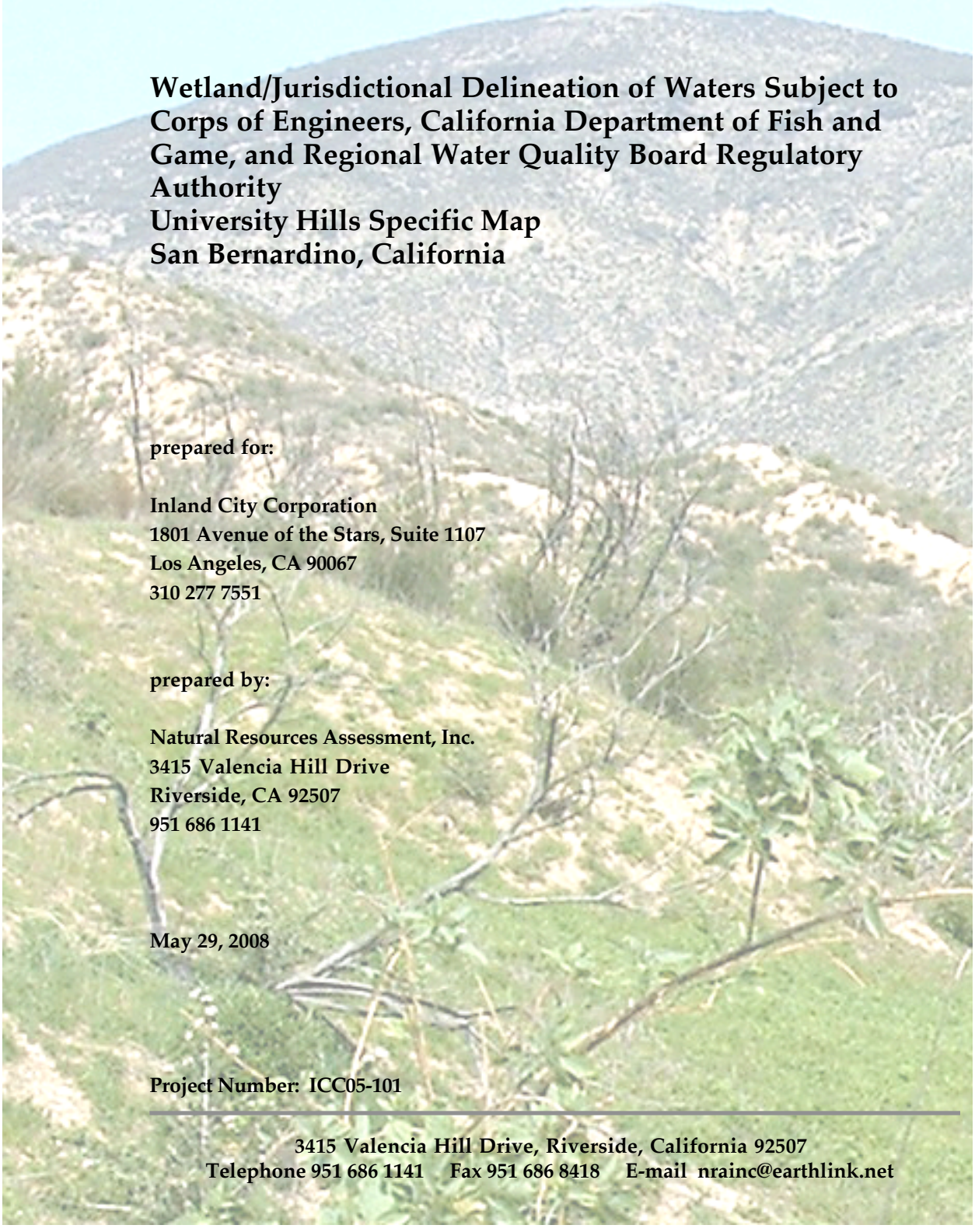
Natural Resources Assessment, Inc.

Wetland/Jurisdictional Delineation of Waters Subject to Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Board Regulatory Authority
University Hills Specific Map
San Bernardino, California



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Project Number: ICC05-101

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Executive Summary

Natural Resources Assessment, Inc. (NRA, Inc.) was contracted by Inland City Corporation to prepare a wetlands and jurisdictional delineation for the proposed University Hills Specific Plan.

The proposed development could impact unnamed drainage channels that potentially fall under the jurisdiction of the U.S. Army Corps of Engineers (Corps), the California Department of Fish and Game (CDFG), and the Regional Water Quality Control Board (RWQCB).

NRA, Inc.'s evaluation included an examination of topographic maps and hydrologic information, as well as an on-site examination of vegetation, soils, and hydrology. Based on this analysis, NRA, Inc. found a total of 15.86 acres that meet CDFG and Corps criteria for jurisdictional waters as delimited by the ordinary high water mark or adjacent riparian plant communities. An additional 1.32 acres was found that meets Corps criteria of jurisdictional wetlands and the CDFG criteria for riparian plant communities.

The drainages on site ultimately connects with the Santa Ana River drainage to the south. The Santa Ana River is a waters of the U.S. under Corps jurisdiction. Since a nexus or connection exists with a jurisdictional water, the drainages on site come under the jurisdiction of the Corps. An individual 404 permit will be required for the project.
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Under Section 401 of the Clean Water Act, the Corps has delegated the authority for use of 404 permits to each individual state. The use of a 404 permit in California is regulated by the California Water Quality Control Board. The Board has authority to issue a 401 permit that allows the use of a 404 permit in the state, with the authority in the state being vested in regional offices. It is recommended that the regional office should be contacted for their concerns regarding water quality affects and affects to groundwater drainage, as well as to obtain a 401 permit.

A 1602 Streambed Agreement will be required for impacts to CDFG jurisdictional waters.

1.0 Introduction

Natural Resources Assessment, Inc. (NRA, Inc.) was contracted by Inland City Corporation to prepare a wetlands and jurisdictional delineation for the proposed University Hills Specific Plan.

The proposed development could impact unnamed drainage channels that potentially fall under the jurisdiction of the U.S. Army Corps of Engineers (Corps), the California Department of Fish and Game (CDFG), and the Regional Water Quality Control Board (RWQCB).

2.0 Project Description

The proposed project is mixed residential development and conserved open space. Additional project needs include two water tanks and one new access road.

3.0 Environmental Setting

The Paradise Hills development is located in the Verdemont area of the city of San Bernardino (Figure 1). The property is in the the foothills and alluvial fan of the San Bernardino Mountains north of the California State University at San Bernardino.

The property is in Sections 4, 5, 8 and 9 (estimated), Township 1 north, Range 4 west, on the San Bernardino North (1996) 7.5' U.S. Geological Survey (USGS) topographic quadrangle, San Bernardino base and meridian (Figure 1).

4.0 Regulatory Setting

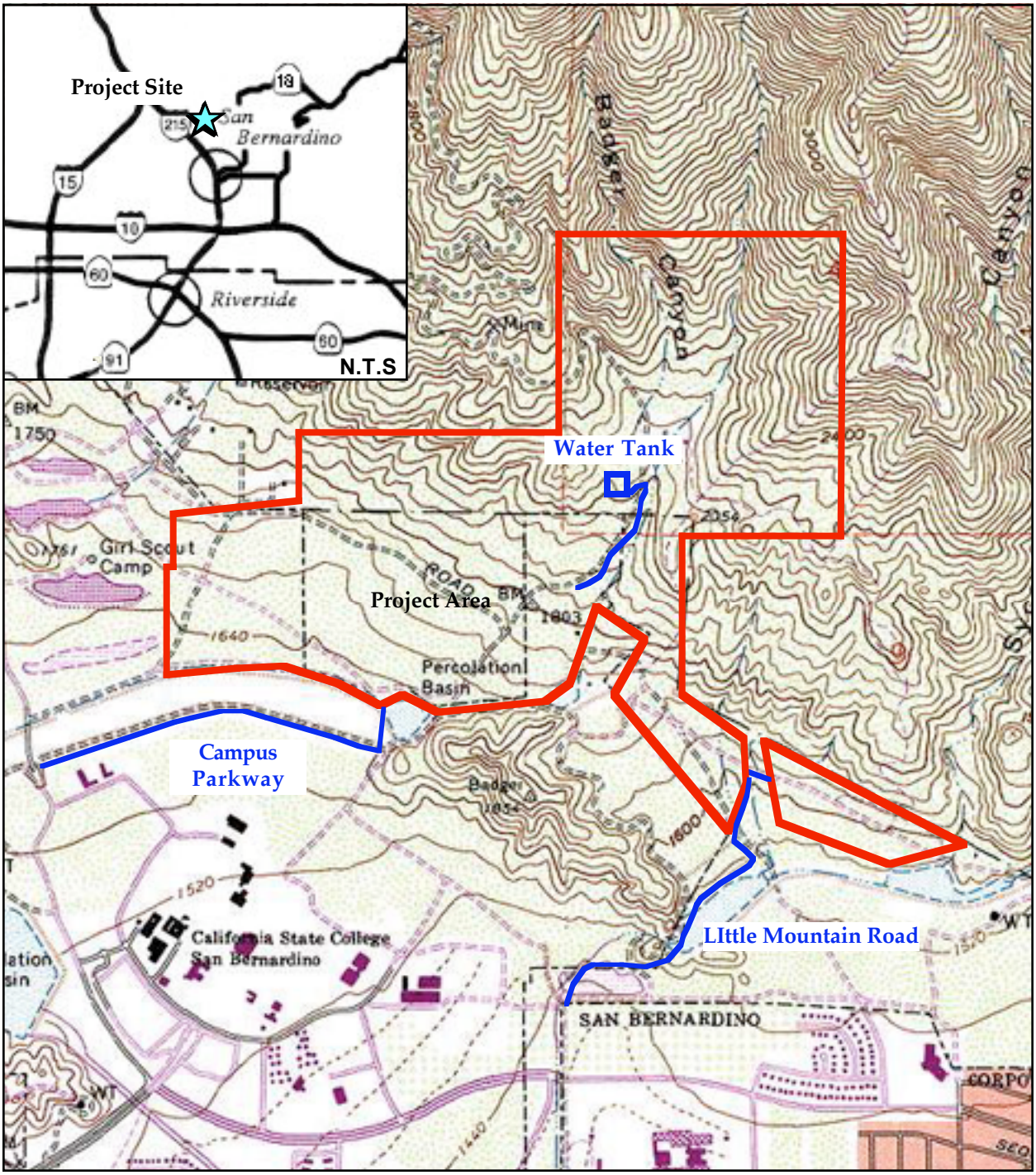
4.1 Corps of Engineers - Jurisdictional Waters

The US Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the United States. These waters include wetlands and non-wetland bodies of water that meet specific criteria. Corps regulatory jurisdiction pursuant to Section 404 of the Clean Water Act is founded on a connection or nexus between the water body in question and interstate commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations. The following definition of waters of the United States is taken from the discussion provided at 33 CFR 328.3:

"The term *waters of the United States* means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce...

(2) All interstate waters including interstate wetlands;



Source: San Bernardino 1996 7.5' USGS topographic quadrangle

Figure 1. Regional Vicinity and Project Site Map

N

Feet (approximate)

0 636 1272

University Hills Development
General Biological Survey
San Bernardino, California

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams)... the use, degradation or destruction of which could affect interstate or foreign commerce...;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters defined in paragraphs (a) (1)-(4) of this section; "

The determination of waters of the U.S for intermittent streams and washes is made difficult because these water bodies experience long periods of low to no water flow. In recognition of these environments where field determination of jurisdictional waters is difficult, technical guidance on how to determine Waters of the U.S. based on physical characteristics associated with dryland fluvial systems has been provided by the Corps (US Army Corps of Engineers 2001).

For non-tidal waters, in the absence of adjacent wetlands, the extent of Corps jurisdiction is defined by the "ordinary high water mark" (OHWM). This is defined in 33 CFR Part 329.1, as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; and presence of litter and debris (U.S Army Corps of Engineers 2001).

In dryland fluvial systems typical of the semi-arid southwest, some of the more common physical characteristics that indicate the OHWM of an intermittent channel include a clear natural scour line impressed on the bank, recent bank erosion, destruction of native terrestrial vegetation and the presence of litter and debris.

In 2006, the Supreme Court addressed the jurisdictional scope of Section 404 of the Clean Water Act, specifically the term "the waters of the U.S.," in *Rapanos v. U.S.* and in *Carabell v. U.S.*, referred to as the Rapanos decision. The Rapanos decision resulted in the changes in the titles and definitions of water bodies in the United States, as follows:

1. Traditional Navigable Waters (TNW) include oceans, seas, interstate waters, and state waters subject to interstate commerce use

2. Non-navigable tributaries to TNW with:
    2.1. Permanent flow
    2.2. Seasonal continuous flow for at least three months, designated as Relatively Permanent Waters

3. Non-navigable tributaries that are not Relatively Permanent

4. Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)

5. Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

In the Rapanos decision, the Supreme Court provided two new analytical standards for determining whether water bodies that are not Traditional Navigable Waters (TNWs), including wetland adjacent to those non- traditional navigable waters, are subject to the Clean Water Act jurisdiction.

The standards are based on one of the following conditions:

1. The water body is relatively permanent or the water body is a wetland that directly abuts (e.g., the wetland is not separated from the tributary by uplands, a berm, dike, or similar feature) a relatively permanent water body, or;

2. If the water body, in combination with all wetlands adjacent to that water body, has a significant nexus with traditional navigable waters.

4.2 Corps of Engineers - Wetlands

The Corps and EPA define wetlands as follows:

> "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions."

Wetlands are defined by the presence of water or evidence of water flow, plant species that require submergence, inundation or high water tables, and soils that are sufficiently inundated or flooded to create anaerobic conditions.

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 order for that particular wetland characteristic to be met. Several parameters may be analyzed to determine whether the criteria are satisfied.

Wetland delineations for 404 purposes must be done according to the Corps of Engineers Wetlands Delineation Manual (Corps Manual) (Environmental Laboratory, 1987). This manual provides two different approaches to delineating wetlands depending on the complexity of the site and whether there is a need for quantitative evaluation and extensive documentation. For small, relatively homogeneous sites such as the subject property, the routine on-site evaluation method is appropriate. This is the method applied in the majority of wetland delineations.

Determination of wetland limits may be obfuscated by a variety of natural environmental factors, including cyclic periods of drought and flooding or highly ephemeral stream systems. During periods of drought, for example, bank return flows are reduced and water tables lowered. This results in a corresponding lowering of ordinary high water and invasion of upland plant species into wetland areas. Conversely, extreme flooding may create physical evidence of high water well above what might be considered ordinary, and may allow temporary invasion of hydrophytic species into non-wetland

areas. In highly ephemeral systems, typical of Southern California, these problems are encountered frequently. In these situations, professional judgment and knowledge of local ecological conditions come into play in delineating wetlands.

4.3 California Department of Fish and Game

The CDFG has not formally defined jurisdictional waters for the state. The accepted standard includes lakes, rivers, and streams which support riparian habitat or wildlife, or both. A stream is any body of water showing evidence of flow through a channel having a bed and banks.

CDFG, through provisions of the State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFG.

Determining the limits of wetlands is not typically done in obtaining CDFG Agreements. The reason for this is that CDFG generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, mulefat and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas.

4.4 State Water Quality Control Board

The Corps has delegated the authority for use of 404 permits to each individual state. The use of a 404 permit in California is regulated by the California Water Quality Control Board under Section 401 of the state regulations. The Board has authority to issue a 401 permit that allows the use of a 404 permit in the state, with the authority in the state being vested in regional offices.

4.5 Porter Cologne Act

The Regional Water Quality Control Board (RWQCB), under the California Water Quality Control Board, regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state", pursuant to provisions of the Porter-Cologne Water Quality Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state".

5.0 Methods

NRA, Inc. conducted the initial fieldwork for the jurisdictional delineation on October 5, 2005. NRA, Inc. and Tetra Tech, Inc. conducted followup detailed surveys on October 29, 2007, November 30, 2007 and February 13, 2008.

The property (Figure 1) was surveyed on foot for both wetland and non-wetland jurisdictional waters. The survey included two access roads extending outside the property boundaries. Areas of potential jurisdiction were evaluated according to Corps, CDFG and RWQCB criteria. Potential jurisdictional areas were also evaluated for a potential federal nexus as required by the Corps.

Potential areas displaying wetland indicators were evaluated according to the routine delineation procedures described in the Corps Manual (Environmental Laboratory 1987). At each point, dominant plant species were identified and soils were examined. Finally, notes were taken on hydrologic conditions, including such hydrologic indicators as recent sediment deposits, evidence of inundation (such as accumulations of vegetation debris showing deposition by water), and surface scour. General site characteristics were also noted.

6.0 Results

6.1 Survey Conditions

Weather conditions were different during each field survey.

October 5, 2005. Average temperatures in the high seventies (degrees Fahrenheit), skies were clear with winds averaging 14 miles per hour (mph), gusting to 37 mph.

October 29, 2007. Average temperatures in the low seventies (degrees Fahrenheit), skies were mostly cloudy with winds averaging four mph, gusting to 20 mph.

November 30, 2007. Average temperatures in the mid fifties (degrees Fahrenheit), skies were overcast, with winds averaging four mph, gusting to 13 mph.

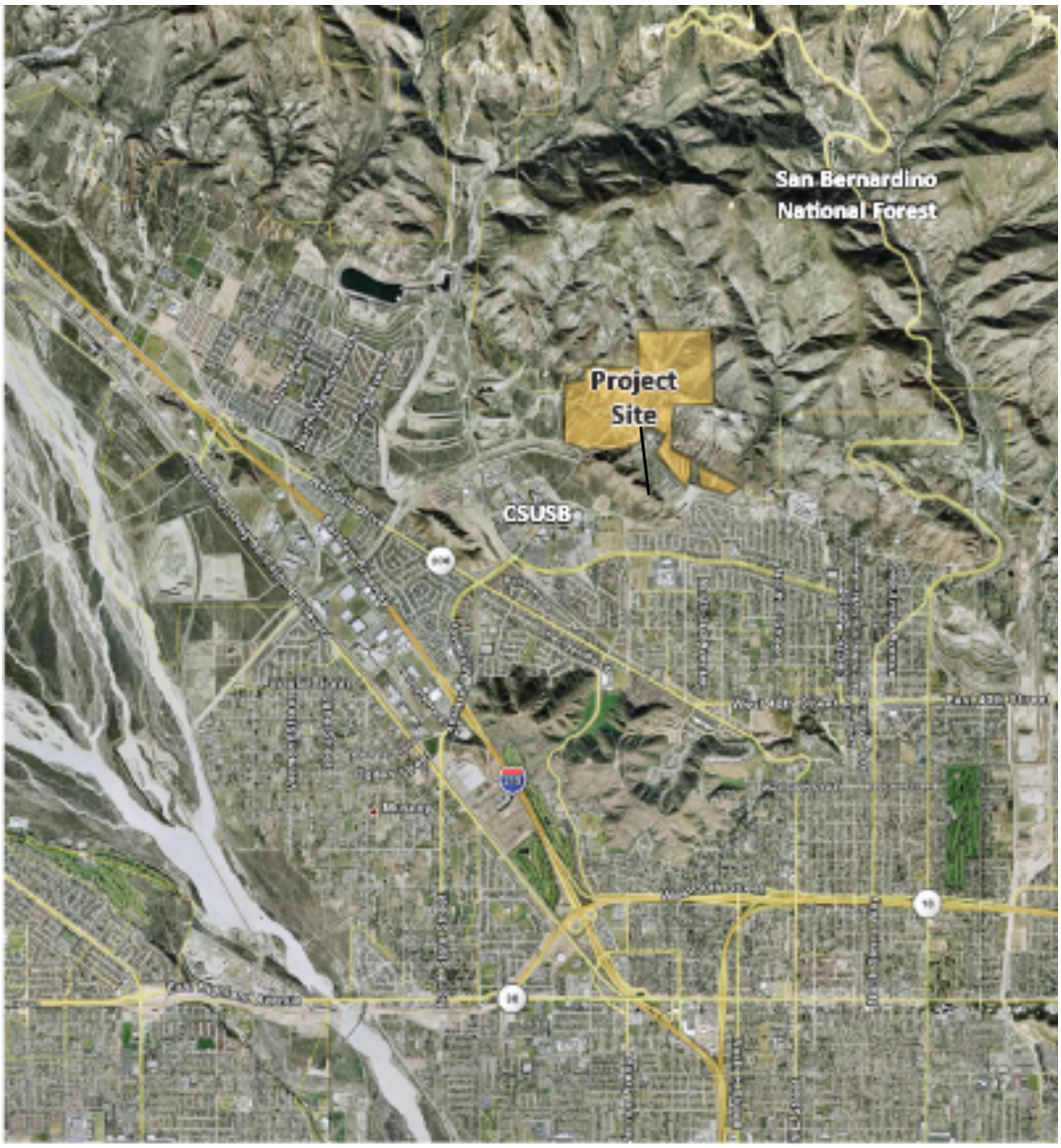
February 13, 2008. Average temperatures in the high fifties (degrees Fahrenheit), mostly cloudy skies and winds averaging five mph, gusting to 22 mph.

6.2 Jurisdictional Waters: Corps of Engineers

Badger Canyon is classified as a non-navigable tributary with permanent flow. The remaining drainages only flow when rain occurs, and are classified as ephemeral drainages. However, Badger Canyon and the other onsite drainages flow through a series of levees and pipes toward Cajon Creek, which connects with the Santa Ana River (Figure 2). The Santa Ana River is a waters of the U.S. under Corps jurisdiction.

6.2.1 Project Site Findings

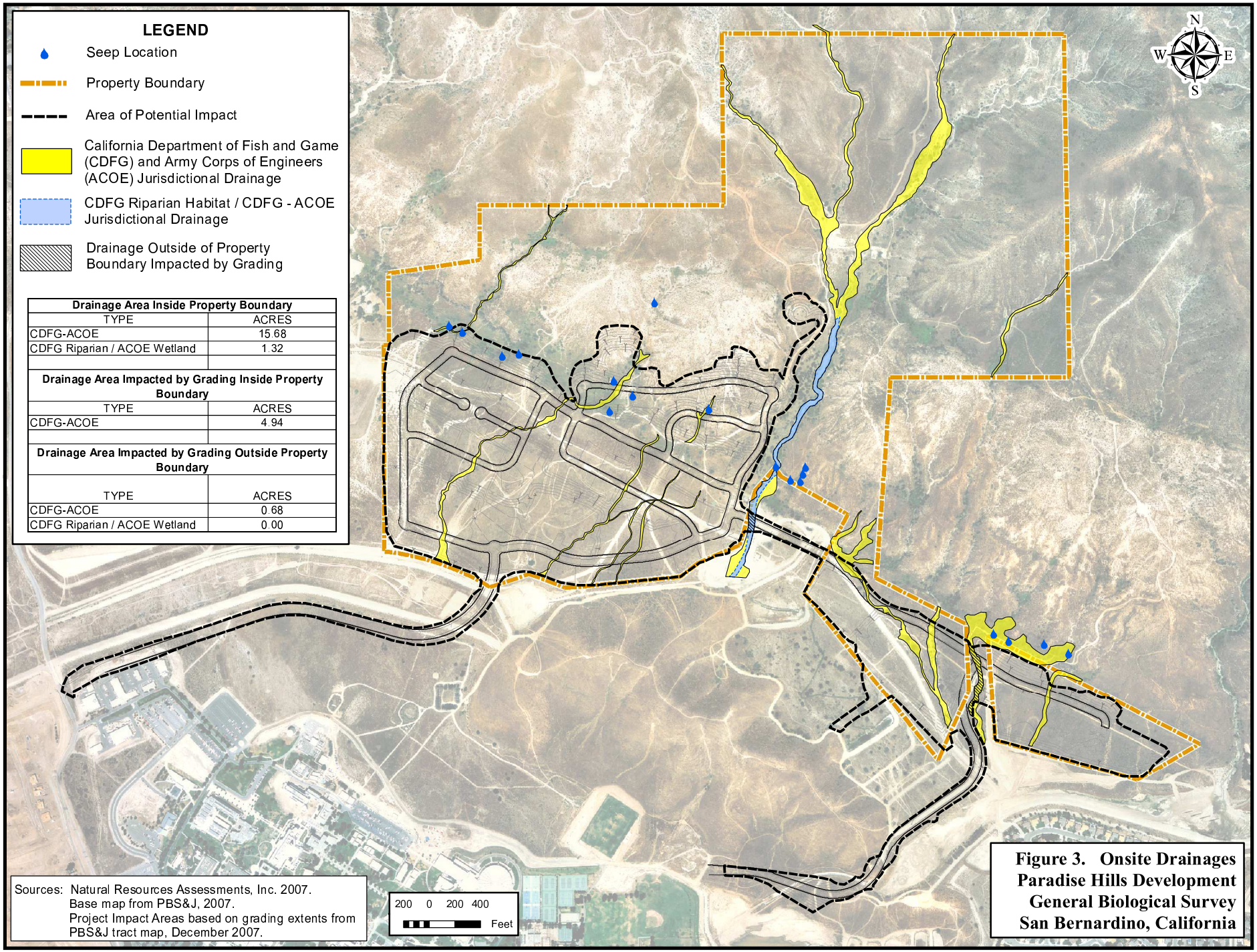
Because a nexus or connection exists with a jurisdictional water, the drainages on site also come under the jurisdiction of the Corps. There are 15.68 acres of jurisdictional drainages within the property boundaries (Figure 3). The project will impact 4.94 acres of jurisdictional drainages.



Source: The Planning Center 2007

Figure 2. Project Site in Relation to Regional Drainage

X:\GIS\21487-01 PARADISE HILLS\DRAINAGES.MXD



Drainage Area Inside Property Boundary	
TYPE	ACRES
CDFG-ACOE	15.68
CDFG Riparian / ACOE Wetland	1.32
Drainage Area Impacted by Grading Inside Property Boundary	
TYPE	ACRES
CDFG-ACOE	4.94
Drainage Area Impacted by Grading Outside Property Boundary	
TYPE	ACRES
CDFG-ACOE	0.68
CDFG Riparian / ACOE Wetland	0.00

Sources: Natural Resources Assessments, Inc. 2007.
Base map from PBS&J, 2007.
Project Impact Areas based on grading extents from PBS&J tract map, December 2007.

Figure 3. Onsite Drainages
Paradise Hills Development
General Biological Survey
San Bernardino, California

6.3 **Wetland Determination and Delineation - Corps of Engineers**

6.3.1 Vegetation

Hydrophytic vegetation is plant life that grows, and is typically adapted for life, in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub and herb layers) are considered hydrophytic. Hydrophytic species are those included on the National List of Plant Species That Occur in Wetlands (Reed, 1988), published by the U.S. Fish and Wildlife Service (USFWS). Each species on the list is rated according to a wetland indicator category, as shown in Table 1. To be considered hydrophytic, the species must have wetland indicator status, i.e., be rated as Obligatory (OBL), Facultative Wetland (FACW) or Facultative (FAC).

Table 1 - Hydrophytic Vegetation

Category	Acronym	Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67% 99%)
Facultative	FAC	Equally likely to occur in wetlands and non-wetlands (estimated probability 34% 66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67% 99%)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability >99%)

6.3.1.1 Project Site Findings on Vegetation

Wetland plant species occurring within the project area are:

- Black willow (*Salix gooddingii* - OBL)
- Red willow (*Salix lasiolepis* - OBL)
- Baltic rush (*Juncus balticus* -FACW+)
- Castor bean (*Ricinus communis* - FACU)
- Wrinkled rush (*Juncus rugulosus* -OBL)
- Cattail (*Typha* unk. sp. - OBL)
- California walnut (*Juglans californica* - FAC)
- California-black walnut cross (*Juglans californica X regia* - not classified)
- Smooth scouring-rush (*Equisetum laevigatum* - FACW)
- Tree tobacco (*Nicotiana glauca* - FAC)
- Athel (*Tamarix ramosissima* - FAC)

- These species occur primarily within the drainage of Badger Canyon (Photo 1). The willows are the dominant species in Badger Canyon, comprising almost 100 percent of the plant community.

- California walnut, California-black walnut cross and castor bean occur elsewhere on site, primarily along the upper sections of the dry drainages. Athel and tree tobacco occur in small numbers along these drainages. None of these drainages support riparian vegetation comprised of more than 50 percent obligate plant species (Photos 2 and 3).

A complete list of plant species observed on the site is given in Appendix A.

6.3.2 Soils

Hydric soils are saturated or inundated long enough during the growing season to develop anaerobic conditions that favor growth and regeneration of hydrophytic vegetation. Soils are considered hydric when the National Technical Committee for Hydric Soils (NTCHS) criteria are met. Current criteria (as of October, 1992) are as follows:

1. All Histosols except Folists; or

2. Soils in Aquic suborders, Aquic subgroups, Albolls suborder, Salothids great group, Pell great groups of vertisols, Pachic subgroups or Cumulic subgroups that are:

   A) Somewhat poorly drained and have a frequently[1] occurring water table at less than 0.5 feet from the surface for a significant period (usually more than two weeks) during the growing season; or

   B) Poorly drained or very poorly drained and have either:

      (1) A frequently occurring water table at less than 0.5 feet from the surface for a significant period (usually more than two weeks) during the growing season if textures are coarse sand, or fine sand in all layers within 20 inches; or

      (2) A frequently occurring water table at less than 1.0 foot from the surface for a significant period (usually more than two weeks) during the growing season if permeability is greater than 6.0 inches/hour in all layers within 20 inches; or

      (3) A frequently occurring water table at less than 1.5 feet from the surface for a significant period (usually more than two weeks) during the growing season if permeability is less than 6.0 inches/hour in all layers within 20 inches; or

[1] The term "frequent" is defined by the NTCHS as more than 50 years out of 100 or more than 50 percent probability in any one year.

Photo 1. Middle reach of Badger Canyon.

Photo 2. Unnamed dry drainage.

Photo 3. Unnamed dry drainage west of Badger Canyon.

Photo 4. Unnamed dry drainage east of Badger Canyon.

3. Soils that are frequently ponded for long duration or very long duration[2] during the growing season; or

4. Soils that are frequently flooded for long duration or very long duration during the growing season.

There are a number of indirect indicators that may indicate the presence of hydric soils, including hydrogen sulfide generation, the presence of iron and manganese concretions, certain soil colors, gleying and the presence of mottling. Generally, hydric soils are dark in color or may be gleyed (bluish, greenish or grayish) as a result of soil development under anoxic (without oxygen) conditions. Bright mottles within an otherwise dark soil matrix indicate periodic saturation with intervening periods of soil aeration.

Hydric indicators are particularly difficult to observe in sandy soils, which are often recently deposited soils of floodplains (entisols) and usually lack sufficient organic material to allow use of soil color as a reliable indicator of hydric conditions. Hydric soil indicators in sandy soils include accumulations of organic matter in the surface horizon, vertical streaking of subsurface horizons by organic matter, and organic pans. In some situations, it may be impossible to find any hydric soil indicators in sandy soils. These are described as "Atypical Situations" in the 1987 manual, which prescribes use of the other two parameters (vegetation and hydrology) for wetland delineations when no hydric soils indicators can be found.

6.3.2.1 Project Site Findings on Soils

The soils on the property exhibit no surface evidence of concentrated water flow except along the drainages. Soils on site are characterized as Tujunga gravelly loamy sand, occurring over most of the alluvial fan. Cieneba-Rock outcrop complex is the dominant soil on the steeper slopes of the property. Hanford coarse loamy sand occurs along the frontal slopes and up Badger Canyon. Soboba stony loamy sand occurs in the bottom of Badger Canyon and in the basins at the foot of the alluvial fan (Soil Conservation Service 1980).

The U.S. Department of the Interior, Soil Conservation Service, has mapped and classified soil types in this area of San bernardino County. The soil types are categorized as hydric soils using standard classifications developed by the Soil Conservation Service and adapted by the Corps. Within the drainage areas Tujunga gravelly sandy loan and Hanford coarse sandy loam are considered to be hydric soils.

6.3.3 Hydrology

Areas with wetland hydrology are those where the presence of water has an overriding influence on vegetation and soil characteristics due to anaerobic and reducing conditions, respectively

[2] Long duration is defined by the NTCHS as a single event ranging from 7 to 30 days; very long duration is defined as a single event that lasts longer than 30 days.

(Environmental Laboratory, 1987). The wetland hydrology parameter is satisfied if the area is seasonally inundated or saturated to the surface for a consecutive number of days equal to 12.5 percent or more of the growing season[3] (Corps of Engineers, 1992). Areas saturated to the surface for less than five percent of the growing season do not meet the hydrology criterion. Areas saturated to the surface between 5.0 and 12.5 percent of the growing season may or may not meet the hydrology criterion; in these situations, other hydrology indicators must be considered, and the vegetation test should be critically reviewed (Corps of Engineers, 1991).

Hydrology is often the most difficult criterion to measure in the field, due to seasonal and annual variations in water availability. Some of the indicators that are commonly used to identify wetland hydrology include visual observation of inundation or saturation, watermarks, recent sediment deposits, surface scour and oxidized root channels (rhizospheres) resulting from prolonged anaerobic conditions. However, indicators such as sediment deposits and surface scour do not necessarily indicate saturation for the length of time necessary to meet the hydrology criterion.

6.3.3.1 Project Site Findings on Hydrology

Most of the drainages displayed ample indicators of the seasonal presence of water. These indicators included vegetative debris, recent scour and sediment deposits. Badger Canyon has a permanent flow of water.

The growing season (frost free days) in this part of San Bernardino County is estimated at 230 to 280 days (Soil Conservation Service 1980). Assuming an average growing season of 255 days, soils would need to be saturated to the surface for a minimum of five percent of the growing season, or about 12 days, in order for the hydrology criterion to be met. A definitive determination would require saturation for 12 percent of the growing season, or about 30 days.

Badger Canyon is saturated year-round. The remaining drainages probably do not meet the test. The majority of these drainages occur on Tujunga gravelly sandy loam. This soil type is a somewhat excessively drained soil with slow runoff. This would imply that water is not retained for very long in this soil type.

6.3.4 Project Site Findings on Wetlands

Badger Canyon supports 1.32 acres of wetland habitat (Figure 3). The hydrophytic plant species is greater than 50 percent obligate and the canyon supports a permanent water source. The Hanford soils are designated as hydric. None of the wetland habitat along Badger Canyon will be impacted by the project.

The remaining drainage do not meet the test for wetland habitat. Only two of the three parameters are present. The soils are hydric, and there are secondary hydric indicators present. However, none of these drainages support sufficient stands of obligate hydrophytic vegetation.

[3] The growing season is defined as that portion of the year when the soil temperature at 19.7 inches below the ground surface is greater than biologic zero (5°C, 41°F)(Soil Survey Staff, 1975); this can be estimated from regional climatological data such as that provided in County Soil Surveys.

6.3.5 Wetland Functions and Values

Wetland functions and values are limited for all but Badger Canyon. Badger Canyon has a high value for wildlife, providing water, food, shelter and a corridor for wildlife movement to and from the site from higher up the mountain. Badger Canyon also provides groundwater recharge and discharge cleanup before the water leaves the property.

The majority of the remaining drainages have only limited functions and values. The drainages east of Badger Canyon provide a moderate amount of ground water recharge and discharge cleanup, but only limited wildlife value. No surface water is available along these drainages. Available food and cover sources are very limited, and these drainages do not function as wildlife corridors.

The drainages west of Badger Canyon may provide very limited groundwater recharge and discharge cleanup. They provide almost not wildlife value. No surface water is available, and none of the drainages support a significant riparian habitat. They do not function as wildlife corridors.

6.4 California Department of Fish and Game

6.4.1 Jurisdictional Drainages

All of the drainages on site have definable bed and banks and show signs of water flow. There are a total of 15.68 acres within the property boundary (Figure 3). The project will impact 4.94 acres of jurisdictional drainages.

6.4.2 Riparian Habitat

Badger Canyon supports 1.32 acres of riparian habitat (Figure 3). The remaining drainages support scattered trees and shrubs within the drainage area, but no substantial riparian habitat. None of this habitat will be impacted by the project.

7.0 Outside Drainages

The development of the project will require the construction of access roads and associated grading outside of the property boundary. There are 0.68 acres of jurisdictional waters that will be affected by this construction.

8.0 Conclusions

There are 15.68 acres of jurisdictional waters and 1.32 acres of wetland within the property limits. The project will impact 4.94 of drainages that are jurisdictional under the Corps. An individual 404 permit will be required for the project.

The Corps has delegated the authority for use of 404 permits to each individual state. The use of a 404 permit in California is regulated by the California Water Quality Control Board under Section 401 of

the state regulations. The Board has authority to issue a 401 permit that allows the use of a 404 permit in the state, with the authority in the state being vested in regional offices. The Board has already determined that a 401 permit will be required.

There are 15.68 acres of jurisdictional waters and 1.32 acres of riparian plant communities within the property limits. The project will impact 4.94 acres of drainages that are jurisdictional under the CDFG. A 1602 Agreement will be required for the project.

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Appendix A - Plant and Animals Observed

Plants

* denotes non-native plant species

PTERIDOPHYTES	**FERNS AND ALLIES**
Dennstaedtiaceae	**Bracken family**
Pteridium aquilinum	Bracken fern
Pteridaceae	**Brake family**
Pellaea andromedifolia	Coffee fern
Pentagramma triangularis	Goldenback fern
Equisetaceae	**Horsetail family**
Equisetum laevigatum	Common horsetail
ANGIOSPERMAE: DICOTYLEDONES	**DICOT FLOWERING PLANTS**
Adoxaceae	**Elderberry family**
Sambucus mexicana	Mexican elderberry
Amaranthaceae	**Amaranthus family**
**Amaranthus albus*	White tumbleweed
Anacardiaceae	**Sumac family**
Rhus ovata	Sugar bush
Rhus trilobata	Squaw bush
**Schinus molle*	Peruvian pepper tree
Toxicodendron diversilobum	Poison oak
Apocynaceae	**Dogbane family**
**Nerium oleander*	Oleander
Asteraceae	**Sunflower family**
Ambrosia acanthicarpa	Annual bur-sage
Ambrosia psilostachya	Western ragweed
Artemisia californica	California sagebrush
Artemisia douglasiana	Mugwort
Artemisia dracunculus	Tarragon
Artemisia ludoviciana	Silver wormwood
Baccharis salicifolia	Mulefat
Brickellia californica	California bricklebush

Boraginaceae	**Borage family**
Amsinckia menziesii	Fiddleneck
Brassicaceae	**Mustard family**
Descurainia pinnata	Tansy mustard
**Hirschfeldia incana*	Short-podded mustard
Rorippa nasturtium-aquaticum	Watercress
**Sisymbrium altissimum*	Tumble mustard
**Sisymbrium irio*	London rocket
Cactaceae	**Cactus family**
Opuntia californica	Snake cholla
Caprifoliaceae	**Honeysuckle family**
Lonicera subspicata	Honeysuckle
Chenopodiaceae	**Saltbush family**
Chenopodium album	Lamb's quarters
Chenopodium berlandieri	Pitseed goosefoot
**Salsola tragus*	Russian thistle
**Centaurea melitensis*	Tocalote
**Centaurea solstitialis*	Star-thistle
**Chamomilla suaveolens*	Pineapple weed
Chrysothamnus nauseosus	Rabbit brush
**Cirsium vulgare*	Bull thistle
**Conyza bonariensis*	Mare's tails
**Conyza canadensis*	Horseweed
Encelia farinosa	Desert brittlebush
**Filago gallica*	Brown filago
Gnaphalium californicum	California everlasting
**Gnaphalium luteo-album*	White everlasting
Gnaphalium palustre	Lowland cudweed
Hazardia squarrosa	Saw-toothed goldenbush
Helianthus annuus	Annual sunflower
Hemizonia fasciculata	Fascicled tarweed
Heterotheca grandiflora	Telegraph weed
Heterotheca psammophila	Camphor weed
**Lactuca serriola*	Prickly lettuce
Lessingia filaginifolia	Cudweed aster
Lessingia glandulifera	Valley lessingia
**Sonchus oleraceus*	Common sow thistle
Stephanomeria virgata	Twiggy wreath plant
Tetradymia comosa	Cotton-thorn
Xanthium strumarium	Cocklebur

Cistaceae	**Rock-rose family**
Helianthemum scoparium	California rush rose
Convolvulaceae	**Morning glory family**
**Convolvulus arvensis*	Bindweed
Cuscuta californica	California dodder
Cucurbitaceae	**Gourd family**
Cucurbita palmata	Coyote melon
Euphorbiaceae	**Spurge family**
Chamaesyce albomarginata	Rattlesnake spurge
Croton californica	Croton
Croton setiger	Doveweed
**Ricinus communis*	Castor bean
Fabaceae	**Pea family**
Astragalus pomonensis	Locoweed
Cercidium floridum	Palo verde
Lotus hamatus	Hooked beak lotus
Lotus scoparius	Deer weed
Lotus strigosus	String-stemmed lotus
Lupinus hirsutissimus	Stinging lupine
**Melilotus indicus*	Sourclover
Fagaceae	**Oak family**
Quercus berberidifolia	Scrub oak
Geraniaceae	**Geranium family**
**Erodium cicutarium*	Red-stemmed filaree
**Erodium botrys*	Long-beaked filaree
Hydrophyllaceae	**Waterleaf family**
Eriodictyon trichocalyx	Yerba santa
Phacelia distans	Blue-eyed scorpion weed
Phacelia ramosisima	Branching phacelia
Juglandaceae	**Walnut family**
Juglans californica	California walnut
Juglans california x regia	Hybrid cross walnut
Lamiaceae	**Mint family**
**Marrubium vulgare*	Horehound
Salvia apiana	White sage

Salvia columbariae	Chia
Salvia mellifera	Black sage
Stachys ajugoides	Water mint
Malvaceae	**Mallow family**
Malacothamnus fasciculatus	Chaparral mallow
**Malva parviflora*	Cheeseweed
Meliaceae	**Chinaberry family**
Melia azedarach	Chinaberry
Myrtaceae	**Myrtle family**
**Eucalyptus* sp.	Eucalyptus
**Eucalyptus globulus*	Blue gum
Nyctaginaceae	**Four O'clock family**
Abronia villosa	Sand verbena
Mirabilis laevis	California wishbone bush
Paeoniaceae	**Peony family**
Paeonia california	California peony
Papaveraceae	**Poppy family**
Argemone munita	Chicalote
Dicentra chrysantha	Golden eardrops
Platanaceae	**Sycamore family**
Platanus racemosa	Western sycamore
Polygonaceae	**Buckwheat family**
Eriogonum elongatum	Long-stemmed eriogonum
Eriogonum fasciculatum	California buckwheat
Eriogonum gracile	Graceful buckwheat
**Rumex crispus*	Curly dock
Rhamnaceae	**Buckthorn family**
Ceanothus crassifolius	Hoaryleaf ceanothus
Ceanothus leucodermis	Whitebark ceanothus
Rhamnus crocea	Spiny redberry
Rosaceae	**Rose family**
Adenostoma fasciculatum	Chamise
Heteromeles arbutifolia	Toyon
Prunus ilicifolia	Holly-leaved cherry

Rubiaceae	**Madder family**
Galium aparine	Weak stem bedstraw
Salicaceae	**Willow family**
Populus fremontii	Fremont cottonwood
Salix goodingii	Black willow
Salix lasiolepis	Arroyo willow
Saxifragaceae	**Saxifrage family**
Ribes cereum	Squaw currant
Scrophulariaceae	**Snapdragon family**
Antirrhinum coulterianum	White snapdragon
Keckiella antirrhinoides	Keckiella
Mimulus cardinalis	Red monkeyflower
Mimulus guttatus	Yellow monkeyflower
Penstemon centranthifolius	Scarlet bugler
Penstemon spectabilis	Chaparral beard's tongue
**Veronica anagallis-aquaticus*	Great water speedwell
Simaroubaceae	**Quassia family**
**Ailanthus altissima*	Tree of heaven
Solanaceae	**Nightshade family**
Datura wrightii	Jimson weed
Nicotiana glauca	Indian tobacco
Nicotiana quadrivalvus	Wallace's tobacco
Solanum xanti	Deadly nightshade
Tamaricaeae	**Tamarisk family**
**Tamarix ramosissima*	Athel
Vitaceae	**Grape family**
Vitis girdiana	Wild grape
Zygophyllaceae	**Caltrop family**
Tribulus terrestris	Puncture vine
ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Arecaceae	**Palm family**
**Phoenix canariensis*	Canary Island palm
Washingtonia filifera	California fan palm
**Washingtonia robusta*	Mexican fan palm

Cyperaceae	**Sedge family**
Carex sp.	Sedge
Cyperus eragrostis	Umbrella sedge
Eleocharis obtuse var. *engelmannii*	Engelmann's spikerush
Juncaceae	**Rush family**
Juncus balticus	Baltic rush
Juncus bufonius	Toad rush
Juncus mexicanus	Mexican spike rush
Juncus rugulosus	Wrinkled rush
Juncus triformis	Yosemite dwarf rush
Lemnaceae	**Duckweed family**
Lemna minor	Simple duckweed
Liliaceae	**Lily family**
Calochortus splendens	Mariposa lily
Yucca whipplei	Whipple's yucca
Poaceae	**Grass family**
Achnatherum sp.	Needlegrass
**Arundo donax*	Giant reed
**Avena barbata*	Slender wild oats
**Bromus diandrus*	Ripgut brome
**Bromus madritensis*	Red brome
**Bromus mollis*	Soft chess
**Bromus tectorum*	Cheatgrass
Hordeum leporinum	Hare barely
**Hordeum marinum*	Mediterranean barley
**Lamarckia aurea*	Golden tops
Leymus condensatus	Short-seeded ryegrass
**Piptatherum miliaceum*	Millet ricegrass
**Polypogon monspeliensis*	Rabbit's foot grass
**Puccinellia distans*	Alkali grass
**Schismus barbatus*	Mediterranean grass
Stipa lepida	Foothill needlegrass
**Vulpia myuros*	Foxtail
Typhaceae	**Cattails**
Typha sp.	Cattail

Taxonomy and nomenclature follow Hickman 1993, Munz 1974, and Roberts, et al. 2004.

Animals

INSECTA	**INSECTS**
Acrididae *Trimerotropis pallidipennis*	**Grasshoppers** Pallid-winged grasshopper
Anthophoridae *Xylocopa varipuncta*	**Digger bees** Valley carpenter bee
Bombyliidae *Bombyliidae* sp.	**Bee flies** Bee fly
Apidae *Apis mellifera*	**Bees** Honey bee
Calliphoridae *Phaenicia* sp.	**Blow fly** Green bottle fly
Asilidae *Efferia* sp.	**Robber flies** Robber fly
Coccinellidae *Hippodamia convergens*	**Ladybird beetles** Convergent ladybird beetle
Formicidae *Camponotus* sp.	**Ants** Carpenter ant
Hesperiidae *Pyrgus albsecens*	**Skippers (butterflies)** Western checkered skipper
Mutillidae *Dasymutilla* sp.	**Velvet ants** Velvet ant
Nymphalidae *Vanessa virginiensis*	**Brush-footed butterflies** Virginia lady
Pieridae *Artogeia rapae* *Pieris protodice*	**Whites and sulfer butterflies** Cabbage white Common white

AMPHIBIA	**AMPHIBIANS**
Hylidae	**Tree Frogs and Relatives**
Pseudacris regilla	Pacific chorus frog
REPTILIA	**REPTILES**
Phryonosomatidae	**Spiny lizards and their allies**
Sceloporus occidentalis	Western fence lizard
Uta stansburiana	Side-blotched lizard
AVES	**BIRDS**
Cathartidae	**Vultures**
Cathartes aura	Turkey vulture
Accipitridae	**Kites, hawks and eagles**
Buteo jamaicensis	Red-tailed hawk
Falconidae	**Caracaras and falcons**
Falco sparverius	American kestrel
Phasianidae	**Quails and pheasants**
Callipepla californica	California quail
Columbidae	**Pigeons and doves**
Zenaida macroura	Mourning dove
Trochlidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Tyrannidae	**Tyrant flycatchers**
Sayornis saya	Say's phoebe
Tyrannus verticaulis	Western kingbird
Hirundinidae	**Swallows**
Stelgidopteryx ruficollis	Northern rough-winged swallow
Corvidae	**Crows and ravens**
Aphelocoma californica	Western scrub jay
Corvus brachyrhynchos	American crow
Corvus corax	Common raven

Aegithalidae	**Bushtits**
Psaltriparus minimus	Bushtit
Troglodytidae	**Wrens**
Thryomanes bewickii	Bewick's wren
Sylviidae	**Old World warblers, gnatcatchers and allies**
Regulus calendula	Ruby-crowned kinglet
Mimidae	**Mimic thrushes**
Mimus polyglottos	Northern mockingbird
Lanidae	**Shrikes**
Lanius ludovicianus	Loggerhead shrike
Sturnidae	**Starlings**
Sturnus vulgaris	European starling
Emberizidae	**Sparrows**
Pipilo crissalis	California towhee
Amphispiza bellii bellii	Bell's sage sparrow
Zonotrichia leucophrys	White-crowned sparrow
Fringillidae	**Finches**
Carpodacus neomexicanus	House finch
Carduelis psaltria	Lesser goldfinch
Passeridae	**Old World sparrows**
Passer domesticus	House sparrow
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and hares**
Sylvilagus audubonii	Audubon's cottontail
Lepus californicus	Black-tailed jackrabbit
Sciuridae	**Squirrels, chipmunks and marmots**
Spermophilus beecheyi	California ground squirrel
Geomyidae	**Pocket gophers**
Thomomys bottae	Botta's pocket gopher

Heteromyidae	**Pocket mice and kangaroo rats**
Perognathus longimembris brevinasus	Los Angeles pocket mouse
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse
Dipodomys simulans	Dulzura kangaroo rat
Cricetidae	**Cricetine mice and rats**
Reithrodontomys megalotis	Western harvest mouse
Peromyscus maniculatus	Deer mouse
Neotoma lepida	Desert woodrat
Canidae	**Foxes, wolves and relatives**
Canis latrans	Coyote

Nomenclature follows Borror and White 1970, Hall 1981, Grenfell et al. 2003, and Stebbins 1966.

Appendix B - Jurisdictional Form

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

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

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): May 29, 2008

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Los Angeles, unk., unk.

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: CA County/parish/borough: San Bernardino City: San Bernardino
Center coordinates of site (lat/long in degree decimal format): Lat. 34° N, Long. 117° W.
Universal Transverse Mercator:
Name of nearest waterbody: Cajon Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Santa Ana River
Name of watershed or Hydrologic Unit Code (HUC): Santa Ana River watershed
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): October 5, 2005, October 29, 2007, November 30, 2007 and February 13, 2008.

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: Santa Ana River is used for sand and gravel mining, recreation.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

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

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet: width (ft) and/or 15.68 acres.
      Wetlands: 1.32 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known): .

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

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

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW
Identify TNW: **N/A**.

Summarize rationale supporting determination: .

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

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

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

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

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

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

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

(i) General Area Conditions:
Watershed size: unknown **Pick List**
Drainage area: unknown **Pick List**
Average annual rainfall: 15=18 inches
Average annual snowfall: none inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **10-15** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **5-10** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: Badger Canyon to Cable Creek to Cajon Creek to Lytle Creek to Warm Creek to the Santa Ana River.
Tributary stream order, if known: First order.

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

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

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

Tributary properties with respect to top of bank (estimate):
Average width: 100? feet
Average depth: 100? feet
Average side slopes: **Vertical (1:1 or less) .**

Primary tributary substrate composition (check all that apply):

☐ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Willow woodland/75%	
☒ Other. Explain: loam.		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Highly eroding. Flood waters have cut down original trace to deep, vertical sided canyon conditions..
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 14.4 %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: Permanent.
Other information on duration and volume: None.

Surface flow is: **Confined.** Characteristics: Spring fed.

Subsurface flow: **Yes**. Explain findings: Major drainage for adjacent mountain range.
☐ Dye (or other) test performed: .

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

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

☐ Discontinuous OHWM.[7] Explain: .

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

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

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Clear low flow, sediment laden in storm events. General soils gravelly loamy sand..
Identify specific pollutants, if known: None..

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

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

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

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

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known: .

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

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

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

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

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

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

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

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

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

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

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

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

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

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ Tributary waters: **5280** linear feet**100** width (ft).
☒ Other non-wetland waters: **1.32**acres.
Identify type(s) of waters: **Willow woodland**.

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

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: **3,000** linear feet**50 (average)** width (ft).
☒ Other non-wetland waters: **3.6** acres.
Identify type(s) of waters: **Dry drainages.**

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

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

Provide acreage estimates for jurisdictional wetlands in the review area: **1.32** acres.

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

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

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

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

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

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

Identify water body and summarize rationale supporting determination: .

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

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

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

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

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

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:San Bernardino North 7.5'.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):No name, 2002?.
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):Field analysis and measurements, use of GPS data.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .