

# Memorandum

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**To:** Augustine Barajas, Associate Environmental Planner  
Caltrans Division of Environmental Planning

**Date:** May 28, 2011

**From:** Christopher Stevenson, Associate District Biologist  
Caltrans Division of Environmental Planning

**File:** LA 57 / 60 Confluence @  
Grand Ave.

**Ref. # :** EIR/EA 279100

**Subject:** Natural Environment Study -- Biological Review

I have completed my review of the Natural Environmental Study, State Route 57 / State Route 60 Confluence at Grand Ave Project, from the City of Industry and City of Diamond Bar.

All applicable NEPA and CEQA protocols for protection of natural resources, wildlife and waters of the U.S. have been adequately discussed, reviewed and documented in this report.

Specifically, impacts to existing native trees, potential endangered plant species, jurisdictional waters and special status animal species occurrences within the BSA are reviewed, noted and discussed in Chapter 4; Results: Biological Resources, Discussion of Impacts and Mitigation. The following impacts are discussed;

1. Impacts to Blue Line Stream(s) are noted in this document. Permits for impacts to "waters of the U.S." and associated mitigation should be completed as stated in the section **4.2. Jurisdictional Waters, 4.2.1.3. Project Impacts**, as well as section **4.2.1.4. Compensatory Mitigation**.
2. Impacts to Native Trees and all appropriate Compensatory Mitigation (City of Diamond Bar's Tree Removal Permit and Ordinances).
3. Potential impact to *Special Status Plant Species*. No listed species were found. **No federally-designated critical habitat is present within the BSA.**
4. Special Status Animal Species Occurrences. Sensitive wildlife species; Cooper's Hawk (*Accipiter cooperi*) and sharp-shinned hawk (*Accipiter striatus*) were observed onsite. These species appear to be utilizing the BSA for winter foraging only. **No federally-designated critical habitat is present within the BSA.**

Caltrans, Division of Environmental Planning / Biology concurs with the results and details of this Natural Environmental Study for this project. Should any need for further review be required, please contact me at my office phone number; 213-897-0146.

Regards,



Christopher Stevenson  
Caltrans Associate District Biologist  
D-7 / Los Angeles

# SAGE ENVIRONMENTAL GROUP

Environmental • Biological • Habitat Restoration • Regulatory Compliance Services

September 13, 2011

Mr. Kevin Radecki, Executive Director  
Industry Urban-Development Agency  
15625 East Stafford Street  
P.O. Box 3366  
City of Industry, CA 91744-0366

**Subject: Results of 2011 Focused Least Bell's Vireo Survey**

**Project: SR57/SR-60 Confluence Grand Avenue Interchange Improvement Project, City of Industry, Los Angeles County, California**

Dear Mr. Radecki,

Sage Environmental Group was retained by Industry Urban-Development Agency to conduct focused presence/absence surveys during the 2011 breeding season for least Bell's vireo (*Vireo bellii pusillus*: LBVI) in suitable riparian habitats surrounding the proposed SR-57/SR-60/Grand Avenue Interchange Improvement Project site located in the City of Industry and the City of Diamond Bar, Los Angeles County, California. This report summarizes the results of the 2011 LBVI survey within the study area of the project site.

## **Introduction**

### **Site Location and Description**

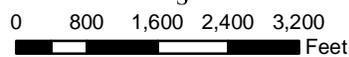
The SR-57/SR-60/Grand Avenue Interchange Improvement Project site is located approximately one mile northeast of the intersection of State Routes 60 and 57 in the City of Diamond Bar and the City of Industry in eastern Los Angeles County, California. For the purpose of this report, the project vicinity is generally defined to extend approximately 750 feet from the existing SR-57/60 right-of-way within the proposed improvement area alignment (Exhibit 1). The project vicinity is primarily composed of disturbed slopes with ruderal vegetation, non-native landscaping and turfgrass on Diamond Bar Golf Course, developed areas that include roadways and buildings, a mature mixed riparian channel (i.e., Diamond Bar Creek) that parallels the freeway, and several willow (*Salix* spp.) riparian patches on the golf course.

The 2011 Study Area includes several willow riparian habitats along the Diamond Bar Creek drainage in the Diamond Bar Golf Course to the south and east of the highway and a small mulefat (*Baccharis salicifolia*)/willow riparian patch along a tributary to Diamond Bar Creek adjacent to the west bound Highway 57/60 off-ramp to the north of the highway (Exhibit 2). The Study Area elevation ranges from approximately 580 feet above mean sea level (amsl) to 630 feet amsl. The Project Site is located on the U.S. Geological Survey (USGS) *San Dimas* 7.5-minute topographic quadrangle in Sections 9 and 16 of T.2S, R.9W. Representative site photographs are included as Attachment B.



**Legend**

 Study Area



**Exhibit 1**  
Project Location Map



**Legend**

-  Potentially Suitable Riparian Habitat Surveyed in 2011 (as approved by Sally Brown USFWS on 5.16.2011)
-  Additional Potentially Suitable Riparian Habitat Surveyed in 2011 as requested by Project Team
-  Potentially Suitable Riparian Habitat Surveyed in 2008 and 2010
-  NAP - USFWS Section 7 (FWS-LA-10B0545-1010723 and FWS-LA-10B0099-1110269)



**Exhibit 2**  
Project Study Area

### **Previous Project Surveys**

Sage Environmental Group conducted protocol Least Bell's Vireo surveys in a slightly larger area that included riparian habitat along Diamond Bar Creek downstream of SR-57/SR-60/Grand Avenue Interchange Improvement Project site in 2008 and 2010. In 2008, one breeding LBVI pair, with at least one unsuccessful nest, was documented downstream of the golf course along Diamond Bar Creek. In 2010, two LBVI pairs and one lone LBVI male were documented downstream of the 2011 Study Area along Diamond Bar Creek. Four unsuccessful nesting efforts were documented in 2010. United States Fish and Wildlife Service (USFWS) Informal Section 7 Consultation was completed to address potential impacts to the species at these locations (FWS-LA-10B0545-1010723 and FWS-LA-10B0099-1110269).

### **Species Descriptions**

#### **Least Bell's Vireo**

The LBVI was state-listed as an endangered species by the California Department of Fish and Game in 1980 (CDFG 2005) and federally listed as endangered by the U.S. Fish and Wildlife Service (USFWS) in 1986. Critical habitat for LBVI was designated in 1994 (USFWS 1994). This species is a summer resident of southern California that breeds in willow thickets and other dense, low riparian growths in lowlands and lower portions of canyons. It has also been found in riparian habitats that support western sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia*), and/or Mexican elderberry (*Sambucus mexicana*) and is generally found along permanent or nearly permanent streams. This species was formerly widespread and common throughout low-lying riparian habitats of central and southern California, but is now restricted to a limited number of locations in southern and central California and northwestern Baja California, Mexico. Destruction of habitat due to flood control practices and parasitism by the brown-headed cowbird (*Molothrus ater*; BHCO) are the major causes in the decline of this species. Since listing, the LBVI population has risen proportionately with the implementation of a number of BHCO trapping programs in and near LBVI breeding sites. The LBVI has recently begun to recolonize formerly occupied areas as well as areas never before documented with their presence. The study area is located outside of USFWS-designated LBVI critical habitat.

### **Survey Area Descriptions**

Four areas of riparian habitat were surveyed for this survey effort: three patches of riparian habitat were surveyed within the borders of the Diamond Bar Golf Course and one patch adjacent to the west bound Highway 57/60 Grand Blvd. off-ramp. The golf course areas each differed from one another in key ways. The easternmost survey area consisted of a long drainage corridor vegetated with mature willow (*Salix gooddingii*, *S. laevigata*, and *S. lasiolepis*) and various ornamental trees (including *Eucalyptus* spp., *Fraxinus* sp., and *Pinus* sp) with a nearly non-existent understory due to grounds maintenance. The central golf course survey area is a short drainage adjacent to the highway dominated by willows of various ages and a mature live oak (*Quercus agrifolia*). The western golf course survey area is a narrow, cement lined drainage along the southern side of the highway bordering the northern golf course boundary. The eastern half of this drainage is dominated by cat tails (*Typha* sp.) and the western half is dominated by a mixture of small to medium sized willows, eucalyptus, and black walnut (*Juglans californica*). The off-ramp survey area is dominated by a narrow line of mule fat (*Baccharis salicifolia*) with two willow trees (*Salix gooddingii*) at its northeast end and a canopy of tall eucalyptus trees (*Eucalyptus globules*) and a few small patches of stinging nettles (*Urtica dioica*) along its western half. While running surface water was always present at the golf course sites, surface water was never observed at the off-ramp site.

## **Survey Methodology**

### **Least Bell's Vireo**

LBVI surveys were performed according to USFWS guidelines (USFWS 2001). The guidelines state that a minimum of eight surveys are to be conducted between April 10 and July 31, at least 10 days apart, and during favorable weather conditions. Biologist Michael Misenhelter conducted eight LBVI survey visits for the 2011 survey effort and was co-author of this report. The survey visits were conducted on May 17 and 27; June 6, 16, and 26; and July 6, 16, and 26. The surveys were conducted by slowly walking along suitable riparian habitats within the study area and periodically stopping to listen and watch for LBVI at strategic points along the survey route. All survey visits were conducted between sunrise and 1100. Each survey visit covered a total of approximately 1.9 acres of riparian habitat at a rate of approximately 0.74 acres/hour. The biologist listened for the song of the male as well as the whisper songs, calls, and scolds of both sexes, while looking for individuals. 10X42 binoculars were used to aid bird identification in the field.

### **Other Wildlife**

All wildlife and wildlife sign (including tracks, scat, carcasses, feathers, burrows, nests, excavations, and vocalizations) within the project vicinity that was detected during protocol LBVI surveys were recorded during each visit. The locations of all currently sensitive species observed were recorded. Since Brown-headed Cowbird (BHCO) populations have deleterious effects on LBVI populations, observations of this species were recorded as well.

## **Results**

A species list of all wildlife detected in the project study area in 2011 is included as Attachment A.

### **Least Bell's Vireo**

No Least Bell's Vireo were detected during the 2011 survey effort. Areas in which LBVI were observed during previous surveys were not included in the 2011 survey.

### **Other Wildlife**

#### **Southwestern Willow Flycatcher (*Empidonax trillii extimus*)**

The Southwestern Willow Flycatcher is typically found in larger, more extensive riparian habitat than what is found in the 2011 survey area. Previous LBVI surveys for the Project included a flycatcher component but the species was not detected and protocol surveys for the species were not included this year. No Southwestern Willow Flycatcher detections were made incidental to this year's LBVI survey.

#### **Yellow-billed Cuckoo (*Coccyzus americanus*)**

Preferred Yellow-billed Cuckoo (YBCU) breeding habitat appears to consist of large patches of riparian woodlands (composed of willow and cottonwood) growing along dynamic, perennial rivers. The 2011 survey did not include surveys for the YBCU. No YBCU were observed incidental to this survey effort.

#### **Brown-headed Cowbird (*Molothrus ater*)**

The Brown-headed Cowbird is a nest parasite that lays its eggs in the nests of other bird species. Young BHCO in the nest typically outcompete and kill the host species chicks. BHCO were observed on two occasions during survey visits to the golf course. A female BHCO was observed near the "golf course east" site on June 26 and a male was observed sitting on a freeway light pole near the "golf course east" site on the same day. BHCO was not detected during surveys of the off-ramp site.

### **Sensitive Species**

The biologist recorded the locations of all currently sensitive species. These locations were subsequently mapped (Exhibit 3). The sensitive species include:

#### Yellow warblers

Yellow warblers (*Dendroica petechia*; YEWA), a California Species of Concern (CSC), were often observed during the golf course survey visits but only once at the off-ramp site. Although specific breeding statuses were not obtained during surveys, this species likely migrates through the area in larger numbers and breeds in smaller numbers within the study area.

#### Raptors

All raptors and raptor nests are protected by the Migratory Bird Treaty Act of 1918 and are considered a Fully Protected Species by the California Department of Fish and Game (CDFG 2006). Adult and juvenile red-tailed hawks (*Buteo jamaicensis*) were observed during many of the site visits. An American Kestrel (*Falco sparverius*) and Cooper's Hawk (*Accipiter cooperii*) were also detected in the survey area during the study. The large trees on the project site serve as suitable nesting habitat for various raptor species.

#### Coastal California gnatcatchers

No coastal California gnatcatchers (*Polioptila californica californica*), a federally threatened species and a California Species of Concern, were observed during the 2011 Least Bell's Vireo surveys. However, coastal California gnatcatchers have been observed during previous area surveys by Sage Environmental Group outside of the project site within Riversidean sage scrub habitat located adjacent to the riparian corridor downstream of the survey area. United States Fish and Wildlife Service (USFWS) Informal Section 7 Consultation was completed to address potential impacts to the species at this location (FWS-LA-10B0545-1010723).

Protocol surveys were not conducted for the coastal California gnatcatcher. The project study area is located outside of USFWS-designated critical habitat for the California gnatcatcher.

### **Conclusion**

#### **Least Bell's Vireo**

No Least Bell's Vireo were detected during the 2011 survey effort. However, LBVI have been detected during previous surveys in riparian habitat downstream of the survey area. Two breeding LBVI pairs and one lone LBVI male were found along Diamond Bar Creek in 2010. One breeding pair was observed in 2008. The survey area covered in 2011 contains highly impacted/restrained riparian habitat. Riparian habitat at the golf course is very narrow in structure with ongoing maintenance to keep the understory cleared and accessible to players along the eastern golf course survey area. The central and western golf course survey areas while retaining a form of understory vegetation to help buffer the golf course from the adjacent freeway experience a high amount of traffic noise from the highway. Likewise, the off-ramp site contains, in places, a thick understory of mule fat but is also located adjacent to the noisy freeway. Excessive noise is thought to negatively affect breeding in passerines.

Restoration, creation, and enhancement of native riparian habitat along the downstream habitat where LBVI have been previously detected in conjunction with a BHCO program and trash cleanup operations would be beneficial to supporting successful LBVI nesting along Diamond Bar Creek in the Brea Canyon area. While useful as a foraging area, the area surveyed for this year's assessment is unlikely to support



**Legend**

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- Additional Potentially Suitable Riparian Habitat Surveyed in 2011 as requested by Project Team
- Potentially Suitable Riparian Habitat Surveyed in 2008 and 2010
- USFWS Section 7 (FWS-LA-10B0545-1010723 and FWS-LA-10B0099-1110269)
- Yellow Warbler aural detections



**Exhibit 3**  
Yellow Warbler Locations

successful breeding due to the high amount of noise levels in sites adjacent to the freeway and lack of a sufficient understory in the one area not adjacent to the freeway.

### **Southwestern Willow Flycatcher**

The 2011 survey effort did not include surveys for the Southwestern Willow Flycatcher (SWFL). SWFL were not detected during surveys conducted in 2008 and 2010. The narrow width of the habitat makes it better suited to LBVI breeding and foraging activity; however, existing riparian thickets adjacent to open areas near surface water could potentially support SWFL breeding and foraging activities but, more likely, serves as a valuable migration stopover area for the species.

### **Yellow-billed Cuckoo**

Suitable habitat for YBCU does not exist on or near the site. The 2011 survey did not include surveys for the YBCU. No YBCU were observed incidental to this survey effort.

### **Other Wildlife**

#### **Brown-headed Cowbird**

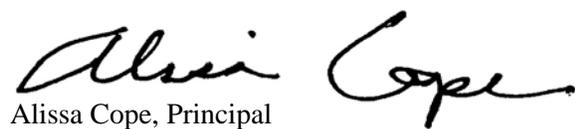
Brown-headed Cowbirds were observed in the study area during this and previous year's surveys. The BHCO may have had a negative effect on the LBVI found in 2010 and may negatively affect future LBVI breeding activities adjacent to the study area. The deleterious effect of this species on riparian songbird species could prove a hindrance to the dispersal of LBVI and SWFL into the project vicinity. Since breeding LBVI were found within the study area in 2008 and 2010, a BHCO trapping program would be an integral part of a long-term restoration plan for the project area.

### **Sensitive Species**

Several non-listed sensitive species, including several yellow warblers, were observed in the study area over the length of the multi-year survey effort. Based on the SR-57/SR-60/Grand Avenue Interchange Improvement Project design phase, coordination with a qualified biologist on construction timing and construction-phase biological monitoring should be initiated to avoid and or minimize potential impacts to these species.

If you have any questions or concerns regarding this 2011 United States Fish and Wildlife Service protocol survey for Least Bell's Vireo, please do not hesitate to contact me at 949.243.2282.

Sincerely,



Alissa Cope, Principal  
**Sage Environmental Group**

Enclosures: Attachment A – Wildlife Species List  
Attachment B – Site Photographs

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## Attachment A Wildlife Species List

### REPTILES

#### Phrynosomatidae

*Sceloporus occidentalis*

*Uta stansburiana*

none

Western Fence Lizard

Side-blotched Lizard

### BIRDS

#### Anatidae

*Anas platyrhynchos*

#### Accipitriidae

*Accipiter cooperi*

*Buteo jamaicensis*

#### Falconidae

*Falco sparverius*

#### Charadriidae

*Charadrius vociferus*

#### Columbidae

*Zenaida macroura*

#### Trochilidae

*Calypte anna*

*Selasphorus sasin*

#### Picidae

*Picoides nuttallii*

#### Tyrannidae

*Sayornis nigricans*

*Sayornis saya*

*Tyrannus vociferans*

*Tyrannus verticalis*

#### Corvidae

*Aphelocoma californica*

*Corvus brachyrhynchos*

*Corvus corax*

#### Hirundinidae

*Stelgidopteryx serripennis*

*Petrochelidon pyrrhonota*

*Hirundo rustica*

#### Paridae

*Poecile gambeli*

#### Aegithalidae

*Psaltriparus minimus*

#### Troglodytidae

*Troglodytes aedon*

#### Turdidae

*Sialia mexicana*

*Catharus guttatus*

*Turdus migratorius*

#### Mimidae

#### Swans, Geese, and Ducks

Mallard

#### Hawks, Old World Vultures, and Harriers

Cooper's Hawk

Red-tailed Hawk

#### Caracaras and Falcons

American Kestrel

#### Plovers and relatives

Killdeer

#### Pigeons and Doves

Mourning Dove

#### Hummingbirds

Anna's Hummingbird

Allen's Hummingbird

#### Woodpeckers and Wrynecks

Nuttall's Woodpecker

#### Tyrant Flycatchers

Black Phoebe

Say's Phoebe

Cassin's Kingbird

Western Kingbird

#### Jays, Magpies, and Crows

Western Scrub-Jay

American Crow

Common Raven

#### Swallows

Northern Rough-winged Swallow

Cliff Swallow

Barn Swallow

#### Titmice and relatives

Mountain Chickadee

#### Bushtit

Bushtit

#### Wrens

House Wren

#### Thrushes, Robins, Chats and Wheatears

Western Bluebird

Hermit Thrush

American Robin

#### Mockingbirds and Thrashers

*Mimus polyglottos*

**Sturnidae**

*Sturnus vulgaris\**

**Parulidae**

*Dendroica petechia*

*Geothlypis trichas*

**Thraupidae**

*Piranga ludoviciana*

**Emberizidae**

*Pipilo maculatus*

*Pipilo crissalis*

*Melospiza melodia*

**Cardinalidae**

*Guiraca caerulea*

**Icteridae**

*Agelaius phoeniceus*

*Euphagus cyanocephalus*

*Icterus cucullatus*

*Icterus bullockii*

**Fringillidae**

*Carpodacus mexicanus*

*Carduelis psaltria*

*Carduelis lawrencei*

Northern Mockingbird

**Starlings & Allies**

European Starling

**Wood Warblers and relatives**

Yellow Warbler

Common Yellowthroat

**Tanagers**

Western Tanager

**Emberizines**

Spotted Towhee

California Towhee

Song Sparrow

**Cardinals, Grosbeaks & Allies**

Blue Grosbeak

**Blackbirds, Orioles & Allies**

Red-winged Blackbird

Brewer's Blackbird

Hooded Oriole

Bullock's Oriole

**Finches**

House Finch

Lesser Goldfinch

Lawrence's Goldfinch

**MAMMALS**

**Leporidae**

*Sylvilagus audubonii*

**Sciuridae**

*Spermophilus beecheyi*

*Sciurus niger I, HA*

**Geomyidae**

*Thomomys bottae*

**Canidae**

*Canis domesticus\**

*Canis latrans HA*

**Felidae**

*Felis cattus\**

**Bovidae**

*Bos taurus I*

**Rabbits and Hares**

Audubon's Desert Cottontail

**Squirrels, Chipmunks, and**

**Marmots**

California Ground Squirrel

Eastern Fox Squirrel

**Pocket Gophers**

Botta's Pocket Gopher

**Foxes, Wolves, and relatives**

Domestic dog

Coyote

**Cats**

Feral Cat

**Sheep, Goats, and relatives**

Feral Cattle

## Attachment B Site Photographs



This view shows typical habitat within the western golf course survey area.



This view shows the central golf course survey area



This view shows the dominant vegetation in the eastern half of the western golf course survey area adjacent to the freeway.



This view shows vegetation more typical of the western half of the golf course western survey area.



This view shows the eastern half of the ramp survey area as seen looking to the south with the freeway behind.



This view shows the eastern portion of the ramp survey area with its canopy of eucalyptus trees.

**JURISDICTIONAL DELINEATION  
(EXISTING CONDITIONS)  
FOR  
GRAND AVENUE/SR-60 CONFLUENCE PROJECT  
CITY OF INDUSTRY, LOS ANGELES COUNTY, CALIFORNIA**

Prepared for:

**Industry Urban-Development Agency**

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Prepared by:

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Contact: Alissa Cope, Principal

September 2007

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## EXECUTIVE SUMMARY

Sage Environmental Group (Sage) was retained by Industry Urban-Development Agency to conduct a jurisdictional delineation and tree inventory within the project footprint of the Grand Avenue/State Route 60 Confluence Project (Project). Now in the preliminary stage of design, this project will involve on and off ramp improvements, freeway widening and associated ancillary improvements related to the new confluence design. All drainages within the Project study area (survey area) were examined for jurisdictional features and connectivity. Results were compiled per U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG) guidelines. Since the project design is still in its formative stages, this report only addresses the existing conditions of the site, and does not evaluate temporary and permanent impacts.

Important findings include the following:

- There are **0.661** acres (**1519.56** linear feet) of wetlands within the survey area. All wetlands are under the joint jurisdiction of the CDFG, USACE, and the RWQCB. Wetlands were found in five separate locations in the survey area within the Relatively Permanent Water of Diamond Bar Creek and its tributaries.
- There are **1.388** acres (**3582.28** linear feet) of USACE jurisdiction the survey area. USACE jurisdiction includes all Ordinary High Water Marks and wetlands within the Relatively Permanent Water of Diamond Bar Creek and its tributaries.
- There are **1.748** (**4797.90** linear feet) acres of RWQCB jurisdiction within the survey area. RWQCB jurisdiction includes all Ordinary High Water Marks and wetlands within the Relatively Permanent Water of Diamond Bar Creek and its tributaries, and all connective features, such as concrete channels, riprap channels, and concrete ditches.
- There are **4.258** acres (**3571.39** linear feet) of CDFG jurisdiction within the survey area. CDFG jurisdiction includes bank to bank measurements and riparian canopy drip line extents. It does not include unvegetated manmade ditches and channels.

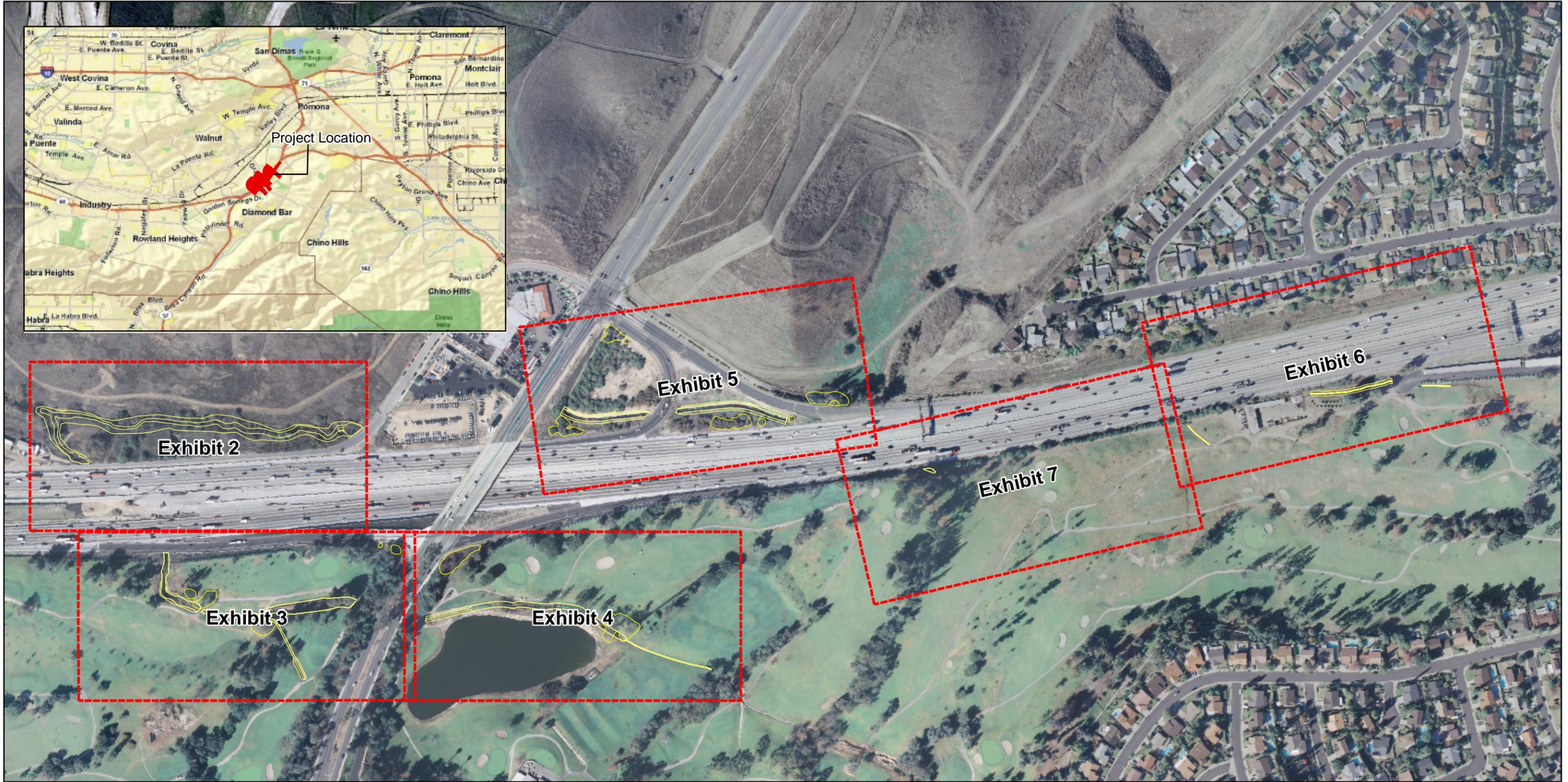
## **SECTION 1.0 – INTRODUCTION**

### **1.1 PROJECT DESCRIPTION**

Sage Environmental Group (Sage) was retained by Industry Urban-Development Agency to conduct a jurisdictional delineation and tree inventory in the project footprint of the Grand Avenue/State Route 60 Confluence Project. Now in the preliminary stage of design, this project will involve on and off ramp improvements, freeway widening and associated ancillary improvements related to the new confluence design. All drainages within the project area were examined for jurisdictional features and connectivity. Results were compiled per U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG) guidelines. Since the project design is still in its formative stages, this report only addresses the existing conditions of the site, and does not evaluate temporary and permanent impacts.

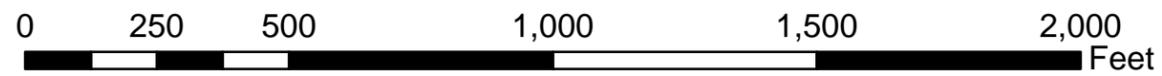
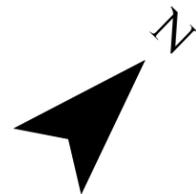
### **1.2 PROJECT LOCATION**

The survey area is located in Diamond Bar, Los Angeles County, California in the *San Dimas* U.S. Geological Service (USGS) 7.5 minute quadrangle (quad) map in Township 2 South, Range 9 West, Sections 9 and 10 (Exhibit 1). The survey area lies on either side of State Routes 57/60, and is transected by Grand Avenue. The surrounding area is primarily composed of residential, recreational, and industrial development, as well as open space. The open space occurs along the north and west sides of the Grand Avenue/SR-57/60 over most of the survey area. This open space is historically grazed and now exhibits remnant patches of coastal sage scrub surrounded by a dominance of ruderal vegetation. A mature, mixed riparian woodland extends from Grand Avenue adjacent to the northwest side of SR-57/60 downstream to beyond the limits of the survey area within Diamond Bar Creek. A mosaic of industrial, recreational, and residential development surrounds the survey area. The south and east portions of the survey area lie within the Diamond Bar Golf Course, and residential development surrounds the golf course. A large industrial development is also underway north of the primary open space of the survey area. At the Grand Avenue/SR-57/60 interchange, a few business enterprises and supporting infrastructure are found within the survey area as well. A number of drainages flow into Diamond Bar Creek from the south and east of SR-57/60. All drainages within the survey area were examined for this project.



**Legend**

-  Delineation Areas
-  Delineated Features



***Exhibit 1***  
**Diamond Bar Creek**  
**Jurisdictional Delineation**  
**Overview Map**

## SECTION 2.0 – METHODS

### 2.1 JURISDICTIONAL DETERMINATION AND WETLAND DELINEATION

Prior to beginning the field delineation, high-resolution aerial photographs, National Wetlands Inventory maps, and USGS topographic maps of the project site were examined to determine the potential areas of USACE / RWQCB / CDFG jurisdiction. In the field, boundaries and dimensions of jurisdictional features were recorded on aerial photographs. Features within the survey area were investigated for the presence of drainages, water bodies, riparian habitats, potential wetlands, and connectivity.

Only features that exhibited the potential to be three-parameter wetlands (i.e., vegetation, soils, and hydrology) were investigated and recorded onto standardized data sheets. Recorded data typically includes present vegetation and percent covers, soil profiles in dug soil pits, and evidence of hydrology. Potential wetland habitats are evaluated using the methodology set forth in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACE 1987), hereafter called the 1987 Wetland Manual. The 2006 Arid West Supplement (Arid Supplement) to the 1987 Wetland Manual was in effect at the time this survey commenced and was therefore applied to this project. Data related to USACE-defined wetlands is recorded onto Wetland Determination Data Forms – Arid West Region for each individually numbered soil pit. Features with no evidence of wetland hydrology, and which supports only upland vegetation, are evaluated for the upward limits of jurisdiction only and not for wetland parameters.

Potential CDFG jurisdictional riparian habitats were evaluated using the guidance described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (CDFG 1994). Potential USACE / RWQCB / CDFG jurisdictional areas are field checked for the presence of definable channels and/or wetland vegetation, riparian habitat, soils, and hydrology. The lateral extent of a jurisdictional drainage is measured in several ways depending on the particular situation. In the absence of a defined wetland, the USACE traditionally uses the determination of the presence of a bed and bank to the upper limit of the ordinary high water mark (OHWM). Under court decisions reached in *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208 (2006)) (hereafter referred to as "Rapanos"), the USACE now excludes jurisdiction over many dry or ephemeral washes (non-Relatively Permanent Waters, or "non-RPW"s) in California. The RWQCB includes all USACE jurisdictional areas, OHWMs in non-RPWs, isolated wetlands, and any other feature that has an effect on surface or subsurface water quality within California. Depending on which measurement is greater, the CDFG takes jurisdiction to the top of the bank on either side of the drainage or to the outer edge of all riparian vegetation. This edge, as determined by the "drip line" of the riparian canopy, is used as the line of demarcation between riparian and upland habitats. On smaller streams or dry washes with little or no riparian habitat, the top of the bank is used to mark the lateral extent of CDFG jurisdictional drainage. In order to calculate jurisdictional acreages after the fieldwork is complete, measurements are gathered in feet.

Hydrologic indicators are observed per the 1987 Wetland Manual guidelines. Indicators include evidence of inundation, saturation, high water table, watermarks, drift lines, sediment deposits, surface soil cracks, water-stained leaves, biotic crust, aquatic invertebrates, hydrogen sulfide odor, and the presence or oxidation/reduction features in the soil, among several others. Consideration of the climate and flow frequency is given when observing watermarks and drift lines. For the purpose of determining hydrologic connectivity to a Traditionally Navigable Water (TNW) body, aerial photos and USGS quads are referenced, and all features are inspected in the field for true connectivity.

For a wetland delineation, plants are categorized according to their probabilities to occur in wetlands versus non-wetlands in accordance with the categories in the *National list of Species that Occur in Wetlands* (Reed et al. 1988). More specifically, the California Land Resource Region (Region 0)

wetlands plant list is used, which is a regional adaptation of the *National List*. The wetland species categories are:

- I. Obligate Wetland (OBL)** – Occur almost always (estimated probability >99 %) under natural conditions in wetlands.
- II. Facultative Wetland (FACW)** – Usually occur in wetlands (estimated probability 67 % to 99 %), but occasionally found in non-wetlands.
- III. Facultative (FAC)** – Equally likely to occur in wetlands or non-wetlands (estimated probability 34 % to 66 %).
- IV. Facultative Upland (FACU)** – Usually occur in non-wetlands (estimated probability 67 % to 99 %), but occasionally found in wetlands.
- V. Obligate Upland (UPL)** – May occur in wetlands in another region, but occur almost always (estimated probability >99 %) under natural conditions in non-wetlands in southern California. All species not listed on the *National List of Species that Occur in Wetlands* (Reed et al. 1988) are considered to be UPL.
- VI. No Indicator (NI)** – NI is recorded for those species for which insufficient information was available to determine an indicator status.

Reference photographs were gathered during this project and are included as Appendix B. As prescribed by the 1987 Wetland Manual, all available lists of hydric soils were referenced to identify any occurrence of hydric soils listed within the survey area. The national, state, and local hydric soils lists were used along with local soil survey maps (Appendix C).

All determinations and delineations were digitized for the precise mapping of jurisdictional areas. Where no wetlands were present, the lateral limits of USACE/RWQCB/CDFG jurisdiction were measured and recorded onto aerial photographs or field notes. All data on jurisdictional determinations and wetland delineations were reproduced using Global Information System (GIS) software and displayed on aerial maps for this report (Exhibits 2 to 7).

## 2.2 TREE INVENTORY

A tree inventory was performed in the main riparian channel shown in Exhibit 2 as well as in several areas that contained native vegetation elsewhere within the survey area. Within Exhibit 2, native and non-native trees of all sizes were tallied by species, and recorded onto standardized data sheets. Within Exhibits 3 to 5, only native species were inventoried. Seedlings (generally 1 to 6 feet tall) were tallied separately, then added into the totals for each species.

Most of the vegetation within the rest of the survey area was classified as non-native, and excepting the complete inventory of Exhibit 2 and Exhibit 2a, tallies were generally obtained for only native species. In addition to the woodland of Exhibit 2, tree inventories were performed for coast live oak (*Quercus agrifolia*) and California walnut (*Juglans californica*) present within the ramp areas of the Grand Avenue and SR-57/60 intersections. Other inventories were taken in Diamond Bar Golf Course, primarily of large, old individuals, such as California sycamore and coast live oak.

In addition to a tree inventory, several patches of native vegetation were classified and mapped by community (Sawyer and Keeler-Wolf 1995). These areas included California Walnut, Mulefat, and Red Willow Series (Exhibits 3, 4, and 5).

The written results of these tree inventories and vegetation community mapping efforts are contained in Exhibits 2 to 7 at the end of this report.

## SECTION 3.0 – DEFINITIONS OF JURISDICTIONAL LIMITS

### 3.1 UNITED STATES ARMY CORPS OF ENGINEERS

Pursuant to Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged and/or fill material into waters of the United States. Waters of the United States include navigable waterways and wetlands adjacent to navigable waterways, and non-navigable waterways and wetlands adjacent to non-navigable waters that are contiguous with navigable waterways. The term “waters of the United States” is defined at 33 Code of Federal Regulations (CFR) Part 328 and currently includes (1) all navigable waters (including all waters subject to the ebb and flow of the tide), (2) all interstate waters and wetlands, (3) all other waters (e.g., lakes, rivers, intermittent streams) that could affect interstate or foreign commerce, (4) all impoundments of waters mentioned above, (5) all tributaries to waters mentioned above, (6) the territorial seas, and (7) all wetlands adjacent to waters mentioned above.

Wetlands are defined in 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.” In 1987 the USACE published a manual to guide its field personnel in determining jurisdictional wetland boundaries. Currently, the 1987 Wetland Manual provides the legally accepted methodology for identification and delineation of USACE-jurisdictional wetlands.

The methodology set forth in the 1987 Wetland Manual generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. Currently, the 1987 Wetland Manual, as amended by the Arid West Supplement of 2006, provides the legally accepted method for identification and delineation of USACE-jurisdictional wetlands in California. While the manual provides great detail in methodology and allows for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the 1988 National List of Plant Species that Occur in Wetlands [Reed, P.B., Jr., et al. 1988]). These plants are known as “hydrophytic vegetation”;
- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions). Such soils, known as “hydric soils”, have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season; and
- Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year. For most of low-lying southern California, 5 percent of the growing season is equivalent to 18 days.

Although the most reliable evidence of wetland hydrology may be provided by a gauging station or groundwater well data, such information is often limited for most areas. Thus, most hydrologic indicators are those that can be observed during field inspection. The following indicators provide some evidence of hydrology: (1) standing or flowing water; (2) water-logged soils during the growing season; (3) water marks present on trees or other objects associated with a drainage; (4) drift lines, or small piles of debris oriented in the direction of water movement through an area; (5) shelving; (6) destruction of terrestrial vegetation; and (7) thin layers of sediments deposited on leaves or other objects. The Arid West Supplement of 2006 includes all of these indicators as well as surface soil cracks, inundation visible on aerial imagery, salt and biotic crusts, aquatic invertebrates, hydrogen sulfide odor, oxidation/reduction

reactions within the soil profile, and several others. In general, a combination of hydrologic indicators indicates a more defined hydrological system.

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

*...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

On January 9, 2001, the U.S. Supreme Court ruled (in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*) (SWANCC) that the USACE jurisdiction does not extend to previously regulated isolated waters, including but not limited to isolated ponds, reservoirs, and wetlands. Examples of isolated waters that are affected by this ruling include vernal pools, stock ponds, lakes (without outlets), playa lakes, and desert washes that are not tributary to navigable or interstate waters or to other jurisdictional waters.

A joint guidance by the U.S. Environmental Protection Agency (EPA) and the USACE was issued on June 5, 2007 to clarify circumstances where a Clean Water Act (CWA) Section 404 permit would be required before conducting activities in wetlands, tributaries, and other waters. This guidance is consistent with the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208 (2006)) ("Rapanos"), which address the jurisdiction over waters of the United States under the Clean Water Act (33 U.S.C. §1251 et seq.). This Rapanos guidance does not supersede the 2003 guidance interpreting SWANCC, and the agencies will continue to evaluate jurisdiction over isolated waters on a case-by-case basis.

The USACE will continue to assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries.

The USACE will use fact-specific analysis to determine whether waters have a significant nexus with a traditional navigable water for non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary. "A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters," including consideration of hydrologic and ecologic factors.

In May 2007, the USACE and EPA jointly published and authorized the use of the *Jurisdictional Determination Form Instructional Guidebook* (USACE 2007). The form and guidebook define how to determine if an area is jurisdictional, and if there is a significant nexus per the Rapanos decision. A nexus is defined as some property of a drainage that has an effect on the physical, chemical, or biological integrity of a downstream TNW. A significant nexus is more than insubstantial and more than speculative effects.

### **3.2 REGIONAL WATER QUALITY CONTROL BOARD**

The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (Cal. Water Code, Div. 7, §13000 et seq.). Porter-Cologne reserves the right for the State of California to regulate activities that could affect the quantity and/or quality of surface and/or ground waters, including isolated wetlands, within the State. Waters of the State determined to be jurisdictional for these purposes require, if impacted, waste discharge requirements and a 401 Certification (in the case of the required USACE permit). The State Water Resources Control Board (SWRCB) and the local Regional Water Quality Control Boards (RWQCB) are the relevant permitting agencies. Limits of jurisdiction include wetland boundaries and the OHWM of TNWs, RPWs and non-RPWs.

### **3.3 CALIFORNIA DEPARTMENT OF FISH AND GAME**

Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. Potential CDFG jurisdictional riparian habitats were evaluated using the guidance described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (CDFG 1994).

CDFG defines a “stream” (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation”. CDFG’s definition of “lake” includes “natural lakes or man-made reservoirs”. CDFG limits of jurisdiction include the maximum extents of the uppermost bank-to-bank distance or riparian vegetation dripline.

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

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways;
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated as natural waterways; and
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions.

## SECTION 4.0 – RESULTS AND DISCUSSION

### 4.1 DESCRIPTION OF SITE

The survey area lies on either side of Interstate 57/60, and is transected by Grand Avenue. The surrounding area is primarily composed of residential, recreational, and industrial development, as well as open space. Diamond Bar Creek, the principal drainage of the survey area, runs in a northeast to southwest direction on the north side of Interstate 57/60. The survey was conducted in the middle of the driest year to date in the Los Angeles area, and the creek was identified with surface flows. This perennial stream is presumably fed from a combination of underground springs and runoff from upstream human development. Water sources originate upstream from Diamond Bar Golf Course and the surrounding residences on the south and east sides of SR 57/60, underground sheet flow from between the north side of Interstate 57/60 and the south bank of Diamond Bar Creek, and natural flows from the surrounding hillsides. The drainages within the survey area are connected via drainage grates, culverts, and ditch networks that pass from the northeast to the southwest. Many of these pass underneath SR-57/60 and drain into Diamond Bar Creek. Diamond Bar Creek eventually empties into San Jose Creek and then to the San Gabriel River before finally ending in the Pacific Ocean.

### 4.2 VEGETATION COMMUNITIES

The following descriptions are included in this report to encompass the native vegetation communities found within the survey area. All community descriptions follow that provided in *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and/or Holland (1986), and nomenclature follows that provided in *The Jepson Manual: Higher Plants of California* (Hickman et al. 1993).

#### 4.2.1 Developed

Developed areas are areas that have been altered by humans and now display man-made structures such as houses, paved roads, buildings, parks, and other maintained areas.

Developed areas within the survey area include the Grand Avenue and SR-57/60 roadways, several businesses (i.e. Burger King, Diamond Bar Honda), Diamond Bar Golf Course and its facilities, frontage roads, and a Caltrans staging area (Exhibits 1 to 7).

#### 4.2.2 Disturbed / Ruderal

Disturbed and Ruderal areas are often a result of disturbances caused by humans. Ruderal areas are typically characterized by heavily compacted or frequently disturbed soils. Plant species occurring in ruderal areas are adapted to survive in these conditions and readily colonize disturbed ground. Ruderal areas within the project site exhibit varying degrees of past surface disturbance. Areas of disturbance are often devoid of vegetation, or may contain sparse vegetation composed of colonizing species. Disturbed areas include bare ground, dirt roads, cleared lots, and other barren features.

The majority of the survey area north of SR-57/60 can be characterized as Ruderal (Exhibits 2 and 5). These slopes were historically used for cattle grazing, and now contain primarily ruderal plant species. The dominant ruderal plant species that occur onsite include tocalote (*Centaurea melitensis*), short pod

mustard (*Hirschfeldia incana*), and fennel (*Foeniculum vulgare*). Disturbed areas occur onsite primarily as cleared lots, dirt roads, and roadway shoulders (Exhibits 1 to 7).

#### **4.2.3 Cattail Series**

Cattail Series is described in Sawyer and Keeler-Wolf (1995) as being dominated by cattails (*Typha* sp.) emerging from water. Cover is continuous to open, and species such as bulrush (*Scirpus* spp.), saltgrass (*Distichlis spicata*) and yerba mansa (*Anemopsis californica*), are often present. This vegetation community can be permanently, regularly, semi-permanently, seasonally, or irregularly flooded. The water can be fresh or salty, and soils are often peaty, high in organic content, or hydric. This series occurs from sea level to 2000 meters in elevation. The National List of Wetland Plants lists cattails as an obligate wetland indicator species.

Cattail Series is present on the survey area within the wetlands of Diamond Bar Golf Course (Exhibits 3 and 4) and the concrete ditch channels between the Grand Avenue / southbound SR-57/60 ramps (Exhibit 5). Plant species found on the project site typical of the Cattail Series include broad-leaved cattail (*Typha latifolia*), willow herb (*Epilobium ciliatum*), watercress (*Rorippa palustris*), and knotweed (*Polygonum amphibium*).

The Cattail Series of Exhibits 3 and 4 occur along the historic Diamond Bar Creek channel, and were likely more expansive prior to the construction of the golf course. The series within the concrete drainage ditches of Exhibit 5 has established due to a buildup of sedimentation. Although this series within Exhibit 5 appears in man-made concrete ditches, the San Dimas USGS quad map shows a blue-line drainage through that cloverleaf interchange. This indicates a historic presence of the drainage prior to the construction of the road and the surrounding ramps. Water has continued to flow through this area after construction, and a lack of maintenance within the ditches has allowed the establishment of a substantial Cattail Series that has taken on a naturally occurring appearance.

#### **4.2.4 Red Willow Series**

Red Willow Series is characterized by a dominance of red willow (*Salix laevigata*). This series occurs along riparian channels, wetlands, floodplains, lake edges, ditches, and other periodically inundated areas. Other tree and shrub species that may be present include California sycamore (*Platanus racemosa*), coyote brush (*Baccharis pilularis*), cottonwood (*Populus* spp.), white alder (*Alnus rhombifolia*), and other willows (*Salix* spp). This series occurs from sea level to 1700 meters in elevation.

Red Willow Series is present onsite in a small area of the ditch adjacent to the off ramp from SR 57/60 to Grand Avenue (Exhibit 5). Additional individual red willow trees occur in the mixed willow areas shown in Exhibits 2 and 3.

#### **4.2.5 Mixed Willow Series**

Mixed Willow Series is characterized by dense, broad-leaved, winter-deciduous riparian thickets that are not dominated by any single willow (*Salix* spp.) species. Site factors that favor this community are loose, deep coarse alluvium deposited near stream channels during flood flows. This community is a seral type (one that evolves into another community as it matures) and may eventually be replaced by cottonwood-sycamore riparian forest if left undisturbed by floods (Holland 1986).

Goodding's black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and red willow dominated the riparian canopy onsite. Other trees found in this series onsite include velvet ash (*Fraxinus velutina*), white alder (*Alnus rhombifolia*), weeping willow (*Salix babylonica*), and Mexican elderberry (*Sambucus mexicana*). Mule fat (*Baccharis salicifolia*) was the most common understory species. This community was dense along both sides of Diamond Bar Creek and the channel itself, and appeared to be in a stable state (Exhibit 2). Other Mixed Willow areas were found at the south extension of the survey area in the golf course (Exhibit 3), and sporadic willow trees occurred elsewhere within the survey area, primarily as single individuals (Exhibit 4).

#### **4.2.6 California Walnut Series**

The southern California black walnut (*Juglans californica*) is a deciduous native tree considered rare by the California Native Plant Society. California Walnut Series occurs where this species is the dominant species in the plant community. This community can occur on the relatively moist soils of riparian corridors and floodplains as well as in upland areas on north-facing slopes (Sawyer and Keeler-Wolf 1995; Holland 1986). On most sites in southern California, an open canopy favors the development of a grassy understory, but coastal sage scrub species often dominate the understories on drier sites (Holland 1986). California Walnut Woodland (Holland 1986) is considered a sensitive plant community by the CDFG.

Onsite, this community is found as a co-dominant woodland series along with Mixed Willow Series in Diamond Bar Creek (Exhibit 2). In addition to its occurrence along Diamond Bar Creek, California Walnut Series also occurs on the eastern embankment of the Grand Avenue/SR-57/60 interchange between the interchange and the golf course (Exhibit 4).

#### **4.2.7 California Sycamore Series**

The California Sycamore Series, as described by Sawyer and Keeler-Wolf (1995), is a community in which the California (or western) sycamore (*Platanus racemosa*) is the sole or dominant species in the canopy with willow (*Salix* sp.), oak (*Quercus* sp.), cottonwood (*Populus* sp.), and other trees often present. Trees are usually less than 115 feet in height and the canopy of the community is typically open. Shrubs can be common or infrequent and the ground layer can be grassy (Sawyer and Keeler-Wolf 1995). This community may be characterized as a wetland with permanently saturated soils and riparian corridors leading into braided, depositional channels of intermittent streams. Terraces can be adjacent to the floodplains and are subject to high-intensity flooding. Soils are alluvial in nature, often cobbled and rocky. Holland (1986) describes this type of community as a Riparian Forest or Sycamore Alluvial Woodland. Elevations for the California Sycamore Series range from sea level to 7,900 feet above mean sea level.

This series occurs in Diamond Bar Creek and three additional patches inside the golf course (Exhibits 2, 3, and 4). The California sycamore trees within the golf course are very large, mature trees that may have pre-dated the construction of the golf course. These trees occur as individuals or in small groups along the Diamond Bar Creek channel within the golf course.

#### **4.2.8 Coast Live Oak Series**

The Coast Live Oak Series, as described by Sawyer and Keeler-Wolf (1995), is dominated by the evergreen coast live oak (*Quercus agrifolia*), forming an open, intermittent or continuous canopy of trees less than 100 feet in height; this series often exists on very steep slopes, with mostly sandstone or shale-

derived soils. The floristic composition of this vegetation community matches the Coast Live Oak Woodland described by Holland (1986); this community has a poorly developed shrub layer and a grassy understory. The Coast Live Oak Series is typically found on north-facing slopes and shaded ravines at elevations ranging between sea level and 4,000 feet above mean sea level. Coast Live Oak Series is dominated by coast live oak, but unlike the Coast Live Oak Riparian Forest, the Series may not be directly associated with a drainage.

Coast Live Oak Series is found in a small area of Diamond Bar Creek (Exhibit 2), a small area at the southwest edge of the survey area (Exhibit 3), and inside the landscaped cloverleaf interchange at the north end of the Grand Avenue/SR-57/60 interchange (Exhibit 5). The tree along Diamond Bar Creek (Exhibit 2) appears to be naturally occurring, and the tree at the south end of the survey area (Exhibit 3) may be naturally occurring as well. However, those present within the Grand Avenue / southbound SR-57/60 ramps are all landscaped individuals in three general distributions (Exhibit 5).

#### **4.2.9 Mulefat Series**

Mulefat Series occurs in areas with sandy substrates where the water supply is less dependable than other riparian habitats, but where the soil may be seasonally flooded or saturated. Mulefat (*Baccharis salicifolia*) is typically the sole or dominant shrub in the canopy, with various willow species often present (Sawyer and Keeler-Wolf 1995). Shrubs in this series are less than 12 feet in height, the canopy is continuous, and the ground layer is sparse (Sawyer and Keeler-Wolf 1995). This community matches the description of Mule Fat Scrub as defined by Holland (1986).

Mulefat Series occurs subdominantly in Diamond Bar Creek as well as in patches at the south end of the Grand Avenue/SR-57/60 interchange and adjacent to the Grand Avenue on-ramp from southbound SR-57/60 (Exhibits 2, 3, and 5).

#### **4.2.10 Coastal Sage Scrub Series**

The Venturan-Diegan Coastal Sage Scrub Series (also known as Coastal Sage Scrub) consists primarily of low, drought-deciduous and evergreen shrubs. This community typically occurs on xeric (dry) slopes or clay-rich soils that are slow to release water (Gray and Bramlet 1992; Holland 1986). Coastal Sage Scrub Series matches the California Buckwheat Series and the California Buckwheat-California Sagebrush Series described by Sawyer and Keeler-Wolf (1995), the Diegan and Riversidean Sage Scrubs described by Holland (1986), and the Coastal Scrub of the California Wildlife Habitat Relations System (Mayer and Laudenslayer 1988).

Dominant species present onsite include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and beavertail cactus (*Opuntia littoralis*). This series occurs as remnant patches within the larger ruderal slopes outside of the delineated areas of Diamond Bar Creek (Exhibit 2).

### **4.3 SOILS**

The following soils, identified from (<http://websoilsurvey.nrcs.usda.gov>), were identified within the survey areas:

**Yolo association** – This soil association occurs on alluvial fans between elevations of 1,175 and 1,200 feet. This soil association is over 60 inches deep, well drained, and exhibits moderate subsoil

permeability. Yolo soil associations have grayish-brown, medium acid and slightly acid loam surface layers approximately 18 inches thick underlain by a grayish-brown neutral loam to silt loam subsoil approximately 18 inches thick. The substratum is a light yellowish brown, neutral loam to silt loam. Available water holding capacity is 8.5 to 10.5 inches from 60 inches of soil depth.

Yolo soils make up approximately 90 percent of this association. Approximately five percent of this soil is composed of Chino soils and Handford soils. Natural vegetation found on this soil association consists of oak trees and annual grasses. The frost-free season for this soil type ranges from 240 to 300 days. Inherent fertility of this type of soil is high. Yolo association soils are primarily used for the production of irrigated alfalfa, small grain, sugar beets, and potatoes.

**Altamont-Diablo association, 30 to 50% slopes, eroded** – This soil association occurs throughout the Los Angeles basin area with elevations ranging from near sea level to 1,500 feet. Altamont-Diablo associations are composed of 60 percent Altamont soils and 30 percent Diablo soils, and 10 percent San Benito soils. Natural vegetation occurring on this soil association consists of annual grasses and forbs. This soil association is used extensively for residential development, watershed and wildlife.

Altamont soils from this association occur on 2 to 9 percent slopes. These soils occur on steeper slopes and are moderately eroded, reducing the effective soil depth and water-holding capacity. Altamont soils exhibit a water-holding capacity of 3.0 to 4.5 inches and are approximately 20 to 27 inches deep.

Diablo soils from this association also occur on 2 to 9 percent slopes. These soils exhibit similar characteristics of Altamont soils (occur on steeper slopes and are moderately eroded). Diablo soils exhibit a water-holding capacity of 2.5 to 5.5 inches and are approximately 20 to 39 inches deep.

**San Andreas-San Benito association, 30 to 75 percent slopes, eroded** – This soil association occurs on steep to very steep mountainous areas between elevations of 200 and 1,500 feet. San Andreas-San Benito associations are composed of 50 percent San Andreas soils, 30 percent San Benito soils, and approximately 5 percent each of Balcom soils, Castaic soils, Diablo soils, and Saugus soils. Natural vegetation consists of thick brush or annual grasses and forbs. This soil association is used primarily for watershed, wildlife, and range.

San Andreas soils from this association are well drained and have moderate subsoil permeability. These soils are 24 to 36 inches deep, with a grayish-brown and brown, neutral and medium acid fine sandy loam surface layers about 15 inches thick. The subsoil is a grayish-brown and brown medium acid very fine sandy loam about 13 inches thick underlain by very pale-brown soft, medium grained sandstone. Water-holding capacity is 2.5 to 3.5 inches for 24 to 36 inches of soil depth. Sheet erosion and inherent fertility for San Andreas soils are moderate.

San Benito soils from this association are well drained and have moderately slow subsoil permeability. This soil exhibits dark grayish-brown, neutral clay loam surface layers approximately 28 inches thick and has light yellowish-brown moderately alkaline and calcareous, clay loam subsoils. Water-holding capacity is 6.5 to 8.5 inches for 36 to 48 inches of soil depth.

**San Benito-Soper association** – This soil association occurs on steep foothills along the Orange County line south of Pomona with elevations of 750 and 1,500 feet. San Benito-Soper associations are composed of 75 percent San Benito soils, and 25 percent Soper soils. Natural vegetation occurring on this soil association consists of brush or annual grasses and forbs. This soil is used exclusively for watershed, wildlife and grazing.

Soper soils are well drained, have moderately slow subsoil permeability, and are 36 to 60 inches deep. The Soper soils exhibit dark grayish-brown, neutral gravelly loam surface layers approximately 12 inches thick, while the substratum occurs at depths from 36 to 60 inches and is a sandy conglomerate. 10 to 35 percent of the surface layer and subsoil is composed of gravel. Water-holding capacity is 4 to 7.5 inches for 36 to 60 inches of soil depth.

#### **4.5 EXISTING WETLAND MAPPING**

An examination of the San Dimas USGS quad map revealed a blue line drainage within Diamond Bar Creek as well as a tributary ending just northeast of the Grand Avenue and SR-57/60 Interchange. The USGS quad also displayed a vegetative corridor along most of Diamond Bar Creek north and west of SR 57/60.

The National Wetlands Inventory search revealed that Diamond Bar Creek is classified as a Riverine Freshwater Forested/Shrub Wetland, and that the upstream portion of Diamond Bar Creek is a Freshwater Emergent Wetland. Both the San Dimas USGS quad and the National Wetlands Inventory results indicate that the origins of Diamond Bar Creek and its tributaries are found near Pomona peak within the Puente Hills.

From the survey area, Diamond Bar Creek flows to the southwest where it connects to San Jose Creek. San Jose Creek then continues west to the San Gabriel River. The San Gabriel River then continues west before terminating at the Pacific Ocean. Diamond Bar Creek, San Jose Creek, and the San Gabriel River are considered Relatively Permanent Waters (RPW) of the U.S., and the Pacific Ocean is considered a Traditionally Navigable Water (TNW) of the U.S.

#### **4.6 JURISDICTIONAL AND WETLAND FINDINGS**

This section includes an analysis of jurisdictional and wetland findings as they relate to USACE, RWQCB, and the CDFG. Since the project design for the Grand Avenue/SR-57/60 Confluence Project is not finalized as of the date of this report, only total acres of jurisdiction have been calculated for each agency. Temporary and/or permanent impacts have not been calculated, and are not included in this report.

##### **4.6.1 Wetlands**

Wetlands were identified within several areas of the survey area where hydrophytic vegetation, hydric soils, and surface water were present (Exhibits 2, 3, 4, and 7). There are **0.661** acres (**1519.56** linear feet) of wetlands within the survey area. All wetlands are under the joint jurisdiction of the CDFG, USACE, and the RWQCB. Wetlands were found in five separate locations in the survey area within the Relatively Permanent Water of Diamond Bar Creek and its tributaries.

The largest wetland areas were found within Diamond Bar Golf Course. Most of these occurred in the upstream extension of Diamond Bar Creek, and were in various states of maintenance. The wetlands within Exhibit 3 were dominated by broad-leaved cattail, and included mixed willow species as well as white alder, California sycamore, and others. The banks adjacent to the wetlands included some fill as a result of golf course construction, and were likely more extensive historically. Nevertheless, these wetlands were mature and dense with vegetation. However, while the water flow was continuous among the segments of the creek, the wetlands within Exhibit 3 were not continuous with the up or down stream

portions; they were linked by concrete ditches, culverts, and landscaped ditches. A total of **0.378** acres (**651.34** linear feet) of wetlands were found in Exhibit 3.

Following the wetlands within Exhibit 3 further upstream, a long, narrow wetland was found on the east side of Grand Avenue (Exhibit 4). This wetland was connected to those of Exhibit 3 by a culvert that passed under Grand Avenue. At the time of this field survey, the cattails that dominated the wetland within Exhibit 4 were in the process of being cut by the maintenance crew of Diamond Bar Golf Course. A field inspection was carried out along the length of this wetland and revealed an abundance of cut cattail stems, indicating that the entire wetland was dominated by cattails. Soil profiles and hydrologic indicators confirmed that the three wetland parameters were present within this wetland. The wetland in Exhibit 4 comprised **0.254** acres (**564.73** linear feet) of the survey area.

Additional wetlands were found adjacent to the east side of SR-57/60 (Exhibit 7). This wetland was dominated by Echinochloa grass (*Echinochloa crus-galli*) and duckweed (*Lemna minor*), and the surrounding banks were recently denuded of exotic trees. The banks adjacent to the channel were steep and composed of fill from the construction of the golf course. This wetland was more heavily disturbed than those of Exhibits 3 and 4 (excluding the recent mowing within Exhibit 4), and it had a higher degree of open water in its thin channel. The wetland in Exhibit 7 comprised **0.024** acres (**283.51** linear feet) of the survey area.

One small wetland was confirmed within the Diamond Bar Creek channel where permanent sheet flow emerged from the south slope of the channel banks (Exhibit 2). This wetland occurred on a slope from approximately 20 feet up from the permanent water within the creek. This area supported watercress (*Rorippa palustris*) and algal mats. The soil was deep black in color and smelled of hydrogen sulfide. A hydrogen sulfide odor is only present in the most advanced stages of wetland soil development. Since deep black soils with a hydrogen sulfide odor were present, this indicates that this sheet flow has been occurring for quite some time. This small wetland comprises **0.005** acres (**19.98** linear feet) of Diamond Bar Creek. The remainder of Diamond Bar Creek in Exhibit 2 was examined for the presence of wetlands, but due to a lack of hydric soils, no additional acreage was found.

Upon analysis and in accordance with all current regulations, all wetlands within the survey area fall under the jurisdiction of the USACE, RWQCB, and the CDFG.

#### **4.6.2 USACE Jurisdiction**

There are **1.388** acres (**3582.28** linear feet) of jurisdiction under the USACE within the survey area. USACE jurisdiction includes all natural Ordinary High Water Marks and wetlands within the Relatively Permanent Water of Diamond Bar Creek and its tributaries (Exhibits 2, 3, 4, and 7). Non-USACE jurisdictional, albeit connective, features examined within the survey area include concrete and riprap ditches, metal drainage grates, distribution boxes, and underpass systems. Total USACE jurisdiction includes **0.661** acres (**1519.56** linear feet) of wetlands within Diamond Bar Creek and its tributaries, a Relatively Permanent Water of the U.S. No isolated wetlands were observed within the survey area.

#### **4.6.3 RWQCB Jurisdiction**

There are **1.748** acres (**4797.90** linear feet) of jurisdiction under the RWQCB within the survey area. Since RWQCB is responsible for the regulation of activities that may affect surface and subsurface waters and the areas examined within the survey area displayed significant flow during a drought year, RWQCB jurisdiction includes all Ordinary High Water Marks and wetlands within the Relatively Permanent Water

of Diamond Bar Creek and its tributaries, and all connective features, such as concrete channels, riprap channels, and concrete ditches. Of the total RWQCB acreage, **0.661** acres (**1519.56** linear feet) occur as wetlands within Relatively Permanent Waters (Exhibits 2, 3, 4, and 7). In addition to wetlands, RWQCB jurisdiction includes all riprap/concrete-lined channels (Exhibits 3 to 6) and natural RPW OHWMs, such as that within the downstream portion of Diamond Bar Creek (Exhibit 2). **1.087** acres (**3278.34** linear feet) occur as RPW OHWMs in natural and manmade channels (Exhibits 2 to 7).

#### **4.6.4 CDFG Jurisdiction**

There are **4.258** acres (**3571.39** linear feet) of jurisdiction under the CDFG within the survey area. CDFG jurisdiction includes bank to bank measurements and riparian canopy drip line extents; it does not include *unvegetated* manmade ditches and channels. Of this total, **0.661** acres (**1519.56** linear feet) occur as wetlands within Relatively Permanent Waters (Exhibits 2, 3, 4, and 7). Another **3.597** acres (**2051.83** linear feet) occur as RPW dripline or bank to bank extents (Exhibits 2 to 6). With **2.143** acres (**1379.10** linear feet) of dripline coverage, the riparian channel in Exhibit 2 contains the largest CDFG jurisdictional area. This area may best be characterized as a diverse, mature, riparian woodland in a heavily incised channel. Other dripline extents were collected within several areas of Diamond Bar Golf Course, where large native trees (i.e. coast live oak and California sycamore) were found present along the Diamond Bar Creek drainage (Exhibits 3 and 4).

The concrete ditches within Exhibit 5 displayed ample cattail growth as well as other herbaceous wetland-associated vegetation during the survey. The channels also contained crayfish and mosquito fish at the time of the survey. Based on these natural attributes within the artificial channel, the ditches are therefore considered to be under the jurisdiction of the CDFG.

## SECTION 5.0 – CONCLUSION

Based on all current regulations and interpretations of jurisdictional extents of the USACE, RWQCB, and the CDFG, Table 5-1 summarizes jurisdictional acreages for each agency. These acreage calculations may be used to assess any temporary or potential impacts that may result from the Grand Avenue/SR-57/60 Confluence Project.

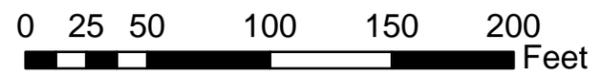
**Table 5-1  
Jurisdictional Matrix**

| <b>Authority</b> | <b>Wetland</b> | <b>Dripline/Bank to Bank</b> | <b>OHWM</b> | <b>Total</b> |
|------------------|----------------|------------------------------|-------------|--------------|
| USACE            | 0.661          | 0                            | 0.727       | 1.388 acres  |
| RWQCB            | 0.661          | 0                            | 1.087       | 1.748 acres  |
| CDFG             | 0.661          | 3.597                        | 0           | 4.258 acres  |



**Legend**

- |  |   |  |   |
|--|---|--|---|
|  Bank to Bank | <b>Vegetation</b>   |  Coast Live Oak |  Soil Pits         |
|  OHWM         |  California Sycamore |  Mulefat Scrub  |  Box/Culvert/Grate |
|  Wetland      |  California Walnut   |  Red Willow     |   |

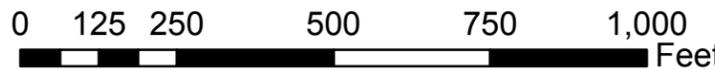


**Exhibit 2**  
**Diamond Bar Creek**  
**Jurisdictional Delineation**

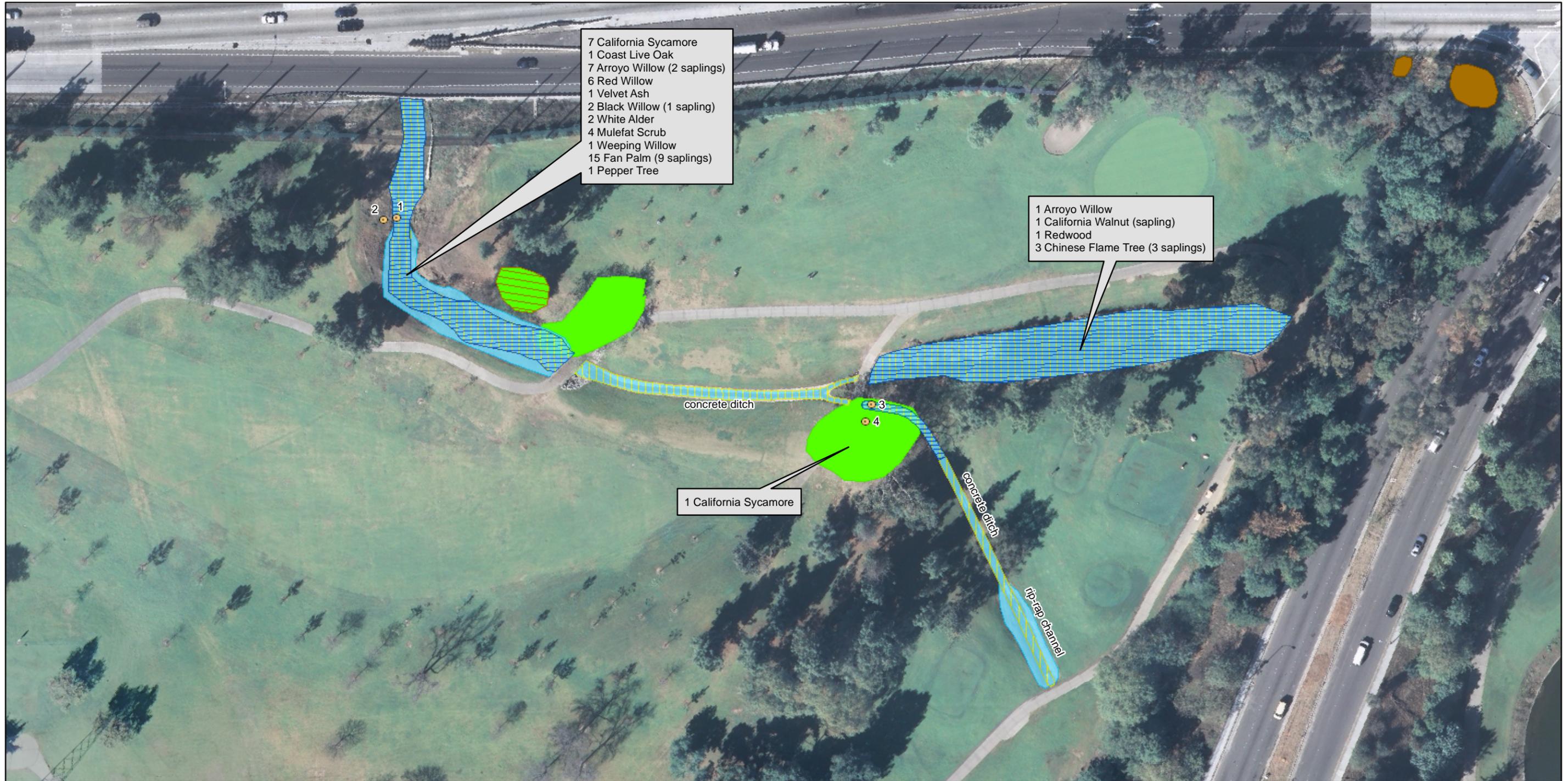


**Legend**

| class               |                                |                    |
|---------------------|--------------------------------|--------------------|
| California Walnut   | Velvet Ash                     | Fan Palm           |
| Mixed Willow        | Mexican Elderberry             | Chinese Flame Tree |
| Arroyo Willow       | Mulefat                        | Castor Bean        |
| Black Willow        | Toyon                          | Common Fig         |
| White Alder         | Disturbed California Sagebrush | Tree Tobacco       |
| California Sycamore | Freshwater Marsh               | Olive              |
| Coast Live Oak      | English Walnut                 | Fennel             |
|                     | Eucalyptus                     | Ruderal            |

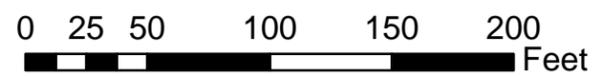


**Exhibit 2a**  
**Diamond Bar Creek**  
**Jurisdictional Delineation**  
**Existing Vegetation**

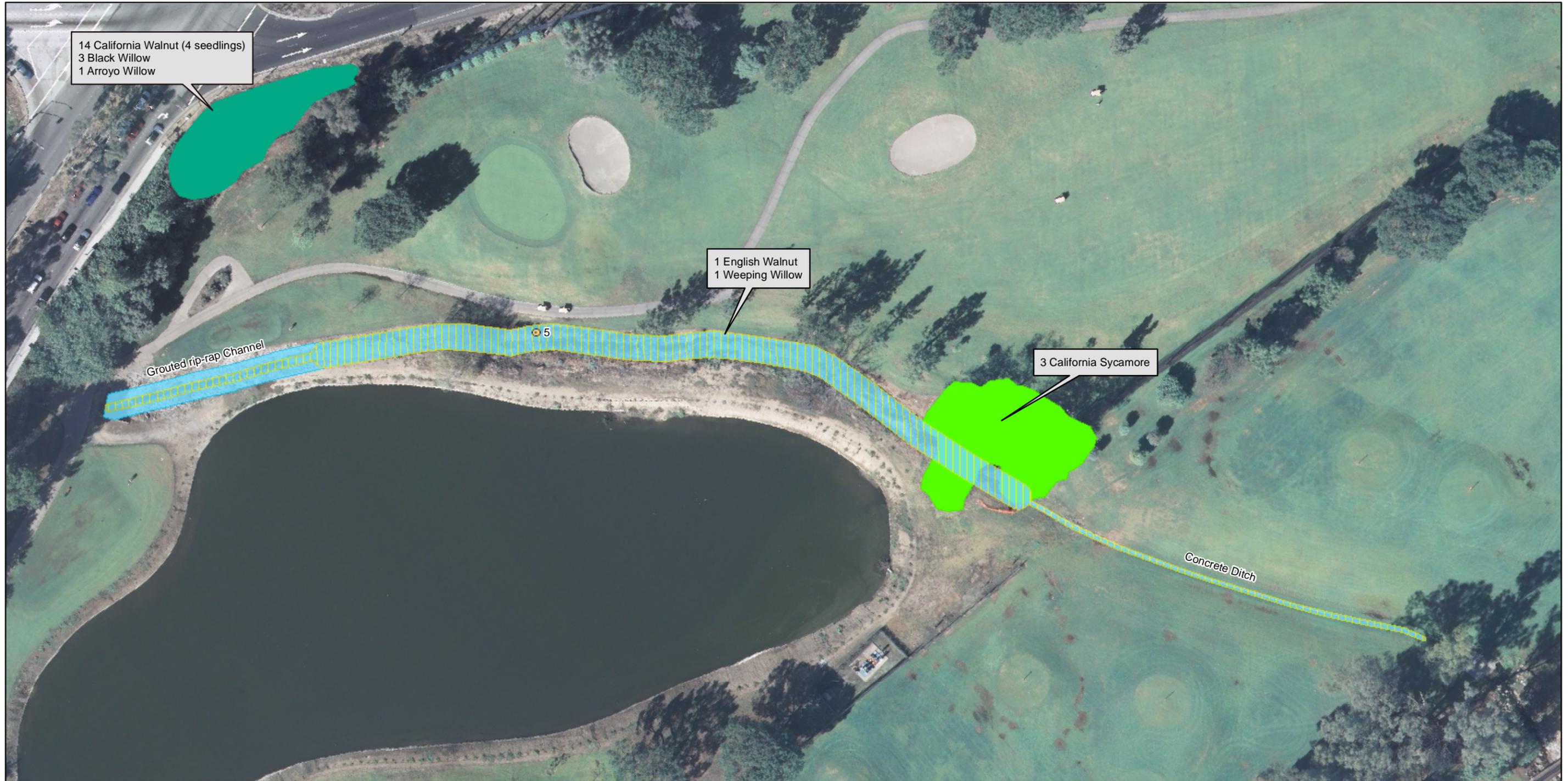


**Legend**

|   |              |   |   |   |   |                   |
|---|--------------|---|---|---|---|-------------------|
|  | Bank to Bank | <b>Vegetation</b>   |  | Coast Live Oak  |  | Soil Pits         |
|  | OHWM         |  | California Sycamore   |  |  | Box/Culvert/Grate |
|  | Wetland      |  | California Walnut   |  |   |                   |
|   |              |   |   |   |   |                   |

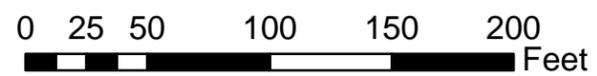


**Exhibit 3**  
**Diamond Bar Creek**  
**Jurisdictional Delineation**



**Legend**

|   |              |   |   |   |   |                   |
|---|--------------|---|---|---|---|-------------------|
|  | Bank to Bank | <b>Vegetation</b>   |  | Coast Live Oak  |  | Soil Pits         |
|  | OHWM         |  | California Sycamore   |  |  | Box/Culvert/Grate |
|  | Wetland      |  | California Walnut   |  |   |                   |
|   |              |   | Red Willow  |   |   |                   |



**Exhibit 4**  
**Diamond Bar Creek**  
**Jurisdictional Delineation**



**Legend**

- |  |   |  |   |
|--|---|--|---|
|  Bank to Bank | <b>Vegetation</b>   |  Coast Live Oak |  Soil Pits         |
|  OHWM         |  California Sycamore |  Mulefat Scrub  |  Box/Culvert/Grate |
|  Wetland      |  California Walnut   |  Red Willow     |   |

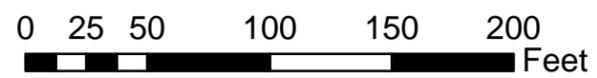


**Exhibit 5**  
**Diamond Bar Creek**  
**Jurisdictional Delineation**



**Legend**

- |   |              |   |   |   |   |                   |
|---|--------------|---|---|---|---|-------------------|
|  | Bank to Bank | <b>Vegetation</b>   |  | Coast Live Oak  |  | Soil Pits         |
|  | OHWM         |  | California Sycamore   |  |  | Box/Culvert/Grate |
|  | Wetland      |  | California Walnut   |  |   |                   |
|   |              |   | Red Willow  |   |   |                   |



**Exhibit 6**  
**Diamond Bar Creek**  
**Jurisdictional Delineation**



**Legend**

- |  |   |  |   |
|--|---|--|---|
|  Bank to Bank | <b>Vegetation</b>   |  Coast Live Oak |  Soil Pits         |
|  OHWM         |  California Sycamore |  Mulefat Scrub  |  Box/Culvert/Grate |
|  Wetland      |  California Walnut   |  Red Willow     |   |



***Exhibit 7***  
**Diamond Bar Creek**  
**Jurisdictional Delineation**

## SECTION 6.0 – REFERENCES

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*San Dimas* USGS 7.5-minute topographic quadrangle.

**APPENDIX A**  
**SITE PHOTOS**



**Photo 1:** Wetland vegetation confined within concrete walls on Diamond Bar Creek at the underpass of SR-57/60 on Diamond Bar Golf Course (Exhibit3).



**Photo 2:** View upstream from the SR-57/60 underpass along Diamond Bar Creek into Diamond Bar Golf Course. Note prominence of wetland and young woody riparian growth (Exhibit 3).



**Photo 3:** View upstream along Diamond Bar Creek from fill slope of Diamond Bar Golf Course (Exhibit 3). Note young woody riparian growth and cattails in foreground and the older, more mature riparian growth in the background.



**Photo 4:** View downstream along Diamond Bar Creek from golf cart bridge. Note continuous coast live oak canopy with the streamside riparian vegetation (Exhibit 3).



**Photo 5:** View downstream from RWQCB jurisdictional concrete ditch showing golf cart bridge and downstream wetland vegetation in Diamond Bar Creek (Exhibit 3).



**Photo 6:** View upstream along RWQCB jurisdictional concrete ditch within Diamond Bar Creek (Exhibit 3). Note presence of flowing water and cattail-dominated wetland in the background.



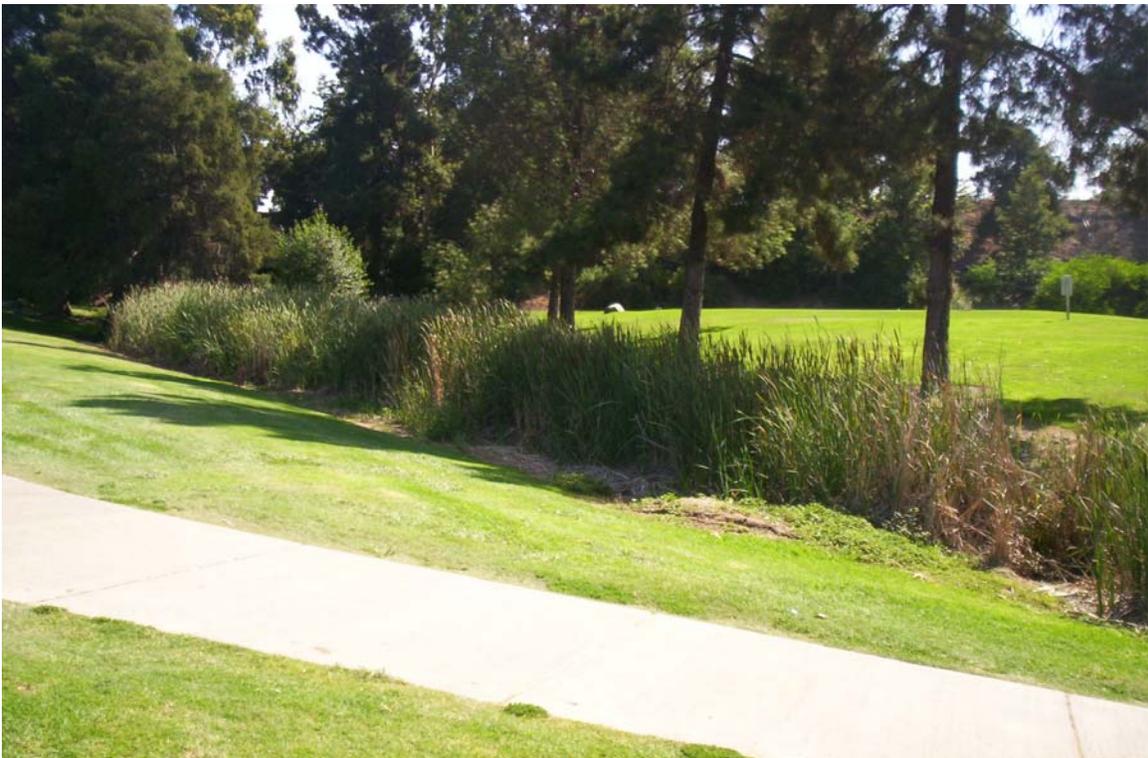
**Photo 7:** View downstream along RWQCB jurisdictional concrete-channelized portion of Diamond Bar Creek from fork adjacent to golf cart path (Exhibit 3).



**Photo 8:** View upstream from fork at golf cart path of Diamond Bar Creek tributary (Exhibit 3). Note presence of water, landscaped surrounding banks, and drainage pipe in the background.



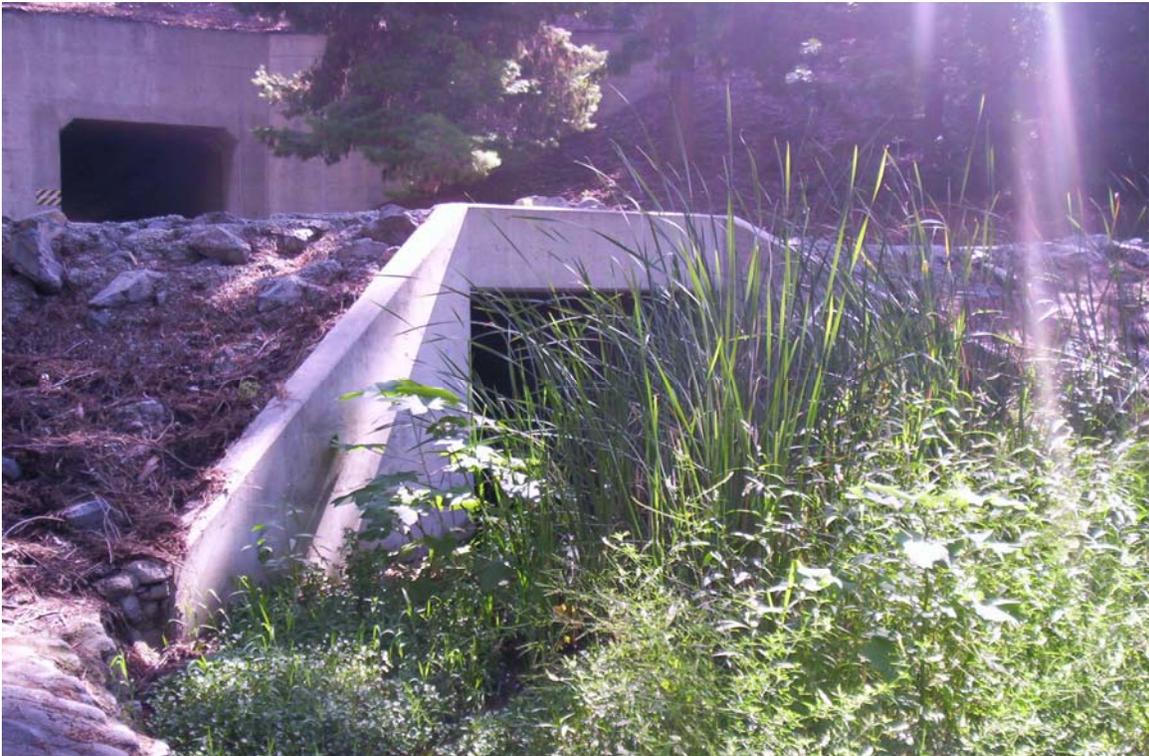
**Photo 9:** View upstream of cattail-dominated wetland section within Diamond Bar Creek (Exhibit 3). Note dumped soil and landscape trimmings at the edge.



**Photo 10:** View of cattail-dominated wetland section of Diamond Bar Creek within Exhibit 3.



**Photo 11:** View downstream along cattail-dominated section of Diamond Bar Creek taken from golf cart path above box opening (Exhibit 3).



**Photo 12:** View of wetland vegetation and box opening at upstream edge of the cattail-dominated wetland section of Diamond Bar Creek (Exhibit 3).



**Photo 13:** View of cattail-dominated wetland section of Diamond Bar Creek east of Grand Avenue (Exhibit 4). Note standing vegetation, algae, water, and cut vegetation.



**Photo 14:** View of cattail-dominated wetland section of Diamond Bar Creek east of Grand Avenue (Exhibit 4). Mower shown was in the process of cutting the cattails down in this channel at the time of the survey.



**Photo 15:** View downstream along Diamond Bar Creek (Exhibit 4). Note remnant standing cattails and weeping willow in foreground and riprap channel and box opening in background.



**Photo 16:** View downstream along channelized riprap portion of Diamond Bar Creek (Exhibit 4). This portion is RWQCB jurisdictional, and it extends under Grand Avenue before emptying into the cattail-dominated wetland just west of Grand Avenue.



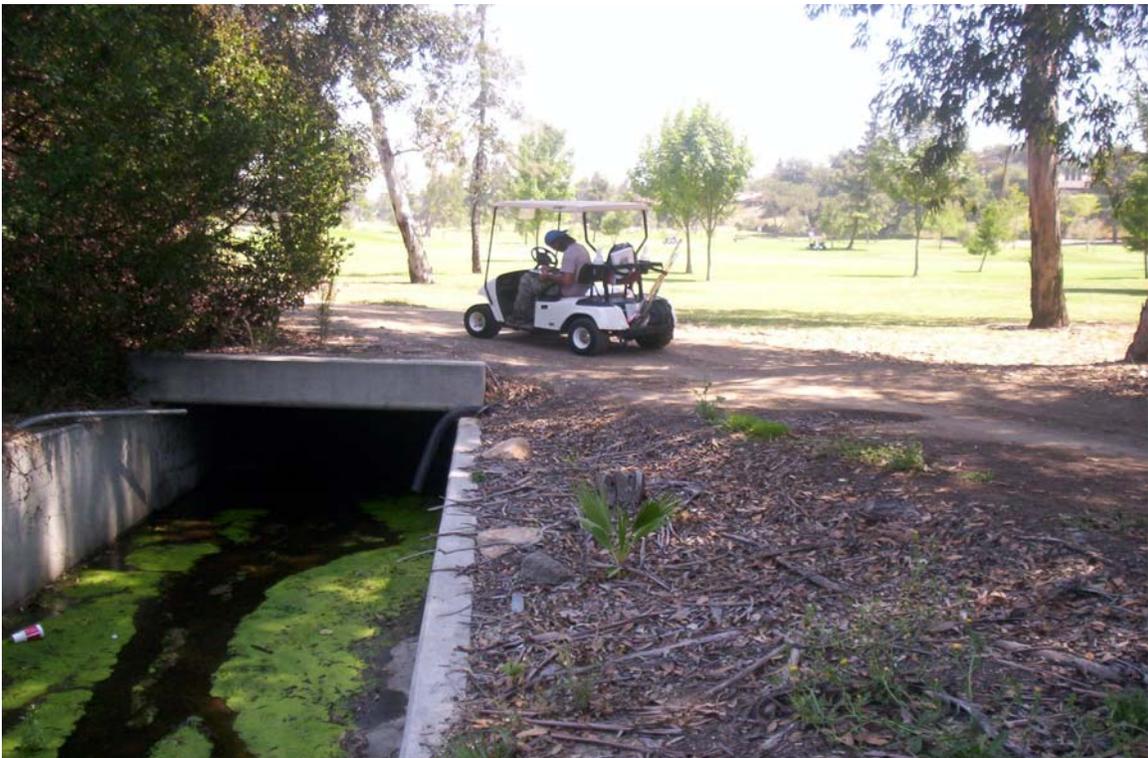
**Photo 17:** View downstream from below California sycamore canopy along recently-mowed cattail-dominated section of Diamond Bar Creek (Exhibit 4).



**Photo 18:** View upstream along RWQCB jurisdictional concrete channel of Diamond Bar Creek (Exhibit 4). Note cut cattails, water, and pipe opening.



**Photo 19:** View downstream of RWQCB jurisdictional connective box culvert (Exhibit 6). Note flowing water and duckweed.



**Photo 20:** View upstream of RWQCB jurisdictional connective box culvert (Exhibit 6). Note flowing water and duckweed.



**Photo 21:** This photo depicts a gravel-topped area and drainage that diverts water underground (Exhibit 7).



**Photo 22:** This photo shows a RWQCB jurisdictional concrete ditch devoid of water just downslope from the area shown in Photo 21 (Exhibit 7). Note gravel-topped area at lower right.



**Photo 23:** Small pipe opening at the downstream end of the concrete ditch shown in Photo 22 (Exhibit 7).



**Photo 24:** Wetland vegetation in the upstream portion of the linear wetland shown in Exhibit 7. Note presence of castor bean and the barren, recently denuded fill banks.



**Photo 25:** Downstream portion of the linear wetland shown in Exhibit 7. Note presence of surface water, duckweed, and recently denuded, barren fill banks. This wetland was in poor general quality at the time of the survey.



**Photo 26:** Large pipe opening at the downstream end of the wetland shown in Exhibit 7.



**Photo 27:** Large distribution box adjacent to the golf course facilities shown in Exhibit 7.



**Photo 28:** Drainage grate at golf course edge (Exhibit 6).



**Photo 29:** Another large drainage grate at golf course edge (Exhibit 6).



**Photo 30:** Soil profile of the small sheetflow wetland within Exhibit 2. This soil smelled of hydrogen sulfide, a very strong indicator of hydric soils.



**Photo 31:** The sheetflow-induced wetland of Exhibit 2. Note presence of surface water, watercress, and algal mats. This unusual wetland was defined by a distinct line of water seepage upslope about 20 feet from the water's edge.



**Photo 32:** Underpass large box opening at upstream origin of large riparian channel shown in Exhibit 2. This water passed below Grand Avenue and the developed area footprint from the cattail-dominated concrete channels in the ramp area upstream and northeast of this point.



**Photo 33:** Fallen trees and high drift lines seen in this photo taken just below the water entry point of the large riparian channel suggest recent rapidly moving and high waters, most likely a result of the extensive rainfall of 2005.



**Photo 34:** A view within the riparian channel of Exhibit 2.



**Photo 35:** A view of the canopy structure within the riparian channel of Exhibit 2. Although a mix of native and non-native species thrive in this woodland, the area is dominated by California walnut and several willow species.



**Photo 36:** Non-jurisdictional erosion gulch within Exhibit 2. Upon examination, this erosional feature had no upstream source. It may have resulted from flood backwash in high flow conditions of 2005, or a number of other reasons (i.e. land slump, fault line, road runoff, etc.).



**Photo 37:** Upper terminus of the non-jurisdictional erosional gulch feature within Exhibit 2. Note the lack of water, dry forbs, and the curious sunken sharp edge.



**Photo 38:** Water port of entry for Diamond Bar Creek on the west side of SR-57/60 into the large riparian channel (Exhibit 2). This underpass box opening extends from this point to the east side of SR-57/60 in a wetland channel on Diamond Bar Golf Course.



**Photo 39:** Water spillway for Diamond Bar Creek into the large riparian channel (Exhibit 2). Note the presence of red willow and watercress, and the generally moderate flow rate.



**Photo 40:** Cattail-dominated concrete channel within the ramp area of SR-57/60 and Grand Avenue (Exhibit 5). The vegetation in this manmade channel is dense and full, indicating that this channel is not maintained and has returned to a more natural state.



**Photo 41:** Upstream extension of the area shown in Photo 40 (Exhibit 5). Note the continued prominence of wetland vegetation and the underpass box opening below the metered stop of the on-ramp for southbound SR 57/60.



**Photo 42:** Upstream extension of the concrete channels of Exhibit 5. Note the continued prevalence of wetland vegetation, flowing water, and upland soil along the angled walls.



**Photo 43:** Upper terminus of manmade channels of Exhibit 5. The entire length of these concrete channels were strongly vegetated with wetland plants at the time of this survey.



**Photo 44:** Box opening at the upper terminus of the manmade channels of Exhibit 5. From this point, the water passes below SR-57/60 and presumably connects to the RWQCB jurisdictional box culvert on the edge of Diamond Bar Golf Course shown in Exhibit 6.

**APPENDIX B**

**WETLAND DATA SHEETS AND TREE INVENTORY DATA SHEETS**

**WETLAND DETERMINATION DATA FORM - Arid West Region**

Project/Site: Diamond Bar Creek Golf Course City/County: Diamond Bar Los Angeles County Sampling Date: 8-15-07

Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 1

Investigator(s): Paul Marrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_

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

Subregion (LRR): \_\_\_\_\_ Lat: 115 0423811 Long: 3763284 (WP 064) Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks: <u>riparian strip bordered by fill banks on both sides with golf course landscaping. Water present from irrigation runoff.</u>  |  |

**VEGETATION**

| Tree Stratum (Use scientific names.)                                      | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
|---|------------------|-------------------|------------------|--|-------------------|--|--------------|--|-------------|-----------|-------|-----------|--------------|-----------|-------|-----------|-------------|-----------|-------|-----------|--------------|----------|-------|----------|-------------|----------|-------|-----------|----------------|----------------|--|----------------|--------------------------------------|--|--|--|
| 1. <u>Salix lasiolepis</u>  | <u>5%</u>        | <u>NO</u>         | <u>FACW</u>      | Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)   |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 2. <u>Salix lasiolepis</u>  | <u>18%</u>       | <u>Yes</u>        | <u>FACW</u>      |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 3. <u>Platanus racemosa</u>   | <u>10%</u>       | <u>Yes</u>        | <u>FACW</u>      |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 4. <del>Salix lasiolepis</del>  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Total Cover: <u>33%</u>   |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| $33\% \times 1.5 = 49.5$<br>$49.5 \times 2 = 99$                          |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Sapling/Shrub Stratum   | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet:  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 1. <u>Washingtonia filifera</u>   | <u>5%</u>        | <u>Yes</u>        | <u>FACW</u>      | <table border="0" style="width:100%;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td><u>75</u></td> <td>x 1 =</td> <td><u>75</u></td> </tr> <tr> <td>FACW species</td> <td><u>43</u></td> <td>x 2 =</td> <td><u>86</u></td> </tr> <tr> <td>FAC species</td> <td><u>15</u></td> <td>x 3 =</td> <td><u>45</u></td> </tr> <tr> <td>FACU species</td> <td><u>2</u></td> <td>x 4 =</td> <td><u>8</u></td> </tr> <tr> <td>UPL species</td> <td><u>2</u></td> <td>x 5 =</td> <td><u>10</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>137</u> (A)</td> <td></td> <td><u>224</u> (B)</td> </tr> <tr> <td align="center" colspan="4">Prevalence Index = B/A = <u>1.63</u></td> </tr> </table> | Total % Cover of: |  | Multiply by: |  | OBL species | <u>75</u> | x 1 = | <u>75</u> | FACW species | <u>43</u> | x 2 = | <u>86</u> | FAC species | <u>15</u> | x 3 = | <u>45</u> | FACU species | <u>2</u> | x 4 = | <u>8</u> | UPL species | <u>2</u> | x 5 = | <u>10</u> | Column Totals: | <u>137</u> (A) |  | <u>224</u> (B) | Prevalence Index = B/A = <u>1.63</u> |  |  |  |
| Total % Cover of:   |                  | Multiply by:      |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| OBL species   | <u>75</u>        | x 1 =             | <u>75</u>        |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| FACW species  | <u>43</u>        | x 2 =             | <u>86</u>        |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| FAC species   | <u>15</u>        | x 3 =             | <u>45</u>        |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| FACU species  | <u>2</u>         | x 4 =             | <u>8</u>         |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| UPL species   | <u>2</u>         | x 5 =             | <u>10</u>        |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Column Totals:  | <u>137</u> (A)   |                   | <u>224</u> (B)   |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Prevalence Index = B/A = <u>1.63</u>                                      |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 2. _____  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 3. _____  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 4. _____  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 5. _____  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Total Cover: <u>5%</u>  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Herb Stratum  | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators:   |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 1. <u>Typha latifolia</u>   | <u>75%</u>       | <u>Yes</u>        | <u>OBL</u>       | <input checked="" type="checkbox"/> Dominance Test is >50%<br><input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input checked="" type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 2. <u>Filipodium filiforme</u>  | <u>5%</u>        | <u>NO</u>         | <u>FACW</u>      |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 3. <u>Pitris Echioides</u>  | <u>5%</u>        | <u>NO</u>         | <u>FAC</u>       |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 4. <u>Cucurbita foetidissima</u>  | <u>2%</u>        | <u>NO</u>         | <u>UPL</u>       |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 5. <u>Caryza canadensis</u>   | <u>2%</u>        | <u>NO</u>         | <u>FAC</u>       |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 6. <u>Xanthium strumarium</u>   | <u>7%</u>        | <u>NO</u>         | <u>FACU</u>      |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 7. <u>Pluchea odorata</u>   | <u>1%</u>        | <u>NO</u>         | <u>NI</u>        |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 8. <u>Lactuca scariola</u>  | <u>1%</u>        | <u>NO</u>         | <u>FAC</u>       |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 9. <u>Melilotus alba</u>  | <u>2%</u>        | <u>50%</u>        | <u>FACU</u>      |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Total Cover: <u>100%</u>  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| $100\% \times 2 = 200$  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Woody Vine Stratum  | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present?  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 1. _____  |                  |                   |                  | Yes <input checked="" type="checkbox"/> No _____   |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| 2. _____  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Total Cover: _____  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| % Bare Ground in Herb Stratum <u>0%</u> % Cover of Biotic Crust <u>0%</u> |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |
| Remarks: <u>derelict tissue in Typha</u>                                  |                  |                   |                  |  |                   |  |              |  |             |           |       |           |              |           |       |           |             |           |       |           |              |          |       |          |             |          |       |           |                |                |  |                |                                      |  |  |  |

**SOIL**

8-15-07

Sampling Point: 1

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

| Depth (inches) | Matrix        |      | Redox Features |    |                   |                  | Texture    | Remarks                              |
|----------------|---------------|------|----------------|----|-------------------|------------------|------------|--------------------------------------|
|                | Color (moist) | %    | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |                                      |
| 0-4            | 10YR 2/2      | 100% | —              | —  | —                 | —                | silty clay | eroded fill in areas                 |
| 4-8            | 5GY 2.5/1     | 95%  | 7.5YR 3/4      | 5% | RC                | RC               | silty clay | oxidized channels along living roots |
| 8-18 (bottom)  | 10GY 2.5/1    | 91%  | 6/10Y          | 7% | D                 | M                | silty clay | medium mottles                       |
|                |               |      | 5YR 4/6        | 2% | C                 | PL               | "          |                                      |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) |  | Indicators for Problematic Hydric Soils <sup>3</sup> : |
|---|--|--|
| <input type="checkbox"/> Histosol (A1)                                    | <input type="checkbox"/> Sandy Redox (S5)                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)        |
| <input type="checkbox"/> Histic Epipedon (A2)                             | <input type="checkbox"/> Stripped Matrix (S6)                | <input type="checkbox"/> 2 cm Muck (A10) (LRR B)       |
| <input type="checkbox"/> Black Histic (A3)                                | <input type="checkbox"/> Loamy Mucky Mineral (F1)            | <input type="checkbox"/> Reduced Vertic (F18)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                            | <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2)     |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C)                   | <input checked="" type="checkbox"/> Depleted Matrix (F3)     | <input type="checkbox"/> Other (Explain in Remarks)    |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D)                           | <input type="checkbox"/> Redox Dark Surface (F6)             |  |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                | <input type="checkbox"/> Depleted Dark Surface (F7)          |  |
| <input type="checkbox"/> Thick Dark Surface (A12)                         | <input type="checkbox"/> Redox Depressions (F8)              |  |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                         | <input type="checkbox"/> Vernal Pools (F9)                   |  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                         |  |  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:   |   | Secondary Indicators (2 or more required)                                     |
|---|---|---|
| <b>Primary Indicators (any one indicator is sufficient)</b>                   |   | <input checked="" type="checkbox"/> Water Marks (B1) (Riverine)               |
| <input checked="" type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)   | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)         |
| <input checked="" type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Biotic Crust (B12)                                       | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)            |
| <input checked="" type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                              | <input checked="" type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine)                       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               | <input type="checkbox"/> Dry-Season Water Table (C2)                          |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)                 | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input checked="" type="checkbox"/> Thin Muck Surface (C7)                    |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine)                    | <input checked="" type="checkbox"/> Presence of Reduced Iron (C4)                 | <input checked="" type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                             | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)               | <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                               | <input type="checkbox"/> Shallow Aquitard (D3)                                |
| <input type="checkbox"/> Water-Stained Leaves (B9)                            |   | <input type="checkbox"/> FAC-Neutral Test (D5)                                |

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): —

Water Table Present? Yes  No  Depth (inches): 8

Saturation Present? Yes  No  Depth (inches): 3

Wetland Hydrology Present? Yes  No

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

Remarks: (C8) live crayfish in water at pit

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Diamond Bar Creek Golf Course City/County: Diamond Bar, LA County Sampling Date: 8.13.07  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 2  
 Investigator(s): Paul Morrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): fill slope bank Local relief (concave, convex, none): convex Slope (%): 30%  
 Subregion (LRR): \_\_\_\_\_ Lat: 115 0423815 Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><p align="center" style="font-size: 1.2em;">Soil pit on fill bank. Vegetation mostly cleared.</p>  |  |

**VEGETATION**

| Tree Stratum (Use scientific names.)   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)                                    |
| 2. _____   | _____            | _____             | _____            | Total Number of Dominant Species Across All Strata: <u>2</u> (B)                                       |
| 3. _____   | _____            | _____             | _____            | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                 |
| 4. _____   | _____            | _____             | _____            |  |
| Total Cover: _____   |                  |                   |                  |  |
| <u>Sapling/Shrub Stratum</u>   |                  |                   |                  | <b>Prevalence Index worksheet:</b>   |
| 1. _____   | _____            | _____             | _____            | Total % Cover of: _____ Multiply by: _____   |
| 2. _____   | _____            | _____             | _____            | OBL species _____ x 1 = _____  |
| 3. _____   | _____            | _____             | _____            | FACW species <u>1</u> x 2 = <u>2</u>   |
| 4. _____   | _____            | _____             | _____            | FAC species <u>1</u> x 3 = <u>3</u>  |
| 5. _____   | _____            | _____             | _____            | FACU species <u>1</u> x 4 = <u>4</u>   |
| Total Cover: _____   |                  |                   |                  | UPL species <u>5</u> x 5 = <u>25</u>   |
| <u>Herb Stratum</u>  |                  |                   |                  | Column Totals: <u>0</u> (A) <u>34</u> (B)  |
| 1. <u>Cucurbita foetidissima</u>   | <u>3%</u>        | <u>yes</u>        | <u>UPL</u>       | Prevalence Index = B/A = <u>4.25</u>   |
| 2. <u>Ricinus communis</u>   | <u>1%</u>        | <u>no</u>         | <u>FAC</u>       |  |
| 3. <u>Chenopodium album</u>  | <u>1%</u>        | <u>no</u>         | <u>FAC</u>       |  |
| 4. <u>Chamisyce alboriginata</u>   | <u>2%</u>        | <u>yes</u>        | <u>UPL</u>       |  |
| 5. <u>Washingtonia filifera</u>  | <u>1%</u>        | <u>no</u>         | <u>FAC W</u>     |  |
| 6. _____   | _____            | _____             | _____            |  |
| 7. _____   | _____            | _____             | _____            |  |
| 8. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>8%</u> x .5 = <u>4</u><br>x .2 = <u>1.6</u>                              |                  |                   |                  |  |
| <u>Woody Vine Stratum</u>  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b>  |
| 1. _____   | _____            | _____             | _____            | ___ Dominance Test is >50%   |
| 2. _____   | _____            | _____             | _____            | ___ Prevalence Index is ≤3.0 <sup>1</sup>  |
| Total Cover: _____   |                  |                   |                  | ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| <u>% Bare Ground in Herb Stratum</u> <u>95%</u> <u>% Cover of Biotic Crust</u> <u>0%</u> |                  |                   |                  | ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| Remarks:   |                  |                   |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.                          |
|  |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                |

**SOIL**

8-15-07

Sampling Point: 2

0-15

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

| Depth (inches) | Matrix        |     | Redox Features |    |                   |                  | Texture         | Remarks        |
|----------------|---------------|-----|----------------|----|-------------------|------------------|-----------------|----------------|
|                | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |                 |                |
| <del>0-2</del> | 7.5 YR 2.5/3  | 100 |                |    |                   |                  | loam fill slope |                |
| 3-10           | 10 YR 3/2     | 98% | 7.5 YR 5/8     | 2% | C                 | M                | clay loam       | faint mottling |
| 10-15          | 10.5 YR 3/4   | 99% | 7.5 YR 4/6     | 1% | C                 | M                | sandy loam      | faint mottling |
|                |               |     |                |    |                   |                  |                 |                |
|                |               |     |                |    |                   |                  |                 |                |
|                |               |     |                |    |                   |                  |                 |                |
|                |               |     |                |    |                   |                  |                 |                |
|                |               |     |                |    |                   |                  |                 |                |
|                |               |     |                |    |                   |                  |                 |                |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

|  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)           | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)     |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)       | <input type="checkbox"/> 2 cm Muck (A10) (LRR B)    |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1)   | <input type="checkbox"/> Reduced Vertic (F18)       |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   | <input type="checkbox"/> Red Parent Material (TF2)  |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C)    | <input type="checkbox"/> Depleted Matrix (F3)       | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D)            | <input type="checkbox"/> Redox Dark Surface (F6)    |   |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |   |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Depressions (F8)     |   |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Vernal Pools (F9)          |   |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          |   |   |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

|  |  |
|--|--|
| <b>Primary Indicators (any one indicator is sufficient)</b>            | <b>Secondary Indicators (2 or more required)</b>                   |
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Water Marks (B1) (Riverine)               |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Sediment Deposits (B2) (Riverine)         |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Drift Deposits (B3) (Riverine)            |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine)                | <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)          | <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine)             | <input type="checkbox"/> Thin Muck Surface (C7)                    |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Salt Crust (B11)                              | <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Biotic Crust (B12)                            |  |
| <input checked="" type="checkbox"/> Aquatic Invertebrates (B13)        |  |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |  |
| <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |  |
| <input checked="" type="checkbox"/> Presence of Reduced Iron (C4)      |  |
| <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |  |
| <input type="checkbox"/> Other (Explain in Remarks)                    |  |

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes \_\_\_\_\_ No

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

Remarks: ~~(B13) Aquatic snails (Housworts)~~

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Diamond Bar Creek Golf Course City/County: Diamond Bar, LA County Sampling Date: 8.15.07  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 3  
 Investigator(s): Paul Morrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): vegetated + non-veg riparian channels Local relief (concave, convex, none): concave channel Slope (%): 1%  
 Subregion (LRR): \_\_\_\_\_ Lat: 115 0423934 Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: 3763330 (midpoint 3 or 4) (WP 066)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.) (with irrigation)  
 Are Vegetation  Soil  or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_ Soil \_\_\_\_\_ or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks: <u>fill slope banks both sides about 10% gradient, some soil/landscape waste piles at bank.</u>   |  |

**VEGETATION**

| Tree Stratum (Use scientific names.)    | Absolute % Cover | Dominant Species?                   | Indicator Status | Dominance Test worksheet:  |
|---|------------------|-------------------------------------|------------------|--|
| 1. <u>Salix lasiolepis (at E end)</u>   | <u>3%</u>        | <input checked="" type="checkbox"/> | <u>FACW</u>      | Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  |
| 2. _____                                |                  |                                     |                  | Total Number of Dominant Species Across All Strata: <u>2</u> (B)   |
| 3. _____                                |                  |                                     |                  | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)  |
| 4. _____                                |                  |                                     |                  |  |
| Total Cover: <u>3%</u>                  |                  |                                     |                  |  |
| Sapling/Shrub Stratum                   |                  |                                     |                  | Prevalence Index worksheet:  |
| 1. _____                                |                  |                                     |                  | Total % Cover of: _____ Multiply by: _____   |
| 2. _____                                |                  |                                     |                  | OBL species <u>110</u> x 1 = <u>110</u>  |
| 3. _____                                |                  |                                     |                  | FACW species <u>7</u> x 2 = <u>14</u>  |
| 4. _____                                |                  |                                     |                  | FAC species <u>6</u> x 3 = <u>18</u>   |
| 5. <u>Rumex crispus 1%</u>              |                  |                                     | <u>UPL</u>       | FACU species <u>2</u> x 4 = <u>8</u>   |
| _____ <u>Epilobium ciliatum 4%</u>      |                  |                                     | <u>FACW</u>      | UPL species <u>2</u> x 5 = <u>10</u>   |
| _____ <u>Melilotus alba 1%</u>          |                  |                                     | <u>FACU</u>      | Column Totals: <u>127</u> (A) <u>160</u> (B)   |
| _____ <u>Solanum xanthii 1%</u>         |                  |                                     | <u>UPL</u>       | Prevalence Index = B/A = <u>1.26</u>   |
| Total Cover: <u>0%</u>                  |                  |                                     |                  |  |
| Herb Stratum                            |                  |                                     |                  | Hydrophytic Vegetation Indicators:   |
| 1. <u>Rorippa palustris</u>             | <u>3%</u>        |                                     | <u>OBL</u>       | <input checked="" type="checkbox"/> Dominance Test is >50%   |
| 2. <u>Ludwigia peploides</u>            | <u>3%</u>        |                                     | <u>OBL</u>       | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>  |
| 3. <u>Typha latifolia</u>               | <u>95%</u>       | <input checked="" type="checkbox"/> | <u>OBL</u>       | <input checked="" type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 4. <u>Cyperus sp. (umbrella sedge)</u>  | <u>3%</u>        |                                     | <u>OBL</u>       | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| 5. <u>Polygonum amphibium</u>           | <u>4%</u>        |                                     | <u>OBL</u>       |  |
| 6. <u>Pennisetum echinoides</u>         | <u>3%</u>        |                                     | <u>FAC</u>       |  |
| 7. <u>Cyperus sp.</u>                   | <u>2%</u>        |                                     | <u>OBL</u>       |  |
| 8. <u>Xanthium strumarium</u>           | <u>3%</u>        |                                     | <u>FACU</u>      |  |
| _____ <u>Ricinus communis 1%</u>        |                  |                                     | <u>FACU</u>      |  |
| Total Cover: <u>124%</u>                |                  |                                     |                  |  |
| Woody Vine Stratum                      |                  |                                     |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.  |
| 1. _____                                |                  |                                     |                  |  |
| 2. _____                                |                  |                                     |                  |  |
| Total Cover: <u>0%</u>                  |                  |                                     |                  |  |
| % Bare Ground in Herb Stratum <u>0%</u> |                  | % Cover of Biotic Crust <u>0%</u>   |                  | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____   |

Remarks: derenchymous tissue in Typha

SOIL

8.15.07

Sampling Point: 3

0-18  
(bottom)

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

| Depth (Inches) | Matrix               |                 | Redox Features        |               |                   |                  | Texture    | Remarks                         |
|----------------|----------------------|-----------------|-----------------------|---------------|-------------------|------------------|------------|---------------------------------|
|                | Color (moist)        | %               | Color (moist)         | %             | Type <sup>1</sup> | Loc <sup>2</sup> |            |                                 |
| 0-1            | 10YR 3/2             | 100%            |                       |               |                   |                  | loam       | water-stained leaves on surface |
| 8-12           | <del>10 GY 1.5</del> | <del>100%</del> | <del>7.5 YR 4/6</del> | <del>2%</del> | <del>C</del>      | <del>PL</del>    | sandy loam | lots of organic decaying matter |
| 8-12-18        | N 2.5/1              | 98%             | 7.5 YR 4/6            | 2%            | C                 | PL               | Sandy clay | organic inclusions              |
| 1-8            | N 2.5/1              | 100%            |                       |               |                   |                  | Sandy loam | organic content                 |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

|  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)                       | <input type="checkbox"/> Sandy Redox (S5)           | <input type="checkbox"/> Indicators for Problematic Hydric Soils <sup>3</sup> : |
| <input type="checkbox"/> Histic Epipedon (A2)                | <input type="checkbox"/> Stripped Matrix (S6)       | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)                                 |
| <input type="checkbox"/> Black Histic (A3)                   | <input type="checkbox"/> Loamy Mucky Mineral (F1)   | <input type="checkbox"/> 2 cm Muck (A10) (LRR B)                                |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4)    | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   | <input type="checkbox"/> Reduced Vertic (F18)                                   |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C)      | <input type="checkbox"/> Depleted Matrix (F3)       | <input type="checkbox"/> Red Parent Material (TF2)                              |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D)              | <input type="checkbox"/> Redox Dark Surface (F6)    | <input type="checkbox"/> Other (Explain in Remarks)                             |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)   | <input type="checkbox"/> Depleted Dark Surface (F7) |   |
| <input type="checkbox"/> Thick Dark Surface (A12)            | <input type="checkbox"/> Redox Depressions (F8)     |   |
| <input checked="" type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9)          |   |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)            |   |   |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

|  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input checked="" type="checkbox"/> Salt Crust (B11)                              | <u>Secondary Indicators (2 or more required)</u>                   |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input checked="" type="checkbox"/> Biotic Crust (B12)                            | <input checked="" type="checkbox"/> Water Marks (B1) (Riverine)    |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input checked="" type="checkbox"/> Aquatic Invertebrates (B13)                   | <input type="checkbox"/> Sediment Deposits (B2) (Riverine)         |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine)            | <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)                    | <input type="checkbox"/> Drift Deposits (B3) (Riverine)            |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)      | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input checked="" type="checkbox"/> Drainage Patterns (B10)        |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine)         | <input type="checkbox"/> Presence of Reduced Iron (C4)                            | <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)               | <input checked="" type="checkbox"/> Thin Muck Surface (C7)         |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                               | <input checked="" type="checkbox"/> Crayfish Burrows (C8)          |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9)      |   | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
|  |   | <input checked="" type="checkbox"/> Shallow Aquitard (D3)          |
|  |   | <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations: (at pit)**

|   |                          |  |
|---|--------------------------|--|
| Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                          | Depth (inches): _____    | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                            | Depth (inches): <u>8</u> |  |
| Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Depth (inches): <u>5</u> |  |

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

Remarks: (C8) Live crayfish in water \* Also Pacific chorus frog juveniles  
 (D3) some areas to E of both forks are concrete below  
 (B12) live algae mat (B13) thousands of aquatic snails

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Diamond Bar Golf Course City/County: Diamond Bar, Los Angeles Sampling Date: 8-15-07  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 4  
 Investigator(s): Paul Morrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): top of fill slope bank Local relief (concave, convex, none): convex Slope (%): 5%  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NMI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> |
| Remarks: <u>All landscaped on a fill slope. Irrigated golf course, but primarily bare ground at pit.</u>   |  |

**VEGETATION**

| Tree Stratum (Use scientific names.)          | Absolute % Cover              | Dominant Species? | Indicator Status                | Dominance Test worksheet:   |
|---|-------------------------------|-------------------|---------------------------------|---|
| 1. <u>Platanus racemosa</u>                   | <u>25%</u>                    | <u>yes</u>        | <u>FAC W</u>                    | Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)   |
| 2. <u>landscape exotic</u>                    | <u>15%</u>                    | <u>no</u>         |                                 |   |
| 3. _____                                      |                               |                   |                                 |   |
| 4. _____                                      |                               |                   |                                 |   |
| Total Cover: <u>40%</u>                       |                               |                   | <u>.5 = 20</u><br><u>12 = 8</u> | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species <u>25</u> x 2 = <u>50</u><br>FAC species <u>2</u> x 3 = <u>6</u><br>FACU species <u>8</u> x 4 = <u>32</u><br>UPL species _____ x 5 = _____<br>Column Totals: <u>35</u> (A) <u>88</u> (B)<br>Prevalence Index = B/A = <u>2.514</u> |
| Shrub/Stratum                                 | Absolute % Cover              | Dominant Species? | Indicator Status                |   |
| 1. _____                                      |                               |                   |                                 |   |
| 2. _____                                      |                               |                   |                                 |   |
| 3. _____                                      |                               |                   |                                 |   |
| 4. _____                                      |                               |                   |                                 |   |
| 5. _____                                      |                               |                   |                                 |   |
| Total Cover: <u>0%</u>                        |                               |                   |                                 |   |
| Herb Stratum                                  | Absolute % Cover              | Dominant Species? | Indicator Status                |   |
| 1. <del>_____</del> <u>Cynodon dactylon</u>   | <u>3%</u>                     | <u>yes</u>        | <u>FAC U</u>                    | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br><del>_____</del> Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 2. <u>Pieris echinoides</u>                   | <u>2%</u>                     | <u>yes</u>        | <u>FAC</u>                      |   |
| 3. <del>_____</del> <u>Paspalum dilatatum</u> | <u>5%</u>                     | <u>yes</u>        | <u>FAC U</u>                    |   |
| 4. _____                                      |                               |                   |                                 |   |
| 5. _____                                      |                               |                   |                                 |   |
| 6. _____                                      |                               |                   |                                 |   |
| 7. _____                                      |                               |                   |                                 |   |
| 8. _____                                      |                               |                   |                                 |   |
| Total Cover: <u>10%</u>                       |                               |                   | <u>.5 = 5</u><br><u>12 = 2</u>  |   |
| Woody Vine Stratum                            | Absolute % Cover              | Dominant Species? | Indicator Status                |   |
| 1. _____                                      |                               |                   |                                 |   |
| 2. _____                                      |                               |                   |                                 |   |
| Total Cover: <u>50%</u>                       |                               |                   |                                 |   |
| % Bare Ground in Herb Stratum <u>96%</u>      | % Cover of Biotic Crust _____ |                   |                                 | Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>  |
| Remarks: <u>Mostly bare ground.</u>           |                               |                   |                                 |   |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Diamond Bar Creek Golf Course City/County: Diamond Bar, LA County Sampling Date: 8-15-07  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 5  
 Investigator(s): Paul Morrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Typha lined ditch Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: (on map) Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.) (with irrigation)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks: <u>Typha in process of being completely cut; entire ditch within landscaped golf course.</u>  |  |

**VEGETATION** (through whole channel to N of pond)

| Tree Stratum (Use scientific names.)                | Absolute % Cover | Dominant Species?                 | Indicator Status | Dominance Test worksheet:  |
|---|------------------|-----------------------------------|------------------|--|
| 1. <u>Salix babylonica</u>                          | <u>3%</u>        | <u>yes</u>                        | <u>FACW-</u>     | Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  |
| 2. _____  |                  |                                   |                  | Total Number of Dominant Species Across All Strata: <u>2</u> (B)   |
| 3. _____  |                  |                                   |                  | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
| 4. _____  |                  |                                   |                  |  |
| Total Cover: <u>3%</u>                              |                  |                                   |                  |  |
| Sapling/Shrub Stratum                               |                  |                                   |                  | Prevalence Index worksheet:  |
| 1. _____  |                  |                                   |                  | Total % Cover of: _____ Multiply by: _____   |
| 2. _____  |                  |                                   |                  | OBL species <u>108</u> x 1 = <u>108</u>  |
| 3. _____  |                  |                                   |                  | FACW species <u>3</u> x 2 = <u>6</u>   |
| 4. _____  |                  |                                   |                  | FAC species <u>2</u> x 3 = <u>6</u>  |
| 5. _____  |                  |                                   |                  | FACU species <u>3</u> x 4 = <u>12</u>  |
|   |                  |                                   |                  | UPL species _____ x 5 = _____  |
| Total Cover: <u>0%</u>                              |                  |                                   |                  | Column Totals: <u>126%</u> (A) <u>132</u> (B)  |
| Herb Stratum  |                  |                                   |                  | Prevalence Index = B/A = <u><del>1.138</del> 1.138</u>   |
| 1. <u>Typha latifolia (pre-cut) (estimate)</u>      | <u>80%</u>       | <u>yes</u>                        | <u>OBL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input checked="" type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 2. <u>Cyperus sp</u>                                | <u>15%</u>       |                                   | <u>OBL</u>       |  |
| 3. <u>Rorippa palustris</u>                         | <u>10%</u>       |                                   | <u>OBL</u>       |  |
| 4. <u>duckweed</u>                                  | <u>3%</u>        |                                   | <u>OBL</u>       |  |
| 5. <u>Melilotus alba</u>                            | <u>3%</u>        |                                   | <u>FACU</u>      |  |
| 6. <u>Picris echioides</u>                          | <u>1%</u>        |                                   | <u>FAC</u>       |  |
| 7. <u>Xanthium strumarium</u>                       | <u>1%</u>        |                                   | <u>FAC+</u>      |  |
| 8. _____  |                  |                                   |                  |  |
| Total Cover: <u>113%</u> <u>50.5</u><br><u>22.0</u> |                  |                                   |                  |  |
| Woody Vine Stratum                                  |                  |                                   |                  |  |
| 1. _____  |                  |                                   |                  |  |
| 2. _____  |                  |                                   |                  |  |
| Total Cover: <u>0%</u>                              |                  |                                   |                  |  |
| % Bare Ground in Herb Stratum <u>0%</u>             |                  | % Cover of Biotic Crust <u>0%</u> |                  |  |
|   |                  |                                   |                  | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____   |

Remarks: - aerenchymous tissue  
- Typha being mowed down

**SOIL**

8.15.07

Sampling Point: 5

0-18

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

| Depth (inches) | Matrix               |                 | Redox Features |           |                   |                  | Texture | Remarks  |
|----------------|----------------------|-----------------|----------------|-----------|-------------------|------------------|---------|--|
|                | Color (moist)        | %               | Color (moist)  | %         | Type <sup>1</sup> | Loc <sup>2</sup> |         |  |
| 0-6            | 10 YR 4/6            | 100%            |                |           |                   |                  | Sand    | fill soil (contains many different colored grains) |
| 6-11           | <del>10 YR 4/6</del> | <del>100%</del> | multi-color    | pure sand |                   |                  | Sand    | gleyed sand  |
| 11-18          | <del>10 YR 4/6</del> | 100%            |                |           |                   |                  | clay    |  |
|                | 10 GY 2.5/1          |                 |                |           |                   |                  |         |  |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

fill slope sand in top layers

**HYDROLOGY**

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13) (snails)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Other (Explain in Remarks)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Thin Muck Surface (C7)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquifer (D3)
- FAC-Neutral Test (D5)

Field Observations: (at pit)

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 8  
 Saturation Present? Yes  No  Depth (inches): 6

Wetland Hydrology Present? Yes  No

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

Remarks:

(B12) live stage in flowing water

**WETLAND DETERMINATION DATA FORM - Arid West Region**

Project/Site: Diamond Bar Golf Course City/County: Diamond Bar, Los Angeles Sampling Date: 8-15-07  
 Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: 6  
 Investigator(s): Paul Morrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Fill slope riparian channel Local relief (concave, convex, none): convex Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 115 0424579 (W071) Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 3764320 NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.) (with irrigation)  
 Are Vegetation  Soil  or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_ Soil \_\_\_\_\_ or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks: <u>Thin channel (1.1 m) funnelled by fill slopes at ~55% angles</u>   |  |

**VEGETATION**

| Tree Stratum (Use scientific names.)   | Absolute % Cover | Dominant Species?                 | Indicator Status | Dominance Test worksheet:   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
|--|------------------|-----------------------------------|------------------|---|-------------------|--|--------------|--|-------------|-----------|-------|-----------|--------------|-----------|-------|-----------|-------------|--|-------|--|--------------|-----------|-------|-----------|-------------|--|-------|--|----------------|----------------|--|----------------|---------------------------------------|--|--|--|
| 1. <del>All trees cut</del>  |                  |                                   |                  | Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)  |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| 2. <del>Chinese flame tree</del>   |                  |                                   |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| 3. <u>Eucalyptus sp.</u>   |                  |                                   |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| 4. _____   |                  |                                   |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| Total Cover: <u>0%</u>   |                  |                                   |                  | <b>Prevalence Index worksheet:</b><br><table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center"><u>20</u></td> <td align="center">x 1 =</td> <td align="center"><u>20</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>25</u></td> <td align="center">x 2 =</td> <td align="center"><u>50</u></td> </tr> <tr> <td>FAC species</td> <td></td> <td align="center">x 3 =</td> <td></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>18</u></td> <td align="center">x 4 =</td> <td align="center"><u>72</u></td> </tr> <tr> <td>UPL species</td> <td></td> <td align="center">x 5 =</td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>63%</u> (A)</td> <td></td> <td align="center"><u>142</u> (B)</td> </tr> <tr> <td align="center" colspan="4">Prevalence Index = B/A = <u>2.254</u></td> </tr> </table> | Total % Cover of: |  | Multiply by: |  | OBL species | <u>20</u> | x 1 = | <u>20</u> | FACW species | <u>25</u> | x 2 = | <u>50</u> | FAC species |  | x 3 = |  | FACU species | <u>18</u> | x 4 = | <u>72</u> | UPL species |  | x 5 = |  | Column Totals: | <u>63%</u> (A) |  | <u>142</u> (B) | Prevalence Index = B/A = <u>2.254</u> |  |  |  |
| Total % Cover of:  |                  | Multiply by:                      |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| OBL species  | <u>20</u>        | x 1 =                             | <u>20</u>        |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| FACW species   | <u>25</u>        | x 2 =                             | <u>50</u>        |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| FAC species  |                  | x 3 =                             |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| FACU species   | <u>18</u>        | x 4 =                             | <u>72</u>        |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| UPL species  |                  | x 5 =                             |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| Column Totals:   | <u>63%</u> (A)   |                                   | <u>142</u> (B)   |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| Prevalence Index = B/A = <u>2.254</u>  |                  |                                   |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| <b>Sapling/Shrub Stratum</b><br>1. _____<br>2. _____<br>3. _____<br>4. _____<br>5. _____<br>Total Cover: <u>0%</u>   |                  |                                   |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| <b>Herb Stratum</b><br>1. <u>Ricinus communis</u> 8% <input checked="" type="checkbox"/> FACU<br>2. <del>Echinochloa crus-galli</del> 25% <input checked="" type="checkbox"/> FACW<br>3. <u>Cyperus sp (umbrella sedge)</u> 5% <input type="checkbox"/> OBL<br>4. <u>Epilobium ciliatum</u> 10% <input type="checkbox"/> FACU<br>5. <u>duckweed</u> 15% <input checked="" type="checkbox"/> OBL<br>6. _____<br>7. _____<br>8. _____<br>Total Cover: <u>63%</u> |                  |                                   |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| <b>Woody Vine Stratum</b><br>1. _____<br>2. _____<br>Total Cover: <u>0%</u>  |                  |                                   |                  |   |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |
| % Bare Ground in Herb Stratum <u>0%</u>  |                  | % Cover of Biotic Crust <u>0%</u> |                  | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____  |                   |  |              |  |             |           |       |           |              |           |       |           |             |  |       |  |              |           |       |           |             |  |       |  |                |                |  |                |                                       |  |  |  |

Remarks: - All trees cut. Very few seedlings or resprouts.

**SOIL**

8-15-07

Sampling Point: 6

0-18  
(bottom)

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

| Depth (inches) | Matrix        |      | Redox Features |   |                   |                  | Texture    | Remarks |
|----------------|---------------|------|----------------|---|-------------------|------------------|------------|---------|
|                | Color (moist) | %    | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-5            | 10 YR 3/2     | 100% | —              | — | —                 | —                | Sandy loam |         |
| 5-10           | 10 GY 2.5/1   | 100% | —              | — | —                 | —                | Sandy loam |         |
| 10-14          | 5 GY 2.5/1    | 100% | —              | — | —                 | —                | Sandy loam |         |
| 14-18          | 5 GY 3/1      | 100% | —              | — | —                 | —                | Clay loam  |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

|  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)                       | <input type="checkbox"/> Sandy Redox (S5)           | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)     |
| <input type="checkbox"/> Histic Epipedon (A2)                | <input type="checkbox"/> Stripped Matrix (S6)       | <input type="checkbox"/> 2 cm Muck (A10) (LRR B)    |
| <input type="checkbox"/> Black Histic (A3)                   | <input type="checkbox"/> Loamy Mucky Mineral (F1)   | <input type="checkbox"/> Reduced Vertic (F18)       |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4)    | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   | <input type="checkbox"/> Red Parent Material (TF2)  |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C)      | <input type="checkbox"/> Depleted Matrix (F3)       | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D)              | <input type="checkbox"/> Redox Dark Surface (F6)    |   |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)   | <input type="checkbox"/> Depleted Dark Surface (F7) |   |
| <input type="checkbox"/> Thick Dark Surface (A12)            | <input type="checkbox"/> Redox Depressions (F8)     |   |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)            | <input type="checkbox"/> Vernal Pools (F9)          |   |
| <input checked="" type="checkbox"/> Sandy Gleyed Matrix (S4) |   |   |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks: (S4) fill slope erosion runoff soil from steep banks (~55%)  
 All trees recently cut increases erosion potential. Many appear dead.

**HYDROLOGY**

|  |  |
|--|--|
| <b>Wetland Hydrology Indicators:</b>                                   | <b>Secondary Indicators (2 or more required)</b>                   |
| <b>Primary Indicators (any one indicator is sufficient)</b>            |  |
| <input checked="" type="checkbox"/> Surface Water (A1)                 | <input type="checkbox"/> Water Marks (B1) (Riverine)               |
| <input checked="" type="checkbox"/> High Water Table (A2)              | <input type="checkbox"/> Sediment Deposits (B2) (Riverine)         |
| <input checked="" type="checkbox"/> Saturation (A3)                    | <input type="checkbox"/> Drift Deposits (B3) (Riverine)            |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine)                | <input checked="" type="checkbox"/> Drainage Patterns (B10)        |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)          | <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine)             | <input type="checkbox"/> Thin Muck Surface (C7)                    |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input checked="" type="checkbox"/> Crayfish Burrows (C8)          |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Salt Crust (B11)                              | <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input checked="" type="checkbox"/> Biotic Crust (B12)                 |  |
| <input type="checkbox"/> Aquatic Invertebrates (B13)                   |  |
| <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)         |  |
| <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |  |
| <input type="checkbox"/> Presence of Reduced Iron (C4)                 |  |
| <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |  |
| <input checked="" type="checkbox"/> Other (Explain in Remarks)         |  |

**Field Observations:**

|   |                           |  |
|---|---------------------------|--|
| Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                          | Depth (inches): <u>8</u>  | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                            | Depth (inches): <u>11</u> |  |
| Saturation Present? (Includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Depth (inches): <u>6</u>  |  |

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

Remarks: (B12) Live algae in water  
 (C8) Live crayfish in water  
 \*Live small fish in water (mosquitofish)

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Diamond Bar Creek City/County: Diamond Bar, LA County Sampling Date: 8/16/07

Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 1

Investigator(s): Paul Morrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): highly-incised riparian wash Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): \_\_\_\_\_ Lat: 118 0423855 Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: 3763490 NWI classification: \_\_\_\_\_

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

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

Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks: <u>sheetflow water flow from S bank. Source unknown.</u>  |  |

**VEGETATION**

| Tree Stratum (Use scientific names.)     | Absolute % Cover | Dominant Species?                 | Indicator Status | Dominance Test worksheet:   |
|--|------------------|-----------------------------------|------------------|---|
| 1. <u>Washingtonia filifera</u>          | <u>9%</u>        | <u>Yes</u>                        | <u>FACW</u>      | Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)                                     |
| 2. <u>Salix Goodenii</u>                 | <u>60%</u>       | <u>Yes</u>                        | <u>FACW</u>      | Total Number of Dominant Species Across All Strata: <u>4</u> (B)  |
| 3. <u>Ficus Ucarib</u>                   | <u>5%</u>        | <u>NO</u>                         | <u>UPL</u>       | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)                               |
| 4. <u>Sambucus mexicana</u>              | <u>3%</u>        | <u>NO</u>                         | <u>FACU</u>      |   |
| Total Cover: <u>77%</u>                  |                  |                                   |                  |   |
| <u>38.5</u>                              |                  |                                   |                  |   |
| <u>15.4</u>                              |                  |                                   |                  |   |
| Shrub/Strat                              | Absolute % Cover | Dominant Species?                 | Indicator Status | Prevalence Index worksheet:   |
| 1. <u>Fraxinus velutina</u>              | <u>2%</u>        | <u>yes</u>                        | <u>FACW</u>      | Total % Cover of: _____ Multiply by: _____  |
| 2. _____                                 |                  |                                   |                  | OBL species <u>20%</u> x 1 = <u>20</u>  |
| 3. _____                                 |                  |                                   |                  | FACW species <u>72%</u> x 2 = <u>144</u>  |
| 4. _____                                 |                  |                                   |                  | FAC species _____ x 3 = _____   |
| 5. _____                                 |                  |                                   |                  | FACU species <u>3%</u> x 4 = <u>12</u>  |
| Total Cover: <u>2%</u>                   |                  |                                   |                  | UPL species <u>6%</u> x 5 = <u>30</u>   |
|  |                  |                                   |                  | Column Totals: <u>100</u> (A) <u>208</u> (B)  |
|  |                  |                                   |                  | Prevalence Index = B/A = <u>2.04</u>  |
| Herb Stratum                             | Absolute % Cover | Dominant Species?                 | Indicator Status | Hydrophytic Vegetation Indicators:  |
| 1. <u>Rorippa palustris</u>              | <u>20%</u>       | <u>yes</u>                        | <u>DBL</u>       | <input checked="" type="checkbox"/> Dominance Test is >50%  |
| 2. <u>Epilobium ciliatum</u>             | <u>1%</u>        | <u>no</u>                         | <u>FACW</u>      | <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>                               |
| 3. _____                                 |                  |                                   |                  | ____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 4. _____                                 |                  |                                   |                  | ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 5. _____                                 |                  |                                   |                  |   |
| 6. _____                                 |                  |                                   |                  |   |
| 7. _____                                 |                  |                                   |                  |   |
| 8. _____                                 |                  |                                   |                  |   |
| Total Cover: <u>21%</u>                  |                  |                                   |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.                           |
| Woody Vine Stratum                       | Absolute % Cover | Dominant Species?                 | Indicator Status | Hydrophytic Vegetation Present?   |
| 1. _____                                 |                  |                                   |                  | Yes <input checked="" type="checkbox"/> No _____  |
| 2. _____                                 |                  |                                   |                  |   |
| Total Cover: _____                       |                  |                                   |                  |   |
| % Bare Ground in Herb Stratum <u>70%</u> |                  | % Cover of Biotic Crust <u>0%</u> |                  |   |
| Remarks: _____                           |                  |                                   |                  |   |

115 0423855  
3763490  
(WP073) SOIL

8-16-07 Sampling Point: 1

0-18  
(bottom)

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

| Depth (inches) | Matrix                       |      | Redox Features |   |                   |                  | Texture    | Remarks |
|----------------|------------------------------|------|----------------|---|-------------------|------------------|------------|---------|
|                | Color (moist)                | %    | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-1            | 10 YR 3/2                    | 100% | —              | — | —                 | —                | Sandy loam |         |
| 1-18           | <del>10 YR 3/2</del> N 2.5/1 | 100% | —              | — | —                 | —                | Sandy loam |         |
|                |                              |      |                |   |                   |                  |            |         |
|                |                              |      |                |   |                   |                  |            |         |
|                |                              |      |                |   |                   |                  |            |         |
|                |                              |      |                |   |                   |                  |            |         |
|                |                              |      |                |   |                   |                  |            |         |
|                |                              |      |                |   |                   |                  |            |         |
|                |                              |      |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | Indicators for Problematic Hydric Soils <sup>3</sup> : |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)        |
| <input type="checkbox"/> Histic Epipedon (A2)                             | <input type="checkbox"/> 2 cm Muck (A10) (LRR B)       |
| <input type="checkbox"/> Black Histic (A3)                                | <input type="checkbox"/> Reduced Vertic (F18)          |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Red Parent Material (TF2)     |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C)                   | <input type="checkbox"/> Other (Explain in Remarks)    |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D)                           |  |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                |  |
| <input type="checkbox"/> Thick Dark Surface (A12)                         |  |
| <input checked="" type="checkbox"/> Sandy Mucky Mineral (S1)              |  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                         |  |
| <input type="checkbox"/> Sandy Redox (S5)                                 |  |
| <input type="checkbox"/> Stripped Matrix (S6)                             |  |
| <input type="checkbox"/> Loamy Mucky Mineral (F1)                         |  |
| <input type="checkbox"/> Loamy Gleyed Matrix (F2)                         |  |
| <input type="checkbox"/> Depleted Matrix (F3)                             |  |
| <input type="checkbox"/> Redox Dark Surface (F6)                          |  |
| <input type="checkbox"/> Depleted Dark Surface (F7)                       |  |
| <input type="checkbox"/> Redox Depressions (F8)                           |  |
| <input type="checkbox"/> Vernal Pools (F9)                                |  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:  | Secondary Indicators (2 or more required)                             |
|--|---|
| <u>Primary Indicators (any one indicator is sufficient)</u>            |   |
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Water Marks (B1) (Riverine)                  |
| <input checked="" type="checkbox"/> High Water Table (A2)              | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input checked="" type="checkbox"/> Saturation (A3)                    | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)    |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine)                | <input checked="" type="checkbox"/> Drainage Patterns (B10)           |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)          | <input type="checkbox"/> Dry-Season Water Table (C2)                  |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine)             | <input type="checkbox"/> Thin Muck Surface (C7)                       |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input checked="" type="checkbox"/> Crayfish Burrows (C8)             |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)    |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Shallow Aquitard (D3)                        |
| <input type="checkbox"/> Salt Crust (B11)                              | <input type="checkbox"/> FAC-Neutral Test (D5)                        |
| <input type="checkbox"/> Biotic Crust (B12)                            |   |
| <input checked="" type="checkbox"/> Aquatic Invertebrates (B13)        |   |
| <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)         |   |
| <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |   |
| <input type="checkbox"/> Presence of Reduced Iron (C4)                 |   |
| <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |   |
| <input checked="" type="checkbox"/> Other (Explain in Remarks)         |   |

Field Observations: (at pit)

Surface Water Present? Yes  No  Depth (inches): 0 (shet)

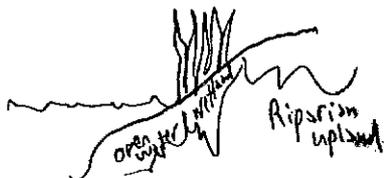
Water Table Present? Yes  No  Depth (inches): 12

Saturation Present? Yes  No  Depth (inches): 0

Wetland Hydrology Present? Yes  No

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

Remarks: (c8) live crayfish in water  
 Other: shet flow from S bank. Tel-stained surface at outlet



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Diamond Bar Creek City/County: Diamond Bar, LA County Sampling Date: 8/16/07  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 2  
 Investigator(s): Paul Morrissey, Kris Alberts Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): highly-incised riparian channel Local relief (concave, convex; none): Concave Slope (%): 0%  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.) (w/irrigation factor)  
 Are Vegetation \_\_\_\_\_ Soil \_\_\_\_\_ or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation  Soil  or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> |
| Remarks: <u>Entire riparian OHWM in side steeply-incised banks; highly erosive. Substantial vegetation not present due to high-flows seasonally increasing bank grade. Grade well over 75% to S, +40% to N</u>                           |  |

**VEGETATION**

| Tree Stratum (Use scientific names.)                                       | Absolute % Cover | Dominant Species?  | Indicator Status | Dominance Test worksheet:   |
|--|------------------|--|------------------|---|
| 1. _____   | _____            | _____  | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)  |
| 2. _____   | _____            | _____  | _____            |   |
| 3. _____   | _____            | _____  | _____            |   |
| 4. _____   | _____            | _____  | _____            |   |
| Total Cover: _____   |                  |  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of:      Multiply by:<br>OBL species <u>25</u> x 1 = <u>25</u><br>FACW species <u>46</u> x 2 = <u>92</u><br>FAC species <u>1</u> x 3 = <u>3</u><br>FACU species    _____ x 4 = _____<br>UPL species <u>2</u> x 5 = <u>10</u><br>Column Totals: <u>74</u> (A) <u>130</u> (B)<br><br>Prevalence Index = B/A = <u>1.75</u> |
| <b>Sapling/Shrub Stratum</b>   |                  |  |                  |   |
| 1. <u>Baccharis salicifolia (to 10 feet tall)</u>                          | <u>40%</u>       | <u>Yes</u>   | <u>FACW</u>      |   |
| 2. <u>Ficus carica (8 ft.)</u>   | <u>2%</u>        | <u>No</u>  | <u>UPL</u>       |   |
| 3. <u>Urtica dioica</u>  | <u>3%</u>        | <u>No</u>  | <u>FACW</u>      |   |
| 4. _____   | _____            | _____  | _____            |   |
| 5. _____   | _____            | _____  | _____            |   |
| Total Cover: <u>45%</u> <u>22.5</u>  |                  |  |                  |   |
| <b>Herb Stratum</b>  |                  |  |                  |   |
| 1. <u>Rorippa palustris</u>  | <u>5%</u>        | <u>No</u>  | <u>OBL</u>       |   |
| 2. <u>Artemisia douglasiana</u>  | <u>1%</u>        | <u>No</u>  | <u>FAC+</u>      |   |
| 3. <u>Polygonum amphibium</u>  | <u>20%</u>       | <u>Yes</u>   | <u>OBL</u>       |   |
| 4. <u>Baccharis salicifolia</u>  | <u>3%</u>        | <u>No</u>  | <u>FACW</u>      |   |
| 5. _____   | _____            | _____  | _____            |   |
| 6. _____   | _____            | _____  | _____            |   |
| 7. _____   | _____            | _____  | _____            |   |
| 8. _____   | _____            | _____  | _____            |   |
| Total Cover: <u>28%</u> <u>14.5</u>  |                  |  |                  |   |
| Total Cover: <u>72%</u> <u>5.6</u>   |                  |  |                  |   |
| <b>Woody Vine Stratum</b>  |                  |  |                  |   |
| 1. _____   | _____            | _____  | _____            |   |
| 2. _____   | _____            | _____  | _____            |   |
| Total Cover: <u>0%</u>   |                  |  |                  |   |
| % Bare Ground in Herb Stratum <u>72%</u> % Cover of Biotic Crust <u>0%</u> |                  | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ |                  |   |
| Remarks: _____   |                  |  |                  |   |

**SOIL**

8-16-07

Sampling Point: 2

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

| Depth (Inches) | Matrix              |               | Redox Features |     |                   |                  | Texture    | Remarks                |
|----------------|---------------------|---------------|----------------|-----|-------------------|------------------|------------|------------------------|
|                | Color (moist)       | %             | Color (moist)  | %   | Type <sup>1</sup> | Loc <sup>2</sup> |            |                        |
| 0-2            | 10YR 4/2            | 100%          | —              | —   | —                 | —                | Sandy loam | erosive layer from top |
| 2-4            | 10Y 5/1             | 100%          | —              | —   | —                 | —                | sand       |                        |
| 4-9            | 10YR 4/6            | 60%           | 10YR 4/1       | 98% | D                 | M                | Sandy clay |                        |
| <del>4-9</del> | <del>10YR 5/8</del> | <del>2%</del> | 10YR 5/8       | 2%  | C                 | M                | "          |                        |
| 9-16           | 2.5Y 5/3            | 100%          | —              | —   | —                 | —                | Sand       | <del>erosive</del>     |

0-16

(bottom)

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

capillary fringe

**HYDROLOGY**

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Other (Explain in Remarks)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Thin Muck Surface (C7)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations: (at pit)

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 3  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): 1

Wetland Hydrology Present? Yes  No

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

Remarks:

(B13) live crayfish in water, + mosquitofish, especially near/in larger pools

# SAGE ENVIRONMENTAL GROUP

Environmental • Biological • Habitat Restoration • Regulatory Compliance Services

July 12, 2010

Mr. Kevin Radecki, Executive Director  
Industry Urban-Development Agency  
15625 East Stafford Street  
P.O. Box 3366  
City of Industry, CA 91744-0366

**Subject: Results of Year 2010 Focused Plant Survey for the Federally-listed Endangered Braunton's Milk-vetch**

**Project: Expanded Alignment - SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project, City of Industry, Los Angeles County, California**

Dear Mr. Radecki,

Sage Environmental Group was retained by Industry Urban-Development Agency to conduct a focused plant survey for the federally-listed endangered Braunton's milk-vetch (*Astragalus brauntonii*) for the proposed Expanded Alignment - SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project in 2008 which resulted in negative findings. The species was not observed onsite and was deemed absent at that time.

Due to the expansion of the project footprint to include an additional staging area northeast quadrant of the Grand Avenue/ SR-60 interchange and within the Braunton's milk-vetch potential habitat area, a second focused plant survey was conducted in 2010 to ensure efficient environmental processing by Caltrans. This report documents that the species was not observed onsite and was deemed absent at that time.

The focused plant survey was conducted on suitable soils on the project site during the flowering period for this species to determine the presence/absence of the species. The results of the 2010 focused Braunton's milk-vetch plant survey are summarized herein.

## **Introduction**

### **Site Location and Description**

The Expanded Alignment - SR-57/SR-60/Grand Avenue Interchange Improvement Project site is located approximately one mile northeast of the intersection of State Routes 60 and 57 in the City of Industry, Los Angeles County, California (Exhibit 1 – Project Location Map). The proposed study area includes approximately 0.75 mile of Grand Avenue, and includes an intersection modification footprint at the intersection of Grand Avenue and Golden Springs Drive as well as additional HOV lanes and ramps in other areas. The south side of the study area includes landscaped roadsides, a naturalized concrete channel, and Diamond Bar Creek Golf Course, and with the exception of a Caltrans staging area, Diamond Bar Honda, and a Burger King, primarily undeveloped or landscaped areas are found on the north side. In addition to the already developed portions within the footprint, the study area is predominantly composed of disturbed areas, exotic landscapes, and ruderal slopes surrounding a riparian system adjacent to the existing freeway.). Mixed riparian woodland, including willow riparian areas, and

ruderal and remnant coastal sage scrub habitats occur along Diamond Bar Creek. The elevation is approximately 580 feet above mean sea level (msl) at its lowest point and 630 feet above msl at its highest. The Expanded Alignment - SR-57/SR-60/Grand Avenue Interchange Improvement Project Site is located on the U.S. Geological Survey (USGS) *San Dimas* 7.5-minute topographic quadrangle in Sections 9 and 16 of T.2S, R.9W. Representative site photographs are included as Attachment B.

## **Methodology**

### **Literature Review**

Prior to performing the focused plant survey, the most recent records of the California Natural Diversity Database (CNDDDB 2010) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2010) were reviewed for the quadrangles containing and surrounding the project site (i.e., *Azusa, Glendora, Mt. Baldy, Ontario, San Dimas, Baldwin Park, La Habra, Yorba Linda, and Prado Dam*, California USGS 7.5 minute quadrangles). These databases contain records of reported occurrences of federal and state-listed endangered, threatened, proposed endangered and threatened species, former Federal Species of Concern (FSC), delisted species, California Species of Special Concern (CSC), and otherwise sensitive species or habitats that may occur in the vicinity of the project site.

### **Biological Reconnaissance Survey**

Biologist Kris Alberts conducted a combined foot survey and windshield survey in Spring 2008 along the study area to document existing conditions and to assess the area for its potential to harbor sensitive biological resources. Aerial images of the footprint were carried into the field to record additional notes about the biology of the study area.

### **2008 Focused Braunton's milk-vetch Plant Survey**

Botanists Nichole Cervin and Jenny McGee conducted the 2008 focused Braunton's milk-vetch plant survey. The survey was concentrated in areas on the project site where suitable habitat for Braunton's milk-vetch was present. The 2008 survey resulted in negative findings.

## **Sensitive Species**

A sensitive species is considered to potentially occur in a project area if its known geographic range includes part of the project area or adjacent parcels and/or if the general habitat or environmental conditions (e.g., soil type, elevation range, etc.) required for the species are present onsite. Each "potential for occurrence" ranking (PFO) for sensitive plant species within the study area was determined based on the following general criteria:

- **Absent:** Species was not observed during protocol focused surveys conducted at an appropriate time for identification of the species or Species is restricted to habitats that do not occur on the project site, or the project area is outside of the geographical range, or suitable habitat conditions are not present onsite.
- **Assumed Absent:** No or very low quality habitat and species not found during field surveys and/or no records exist within the project site or the immediate vicinity (approximately 5 miles).

- **Low:** No records exist of the species occurring within the project site or its immediate vicinity (approximately 5 miles) and/or habitats needed to support the species are of poor quality.
- **Moderate:** Either a historical record of the species exists within the immediate vicinity of the project site (approximately 5 miles) and suitable habitat occurs onsite, or good quality habitat requirements associated with the species occur on the project site and the site is within the known range of the species.
- **High:** Both a historical record exists of the species within the study area or its immediate vicinity (approximately 5 miles) and moderate to excellent quality habitat requirements associated with the species occur on the project site.
- **Present:** Species was observed on the study area within one year of or at the time of the survey.

### **2010 Focused Plant Survey**

Based on the findings of the literature search, 2008 reconnaissance level biological surveys, and 2008 focused survey, a 2010 focused Braunton's milk-vetch plant survey was conducted within suitable soils of the project site. Botanists Nichole Cervin and Rebecca Alvidrez conducted the survey on June 25, 2010. The survey concentrated on areas on the project site where suitable habitat for Braunton's milk-vetch was present. A map of the area covered by the survey is provided as Exhibit 2 – Focused Plant Survey Map.

Braunton's milk-vetch is a federally endangered and a CNPS List 1B.1 species. This perennial herb occurs in carbonate soils of chaparral, coastal sage scrub, closed-cone coniferous forests, and valley and foothill grasslands at elevations up to 2,100 feet amsl. The range of this species includes the hills and basins of Ventura, Los Angeles, Orange, and Riverside counties. Braunton's milk-vetch flowers from March to July and generally germinates following burns and other disturbances. Threats to this species include development and alteration of local fire regimes. This species is considered to be very rare, with little more than ten known occurrences.

To ensure the detection of Braunton's milk-vetch and other rare plants, the survey members were organized into a single line and were spaced 15 to 30 feet apart to form adjacent belt transects. The edge of each transect abutted the adjacent transect, leaving no gaps between each belt, for at least 100 percent coverage. Each crewmember then walked in the direction of the agreed upon endpoint within the individual belt transect. Each person walked the transect in a slightly meandering pattern for maximum and overlapping coverage. When carbonate soils suitable for Braunton's milk-vetch were encountered, the team member would stop and carefully scan the immediate area for the range of the microhabitat. All plants observed during the survey were identified to the level of species or subspecies. Plants of uncertain identity were collected and subsequently identified from keys, descriptions, and illustrations in Hickman (1993) and Munz (1974). Plant nomenclature follows that of The Jepson Manual, Higher Plants of California (Hickman 1993). A complete list of plant species observed during the focused survey is presented as Attachment A.

### **Photographic Documentation**

The vegetation communities, soil types and other onsite conditions within the survey area were documented with photographs (see Attachment B – Site Photographs).

## Results

### Literature Review

Based upon the literature reviews conducted in 2008 and 2010, and the reconnaissance survey, a total of 47 sensitive plant species were identified as having a potential to occur within the study area. The 47 sensitive plant species and their potential to occur within the study area are listed below. A key to the status codes follows this list.

Twenty-five sensitive plant species were considered absent from the study area at the time of this survey due to a lack of suitable soils, habitats, and/or elevation ranges. Thirteen additional sensitive plant species were confirmed absent from the study area by either the current survey or during reconnaissance-level and focused plant surveys conducted during the 2003 and 2008 flowering season (Jones & Stokes 2003, Sage Environmental Group 2008).

### Absent

- chaparral sand-verbena (*Arbronia villosa* var. *aurita*) – CNPS List 1B.1;
- Braunton's milk-vetch (*Astragalus brauntonii*) – **FE**, CNPS List 1B.1;
- Coulter's saltbush (*Atriplex coulteri*) – CNPS 1B.2;
- Parish's brittlescale (*Atriplex parishii*) – CNPS 1B.1;
- Davidson's saltbush (*Atriplex serenana* var. *davidsonii*) – CNPS List 1B.2;
- Nevin's barberry (*Berberis nevinii*) – **FE, SE**, CNPS 1B.1;
- thread-leaved brodiaea (*Brodiaea filifolia*) – **FT, SE**, CNPS List 1B.1;
- round-leaved filaree (*California macrophylla*) – CNPS 1B.1;
- slender mariposa lily (*Calochortus clavatus* var. *gracilis*) – CNPS List 1B.2;
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) – **FC, SE**, CNPS List 1A.1;
- California saw-grass (*Cladium californicum*) – CNPS List 2.2;
- salt marsh birds beak (*Cordylanthus maritimus* ssp. *maritimus*) – **FE, SE**, CNPS List 1B.1;
- slender-horned spineflower (*Dodecahema leptoceras*) – **FE, SE**, CNPS List 1B.1;
- San Gabriel River dudleya (*Dudleya cymosa* ssp. *crebrifolia*) – CNPS List 1B.2;
- San Gabriel Mountains dudleya (*Dudleya densifolium*) – CNPS List 1B.1;
- many-stemmed dudleya (*Dudleya multicaulis*) – CNPS List 1B.2;
- Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*) – **FE, SE**, CNPS 1B.1;
- hot springs fimbriatylis (*Fimbristylis thermalis*) – CNPS List 2.2;
- San Gabriel bedstraw (*Galium grande*) – CNPS List 1B.2;
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) – Presumed Extinct;
- mesa horkelia (*Horkelia cuneata* ssp. *puberula*) – CNPS List 1B.1;
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) – CNPS List 1B.1;
- lemon lily (*Lilium parryi*) – CNPS List 1B.2;
- San Gabriel linanthus (*Linanthus concinnus*) – CNPS List 1B.2;
- Hall's monardella (*Monardella macrantha* ssp. *hallii*) – CNPS List 1B.3;
- prostrate navarretia (*Navarretia prostrata*) – CNPS List 1B.1;
- chaparral nolina (*Nolina cismontana*) – CNPS List 1B.2;
- California Orcutt grass (*Orcuttia californica*) – **FE, SE**, CNPS List 1B.1;
- woolly mountain-parsley (*Oreonana vestita*) – CNPS 1B.3;
- Rock Creek broomrape (*Orobanche valida* ssp. *valida*) – CNPS List 1B.2;
- San Bernardino grass-of-Parnassus (*Parnassia cirrata* var. *cirrata*) – CNPS List 1B.3;
- Lyon's pentachaeta (*Pentachaeta lyonii*) – **FE, SE**, CNPS List 1B.1;

- Brand's phacelia (*Phacelia stellaris*) – **FC**, CNPS List 1B.1;
- Gambel's watercress (*Rorippa gambelii*) – **FE, ST**, CNPS 1B.1;
- rayless ragwort (*Senecio aphanactis*) – CNPS List 2.2;
- Salt Spring checkerbloom (*Sidalcea neomexicana*) – CNPS List 2.2;
- Greata's aster (*Symphyotrichum greatae*) – CNPS List 1B.3; and
- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) – CNPS List 2.2.

Nine sensitive plant species were determined to have a **low** potential to occur on the study area, due to the presence of moderately disturbed habitat associated with these species. In addition, due to the presence of suitable habitat for these species onsite that was not surveyed or the fact that a focused survey was not performed during the blooming period for these sensitive species, these species can not be excluded from occurring on the project site based upon the focused surveys conducted to date.

### **Low**

- Plummer's mariposa lily (*Calochortus plummerae*) – CNPS List 1B.2;
- intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) – CNPS List 1B.2;
- southern tarplant (*Centromadia parryi* ssp. *australis*) – CNPS List 1B.1;
- smooth tarplant (*Centromadia pungens* ssp. *laevis*) – CNPS List 1B.1;
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) – CNPS List 3.2;
- California satintail (*Imperata brevifolia*) – CNPS List 2.1;
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) – CNPS List 1B.2;
- white rabbit-tobacco (*Gnaphalium leucocephalum*) – CNPS List 2.2; and
- San Bernardino aster (*Symphyotrichum defoliatum*) – CNPS List 1B.2;

### **Status Codes**

#### **Federal**

|     |   |                                    |
|-----|---|------------------------------------|
| FE  | = | Federally listed; Endangered       |
| FT  | = | Federally listed; Threatened       |
| FC  | = | Federal Candidate for listing      |
| FSC | = | Federal Species of Special Concern |

#### **State**

|      |   |   |
|------|---|---|
| ST   | = | State listed; Threatened  |
| SE   | = | State listed; Endangered  |
| RARE | = | State-listed; Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.) |
| CSC  | = | State Species of Special Concern  |

#### **CNPS**

|         |   |   |
|---------|---|---|
| List 1A | = | Plants presumed extinct in California.  |
| List 1B | = | Plants rare and endangered in California and throughout their range.                          |
| List 2  | = | Plants rare, threatened or endangered in California but more common elsewhere in their range. |

#### **Extensions**

|     |   |  |
|-----|---|--|
| 0.1 | = | Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat). |
|-----|---|--|

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0.2 = Fairly endangered in California (20-80% occurrences threatened).  
0.3 = Not very endangered in California (<20% of occurrences threatened).

### **Conclusions and Recommendations**

The 2010 focused Braunton's milk-vetch plant survey resulted in negative findings. The species was not observed present onsite during the 2008 survey.

Nine sensitive plant species are considered to have a low potential to occur within the project site. However, none of these nine species are federal- and/or state-listed endangered or threatened; therefore, focused surveys for these species are not required. In addition, based upon the findings of this survey and other focused plant surveys conducted during the 2003 and 2008 flowering season (Jones & Stokes 2003, Sage Environmental Group 2008), all federal- and/or state-listed endangered or threatened plant species are confirmed absent from the project site; therefore, no further plant surveys are necessary for this project.

If you have any questions or concerns regarding this 2010 Focused Plant Survey for the Federally-listed Endangered Braunton's Milk-vetch, please feel free to contact me at 949.243.2282.

Sincerely,



Alissa Cope  
Principal  
**Sage Environmental Group**

Enclosures: Exhibit 1 – Project Location Map  
Exhibit 2 – Focused Plant Survey Map  
Attachment A – 2010 List of Plant Species Observed  
Attachment B – Site Photographs

## REFERENCES

California Native Plant Society Electronic Inventory (CNPSEI).

2008 *Azusa, Glendora, Mt. Baldy, Ontario, San Dimas, Baldwin Park, La Habra, Yorba Linda, and Prado Dam*, California USGS 7.5-minute quadrangles.

California Natural Diversity Database (CNDDDB).

2008 *Azusa, Glendora, Mt. Baldy, Ontario, San Dimas, Baldwin Park, La Habra, Yorba Linda, and Prado Dam*, California USGS 7.5-minute quadrangles.

Sage Environmental Group

2008 Results of the 2010 Focused Plant Survey for the Proposed Grand Avenue / SR- 60 Confluence Project in the City of Diamond Bar in Los Angeles County, California.

Hickman, J. C. (Editor)

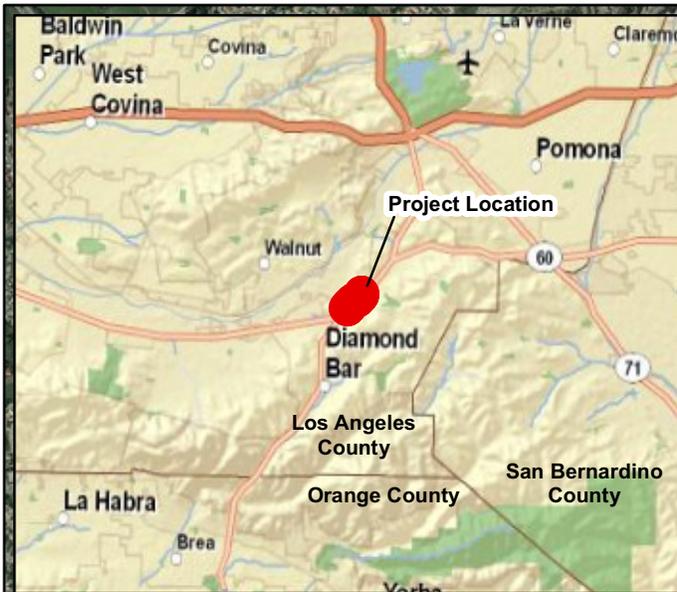
1993 *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, California.

Munz, P. A.

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

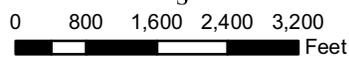
Jones and Stokes.

2003 *Draft Biological Resources Impact Analysis for the Proposed Industry Business Center Project*. City of Industry, Los Angeles County, California.



**Legend**

 Study Area

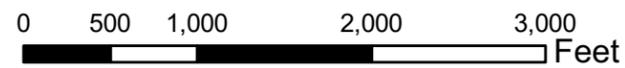


**Exhibit 1**  
Project Location Map



**Legend**

-  Suitable Carbonate Soils/2010 Survey Area
-  2008 Survey Area
-  Study Area



**Exhibit 2**  
Focused Plant Survey Map

**Attachment A**  
**2010 List of Plant Species Observed**  
**Expanded Alignment - SR-57/SR-60 Confluence**  
**Grand Avenue Interchange Improvement Project**

| Scientific Name  | Common Name   |
|--|---|
| <b>ANGIOSPERMS (DICOTYLEDONS)</b>  |   |
| <b>AMARANTHACEAE</b><br><i>Amaranthus albus</i>  | <b>AMARANTH FAMILY</b><br>tumbling pigweed  |
| <b>APIACEAE</b><br><i>Foeniculum vulgare</i> *   | <b>CARROT FAMILY</b><br>fennel  |
| <b>ASCLEPIADACEAE</b><br><i>Asclepias fascicularis</i><br><i>Asclepias californica</i>   | <b>MILKWEED FAMILY</b><br>narrow-leaf milkweed<br>California milkweed   |
| <b>ASTERACEAE</b><br><i>Baccharis salicifolia</i><br><i>Carduus pycnocephalus</i> *<br><i>Centaurea melitensis</i> *<br><i>Cirsium vulgare</i> *<br><i>Conyza canadensis</i><br><i>Hedypnois cretica</i> *<br><i>Sonchus oleraceus</i> *<br><i>Xanthium strumarium</i> | <b>SUNFLOWER FAMILY</b><br>mule fat<br>Italian thistle<br>tocalote<br>bull thistle<br>horseweed<br>crete hedypnois<br>common sow thistle<br>cocklebur |
| <b>BRASSICACEAE</b><br><i>Brassica nigra</i> *<br><i>Hirschfeldia incana</i> *<br><i>Raphanus sativus</i> *  | <b>MUSTARD FAMILY</b><br>black mustard<br>short-podded mustard<br>radish  |
| <b>CAPRIFOLIACEAE</b><br><i>Sambucus mexicana</i>  | <b>HONEYSUCKLE FAMILY</b><br>Mexican elderberry   |
| <b>CONVOLVULACEAE</b><br><i>Convolvulus arvensis</i> *   | <b>MORNING-GLORY FAMILY</b><br>bindweed   |
| <b>EUPHORBIACEAE</b><br><i>Chamaesyce albomarginata</i><br><i>Eremocarpus setigerus</i>  | <b>SPURGE FAMILY</b><br>rattlesnake weed<br>dove weed   |
| <b>FABACEAE</b><br><i>Medicago polymorpha</i> *<br><i>Melilotus indica</i> *   | <b>LEGUME FAMILY</b><br>bur clover<br>sourclover  |
| <b>GERANIACEAE</b><br><i>Erodium cicutarium</i> *  | <b>GERANIUM FAMILY</b><br>red-stemmed filaree   |
| <b>LAMIACEAE</b><br><i>Marrubium vulgare</i> *   | <b>MINT FAMILY</b><br>horehound   |
| <b>MALVACEAE</b><br><i>Malva parviflora</i> *  | <b>MALLOW FAMILY</b><br>cheeseweed  |
| <b>MYRTACEAE</b><br><i>Eucalyptus sp.</i> *  | <b>MYRTLE FAMILY</b><br>gum tree  |
| <b>SALICACEAE</b><br><i>Salix gooddingii</i><br><i>Salix laevigata</i>   | <b>WILLOW FAMILY</b><br>black willow<br>red willow  |

| Scientific Name  | Common Name   |
|--|---|
| <b>SIMAROUBACEAE</b><br><i>Ailanthus altissima</i> *   | <b>QUASSIA FAMILY</b><br>tree of heaven   |
| <b>SOLANACEAE</b><br><i>Nicotiana glauca</i> *   | <b>NIGHTSHADE FAMILY</b><br>tree tobacco  |
| <b>URTICACEAE</b><br><i>Urtica dioica</i> ssp. <i>holosericea</i>  | <b>NETTLE FAMILY</b><br>giant creek nettle  |
| <b>ANGIOSPERMS (MONOCOTYLEDONS)</b>  |   |
| <b>POACEAE</b><br><i>Avena barbata</i> *<br><i>Avena fatua</i> *<br><i>Bromus diandrus</i> *<br><i>Bromus hordeaceus</i> *<br><i>Bromus madritensis</i> ssp. <i>rubens</i> *<br><i>Hordeum murinum</i> *<br><i>Polypogon monspeliensis</i> * | <b>GRASS FAMILY</b><br>slender wild oat<br>wild oat<br>ripgut grass<br>soft chess<br>foxtail chess<br>glaucous foxtail barley<br>annual beard grass |
| * Denotes non-native species   |   |



**Photo 1.** This photo is representative of the carbonate soils present onsite.



**Photo 2.** This photo is representative of the Ruderal vegetation community present within the focused plant survey area.



**Photo 3.** This picture shows a tree of heaven (*Ailanthus altissima*) stand towards the southwestern edge of the survey boundary.



**Photo 4.** This photo shows the Ruderal vegetation growing on the carbonate soils within the project site.

## 2.3 Biological Environment

The analysis of potential impacts of the SR-57/SR-60 Confluence at Grand Avenue Project on natural communities is based on the natural environment study (Sage Environmental Group 2010).

### 2.3.1 Natural Communities

This section discusses natural communities of concern. The focus of this section is on biological communities and not individual plant or animal species. The emphasis of the section is on the ecological function of the natural communities within the area. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. Regulations that pertain to the natural communities are discussed (i.e. Oak Woodland protection, California Fish and Game Code, etc.).

Habitat areas that have been designated as critical habitat under the federal Endangered Species Act (FESA) are discussed in Section 2.3.5, Threatened and Endangered Species. Wetlands and other waters are discussed in Section 2.3.2.

Several biological technical reports have been prepared for the SR-57/SR-60 Confluence at Grand Avenue project. These include a biological reconnaissance survey, jurisdictional delineation, native tree inventory, and focused plant and animal surveys.

A biological reconnaissance survey was conducted in spring 2008 for the overall SR-57/SR-60 confluence study area. Based on the reconnaissance survey findings, a focused plant survey for Braunton's milk-vetch (*Astragalus brauntonii*) was conducted along the northern portion of the SR-57/SR-60 confluence study area in 2008, 2010, and 2011 (Sage Environmental Group 2008, 2011). A native tree inventory and a jurisdictional delineation were completed in winter 2007 (Sage Environmental Group 2007), and the findings were reconfirmed in 2011.

As part of the early consultation process conducted for the SR-57/SR-60 Confluence at Grand Avenue project, in 2007 the United States Fish and Wildlife Service (USFWS) recommended focused surveys be conducted for the southwestern willow flycatcher (*Empidonax traillii extimus*) (SWWFC) and least Bell's vireo (*Vireo bellii pusillus*) (LBV) within suitable habitat areas located within the project study area (Medak pers. comm.). Based on the USFWS recommendation, 2 years of protocol surveys have been conducted (Sage Environmental Group 2007, 2008). An additional LBV survey was conducted in 2011 per USFWS recommendation (Brown pers. comm.; Sage Environmental Group 2011).

The biological study area (BSA) for the SR-57/SR-60 Confluence at Grand Avenue project encompasses an approximately 2.6-mile segment along the SR-57/SR-60 confluence and an approximately 3,000-foot segment of Grand Avenue from the existing SR-60 westbound on-ramp to Golden Springs Drive. The BSA also includes an additional 50-foot buffer outside the

existing roadway right-of-way. The limits of the BSA include the current Caltrans right-of-way and adjacent private/public property required for the widening and ancillary improvements, including retaining walls, drainage facility extensions, utility relocation, water quality treatment BMPs, temporary construction easements, and staging areas.

The data and analysis contained in this EIR/EA is based on the biological technical report findings and is specific to the SR-57/SR-60 Confluence at Grand Avenue project BSA.

### **2.3.1.1 Regulatory Setting**

This section discusses natural communities and habitat not listed as critical habitat under the FESA discussed later in Section 2.3.5, Threatened and Endangered Species, and not discussed later in Section 2.3.2, Wetlands and Other Waters. There is no specific regulatory setting for natural communities, but it is an important component of understanding the context of the biological setting for the proposed project.

The City of Diamond Bar's Tree Preservation and Protection Ordinance (Municipal Code, Title 22 *Development Code*, Article 3 *Site Planning and General Development Standards*, Chapter 22.38 *Tree Preservation and Protection*) (Ordinance) is designed to protect native oak (*Quercus* sp.), walnut (*Juglans* sp.), western sycamore (*Platanus racemosa*), and willow (*Salix* sp.) measuring 8 inches or more in diameter at breast height (DBH). According to the Ordinance, no person will remove or relocate a protected tree or develop within the protection zone of a protected tree without first obtaining a Tree Removal Permit from the Director of the City's Community and Development Services Department. In accordance with the Ordinance, replacement trees will be planted at a minimum of 3:1 for residential parcels greater than 20,000 square feet and commercial and industrial properties; however, the director or commission has final approval.

### **2.3.1.2 Affected Environment**

The area surrounding the project is primarily composed of residential, recreational (golf course), and industrial development, as well as open space. The open space occurs along the north and west sides of the Grand Avenue/SR-57 interchange. This open space is historically grazed and now exhibits remnant patches of coastal sage scrub surrounded by a dominance of ruderal vegetation. A mature, mixed riparian woodland extends from Grand Avenue adjacent to the northwest side of SR-57/SR-60 downstream to beyond the limits of the proposed project within Diamond Bar Creek. A number of drainages flow into Diamond Bar Creek from the south and east of SR-57/SR-60. At the SR-57/SR-60 Grand Avenue interchange, a few business enterprises are also present.

The existing SR-57/SR-60 confluence area is relatively flat, ranging from approximately 600–770 feet (183–235 meters) in elevation. The existing Grand Avenue overcrossing is approximately 700 feet (213 meters) in elevation at its highest point. The majority of the study area has been altered by humans and is composed of ruderal, ornamental, and developed areas. Vegetation communities identified and mapped within the BSA include 20.25 acres (ac) of ruderal vegetation, 37.00 ac of ornamental vegetation, and 119.46 ac of developed area as described in detail below.

No natural communities of concern are located within the BSA. However, there are a few individual native riparian trees and shrubs located within and around the tributaries to Diamond Bar Creek and within the existing SR-60 right-of-way near Diamond Bar Boulevard that may be subject to the City of Diamond Bar's Tree Preservation and Protection Ordinance, as discussed below.

### **Ruderal Vegetation**

Ruderal vegetation generally occurs in the margins along the sides of the paved roads and on the disked and/or former hillsides within the BSA. Ruderal areas typically have heavily compacted or frequently disturbed soils. These areas are dominated by pioneering herbaceous plants, grasses (i.e., *Bromus* and *Avena* spp.), and noxious weeds, including mustards (i.e., *Brassica* spp., *Hirschfeldia incana*), thistles (i.e., *Silybum marianum*, *Carduus pycnocephalus*, *Centaurea melitensis*), and fennel (*Foeniculum vulgare*).

### **Ornamental/Developed**

Ornamental vegetation includes commonly found non-native landscape species used within the Diamond Bar Golf Course and roadway landscaped areas. Developed areas within the study area display man-made structures such as houses, roads, businesses, and the fairways of Diamond Bar Golf Course. The common vegetation type within these ornamental/developed areas consists of exotic landscaping.

### **Native Trees**

Although not separate communities, there are a few individual native riparian trees and shrubs located within and around the tributaries to Diamond Bar Creek within the BSA and within the existing SR-60 right-of-way near Diamond Bar Boulevard. These native trees include coast live oak (*Quercus agrifolia*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), California sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia* Nutt.), and California walnut (*Juglans californica*). It is noted that all but one coast live oak individuals were landscaped specimens along the freeway rights-of way. Based on review of the 2008 Biological Reconnaissance Survey tree inventory and the proposed site plans, approximately 96 native trees are located within the proposed project's construction footprint. Of these, 69 are located within the existing Caltrans right-of-way. The native trees identified in the BSA are provided in Table 2.3.1-1 and Figure 2.3.1-1, Biological Study Area and Sensitive Biological Resources.

### **Wildlife and Wildlife Corridors**

Wildlife corridors provide specific opportunities for individual animals to disperse or migrate between other areas. Adequate cover, minimum physical dimensions, and tolerably low levels of disturbance and mortality (e.g., limited night lighting and noise, low vehicular traffic levels) are common requirements for corridors.

**Table 2.3.1-1. Native Trees Located within the BSA**

| Common Name         | Scientific Name                | Within Caltrans ROW | Outside of Caltrans ROW |
|---------------------|--------------------------------|---------------------|-------------------------|
| Coast live oak      | <i>Quercus agrifolia</i>       | 51                  | 1                       |
| Red willow          | <i>Salix laevigata</i>         | 0                   | 6                       |
| Arroyo willow       | <i>Salix lasiolepis</i>        | 1                   | 8                       |
| Black willow        | <i>Salix gooddingii</i>        | 3                   | 2                       |
| California sycamore | <i>Platanus racemosa</i>       | 0                   | 8                       |
| California walnut   | <i>Juglans californica</i>     | 14                  | 0                       |
| White alder         | <i>Alnus rhombifolia</i> Nutt. | 0                   | 2                       |
| Subtotal            |                                | 69                  | 27                      |
| TOTAL               |                                | 96                  |                         |

The BSA is characterized by ruderal and ornamental vegetation. The drainage tributaries located within the BSA are either piped underground or are concrete channels with high steep walls, and freeway noise and night lighting are currently present. Given some of the physical man-made constraints present for mammals, it is likely that the project site does not provide an important value to the movement of mammals. There is little opportunity for movement of mammal species from the adjacent Diamond Bar Creek to the golf course located across the freeway. However, there may be a potential for animals to move from the golf course to the Puente Hills, an open space located to the southwest.

Within the context for bird movement, the golf course may function as a linkage and/or corridor for species present by providing a potential visual and physical connection to some degree to open space areas in the region, including San Jose Hills, Puente Hills, and Whittier Narrows. Cooper’s hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*) were observed on site. These species appear to utilize the BSA for wintering and foraging only.

### 2.3.1.3 Environmental Consequences

#### ***Vegetation Communities***

##### *Alternative 1, No-Build Alternative*

The No-Build Alternative does not propose any construction and, therefore, would result in no adverse impacts related to vegetation communities.

##### *Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration (Construction and Operation)*

The build alternatives would result in temporary and permanent impacts on ruderal, ornamental, and developed areas.

Implementation of Alternative 2 would result in temporary impacts on 18.39 ac of ruderal vegetation, 28.00 ac of ornamental vegetation, and 7.85 ac of developed area; and permanent impacts on 1.86 ac of ruderal vegetation, 9.00 ac of ornamental vegetation, and 3.92 ac of developed area. None of these communities are considered to be natural communities of concern. Therefore, no adverse impact under NEPA or significant impact under CEQA would occur.

Implementation of Alternative 3 would result in temporary impacts on 18.29 ac of ruderal vegetation, 27.63 ac of ornamental vegetation, and 7.85 ac of developed area; and permanent impacts on 1.96 ac of ruderal vegetation, 9.37 ac of ornamental vegetation, and 3.93 ac of developed area. None of these communities are considered to be natural communities of concern. Therefore, no adverse impact under NEPA or significant impact under CEQA would occur.

### **Native Trees**

#### Alternative 1, No-Build Alternative

The No-Build Alternative does not propose any construction and, therefore, would result in no adverse impacts related to native trees.

#### Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration (Construction and Operation)

The proposed project would result in the removal of existing native trees located within the BSA. Up to 96 trees may be affected as listed in Table 2.3.1-1, Native Trees Located within the BSA. As the design of the project is finalized and the extent of the widening is precisely defined, field review to determine the extent of impacts on native trees would be conducted, with removal of native trees avoided to the greatest extent possible. Mitigation Measures BIO-1 and BIO-2 would reduce the potentially adverse impacts under NEPA and CEQA to minor adverse and less than significant, respectively.

### **Wildlife and Wildlife Corridors**

#### Alternative 1, No-Build Alternative

The No-Build Alternative does not propose any construction and, therefore, would result in no adverse impacts related to wildlife movement or wildlife corridors.

#### Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration (Construction and Operation)

A number of man-made physical constraints exist in the project area in relation to the movement of mammals. However, there may be a potential for animals to move from the Diamond Bar Golf Course to the Puente Hills open space located to the southwest. Within the context for bird movement, the golf course and the Diamond Bar Creek riparian corridor located adjacent to the BSA may function as a potential linkage to open space areas in the region.

The build alternatives would avoid and minimize encroachment into the existing golf course to the extent possible. Permanent impacts are limited to the minor relocation of existing drainage channels within the Caltrans right-of-way to accommodate the roadway widening. The value of the golf course to continue to function as a potential corridor and/or linkage for mammals and birds moving between the Puente Hills, San Jose Hills, and Whittier Narrows would not be substantially altered by the proposed project. Therefore, no substantially adverse impact under NEPA or significant impact under CEQA would occur.

#### **2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures**

The following mitigation measures are proposed to reduce impacts of the proposed project on native trees.

**BIO-1:** Native trees, including coast live oak present within the existing Caltrans landscaped areas, that require removal shall be replaced in proximity to the BSA as follows: Mark and replace all native trees greater than 6 inch diameter at breast height (dbh) (4.5 feet above surrounding grade) with the same species at a 1:1 ratio. Source materials should be of the same subspecies and/or variety locally present and from seeds or cuttings gathered within coastal southern California to ensure local provenance. Locations for the tree planting include the Caltrans right-of-way, Diamond Bar Golf Course, and the downstream portion of Diamond Bar Creek owned by the City of Industry.

**BIO-2:** The City of Diamond Bar's Tree Removal Permit process shall be applicable for the removal of any native trees outside of the freeway right-of-way. All removed native trees located outside of Caltrans landscaped areas shall be replaced as follows: Mark and replace all native trees greater than 6 inch diameter at breast height (dbh) (4.5 feet above surrounding grade) with the same species at a 2:1 ratio. Source materials should be of the same subspecies and/or variety locally present and from seeds or cuttings gathered within coastal southern California to ensure local provenance. Locations for the tree planting include the Caltrans right-of-way, Diamond Bar Golf Course, and the downstream portion of Diamond Bar Creek owned by the City of Industry.

The project impacts on ruderal and ornamental/developed vegetation communities do not require mitigation.

#### **2.3.1.5 Cumulative Impacts**

Because impacts on mature native trees within the BSA would be offset by planting like-in-kind trees at a 1:1 and 2:1 ratio in proximity to the BSA, the project is not expected to contribute to cumulative effects on native trees in the region.

### **2.3.2 Wetlands and Other Waters**

The analysis of potential impacts of the SR-57/SR-60 Confluence at Grand Avenue project on wetlands and other waters is based on the NES (Sage Environmental Group 2010) and the Jurisdictional Delineation, Existing Conditions (Sage Environmental Group 2007).

### **2.3.2.1 Regulatory Setting**

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (CWA, 33 U.S.C. 1344) is the primary law regulating wetlands and waters. The CWA regulates the discharge of dredged or fill material into waters of the United States (WoUS), including wetlands. WoUS include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (EPA).

USACE issues two types of 404 permits: Standard and General permits. Nationwide permits, a type of general permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a nationwide permit may be permitted under one of USACE's standard permits. For standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 CFR Part 230), and whether permit approval is in the public interest. The 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (WoUS) only if there is no practicable alternative that would have less adverse effects. The guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on WoUS, and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration (FHWA) and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game (CDFG), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required. CDFG

jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications for impacts on wetlands and waters in compliance with Section 401 of the CWA. Please see Section 2.2.2, Water Quality and Stormwater Runoff, for additional details.

### **2.3.2.2 Affected Environment**

The 2007 Jurisdictional Delineation indicated that the presence of 1.18 ac of WoUS and 1.62 ac of waters of the State, including 0.38 ac of wetlands located within the BSA. Current engineering design plans indicate relocation of the existing southerly SR-60 concrete-lined channel and minor culvert extensions that would affect other drainage features as shown Figure 2.3.1-1, Biological Study Area and Sensitive Biological Resources.

### **2.3.2.3 Environmental Consequences**

#### ***Alternative 1, No-Build Alternative***

The No-Build Alternative does not propose any construction and, therefore, would result in no adverse impacts related to jurisdictional waters.

#### ***Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration (Construction and Operation)***

The build alternatives avoid and minimize permanent impacts on jurisdictional waters and wetlands to the extent feasible. Existing concrete-line drainage features within Caltrans right-of-way would be affected by the roadway widening. Relocation and/or extension of these features is proposed in lieu of under-grounding these facilities. Culvert extension is designed as the minimum extension necessary to accommodate roadway widening.

Implementation of Alternative 2 would result in the permanent loss of 0.12 ac (0.05 ha) of wetlands due to culvert extensions to accommodate the widening of SR-60 and Grand Avenue. Measures BIO 3 through BIO-8 are proposed to reduce these impacts to less than significant under CEQA and minor adverse under NEPA.

Implementation of Alternative 3 would result in the permanent loss of 0.16 ac (0.06 ha) of WoUS and waters of the State, including 0.12 ac (0.08 ha) of wetlands, due to culvert extensions to accommodate the widening of SR-60 and Grand Avenue, and installation of the new SR-60/Grand Avenue eastbound loop on-ramp. Measures BIO 3 through BIO-8 are proposed to reduce these impacts to less than significant under CEQA and minor adverse under NEPA.

Indirect effects on wetlands and other waters may include: 1) changes in hydrology from increased sediment entering drainage areas after vegetation clearing, and/or 2) invasive, nonnative plants transported into areas along the roadway with the movement of soil and/or placement of fill material that is present on construction equipment brought on site or taken off site and is inadvertently included in seed mixes. These indirect effects would only last during construction and, therefore, are not considered adverse under NEPA or significant under CEQA.

It is anticipated that resource agency permits would be required for the proposed relocation and culvert extensions from the USACE, RWQCB, and the CDFG under Section 404 and 401 of federal CWA and Section 1600 of the State Fish and Game Code, respectively.

#### **2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures**

In addition to the minimization measures described in Section 2.2.2, Water Quality and Stormwater Runoff, the following measures would substantially reduce impacts of the proposed project on jurisdictional waters.

##### ***Minimization Measures***

**BIO-3:** To the extent feasible, construction activities shall occur outside the rainy season (October to May) to ensure that erosion caused by construction activities does not occur and that sedimentation is not deposited within the storm drain system or any adjacent drainages. If construction occurs during the rainy season, appropriate erosion and storm water control devices shall be in place and maintained throughout the rainy season.

Additional measures may be imposed subject to the concurrence of the resource agencies (including USACE, CDFG, and RWQCB) and may entail one or more of the following options in order of preference: 1) onsite creation or enhancement of riparian habitat; 2) offsite creation or enhancement of riparian habitat; and/or 3) participation in an established offsite mitigation bank program. The appropriate mitigation ratio would be determined in coordination with the resource agencies based on the quality of jurisdictional resources to be affected.

##### ***Mitigation Measures***

**BIO-4:** Concurrent with the initiation of construction, permanent impacts on waters of the United States and wetlands shall be offset through replacement within the downstream portion of Diamond Bar Creek owned by the City of Industry at a minimum ratio of 2:1.

**BIO-5:** A Habitat Mitigation Monitoring Plan (HMMP) shall be prepared and approved by USACE and CDFG prior to the commencement of construction within jurisdictional waters.. At a minimum, the HMMP will meet the following criteria:

- The habitat shall be replaced and/or enhanced at a minimum 2:1 ratio.
- The HMMP shall identify a success criterion of at least 80 percent cover of native riparian vegetation for replaced habitat.

- Further criteria specified in the HMMP shall include a 5-year establishment period for the replacement habitat, regular trash removal, and regular maintenance and monitoring activities to ensure the success of the mitigation plan.

**BIO-6:** A nationwide permit shall be obtained through the USACE prior to obtaining grading permits, pursuant to Section 404 of the Clean Water Act.

**BIO-7:** A streambed alteration notification shall be submitted and authorization from the CDFG shall be obtained prior to obtaining grading permits.

**BIO-8:** A certification or waiver from the Region 4 RWQCB shall be obtained prior to the initiation of construction.

### **2.3.2.5 Cumulative Impacts**

Because impacts on jurisdictional waters within the BSA would be offset by the expansion of contiguous waters and wetlands at a 2:1 ratio immediately adjacent to the BSA along Diamond Bar Creek, the project is not expected to contribute to cumulative effects to waters and wetlands in the region.

### **2.3.3 Plant Species**

The analysis of potential impacts of the SR-57/SR-60 Confluence at Grand Avenue project on plant species is based on the NES (Sage Environmental Group 2010) and the Focused Plant Survey for the federally listed endangered Branton's milk-vetch (Sage Environmental Group 2008, 2011). Potential impacts on threatened and endangered plant species are discussed later in Section 2.3.5, Threatened and Endangered Species.

#### **2.3.3.1 Regulatory Setting**

The USFWS and CDFG share regulatory responsibility for the protection of special-status plant species. Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under FESA and/or the California Endangered Species Act (CESA). Section 2.3.5, Threatened and Endangered Species, provides detailed information regarding these species.

This section discusses potential impacts of the proposed project on other special-status plant species, including CDFG fully protected species and species of concern, USFWS candidate species, and nonlisted California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA are at 16 USC, Section 1531, et seq. (refer also to 50 CFR Part 402). The regulatory requirements for CESA are at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act at Fish and Game Code, Sections 1900 to 1913, and CEQA, Sections 2100 to 21177.

### 2.3.3.2 Affected Environment

Much of the vegetation adjacent to the existing SR-60 and Grand Avenue road surfaces consists of ruderal and ornamental vegetation, including landscaped coast live oak and California walnut.

A literature review resulted in a list of 10 special-interest plant species that have a potential to occur in or within the vicinity of the BSA as determined by federal, state, or CNPS data. The special-interest plant species identified as potentially occurring in the BSA are:

- Plummer's mariposa lily (*Calochortus plummerae*)
- Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*)
- Southern tarplant (*Centromadia parryi* ssp. *australis*)
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*)
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*)
- California satintail (*Imperata brevifolia*)
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)
- White rabbit-tobacco (*Gnaphalium leucocephalum*)
- San Bernardino aster (*Symphytotrichum defoliatum*)

No special-interest plant species were observed or otherwise detected in the BSA at the time of the 2008 biological reconnaissance survey and focused plant surveys. Therefore, these species are considered absent from the BSA.

### 2.3.3.3 Environmental Consequences

#### **Alternative 1, No-Build Alternative**

The No-Build Alternative does not propose any construction and, therefore, would result in no adverse impacts related to plant species.

#### **Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration (Construction and Operation)**

No impacts on special-interest plant species would occur as a result of implementation of the build alternatives. Therefore, there would be no impact under CEQA and NEPA.

### 2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

The proposed SR-57/SR-60 Confluence at Grand Avenue project would not result in adverse impacts related to special-interest plant species. No avoidance, minimization, or mitigation measures are required.

### 2.3.3.5 Cumulative Impacts

The proposed SR-57/SR-60 Confluence at Grand Avenue project would not result in adverse impacts related to special-interest plant species. No avoidance, minimization, or mitigation measures are required.

### 2.3.4 Animal Species

The analysis of potential impacts of the SR-57/SR-60 Confluence at Grand Avenue project on animal species is based on the NES (Sage Environmental Group 2010) and subsequent 2011 least Bell's vireo survey (Sage Environmental Group 2011). The NES is on file and available for review at the Cities of Industry and Diamond Bar, and the Caltrans District 7 offices. Potential impacts on threatened and endangered animal species are discussed later in Section 2.3.5, Threatened and Endangered Species.

#### 2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts on wildlife. The USFWS, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and CDFG are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the state or federal Environmentally Sensitive Areas (ESAs). Wildlife species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 below. All other special-status animal species, including CDFG fully protected species and species of concern, and USFWS and NOAA candidate species are discussed here.

Federal laws and regulations pertaining to wildlife include the following: NEPA, the Migratory Bird Treaty Act (MBTA), and the Fish and Wildlife Coordination Act.

State laws and regulations pertaining to wildlife include the following: CEQA, and Sections 1601-1603 and Sections 4150 and 4152 of the Fish and Game Code.

#### 2.3.4.2 Affected Environment

A literature review identified 32 special-interest animal species that have a potential to occur in or within the vicinity of the BSA for the proposed project:

- Orange-throated whiptail (*Aspidoscelis hyperythra*)
- Coastal western whiptail (*Aspidoscelis tigris stejnegeri*)
- Coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillii*)
- Northern red-diamond rattlesnake (*Crotalus ruber ruber*)
- Cooper's hawk (*Accipiter cooperii*) (nesting)
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)

- Grasshopper sparrow (*Ammodramus savannarum*)
- Golden eagle (*Aquila chrysaetos*)
- Short-eared owl (*Asio flammeus*)
- Long-eared owl (*Asio otus*)
- Burrowing owl (*Athene cunicularia*)
- Ferruginous hawk (*Buteo regalis*)
- Northern harrier (*Circus cyaneus*)
- Black swift (*Cypseloides niger*)
- White-tailed kite (*Elanus leucurus*)
- Merlin (*Falco columbarius*)
- Yellow-breasted chat (*Icteria virens*)
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
- Pallid bat (*Antrozous pallidus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Western mastiff bat (*Eumops perotis californicus*)
- Hoary bat (*Lasiurus cinereus*)
- Western yellow bat (*Lasiurus xanthinus*)
- Yuma myotis (*Myotis yumanensis*)
- Tricolored blackbird (*Agelaius tricolor*)
- Vaux's swift (*Chaetura vauxi*)
- Big free-tailed bat (*Nyctinomops macrotis*)
- Sharp-shinned hawk (*Accipiter striatus*)
- Yellow warbler (*Dendroica petechia*)

The following three sensitive species were confirmed **present** within the SR-57/SR-60 Confluence at Grand Avenue BSA. All three species are federally protected under the MBTA.

- Cooper's hawk (*Accipiter cooperii*)
- Sharp-shinned hawk (*Accipiter striatus*)
- Yellow warbler (*Dendroica petechia*)

### 2.3.4.3 Environmental Consequences

#### **Alternative 1, No-Build Alternative**

The No-Build Alternative does not propose any construction and, therefore, would result in no adverse impacts related to animal species.

**Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange  
Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration  
(Construction and Operation)**

Based on the 2008 general biological reconnaissance, and the 2007, 2008, and 2011 focused LBV surveys, sensitive wildlife species documented as present within the BSA are limited to raptors and other species protected by the MBTA. Within the BSA, direct impacts on the yellow warbler (*Dendroica petechia*) are not anticipated, as this species currently utilizes the site for wintering and foraging only. Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*) were observed on site. These species appear to utilize the BSA for wintering and foraging only. No federally designated critical habitat is present within the BSA.

Impacts on nesting birds could occur if an active nest is removed or if nesting birds are disturbed as a result of construction activities to the extent that they abandon the nest. The MBTA and California Fish and Game Code prohibit impacts that cause nest failure of most species of birds, and the mitigation measure described below is anticipated to ensure that no nest loss would occur. Mitigation Measure BIO-9 would reduce the potentially adverse impacts on nesting birds under NEPA and CEQA to minor adverse and less than significant, respectively.

**2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures**

The following mitigation would be implemented to protect nesting birds during project construction:

**BIO-9:** Grubbing of vegetation shall occur outside of the raptor nesting season, generally defined as January 15 to September 15, to avoid potential impacts on nesting birds. However, work may occur during the nesting season if a preconstruction nest survey is conducted by a qualified biologist. The surveys shall be conducted no more than 3 days prior to the start of work to protect native nesting birds. The survey shall be conducted within the proposed impact area and adjacent suitable habitat up to 500 feet outside the BSA. Should nesting raptors be present, no work shall be conducted in that area until the young have fledged and will no longer be affected by the project, as determined by the qualified biologist.

As discussed in Section 2.3.1.4 of this document, impacts on mature native trees would be offset in accordance with the requirements of the Caltrans and/or City of Diamond Bar's Tree Preservation Ordinance through the Tree Removal Permit process. No additional compensatory mitigation would be required.

**2.3.4.5 Cumulative Impacts**

Project impacts on nesting birds are limited to the removal of trees and shrubs along the project's active roadways. These resources are less suitable for nesting than other resources throughout the region due to their proximity to the roadway and the resulting noise and human disturbance.

Potential impacts from tree removal would be minimized and avoided through the planting of replacement trees. Therefore, temporary impacts on these resources are not anticipated to result in a cumulatively considerable contribution to impacts on nesting sites throughout the region.

### **2.3.5 Threatened and Endangered Species**

The analysis of potential impacts of SR-57/SR-60 Confluence at Grand Avenue project on the threatened and endangered species is based on the NES (Sage Environmental Group 2010), supporting focused surveys, and a subsequent 2011 least Bell's vireo survey included herein as appendices. Focused surveys included USFWS protocol surveys for SWWFC and LBV conducted in 2007 and 2008, focused plant surveys for Braunton's milk-vetch conducted in 2008 and 2011, and focused surveys for LBV conducted in 2011.

#### **2.3.5.1 Regulatory Setting**

The primary federal law protecting threatened and endangered species is the FESA: 16 USC Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the FHWA, are required to consult with the USFWS and NOAA Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the CESA, California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The CDFG is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts on CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone

over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

### **2.3.5.2 Affected Environment**

The literature review indicated the potential occurrence in the BSA of one plant and three animal species that are state- and/or federally listed as threatened or endangered.

These threatened and endangered species are:

- Braunton's milk-vetch (*Astragalus brauntonii*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- California gnatcatcher (*Polioptila californica californica*)

No threatened and endangered animal or plant species were observed or otherwise detected in the BSA at the time of the 2007, 2008, and 2011 field surveys. No federally designated critical habitat is present within the BSA.

### **2.3.5.3 Environmental Consequences**

#### ***Alternative 1, No-Build Alternative***

Since no threatened and endangered animal or plant species were observed or otherwise detected in the BSA and no federally designated critical habitat is present within the BSA, no adverse impacts on threatened and endangered species would occur as a result of implementation of the No-Build Alternative.

#### ***Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration (Construction and Operation)***

Since no threatened and endangered animal or plant species were observed or otherwise detected in the BSA and no federally designated critical habitat is present within the BSA, no adverse impacts on threatened or endangered species would occur as a result of implementation of the build alternatives.

### **2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures**

The proposed SR-57/SR-60 Confluence at Grand Avenue project would not result in adverse impacts related to threatened or endangered species. No avoidance, minimization, or mitigation measures are required.

### 2.3.5.5 Cumulative Impacts

The proposed SR-57/SR-60 Confluence at Grand Avenue project would not result in adverse impacts related to threatened or endangered species. No avoidance, minimization, or mitigation measures are required.

### 2.3.6 Invasive Species

The analysis of potential impacts of the SR-57/SR-60 Confluence at Grand Avenue project related to invasive species is based on the NES (Sage Environmental Group 2010). The NES is on file and available for review at the Cities of Industry and Diamond Bar, and the Caltrans District 7 offices.

#### 2.3.6.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” FHWA guidance issued August 10, 1999, directs the use of the state’s invasive species list, currently maintained by the California Invasive Species Council (Cal-IPC), to define the invasive species that must be considered as part of the NEPA analysis for a proposed project.

#### 2.3.6.2 Affected Environment

As discussed earlier in Section 2.3.1, Natural Communities, the dominant habitat types in the BSA consist of nonnative ruderal vegetation and developed areas dominated by ornamental vegetation (Developed/Ornamental).

During the 2008 reconnaissance surveys, 9 exotic plants on the Cal-IPC Invasive Plant Inventory were identified in the BSA. Each plant in the inventory is given an overall rating of high, moderate, limited, or unknown. Plants with a rating of high have severe ecological impacts. Plants with a rating of moderate have a substantial and apparent but not severe ecological impact.

Plants with a limited rating are invasive, but their ecological impacts are minor on a statewide level. The invasive species identified in the BSA and the applicable Cal IPC rating are provided in Table 2.3.6-1.

**Table 2.3.6-1 Invasive Plants Located within the BSA**

| Common Name     | Scientific Name              | Cal-IPC Rating |
|-----------------|------------------------------|----------------|
| Wild oat        | <i>Avena</i> sp.             | Moderate       |
| Ripgut grass    | <i>Bromus diandrus</i>       | Moderate       |
| Italian thistle | <i>Carduus pycnocephalus</i> | Moderate       |
| Tocalote        | <i>Centaurea melitensis</i>  | Moderate       |
| Fennel          | <i>Foeniculum vulgare</i>    | High           |

|                  |                             |          |
|------------------|-----------------------------|----------|
| Tree tobacco     | <i>Nicotina glauca</i>      | Moderate |
| Castor bean      | <i>Ricinis communis</i>     | Limited  |
| Milk thistle     | <i>Silybum marianum</i>     | Limited  |
| Mexican fan palm | <i>Washingtonia robusta</i> | Moderate |

Source: Cal-IPC Invasive Plant Inventory ([www.cal-ipc.org/ip/inventory/weedlist.php](http://www.cal-ipc.org/ip/inventory/weedlist.php), accessed 2009) and Sage Environmental Group 2010.

### 2.3.6.3 Environmental Consequences

#### **Alternative 1, No-Build Alternative**

The No-Build Alternative does not propose any construction and, therefore, would result in no adverse impacts related to invasive plant species.

#### **Alternative 2, Combination Cloverleaf/Diamond Configuration Interchange Alternative and Alternative 3, Partial Cloverleaf Interchange Configuration (Construction and Operation)**

The construction of build alternatives has the potential to spread invasive species by the entering and exiting of construction equipment contaminated by invasives, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that seed of invasive species is spread along the highway. Minimization Measures BIO-10 and BIO-11 would reduce the potentially adverse impacts under NEPA and CEQA to minor adverse and less than significant, respectively.

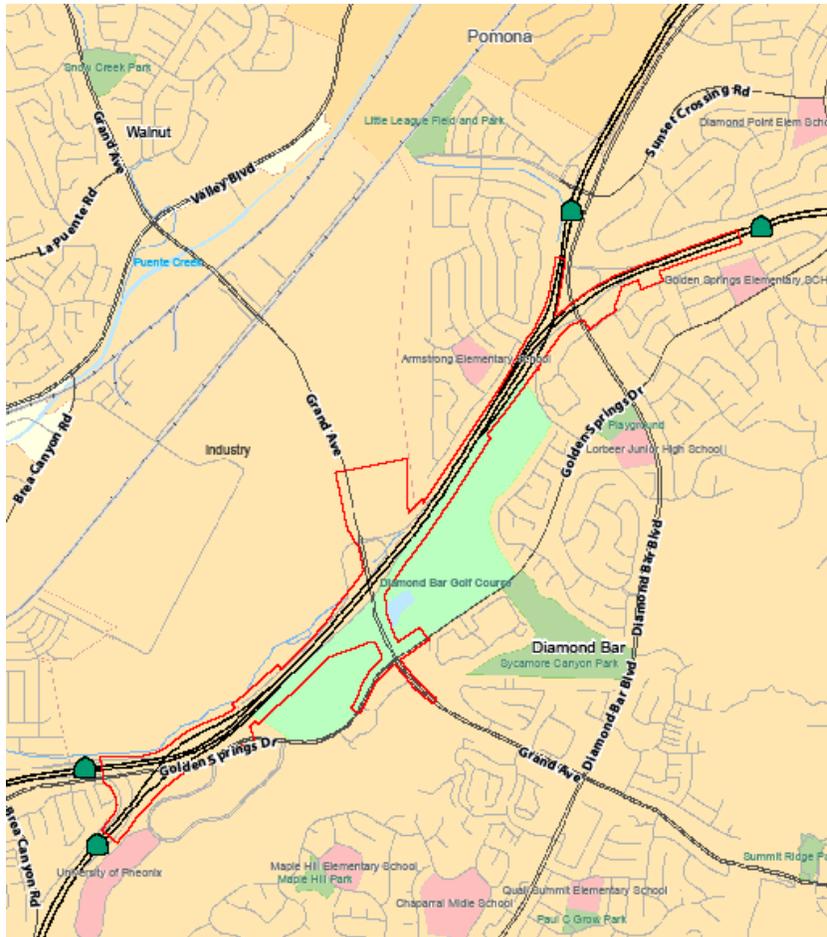
### 2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures would minimize the potential project impacts related to invasive species.

**BIO-10:** Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds (before mobilizing to arrive at the site and before leaving the site).

**BIO-11:** Trucks with loads carrying vegetation shall be covered, and vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.

# State Route 57/State Route 60 Confluence at Grand Avenue Project Grand Avenue Interchange and Confluence Improvements



## Natural Environment Study

City of Industry and City of Diamond Bar

District 07-LA-60-PM R23.87/R24.48  
EIR/EA 279100

July 2010



# Natural Environment Study

State Route-57 (SR-57)/State Route-60 (SR-60) Confluence at Grand Avenue  
Grand Avenue Interchange and Confluence Improvements  
City of Industry and City of Diamond Bar  
County of Los Angeles

District 07-LA-60-PM R23.87/R24.48

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July 2010

STATE OF CALIFORNIA  
Department of Transportation

CITY OF INDUSTRY  
Urban-Industry Development Agency

CITY OF DIAMOND BAR  
Public Works Division

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## Summary

The City of Industry, in cooperation with the California Department of Transportation (Caltrans), is proposing freeway improvements to the State Route-57 (SR-57)/State Route-60 (SR-60) confluence at the Grand Avenue interchange in Los Angeles County. The primary purpose of the proposed project is to improve the operational deficiencies of the SR-57 and SR-60 freeways at the Grand Avenue interchange

The Biological Study Area (BSA) for the Proposed Project's limit of disturbance includes an approximately 2.6 mile segment along the SR-57/SR-60) confluence and an approximately 3,000 foot segment of Grand Avenue from the existing SR-60 westbound on-ramp to Golden Springs Drive. The BSA also includes an additional 50 ft buffer outside the existing roadway right-of-way.

Biological resources found within the BSA include a few scattered native riparian tree species located within and around the tributaries to Diamond Bar Creek, raptor foraging and jurisdictional waters/wetlands. Two concrete-lined channels present within the BSA will be relocated as part of the project. It is anticipated that resource agency permits will be required from the United States Army Corps of Engineers (ACOE), California Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG) under Sections 404 and 401 of the federal Clean Water Act (CWA) and Section 1600 of the State Fish and Game Code, respectively, for the channel relocations. Native birds protected under the Migratory Bird Treaty Act (MBTA) may also nest within and adjacent to the BSA. Mitigation measures proposed herein avoid and minimize potential effects to nesting birds.

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## **List of Abbreviated Terms**

|          |   |
|----------|---|
| ACOE     | Army Corps of Engineers                                   |
| BSA      | biological study area                                     |
| Caltrans | California Department of Transportation                   |
| CAGN     | coastal California gnatcatcher                            |
| CDFG     | California Department of Fish and Game                    |
| CESA     | California Environmental Quality Act                      |
| CFR      | Code of Federal Regulations                               |
| CNDDDB   | California Natural Diversity Database                     |
| CNPS     | California Native Plant Society                           |
| EA       | Environmental Assessment                                  |
| EIR      | Environmental Impact Report                               |
| FC       | Federal Candidate for listing as Threatened or Endangered |
| FE       | Federal Endangered  |
| FESA     | Federal Endangered Species Act                            |
| FHWA     | Federal Highway Administration                            |
| FONSI    | Finding of No Significant Impact                          |
| FP       | Fully Protected   |
| FPE      | Federal Proposed Endangered                               |
| FPT      | Federal Proposed Threatened                               |
| FSC      | Federal Species of Concern                                |
| FT       | Federal Threatened  |
| ft       | foot/feet   |
| FWS      | Fish and Wildlife Service                                 |
| IS       | Initial Study   |
| km       | kilometer(s)  |
| KP       | kilometer post  |
| LBV      | least Bell's vireo  |
| m        | meter(s)  |
| MBTA     | Migratory Bird Treaty Act                                 |
| mi       | mile(s)   |
| MND      | Mitigated Negative Declaration                            |

|                |  |
|----------------|--|
| NEPA           | National Environmental Policy Act                |
| NMFS           | National Marine Fisheries Service                |
| NOAA Fisheries | National Marine Fisheries Service                |
| NRCS           | Natural Resources Conservation Service           |
| OHW            | Ordinary High Water Mark                         |
| PM             | post mile  |
| RWQCB          | Los Angeles Regional Water Quality Control Board |
| SE             | State of California Endangered                   |
| SSC            | California Species of Special Concern            |
| ST             | State of California Threatened                   |
| SWWFC          | southwestern willow flycatcher                   |
| USDA           | United States Department of Agriculture          |
| USFWS          | United States Fish and Wildlife Service          |
| USGS           | United States Geological Survey                  |

# Chapter 1. Introduction

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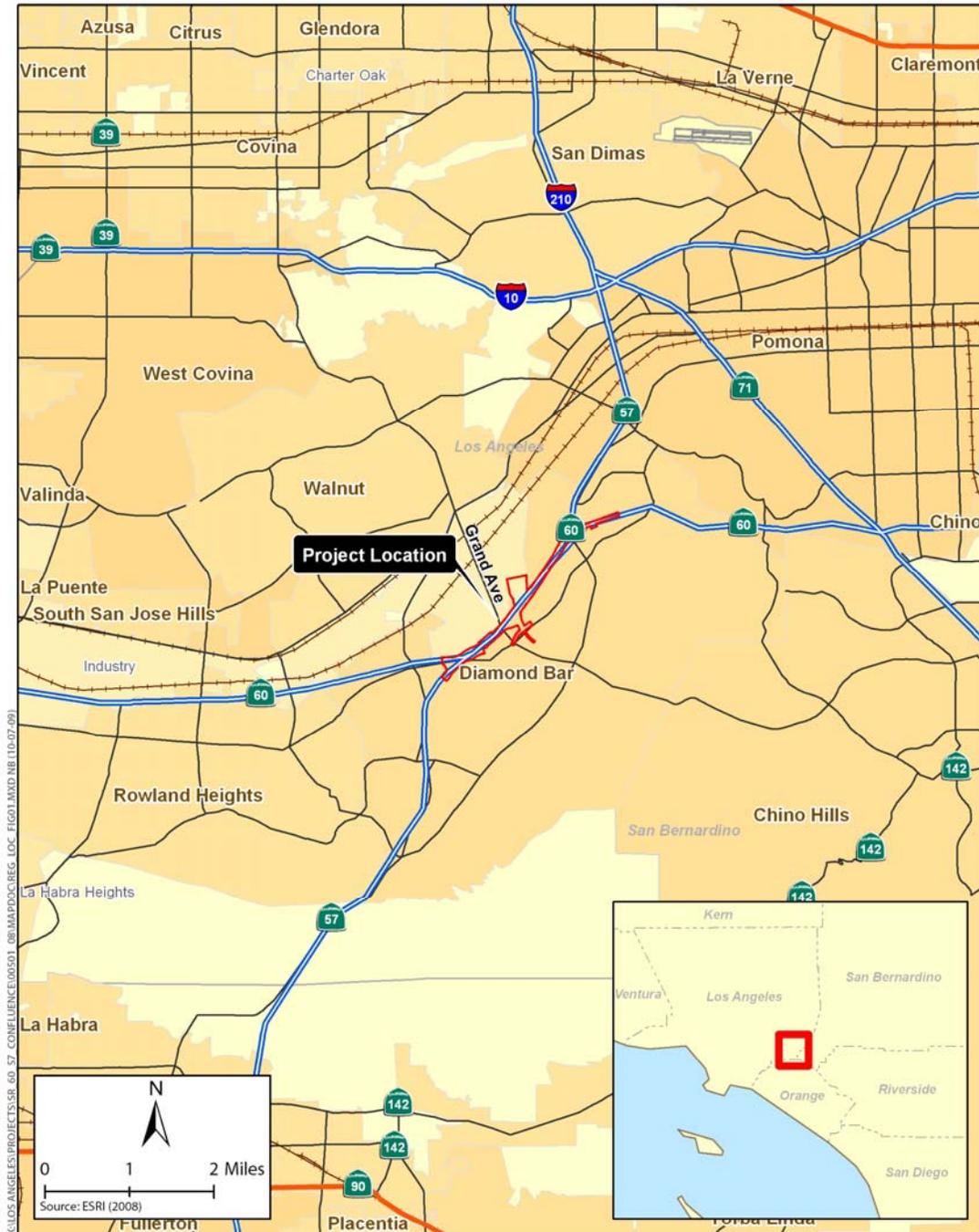
The City of Industry, in cooperation with the California Department of Transportation (Caltrans), is proposing freeway improvements to the State Route-57 (SR-57)/State Route-60 (SR-60) confluence at the Grand Avenue interchange in Los Angeles County. Figure 1 and Figure 2 show the regional location and project vicinity relatively. The proposed project would be subject to both the California Environmental Quality Act (CEQA) and the federal National Environmental Policy Act (NEPA). The City of Industry would be the lead agency under CEQA and Caltrans would be the lead agency under NEPA.

SR-57 is a major north-south freeway, serving the cities and communities of the greater Los Angeles area. This freeway's north terminus is at its junction with Interstate 210 (I-210), in the City of Glendora, and its south terminus is located at the junction with Interstate 5 (I-5), and State Route 22 (SR-22), in the City of Orange. The portion of SR-57 that is located in the project area is located in the Pomona Valley.

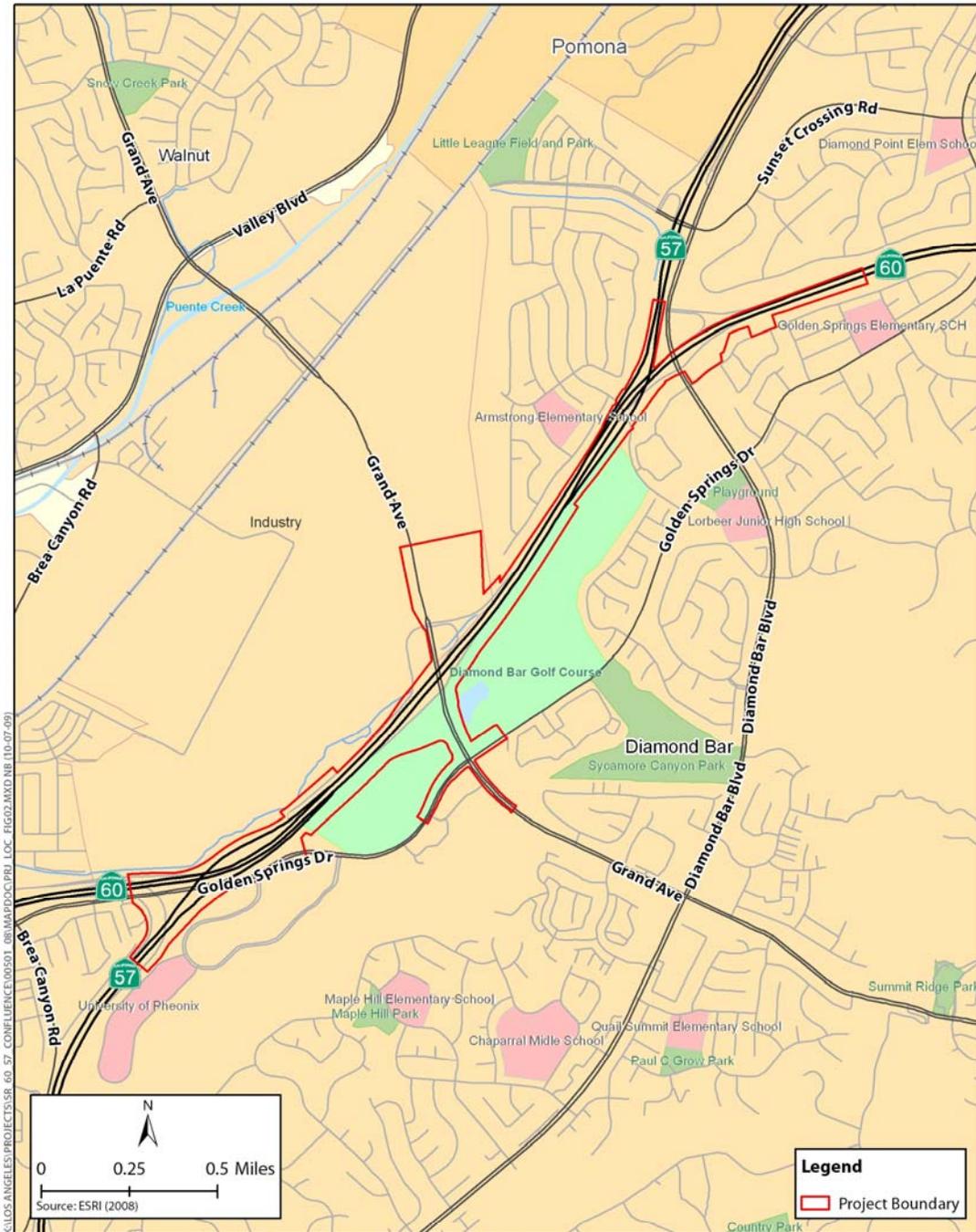
SR-60 is a major east-west freeway that also serves the cities and communities of the Greater Los Angeles Area. SR-60 is part of the National Highway System (NHS) and the State Freeway and Expressway (F&E) System. SR-60 runs from Interstate 10 (I-10) near the Los Angeles River in the City of Los Angeles east to I-10 in Riverside County, serving the cities and communities on the eastern side of the Los Angeles metropolitan area and running along the south side of the San Gabriel Valley. The west terminus of the freeway is at the East Los Angeles Interchange complex, and the east terminus is at the junction with I-10 in the City of Beaumont

SR-57 and SR-60 meet and interconnect in the City of Diamond Bar and the City of Industry. The two separate freeways share an alignment for approximately 1.26 miles along the northbound/eastbound direction and approximately 1.34 miles along the southbound/westbound direction, following a generally northeasterly-southwesterly orientation.

The primary purposes of the proposed project are to improve traffic operations and safety of the SR-57 and SR-60 freeways at the Grand Avenue interchange.



**Figure 1**  
**Regional Vicinity Map**  
**State Route 57/State Route 60 Confluence at Grand Avenue Project**



**Figure 2**  
**Project Location Map**  
**State Route 57/State Route 60 Confluence at Grand Avenue Project**

## 1.1. Project History

The Project Study Report (PSR) was approved on March 27, 2009 for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project. The PSR Project Limits were located approximately at the midpoint of the two-mile common alignment of the SR-57/SR-60. The forecasted population and employment growth between 2008 and 2035 is expected to result in traffic growth approximately 25% higher than the existing volumes for the SR-60 mainline and the newly constructed HOV lanes based on SCAG traffic forecasts. With the steady commercial and industrial growth in the City of Industry and residential growth in the City of Diamond Bar, Grand Avenue from growth in the City of Diamond Bar, Grand Avenue from the interchange at SR-60 south to Golden Springs, would experience extensive delays and LOS approaching E and F during both the AM and PM peak hours. The 2035 forecasted traffic would result in further deficiencies in the mainline freeway demand over capacity ratio and an estimated LOS on the mainline of F in both the westbound and eastbound direction. The Grand Avenue interchange volumes forecasted to year 2035 indicate significant traffic delays at the off ramps in both directions of SR-60 due to the high demand over capacity ratios. The results of the AM and PM peak hour intersection LOS calculations indicate the existing off-ramps onto Grand Avenue would experience LOS F during peak hours.

The biological technical reports referenced herein and provided as Volume II have been prepared for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project and the adjacent project, the Westbound On-Ramp at Grand Avenue/SR-60 Interchange Improvements Project.

## 1.2. Project Description

This section describes the proposed project and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. Two build alternatives are being considered for the proposed project.

The proposed project would consist of the reconfiguration of the approximately 2.5-mile confluence of SR-57 and SR-60, which would include the addition of auxiliary lanes and associated on-ramp/off-ramp reconfigurations. SR-57 and SR-60 are major inter-regional freeways linking cities in the San Gabriel Valley and the Inland Empire with Los Angeles and Orange Counties.

### **1.2.1. Alternative 1 - No-Build Alternative**

The No-Build (or No-Action) Alternative would result in no structural or physical changes to SR-57, SR-60, or the Grand Avenue interchange. Existing deficient capacity and congestion conditions due to short weave sections on SR-57, SR-60, and Grand Avenue would not change under this Alternative.

### **1.2.2. Build Alternatives**

Two build alternatives are being considered. Both build alternatives would require the relocation of utility infrastructure (underground electrical lines, telecommunication lines, and electrical poles) on Grand Avenue, Golden Springs Drive, and the new Grand Avenue overcrossing structure as required, as well as the addition of a High Occupancy Vehicle (HOV) preferential lane to the westbound loop on-ramp after the construction of a new westbound direct on-ramp project being proposed by the City of Industry. The two build alternatives (Alternatives 2 and 3) are described below and shown in Figures 3 and 4, respectively.

#### **Alternative 2- Combination Cloverleaf/Diamond Configuration Interchange Alternative**

Alternative 2 would maintain the existing interchange configuration (compact-diamond) for the eastbound on and off ramps on SR-60. The interchange configuration at Grand Avenue for Alternative 2 would remain as a combination of partial cloverleaf for the westbound direction. The westbound SR-60 loop on-ramp would join the freeway as an auxiliary lane that would be constructed from the dropped lane from the SR-57 connector to the Grand Avenue westbound off-ramp, creating a two-lane exit ramp to Grand Avenue. An auxiliary lane would also be added in the eastbound direction that extends from the eastbound on ramp at Grand Avenue to the new connectors that bypasses the north/east SR-57/SR-60 interchange. A southbound SR-57 drop lane will be extended to a re-aligned westbound SR-60 off-ramp to Grand Avenue, creating a two-lane exit ramp.

A new bypass off-ramp is proposed on eastbound SR-60 west of the southern/western SR-57/ SR-60 junction. The existing northbound SR-57 to eastbound SR-60 connector would be realigned to accommodate the new bypass ramp and existing connector structure. A bypass connector would also be built at the northern/ eastern SR-57/SR-60 junction, and this connector would require new overcrossing structures at Prospector Road and Diamond Bar Boulevard as well as re-alignment of the Diamond Bar Blvd on-ramp.

The existing Grand Avenue overcrossing would be replaced with a new overcrossing structure over SR-60. Two 450-foot-long double left-turn lanes would be constructed on southbound Grand Avenue to provide access to the eastbound SR-60 on-ramp at Grand Avenue. The new Grand Avenue overcrossing would be widened to accommodate eight through lanes and double left-turn lanes.

The widening of Grand Avenue would continue south to Golden Springs Drive. Golden Springs Drive would be widened to allow additional through lanes, double left-turn lanes, and one right-turn lane on three legs of the intersection of Grand Avenue and Golden Springs. Oneright-turn lane would be provided on Grand Avenue on the northbound approach to Golden Springs Drive. Approximately 600 feet of Grand Avenue in the northbound direction south of the intersection at Golden Springs would be restriped to three lanes.

The improvements along the proposed eastbound on and off ramps would require partial takes of property from the public golf course south of SR-60. Sliver takes of property would also be required from behind a motel parking lot between Prospectors Road and Diamond Bar Boulevard. The proposed realignment of the eastbound on ramp on Diamond Bar Boulevard would also require a sliver take of a commercial property east of Diamond Bar Boulevard.

This alternative may also require retaining walls along the freeway mainline widening, auxiliary lanes, and on-and off-ramps. The locations and design of any potential retaining walls would be determined upon further project study.

### **Alternative 3-Partial Cloverleaf Interchange Configuration Alternative**

Under Alternative 3 the existing eastbound on and off ramps at Grand Avenue, which form a compact diamond interchange, would be reconfigured as a partial cloverleaf interchange. The new intersection of Grand Avenue and the new eastbound on and off ramps would be located approximately 500 feet south of the existing intersection, or midway between the freeway and Golden Springs Drive. The new eastbound on-ramp would be a loop on-ramp that would join SR-60 as a new eastbound auxiliary lane. The existing eastbound on-ramp would be realigned to accommodate the widened Grand Avenue and would merge into the eastbound auxiliary lane created by a new southbound Grand Avenue to eastbound SR-60 loop on-ramp. The auxiliary lane would continue until joining an existing auxiliary lane on the eastbound SR-60 after the SR-57/SR-60 split. A southbound SR-57 drop lane will be extended to a re-aligned westbound SR-60 off-ramp to Grand Avenue, creating a two-lane exit ramp.

As in Alternative 2, a new bypass off-ramp is proposed on eastbound SR-60 west of the southern/western SR-57/ SR-60 junction. The existing northbound SR-57 to eastbound SR-60 connector would be realigned to accommodate the new bypass ramp and existing connector structure. A bypass connector would also be built at the northern /eastern SR-57/SR-60 junction, and this connector would require new overcrossing structures at Prospector Road and Diamond Bar Boulevard as well as re-alignment of the Diamond Bar Blvd on-ramp.

Similar to Alternative 2, the existing Grand Avenue overcrossing would be replaced with a new overcrossing structure over SR-60. However, unlike Alternative 2, a double left-turn lane from southbound Grand Avenue to the eastbound on-ramp would not be required, since vehicles traveling on southbound Grand Avenue would access northbound SR-57 and eastbound SR-60 by way of the new loop on-ramp on the west side of Grand Avenue. The new Grand Avenue overcrossing would be widened to accommodate the eight through lanes with a center divider/median.

Alternative 3, like Alternative 2 also would widen Grand Avenue south to Golden Springs Drive. Golden Springs Drive would be widened to allow additional through lanes, double left-turn lanes, and one right-turn lane on three legs of the intersection of Grand Avenue and Golden Springs. One right-turn lane would be provided on Grand Avenue on the northbound approach to Golden Springs Drive. Approximately 600 feet of Grand Avenue in the northbound direction south of the intersection at Golden Springs would be restriped to three lanes.

The improvements along the proposed eastbound on and off ramps would require partial takes of property from the public golf course south of SR-60. Sliver takes of property would also be required from a motel parking lot between Prospectors Road and Diamond Bar Boulevard. The proposed realignment of the eastbound on ramp on Diamond Bar Boulevard would also require a sliver take of a commercial property east of Diamond Bar Boulevard.

### **Construction Activities and Staging**

The construction phase of the proposed project is anticipated to begin in the summer of 2013 and end by the fall of 2016. The proposed project would involve clearing, excavation, grading, and other site preparation activities prior to structural work and paving. On-site construction staging would occur just north of the westbound SR-60/southbound SR-57 Grand Avenue on- and off-ramps. This area, which is east of Grand Avenue, is owned by the City of Industry.

Figure 3: Alternative 2, Combination Cloverleaf / Diamond Interchange Configuration



Figure 4: Alternative 3, Partial Cloverleaf Interchange Configuration



## Chapter 2. Study Methods

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In support of the EIR/EA that is being prepared for the proposed project, several biological surveys were conducted, including focused surveys, native tree inventory, jurisdictional delineation and biological reconnaissance survey. These technical reports are included herein as Volume II.

A biological reconnaissance survey was conducted in spring 2008 for the overall SR-57/SR-60 Confluence study area. Based on the reconnaissance survey findings, a focused plant survey was conducted along the northern portion of the SR-57/SR-60 Confluence study area. A native tree inventory and a jurisdictional delineation were completed in winter 2007.

As part of the early consultation process conducted for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project, in 2007 the USFWS recommended focused surveys be conducted for the (*Empidonax traillii extimus*) (SWWFC) and (*Vireo bellii pusillus*) (LBV) within suitable habitat areas located within the project study area<sup>1</sup>. Based on the USFWS recommendation, two years of protocol surveys have been conducted. An additional third year of protocol surveys is currently underway.

The Biological Study Area (BSA) for the State Route-57 (SR-57)/State Route-60 (SR-60) Confluence at Grand Avenue Project limit of disturbance includes an approximately 2.6 mile segment along the SR-57/SR-60) confluence and an approximately 3,000 foot segment of Grand Avenue from the existing SR-60 westbound on-ramp to Golden Springs Drive. The limits of the BSA includes the current Caltrans right-of-way and adjacent private/public property required for the on-ramp and ancillary improvements, including retaining walls, drainage facility extensions, utility relocation, water quality treatment BMPs, and temporary construction easements and staging areas.

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<sup>1</sup> March 27, 2007 e-mail correspondence from Christine L. Medak, Biologist, U.S. Fish and Wildlife Service Biologist, to Erik Hansen, Environmental Scientist, EIP Associates.

## 2.1. Regulatory Requirements

NEPA and CEQA require consideration of impacts to biological resources prior to implementing any projects. Other relevant laws and guidelines regarding biological resources are described below.

### 2.1.1. Federal Regulations

Federal regulations that apply to biological resources include the Federal Endangered Species Act (FESA), Sections 404 and 401 of the federal Clean Water Act, and the Migratory Bird Treaty Act.

#### **Federal Endangered Species Act**

Section 7 of the FESA of 1973 requires federal agencies to consult with the United States Fish and Wildlife Service (USFWS) if the project may affect federally listed threatened or endangered species. Section 9 of FESA prohibits the “take” (e.g. harm, harassment, pursuit, injury, kill) of federally listed wildlife. Take incidental to otherwise lawful actions can be authorized under Sections 7 (federal consultations) and 10 (habitat conservation plans) of the FESA.

If a proposed project is authorized, funded, or carried out by a federal agency and may affect a listed species, then the federal agency must consult with USFWS on behalf of the applicant, pursuant to Section 7 of the FESA. During the Section 7 process, measures to avoid and minimize project effects to listed species and their habitat will be identified and incorporated into a biological opinion that includes an incidental take statement that authorizes incidental take by the federal agency and applicant.

#### **Sections 404 of the Federal Clean Water Act**

Section 404 of the Clean Water Act establishes a permit program, administered by the United States Army Corps of Engineers (ACOE), that regulates the discharge of dredged or fill material into waters of the United States (including wetlands). The discharge of dredged or fill material (temporarily or permanently) into areas delineated as waters of the United States typically requires prior authorization from the ACOE.

The Code of Federal Regulations (CFR) defines “waters of the U.S.” as intrastate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The Code defines wetlands as “areas that are inundated or saturated by surface water or ground water at a frequency and duration

sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” In the absence of wetlands, the ACOE jurisdiction in non-tidal waters extends between the Ordinary High Water Mark (OHWM). The limits of the ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM, which is defined at 33 CFR 328.3(e) as:

“that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied.

In 2006, the United States Supreme Court further considered the ACOE jurisdiction of “waters of the United States” in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208), collectively referred to as *Rapanos*. The Supreme Court concluded that wetlands are “waters of the United States” if they significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as navigable. On June 5, 2007, the ACOE issued guidance regarding the *Rapanos* decision. This guidance states that the ACOE will continue to assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, relatively permanent nonnavigable tributaries that have a continuous flow at least seasonally (typically three months), and wetlands that directly abut relatively permanent tributaries. The ACOE will determine jurisdiction over waters that are nonnavigable tributaries that are not relatively permanent and wetlands adjacent to nonnavigable tributaries that are not relatively permanent only after making a significant nexus finding.

Furthermore, the preamble to ACOE regulations (Preamble Section 328.3, Definitions) states that the ACOE does not generally consider the following waters to be waters of the U.S. The ACOE does, however, reserve the right to regulate these waters on a case-by-case basis.

- Nontidal drainage and irrigation ditches excavated on dry land
- Artificially irrigated areas that would revert to upland if the irrigation ceased
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for purposes of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States.

Waters found to be isolated and not subject to CWA regulation are often still regulated by the RWQCB under the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Should it be necessary, the FESA and the National Historic Preservation Act requires that the ACOE initiate consultation with these federal agencies before it can issue a permit. The purpose is to ensure that its actions, including the issuance of a permit, do not jeopardize the continued existence of listed species or adversely modify designated critical habitat or historic resources (Federal Endangered Species Act of 1973). Authorization also requires the applicant to ensure that the project is consistent with all state and local government requirements.

### **Sections 401 of the Federal Clean Water Act**

Section 401 of the Clean Water Act requires that any applicant for a federal permit for activities that involve a discharge to waters of the State, obtain a certification from the regulating State agency that specifies the discharge will comply with the applicable provisions under the Federal Clean Water Act. The Regional Water Quality Control Boards administers the certification program in California.

Therefore, before the ACOE will issue a Section 404 permit, applicants must apply

for and receive a Section 401 water quality certification from the Santa Ana Regional Water Quality Control Board (RWQCB). Additionally, isolated nonnavigable waters and wetlands excluded from ACOE jurisdiction are subject to RWQCB authority as waters of the State, and any discharge of waste (the RWQCB considers fill to be waste) may require a Report of Waste Discharge and may be subject to Waste Discharge Requirements by the RWQCB.

The RWQCB can require mitigation measures above and beyond those required by the ACOE or CDFG. However, typically the mitigation proposed to satisfy the ACOE and CDFG meets RWQCB requirements to offset impacts to water quality.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (16 USC § 703 712) prohibits the take of any migratory bird. This treaty defines take as the action of or attempt to pursue, hunt, shoot, collect, or kill. Under this act, it is unlawful to take, possess, import, export, transport, sell, offer for sale, purchase, or barter any migratory bird, or any part, nest, or eggs of any such bird except under the terms of a valid permit.

#### **2.1.2. State Regulations**

State regulations that apply to biological resources include the California Endangered Species Act (CESA), Native Plant Protection Act, and Section 1601 – 1603 of the Fish and Game Code.

### **California Endangered Species Act**

The CESA establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. Sections 2081(b) and (c) of the CESA allow the California Department of Fish and Game (CDFG) to issue an incidental take permit for a State listed threatened and endangered species only if specific criteria are met. Measures to minimize the take of species covered by the permit and to mitigate the impacts caused by the take will be set forth in one or more attachments to the permit. This attachment will generally be a mitigation plan (possibly a Habitat Conservation Plan) prepared and submitted by the applicant in coordination with CDFG staff. The mitigation plan should identify measures to avoid and minimize the take of State-listed species and to fully mitigate the impact of that take.

For projects that affect both a state and federal listed species, compliance with the FESA will satisfy CESA requirements if CDFG determines that the federal incidental take authorization is "consistent" with CESA under Fish and Game Code Section 2080.1. For projects that will result in a 'take' of a state-only listed species, project proponents must apply for a take permit under section 2081(b).

### **Native Plant Protection Act**

California's Native Plant Protection Act, Fish and Game Code Sections 1900-1913, requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification to the CDFG at least 10 days in advance of any change in land use. This allows CDFG to salvage listed plant species that would otherwise be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFG during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

### **Streambed Alteration Agreement (California Fish and Game Code Section 1600)**

Section 1600 of the California Fish and Game Code states that "it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity." CDFG jurisdiction includes ephemeral, intermittent and perennial watercourses (including dry washes) characterized by 1) the presence of hydrophytic vegetation, 2) the location of definable bed and banks, and 3) the presence of existing fish or wildlife resources.

Under Sections 1601-1603 of the Fish and Game Code, project applicants are required to notify CDFG prior to any project that would divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. CDFG must inform the project applicant of the existence of any fish and wildlife resources that may be substantially adversely affected by project related activities. If impacts to resources are identified, the CDFG must include a Streambed Alteration Agreement for measures to protect fish and wildlife resources.

### **2.1.3. General Plans and Policies**

City of Diamond Bar's Tree Preservation and Protection Ordinance (Municipal Code, Title 22 *Development Code*, Article 3 *Site Planning and General Development Standards*, Chapter 22.38 *Tree Preservation and Protection*) (Ordinance) is designed to protect native oak (*Quercus* sp.), walnut (*Juglans* sp.), western sycamore (*Platanus racemosa*), and willow (*Salix* sp.) measuring eight inches more in diameter at breast height (DBH). According to the Ordinance, no person shall remove or relocate a protected tree or develop within the protection zone of a protected tree without first obtaining a Tree Removal Permit from the Director of the City's Community and Development Services Department. In accordance with the Ordinance, replacement trees shall be planted at a minimum of 3:1 for residential parcels greater than 20,000 square feet and commercial and industrial properties; however, the Director or Commission has final approval.

There are no other local plans or ordinances relevant to the project area. The site of the Proposed Project is not located in any approved Habitat Conservation Plan or Natural Community Conservation Plan.

## **2.2. Studies Required**

Several biological technical reports have been prepared for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project. These include a biological reconnaissance survey, jurisdictional delineation, native tree inventory, and focused surveys, included herein as NES - Volume 2.

A biological reconnaissance survey was conducted in spring 2008 for the overall SR-57/SR-60 Confluence study area. Based on the reconnaissance survey findings, a focused plant survey was conducted along the northern portion of the SR-57/SR-60 Confluence study area. A native tree inventory and a jurisdictional delineation were completed in winter 2007.

As part of the early consultation process conducted for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project, in 2007 the FWS recommended focused surveys be conducted for the southwestern willow flycatcher (*Empidonax traillii extimus*) (SWWFC) and LBV within suitable habitat areas located within the

project study area.<sup>2</sup> Based on the FWS recommendation, three years of protocol surveys have been conducted. Survey years were 2007, 2008 and 2010.

The data and analysis contained in this NES is based on the biological technical report findings included herein as Volume II and is specific to the State Route-57 (SR-57)/State Route-60 (SR-60) confluence at the Grand Avenue interchange BSA.

### **2.2.1. Biological Reconnaissance Survey**

A general biological reconnaissance survey for the SR-57/SR-60 Confluence study area was conducted in spring 2008 to generally define the Biological Resource baseline condition for the proposed project footprint and immediately adjacent areas and to define additional protocol surveys, tree assessments, and jurisdictional determinations that may be required to appropriately evaluate the project's potential impact to biological resources present.

Prior to conducting the field survey, available literature was reviewed to identify any special status plants, wildlife, or sensitive habitats known within the vicinity of the project site. The California Natural Diversity Database (CNDDB 2008) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2008) were reviewed for the quadrangles containing and surrounding the project site (i.e., *Azusa*, *Glendora*, *Mt. Baldy*, *Ontario*, *San Dimas*, *Baldwin Park*, *La Habra*, *Yorba Linda*, and *Prado Dam* California USGS 7.5 minute quadrangles). These databases contain records of reported occurrences of federal and state-listed endangered, threatened, proposed endangered and threatened species, former Federal Species of Concern (FSC), delisted species, California Species of Special Concern (CSC), and otherwise sensitive species or habitats that may occur in the vicinity of the project site. Other existing documentation relevant to the project site was also reviewed for this report, including prior survey results reported by Jones and Stokes in 2003 and by Sage Environmental Group in 2007.

Sensitive plant species include all federal and state-listed endangered and/or threatened species and those that have been identified by the California Native Plant Society (CNPS) as having a limited distribution in California and throughout their range.

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<sup>2</sup> March 27, 2007 e-mail correspondence from Christine L. Medak, Biologist, U.S. Fish and Wildlife Service Biologist, to Erik Hansen, Environmental Scientist, EIP Associates.

A sensitive wildlife species (i.e., federal and state-endangered, threatened, proposed, CSC, or otherwise sensitive species) was considered a potential inhabitant of the project vicinity if known occurrences and/or its geographical distribution encompassed part of the study area or if its distribution was near the site and general habitat requirements (i.e., wintering, roosting, nesting, or foraging habitat, or a permanent water source) of the species were present in the study area. The potential for each species to occur within the study area was then assessed based on these and other factors, including levels of disturbance, proximity to existing developments, connectivity to source populations, relative abundance, population trends, habitat quality and size, age of historical records, and the amount of development and disturbance that has occurred during the time subsequent to the latest records. A combined foot survey and windshield survey was conducted along the study area to document existing conditions and to assess the area for its potential to harbor sensitive biological resources and jurisdictional features. Aerial images of the footprint were carried into the field to record additional notes about the biology of the study area. Recorded notes included the locations of sensitive habitats, including various riparian habitats, patches of California walnut and coast live oak, and several large isolated natural trees.

### **2.2.2. Jurisdictional Delineation**

A Jurisdictional Delineation was conducted for the SR-57/SR-60 Confluence study area in August 2007. Prior to beginning the field delineation, high-resolution aerial photographs, National Wetlands Inventory maps and USGS topographic maps of the project site were examined to determine the potential areas of USACE / RWQCB / CDFG jurisdiction. In the field, boundaries and dimensions of jurisdictional features were recorded on aerial photographs. Features within the survey area were investigated for the presence of drainages, water bodies, riparian habitats, potential wetlands and connectivity. Only features that exhibited the potential to be three-parameter wetlands (i.e., vegetation, soils, and hydrology) were investigated and recorded onto standardized data sheets. Recorded data typically includes present vegetation and percent covers, soil profiles in dug soil pits, and evidence of hydrology. Potential wetland habitats were evaluated using the methodology set forth in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (ACOE 1987) and the 2006 Arid West Supplement (Arid Supplement). Data related to USACE-defined wetlands is recorded onto Wetland Determination Data Forms – Arid West Region for each individually numbered soil pit. Features with no evidence of wetland

hydrology, and which supports only upland vegetation, were evaluated for the upward limits of jurisdiction only and not for wetland parameters.

Potential CDFG jurisdictional riparian habitats were evaluated using the guidance described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (CDFG 1994).

### **2.2.3. Native Tree Inventory**

A tree inventory was performed as part of the Jurisdictional Delineation in August 2007. Within the Proposed Project BSA, native trees were inventoried by species and recorded onto standardized data sheets. In addition to the individual tree inventory, several patches of native vegetation were classified and mapped by community (Sawyer and Keeler-Wolf 1995).

### **2.2.4. Braunton's Milk-Vetch Focused Survey**

Focused surveys for the Braunton's Milk-Vetch (*Astragalus brauntonii*), a federally endangered and a CNPS List 1B.1 species, were conducted in June 2008 and again in June 2010. The survey was concentrated in areas where suitable habitat for Braunton's milk-vetch was present. To ensure the detection of Braunton's milk-vetch and other rare plants, the survey members were organized into a single line and were spaced 15 to 30 feet apart to form adjacent belt transects. The edge of each transect abutted the adjacent transect, leaving no gaps between each belt, for at least 100 percent coverage. Each crewmember then walked in the direction of the agreed upon endpoint within the individual belt transect. Each person walked the transect in a slightly meandering pattern for maximum and overlapping coverage. When carbonate soils suitable for Braunton's milk-vetch were encountered, the team member would stop and carefully scan the immediate area for the range of the microhabitat.

### **2.2.5. Southwestern Willow Flycatcher and Least Bell's Vireo Surveys**

Two consecutive-year focused surveys were conducted in 2007 and 2008. A third 2010 protocol survey has also been completed. As approved by the FWS, the SWWFC and LBV surveys were conducted simultaneously to reduce redundancy in survey time.<sup>1</sup>

Year 2007 Focused Survey

A habitat assessment was used to identify potentially suitable riparian habitat areas that could support the SWWFC and LBV within the study area. One area was identified. It is located along Diamond Bar Creek immediately downstream of the Grand Avenue.

SWWFC surveys followed FWS protocol for project-related surveys (FWS 2000). A total of six protocol surveys were conducted by playing taped willow flycatcher songs in all suitable habitat to determine presence/absence. Visits were at least five days apart, and less than 2.6 linear miles (4.2 kilometers) of habitat were surveyed per day. All surveys occurred within the three FWS established survey periods [i.e. at least one survey in period 1 (May 15 to May 31), at least one survey in period 2 (June 1 to June 21), and three surveys in period 3 (June 22 to July 17)] during favorable weather conditions. Surveys began pre-dawn and ended by 1200. All SWWFC surveys were performed by FWS-permitted biologists.

LBV protocol surveys were performed according to FWS guidelines (FWS 2001) and occurred concurrently with SWWFC surveys within the identified suitable habitat areas. The FWS requires a minimum of eight surveys between April 10 and July 31 at least ten days apart during favorable weather conditions.

Year 2008 Focused Survey

The second year survey was conducted in 2008. At that time, the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project study area expanded southward to include the adjacent golf course and to the west and east along the SR-60. A habitat assessment was to identify potentially suitable riparian habitat areas that could support the SWWFC and LBV within the expanded study area. The potential SWWFC and LBV suitable habitat surveyed during 2008 included the 2007 survey area and several additional areas along the SR-60 alignment.

SWWFC surveys followed FWS protocol for project-related surveys (FWS 2000). A total of six protocol surveys were conducted by playing taped willow flycatcher songs in all suitable habitat to determine presence/absence. Visits were at least five days apart, and less than 2.6 linear miles (4.2 kilometers) of habitat were surveyed per day. All surveys occurred within the three FWS established survey periods [i.e. at least one survey in period 1 (May 15 to May 31), at least one survey in period 2 (June 1 to June 21), and three surveys in period 3 (June 22 to July 17)] during favorable weather conditions. Survey dates were May 15-16; June 5; June 17-18; June 26; July 9; and July 17. Surveys began pre-dawn and ended by 1200. All SWWFC surveys were

performed by FWS permitted biologists Mike McEntee (TE099463) or Kris Alberts (TE039640-2).

LBV surveys were performed according to FWS guidelines (FWS 2001) and occurred concurrently with SWWFC surveys. A minimum of eight surveys are required between April 10 and July 31 at least ten days apart during favorable weather conditions. Biologists Kris Alberts, Mike McEntee, Linette Lina, Nichole Cervin, Paul Morrissey, Shannan Shaffer, Heather Clayton, and Lisa Wadley conducted nine surveys (April 24-25; May 5-6; May 15-16; May 27; June 5; June 17-18; June 26; July 9; and July 17).

#### Year 2010 Focused Survey

The third year survey was completed in 2010 consistent with 2008 expanded survey area. SWWFC surveys follow FWS protocol for project-related surveys (FWS 2000). A total of six protocol surveys were conducted by playing taped willow flycatcher songs in all suitable habitat to determine presence/absence. Visits were at least five days apart, and less than 2.6 linear miles (4.2 kilometers) of habitat were surveyed per day. All surveys occurred within the three FWS established survey periods [i.e. at least one survey in period 1 (May 15 to May 31), at least one survey in period 2 (June 1 to June 21), and three surveys in period 3 (June 22 to July 17)] during favorable weather conditions. All SWWFC surveys were performed by FWS permitted biologist Kris Alberts (TE039640-2). LBV surveys were performed according to FWS guidelines (FWS 2001) and occurred concurrently with SWWFC surveys. A minimum of eight surveys are required between April 10 and July 31 at least ten days apart during favorable weather conditions. Biologists Kris Alberts and Nichole Cervin conducted a total of nine surveys (April 15; April 26; May 6; May 17; May 27, June 7; June 17; June 28; and July 8).

### 2.3. Personnel and Survey Dates

| <b>Table 2-1: Personnel and Survey Dates</b>   |  |  |
|--|--|--|
| <b>DATE</b>  | <b>SURVEY FOCUS</b>  | <b>SURVEYORS</b>   |
| February 5, 2008   | Biological Reconnaissance Survey   | Biologist Kris Alberts (TE039640-2)  |
| June 17, 2008  | Focused Plant Survey for the Federally-listed Endangered Braunton's Milk-vetch | Botanists Nichole Cervin and Jenny McGee                                       |
| June 25, 2010  | Focused Plant Survey for the Federally-listed Endangered Braunton's Milk-vetch | Botanists Nichole Cervin   |
| August 15 and 16, 2007   | Jurisdictional Delineation   | Biologist Kris Alberts (TE039640-2) and Paul Morrissey                         |
| August 15 and 16, 2007   | Native Tree Inventory  | Biologist Kris Alberts (TE039640-2) and Paul Morrissey                         |
| 6 surveys<br>May 15-16;<br>June 5; June 17-18; June 26;<br>July 9; and July 17, 2007 | Year 2007 Focused SWWFC Survey   | FWS permitted biologists Mike McEntee (TE099463) or Kris Alberts (TE039640-2). |

| <b>Table 2-1: Personnel and Survey Dates</b>  |                                |  |
|---|--------------------------------|--|
| <b>DATE</b>   | <b>SURVEY FOCUS</b>            | <b>SURVEYORS</b>   |
| 10 surveys<br>April 27; May 7, 17, and 29;<br>June 8 and 19;<br>and July 2, 9, 14, and 27,<br>2007                    | Year 2007 Focused LBV Survey   | Biologists Paul Morrissey, Kris Alberts (TE039640-2), Mike McEntee (TE099463), Laura Gorman, Linette Lina, and Stephaney Cox                                   |
| 6 surveys<br>May 15-16;<br>June 5; June 17-18; June 26;<br>July 9; and July 17, 2008                                  | Year 2008 Focused SWWFC Survey | FWS permitted biologists Mike McEntee (TE099463) or Kris Alberts (TE039640-2).   |
| 9 surveys<br>April 24-25;<br>May 5-6; May 15-16; May 27;<br>June 5; June 17-18; June 26;<br>July 9; and July 17, 2008 | Year 2008 Focused LBV Survey   | Biologists Kris Alberts (TE039640-2), Mike McEntee (TE099463), Linette Lina, Nichole Cervin, Paul Morrissey, Shannan Shaffer, Heather Clayton, and Lisa Wadley |
| 6 surveys<br>May 17; May 27; June 7;<br>June 17; June 28; and July 8,<br>2010   | Year 2010 Focused SWWFC Survey | USFWS permitted biologist Kris Alberts (TE039640-2).   |
| 9 surveys<br>April 15; April 26; May 6; May 17; May 27;<br>June 7; June 17; June 28;<br>and July 8,<br>2010           | Year 2010 Focused LBV Survey   | USFWS permitted biologist Kris Alberts (TE039640-2).   |

## **2.4. Agency Coordination and Professional Contacts**

On March 27, 2007, as part of the early consultation process conducted for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project, Christine L. Medak, Biologist, FWS Biologist discussed the proposed SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project with Erik Hansen, Environmental Scientist, EIP Associates. Ms. Medak recommended focused surveys be conducted for the SWWFC and LBV within suitable habitat areas located within the project study area, stating that the SWWFC and LBV surveys could be conducted simultaneously to reduce redundancy in survey time. The conversation was memorialized in a March 27, 2007 e-mail. The completed 2007 and 2008 protocol survey reports have been forwarded to the FWS for their use/review.

## **2.5. Limitations That May Influence Results**

There are no known limitations or constraints affecting the survey results. The surveys were conducted using standard protocols.

## Chapter 3. Results: Environmental Setting

The following section addresses the regional context, and general conditions and biological resources observed within the project vicinity, including the area's topography, soils, vegetation, watercourses and level of human or natural disturbance.

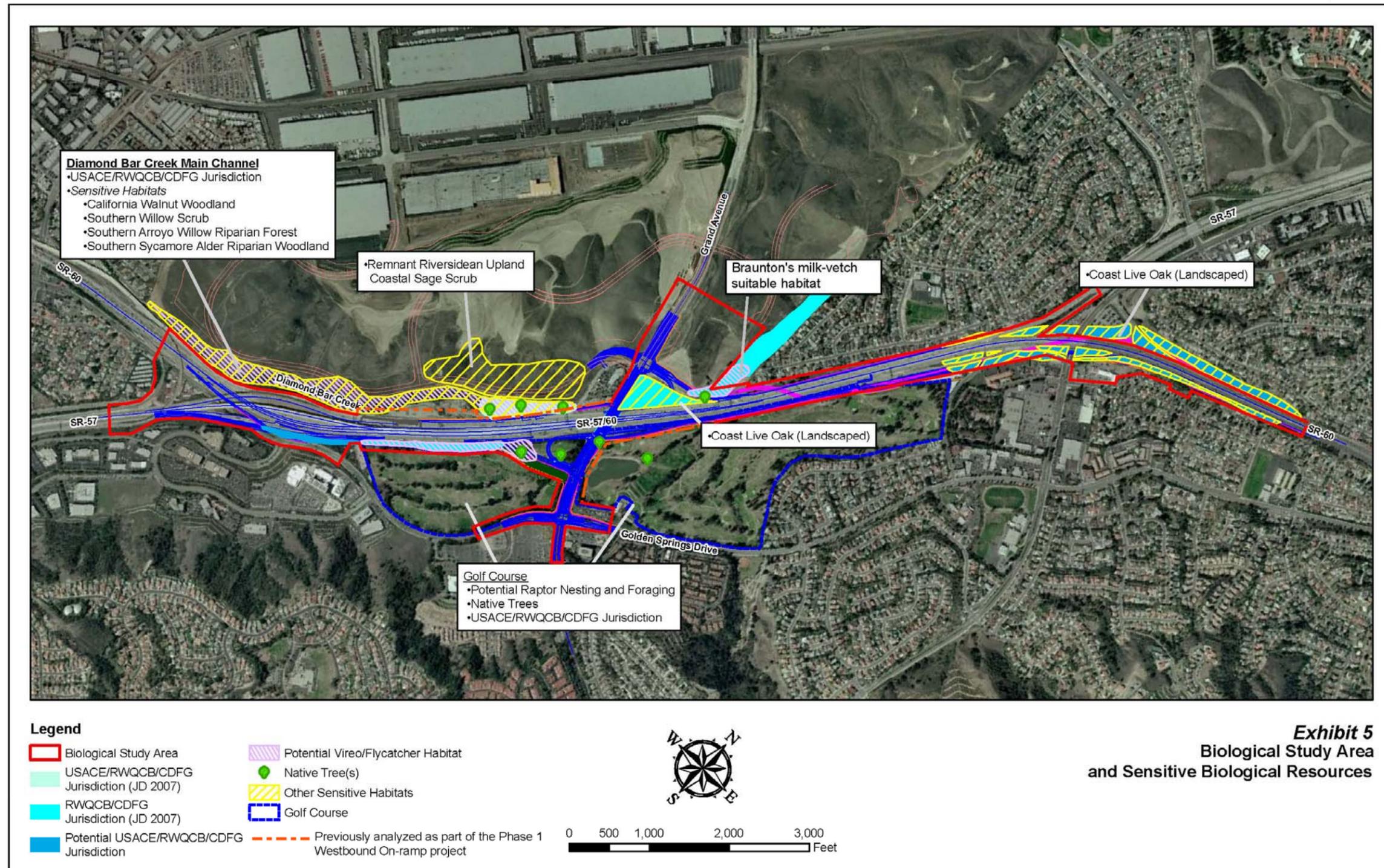
### 3.1. Description of the Existing Biological and Physical Conditions

The surrounding area is primarily composed of residential, recreational, and industrial development, as well as open space. The open space occurs along the north and west sides of the Grand Avenue/SR-57/60. This open space is historically grazed and now exhibits remnant patches of coastal sage scrub surrounded by a dominance of ruderal vegetation. A mature, mixed riparian woodland extends from Grand Avenue adjacent to the northwest side of SR-57/60 downstream to beyond the limits of the Proposed Project within Diamond Bar Creek. A mosaic of industrial, recreational, and residential development surround the Project area along the south and east portions, including Diamond Bar Golf Course and residential development surrounds the golf course. At the Grand Avenue/SR-57/60 interchange, a few business enterprises and supporting infrastructure are present. A number of drainages flow into Diamond Bar Creek from the south and east of SR-57/60.

#### 3.1.1. Study Area

The Biological Study Area (BSA) for the State Route-57 (SR-57)/State Route-60 (SR-60) Confluence at Grand Avenue Project limit of disturbance includes an approximately 2.6 mile segment along the SR-57/SR-60) confluence and an approximately 3,000 foot segment of Grand Avenue from the existing SR-60 westbound on-ramp to Golden Springs Drive (Figure 5- Biological Study Area and Sensitive Biological Resources). The limits of the BSA includes the current Caltrans right-of-way and adjacent private/public property required for the on-ramp and ancillary improvements, including retaining walls, drainage facility extensions, utility relocation, water quality treatment BMPs, and temporary construction easements and staging areas.

April 2010



### 3.1.2. Physical Conditions

The Proposed Project is located in Diamond Bar, Los Angeles County, California in the *San Dimas* U.S. Geological Service (USGS) 7.5 minute quadrangle (quad) map in Township 2 South, Range 9 West, Sections 9 and 10. The elevation of the site is approximately 700 feet above mean sea level (msl) at its lowest point and 912 feet above msl at its highest point.

The following soils, identified from (<http://websoilsurvey.nrcs.usda.gov>), were identified within the BSA: Yolo association – this soil association occurs on alluvial fans between elevations of 1,175 and 1,200 feet, is over 60 inches deep, well drained, and exhibits moderate subsoil permeability; Altamont-Diablo association, 30 to 50% slopes, eroded – this soil association occurs throughout the Los Angeles basin area with elevations ranging from near sea level to 1,500 feet and occur on steeper slopes and are moderately eroded, reducing the effective soil depth and water-holding capacity and are approximately 20 to 27 inches deep; San Andreas-San Benito association, 30 to 75 percent slopes, eroded - this soil association occurs on steep to very steep mountainous areas between elevations of 200 and 1,500 feet; San Benito-Soper association – This soil association occurs on steep foothills along the Orange County line south of Pomona with elevations of 750 and 1,500 feet.

A number of drainage features flow into Diamond Bar Creek from the south and east of SR-57/60. Within the BSA, these include two concrete-line drainage features associated with the existing freeway and several small tributaries, all of which flow into Diamond Bar Creek via existing roadway culverts. From the project area, Diamond Bar Creek flows to the southwest where it connects to San Jose Creek. San Jose Creek then continues west to the San Gabriel River. The San Gabriel River then continues west before terminating at the Pacific Ocean. Diamond Bar Creek, San Jose Creek, and the San Gabriel River are considered Relatively Permanent Waters (RPW) of the U.S., and the Pacific Ocean is considered a Traditionally Navigable Water (TNW) of the U.S.

### 3.1.3. Biological Conditions in the Biological Study Area

#### *Natural Vegetation Communities*

The majority of the study area has been altered by humans and is comprised of ruderal, ornamental, and developed areas. Ruderal vegetation generally occurs in the margins along the sides of the paved roads and on the disked and/or formerly hillsides

within the BSA. Ruderal areas typically have heavily compacted or frequently disturbed soils. These areas are dominated by pioneering herbaceous plants, grasses (i.e., *Bromus* and *Avena* spp.), and noxious weeds, including mustards (i.e., *Brassica* spp., *Hirschfeldia incana*), thistles (i.e., *Silybum marianum*, *Carduus pycnocephalus*, *Centaurea melitensis*), and fennel (*Foeniculum vulgare*).

Ornamental vegetation includes commonly-found non-native landscape species used within the Diamond bar Golf Course and roadway landscaped areas. Developed areas within the study area display man-made structures such as houses, roads, businesses, and the fairways of Diamond Bar Golf Course.

The common vegetation type within these developed areas consists of exotic landscaping. In addition to these concentrated communities, the remainder of the study area contains a few scattered native riparian species located within and around the tributaries to Diamond Bar Creek within the BSA. These native trees include coast live oak (*Quercus agrifolia*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), California sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia* Nutt.), and California walnut (*Juglans californica*). It is noted that all but one coast live oak individuals were landscaped specimens along the freeway rights-of way. Vegetation communities mapped within the BSA and each proposed alignment area (Figure 6 and Figure 7).

### ***Migration Corridors***

Wildlife corridors provide specific opportunities for individual animals to disperse or migrate between other areas. Adequate cover, minimum physical dimensions, and tolerably low levels of disturbance and mortality (e.g., limited night lighting and noise, low vehicular traffic levels) are common requirements for corridors.

The BSA is characterized by ruderal and ornamental vegetation. The drainage tributaries located within the BSA are either piped underground or are concrete channels with high steep walls, and freeway noise and night lighting are currently present. Given some of the physical man-made constraints present for mammals, it is likely that the project site does not provide an important value to the movement of mammals. There is little opportunity for movement of mammal species from the adjacent Diamond Bar Creek to the west or north. However, there may be a potential for animals to move from Diamond Bar Creek through the gold course to the Puente Hills, an open space are located to the southwest.



■ BSA  
 ■ NAP – included in the Westbound On-Ramp at Grand Avenue/SR-60 Interchange Improvements Project BSA

**Vegetation Communities (acres)**

|                  | Present within BSA | Temporary Impacts | Permanent Impacts |
|------------------|--------------------|-------------------|-------------------|
| ■ 1 - Developed  | 119.46             | 7.85              | 3.92              |
| ■ 2 - Ruderal    | 20.25              | 18.39             | 1.86              |
| ■ 3 - Ornamental | 37.00              | 28.00             | 9.00              |
| <b>TOTAL</b>     | <b>176.71</b>      | <b>54.24</b>      | <b>14.78</b>      |

**Figure 6: Alternative 2 - Vegetation Communities**



- BSA
  - NAP – included in the Westbound On-Ramp at Grand Avenue/SR-60 Interchange Improvements Project BSA
- Vegetation Communities (acres)**

|                  | Present within BSA | Temporary Impacts | Permanent Impacts |
|------------------|--------------------|-------------------|-------------------|
| ■ 1 - Developed  | 119.46             | 7.85              | 3.93              |
| ■ 2 - Ruderal    | 20.25              | 18.29             | 1.96              |
| ■ 3 - Ornamental | 37.00              | 27.63             | 9.37              |
| <b>TOTAL</b>     | <b>176.71</b>      | <b>53.77</b>      | <b>15.26</b>      |

**Figure 7: Alternative 3 - Vegetation Communities**

### ***Aquatic Resources***

A Jurisdictional Delineation was conducted for the SR-57/SR-60 Confluence project area in August 2007 and is included in Volume II of the NES. Within the BSA, a number of drainage features flow into Diamond Bar Creek from the south and east of SR-57/60 as shown in Figure 8 – Jurisdictional Waters and Native Tree Locations. These include two concrete-line drainage features associated with the existing freeway and several small tributaries

### ***Invasive Species***

As discussed earlier in this Section, the dominant habitat types in the BSA consist of nonnative ruderal vegetation and developed areas dominated by ornamental vegetation (Developed/Ornamental).

During the 2008 reconnaissance surveys, 9 exotic plants on the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory were identified in the BSA. Each plant in the inventory is given an overall rating of high, moderate, limited, or unknown. Plants with a rating of high have severe ecological impacts. Plants with a rating of moderate have a substantial and apparent but not severe ecological impact.

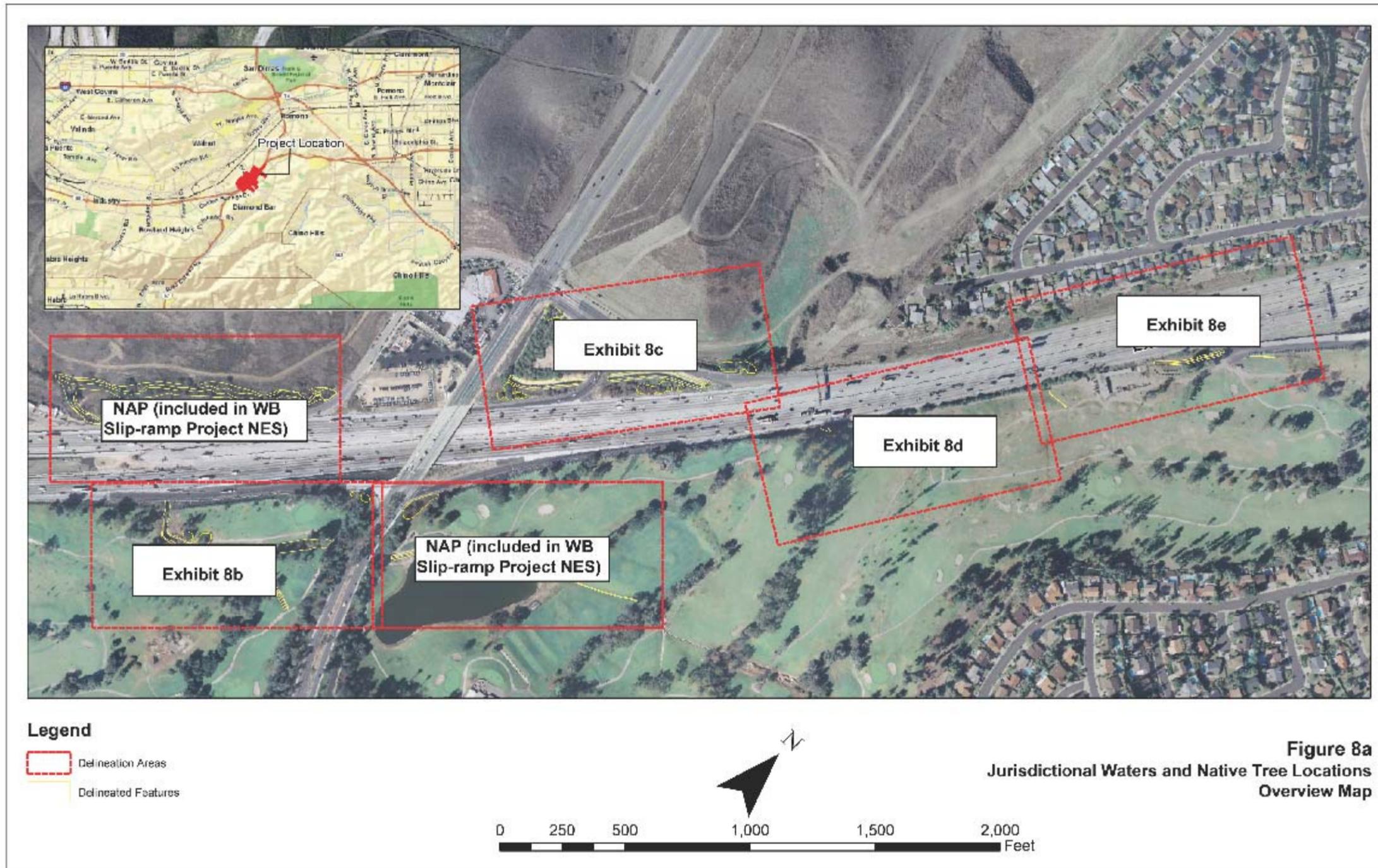
Plants with a limited rating are invasive, but their ecological impacts are minor on a Statewide level. The invasive species identified in the BSA and the applicable Cal IPC rating are provided in Table 3.1-1.

**Table 3.1-1 Invasive Plants Located within the BSA**

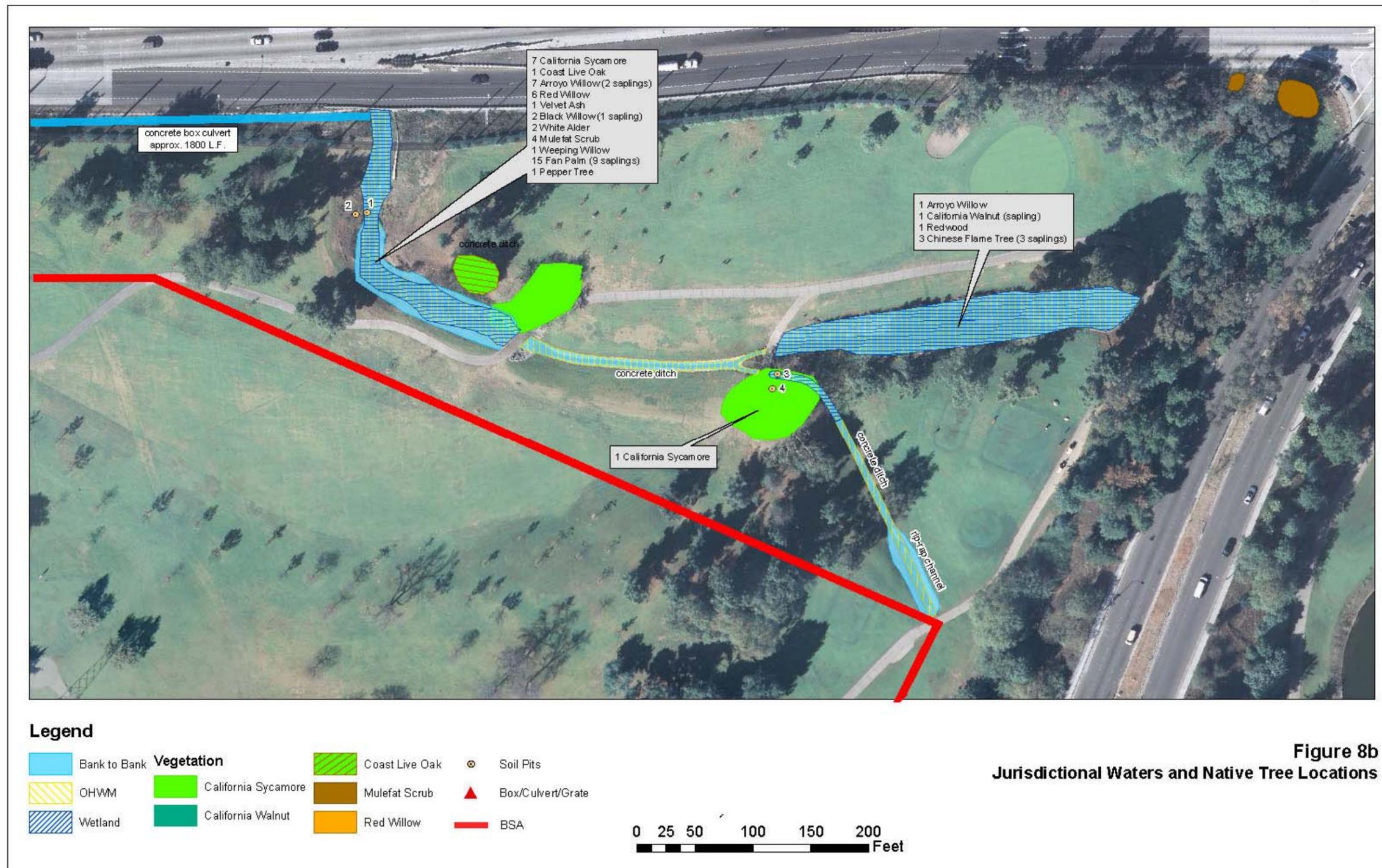
| <b>Common Name</b> | <b>Scientific Name</b>       | <b>Cal-IPC Rating</b> |
|--------------------|------------------------------|-----------------------|
| Wild oat           | <i>Avena</i> sp.             | Moderate              |
| Ripgut grass       | <i>Bromus diandrus</i>       | Moderate              |
| Italian thistle    | <i>Carduus pycnocephalus</i> | Moderate              |
| Tocalote           | <i>Centaurea melitensis</i>  | Moderate              |
| Fennel             | <i>Foeniculum vulgare</i>    | High                  |
| Tree tobacco       | <i>Nicotina glauca</i>       | Moderate              |
| Castor bean        | <i>Ricinis communis</i>      | Limited               |
| Milk thistle       | <i>Silybum marianum</i>      | Limited               |
| Mexican fan palm   | <i>Washingtonia robusta</i>  | Moderate              |

Source: Cal-IPC Invasive Plant Inventory ([www.cal-ipc.org/ip/inventory/weedlist.php](http://www.cal-ipc.org/ip/inventory/weedlist.php), accessed 2009) and Sage Environmental Group, 2009.

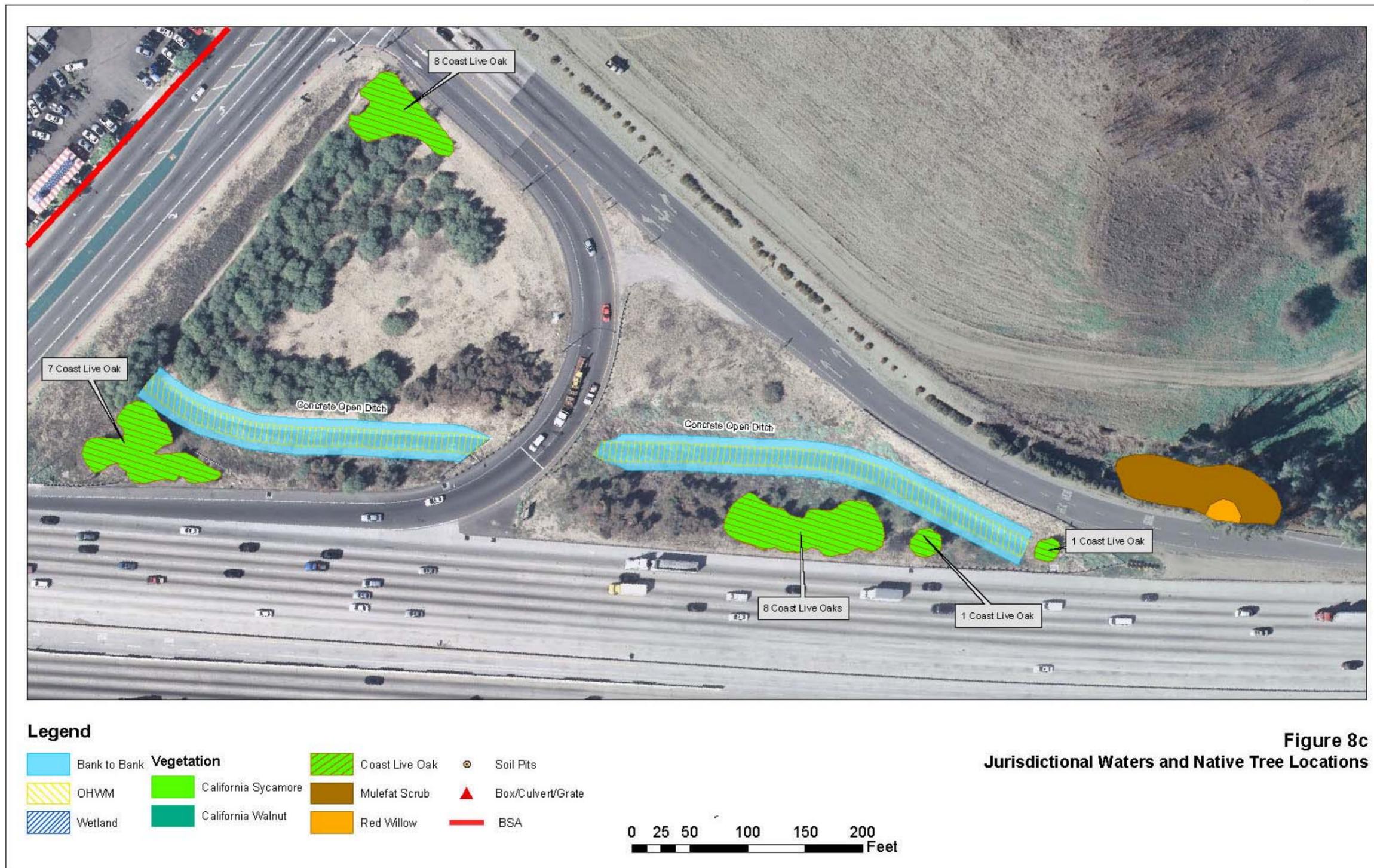
April 2010



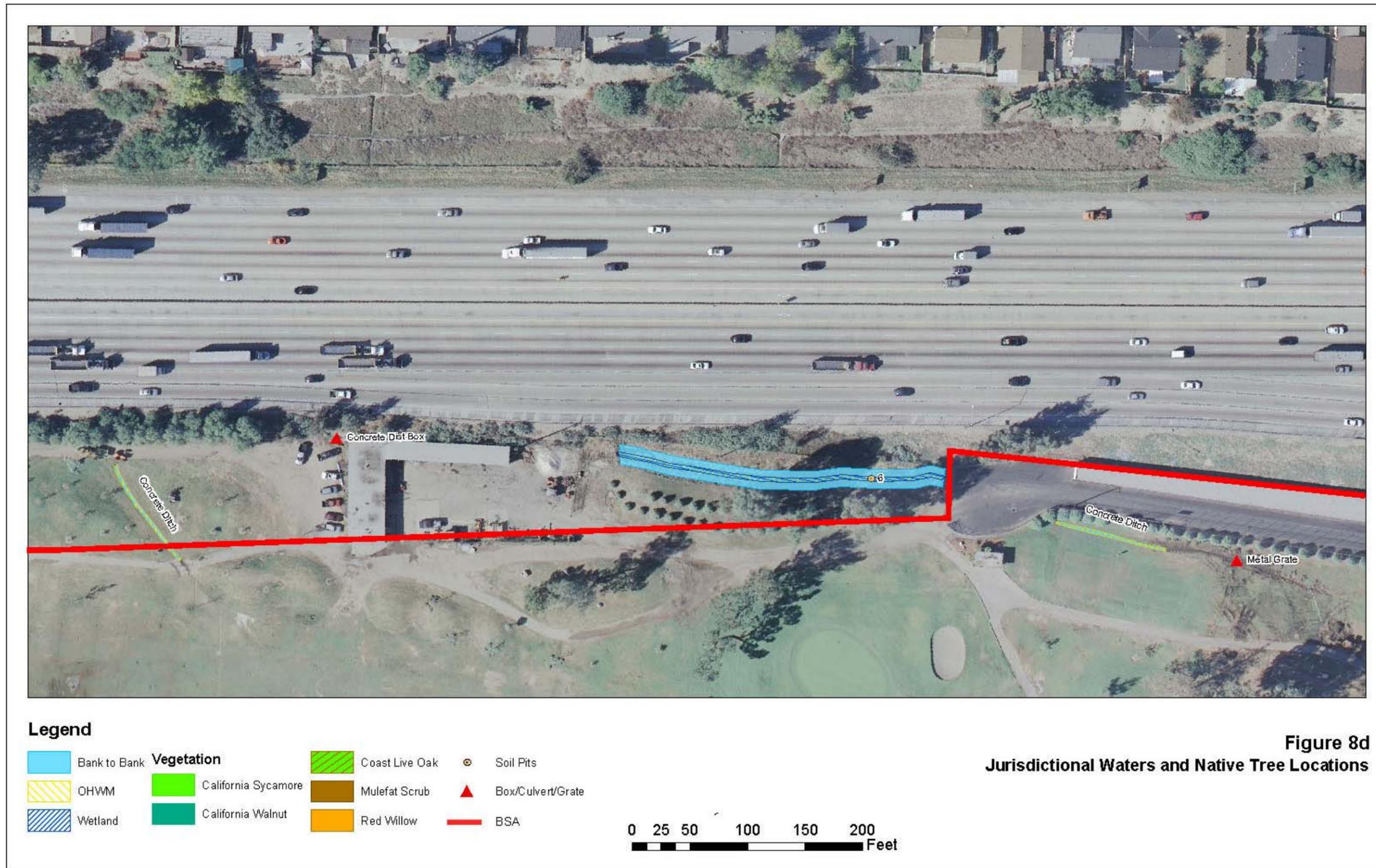
April 2010



April 2010



April 2010



**Figure 8d**  
**Jurisdictional Waters and Native Tree Locations**

April 2010



**Figure 8e**  
Jurisdictional Waters and Native Tree Locations



■ BSA

**Figure 8f**  
**Jurisdictional Waters and Native Tree Locations**

### 3.2. Regional Species and Habitats of Concern

Plant and animal species are considered to have special status if they have been listed as such on maintained lists with explicit criteria by federal or state agencies or one or more special interest groups, such as CNPS. This generally excludes species not concluded to be currently under threat or endangerment (e.g., those simply on “watch” lists or for which further information is solicited). The California Department of Fish and Game (CDFG) publishes separate comprehensive lists for plants and animals through the CNDDDB. These include taxa officially listed by the state and federal governments as endangered, threatened or rare, and candidates for state or federal listing. As part of the Biological Reconnaissance Survey for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement, a query of the CNPS database and CNDDDB for the California Natural Diversity Database (CNDDDB 2008) and the California Native Plant Society’s Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2008) were reviewed for the quadrangles containing and surrounding the project site (i.e., *Azusa, Glendora, Mt. Baldy, Ontario, San Dimas, Baldwin Park, La Habra, Yorba Linda, and Prado Dam* California USGS 7.5 minute quadrangles).

The review identified 40 special-status plant species, 64 special-status animal species, and 11 sensitive natural communities as historically occurring in the vicinity of the BSA. Additional species were added to the list, as applicable, based on biologist knowledge of the study area and special-status species of the region. The Biological Reconnaissance Survey included in Volume II provides a full list of special-status species and sensitive habitats identified from the database query and a determination of the likelihood of occurrence for each species within the study area.

None of the 11 sensitive habitats identified as having a potential to occur are present within the SR-57/SR-60 Confluence Project BSA.

#### Absent

| <u>Habitat Type</u>                       | <u>Status</u> |
|---|---------------|
| California Walnut Woodland                | CDFG S1.1     |
| Southern Willow Scrub                     | CDFG S2.1     |
| Southern Arroyo Willow Riparian Forest    | CDFG N/A      |
| Riversidean Upland Coastal Sage Scrub     | CDFG S2.1     |
| Valley Needlegrass Grassland              | CDFG S1.1     |
| Southern Sycamore Alder Riparian Woodland | CDFG N/A      |
| Riversidian Alluvial Fan Sage Scrub       | CDFG S2.1     |
| Canyon Live Oak Ravine Forest             | CDFG N/A      |
| Southern Coast Live Oak Woodland          | CDFG N/A      |

|   |          |
|---|----------|
| Southern California Arroyo Chub/Santa Ana Sucker Stream | CDFG N/A |
| Southern Cottonwood Willow Riparian Forest              | CDFG N/A |

### 3.3. Vegetation

According to the literature review and the reconnaissance survey, a total of 40 sensitive plant species were identified as having a potential to occur within the SR-57/SR-60 Confluence Project study limits. Thirty of these 40 sensitive plant species are assumed or confirmed absent from the study area, and 10 of these 40 sensitive plant species have a low potential to occur within the study area. The 40 sensitive plant species and their potential to occur within the study area are listed below. A key to the status codes follows this list.

Twenty-four sensitive plant species are considered **absent** from the study area due to a lack of suitable soils, habitats, and/or elevation ranges. Twelve additional sensitive plant species were confirmed absent from portions of the study area during reconnaissance-level and focused plant surveys performed during the 2003 flowering season (Jones and Stokes 2003).

#### Absent

| <u>Scientific Name</u>   | <u>Common Name</u>   | <u>Status</u>  |
|--|--|--|
| <i>Arbronia villosa</i> var. <i>aurita</i><br><i>Atriplex coulteri</i> )   | chaparral sand-verbena<br>Coulter's saltbush   | CNPS List 1B.1<br>CNPS 1B.2; CNPS List 1B.1  |
| <i>Atriplex serenana</i> var,<br><i> davidsonii</i>  | Davidson's saltbush  | CNPS List 1B.2   |
| <i>Berberis nevini</i> )<br><i>Brodiaea filifolia</i><br><i>California macrophylla</i><br><i>Calochortus clavatus</i> var.<br><i> gracilis</i> | Nevin's barberry<br>thread-leaved brodiaea<br>round-leaved filaree<br>slender mariposa lily  | <b>FE, SE</b> , CNPS 1B.1;<br><b>FT, SE</b> , CNPS List 1B.1<br>CNPS 1B.1;<br>CNPS List 1B.2 |
| <i>Chorizanthe parryi</i> var.<br><i> fernandina</i><br><i>Cladium californicum</i><br><i>Cordylanthus maritimus</i> ssp.<br><i> maritimus</i> | San Fernando Valley<br>spineflower<br>California saw-grass<br>salt marsh birds beak  | <b>FC, SE</b> , CNPS List 1A.1<br>CNPS List 2.2<br><b>FE, SE</b> , CNPS List 1B.1            |
| <i>Dodecahema leptoceras</i><br><i>Dudleya cymosa</i> ssp.<br><i> crebrifolia</i><br><i>Dudleya densifolium</i>                                | slender-horned spineflower<br>San Gabriel River dudleya  | <b>FE, SE</b> , CNPS List 1B.1<br>CNPS List 1B.2   |
| <i>Dudleya multicaulis</i><br><i>Eriastrum densifolium</i> ssp.<br><i> sanctorum</i><br><i>Fimbristylis thermalis</i><br><i>Galium grande</i>  | San Gabriel Mountains<br>dudleya<br>many-stemmed dudleya<br>Santa Ana River woollystar<br>hot springs fimbristylis<br>San Gabriel bedstraw | CNPS List 1B.1<br><b>FE, SE</b> , CNPS 1B.1<br>CNPS List 2.2<br>CNPS List 1B.2;              |

|   |                                   |                                |
|---|-----------------------------------|--------------------------------|
| <i>Helianthus nuttallii</i> ssp.<br><i>parishii</i>   | Los Angeles sunflower             | Presumed Extinct               |
| <i>Horkelia cuneata</i> ssp.<br><i>puberula</i>       | mesa horkelia                     | CNPS List 1B.1                 |
| <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>        | Coulter's goldfields              | CNPS List 1B.1                 |
| <i>Lilium parryi</i>                                  | lemon lily                        | CNPS List 1B.2;                |
| <i>Linanthus concinnus</i>                            | San Gabriel linanthus             | CNPS List 1B.2;                |
| <i>Monardella macrantha</i> ssp.<br><i>hallii</i>     | Hall's monardella                 | CNPS List 1B.3;                |
| <i>Navarretia prostrata</i>                           | prostrate navarretia              | CNPS List 1B.1;                |
| <i>Nolina cismontana</i>                              | chaparral nolina                  | CNPS List 1B.2;                |
| <i>Orcuttia californica</i>                           | California Orcutt grass           | <b>FE, SE</b> , CNPS List 1B.1 |
| <i>Oreonana vestita</i>                               | woolly mountain-parsley           | CNPS 1B.3                      |
| <i>Orobanche valida</i> ssp. <i>valida</i>            | Rock Creek broomrape              | CNPS List 1B.2                 |
| <i>Parnassia cirrata</i> var. <i>cirrata</i>          | San Bernardino grass-of-Parnassus | CNPS List 1B.3                 |
| <i>Pentachaeta lyonii</i>                             | Lyon's pentachaeta                | <b>FE, SE</b> , CNPS List 1B.1 |
| <i>Phacelia stellaris</i>                             | Brand's phacelia                  | <b>FC</b> , CNPS List 1B.1     |
| <i>Rorippa gambelii</i>                               | Gambel's watercress               | <b>FE, ST</b> , CNPS 1B.1      |
| <i>Senecio aphanactis</i>                             | rayless ragwort                   | CNPS List 2.2                  |
| <i>Sidalcea neomexicana</i>                           | Salt Spring checkerbloom          | CNPS List 2.2                  |
| <i>Symphyotrichum greatae</i>                         | Greata's aster                    | CNPS List 1B.3                 |
| <i>Thelypteris puberula</i> var.<br><i>sonorensis</i> | Sonoran maiden fern               | CNPS List 2.2.                 |

Ten sensitive plant species were determined to have a **low** potential to occur on the study area, due to the presence of moderately disturbed habitat associated with these species. One of these 10 species, Braunton's milk-vetch (*Astragalus brauntonii*), is a federally endangered species.

#### **Low**

| <u>Scientific Name</u>                               | <u>Common Name</u>         | <u>Status</u>              |
|--|----------------------------|----------------------------|
| <i>Astragalus brauntonii</i>                         | Braunton's milk-vetch      | <b>FE</b> , CNPS List 1B.1 |
| <i>Calochortus plummerae</i>                         | Plummer's mariposa lily    | CNPS List 1B.2             |
| <i>Calochortus weedii</i> var.<br><i>intermedius</i> | intermediate mariposa lily | CNPS List 1B.2             |
| <i>Centromadia parryi</i> ssp.<br><i>australis</i>   | southern tarplant          | CNPS List 1B.1             |
| <i>Centromadia pungens</i> ssp. <i>laevis</i>        | smooth tarplant            | CNPS List 1B.1             |
| <i>Chorizanthe parryi</i> var. <i>parryi</i>         | Parry's spineflower        | CNPS List 3.2              |
| <i>Imperata brevifolia</i>                           | California satintail       | CNPS List 2.1              |
| <i>Lepidium virginicum</i> var.<br><i>robinsonii</i> | Robinson's pepper-grass    | CNPS List 1B.2             |
| <i>Gnaphalium leucocephalum</i>                      | white rabbit-tobacco       | CNPS List 2.2              |
| <i>Symphyotrichum defoliatum</i>                     | San Bernardino aster       | CNPS List 1B.2             |

#### **Status Codes**

**Federal**

- FE = Federally listed; Endangered
- FT = Federally listed; Threatened
- FC = Federal Candidate for listing

**State**

- ST = State listed; Threatened
- SE = State listed; Endangered

**CNPS**

- List 1A = Plants presumed extinct in California.
- List 1B = Plants rare and endangered in California and throughout their range.
- List 2 = Plants rare, threatened or endangered in California but more common elsewhere in their range.

**Extensions**

- 0.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat).
- 0.2 = Fairly endangered in California (20-80% occurrences threatened).
- 0.3 = Not very endangered in California (<20% of occurrences threatened).

**3.3.1. Sensitive Plant Species Descriptions**

The Braunton's Milk-Vetch is a federally endangered and a CNPS List 1B.1 species. This perennial herb occurs in the carbonate soils of chaparral, coastal sage scrub, closed-cone coniferous forests, and valley and foothill grasslands at elevations up to 2,100 feet amsl. The range of this species includes the hills and basins of Ventura, Los Angeles, Orange, and Riverside counties. Braunton's milk-vetch flowers from March to July and generally germinates following burns and other disturbances. Threats to this species include development and alteration of local fire regimes. This species is considered to be very rare, with little more than ten known occurrences.

The 2008 focused Braunton's milk-vetch plant survey resulted in negative findings. The species was not observed present onsite during the 2008 survey. Based upon the findings of this survey and other focused plant surveys performed during the 2003 flowering season (Jones & Stokes 2003), all federal- and/or state-listed endangered or threatened plant species are confirmed absent from the project site. No further focused plant surveys are necessary for this project to address potential impacts to federal- and/or state-listed endangered or threatened plant species.

### 3.4. Animals

According to the literature review, a total of 64 sensitive wildlife species were identified as having a potential to occur within the SR-57/SR-60 Confluence study area for at least some portion of their life histories. Thirty-seven of these 64 wildlife species are considered absent or assumed absent from the study area, and 27 of the 64 have a low potential to occur within the study area. Two of the 27 sensitive wildlife species with a low potential to occur within the study area are federal and state-listed species: the SWWFC and LBV. Two additional species, golden eagle and white-tailed kite, are California Fully-Protected Species. Note that for some species, two different PFOs may be given for various phases of a life history. For example, a species may be assumed absent for nesting, but may have a low potential to occur as a wintering or migrating species.

Due to a lack of suitable soils, habitats, elevation ranges, or other environmental factors, the following 12 species are considered **absent** from the study area for at least some portion of their life histories:

#### Absent

| <u>Scientific Name</u>            | <u>Common Name</u>                       | <u>Status</u>  |
|-----------------------------------|--|----------------|
| <i>Streptocephalus woottoni</i>   | Riverside fairy shrimp                   | <b>FE</b>      |
| <i>Callophrys mossii hidakupa</i> | San Gabriel Mountains elfin butterfly    | CSC            |
| <i>Catostomus santaanae</i>       | Santa Ana sucker                         | <b>FT, CSC</b> |
| <i>Gila orcuttii</i>              | arroyo chub                              | CSC            |
| <i>Rhinichthys osculus ssp. 3</i> | Santa Ana speckled dace                  | CSC            |
| <i>Batrachoseps gabrieli</i>      | San Gabriel Mountains slender salamander | CSC            |
| <i>Bufo californicus</i>          | arroyo toad                              | <b>FE, CSC</b> |
| <i>Rana aurora draytonii</i>      | California red-legged frog               | <b>FT, CSC</b> |
| <i>Rana muscosa</i>               | mountain yellow-legged frog              | <b>FE, CSC</b> |
| <i>Chaetura vauxi</i> (nesting)   | Vaux's swift                             | CSC            |
| <i>Neotoma lepida intermedia</i>  | San Diego desert woodrat                 | CSC            |
| <i>Ovis canadensis nelsoni</i>    | Nelson's bighorn sheep                   | CSC            |

Due to a complete lack of or very low quality habitat, significant obstructions between the study area and outside populations (i.e., aquatic-associated species and some of the terrestrial species), poorly documented US ranges (i.e., pocketed free-tailed bat) or the location of the study area being outside of known nesting areas (i.e., tricolored blackbird and black swift), low relative abundances and no recent records within the vicinity of the project site (i.e., yellow-billed cuckoo), and/or the species

never being found on the study area during field surveys, the following 25 species are **assumed absent** from the project site for at least some portion of their life histories:

#### Assumed Absent

| <u>Scientific Name</u>                     | <u>Common Name</u>                  | <u>Status</u>                              |
|--|-------------------------------------|--|
| <i>Diplectrona californica</i>             | California diplectronan caddisfly   | None                                       |
| <i>Spea hammondi</i>                       | western spadefoot                   | CSC  |
| <i>Taricha torosa torosa</i>               | Coast Range newt                    | CSC  |
| <i>Anniela pulchra pulchra</i>             | silvery legless lizard              | CSC  |
| <i>Salvadora hexalepis virgulata</i>       | coast patch-nosed snake             | CSC  |
| <i>Thamnophis hammondi</i>                 | two-striped garter snake            | CSC  |
| <i>Actinemys marmorata pallida</i> ;       | southwestern pond turtle            | CSC  |
| <i>Accipiter striatus</i>                  | sharp-shinned hawk                  | CSC (nesting)                              |
| <i>Agelaius tricolor</i>                   | tricolored blackbird                | CSC (nesting)                              |
| <i>Amphispiza belli belli</i>              | Bell's sage sparrow                 | CSC (nesting)                              |
| <i>Aquila chrysaetos</i>                   | golden eagle                        | <b>FPS</b> , CSC (nesting)                 |
| <i>Asio flammeus</i>                       | short-eared owl                     | CSC (nesting)                              |
| <i>Asio otus</i>                           | long-eared owl                      | CSC (nesting)                              |
| <i>Charadrius montanus</i>                 | mountain plover                     | CSC (wintering)                            |
| <i>Coccyzus americanus occidentalis</i>    | western yellow-billed cuckoo        | <b>FC, SE</b>                              |
| <i>Cypseloides niger</i>                   | black swift                         | CSC (nesting)                              |
| <i>Falco mexicanus</i>                     | prairie falcon                      | CSC  |
| <i>Haliaeetus leucocephalus</i>            | bald eagle                          | <b>FD, SE, FPS</b> (nesting and wintering) |
| <i>Lepus californicus bennettii</i>        | San Diego black-tailed jackrabbit   | CSC  |
| <i>Euderma maculatum</i>                   | spotted bat                         | CSC  |
| <i>Nyctinomops femorosaccus</i>            | pocketed free-tailed bat            | CSC  |
| <i>Chaetodipus californicus femoralis</i>  | Dulzura pocket mouse                | CSC  |
| <i>Chaetodipus fallax fallax</i>           | northwestern San Diego pocket mouse | CSC  |
| <i>Perognathus longimembris brevinasus</i> | Los Angeles pocket mouse            | CSC  |
| <i>Taxidea taxus</i>                       | American badger                     | CSC  |

Due to the presence of moderately suitable to good quality habitat and the location of the study area within the known ranges of the species, 27 sensitive wildlife species were determined to have a **low** potential to occur in the study area for at least some portion of their life histories. Two of these species, SWWFC and LBV, are federally and state-endangered species, and the CAGN is a federally threatened species. Two additional species, golden eagle and white-tailed kite, are California Fully-Protected Species.

**Low**

| <u>Scientific Name</u>                                 | <u>Common Name</u>                         | <u>Status</u>                                     |
|--|--|---|
| <i>Aspidoscelis hyperythra</i>                         | orange-throated whiptail                   | CSC   |
| <i>Aspidoscelis tigris stejnegeri</i>                  | coastal western whiptail                   | CSC   |
| <i>Phrynosoma coronatum blainvillii</i>                | coast (San Diego) horned lizard            | CSC   |
| <i>Crotalus ruber ruber</i>                            | northern red-diamond rattlesnake           | CSC   |
| <i>Accipiter cooperii</i>                              | Cooper's hawk                              | CSC (nesting)                                     |
| <i>Aimophila ruficeps canescens</i>                    | southern California rufous-crowned sparrow | CSC   |
| <i>Ammodramus savannarum</i>                           | grasshopper sparrow                        | CSC (nesting)                                     |
| <i>Aquila chrysaetos</i>                               | golden eagle                               | <b>FPS, CSC</b><br>(migrating/foraging/wintering) |
| <i>Asio flammeus</i>                                   | short-eared owl                            | None<br>(migrating/foraging/wintering)            |
| <i>Asio otus</i>                                       | long-eared owl                             | None<br>(migrating/foraging/wintering)            |
| <i>Athene cunicularia</i>                              | burrowing owl                              | CSC   |
| <i>Buteo regalis</i>                                   | ferruginous hawk                           | CSC (wintering)                                   |
| <i>Circus cyaneus</i>                                  | northern harrier                           | CSC (nesting)                                     |
| <i>Cypseloides niger</i>                               | black swift                                | None (migrating/wintering)                        |
| <i>Elanus leucurus</i>                                 | white-tailed kite                          | <b>FPS</b> (nesting)                              |
| <i>Empidonax traillii extimus</i>                      | southwestern willow flycatcher             | <b>FE, SE</b> (nesting)                           |
| <i>Falco columbarius</i>                               | merlin                                     | CSC (wintering)                                   |
| <i>Icteria virens</i>                                  | yellow-breasted chat                       | CSC (nesting)                                     |
| <i>Vireo bellii pusillus</i>                           | least Bell's vireo                         | <b>FE, SE</b> (nesting)                           |
| <i>Chaetodipus fallax fallax</i>                       | northwestern San Diego pocket mouse        | CSC   |
| <i>Antrozous pallidus</i>                              | pallid bat                                 | CSC   |
| <i>Corynorhinus townsendii</i>                         | Townsend's big-eared bat                   | CSC   |
| <i>Eumops perotis californicus</i>                     | western mastiff bat                        | CSC   |
| <i>Lasiurus cinereus</i>                               | hoary bat                                  | CSC   |
| <i>(Lasiurus xanthinus)</i>                            | western yellow bat                         | CSC;  |
| <i>Myotis yumanensis</i>                               | Yuma myotis                                | CSC   |
| <i>Polioptila californica californica</i> <sup>3</sup> | coastal California gnatcatcher             | <b>FT, CSC</b>                                    |

**Status Codes****Federal**

|    |   |                               |
|----|---|-------------------------------|
| FE | = | Federally listed; Endangered  |
| FT | = | Federally listed; Threatened  |
| FC | = | Federal Candidate for listing |
| FD | = | Federally Delisted            |

<sup>3</sup> Year 2010 FWS protocol surveys were performed for this species adjacent to the BSA along Diamond bar Creek. The surveys resulted in negative findings, the species is not present.

**State**

|     |   |                                    |
|-----|---|------------------------------------|
| ST  | = | State listed; Threatened           |
| SE  | = | State listed; Endangered           |
| FPS | = | California Fully-Protected Species |
| CSC | = | State Species of Special Concern   |

Due to the presence of moderately suitable to good quality habitat and the reported occurrence of one individual within a red-winged blackbird flock on the study area in 2003, five sensitive wildlife species were determined to have a **moderate** potential to occur again in the study area for at least some portion of their life histories.

**Moderate**

| <u>Scientific Name</u>     | <u>Common Name</u>   | <u>Status</u>                                |
|----------------------------|----------------------|--|
| <i>Agelaius tricolor</i>   | tricolored blackbird | None<br>(migrating/foraging/wintering)       |
| <i>Chaetura vauxi</i>      | Vaux's swift         | None<br>(migrating/foraging/wintering)       |
| <i>Circus cyaneus</i>      | northern harrier     | None<br>(migrating/foraging/wintering)       |
| <i>Elanus leucurus</i>     | white-tailed kite    | <b>FPS</b><br>(migrating/foraging/wintering) |
| <i>Empidonax traillii</i>  | willow flycatcher    | None   |
| <i>Nyctinomops macroti</i> | big free-tailed bat  | CSC  |

The following four sensitive species were confirmed **present** on the larger study area since 2007. The LBV is a federally and state-endangered species and the CAGN is a federally threatened species.

**Present adjacent to the BSA**

| <u>Scientific Name</u>       | <u>Common Name</u> | <u>Status</u>                          |
|------------------------------|--------------------|--|
| <i>Accipiter cooperii</i>    | Cooper's hawk      | None<br>(migrating/foraging/wintering) |
| <i>Accipiter striatus</i>    | sharp-shinned hawk | None<br>(migrating/foraging/wintering) |
| <i>Dendroica petechia</i>    | Yellow warbler     | CSC<br>(migrating/foraging/wintering)  |
| <i>Vireo bellii pusillus</i> | least Bell's vireo | <b>FE, SE</b> (nesting)                |

The following two sensitive species were confirmed **present** within the Grand Avenue Interchange and Confluence Improvements BSA since 2007.

**Present within BSA**

| <u>Scientific Name</u>    | <u>Common Name</u> | <u>Status</u>                          |
|---------------------------|--------------------|--|
| <i>Accipiter cooperii</i> | Cooper's hawk      | None<br>(migrating/foraging/wintering) |
| <i>Accipiter striatus</i> | sharp-shinned hawk | None<br>(migrating/foraging/wintering) |

**Status Codes**

**Federal**

FE = Federally listed; Endangered  
FT = Federally listed; Threatened  
FC = Federal Candidate for listing  
FD = Federally Delisted

**State**

ST = State listed; Threatened  
SE = State listed; Endangered  
FPS = California Fully-Protected Species  
CSC = State Species of Special Concern

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

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### 4.1. Natural Communities of Special Concern

#### 4.1.1. Discussion of Natural Communities

No natural communities of special concern are located within the BSA. Vegetation communities identified and mapped within the BSA (see Figure 5) include 20.25 ac of ruderal vegetation, 37.00 ac of ornamental vegetation, and 119.46 ac of developed area.

##### 4.1.1.1. SURVEY RESULTS

The project would result in temporary and permanent impacts to ruderal, ornamental, and developed areas.

Implementation of Alternative 2 would result in temporary impacts to 18.39 ac of ruderal vegetation, 28.00 ac of ornamental vegetation, and 7.85 ac of developed area; and permanent impacts to 1.86 ac of ruderal vegetation, 9.00 ac of ornamental vegetation, 3.92 ac of developed area. None of these communities are considered to be natural communities of special concern.

Implementation of Alternative 3 would result in temporary impacts to 18.29 ac of ruderal vegetation, 27.63 ac of ornamental vegetation, and 7.85 ac of developed area; and permanent impacts to 1.96 ac of ruderal vegetation, 9.37 ac of ornamental vegetation, 3.93 ac of developed area. None of these communities are considered to be natural communities of special concern.

Although not separate communities, there are a few individual native riparian trees and shrubs located within and around the tributaries to Diamond Bar Creek within the BSA and within the existing SR-60 right-of-way near Diamond Bar Boulevard. These native trees include coast live oak (*Quercus agrifolia*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), California sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia* Nutt.), and California walnut (*Juglans californica*). Based on review of the 2008 Biological Reconnaissance Survey tree inventory and the proposed site plans, approximately 96

native trees are located within the proposed project’s construction footprint. Of these, 69 are located within the existing Caltrans right-of-way. The native trees identified in the BSA are provided in Table 4.1-1 and Figure 8 – Jurisdictional Waters and Native Tree Locations.

**Table 4.1-1 Native Trees Located within the BSA**

| <b>Common Name</b>  | <b>Scientific Name</b>            | <b>Within Caltrans ROW</b> | <b>Outside of Caltrans ROW</b> |
|---------------------|-----------------------------------|----------------------------|--------------------------------|
| Coast live oak      | <i>Quercus agrifolia</i>          | 51                         | 1                              |
| Red willow          | <i>Salix laevigata</i>            | 0                          | 6                              |
| Arroyo willow       | <i>Salix lasiolepis</i>           | 1                          | 8                              |
| Black willow        | <i>Salix gooddingii</i>           | 3                          | 2                              |
| California sycamore | <i>Platanus racemosa</i>          | 0                          | 8                              |
| California walnut   | <i>Juglans californica</i>        | 14                         | 0                              |
| White alder         | <i>Alnus rhombifolia</i><br>Nutt. | 0                          | 2                              |
| <b>Subtotal</b>     |                                   | <b>69</b>                  | <b>27</b>                      |
| <b>TOTAL</b>        |                                   | <b>96</b>                  |                                |

**4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS**

The proposed project includes minimal widening of the existing freeway footprint along the freeway corridor, thereby avoiding impacts to native trees located within the freeway right-of-way to the extent feasible. Impacts outside of the right-of-way include relocation of existing drainage channels rather than undergrounding, thereby retaining the hydrology supporting adjacent native trees to the extent feasible.

Indirect impacts to roots and canopy of trees on adjacent property may occur as a result of work within the impact area to trees located outside of the permanent and temporary impact areas. If substantial impacts to roots and canopy of trees on adjacent property occur, it may result in the eventual deterioration and loss of the tree. Avoidance and minimization efforts will be implemented as applicable to trees located in areas adjacent to the impact area (i.e., not planned for removal).

To ensure the construction footprint within the BSA is minimized to the extent practicable adjacent to areas containing native trees, a qualified biological monitor will flag and stake the construction limits in the field in coordination with the contractor. The biological monitor will be onsite during construction to ensure the protection of the drip line area of adjacent native trees and that construction limits are enforced. The biological monitor will have the authority to halt construction if required to ensure compliance.

#### **4.1.1.3. PROJECT IMPACTS**

The proposed project will result in the removal of existing native trees located within the BSA. Up to 96 trees may be affected as listed in Table 4.1-1 Native Trees Located within the BSA. As the design of the project is finalized and the extent of the widening is precisely defined, field review to determine the extent of impacts to native trees will be conducted, with removal of native trees avoided to the greatest extent possible.

Short-term indirect effects associated with the construction of the proposed project may include potential fuel or lubricant spills from equipment and vehicles; activities of equipment, vehicles, or personnel outside of designated construction areas; increased erosion, siltation and runoff; increased localized noise and vibration; and increase dust accumulation on plant leaves. Implementation of Best Management Practices (BMPs) as defined in the Storm Water Pollution Prevention Program (SWPPP) and restricting activities to within the designated construction areas would minimize these effects.

Long-term indirect impacts to sensitive riparian habitat could result from impacts to water quality. The SWPPP includes long-term water quality treatment facilities designed to accommodate and treat runoff from the proposed project to ensure that no substantial adverse impacts occur to Diamond Bar Creek located downstream of the project site. The project is not anticipated to result in other long-term indirect impacts to sensitive habitats, including shading from retaining walls, fragmentation or adverse effects to adjacent habitat.

#### **4.1.1.4. COMPENSATORY MITIGATION**

Native trees, including coast live oak present within the existing Caltrans landscaped areas, that require removal will be replaced in proximity to the BSA as follows: Mark and replace all native trees greater than 6 inch diameter at breast height (dbh) (4.5 feet above surrounding grade) with the same species at a 1:1 ratio. Source materials should be of the same subspecies and/or variety locally present and from seeds or

cuttings gathered within coastal southern California to ensure local provenance. Locations for the tree planting include the Caltrans right-of-way, Diamond Bar Golf Course, and the downstream portion of Diamond Bar Creek owned by the City of Industry.

The City of Diamond Bar's Tree Removal Permit process will be applicable for the removal of any of these trees outside of the freeway right-of-way. All native trees located outside of Caltrans landscaped areas removed will be replaced as follows: Mark and replace all native trees greater than 6 inch diameter at breast height (dbh) (4.5 feet above surrounding grade) with the same species at a 2:1 ratio. Source materials should be of the same subspecies and/or variety locally present and from seeds or cuttings gathered within coastal southern California to ensure local provenance. Locations for the tree planting include the Caltrans right-of-way, Diamond Bar Golf Course, and the downstream portion of Diamond Bar Creek owned by the City of Industry.

#### **4.1.1.5. CUMULATIVE IMPACTS**

Because impacts to mature native trees within the BSA will be offset by planting like-in-kind trees at a 1:1 and 2:1 ratio in proximity to the BSA, the project is not expected to contribute to cumulative effects to mature trees in the region.

## **4.2. Jurisdictional Waters**

### **4.2.1.1. SURVEY RESULTS**

The 2007 *Jurisdictional Delineation* indicated that the presence of 1.18 acres of waters of the United States and 1.62 acres of waters of the States, including 0.38 acres of wetlands located within the BSA. Current engineering design plans indicate relocation of the existing southerly SR-60 concrete-lined channel and minor culvert extensions which would affect other drainage features as shown on Figure 8 – Jurisdictional Waters and Native Tree Locations.

### **4.2.1.2. AVOIDANCE AND MINIMIZATION EFFORTS**

The proposed project avoids and minimizes permanent impacts to jurisdictional waters and wetlands to the extent feasible. Relocation of existing concrete-line drainage features is proposed in lieu of under grounding these facilities. Culvert extension is designed as the minimum extension necessary to accommodate roadway widening.

#### **4.2.1.3. PROJECT IMPACTS**

Implementation of Alternative 2 will result in the permanent loss of 0.12 acres of wetlands due to culvert extensions to accommodate the widening of SR-60 and Grand Avenue.

Implementation of Alternative 3 will result in the permanent loss of 0.16 acres of waters of the United States and State, including 0.21 acres of wetlands, due to culvert extensions to accommodate the widening of SR-60 and Grand Avenue, and installation of the new SR-60/Grand Avenue eastbound loop on-ramp.

It is anticipated that resource agency permits will be required for the proposed relocation and culvert extensions from the ACOE, RWQCB, and the CDFG under Section 404 and 401 of federal CWA and Section 1600 of the State Fish and Game Code, respectively.

Indirect effects to wetlands and other waters may include: (1) changes in hydrology from increased sediment entering drainage areas after vegetation clearing, and/or (2) invasive, nonnative plants transported into areas along the roadway with the movement of soil and/or placement of fill material that is present on construction equipment brought on site or taken off site and is inadvertently included in seed mixes. These indirect effects would only last during construction.

#### **4.2.1.4. COMPENSATORY MITIGATION**

A native habitat replacement program at a 2:1 ratio for impacts to waters and wetlands is anticipated. The downstream portion of Diamond Bar Creek owned by the City of Industry is proposed as the mitigation site. A 5-year Habitat Mitigation and Monitoring Program (HMMP) will be developed in consultation with the resource agencies (ACOE, CDFG, RWQCB, FWS) to ensure the success of the native habitat replacement program. The HMMP will include provisions for initial planting, performance monitoring and success criteria.

#### **4.2.1.5. CUMULATIVE EFFECTS**

Because impacts to jurisdictional waters within the BSA will be offset by the expansion of contiguous waters and wetlands at a 2:1 ratio immediately adjacent to the BSA along Diamond bar Creek, the project is not expected to contribute to cumulative effects to waters and wetlands in the region.

### **4.3. Special Status Plant Species**

Based on the 2008 general biological reconnaissance survey and the 2008 and 2010 focused Braunton's milk-vetch plant survey, no listed sensitive plant species are located within the BSA. No federally-designated critical habitat is present within the BSA.

### **4.4. Special Status Animal Species Occurrences**

Based on the 2008 general biological reconnaissance, and the 2007, 2008 and 2010 focused SWWFC and LBV, sensitive wildlife species documented as present within the BSA is limited to raptors and other species protected by the MBTA. Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*) were observed onsite. These species appear to utilize the BSA for wintering and foraging only. No federally-designated critical habitat is present within the BSA.

The MBTA and the California Fish and Game Code prohibit impacts to most native species of nesting birds. The trees and shrubs within and adjacent to the BSA may provide suitable nesting sites for a variety of species, including raptors and species protected by the MBTA, which are protected pursuant to these regulations.

#### **4.4.1. Nesting Birds**

The trees and shrubs within the BSA may provide suitable nesting sites for a variety of these species. However, raptor nesting habitat within the BSA is not ideal due to the lack of large sized trees and/or structures.

##### **4.4.1.1. SURVEY RESULTS**

The trees and shrubs within the BSA may provide suitable nesting sites for a variety of these species; however, no active nests were found within the BSA during the 2008 general biological reconnaissance, and the 2007, 2008 and 2010 focused SWWFC and LBV surveys. Raptor nesting habitat within the BSA is not ideal due to the lack of large sized trees and/or structures. No federally-designated critical habitat is present within the BSA.

##### **4.4.1.2. AVOIDANCE AND MINIMIZATION EFFORTS**

Potential direct impacts to protected species are limited to migratory birds protected under the MBTA. Grubbing of vegetation within the construction footprint will

occur outside of the bird nesting season, generally defined as February 1 to August 31, to avoid potential impacts to nesting birds. However, work may occur during the nesting season if a preconstruction nest survey is conducted by a qualified biologist within three days prior to the start of construction to ensure no impacts to nesting birds occur. The survey will be conducted within the proposed impact area and adjacent suitable habitat up to 500 feet outside the construction footprint. Should nesting birds be present, no work will be conducted in that area until the young have fledged and will no longer be affected by the project, as determined by the qualified biologist.

#### **4.4.1.3. PROJECT IMPACTS**

Direct impacts to nesting birds could occur if an active nest is removed or if nesting birds are disturbed as a result of construction activities to the extent that they abandon the nest. The MBTA and California Fish and Game Code prohibit impacts that cause nest failure of most species of birds, and the avoidance and minimization measures described in Section 4.3.1.2 are anticipated to ensure that no nest loss occurs.

#### **4.4.1.4. COMPENSATORY MITIGATION**

As discussed in Section 4.1.1.4 of this document, impacts to mature native trees will be offset in accordance with the requirements of the Caltrans and/or City's Tree Preservation Ordinance through the Tree Removal Permit process. No additional compensatory mitigation is required.

#### **4.4.1.5. CUMULATIVE EFFECTS**

Project impacts to nesting birds are limited to the removal of trees and shrubs along the project's active roadways. These resources are less suitable for nesting than other resources throughout the region due to their proximity to the roadway and the resulting noise and human disturbance. Potential impacts from tree removal will be minimized and avoided through the planting of replacement trees. Therefore, temporary impacts to these resources are not anticipated to result in a cumulatively considerable contribution to impacts to nesting sites throughout the region.

## Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

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### **5.1. Federal Endangered Species Act Consultation Summary**

On March 27, 2007, as part of the early consultation process conducted for the SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project, Christine L. Medak, Biologist, FWS Biologist discussed the proposed SR-57/SR-60 Confluence Grand Avenue Interchange Improvement Project with Erik Hansen, Environmental Scientist, EIP Associates. Ms. Medak recommended focused surveys be conducted for the SWWFC and LBV within suitable habitat areas located within the project study area, stating that the SWWFC and LBV surveys could be conducted simultaneously to reduce redundancy in survey time. The conversation was memorialized in a March 27, 2007 e-mail.

The completed 2007 and 2008 protocol survey reports documenting negative findings within the BSA have been forwarded to the FWS for their use/review. The 2010 protocol survey report will be forwarded to the FWS for their use/review once available.

### **5.2. Federal Fisheries and Essential Fish Habitat Consultation Summary**

No additional consultation was required for Federal Fisheries and Essential Fish Habitat, as these resources have been determined to be absent from the BSA.

### **5.3. California Endangered Species Act Consultation Summary**

No additional consultation was required pursuant to CESA, as resources subject to CESA have been determined to be absent from the BSA.

#### **5.4. Wetlands and Other Waters Coordination Summary**

It is anticipated that resource agency permits will be required from the United States Army Corps of Engineers (ACOE), California Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG) under Sections 404 and 401 of the federal Clean Water Act (CWA) and Section 1600 of the State Fish and Game Code, respectively, for the concrete-lined channel relocations and minor culvert extensions associated with roadway widening.

#### **5.5. Invasive Species**

Post-project restoration monitoring within the downstream Diamond Bar Creek migration area is required to include invasive vegetation control as required by the Army Corps of Engineers (ACOE), California Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG) through the Section 404 and 401 of the federal Clean Water Act (CWA) and Section 1600 of the State Fish and Game Code compliance process.

#### **5.6. Other**

No additional consultation was required for other topics. Section 3.1.3 of this NES includes relevant information pertaining to the MBTA and wildlife corridors. No additional information is required.

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