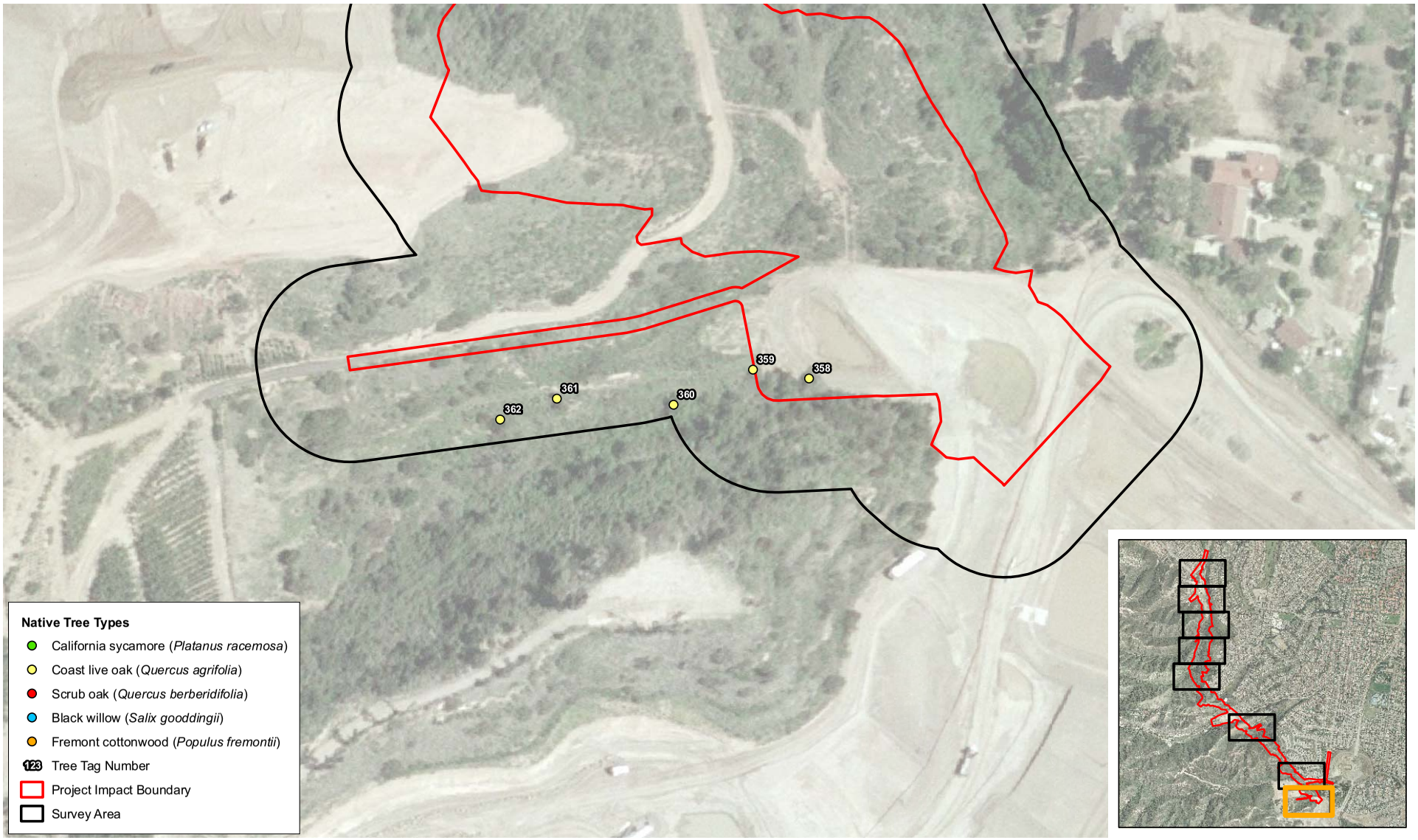

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Native Tree Locations

Exhibit 11

Native Tree Survey for the Foothill Parkway Extension Project

N W E S

100 50 0 100 Feet

BonTerra CONSULTING

PAS R:/Projects/RBF/J307/Graphics/Bio/Ex4-11_trees_mapbook_021508.pdf

3.1 PROJECT IMPACTS

A total of 194 native trees are present within the impact area: 113 coast live oaks, 17 scrub oaks, 55 California sycamores, 3 Fremont cottonwoods, and 6 black willows (Exhibits 4 through 11). A summary of tree size, aesthetics, and health ratings is provided in Tables 4 and 5.

TABLE 4
SUMMARY OF TREE QUANTITY AND SIZE FOR TREES WITHIN THE IMPACT AREA

Species	Quantity	Average dbh (inches)	Average Height (feet)	Average Canopy (feet)	Average Health	Average Aesthetics
(*Quercus agrifolia*) Coast live oak	113	19.3	29.1	29.1	3.9	4.0
(*Quercus berberidifolia*) Scrub oak	17	7.2	15.3	19.7	4.1	3.8
(*Platanus racemosa*) California sycamore	55	12.9	31.6	23.2	4.7	4.7
(*Populus fremontii*) Fremont cottonwood	3	12.7	31.7	21.7	4.7	4.3
(*Salix goodingii*) Black willow	6	20.5	45.8	48.3	5.0	4.7

TABLE 5
AVERAGE OF AESTHETIC AND HEALTH RATINGS FOR TREES WITHIN THE IMPACT AREA

Species	Health (%)					Aesthetics (%)				
	1	2	3	4	5	1	2	3	4	5
(*Quercus agrifolia*) Coast live oak	3	15	18	19	45	2	10	20	20	48
(*Quercus berberidifolia*) Scrub oak	0	12	6	41	41	0	0	47	24	29
(*Platanus racemosa*) California sycamore	0	5	4	9	82	0	0	7	20	73
(*Populus fremontii*) Fremont cottonwood	0	0	0	33	67	0	0	0	67	33
(*Salix goodingii*) Black willow	0	0	0	0	100	0	0	0	33	67

SECTION 4.0 MITIGATION REQUIRED

A total of 672 native trees would be required to mitigate for project impacts according to the mitigation ratios specified by the City. Mitigation requirements would include 452 coast live oaks, 34 scrub oaks, 165 California sycamores, 9 Fremont cottonwoods, and 12 black willows. Project impacts and required mitigation are summarized below in Table 6.

TABLE 6
MITIGATION REQUIRED FOR PROJECT IMPACTS

Species	Quantity Impacted	Replacement Ratio	Mitigation Requirement
(*Quercus agrifolia*) Coast live oak	113	4:1	452
(*Quercus berberidifolia*) Scrub oak	17	2:1	34
(*Platanus racemosa*) California sycamore	55	3:1	165
(*Populus fremontii*) Fremont cottonwood	3	3:1	9
(*Salix goodingii*) Black willow	6	2:1	12
		TOTAL	**672**

The native tree mitigation plan will include the following measures:

- Prior to grading, orange snow fencing will be installed around native trees (outside the dripline) that would not be impacted by construction. Fencing will be in place and inspected by a qualified Biological Monitor prior to commencement of grading. This fencing will remain in place throughout the entire period of construction, and will be periodically checked by the Biological Monitor.

- The Landscape Architect will design the replacement trees into the riparian revegetation to replace the habitat value of the woodlands and trees removed by the proposed project. At least 4.28 acres of replacement habitat will be planted to compensate for the loss of riparian and oak woodland habitat. The planting plan will be reviewed by a qualified Biologist and to ensure that the replacement trees are located in such a way as to provide comparable habitat quality.

- All replacement trees should be located in the riparian and oak woodland revegetation areas if possible. If spacing requirements cannot accommodate the number of replacement trees, the trees may be planted adjacent to the proposed road as a transition to open space.

- Planting specifications will consider the following:

    - Newly planted trees will be planted above grade and maintained for five years, including irrigation, weed control, herbivore protections, and replacement.

- Amending the backfill soil with wood shavings, oak leaf-mold, etc. is not recommended when existing soil is high in natural organic matter with a sandy loam texture.

- Recommendations for the need of planting amendments and drainage systems will be based on soil tests of this project and approved by the City.

- Any City approved work within the driplines of saved trees, including branch removal, will be under the inspection of a qualified Arborist.

- Landscaping requiring irrigation will not be planted within the dripline of oaks due to the susceptibility of native oaks to root rot caused by excessive unseasonable irrigation. The design and installation of landscape irrigation systems outside the dripline of the oaks will be such that the area within the dripline is not wetted during operation of the system. In addition, surface runoff from impermeable surfaces will be directed away from oaks; where natural topography has been altered, provisions should be made for drainage away from trunks of oaks so that water will not pond or collect within the dripline of any oak.

SECTION 5.0 REFERENCES

BonTerra Consulting. 2008 (February 15). *Foothill Parkway Westerly Extension Project, Biological Technical Report* (Prepared for the City of Corona). Costa Mesa, CA: BonTerra Consulting.

Coletta, J. 2008 (February 13). Personal communication. Telephone conversation between J. Coletta (City of Corona) and A. Oneal regarding native tree mitigation requirements.

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APPENDIX A

SUMMARY OF NATIVE TREE DATA

SUMMARY OF NATIVE TREE DATA

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
101	QUAG	2	22.0	31.1	53.1	50	45	4	5	stream adjacent	no
102	QUAG	1	26.0		26.0	40	35	5	5	stream adjacent	no
103	QUAG	2	8.9	5.1	14.0	15	10	5	5		no
104	QUAG	2	5.7	3.7	9.4	15	8	5	5	stream adjacent	no
105	QUAG	1	17.3		17.3	30	20	5	5	stream adjacent	no
106	QUAG	1	54.7		54.7	60	100	5	5	stream adjacent	no
107	QUAG	1	22.0		22.0	40	30	2	4	Severe lean and trunk decay; stream adjacent	no
108	QUAG	4	9.1	7.9	16.9	40	30	5	5	Trunk 3: 8.3", Trunk 4: 4.3";stream adjacent	no
109	QUAG	2	13.6	18.9	32.5	25	45	3	5	Trunk 3: 9.1" (fill under canopy)	no
110	QUBE	8	4.3	2.6	6.9	15	20	5	4	stream adjacent	yes
111	QUAG	2	13.0	12.6	25.6	30	40	5	5	stream adjacent	yes
112	QUAG	4	11.0	5.3	16.3	18	30	5	5	Trunk 3: 11.0", Trunk 4: 5.3"	yes
113	PLARAC	6	6.7	5.3	12.0	15	20	3	3	Trunk Decay	no
114	PLARAC	1	9.3		9.3	35	15	5	5	stream adjacent	yes
115	QUAG	2	6.9	9.1	15.9	40	20	5	5	stream adjacent	yes
116	QUAG	8	4.3	4.1	8.5	20	10	5	5	stream adjacent	yes
117	QUAG	6	5.5	5.1	10.6	20	15	2	3	Trunk 3: 4.5", Trunk 4: 3.0"	no
118	QUAG	3	13.2	3.5	16.7	20	20	2	3	Trunk 3: 2.8"	no
119	QUAG	3	5.1	1.8	6.9	12	8	3	3	stream adjacent	no
120	QUAG	5	4.7	4.5	9.3	15	20	3	4	Trunk 3: 4.1", Trunk 4: 3.5"; stream adjacent	no
121	QUAG	6	3.9	4.5	8.5	25	18	2	3		no
122	QUAG	4	5.5	3.9	9.4	25	15	5	5	Trunk 3: 2.4", Trunk 4: 2.0"	no
123	QUAG	2	12.6	5.1	17.7	30	40	5	5		no
124	QUAG	4	3.9	3.9	7.9	20	25	5	5	Trunk 3: 3.1", Trunk 4: 3.0"	no
125	QUAG	13	4.5	4.7	9.3	25	20	5	5	4 stems = 4.3", others ±2.0"	no
126	QUAG	3	5.5	3.5	9.1	20	15	5	5		no
127	QUAG	15	7.1	4.7	11.8	20	15	5	5		no
128	QUAG	6	8.7	4.1	12.8	20	20	3	4	stream adjacent	no
129	QUAG	3	12.6	4.7	17.3	20	20	3	4	stream adjacent	no
130	QUAG	2	5.9	3.9	9.8	15	15	4	5	Not tagged; inaccessible; stream adjacent	yes
131	QUAG	2	7.3	7.5	14.8	20	15	5	5	stream adjacent	no

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
132	QUAG	7	8.9	7.9	16.7	30	25	5	5	stream adjacent	yes
133	SALGOO	1	16.9		16.9	45	50	5	4	stream adjacent	yes
134	SALGOO	1	28.0		28.0	50	50	5	5	stream adjacent	yes
135	SALGOO	1	15.0		15.0	35	45	5	5	stream adjacent	yes
136	QUAG	3	9.1	7.3	16.3	35	25	5	5	Trunk 3: 7.5"	no
137	PLARAC	6	9.8	7.5	17.3	30	15	5	5	Not tagged; inaccessible	yes
138	PLARAC	2	8.9	5.9	14.8	30	12	5	5	Not tagged; inaccessible	yes
139	PLARAC	1	10.8		10.8	30	15	5	5	stream adjacent	yes
140	PLARAC	5	11.0	12.6	23.6	50	20	5	5	stream adjacent	yes
141	QUAG	1	14.4		14.4	30	20	5	5	stream adjacent	yes
142	QUAG	1	10.6		10.6	20	25	5	5	stream adjacent	yes
143	QUAG	1	30.7		30.7	50	50	2	3	stream adjacent	yes
144	QUAG	3	16.9	16.3	33.3	40	50	5	5	Waypoint is 30 ft NE of Tree#143; stream adjacent	yes
145	PLARAC	3	6.1	6.2	12.3	25	60	5	5	stream adjacent	yes
146	PLARAC	3	9.8	10.4	20.3	50	50	5	5	stream adjacent	yes
147	QUAG	1	17.3		17.3	50	40	5	4	stream adjacent	yes
148	QUAG	1	15.6		15.6	40	20	2	3	Some trunk decay; stream adjacent	yes
149	PLARAC	3	7.5	7.2	14.6	60	40	5	5	stream adjacent	yes
150	PLARAC	4	12.0	7.1	19.1	50	40	2	4	Some trunk decay; stream adjacent	yes
151	PLARAC	1	6.8		6.8	40	10	5	5	stream adjacent	yes
152	QUAG	5	8.2	7.7	15.9	25	40	5	5	stream adjacent	yes
153	QUAG	2	7.9	7.2	15.0	25	20	5	5	stream adjacent	yes
154	QUAG	1	16.7		16.7	40	30	2	3	A lot of trunk decay; stream adjacent	yes
155	PLARAC	4	4.9	7.9	12.8	40	30	5	5	stream adjacent	yes
156	PLARAC	2	5.2	11.3	16.6	40	40	5	5	stream adjacent	yes
157	QUAG	1	11.0		11.0	30	30	3	2	stream adjacent	yes
158	QUAG	5	15.6	5.0	20.6	25	40	5	5	stream adjacent	yes
159	QUAG	2	7.5	2.4	9.8	25	15	5	5	stream adjacent	yes
160	QUAG	3	5.1	4.7	9.8	30	20	5	5		yes
161	QUAG	2	8.9	5.1	14.0	25	15	2	3		yes

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
162	QUAG	5	8.3	5.9	14.2	20	30	1	1	Possibly dead; all leaves brown and trunk decayed	yes
163	QUAG	1	16.9		16.9	15	15	1	2	stream adjacent	yes
164	QUAG	1	11.4		11.4	20	20	2	3	Trunk decay; stream adjacent	yes
165	QUAG	3	10.4	10.2	20.7	30	40	5	5	stream adjacent	yes
166	QUAG	3	14.6	18.1	32.7	30	30	5	5	stream adjacent	yes
167	PLARAC	1	4.3		4.3	15	15	5	5	stream adjacent	yes
168	PLARAC	1	3.0		3.0	10	15	5	5	stream adjacent	yes
169	PLARAC	4	14.6	7.1	21.7	30	40	5	5	stream adjacent	yes
170	PLARAC	1	12.0		12.0	35	30	5	5	stream adjacent	yes
171	PLARAC	3	6.9	5.7	12.6	25	20	5	5	stream adjacent	yes
172	QUAG	1	19.5		19.5	40	40	5	5	stream adjacent	yes
173	PLARAC	2	11.2	14.4	25.6	50	30	5	5	stream adjacent	yes
174	PLARAC	2	3.7	3.0	6.7	10	20	4	4	Being shaded out by adjacent trees; stream adjacent	yes
175	QUBE	2	6.1	7.5	13.6	10	25	2	3	Big crack in trunk; stream adjacent	yes
176	QUBE	1	6.3		6.3	20	20	2	3	Trunk decay; stream adjacent	yes
177	QUAG	2	5.3	4.3	9.6	30	20	5	5		yes
178	QUBE	7	4.3	3.5	7.9	20	15	5	5	stream adjacent	yes
179	QUAG	1	19.5		19.5	30	30	5	5	stream adjacent	yes
180	QUAG	3	11.6	9.4	21.1	25	30	5	5	stream adjacent	yes
181	QUBE	3	6.9	5.5	12.4	15	30	5	5	stream adjacent	yes
182	QUAG	2	13.2	9.6	22.8	25	30	5	5	stream adjacent	yes
183	PLARAC	1	6.9		6.9	15	20	5	4	stream adjacent	yes
184	PLARAC	2	8.5	4.5	13.0	25	20	5	4	stream adjacent	yes
185	QUAG	2	15.9	21.1	37.0	30	40	5	5	stream adjacent	yes
186	PLARAC	1	3.7		3.7	15	15	5	4	stream adjacent	yes
187	QUBE	3	4.7	3.7	8.5	15	20	4	4	Minor trunk decay; stream adjacent	yes
188	QUBE	6	4.5	5.3	9.8	15	20	5	5	stream adjacent	yes
189	QUBE	4	3.5	5.3	8.9	15	20	4	5	stream adjacent	yes
190	QUAG	1	16.1		16.1	30	30	5	5	stream adjacent	yes

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
191	QUAG	1	17.7		17.7	40	30	5	5	stream adjacent	yes
192	QUAG	2	12.6	9.3	21.9	25	30	5	5	stream adjacent	yes
193	QUAG	2	8.7	7.7	16.3	25	30	5	5	stream adjacent	yes
194	QUAG	1	14.6		14.6	40	25	5	5	stream adjacent	yes
195	QUAG	2	7.7	6.3	14.0	30	20	5	5	stream adjacent	yes
196	QUAG	1	3.9		3.9	15	10	4	5	Woodpecker holes; stream adjacent	yes
197	PLARAC	1	15.0		15.0	60	30	5	5	stream adjacent	yes
198	QUAG	1	27.6		27.6	50	50	5	5	stream adjacent	yes
199	QUBE	15	3.5	2.8	6.3	15	30	5	4		yes
200	QUBE	5	3.7	3.3	7.1	15	20	5	5		yes
201	QUAG	3	9.4	7.7	17.1	25	30	1	1	Possibly dead	yes
202	QUAG	1	22.6		22.6	30	40	5	5	stream adjacent	yes
203	PLARAC	1	8.9		8.9	40	20	5	5	stream adjacent	yes
204	PLARAC	2	12.4	8.9	21.3	40	30	5	5	stream adjacent	yes
205	PLARAC	3	6.9	13.9	20.7	30	20	5	5	stream adjacent	yes
206	QUAG	2	24.0	16.0	40.0	40	40	5	5	Visually estimated DBH (bees)	yes
207	QUAG	3	13.9	15.0	28.8	25	30	4	5	Exposed roots; stream adjacent	no
208	QUAG	6	13.8	9.1	22.8	25	25	5	5	stream adjacent	no
209	QUAG	1	6.1		6.1	20	15	5	5	stream adjacent	yes
210	PLARAC	3	14.8	12.7	27.4	40	40	2	5	Rot in the trunk; stream adjacent	yes
211	QUAG	3	20.5	25.6	46.1	40	50	5	5	stream adjacent	no
212	QUAG	1	13.9		13.9	30	30	5	5		yes
213	QUAG	3	13.4	2.0	15.4	25	25	5	5		yes
214	QUAG	2	15.6	10.6	26.2	25	40	4	5	Some exposed roots on the side of the hill	yes
215	QUAG	2	18.3	18.5	36.8	60	60	5	5		yes
216	QUAG	2	6.1	7.0	13.1	25	25	5	2		yes
217	QUAG	1	5.3		5.3	10	10	5	5	stream adjacent	no
218	QUAG	4	13.4	15.0	28.3	25	30	2	5	stream adjacent	no
219	QUAG	3	11.0	3.6	14.6	25	15	5	4	stream adjacent	no
220	QUAG	1	2.7		2.7	10	15	5	4	stream adjacent	no
221	QUAG	3	11.5	2.6	14.1	40	25	5	5	stream adjacent	no

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
222	QUAG	1	13.9		13.9	40	40	5	5	stream adjacent	no
223	QUAG	3	15.2	12.8	28.0	40	30	5	5	stream adjacent	no
224	QUAG	1	18.8		18.8	25	35	2	3	Fungus; stream adjacent	no
225	QUAG	4	12.4	11.9	24.3	20	30	1	2	Damaged branches, some basal rot; stream adjacent	no
226	QUAG	5	17.8	15.5	33.3	30	40	5	5	stream adjacent	no
227	QUAG	1	28.7		28.7	50	60	3	5	Some basal rot; stream adjacent	no
228	QUAG	2	20.6	10.6	31.2	50	40	5	5	stream adjacent	no
229	QUAG	1	18.9		18.9	40	30	1	3	Hardly any green leaves; stream adjacent	no
230	QUAG	3	12.7	11.7	24.3	25	40	4	4	stream adjacent	no
231	QUAG	2	16.1	15.7	31.9	25	40	4	4	stream adjacent	no
232	QUAG	1	13.4		13.4	25	25	3	2	stream adjacent	yes
233	PLARAC	2	8.9	7.5	16.3	40	30	2	3	Some trunk decay; stream adjacent	yes
234	QUAG	1	14.8		14.8	25	25	5	4	stream adjacent	yes
235	PLARAC	1	3.1		3.1	20	5	5	4	stream adjacent	yes
236	PLARAC	1	3.3		3.3	20	5	5	4	stream adjacent	yes
237	PLARAC	4	6.9	7.5	14.4	35	25	5	5	stream adjacent	yes
238	QUAG	3	17.9	13.2	31.1	25	45	3	4	3rd trunk rotted off/dead; stream adjacent	yes
239	QUAG	2	10.8	3.5	14.4	25	15	2	4	Some trunk decay	yes
240	QUAG	3	6.9	6.7	13.6	30	15	5	4		yes
241	PLARAC	1	8.7		8.7	35	15	5	4	stream adjacent	yes
242	PLARAC	2	5.5	3.1	8.7	35	10	5	4	stream adjacent	yes
243	QUAG	1	14.0		14.0	30	30	5	5	stream adjacent	yes
244	PLARAC	2	8.5	4.5	13.0	15	25	3	3	stream adjacent	yes
245	PLARAC	5	5.5	6.1	11.6	25	20	5	5	stream adjacent	yes
246	QUAG	3	5.3	3.5	8.9	15	25	5	4		yes
247	PLARAC	2	7.9	5.5	13.4	30	15	5	5	stream adjacent	yes
248	PLARAC	2	7.1	2.4	9.4	25	20	5	5	stream adjacent	yes
249	PLARAC	3	8.3	6.7	15.0	30	20	5	5	stream adjacent	yes
250	QUAG	1	17.3		17.3	35	30	2	4	Woodrat nest	yes
251	PLARAC	1	7.7		7.7	30	15	5	5	Woodrat nest; stream adjacent	yes

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
252	PLARAC	1	7.7		7.7	30	15	4	4	Woodrat nest; stream adjacent	yes
253	QUAG	3	20.7	19.3	40.0	35	45	4	5	3rd trunk dead	yes
254	QUAG	5	7.3	3.3	10.6	20	30	5	4		yes
255	QUAG	1	16.9		16.9	25	35	4	4	stream adjacent	yes
256	PLARAC	4	9.6	6.7	16.3	30	25	5	5	stream adjacent	yes
257	QUAG	4	56.5	13.8	70.3	45	60	4	5	stream adjacent	yes
258	PLARAC	7	8.3	7.9	16.1	30	30	5	5	stream adjacent	yes
259	QUAG	2	5.7	4.1	9.8	20	20	3	2	stream adjacent	yes
260	QUAG	1	14.6		14.6	25	35	4	4	Inaccessible; dbh estimated	no
261	QUAG	1	22.8		22.8	40	50	5	5	stream adjacent	no
262	QUAG	2	15.7	20.3	36.0	35	60	4	5	stream adjacent	no
263	QUAG	2	19.3	17.9	37.2	50	50	5	5	stream adjacent	no
264	QUAG	2	15.6	11.4	27.0	30	40	5	5	stream adjacent	no
265	PLARAC	5	18.1	5.5	23.6	30	30	4	4	stream adjacent	no
266	PLARAC	1	6.9		6.9	20	15	5	4	stream adjacent	no
267	QUAG	1	2.8		2.8	10	10	5	3	stream adjacent	no
268	PLARAC	1	11.4		11.4	45	20	4	5	stream adjacent	yes
269	QUAG	3	6.9	3.9	10.8	20	20	2	2	Trunk base rot	yes
270	QUBE	4	3.5	3.5	7.1	15	20	5	4		yes
271	QUAG	4	9.4	7.9	17.3	25	30	5	5		yes
272	QUAG	1	15.7		15.7	30	30	4	4	Woodrat nest; roots exposed	yes
273	QUAG	1	15.0		15.0	30	30	3	5	DBH estimated; poison oak	yes
274	QUAG	3	15.4	4.7	20.1	25	20	4	3	stream adjacent	yes
275	PLARAC	1	6.7		6.7	25	15	5	3	stream adjacent	yes
276	QUAG	4	11.8	7.9	19.7	30	20	3	3	DBH estimated; poison oak	yes
277	QUAG	2	13.0	8.5	21.5	35	25	4	4		yes
278	QUAG	2	16.1	8.7	24.8	40	30	2	3	Trunk rot; some fungi; stream adjacent	yes
279	QUAG	1	13.6		13.6	25	15	4	4	stream adjacent	yes
280	QUAG	1	15.0		15.0	20	20	3	3	stream adjacent	yes
281	QUAG	1	25.4		25.4	40	40	5	5	stream adjacent	yes

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
282	QUAG	3	12.0	8.5	20.5	20	30	3	3	stream adjacent	yes
283	QUAG	1	21.5		21.5	40	30	3	3	stream adjacent	yes
284	QUAG	2	12.2	12.8	25.0	20	20	2	3		yes
285	QUAG	3	23.6	19.7	43.3	50	60	5	5	Bees	yes
286	QUAG	2	16.7	3.1	19.9	40	50	5	5		yes
287	QUAG	1	7.7		7.7	25	20	3	3		yes
288	QUAG	1	17.7		17.7	25	25	5	5		yes
289	QUAG	2	18.9	14.0	32.9	40	40	5	5		yes
290	QUAG	1	14.2		14.2	30	25	4	4		yes
291	QUAG	1	10.0		10.0	25	10	2	2	Lost major branch	yes
292	QUAG	1	15.0		15.0	25	30	5	4		yes
293	QUAG	4	15.9	13.2	29.1	35	40	2	5		yes
294	QUAG	4	17.1	16.9	34.1	50	50	3	5	One dead branch	yes
295	QUAG	4	2.6	3.0	5.5	10	15	5	5	stream adjacent	yes
296	PLARAC	4	8.9	6.3	15.2	25	25	5	5	stream adjacent	yes
297	QUAG	3	15.7	11.2	27.0	40	30	3	4	stream adjacent	yes
298	QUAG	1	14.2		14.2	30	40	4	4		yes
299	QUAG	2	27.0	13.8	40.7	50	60	5	5		yes
300	QUAG	5	15.4	2.2	17.5	25	40	5	4		yes
301	QUAG	4	18.9	2.0	20.9	30	25	2	3	Broken trunk	yes
302	QUAG	1	21.3		21.3	40	40	4	5		yes
303	PLARAC	2	9.3	7.3	16.5	25	25	4	4	Surrounded by mulefat; stream adjacent	yes
304	PLARAC	2	11.2	11.8	23.0	40	35	5	5	stream adjacent	yes
305	PLARAC	3	8.1	6.7	14.8	25	30	5	5	stream adjacent	yes
306	PLARAC	2	6.5	3.9	10.4	25	20	5	5	stream adjacent	yes
307	PLARAC	1	6.1		6.1	30	15	5	5	stream adjacent	yes
308	PLARAC	7	6.7	6.5	13.2	30	30	5	5	stream adjacent	yes
309	PLARAC	2	9.4	4.7	14.2	30	20	5	5	stream adjacent	yes
310	PLARAC	2	5.3	4.1	9.4	25	15	5	5	stream adjacent	yes
311	QUAG	4	16.9	8.5	25.4	20	40	3	3		yes

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
312	QUAG	1	13.6		13.6	15	35	2	2	Short and twisted; stream adjacent	yes
313	QUAG	1	7.5		7.5	20	15	4	4		yes
314	QUAG	1	21.9		21.9	15	35	1	2	stream adjacent	yes
315	PLARAC	1	7.1		7.1	25	15	3	3	stream adjacent	yes
316	QUAG	2	15.4	34.1	49.5	45	40	3	5	stream adjacent	yes
317	PLARAC	3	8.1	6.8	14.9	25	20	5	4	Trunk 3: 4.9"; stream adjacent	no
318	PLARAC	4	5.7	7.5	13.2	40	25	4	5	Trunk 3: 6.7", Trunk 4: 3.3"; stream adjacent	yes
319	PLARAC	1	7.6		7.6	30	10	5	4	stream adjacent	no
320	PLARAC	1	6.4		6.4	30	10	5	4	stream adjacent	no
321	PLARAC	1	3.9		3.9	25	10	5	3	stream adjacent	no
322	PLARAC	2	6.9	4.1	11.0	25	20	5	3	stream adjacent	no
323	PLARAC	4	7.8	5.6	13.4	30	40	4	3	Trunk 3: 7.2", Trunk 4: 5.6"; stream adjacent	no
324	QUAG	6	19.3	9.4	28.7	25	40	4	4	Trunk 3: 4.8", 4: 9.2", 5: 6.2", 6: 1.9"	yes
325	QUAG	3	27.2	15.9	43.1	40	60	2	4	Trunk 3: 15.4"; stream adjacent	yes
326	QUBE	6	3.1	2.8	5.9	20	30	4	3	Trunk 3: 3.0", 4: 1.1", 5: 1.6", 6: 2.4"; stream adjacent	yes
327	QUBE	1	2.6		2.6	15	10	4	3	stream adjacent	yes
328	QUBE	16	2.0	1.6	3.6	15	20	4	3	Trunk 3: 1.6", 4: 1.6", 5: 2", remainder: 1.2"; stream adjacent	yes
329	QUBE	10	3.1	3.0	6.1	15	10	4	3	Trunk 3: 2.0", 4: 1.2", 5: 1.2", remainder: 0.8"; stream adjacent	yes
330	QUBE	3	3.1	2.8	5.9	10	10	4	3	Trunk 3: 1.8"; stream adjacent	yes
331	QUAG	1	5.3		5.3	20	10	3	3	stream adjacent	yes
332	QUAG	2	17.7	8.7	26.4	35	20	2	4	stream adjacent	no
333	QUAG	1	9.6		9.6	20	10	5	4	stream adjacent	no
334	QUAG	2	5.7	5.2	10.9	20	10	4	3	stream adjacent	no
335	QUAG	2	11.1	10.6	21.7	25	20	4	4	stream adjacent	no
336	QUAG	1	28.1		28.1	60	30	4	5	stream adjacent	no
337	QUAG	1	5.3		5.3	25	15	3	4	stream adjacent	no
338	QUAG	2	22.0	17.5	39.5	80	60	3	4	stream adjacent	no
339	QUAG	2	8.3	6.7	15.0	25	25	4	3		no

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
340	QUAG	1	21.9		21.9	50	50	4	5	stream adjacent	yes
341	QUAG	8	2.8	2.4	5.2	20	20	5	3	Trunks: 2.4", 2.4", 2.6", 2.8", 2.4", 2.2"	no
342	QUAG	2	12.1	8.3	20.4	25	15	2	2		yes
343	QUAG	6	5.5	4.1	9.6	20	15	4	4	Trunks: 3.1", 2.6", 4.3", 5.1"	yes
344	QUAG	2	4.0	4.0	8.0	20	10	4	3	inaccessible; dbh estimated	yes
345	QUAG	3	3.2	2.8	6.0	15	10	4	3	Trunk 3: 2.6"; stream adjacent	yes
346	QUAG	5	2.0	3.7	5.7	15	10	4	2	other 3 trunks: 1.2"; stream adjacent	yes
347	QUAG	2	11.7	12.2	23.9	30	30	3	3		yes
348	QUAG	2	12.1	5.3	17.4	20	20	3	3		yes
349	QUAG	1	29.3		29.3	50	50	2	4	stream adjacent	no
350	QUAG	2	20.0	8.0	28.0	30	20	4	4	Inaccessible; dbh estimated; not tagged	no
351	QUAG	1	12.0		12.0	20	15	4	4	Inaccessible; dbh estimated; not tagged	no
352	QUAG	3	12.0	8.0	20.0	20	15	3	3	Inaccessible; dbh estimated; not tagged; Trunk 3 = 6"; squirrel nest	no
353	QUAG	2	48.0	36.0	84.0	50	30	2	3	Inaccessible; dbh estimated; not tagged	no
354	QUAG	1	12.0		12.0	30	20	3	3	Inaccessible; dbh estimated; not tagged	no
355	QUAG	1	25.0		25.0	30	20	4	4	Inaccessible; not tagged; dbh estimated; behind private fence	yes
356	QUAG	1	25.0		25.0	20	30	4	4	Inaccessible; not tagged; dbh estimated; behind private fence	no
357	QUAG	1	25.0		25.0	30	30	4	4	Inaccessible; not tagged; dbh estimated; behind private fence	no
358	QUAG	2	25.0	10.2	35.2	40	25	3	4	Trunk bark looks burned; stream adjacent	yes
359	QUAG	3	8.5	8.3	16.8	20	15	2	3	Trunk 3: 8.1"; trunk burned and many woodpecker holes; stream adjacent	yes
360	QUAG	4	13.8	29.5	43.3	50	35	3	3	Inaccessible; not tagged; dbh estimated; bark burned, woodpecker holes; Trunk 3: 35"; Trunk 4: 7.9"; stream adjacent	no
361	QUAG	11	3.5	3.5	7.0	30	25	2	2	Many smaller trunks from same dead tree; Trunks measured: 3.3", 2.4", 2.2"; 3.1", 2.8", 3.1", 3.1", 2.4", 4.3"; stream adjacent	no

SUMMARY OF NATIVE TREE DATA
(Continued)

Tree Tag #	Tree Species	# Main Trunks	DBH1 (in)	DBH2 (in)	Sum of Two Trunks (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	Notes	Within Impact Boundary?
362	QUAG	6	11.8	11.0	22.8	35	30	3	3	Trunks: 10.6", 10.3", 3.1", 1.6"; New growth healthy, old growth burned/dead; stream adjacent	no
363	QUAG	1	4.0		4.0	20	10	3	3		yes
364	QUAG	1	4.0		4.0	20	15	3	3		yes
365	QUBE	1	3.0		3.0	15	15	3	3		yes
366	SALGOO	1	25.1		25.1	50	50	5	5	stream adjacent	yes
367	SALGOO	1	20.0		20.0	50	50	5	5	stream adjacent	yes
368	SALGOO	1	18.0		18.0	45	45	5	4	stream adjacent	yes
369	POPFRE	1	10.0		10.0	30	20	4	4	stream adjacent	yes
370	POPFRE	1	13.0		13.0	30	20	5	5	stream adjacent	yes
371	POPFRE	1	8.0		8.0	25	15	4	4	stream adjacent	no
372	POPFRE	1	15.0		15.0	35	25	5	4	stream adjacent	Yes

[1] Note:
PLARAC = California sycamore (*Platanus racemosa*)
POPFRE = Fremont cottonwood (*Populus fremontii*)
QUAG = coast live oak (*Quercus agrifolia*)
QUBE = scrub oak (*Quercus berberidifolia*)
SALGOO = black willow (*Salix gooddingii*)

APPENDIX G
JURISDICTIONAL DELINEATION

FOOTHILL PARKWAY WESTERLY EXTENSION PROJECT
CITY OF CORONA, CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

Prepared For:

City of Corona
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September 27, 2007
10-104629

FOOTHILL PARKWAY
WESTERLY EXTENSION PROJECT
CITY OF CORONA, CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional "waters of the U.S." (including wetlands) and "waters of the State" determination for the above-referenced project.

RBF CONSULTING

Lauren See
Regulatory Specialist
Planning and Environmental Services

Richard Beck, REA
Regulatory Manager
Planning and Environmental Services

September 27, 2007

Executive Summary

At the request of the City of Corona (City), RBF Consulting (RBF) has prepared this Delineation of Jurisdictional Waters for the Foothill Parkway Westerly Extension project, located in the City of Corona, County of Riverside, State of California. This delineation was conducted on September 19, 2007, to document the regulatory authority of the U.S. Army Corps of Engineers (USACE), Santa Ana Regional Water Quality Control Board (RWQCB), and California Department of Fish and Game (CDFG) pursuant to the Federal Clean Water Act (CWA), California Porter-Cologne Water Quality Control Act, and California Fish and Game Code. The project area was surveyed pursuant to the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2006), to identify evidence of hydrology, hydrophytic vegetation, and hydric soils; and the *Field Guide to Lake and Streambed Alteration Agreements Section 1600-1607* (CDFG, 1994) to identify evidence of streambed(s) and associated riparian vegetation.

Please note that based on a detailed review of current site conditions, our research has indicated that it will be necessary for the project applicant to successfully obtain the following permits prior to commencement of any construction activities within the delineated jurisdictional areas: USACE 404 Individual Permit (IP), RWQCB 401 Water Quality Certification and Report of Waste Discharge (ROWD), and CDFG 1602 Streambed Alteration Agreement (SAA). Table ES-1, Summary Table, indicates each regulatory agency and their corresponding jurisdiction.

TABLE ES-1. Summary Table

Agency	Permit Required?	Permit Type	Jurisdictional Impact Acreage	
			Temporary	Permanent
USACE	Yes	404 IP	3.01	1.62
RWQCB	Yes	401 Certification	3.01	1.62
		ROWD	0.00	0.03
CDFG	Yes	1602 SAA	3.01	6.76

This report presents RBF's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdiction. Generally, this would be a written concurrence in the form of a Jurisdictional Determination (JD) letter.

Table of Contents

1.0 INTRODUCTION AND PURPOSE 1
1.1 Project Site Background 1
1.2 Project Description 5

2.0 SUMMARY OF REGULATIONS 6
2.1 U.S. Army Corps of Engineers 6
2.2 Regional Water Quality Control Board 8
2.3 California Department of Fish and Game 9
2.4 Activities Requiring Permits 11

3.0 METHODOLOGY 12
3.1 Waters of the U.S. and State 12
3.2 Wetlands 12
3.3 SWANCC Waters 17
3.4 Rapanos Waters 17

4.0 LITERATURE REVIEW 19
4.1 USGS Topographic Quadrangle 18
4.2 Aerial Photograph 20
4.3 Soil Survey 21
4.4 Hydric Soils List of California 23
4.5 Local Climate 23
4.6 Flood Zone 23
4.7 General Plan 23
4.8 Additional Resources 23

5.0 SITE CONDITIONS 26
5.1 Drainages 26
5.2 Wetlands 28

6.0 FINDINGS 29
6.1 U.S. Army Corps of Engineers 29
6.2 Regional Water Quality Control Board 31
6.3 California Department of Fish and Game 31

7.0 REGULATORY APPROVAL PROCESS 32
7.1 U.S. Army Corps of Engineers 32
7.2 Regional Water Quality Control Board 33
7.3 California Department of Fish and Game 34
7.4 Global Recommendations 35

8.0 REFERENCES 36

LIST OF EXHIBITS

1. Regional Vicinity 2
2. Site Vicinity 3
3. Aerial Photograph 4
4. On-Site Photographs 27
5. Jurisdictional Map 30

TABLES

1. Topographic Summary 20
2. Project Site Summary 25
3. Drainage Summary 28

APPENDIX

Preliminary Jurisdictional Determination Forms

ACRONYMS

BGS	Below Ground Surface
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZMP	California Zone Management Plan
EPA	Environmental Protection Agency
FAC	Facultative Vegetation
FACU	Facultative Upland Vegetation
FACW	Facultative Wetland Vegetation
GPS	Global Positioning System
IP	Individual Permit
MSL	Mean Sea Level
NRCS	Natural Resources Conservation Service
NOD	Notice of Determination
NWP	Nationwide Permit
OBL	Obligate Wetland Vegetation
OHWM	Ordinary High Water Mark
OU	Operable Unit
RBF	RBF Consulting
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SBBM	San Bernardino Base and Meridian
SWANCC	Solid Water Agency of Northern Cook County
UPL	Obligate Upland Vegetation
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	Unites States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Section 1 Introduction and Purpose

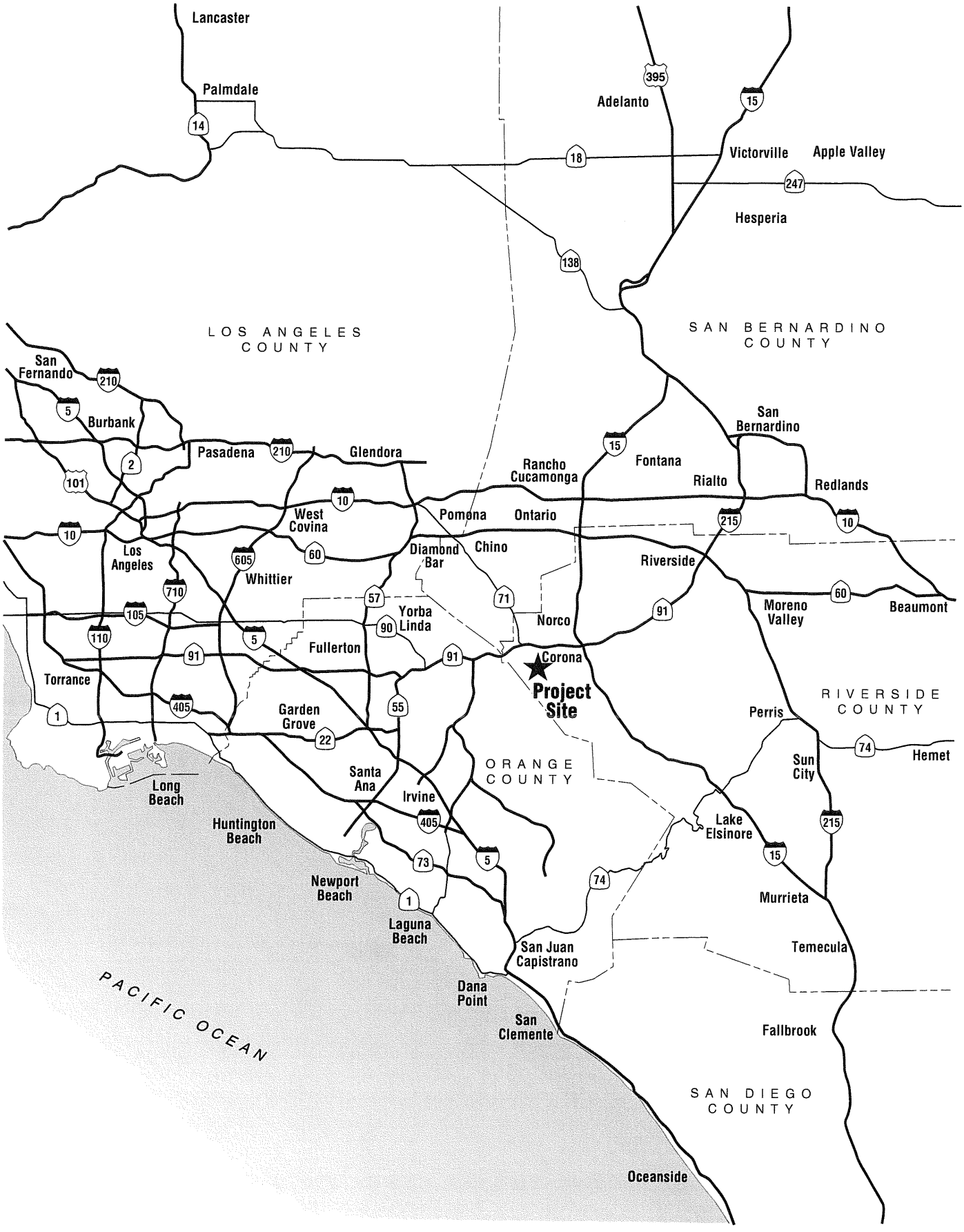
This delineation was prepared for the City of Corona (City), in order to delineate the U.S. Army Corps of Engineers' (USACE), Santa Ana Regional Water Quality Control Board's (RWQCB), and California Department of Fish and Game's (CDFG) jurisdictional authority for drainages located within the Foothill Parkway Westerly Extension project, herein referred to as the project site.

The project site is located immediately adjacent to the Cleveland National Forest, in the City of Corona and unincorporated County of Riverside, California (Section 3, 4, and 10, T.4S, R.7W, and Section 33, T.3S R.7W; San Bernardino Base and Meridian [SBBM]) (refer to Exhibits 1 and 2). The project site is generally located south of State Route 91 (SR-91) and west of Interstate 15 (I-15). Specifically, the project site extends westerly from the existing Foothill Parkway terminus approximately 600 feet west of Skyline Drive to Green River Road, for a distance of approximately two miles (refer to Exhibit 3, *Project Site*). On-site access is provided via Skyline Drive and Green River Road.

This delineation has been designed to document the authority of the regulatory agencies, the methodology undertaken by RBF Consulting (RBF) to document jurisdictional authority, and the findings made by RBF within the boundaries of the project site. This report presents our best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional boundaries.

1.1 PROJECT SITE BACKGROUND

The roadway extension is situated along the northeastern base of the Santa Ana Mountains and transects both private and public properties within the City of Corona and unincorporated County of Riverside. The proposed alignment is located adjacent to the Cleveland National Forest under jurisdiction of the United States Forest Service (USFS). The proposed alignment traverses undeveloped terrain generally in an east/west direction. Topography on-site generally ranges from gently sloping terraces transected by ravines in the eastern and western portions of the alignment, to steep mountainous terrain in the central portion of the alignment. Elevations range from approximately 800 to 1,300 feet above mean sea level (msl). Land uses surrounding and adjacent to the Project alignment include residential uses, vacant properties, limited agricultural uses, and USFS property.



RBF CONSULTING

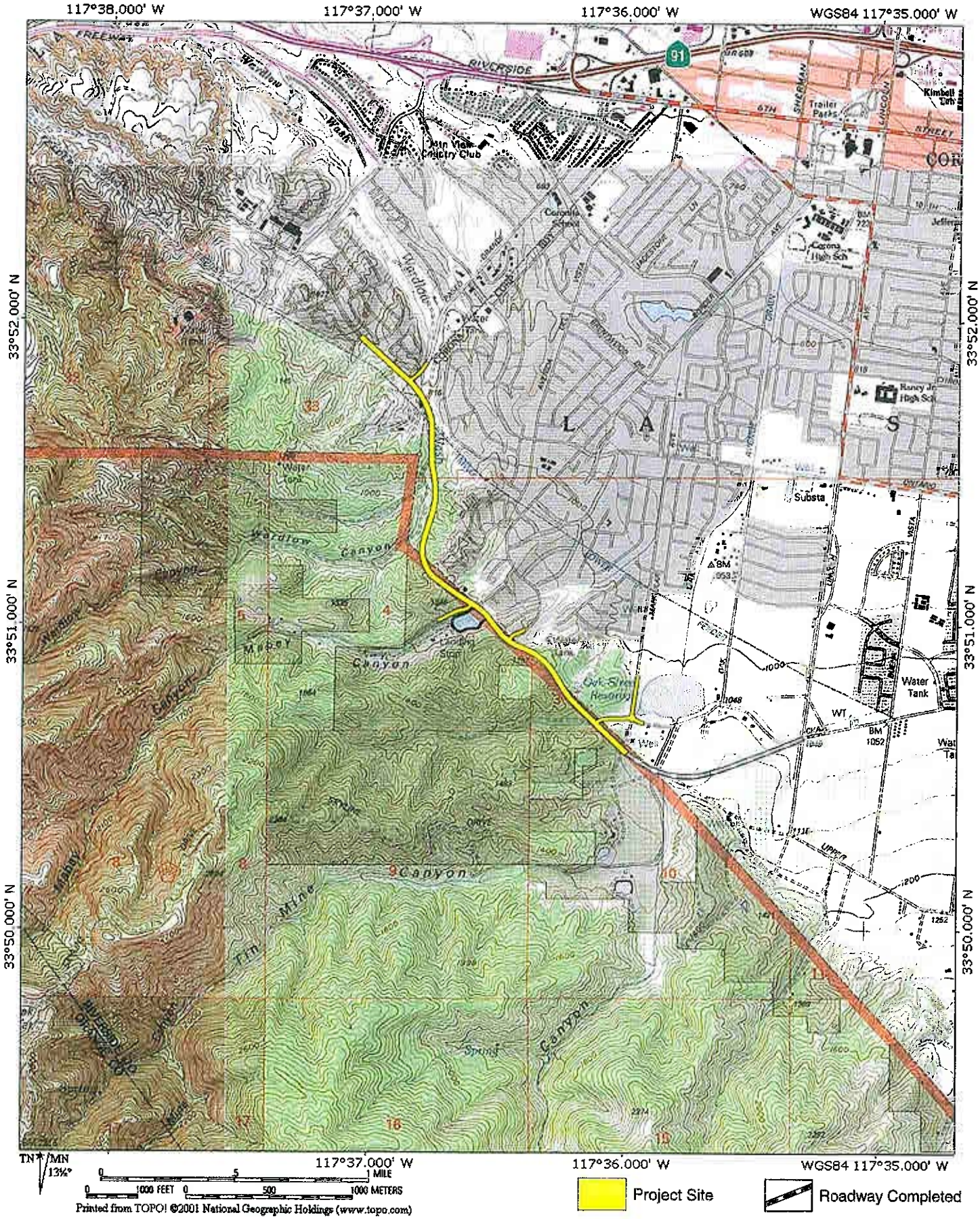
not to scale

9/25/07 JN 10-104629-13012

FOOTHILL PARKWAY WESTERLY EXTENSION
• JURISDICTIONAL DELINEATION

Regional Vicinity

Exhibit 1



RBF CONSULTING

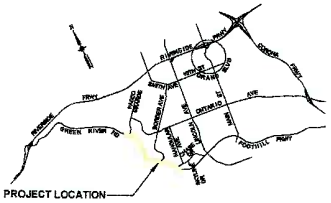
0 2500' APPROXIMATE

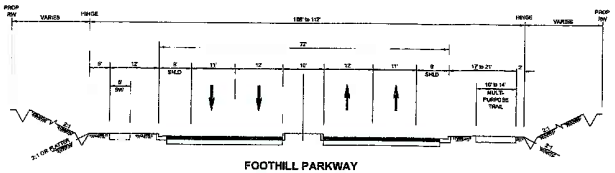
9/27/07 JN 10-104629-13012

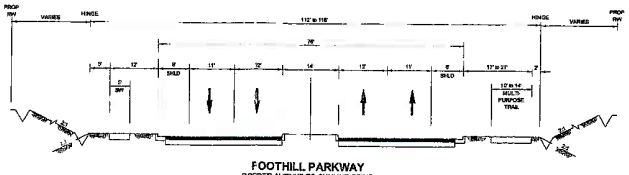
FOOTHILL PARKWAY WESTERLY EXTENSION
• JURISDICTIONAL DELINEATION

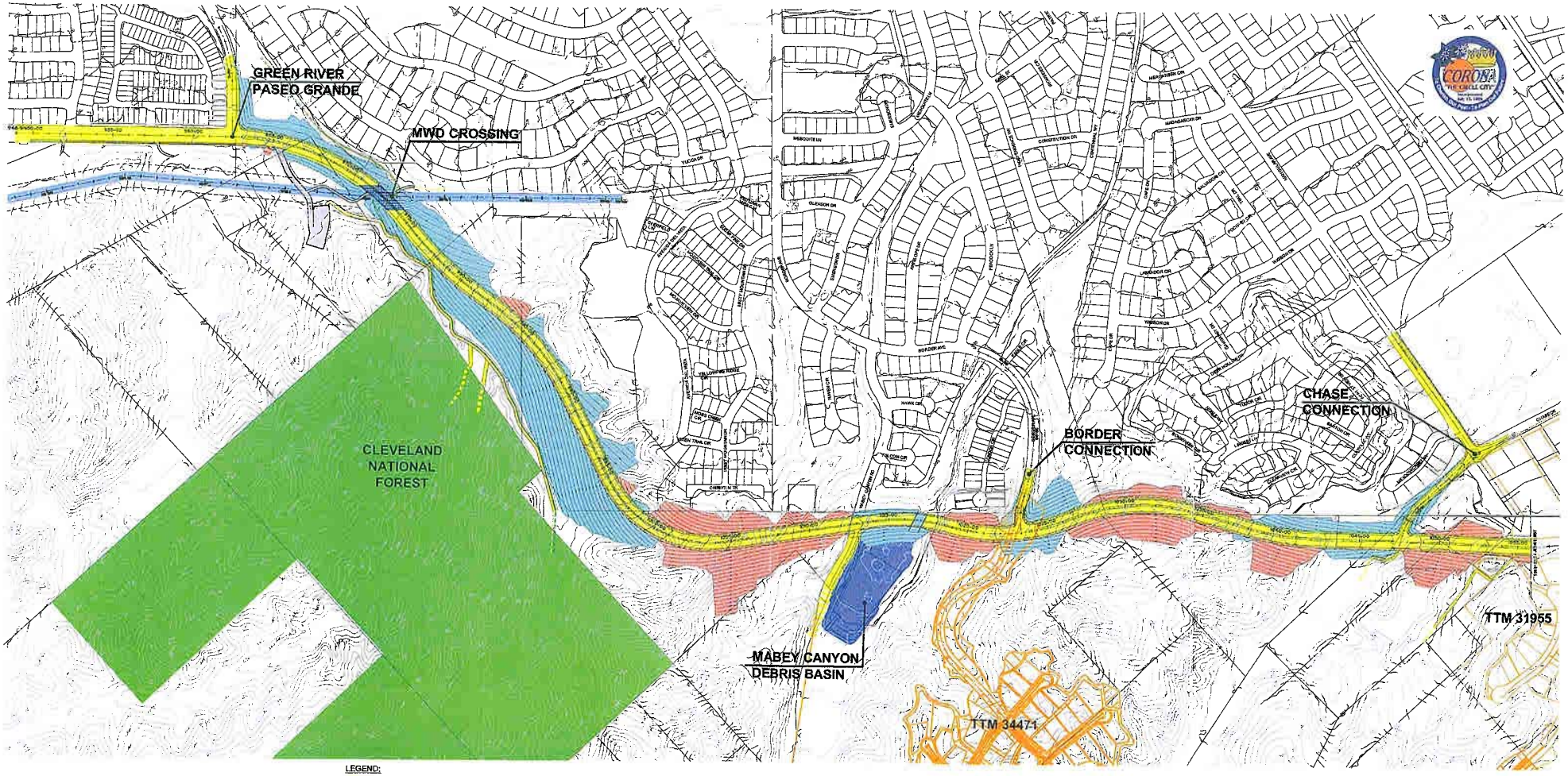
Site Vicinity

Exhibit 2









LEGEND:

- ROADWAY IMPROVEMENTS
- CUT AREA
- FILL AREA
- MWD LINE
- BASIN IMPROVEMENTS
- PROPOSED DEVELOPMENTS

RBF CONSULTING

0 600' APPROXIMATE

9/25/07 JN 10-104629-13012

FOOTHILL PARKWAY WESTERLY EXTENSION • JURISDICTIONAL DELINEATION

Project Site

Exhibit 3

1.2 PROJECT DESCRIPTION

The proposed project would involve the westerly extension of Foothill Parkway as a four-lane roadway from approximately 600 feet west of skyline Drive to Green River Road. At skyline Drive, the roadway would veer to the west into unincorporated Riverside County and continue in an east/west direction along the City/County boundary. The alignment would then curve to the north and connect to Green River Road in the vicinity of Paseo Grande. The Project will be designed to protect the existing 108-inch MWD feeder line located approximately 1,000 feet southeast of Paseo Grande. Roadway improvements would require right-of-way acquisition for new landscaping, roadway improvements (curb, shoulders, travel lanes, and landscaped medians), slopes, and drainage facilities. The Project also includes a new signalized intersection at Paseo Grande, and two possible additional signalized intersections at the proposed Border Avenue and Chase Drive. The City proposes to extend and connect two existing local collector streets, Border Avenue and Mangular Avenue/Chase Drive, to facilitate north/south local access to Foothill Parkway.

Section 2 Summary of Regulations

There are three (3) key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The USACE Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA), and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFG regulates activities under the Fish and Game Code Section 1600-1616, and the RWQCB pursuant to Section 401 of the CWA and the California Porter-Cologne Act.

2.1 UNITED STATES ARMY CORPS OF ENGINEERS

The USACE has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. The USACE and Environmental Protection Agency (EPA) define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) Replacing any portion of a water of the United States with dry land; or (ii) Changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." The term "waters of the United States" includes the following:

(1) all waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide;

(2) wetlands;

(3) all waters such as interstate 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 interstate or foreign commerce;

(4) all impoundments of water mentioned above;

(5) all tributaries of waters mentioned above;

(6) the territorial seas; and,

(7) all wetlands adjacent to the waters mentioned above.

Wetlands, a subset of jurisdictional waters, are jointly defined by the USACE and EPA as *"those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions* (33 CFR §328.3(b))*"*. Wetlands generally include swamps, marshes, bogs, and similar areas. The process in which jurisdictional areas (if any) are identified is further discussed in Section 3.0, *Methodology*.

The USACE's regulatory program continues to evolve due to court rulings associated with litigation. The following court cases have further defined the USACE's jurisdiction:

2.1.1 SWANCC

A significant change in wetland regulation occurred on January 9, 2001, when the U.S. Supreme Court issued the decision on *Solid Water Agency of Northern Cook County v. USACE* (SWANCC). The SWANCC decision limited the scope of the USACE's Section 404 CWA regulatory permitting program as applied to isolated waters. The U.S. Supreme Court struck down the USACE's jurisdictional authority over isolated, non-navigable, intrastate waters that are not tributary or adjacent to navigable waters or tributaries (i.e., wetland conditions). Overall, the Court held that Congress did not intend for isolated, non-navigable water conditions to be covered within Section 404 of the CWA, since they are not considered to be true "waters of the U.S." All isolated conditions should be approved by the USACE prior to the application process.

2.1.2 Rapanos

The June 19, 2006, U.S. Supreme Court decision on the *Rapanos v. United States* case has further limited the definition of "wetlands" and "waters of the United States" under the CWA. The Rapanos decision was a 4-1-4 decision in which four justices advocated a narrower interpretation of the Clean Water Act to hold that "waters of the United States" excludes intermittent or ephemeral streams and wetlands without a continuous surface connection to navigable waters.

The USACE and EPA came out with a memorandum on June 5, 2007, in order to provide guidance in implementing the U.S. Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (jointly hereafter Rapanos), which addresses the jurisdiction over waters of the United States under the CWA. In accordance with the Rapanos Decision, the agencies will continue to assert jurisdiction over traditional navigable water (TNW) and all wetlands adjacent to TNWs; however, jurisdiction can be

asserted over a waters, including wetlands, that is not a TNW by meeting either of the following standards:

(1) Relatively permanent (i.e., flows year-round, or at least seasonally) non-navigable tributaries of TNW and wetlands with a continuous surface connection with such tributaries.

(2) Certain adjacent and non-navigable tributaries that are not relatively permanent. This requires a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional. A "significant nexus" may be found where waters, including adjacent wetlands, affect chemical, physical or biological integrity of TNWs.

2.2 REGIONAL WATER QUALITY CONTROL BOARD

The nine (9) Regional Boards have the responsibility for protecting water quality in California. The RWQCB regulates discharges to surface waters under the Federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB's jurisdiction extends to all waters of the State (includes SWANCC and Rapano conditions) and to all waters of the United States, including wetlands.

Section 401 of the CWA gives the RWQCB the authority to regulate through 401 Certification any proposed federally permitted activity, which may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide "certification that there is reasonable assurance that an activity which may result in the discharge to waters of the United States will not violate water quality standards." Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, of which are found as numeric and narrative objectives in each of the nine (9) Regional Board's Basin Plan.

The Porter-Cologne Water Quality Control Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne has become an important tool in the post SWANCC era, with respect to the State's authority over isolated waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge (should there be no Section 404 nexus). Although "waste" is partially defined as any waste substance associated with human habitation, the RWQCB also interprets this to include fill discharged into water bodies.

2.3 CALIFORNIA DEPARTMENT OF FISH AND GAME

Historically, the State of California regulated activities in rivers, streams, and lakes pursuant to Sections 1600-1607 of the California Fish and Game Code. Legislation that took effect on January 1, 2004 repealed Fish and Game Code sections 1600-1607 and added Fish and Game Code sections 1600-1616. There is no longer separation between private/public notifications (previously 1601/1603). Fish and Game Code Sections 1600-1616 establish a fee based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify the CDFG before beginning any activity that will do one or more of the following:

(1) substantially obstruct or divert the natural flow of a river, stream, or lake;

(2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or

(3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

This notification process is referred to as a 1602 Streambed Alteration Agreement (SAA). Fish and Game Code section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state. Jurisdictional limits of the CDFG are not as clearly defined by regulation as those of the USACE. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFG takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

Any of the below criteria could be applicable in determining what constitutes a stream depending on the potential for the proposed activity to adversely affect fish and other stream-dependent wildlife resources.

(1) The term stream can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (United States Geological Survey maps, USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

(2) Biological components of a stream, may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system.

(3) As a physical system, a stream not only includes water (at least on an intermittent or ephemeral basis), but also a bed or channel, a bank and/or levee, instream features such as logs or snags, and various flood plains depending on the return frequency of the flood event being considered (i.e. 10, 50, or 100 years, ect.).

(4) The lateral extent of a stream can be measured in several ways depending on a particular situation and the type of fish or wildlife resource at risk. The following criteria are presented in order from the most inclusive to the least inclusive:

(a) The flood plain of a stream can be the broadest measurement of a stream's lateral extent depending on the return frequency of the flood event used. For most flood control purposed, the 100-year flood plain exists for many streams. *However, the 100-year flood plain may include significant amounts of upland or urban habitat and therefore may not be appropriate in many cases.*

(b) The outer edge of riparian vegetation is generally used as the ling of demarcation between riparian and upland habitats and is therefore a reasonable and identifiable boundary for the lateral extent of a stream. In most cases, the use of this criterion should result in protecting the fish and wildlife resources at risk.

(c) Most streams have a natural bank which confines flows to the bed or channel except during flooding. In some instances, particularly on smaller streams or dry washes with little or no riparian habitat, the bank should be used to mark lateral extent of a stream.

(d) A levee or other artificial stream bank would also be used to mark the lateral extent of a stream. However, in many instances, there can be extensive areas of valuable riparian habitat located behind a levee.

2.4 ACTIVITIES REQUIRING PERMITS

Any development proposal that involves impacting drainages, streams, or wetlands on the site through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, or any other modification would require permits from the USACE, the RWQCB, and the CDFG before any development could commence on the project site. Both permanent and temporary impacts are regulated and would therefore trigger the need for permits.

There are two (2) different permit categories utilized by the USACE, which include either a Nationwide Permit (NWP) or Individual Permit (IP). The specific permit required is primarily based on project description and jurisdictional impacts. The USACE will not issue its authorization until the RWQCB completes the Section 401 Water Quality Certification. Processing of the 401 Certification with the RWQCB and 1602 SAA with the CDFG can occur concurrently with the USACE permit process, since the agencies can utilize the same information and analysis. A ROWD is required by the RWQCB if SWANCC or Rapanos waters are present. Applications to both the RWQCB and the CDFG require submittal of a valid California Environmental Quality Act (CEQA) document along with the application.

Section 3 Methodology

Analysis presented in this document consists of field surveys and verification of current conditions conducted on September 19, 2007. While in the field, jurisdictional areas were recorded onto a base map at an approximate scale of 1"= 200' using the topographic contours and visible landmarks as guidelines. Data points were taken with a Trimble Geo XT Ground Positioning System (GPS) with ESRI Arc Pad 6.0/7.0 in order to record and identify specific jurisdictional OHWM areas, soil pits, picture locations, and drainage features. This data was then transferred via USB port as a .shp file and added to the project's jurisdictional map and included in the delineation report.

3.1 WATERS OF THE U.S. AND STATE WATERS

The limits of the USACE's jurisdiction in non-tidal waters extend to the ordinary high water mark (OHWM), which is defined as "*. . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas* (33 CFR §328.3(e))." An OHWM can be determined by the observation of a natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; presence of litter and debris; wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and/or change in plant community. The RWQCB shares USACE jurisdictional methodology, unless SWANCC or Rapanos conditions are present. In the latter case, the RWQCB considers such drainages to be jurisdictional. The CDFG's jurisdiction is defined to the top of bank of the stream/channel or to the limit (outer dripline) of the adjacent riparian vegetation.

3.2 WETLANDS

USACE jurisdictional wetlands are delineated using the methods outlined in the USACE *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2006). The methodology set forth in the Interim Regional Supplement is based on the following three (3) indicators that are normally present in wetlands: (1) hydrology providing permanent or periodic inundation by groundwater or surface water, (2) hydric soils, and (3) hydrophytic vegetation. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within these three parameters. Both RWQCB

and CDFG jurisdictional wetlands encompass that of the USACE. In the field, vegetation, soils, and evidence of hydrology were examined via the methodology listed below:

3.2.1 Vegetation

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

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

The following indicators are applied in the sequence presented. Hydrophytic vegetation is present if any of the indicators is satisfied.

<u>Indicator 1 – Dominance Test</u>

Cover of vegetation is estimated and is ranked according to their dominance. Species that contribute to a cumulative total of 50% of the total dominant coverage, plus any species that comprise at least 20% (also known as the "50/20 rule") of the total dominant coverage are recorded on a wetland data sheet. Wetland indicator status is assigned to each species using *The List of Plant Species that Occur in Wetlands* (USFWS, 1988). If greater than 50% of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation was considered to be met. Plant indicator status categories are described below:

- *Obligate Wetland (OBL):* Plants that occur almost always (estimated >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated <1 percent) in non-wetlands (i.e., cattail or pickleweed);

- *Facultative Wetland (FACW):* Plants that occur usually (estimated >67 to 99 percent) in wetlands, but also occur (estimated 1 to 33 percent) in non-wetlands (i.e., mulefat or willow);

- *Facultative (FAC):* Plants with similar likelihood (estimated 33 to 67 percent) of occurring in both wetlands and non-wetlands;

- *Facultative Upland (FACU):* Plants that occur sometimes (estimated 1 to <33 percent) in wetlands, but occur more often (estimated >67 to 99 percent) in non-wetlands; and,

- *Obligate Upland (UPL):* Plants that occur rarely (estimated 1 percent) in wetlands, but occur almost always (estimated >99 percent) in non-wetlands under natural conditions.

Indicator 2 – Prevalence Index

The prevalence index is used to determine whether hydrophytic vegetation is present on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test. The prevalence index takes in consideration all plant species in the community, not just a few dominants. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighing is abundance (percent cover). Hydrophytic vegetation is present if the prevalence index is 3.0 or less.

Indicator 3 – Plant Morphological Adaptations

Plant morphological adaptations can be used to distinguish certain wetland plant communities in the Arid West, when indicators of hydric soil and wetland hydrology are present. Some hydrophytes develop easily recognized physical characters, or morphological adaptations, when they occur in wetland areas. Common morphological adaptations include, but are not necessarily limited to, adventitious roots and shallow root systems developed on or near the soil surface. To apply this indicator, these 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.

3.2.2 Hydrology

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

Group A – Observation of Surface Water or Saturated Soils

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

Group B – Evidence of Recent Inundation

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

Group C – Evidence of Recent Soil Saturation

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

Group D – Evidence from Other Site Conditions or Data

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

If wetland vegetation criteria is met, the presence of wetland hydrology is evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil test pits. The lateral extent of the hydrology indicators are used as a guide for locating soil pits for evaluation of hydric soils and jurisdictional areas. In portions of the stream where the flow is divided by multiple channels with intermediate sand bars, the entire area between the channels is considered within the OHWM and the wetland hydrology indicator is considered met for the entire area.

3.2.3 Soils

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper 16 inches.

The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. It should also be noted that the limits of wetland hydrology indicators are used as a guide for locating soil pits. If any hydric soil features are located, progressive pits are dug moving laterally away from the active channel until hydric features are no longer present within the top 16 inches of the soil profile.

Once in the field, soil characteristics are verified by digging soil pits along each transect to a depth of at least 16 inches; in areas of high sediment deposition, soil pit depth may be increased. Soil pit locations are usually placed within the drainage invert or within adjoining vegetation. At each soil pit, the soil texture and color are recorded by comparison with standard plates within a *Munsell Soil Chart* (1994). Munsell Soil Charts aid in designating color labels to soils, based by degrees of three simple variables-hue, value, and chroma. Any indicators of hydric soils, such as organic accumulation; iron reduction, translocation, and accumulation; and sulfate reduction are also recorded.

Hydric soil indicators are present in three (3) groups, which include:

<u>All Soils</u>

All soils refers to soils with any USDA soil texture. Hydric soil indicators within this group include histosol, histic epipedon, black histic, hydrogen sulfide, stratified layers, 1 cm muck, depleted below dark surface, and thick dark surface.

<u>Sandy Soils</u>

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

<u>Loamy and Clayey Soils</u>

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

3.3 SWANCC WATERS

The term "isolated waters" is generally applied to waters/wetlands that are not connected by surface water to a river, lake, ocean, or other body of water. In the presence of isolated conditions, the RWQCB and CDFG take jurisdiction via the OHWM/streambed and/or the 3-parameter wetland methodology utilized by the USACE.

3.4 RAPANOS WATERS

The agencies will assert jurisdiction over non-navigable, not relatively permanent tributaries and their adjacent wetlands where such tributaries and wetlands that have a significant nexus to a TNW. The flow characteristics and functions of the tributary itself in combination with the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of the TNWs. Factors considered in the significant nexus evaluation include:

(1) The consideration of hydrologic factors including, but not limited to, the following:

- volume, duration, and frequency of flow, including consideration of certain physical characteristics of the tributary
- proximity to the TNW
- size of the watershed
- average annual rainfall
- average annual winter snow pack

(2) The consideration of ecologic factors including, but not limited to, the following:

- the ability for tributaries to carry pollutants and flood waters to TNWs
- the ability of a tributary to provide aquatic habitat that supports a TNW
- the ability of wetlands to trap and filter pollutants or store flood waters
- maintenance of water quality

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

In the presence of Rapanos drainage conditions, the RWQCB and CDFG take jurisdiction via the OHWM and/or the 3-parameter wetland methodology utilized by the USACE. RBF evaluates each drainage condition and records the data on a Preliminary Jurisdictional Determination Form (refer to the Appendix).

Section 4 Literature Review

Review of relevant literature and materials often aids in preliminarily identifying areas that may fall under an agency's jurisdiction. The following resources have been reviewed and utilized in the preparation of this delineation:

- California Regional Water Quality Control Board, Santa Ana River Basin, Water Quality Control Plan, 1995.
- City of Corona, General Plan, March 2004. http://www.ci.corona.ca.us/depts/planning/GPupdate/gp_list.cfm.
- Eagle Aerial, Aerial Photograph, 2006.
- Natural Resources Conservation Services, Hydric Soils List of California, 1995. http://soils.usda.gov/soil_use/hydric/main.htm.
- U.S. Department of Agriculture, Natural Resources Conservation Service, Western Riverside Area, California Soil Survey, 1971.
- U.S. Department of Homeland Security, Federal Emergency Management Agency, National Flood Insurance Program, Flood Insurance Rate Map No. 06002451355B, 0602500010D, and 0602500005F. http://msc.fema.gov.
- U.S. Fish and Wildlife Service, Department of Habitat and Resource Conservation, Wetland Geodatabase, http://wetlandsfws.er.usgs.gov/NWI/index.html.
- U.S. Geological Survey, 7.5 Minute Series Topographic Quadrangle, Corona South, CA, 1997.

A summary of RBF's literature review is provided below (refer to Section 8.0 for a complete list of references used during the course of this delineation):

4.1 USGS TOPOGRAPHIC QUADRANGLE

The USGS maps show geological formations and their characteristics, describing the physical setting of an area through contour lines and major surface features including lakes, rivers, streams, buildings, landmarks, and other factors that may fall under an agency's jurisdiction. Additionally, the maps depict topography through color and contour lines, which are helpful in determining elevations and latitude and longitude within a project site.

Most topographic maps are made from aerial photos and, due to errors in photo interpretation, some streams which should be shown as "blue-line" or "dashed blue-line" are

not shown. Even the most detailed topographic maps (7.5 minute) do not show all streams. Maps showing a larger area (15 minute) show fewer streams. If a stream has a substantial flow or will have substantial flow during the wet season, if the bed shows signs of scour, if it is large enough to provide fish spawning and/or nursery habitat during the winter and spring of the year, or possesses riparian and/or wetland habitat, it can come under jurisdictional areas whether or not the stream course is designated as a blue-line stream on a map.

Based on the USGS Corona South, California Quadrangle, the project site primarily consists of vacant land located within the City of Corona and unincorporated Riverside County, west of I-15. Oak Street Reservoir is located to the north of the project site. On-site topography ranges from approximately 800 to 1,320 feet above msl and gently slopes to the northeast. The surrounding uses consist of residential uses and open space. The Cleveland National Forest is noted south of the project site. One (1) debris basin is noted in the central portion of the project site. Four (4) blueline streams, including Wardlow Wash, traverse the project site in a north/south direction. The three (3) unnamed drainages flow to Temescal Creek, which is tributary to Prado Dam (TNW). Wardlow Wash flows to the Santa Ana River, just below Prado Dam, which is tributary to the Pacific Ocean (TNW). No on-site pits, ponds, or lagoons were noted during the review of the USGS topographic map.

TABLE 1. Topographic Summary

Map Name	Corona South, California
Map Year	1997
Map Provider	USGS
Property Elevation (feet)	800 to 1,320 feet above msl
Property Slope Type	Sloping
Property Slope Direction	North
Map Contour Interval (feet)	40

4.2 AERIAL PHOTOGRAPH

Prior to the September 19, 2007 site visit, RBF reviewed an existing aerial photograph, provided by Eagle Aerial (2006), for the project site. Aerial photographs can be useful during the delineation process, as the photographs often indicate drainages and vegetation (i.e. riparian vegetation) present within the boundaries of the project site (if any).

According to the aerial photograph, the project site consists primarily of the open space. Upland and riparian vegetation appear to be present on-site. Several drainages are noted traversing the project site. One (1) debris basin is noted in the central portion of the site.

Surrounding uses consist of open space and residential uses. No ponding was noted during the aerial photograph review.

4.3 SOIL SURVEY

On-site soils were researched prior to the September 19, 2007 field visit. The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in giving technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information within respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color).

According to the *Western Riverside Area, California Soil Survey*, dated 1971, the proposed project site is situated on the Monserate-Arlington-Exeter association. The Monserate-Arlington-Exeter association is well drained, nearly level to moderately steep soils that have a surface layer of sandy loam to loam and are shallow to deep to a hardpan. Five (5) soil series are reported within the boundaries of the project site, and consist of the following:

Cortina gravelly course sandy loam, 2 to 8 percent slopes (CnC): This gently sloping to moderately sloping soil on alluvial fans and valley fills. The profile is similar to the one described as typical of the series. The Cortina series are somewhat excessively drained and excessively drained soils formed in alluvium from metasedimentary rocks. In a typical profile, the surface layer is grayish-brown (10YR 5/2) course sandy loam, about 10 inches thick. Permeability is rapid in this soil. The available water holding capacity is 3.75 to 5.0 inches. Runoff is slow to medium, and the hazard of erosion is slight to moderate. This soil is used for dryland pasture, grain, range, irrigated citrus, and homesites. *Subgroup: Typic Xerofluvents.*

Garretson gravelly very fine sandy loam, 2 to 8 percent slopes (GdC): This gently to moderately sloping soil occurs on alluvial fans. The profile is similar to the one described as typical of the series. The Garretson series consists of well drained soils developed in alluvium made up chiefly of metasedimentary materials. In a typical profile, the surface layer is brown (10YR 5/3) and yellowish-brown (10YR 5/4) gravelly very fine sandy loam and gravelly loam, about 29 inches thick. Permeability is moderate. The available water holding capacity is 5.0 to 7.5 inches. Runoff is slow to medium, and the hazard of erosion is slight to moderate. This soil is used for

irrigated citrus, truck crops, alfalfa, pasture, grain, and homesites. *Subgroup: Typic Xerorthents.*

Perkins gravelly loam, 8 to 15 percent slopes, eroded (PgD2): Moderately deep and deep gullies have been formed in this soil. There are small areas of deposition. The profile is similar to the one described as typical of the series except for it is eroded. The Perkins series consists of well drained soils on alluvial fans and terraces. Typically, the surface layer is brown (7.5YR 5/4) gravelly loam about 12 inches thick. Permeability is slow. The available water holding capacity is 6.5 to 7.5 inches. Runoff is rapid, and the hazard of erosion is high. This soil is used for irrigated citrus, dryland grain and pasture, and nonfarm purposes. *Subgroup: Mollic Haploxeralfs.*

Rough broken land (RuF): This land type consists of alluvial materials that are remnants of old alluvial fans and terraces. These fans and terraces have been dissected by drainages to such an extent that areas of recognizable soils cannot be mapped. Slopes range form 30 to 50 percent. The materials in this land type are mainly form acid igneous tocks, such as granite, granodiorite, gneiss, and mica-schist. They are slightly acid to moderately alkaline, pale brown or grayish-brown to brown or dark grayish-brown; and intermittently effervescent. The main uses for this land are for wildlife habitat and watershed.

Terrace escarpments (TeG): This land type consists of variable alluvium on terraces or barrancas. Small areas of recently deposited alluvium may be nest the bottom of the escarpments. This land type may have exposed "rim pan," gravel, cobblestone, stones, or large boulders in variable quantities. Approximately one-fourth of the acreage is made up of eroded spots and active gullies that head toward the terrace top. This land is unaltered alluvial outwash derived from granite, gabbro, metamorphosed sandstone, sandstone, or mica-schist. It has various profiles that are commonly truncated. The material is light grayish-brown to brown in color and slightly acid to neutral in reaction.

Based on the Soil Survey, the soil series present on the project site may have the potential to have hydric soil characteristics (refer to Section 5.0, Site Conditions, for a discussion of on-site soils).

4.4 HYDRIC SOILS LIST OF CALIFORNIA

RBF reviewed the Hydric Soils List of California, provided by the NRCS, dated December 15, 1995, in an effort to verify whether or not on-site soils are considered to be hydric. Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but as expected, they are not a substitute for on-site investigations. According to the list, none of the above-mentioned soil series are listed as hydric.

4.5 LOCAL CLIMATE

The local climate consists of mild winters and hot summers. Most of the rainfall (as in all of Southern California) occurs during winter and early spring. The winter low temperatures can get cold enough for frost, with rare snowfall seen on the local foothills. Winter days are pleasant, with the mercury staying around 70 degrees Fahrenheit (occasionally warming into the 80s). Summertime is hot, with highs averaging in the low 90s. During the hottest months, daytime temperatures in Corona often exceed 100 degrees. For the purposes of this delineation, the growing season is considered to be 365 days a year. Table 2 identifies additional on-site physical setting characteristics.

4.6 FLOOD ZONE

According to the existing FEMA flood maps, portions of the project site are located within the 100-year flood zone. The proposed project site consists of several drainages, including Wardlow Wash, tributary to the Santa Ana River.

4.7 GENERAL PLAN

Some local agencies have ordinances with respect to wetlands and streams. No local ordinances (mandatory buffers or in-kind replacement) regarding wetlands and streams were noted within the City of Corona General Plan.

4.8 ADDITIONAL RESOURCES

According to the *Biological Technical Report* (BonTerra Consulting, August 2007), vegetation types and other areas occurring on the property include coastal sage scrub, alluvial, coastal sage scrub/chaparral, coastal sage scrub/ruderal, chaparral, non-native grassland, riparian forest, oak woodland, ruderal, ornamental, developed/ruderal, disturbed, and developed areas. Vegetation types located on-site within the drainage areas include:

Coastal Sage Scrub: This vegetation contains a mix of shrubs and herbaceous species. The dominant native perennial species on the project site include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), orange-bush monkey flower (*Mimulus aurantiacus*), giant wild rye (*Leymus condensatus*), and deerweed (*Lotus scoparius*).

Alluvial: This area is dominated by scale-broom (*Lepidospartum squamatum*) and California buckwheat.

Chaparral: This vegetation type is a mix of chaparral species including chamise, hoaryleaf ceanothus, laurel sumac, scrub oak, hairy lilac (*Ceanothus oliganthus*), toyon (*Heteromeles arbutifolia*), sugar bush (*Rhus ovata*), and Our Lord's candle (*Yucca whipplei*).

Non-native Grassland: These areas are dominated by black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), and red brome (*Bromus madritensis*).

Riparian Forest: These areas include southern cottonwood-willow riparian forest, mule fat scrub, southern coast live oak riparian forest, and California sycamore-coast live oak riparian forest. The southern cottonwood-willow riparian forest vegetation type is co-dominated by Fremont cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), narrow-leaved willow (*Salix exigua*), lance-leaved willow (*Salix lucida*), mule fat (*Baccharis salifolia*), and western false indigo (*Amorpha fruticosa*). The active stream channel in this vegetation type is rocky with little vegetation. Mule fat scrub vegetation type is dominated by mule fat with scattered upland species including scale-broom, California sagebrush, and California buckwheat. The southern coast live oak riparian forest is dominated by coast live oak trees (*Quercus agrifolia*). Other species present in this area include toyon, laurel sumac, and poison oak (*Toxicodendron diversilobium*). The California sycamore-coast live oak riparian forest is dominanted by coast live oak and western sycamore (*Platanus racemosa*). The understory is moderate in quality due to mountain bikes and horseback riding, and contains western false indigo, mule fat, California brickellbush *(Brickellia california*), thickleaf yerba santa (*Eriodictyon crassifolium*), scale-broom, and tarragon (*Artemisia dracunculus*).

Oak Woodland: These areas are dominated by coast live oak. The oaks in the oak woodland vegetation type occur in drier upland areas, such as adjacent to a riparian area, and are therefore not a component of the riparian forest described above.

Ruderal: Species present in ruderal areas include non-native species and weedy native species. On the project site, these species include tree tobacco (*Nicotiana glauca*), Bermuda grass (*Cydnodon dactylon*), telegraph weed (*Heterotheca grandifolia*), black mustard, Russian thistle, red brome, and castor bean (*Ricinus communis*).

Developed: These areas consist of the concrete areas in the Mabey Canyon Debris Basin, a concrete-lined channel, existing paved roads, and residential and water district structures.

TABLE 2. Project Site Summary

Project Site	Yes	No	Unknown
Within a 100-year floodplain?	X		
A blue line stream?	X		
Within the California Coastal Zone?		X	
Reported groundwater level <6 feet bgs?		X	
Reported Wetland/Riparian Buffers per General Plan		X	

Section 5 Site Conditions

As described in Section 1.0, the proposed project is located within the City of Corona, County of Riverside. Refer to Sections 5.1 and 5.2, below, for discussion with respect to the three (3) wetland parameters or evidence of water flow defined in Section 3.0. Refer to Exhibit 4, *On-Site Photographs*, for representative photographs taken throughout the project site.

5.1 DRAINAGES

Approximately four (4) drainages were noted on-site during the September 19, 2007 site visit. No water flow was noted within the project site; the drainages appear to be ephemeral, in that they contain water only during storm events. Evidence of an OHWM was noted within the drainages typically via sediment deposits, drift and debris lines, and erosional cuts. Generally, the OHWM varied in width, dependent on the water flow, range of slopes, and soil types on-site. Table 3, *Drainage Summary*, indicates the approximate drainage length and OHWM.

5.1.1 Drainage A

Drainage A, located in the southern portion of the project site, flows east into Oak Street Reservoir and is tributary to Temescal Creek. Temescal Creek flows to Prado Dam, a TNW. Drainage A consists mainly of an unvegetated concrete channel; however, a small portion consists of ornamental and alluvial vegetation. The width of Drainage A is approximatley 40 feet, and total length of is approximately 909 feet. Drainage A contains approximately 0.83-acre of USACE, RWQCB, and CDFG jurisdiction.

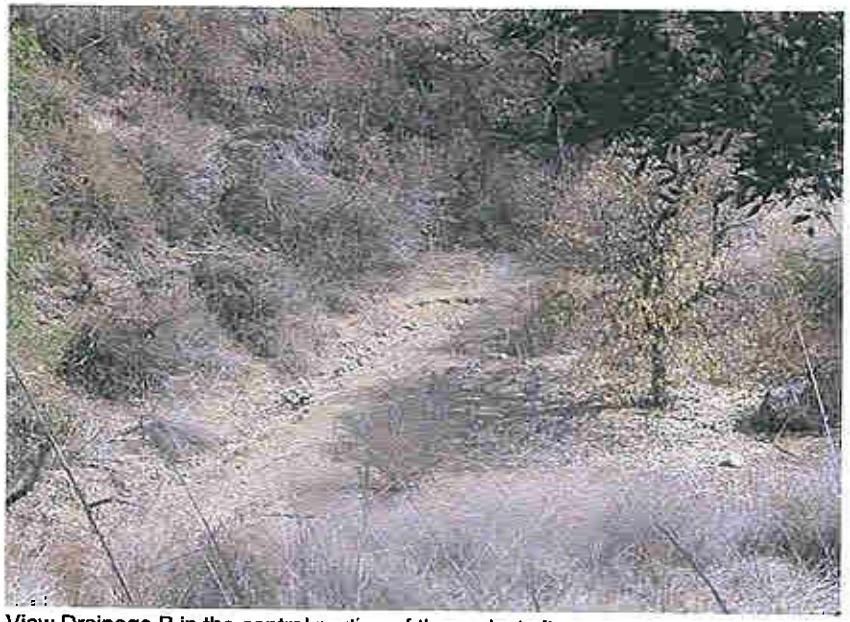
5.1.2 Drainage B

Drainage B, located in the central portion of the project site, flows east towards Mabey Canyon drainge and is tributary to Temescal Creek. Temescal Creek flows to Prado Dam, a TNW. Vegetation within the area surrounding Drainage B consists mainly of chaparral, with limited coastal sage scrub and oak woodland. The width of Drainage B ranges from approximately 2 to 3 feet. The total length of Drainage B is approximately 660 feet and contains approximately 0.03-acre of RWQCB and CDFG jurisdiction.

Typical view of the project site.

View looking west at the on-site concrete channel (Drainage A) in the southern portion of the project site.

View looking south at Drainage D in the northern portion of the project site.



View Drainage B in the central portion of the project site.

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9/25/07 JN 10-104629-13012

FOOTHILL PARKWAY WESTERLY EXTENSION • JURISDICTIONAL DELINEATION

On-Site Photographs

Exhibit 4

5.1.3 Drainage C

Drainage C, which includes the Mabey Canyon Debris Basin and drainage, is located in the central portion of the project site, north of Drainage B. Drainage C flows east to Temescal Creek, which is tributary to Prado Dam, a TNW. Vegetation within Drainage C consists of ruderal, coastal sage scrub, ornamental vegetation, and developed area. Drainage C (including the basin) contains approximately 3.05-acres of USACE, RWQCB, and CDFG jurisdiction.

5.1.4 Drainage D

Drainage D (Wardlow Wash) is located in the northern portion of the project site, and extends north to the Santa Ana River. The width of Drainage D ranges from approximately 2 to 50 feet. The wash has a rocky bottom, and vegetation consists mainly of chaparral, non-native grassland, ruderal, riparian forest, and alluvial habitat. The total length of Drainage D (including its tributary) is approximately 4,686 feet and contains approximately 0.75-acre of USACE and RWQCB jurisdiction and 5.86-acres of CDFG jurisdiction.

TABLE 3. Drainage Summary

Drainage	Drainage Length (ft.)	OHWM Width (ft.)	USACE Acreage	RWQCB Acreage	CDFG Acreage*
A	909	40	0.83	0.83	0.83
B	660	2 - 3	0.00	0.03	0.03
C	267	5	3.05	3.05	3.05
D	4,686	2 - 50	0.75	0.75	5.86
Totals	**6,522**	**NA**	**4.63**	**4.66**	**9.77**

* Includes riparian vegetation.

5.2 WETLANDS

No soil pits were warranted within the project site during the September 19, 2007 site visit due to the scoured wash conditions and/or the lack of dominant hydrophitic vegetation within the majority of the project site. Vegetation within the project site consisted mainly of upland vegetation with sparse mulefat, oak and cottonwood woodlands. Generally, soils within the boundaries of the project site were found to be consistent with those previously mentioned (i.e., gravelly loams) during the literature review in Section 4.3. No wetlands were noted within the boundaries of the project site.

Section 6 Findings

This delineation was prepared for the City in order to delineate the USACE, RWQCB, and CDFG jurisdictional authority for drainages located within the Foothill Parkway Westerly Extension project site. This report presents RBF's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdictional boundaries within a project site/property. Jurisdictional boundaries are broken down specifically by agency and are described below.

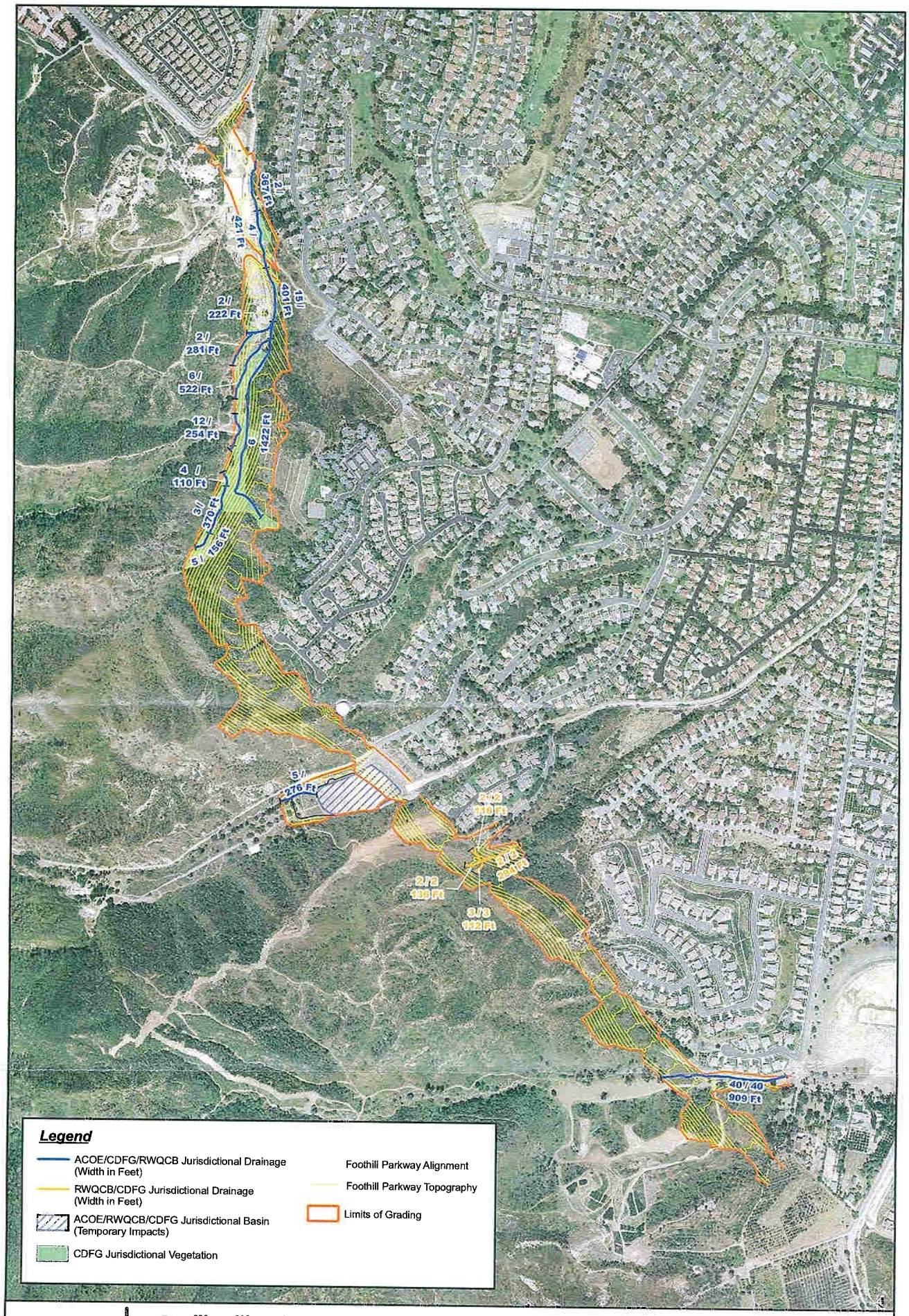
6.1 U.S. ARMY CORPS OF ENGINEERS DETERMINATION

6.1.1 Wetland Determination

As previously noted in Section 2.1, an area must exhibit all three (3) of the wetland parameters described in the USACE Wetland Delineation Manual to be considered a jurisdictional wetland. Based on the results of the literature review and field investigations, it was determined that no portion of the project site contained all three parameters. Based on the literature review and observation made during the field visit, no hydric soils are present within the project site and hydrophytic vegetation is limited (typically not dominant). Based on the site conditions, no USACE jurisdictional wetlands are present.

6.1.2 "Waters of the U.S." (Non-Wetland) Determination

Evidence of hydrology was noted within the project site and consisted of sediment deposits, erosional features, and debris lines. The on-site drainages appear to be ephemeral and contain water flow only during storm events. Three (3) of the on-site drainages (Drainage A, C, and D) were determined to have a significant nexus to the TNW and are considered jurisdictional by the USACE. Drainage B was determined not to have a significant nexus to the TNW, as it is a small 2-foot ephemeral drainage with limited upland vegetation. For the jurisdictional determination of each drainage refer to *Preliminary Jurisdictional Determination Forms*, located in the Appendix. Approximately 4.63-acres of USACE "waters of the U.S." are located within the boundaries of the project site (refer to Exhibit 5, *Jurisdictional Map*). Approximately **3.01-acres** will be temporarily impacted and **1.62-acres** will be permanently impacted by the proposed project.



600 300 0 600 Feet

FOOTHILL PARKWAY WESTERLY EXTENSION

JURISDICTIONAL MAP

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EXHIBIT 5

6.2 REGIONAL WATER QUALITY CONTROL BOARD DETERMINATION

The RWQCB jurisdiction follows that of the USACE; however, it also includes the on-site Rapanos drainage (Drainage B). Approximately 4.66-acres of RWQCB jurisdiction are located within the boundaries of the project site. Approximately **3.01-acres** will be temporarily impacted and **1.65-acres** will be permanently impacted by the proposed project.

6.3 CALIFORNIA DEPARTMENT OF FISH AND GAME DETERMINATION

All four (4) on-site drainages are considered jurisdictional by the CDFG. The CDFG jurisdiction is similar to the USACE jurisdiction, but also encompasses riparian vegetation (to the outer dripline) when present. Approximately 9.77-acres of CDFG jurisdiction are located within the boundaries of the project site. Approximately **3.01-acres** will be temporarily impacted and **6.76-acres** will be permanently impacted by the proposed project.

Section 7 Regulatory Approval Process

The following is a summary of the various permits, agreements, and certifications required before construction activities take place within the jurisdictional areas.

7.1 U.S. ARMY CORPS OF ENGINEERS

The ACOE regulates discharges of dredged fill materials into "waters of the United States" pursuant to Section 404 of the Clean Water Act (CWA). A permit will be required from the ACOE Regulatory Branch-Los Angeles District Office since improvements associated with the proposed project will result in the discharge of material within the ACOE's jurisdiction.

Section 404 Permit Identification:

Based on the amount of jurisdictional area present within the boundaries of the project site (greater than ½-acre), it is anticipated that the proposed improvements can be authorized via an Individual Permit (IP). The following provides a brief description of a typical IP process; however, each permit process is unique and may require additional steps and subsequent information dependent upon the amount of impacts and/or level of controversy. An IP usually has a 30-day comment period under public noticing, though the time limit can be as short as 15 days. Processing time generally takes 9-12 months, but it is not uncommon for the processing time to last 1-3 years depending on the complexity and size of the project project. The IP process generally involves a Pre-Application Field Meeting; submittal of a Department of Army Permit Application (ENG FORM 4345) and associated environmental documentation (e.g., jurisdictional delineation, site plans, project purpose, location, duration, etc.); submittal of a Pre-Construction Notification (PCN); consultations with other agencies (as appropriate); a Section 404(B)(1) Alternatives Analysis and compliance determination; and a final ACOE permit decision. Prior to issuance of the ACOE permit, a CWA Section 401 Water Quality Certification from the RWQCB must be obtained.

Obtaining the Section 401 Water Quality Certification can result in substantial delays in issuing an ACOE permit. To avoid unreasonable delays in ACOE permit processing, the following actions are recommended. In cases where the ACOE has finished its evaluation of a permit proposal and the only action remaining is the issuance of the Section 401 Certification, the ACOE should send a provisional permit to the applicant. Sending a provisional permit completes the ACOE action on the proposal and notifies the applicant of the need to obtain a Section 401 Certification from the appropriate State certifying agency before the Section 404 permit is valid. The provisional permit also places the only remaining action with the certifying agencies, properly focusing the applicant on the State.

7.2 REGIONAL WATER QUALITY CONTROL BOARD

The RWQCB regulates discharges to surface waters under the Federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB's jurisdiction extends to all waters of the State and to all waters of the United States (includes SWANCC and Rapanos conditions), including wetlands. The following permits will be required prior to construction.

7.2.1 Section 401 Water Quality Certification

For an USACE 404 permit to be approved, a 401 Water Quality Certification from the Santa Ana RWQCB will be required. The RWQCB also requires that CEQA compliance be obtained prior to obtaining the 401 Certification.

Once an application has been deemed complete, the RWQCB has between 60 days and 1 year in which to make a decision. According to regulations of the USACE, the State has 60 days from the date of receipt of a valid request for water quality standards certification (33 CFR Section 325.2 (b) (1) (ii)). The USACE district engineer may specify a longer (up to one year) or shorter time, if he or she determines that a longer or shorter time is reasonable (33 CFR Section 325.2 (b) (1) (ii)). If processing and review of the 401 application will take more than 60 days, the RWQCB will request additional time from the USACE. Please note that even when an application has been deemed complete, the RWQCB has the option of denial without prejudice. This is not a reflection on the project, but a means to stop the clock until the required information has been received.

As required by 23 California Code of Regulations (CCR) § 3858 (a), the RWQCB is required to have a minimum 21-day public comment period before any action is taken on a 401 application. The period closes when the RWQCB acts on the 401 application. The public comment period does not close after a certain number of days because proposed projects tend to change through the 401 process and the public is allowed to review and comment on the changed project. The public comment period starts as soon as an application has been received. Additionally, the RWQCB requires that water quality concerns related to urban storm water runoff be addressed. Any 401 Certification application submitted to the RWQCB should incorporate the use of Best Management Practices (BMPs) for the treatment of pollutants carried by storm water runoff in order to be considered a complete application. The RWQCB also requires a 401 Certification Application Fee, which is dependent on the amount and type of impacts.

7.2.2 Report of Waste Discharge

The U.S. Supreme Court's ruling in the Rapanos Decision has no bearing on the California Porter-Cologne Act. Thus, since Porter-Cologne was enacted, California always retains authority to regulate discharges of waste into any waters of the state, regardless of whether the USACE has concurrent jurisdiction under Section 404. Since one (1) of the on-site drainages is determined to have no significant nexus (Rapanos drainage), a Report of Waste Discharge (ROWD) pursuant to California Water Code Section 13260 would be required from the RWQCB. Section 13260 states that persons discharging or proposing to discharge waste that could affect the quality of the waters of the State, other than into a community sewer system, shall file a ROWD containing information which may be required by the appropriate RWQCB.

All dischargers regulated under waste discharge requirements (WDRs) permits must pay an annual fee. The RWQCB has within 30 days of receipt of the application form and any supplemental documents to notify you whether your application is complete. If your application is incomplete, the RWQCB representative will send you a detailed list of discharge specific information necessary to complete the application process. The completion date of your application is normally the date when all required information, including the fee, is received by the RWQCB. The annual fee is determined by the RWQCB based on an evaluation of proposed discharge.

7.3 CALIFORNIA DEPARTMENT OF FISH AND GAME

The on-site drainages (streambeds) and associated riparian vegetation would be considered jurisdictional by the CDFG; therefore, a 1602 Streambed Alteration Agreement (SAA) must be obtained prior to any jurisdictional impact. A SAA is technically not a permit. It is a legally binding contract in which two parties, the project proponent (applicant) and the CDFG, mutually agree to a particular course of action. The CDFG does not have the discretionary authority to decide not to negotiate a SAA or submit to binding arbitration. However, the CDFG has the duty to propose avoidance or mitigation measures which limit the project as necessary to prevent adverse impacts to fish and wildlife resources.

Upon a formal notification, the CDFG will determine whether the notification package (application) is complete. The CDFG will make this determination within 30 calendar days of receiving the notification package if the application is for a regular agreement (i.e., an agreement for a term of five years or less). However, the 30-day time period does not apply to notifications for long-term agreements (i.e., agreements for a term greater than five years).

Once the notification package is deemed complete, the CDFG will process a Draft SAA as described below.

If a SAA is required, the CDFG may require an onsite inspection, and a draft agreement. The draft agreement will include measures to protect fish and wildlife resources while conducting the project. For regular agreements, the CDFG will submit a draft agreement to the applicant within sixty (60) calendar days after the notification is deemed complete. Again, the 60-day time period does not apply to notifications for long-term agreements, since these are often large or complex projects.

The applicant then has 30 calendar days to notify the CDFG whether the measures in the draft agreement are acceptable. After the CDFG receives the signed draft agreement, it will make it final by signing it. The CDFG Application fee associated with the notification package varies and is dependent upon the total cost of the project and type of Agreement (i.e., Regular or Long-Term).

7.4 GLOBAL RECOMMENDATIONS

It is highly recommended that the delineation be forwarded to each of the regulatory agencies for their concurrence. Once the delineation is approved, RBF has found it extremely beneficial and pro-active to have an on-site meeting with the USACE, RWQCB, and CDFG to discuss potential permitting strategies and mitigation opportunities (if any). In short, these Pre-Application Field Meetings often help streamline the permitting process.

Section 8 References

The following references were utilized during preparation of this Delineation of State and Federal Jurisdictional Waters:

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Faber, Phyllis M., and Robert F. Holland, *Common Riparian Plants of California*, Pickleweed Press, 1996.

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Thomas Brothers Map, San Bernardino and Riverside Counties, 2007.

U.S. Army Corps of Engineers, *Final Summary Report: Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest*, June 2001.

U.S. Army Corps of Engineers, *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, 2006.

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U.S. Department of Agriculture, Natural Resources Conservation Service, Western Riverside Area, California Soil Survey, 1971.

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APPENDIX: RBF Preliminary Jurisdictional Determination Forms

RBF CONSULTING

PRELIMINARY JURISDICTIONAL DETERMINATION FORM **DATE 9 / 18 / 07**

PROJECT Foothill Parkway Westerly Extension Project **DRAINAGE A**

Portions of the form left blank are not applicable.

SECTION I: BACKGROUND INFORMATION

A. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **California** County: **Riverside** City: **Corona**

Center coordinates of site (lat/long in degree decimal format): Lat. **33°50'42" North,**

Long . **117°36'03" West**

Name of nearest waterbody: **Temescal Creek**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Prado Dam**

Name of watershed or Hydrologic Unit Code (HUC): **Santa Ana River Watershed, HUC 801.25 (Temescal Creek)**

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There ☐ appear to be; ☒ appear not to be; ☐ appear to be and appear not to be; "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There ☒ appear to be; ☐ appear not to be; ☐ appear to be and appear not to be "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):**
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters (RPWs) that flow directly or indirectly into TNWs (e.g, at least 3 months continuous flow)
   - ☒ Non-RPWs that flow directly or indirectly into TNWs (e.g., ephemeral drainages)
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**

   Non-wetland waters: length: **909 ft.** width: **40 ft.**

   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on:

   - ☐ 1987 Delineation Manual
   - ☐ Arid West Supplement
   - ☒ Established by OHWM
   - ☐ Established by Outer Continental Shelf Limits
   - ☐ Seaward limit of the territorial seas within 3-mile baseline
   - ☐ Established by mean (average) high waters
   - ☐ Established by Corps navigation study
   - ☐ Not established at this time
   - ☐ not applicable

   Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**

   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional (e.g., swales, ditches). Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

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

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

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

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

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

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

1. Characteristics of non-TNWs that flow directly or indirectly into TNW (OFFICE SECTION)

(i) General Area Conditions:

Watershed size: **2,800** square miles

Drainage area:

Average annual rainfall: **12** inches

Average annual snowfall: **0** inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributary flows through ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 or more tributaries before entering TNW.

Project waters are ☐ 1 (or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 (or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **RPW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **RPW**.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW: **Unnamed drainage flows directly to Temescal Creek which flows directly to Prado Dam**

Tributary stream order, if known:

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

Tributary is: ☐ Natural

☐ Artificial (man-made). Explain:

☒ Manipulated (man-altered / some portions of drainage improved).
Explain: **Sandy wash turn into concrete channel.**

Tributary properties with respect to top of bank (estimate):

Average width: **40 feet**

Average depth: **10 feet**

Average side slopes: ☐ Vertical (1:1 or less) ☒ 2:1 ☐ 3:1 ☐ 4:1 (or greater)

Primary tributary substrate composition (check all that apply):

☐ Silts ☒ Sands ☒ Concrete

☐ Cobbles ☐ Gravel ☐ Muck

☐ Bedrock ☐ Vegetation. Type/% cover:

☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Mainly concrete drainage**

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: ☒ relatively straight ☐ meandering

Tributary gradient (approximate average slope): **1%**

(c) Flow:

Tributary provides for: ☐ Seasonal flow ☐ Intermittent but not seasonal flow ☒ Ephemeral flow

Estimate average number of flow events in review area/year: ☐ 1 ☐ 2-5 ☒ 6-10 ☐ 11-20 ☐ 20 (or greater)

Describe flow regime: **Critical**

Other information on duration and volume:

Surface flow is: ☐ discrete ☒ confined ☐ discrete and confined ☐ overland sheetflow

Characteristics:

Subsurface flow: ☐ yes ☐ no ☒ unknown Explain findings:

Tributary has (check all that apply):

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

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

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

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **No water present.**

Identify specific pollutants, if known:

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

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

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW *(If no adjacent wetlands are present, then skip to Section C)*

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: ☐ Intermittent flow ☐ Ephemeral Flow ☐ Perennial Flow

☐ No flow Explain:

Surface flow is: ☐ Discrete ☐ Confined ☐ Discrete and confined ☐ Overland sheetflow

☐ Not present

Characteristics:

Subsurface flow: ☐ Yes ☐ No ☐ Unknown Explain findings:

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain:

☐ Ecological connection. Explain:

☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Flow is from: ☐ Wetland to navigable waters ☐ Navigable waters to wetlands

☐ Wetland to/from navigable waters ☐ No flow

Estimate approximate location of wetland as within the ☐ 2-year or less ☐ 2-5 year ☐ 5-10 year ☐ 10-20 year ☐ 20-50 year ☐ 50-100 year ☐ 100-500 year ☐ 500-year or greater floodplain.

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known:

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

☐ Riparian buffer. Characteristics (type, average width):

☐ Vegetation type/percent cover. Explain:

☐ Habitat for:

☐ Federally Listed species. Explain findings:

☐ Fish/spawn areas. Explain findings:

☐ Other environmentally-sensitive species. Explain findings:

☐ Aquatic/wildlife diversity. Explain findings:

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

All wetland(s) being considered in the cumulative analysis: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more)

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

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

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW? **Yes**

- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW? **No**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs? **No**

- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW? **Yes**

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

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

   Tributary does have a significant nexus to the TNW as it is a flood control facility/channel that conveys water flow into a larger basin.

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

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

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

   ☐ TNWs: linear feet width (ft), Or, acres.

   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

3. **Non-RPWs that flow directly or indirectly into TNWs.**

   ☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters in the review area:
   Tributary waters: length: **909 ft.** width: **40 ft.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

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

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

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

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

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

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

7. **Impoundments of jurisdictional waters.**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ which are or could be used for industrial purposes by industries in interstate commerce.

☐ Interstate isolated waters. Explain:

☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters:

☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.

☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

☐ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:

☒ USDA Natural Resources Conservation Service Soil Survey. Citation:

☒ National wetlands inventory map(s). Cite name:

☐ State/Local wetland inventory map(s):

☒ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Eagle Aerial,

or ☒ Other (Name & Date): On-Site Photographs (35mm)

☐ Previous determination(s). File no. and date of response letter:

☐ Applicable/supporting case law:

☐ Applicable/supporting scientific literature:

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

RBF CONSULTING

PRELIMINARY JURISDICTIONAL DETERMINATION FORM **DATE 9 / 18 / 07**

PROJECT Foothill Parkway Westerly Extension Project **DRAINAGE B**

Portions of the form left blank are not applicable.

SECTION I: BACKGROUND INFORMATION

A. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **California** County: **Riverside** City: **Corona**

Center coordinates of site (lat/long in degree decimal format): Lat. **33°51'01" North,**

Long . **117°36'37" West**

Name of nearest waterbody: **Temescal Creek**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Prado Dam**

Name of watershed or Hydrologic Unit Code (HUC): **Santa Ana River Watershed, HUC 801.25 (Temescal Creek)**

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There ☐ appear to be; ☒ appear not to be; ☐ appear to be and appear not to be; "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There ☒ appear to be; ☐ appear not to be; ☐ appear to be and appear not to be "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):**
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters (RPWs) that flow directly or indirectly into TNWs (e.g, at least 3 months continuous flow)
   - ☒ Non-RPWs that flow directly or indirectly into TNWs (e.g., ephemeral drainages)
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**

   Non-wetland waters: length: **660 ft.** width: **2-3 ft.**

   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on:

   - ☐ 1987 Delineation Manual
   - ☐ Arid West Supplement
   - ☒ Established by OHWM
   - ☐ Established by Outer Continental Shelf Limits
   - ☐ Seaward limit of the territorial seas within 3-mile baseline
   - ☐ Established by mean (average) high waters
   - ☐ Established by Corps navigation study
   - ☐ Not established at this time
   - ☐ not applicable

   Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**

   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional (e.g., swales, ditches). Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

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

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

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

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

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

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

1. Characteristics of non-TNWs that flow directly or indirectly into TNW (OFFICE SECTION)

(i) General Area Conditions:

Watershed size: **2,800** square miles

Drainage area:

Average annual rainfall: **12** inches

Average annual snowfall: **0** inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributary flows through ☐ 1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 or more tributaries before entering TNW.

Project waters are ☐ 1 (or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 (or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **RPW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **RPW**.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW: **Unnamed drainage flows directly to Temescal Creek which flows directly to Prado Dam**

Tributary stream order, if known:

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

Tributary is: ☒ Natural

☐ Artificial (man-made). Explain:

☐ Manipulated (man-altered / some portions of drainage improved). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: **2 feet**

Average depth: **1 feet**

Average side slopes: ☐ Vertical (1:1 or less) ☐ 2:1 ☒ 3:1 ☐ 4:1 (or greater)

Primary tributary substrate composition (check all that apply):

☐ Silts ☒ Sands ☐ Concrete

☐ Cobbles ☐ Gravel ☐ Muck

☐ Bedrock ☐ Vegetation. Type/% cover:

☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: ☒ relatively straight ☐ meandering

Tributary gradient (approximate average slope): **3 %**

(c) Flow:

Tributary provides for: ☐ Seasonal flow ☐ Intermittent but not seasonal flow ☒ Ephemeral flow

Estimate average number of flow events in review area/year: ☐ 1 ☐ 2-5 ☒ 6-10 ☐ 11-20 ☐ 20 (or greater)

Describe flow regime: **Critical**

Other information on duration and volume:

Surface flow is: ☐ discrete ☒ confined ☐ discrete and confined ☐ overland sheetflow

Characteristics:

Subsurface flow: ☐ yes ☐ no ☒ unknown Explain findings:

Tributary has (check all that apply):

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

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

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

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **No water present.**

Identify specific pollutants, if known:

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

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

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW *(If no adjacent wetlands are present, then skip to Section C)*

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: ☐ Intermittent flow ☐ Ephemeral Flow ☐ Perennial Flow

☐ No flow Explain:

Surface flow is: ☐ Discrete ☐ Confined ☐ Discrete and confined ☐ Overland sheetflow

☐ Not present

Characteristics:

Subsurface flow: ☐ Yes ☐ No ☐ Unknown Explain findings:

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain:

☐ Ecological connection. Explain:

☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Flow is from: ☐ Wetland to navigable waters ☐ Navigable waters to wetlands

☐ Wetland to/from navigable waters ☐ No flow

Estimate approximate location of wetland as within the ☐ 2-year or less ☐ 2-5 year ☐ 5-10 year ☐ 10-20 year ☐ 20-50 year ☐ 50-100 year ☐ 100-500 year ☐ 500-year or greater floodplain.

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known:

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

☐ Riparian buffer. Characteristics (type, average width):

☐ Vegetation type/percent cover. Explain:

☐ Habitat for:

☐ Federally Listed species. Explain findings:

☐ Fish/spawn areas. Explain findings:

☐ Other environmentally-sensitive species. Explain findings:

☐ Aquatic/wildlife diversity. Explain findings:

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

All wetland(s) being considered in the cumulative analysis: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more)

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

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

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW? **Yes**

- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW? **No**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs? **No**

- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW? **No**

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

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

   Tributary does not have a significant nexus to the TNW, as it is ephemeral and approximately 2 feet in width. The drainage is mainly unvegetated, while limited portions consist of non-riparian species similar to the surrounding upland areas.

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

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

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

   ☐ TNWs: linear feet width (ft), Or, acres.

   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

3. **Non-RPWs that flow directly or indirectly into TNWs.**

   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

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

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

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

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

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

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

7. **Impoundments of jurisdictional waters.**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ which are or could be used for industrial purposes by industries in interstate commerce.

☐ Interstate isolated waters. Explain:

☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters:

☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.

☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☒ Non-wetland waters (i.e., rivers, streams): length: **660 ft.** width: **2-3 ft.**

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

  ☐ USGS NHD data.

  ☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:

☒ USDA Natural Resources Conservation Service Soil Survey. Citation:

☒ National wetlands inventory map(s). Cite name:

☐ State/Local wetland inventory map(s):

☒ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Eagle Aerial,

or ☒ Other (Name & Date): On-Site Photographs (35mm)

☐ Previous determination(s). File no. and date of response letter:

☐ Applicable/supporting case law:

☐ Applicable/supporting scientific literature:

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

RBF CONSULTING

PRELIMINARY JURISDICTIONAL DETERMINATION FORM **DATE 9 / 18 / 07**

PROJECT Foothill Parkway Westerly Extension Project **DRAINAGE C**

Portions of the form left blank are not applicable.

SECTION I: BACKGROUND INFORMATION

A. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **California** County: **Riverside** City: **Corona**

Center coordinates of site (lat/long in degree decimal format): Lat. **33°51'36" North,**

Long . **117°36'45" West**

Name of nearest waterbody: **Mabey Canyon Basin and Drainage**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Prado Dam**

Name of watershed or Hydrologic Unit Code (HUC): **Santa Ana River Watershed, HUC 801.25 (Temescal Creek)**

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There ☐ appear to be; ☒ appear not to be; ☐ appear to be and appear not to be; "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There ☒ appear to be; ☐ appear not to be; ☐ appear to be and appear not to be "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):**
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters (RPWs) that flow directly or indirectly into TNWs (e.g, at least 3 months continuous flow)
   - ☒ Non-RPWs that flow directly or indirectly into TNWs (e.g., ephemeral drainages)
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**

   Non-wetland waters: length: **276 ft.,** width: **5 ft. (drainage)** and **XX acres (basin)**

   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on:

   - ☐ 1987 Delineation Manual
   - ☐ Arid West Supplement
   - ☒ Established by OHWM
   - ☐ Established by Outer Continental Shelf Limits
   - ☐ Seaward limit of the territorial seas within 3-mile baseline
   - ☐ Established by mean (average) high waters
   - ☐ Established by Corps navigation study
   - ☐ Not established at this time
   - ☐ not applicable

   Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**

   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional (e.g., swales, ditches). Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

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

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

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

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

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

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

1. Characteristics of non-TNWs that flow directly or indirectly into TNW (OFFICE SECTION)

(i) General Area Conditions:

Watershed size: **2,800** square miles

Drainage area:

Average annual rainfall: **12** inches

Average annual snowfall: **0** inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributary flows through ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 or more tributaries before entering TNW.

Project waters are ☐ 1 (or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 (or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **RPW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **RPW**.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW: **Mabey Canyon Basin and drainage flows directly to Temescal Creek which flows directly to Prado Dam**

Tributary stream order, if known:

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

Tributary is: ☐ Natural

☐ Artificial (man-made). Explain:

☒ Manipulated (man-altered / some portions of drainage improved).
Explain: **Basin with drainage.**

Tributary properties with respect to top of bank (estimate):

Average width: **5 feet (draiange)**

Average depth: **1 feet (drainage)**

Acreage: **XX acre (basin)**

Average side slopes: ☐ Vertical (1:1 or less) ☒ 2:1 ☐ 3:1 ☐ 4:1 (or greater)

Primary tributary substrate composition (check all that apply):

☐ Silts ☒ Sands ☒ Concrete

☐ Cobbles ☐ Gravel ☐ Muck

☐ Bedrock ☐ Vegetation. Type/% cover:

☒ Other. Explain: **riprap**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: ☒ relatively straight ☐ meandering

Tributary gradient (approximate average slope): **1 %**

(c) Flow:

Tributary provides for: ☐ Seasonal flow ☐ Intermittent but not seasonal flow ☒ Ephemeral flow

Estimate average number of flow events in review area/year: ☐ 1 ☐ 2-5 ☒ 6-10 ☐ 11-20 ☐ 20 (or greater)

Describe flow regime: **Critical**

Other information on duration and volume:

Surface flow is: ☐ discrete ☒ confined ☐ discrete and confined ☐ overland sheetflow

Characteristics:

Subsurface flow: ☐ yes ☐ no ☒ unknown Explain findings:

Tributary has (check all that apply):

- [x] Bed and banks
- [x] OHWM (check all indicators that apply):
  - [ ] clear, natural line impressed on the bank
  - [ ] changes in the character of soil
  - [ ] shelving
  - [ ] vegetation matted down, bent, or absent
  - [ ] leaf litter disturbed or washed away
  - [ ] sediment deposition
  - [ ] water staining
  - [ ] other (list):
  - [ ] the presence of litter and debris
  - [ ] destruction of terrestrial vegetation
  - [ ] the presence of wrack line
  - [ ] sediment sorting
  - [x] scour
  - [ ] multiple observed or predicted flow events
  - [ ] abrupt change in plant community
- [ ] Discontinuous OHWM. Explain:

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

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

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **No water present.**

Identify specific pollutants, if known:

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

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

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW *(If no adjacent wetlands are present, then skip to Section C)*

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: ☐ Intermittent flow ☐ Ephemeral Flow ☐ Perennial Flow

☐ No flow Explain:

Surface flow is: ☐ Discrete ☐ Confined ☐ Discrete and confined ☐ Overland sheetflow

☐ Not present

Characteristics:

Subsurface flow: ☐ Yes ☐ No ☐ Unknown Explain findings:

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain:

☐ Ecological connection. Explain:

☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Flow is from: ☐ Wetland to navigable waters ☐ Navigable waters to wetlands

☐ Wetland to/from navigable waters ☐ No flow

Estimate approximate location of wetland as within the ☐ 2-year or less ☐ 2-5 year ☐ 5-10 year ☐ 10-20 year ☐ 20-50 year ☐ 50-100 year ☐ 100-500 year ☐ 500-year or greater floodplain.

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known:

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

☐ Riparian buffer. Characteristics (type, average width):

☐ Vegetation type/percent cover. Explain:

☐ Habitat for:

☐ Federally Listed species. Explain findings:

☐ Fish/spawn areas. Explain findings:

☐ Other environmentally-sensitive species. Explain findings:

☐ Aquatic/wildlife diversity. Explain findings:

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

All wetland(s) being considered in the cumulative analysis: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more)

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

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

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW? **Yes**
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW? **No**
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs? **No**

- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW? **Yes**

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

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

   Tributary does have a significant nexus to the TNW as it is a flood control basin that affects water quality, volume, and flow to the down stream Prado Dam (TNW).

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

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

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

   ☐ TNWs: linear feet width (ft), Or, acres.

   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

3. **Non-RPWs that flow directly or indirectly into TNWs.**

   ☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters in the review area:
   Tributary waters: length: **276 ft.**, width: **5 ft.** and **XX-acre (basin)**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is

directly abutting an RPW:

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

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

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

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

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

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

7. **Impoundments of jurisdictional waters.**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ which are or could be used for industrial purposes by industries in interstate commerce.

☐ Interstate isolated waters. Explain:

☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters:

☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.

☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

☐ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:

☒ USDA Natural Resources Conservation Service Soil Survey. Citation:

☒ National wetlands inventory map(s). Cite name:

☐ State/Local wetland inventory map(s):

☒ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Eagle Aerial,

or ☒ Other (Name & Date): On-Site Photographs (35mm)

☐ Previous determination(s). File no. and date of response letter:

☐ Applicable/supporting case law:

☐ Applicable/supporting scientific literature:

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

RBF CONSULTING

PRELIMINARY JURISDICTIONAL DETERMINATION FORM **DATE 9 / 18 / 07**

PROJECT Foothill Parkway Westerly Extension Project **DRAINAGE D**

Portions of the form left blank are not applicable.

SECTION I: BACKGROUND INFORMATION

A. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **California** County: **Riverside** City: **Corona**

Center coordinates of site (lat/long in degree decimal format): Lat. **33°50'57" North,**

Long . **117°36'25" West**

Name of nearest waterbody: **Wardlow Wash**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Santa Ana River Reach 1/ Pacific Ocean**

Name of watershed or Hydrologic Unit Code (HUC): **Santa Ana River Watershed, HUC 801.11 (Reach 2)**

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different JD form.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There ☐ appear to be; ☒ appear not to be; ☐ appear to be and appear not to be; "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There ☒ appear to be; ☐ appear not to be; ☐ appear to be and appear not to be "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):**
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters (RPWs) that flow directly or indirectly into TNWs (e.g, at least 3 months continuous flow)
   - ☒ Non-RPWs that flow directly or indirectly into TNWs (e.g., ephemeral drainages)
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**

   Non-wetland waters: length: **4,686 ft.** width: **2-50 ft.**

   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on:

   - ☐ 1987 Delineation Manual
   - ☐ Arid West Supplement
   - ☒ Established by OHWM
   - ☐ Established by Outer Continental Shelf Limits
   - ☐ Seaward limit of the territorial seas within 3-mile baseline
   - ☐ Established by mean (average) high waters
   - ☐ Established by Corps navigation study
   - ☐ Not established at this time
   - ☐ not applicable

   Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**

   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional (e.g., swales, ditches). Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

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

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

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

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

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

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

1. Characteristics of non-TNWs that flow directly or indirectly into TNW (OFFICE SECTION)

(i) General Area Conditions:

Watershed size: **2,800** square miles

Drainage area:

Average annual rainfall: **12** inches

Average annual snowfall: **0** inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributary flows through ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 or more tributaries before entering TNW.

Project waters are ☐ 1 (or less) ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☒ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 (or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **RPW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☒ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Project waters are ☐ (1 or less) ☐ 1-2 ☒ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **RPW**.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW: **Wardlow Wash flows directly to the Santa Ana River which flows directly to the Pacific Ocean**

Tributary stream order, if known:

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

Tributary is: ☒ Natural

☐ Artificial (man-made). Explain:

☐ Manipulated (man-altered / some portions of drainage improved). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: **25 feet**

Average depth: **1 feet**

Average side slopes: ☐ Vertical (1:1 or less) ☐ 2:1 ☒ 3:1 ☐ 4:1 (or greater)

Primary tributary substrate composition (check all that apply):

☐ Silts ☒ Sands ☐ Concrete

☐ Cobbles ☐ Gravel ☐ Muck

☐ Bedrock ☐ Vegetation. Type/% cover:

☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: ☒ relatively straight ☐ meandering

Tributary gradient (approximate average slope): **1%**

(c) Flow:

Tributary provides for: ☐ Seasonal flow ☐ Intermittent but not seasonal flow ☒ Ephemeral flow

Estimate average number of flow events in review area/year: ☐ 1 ☐ 2-5 ☒ 6-10 ☐ 11-20 ☐ 20 (or greater)

Describe flow regime: **Critical**

Other information on duration and volume:

Surface flow is: ☐ discrete ☒ confined ☐ discrete and confined ☐ overland sheetflow

Characteristics:

Subsurface flow: ☐ yes ☐ no ☒ unknown Explain findings:

Tributary has (check all that apply):

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

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

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

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **No water present.**

Identify specific pollutants, if known:

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

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

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW *(If no adjacent wetlands are present, then skip to Section C)*

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: ☐ Intermittent flow ☐ Ephemeral Flow ☐ Perennial Flow

☐ No flow Explain:

Surface flow is: ☐ Discrete ☐ Confined ☐ Discrete and confined ☐ Overland sheetflow

☐ Not present

Characteristics:

Subsurface flow: ☐ Yes ☐ No ☐ Unknown Explain findings:

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain:

☐ Ecological connection. Explain:

☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *river miles* from **TNW**.

Project waters are ☐ 1 ☐ 1-2 ☐ 2-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more) *aerial (straight) miles* from **TNW**.

Flow is from: ☐ Wetland to navigable waters ☐ Navigable waters to wetlands

☐ Wetland to/from navigable waters ☐ No flow

Estimate approximate location of wetland as within the ☐ 2-year or less ☐ 2-5 year ☐ 5-10 year ☐ 10-20 year ☐ 20-50 year ☐ 50-100 year ☐ 100-500 year ☐ 500-year or greater floodplain.

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known:

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

☐ Riparian buffer. Characteristics (type, average width):

☐ Vegetation type/percent cover. Explain:

☐ Habitat for:

☐ Federally Listed species. Explain findings:

☐ Fish/spawn areas. Explain findings:

☐ Other environmentally-sensitive species. Explain findings:

☐ Aquatic/wildlife diversity. Explain findings:

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

All wetland(s) being considered in the cumulative analysis: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15-20 ☐ 20-25 ☐ 25-30 ☐ 30 (or more)

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

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

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW? **Yes**

- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW? **No**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs? **No**

- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW? **Yes**

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

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

   Tributary (Wardlow Wash) has a significant nexus to the TNW as it is a larger on-site drainage and contains riparian habitat.

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

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

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

   ☐ TNWs: linear feet width (ft), Or, acres.

   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

3. **Non-RPWs that flow directly or indirectly into TNWs.**

   ☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters in the review area:
   Tributary waters: length: **4,686 ft.** width: **ranges 2-50 ft.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

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

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

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

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

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

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

7. **Impoundments of jurisdictional waters.**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ which are or could be used for industrial purposes by industries in interstate commerce.

☐ Interstate isolated waters. Explain:

☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.
Identify type(s) of waters:

☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.

☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).

☐ Lakes/ponds: acres.

☐ Other non-wetland waters: acres. List type of aquatic resource:

☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

☐ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:

☒ USDA Natural Resources Conservation Service Soil Survey. Citation:

☒ National wetlands inventory map(s). Cite name:

☐ State/Local wetland inventory map(s):

☒ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Eagle Aerial,

or ☒ Other (Name & Date): On-Site Photographs (35mm)

☐ Previous determination(s). File no. and date of response letter:

☐ Applicable/supporting case law:

☐ Applicable/supporting scientific literature:

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: