Santa Ana-Garden Grove Fixed Guideway Corridor

Appendix A

Preliminary Jurisdictional Delineation

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EXECUTIVE SUMMARY

This Preliminary Jurisdictional Determination Report summarizes the findings of:

1. U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA);
2. Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA and as defined within Section 13050(e) (et seq.) of the California Water Code (CWC) via the Porter-Cologne Water Quality Control Act (Porter-Cologne); and
3. California Department of Fish and Game (CDFG) jurisdiction pursuant to Section 1602 (et seq.) of the California Fish and Game Code (CFG Code) for the Santa Ana and Garden Grove Fixed Guideway Project (Project).

The intended use of this report is to evaluate any aquatic resources within the proposed Project Biological Study Area (BSA). Aquatic resources are defined as the potential limits of USACE, RWQCB, and CDFG jurisdiction. For the purposes of this report, the BSA is defined as the proposed disturbance footprint and an approximate 50-foot buffer of the track alignment and associated structures for Streetcar Alternative 1 and Streetcar Alternative 2. This Preliminary Jurisdictional Determination (PJD) assumes that there are Waters of the United States (WoUS) within the BSA. A PJD is by definition only advisory in nature and does not require the USACE and U.S. Environmental Protection Agency (EPA) to make an Approved Jurisdictional Determination for any aquatic resources within federal jurisdiction, which often requires significant processing time. Thus, this PJD is prepared to expeditiously obtain USACE permit authorization during the Project permitting phase by assuming federal jurisdiction is present (USACE 2008c).

This document presents URS Corporation's (URS) best effort at estimating aquatic resource boundaries using the most up-to-date regulations, written policies, and guidance from the USACE, RWQCB, and CDFG. Nonetheless, only the USACE, RWQCB, and CDFG can make a final determination of jurisdictional boundaries.

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CHAPTER 1 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Project is located within the Anaheim, Orange, Newport Beach, and Tustin United States Geological Survey (USGS) 7.5-Minute Topographic Quadrangle Maps (USGS 1981). The Project occurs within the cities of Santa Ana and Garden Grove, California at an approximate elevation ranging from 89-138 feet above mean sea level (msl) and spans an approximate 4.3 mile linear length in a east-west direction (Figures 1-1 and 1-2). The coordinates at the approximate center of the BSA are 33.747851 N and -117.893870 W. Land use in the surrounding vicinity includes densely-developed urban areas containing residential, commercial, and public infrastructure. The BSA has been disturbed from development and associated land-clearing activities; no natural communities occur.

Both streetcar alternatives would cross over the Santa Ana River. Under the Project, the existing bridge would remain in its current location and condition. A new single-track bridge would be constructed immediately south of the existing bridge for the fixed guideway. Through the use of of gates and signaling, the single-track bridge would accommodate bi-directional fixed guideway traffic.

1.2 SUMMARY OF USACE JURISDICTION PURSUANT TO SECTION 404 OF THE CWA

The USACE regulates discharge of fills to Waters of the United States (WoUS[1]) through Section 404 of the CWA. The BSA contains one potential WoUS feature, the Santa Ana River, which contains an Ordinary High Water Mark (OHWM) and is classified as a Relatively Permanent Water (RPW) with a lower reach classified as a Traditional Navigable Water (TNW). As a result, it is within the jurisdiction of Section 404 of the CWA. A total of 0.382 acre of potential CWA Section 404 jurisdiction occurs within the BSA, consisting entirely of non-wetland, unvegetated WoUS confined within a concrete flood-control channel. The Project will temporarily impact 0.382 acre of non-wetland WoUS and will permanently impact 0.003 acre of non-wetland WoUS.

[1] ~~The term WoUS is defined as follows (33 C~~FR 328.3): (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) All interstate waters including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce; (4) All impoundments of waters otherwise defined as WoUS; (5) Tributaries of WoUS identified above; (6) The territorial seas; and (7) Wetlands adjacent to waters (other than waters that are themselves wetlands).

1.3 SUMMARY OF RWQCB JURISDICTION PURSUANT TO SECTION 401 OF THE CWA AND THE PORTER-COLOGNE WATER QUALITY CONTROL ACT

The RWQCB regulates fills to Wate rs of the State (WoS) through the CWA Section 401 Water Quality Certification (WQC) Program and Porter-Cologne. Pursuant to CWA Section 401, the RWQCB's jurisdiction within the BSA equals CWA Section 404 jurisdict ion. There is no additional RWQCB jurisdiction subject to Porter-Cologne. A total of 0.382 acre of CWA Section 401 jurisdiction occurs within the B SA, consisting entirely of non-wetland, unvegetated WoS confined within a con crete flood-control channel. The Bridge Avoidance Alter native will temporarily impact 0.382 acre of non-wetland WoS and will permanently impact 0.003 acre of non-wetland WoS. The Bridge Replacement Alternat ive Project will tem porarily impact 0.382 acre of non-wetland WoS and will have no permanent impact to WoS.

1.4 SUMMARY OF CDFG JURISDICTION PURSUANT TO SECTION 1602 (ET SEQ.) OF THE CFG CODE

Pursuant to Section 1 602 (et se q.) of the CFG Code, the CDFG regulates diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. The Santa Ana Ri ver within t he BSA contains a bed, bank, and channel that provide at least minimal functions and values for wildlife. As a result, it is subject to CFG Code Section 1602 (et seq.) jurisdict ion. The Santa Ana River within the BSA consists of 0.520 acre of unvegetated bed, bank, and ch annel, with no associat ed riparian vegetation beyond the bank. The Bridge Avoidance Alt ernative will temporarily impact 0.5 20 acre of unvegetated WoS and will permanently impact 0.003 acre of non-wetland WoS. The Bridge Replacement Alternative Project will temporarily impact 0.520 acre of non-wetland WoS and will have no permanent impact to WoS.

1.5 REQUIRED PERMITS

Project implementation will likely require a CWA Section 404 and 401 permits and a CDFG Lake and Streambed Alteration Agreement (LSAA) for any impacts to the Santa Ana River. Permitting recommendations are provided in Chapter 5.

Figure 1-1 Regional Vicinity Map

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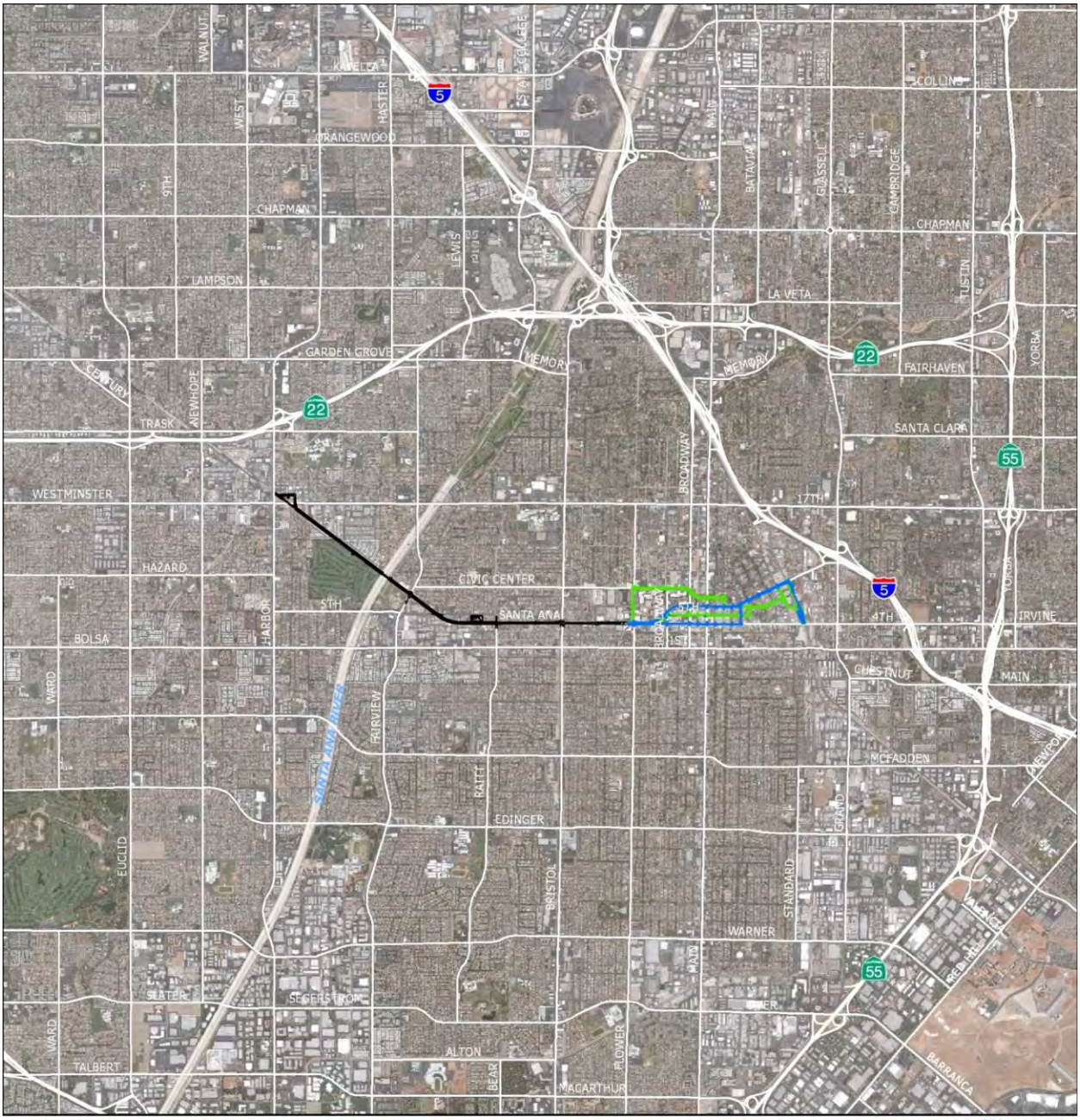
Figure 1-2 Project Location Map



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CHAPTER 2 REGULATORY REVIEW

2.1 REVIEW OF USACE JURISDICTION PURSUANT TO SECTION 404 OF THE CLEAN WATER ACT

2.1.1 WATERS OF THE UNITED STATES

The USACE regulates the discharge of dredged and/or fill material into WoUS pursuant to Section 404 of the CWA. The USACE has authority to permit the discharge of dredged or fill material in WoUS under Section 404 of the CWA and to permit work and the placement of structures in navigable WoUS under the Rivers and Harbors Act of 1899 (RHA).

2.1.1.1 Ordinary High Water Mark

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, including intermittent streams, extend to the ordinary high water mark (OHWM). The OHWM is defined 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" (33 CFR 328.3[e]). In 2005, the USACE issued Regulatory Guidance Letter 05-05, which added the following additional indicators of an OHWM: wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and changes in plant communities (USACE 2005).

2.1.1.2 USACE-Defined Wetlands

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a dominance of vegetation typically adapted for life in saturated soil conditions." The methods set forth in the USACE Wetland Manual generally require that in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit at least minimal hydric characteristics (EL 1987; USACE 2008b). Although the manual provides great detail in methods and allows for varying atypical or problematic conditions, a wetland should normally meet each of the following three criteria:

1. More than 50% of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands [Reed 1988]);
2. Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions). 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

3. Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5% of the growing season during a normal rainfall year (for most of low-lying southern California, 5% of the growing season is equivalent to 18 days).

2.1.2 USACE TERMINOLOGY

The following definitions are from the Rapanos Guidance Memoranda (USACE 2007a, 2007b, and 2008a):

> "Adjacent," as defined in USACE and Environmental Protection Agency (EPA) regulations, means "bordering, contiguous, or neighboring." Wetlands separated from other WoUS by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.' Wetlands that are not separated from a tributary by upland features, such as a berm or dike, are considered "abutting."

A "tributary," as defined in the Rapanos guidance memoranda, means a natural, man-altered, or man-made water body that carries flow directly or indirectly into traditional navigable waters. For purposes of determining "significant nexus" with a traditional navigable water, a "tributary" is the entire reach of the stream that is of the same order (i.e., from the point of confluence, where two lower order streams meet to form the tributary, downstream to the point where the tributary enters a higher order stream).

A water body is considered to have a "significant nexus" with a TNW if its flow characteristics and functions, in combination with the ecologic and hydrologic functions performed by all wetlands adjacent to such a tributary, affect the chemical, physical, and biological integrity of a downstream TNW. A "TNW" includes all of the "navigable waters of the United States," defined in 33 C.F.R. § 329 and by numerous decisions of the federal courts, plus all other waters that are navigable-in-fact.

In the context of CWA jurisdiction post-Rapanos, a water body is a "Relatively Permanent Water (RPW)" if its flow is year-round or is continuous at least "seasonally," (e.g., typically 3 months). Wetlands adjacent to a RPW tributary are also jurisdictional if those wetlands directly abut such a tributary (USACE 2008a).

The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water (USACE 2008a):

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

In general, the USACE does not assert jurisdiction over the following features (USACE 2008a):

- *Ditches*. "Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water (greater than 3 months) generally are not jurisdictional under the CWA, because they are not tributaries or they do not have a significant nexus to TNWs."
- *Swales*. "Swales are generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on relatively flat slopes and typically have grass or other low-lying vegetation throughout the swale. Swales are generally not waters of the U.S. because they are not tributaries or they do not have a significant nexus to TNWs."

2.1.3 REVIEW OF RWQCB JURISDICTION PURSUANT TO SECTION 401 OF THE CLEAN WATER ACT AND PORTER-COLOGNE

The RWQCB regulates fills to WoUS under the Section 401 WQC, which in most instances, equals CWA Section 404 jurisdiction. In the absence of CWA Section 404 jurisdiction over isolated waters or WoS, RWQCB jurisdiction over WoS is extended through Porter-Cologne. WoS are defined in Section 13050(e) of the CWC and include any surface water or groundwater, including saline waters, within the boundaries of the State. Porter-Cologne provides a comprehensive framework to protect water quality in California. It requires that any entity who plans to discharge waste where it might adversely affect WoS must first notify the RWQCB, which may impose requirements to protect water quality.

The Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (SWANCC) decision created "gaps" relating to isolated waters that are no longer subject to the CWA. In response, the State Water Regional Control Board (SWRCB) issued a 2004 Memorandum (SWRCB 2004), stating that RWQCBs should consider setting a higher regulatory priority on discharges to "isolated waters" than to similar discharges to federally-protected waters of similar value. The 2004 Memorandum further stated that "dredging, filling, or excavation" of "isolated" waters constitutes a discharge of waste to waters of the State, and prospective dischargers are required to submit a Waste Discharge Report (WDR) to the RWQCB and comply with other requirements of Porter-Cologne. Among the procedures recommended in the Memorandum was that the RWQCB refer to the same regulatory considerations generally applied to the issuance of Section 401 permits when issuing a WDR (SWRCB 2004).

According to the SWRCB, the SWANCC decision did not affect the authority of the State to regulate discharges to isolated, non-navigable waters of the state, and had no impact upon the RWQCBs' authority to act under state law (SWRCB 2001). Simply because RWQCBs often opted to regulate discharges in the past through Section 401 in lieu of, or in addition to, issuing WDRs does not preclude RWQCBs from issuing WDRs in the absence of Section 401 certification (SWRCB 2001). The State's position is that these general WDRs will continue to apply to certain discharges to non-federal waters.

2.1.4 REVIEW OF CDFG JURISDICTION PURSUANT TO SECTION 1602 (ET SEQ.) OF THE CALIFORNIA FISH AND GAME CODE

Pursuant to Division 2, Chapter 6, Sections 1602 et seq., the CDFG regulates any proposed activity that may substantially modify, divert, obstruct, or any activity that causes changes to the flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. According to the 14 CCR 1.72, a "stream" (including creeks and rivers) is defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs." CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. For clarification, the CDFG Legal Advisor has prepared the following opinion (ESD-CDFG 1994):

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

CHAPTER 3 METHODS

3.1 LITERATURE REVIEW

Prior to conducting fieldwork, the following literature was reviewed to determine watershed characteristics and the locations/types of aquatic resources that may be present within the BSA limits, as follows:

- Anaheim, Orange, Newport Beach, and Tustin United States Geological Survey (USGS) 7.5-Minute Topographic Quadrangle Maps (USGS 1981)
- 2011 color aerial photographs (Digital Globe 2011)
- Soil Survey for Orange County and the Western Part of Riverside County, California (CA678) (USDA-NRCS 1978)
- Natural Resource Conservation Service (NRCS) Web Soil Survey Geographic Database (USDA-NRCS, 2012)
- Natural Resource Conservation Service National Cartography and Geospatial Center watershed data (USDA-NRCS 2005)
- National Wetlands Inventory (USFWS 2012)
- National Weather Service, Los Angeles and Oxnard Forecast Office (NWS 2012)

3.2 PROCEDURES AND FIELD DATA COLLECTION TECHNIQUES

3.2.1 CLEAN WATER ACT PROCEDURES AND DATA COLLECTION METHODS

A routine field determination was conducted for USACE-defined WoUS and wetlands using the methods set forth in the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplement (USACE 2008b). The BSA was surveyed on March 12, 2012 in order to determine the presence/absence and boundaries of potential aquatic resources (i.e., WoS, WoUS, and wetlands) that were identified in the literature review and preliminary field observations. Areas that were determined to have an OHWM, or pond or flow for greater than 5% of the growing season (i.e., approximately 12-18 days), were further analyzed for hydrophytic vegetation, hydric soils, and hydrology as described below.

Total CWA jurisdictional limits were delineated for WoS, WoUS, and wetlands based on the presence of a well-defined OHWM and/or wetland boundaries for each feature. Identification and location of the OHWM followed guidance provided in Lichvar and Wakely (2004), Lichvar et al. (2006), and Lichvar and McColley (2008). The OHWM of USACE-defined WoUS and wetlands were delineated in the field with a sub-meter Trimble GeoXH Global Positioning System (GPS) receiver. The area of each feature was calculated with Geographic Information Systems (GIS) in order to determine total CWA jurisdiction and impacts within the BSA.

3.2.1.1 Vegetation

Vegetation within potential aquatic features was recorded on Wetland Determination Data Forms (Arid West Region, Version 2.0). Plant species were determined based on the *Jepson Manual, Higher Plants of California* (Hickman 1993) and Holland (1986), and the wetland indicator status of plant species was based on the *National List of Plant Species that Occur in Wetlands, California Region 0* (Reed 1988). Vegetation was categorized based the probability to occur in wetlands or up lands according to the wetland indicator status listed in T able 1 (EL 1987; Reed 1988).

Table 1 Summary of Wetland Indicator Status

Category	Probability
Obligate Wetland (OBL)	Almost always occur in wetlands (>99% probability).
Facultative Wetland (FACW)	Usually occur in wetlands (estimated probability 67 to 99%).
Facultative (FAC)	Equally likely to occur in wetlands/non-wetlands (estimated probability 34 to 66%).
Facultative Upland (FACU)	Usually occur in non-wetlands (estimated probability 67 to 99%).
Obligate Upland (UPL)	Almost always occur in non-wetlands (estimated probability >99%).
No Indicator (NI)	Wetland indicator status not assigned. Species is assumed to be upland.

The wetland vegetation criterion was considered to be met if the Dominance Test using the 50/20 rule was satisfied (e.g., any species, or group of species, that contributed to a cumulative total of 50% of the total dominant coverage plus any other species individually comprising at least 20% coverage) (USACE 2008b).

3.2.1.2 Soils

Soil texture, matrix, redoximorphic features[2] (e.g., mottles) and the presence of subsoil layers impervious to water infiltration were documented from soil pits. Soils were examined for positive hydric soil indicators such as low chroma, mott les (e.g., iron or manganese concre tions), histic epipedons, organic layers, gleization, sulfidic odor, or othe r primary hydic soil ind icators listed on the Arid West Wetland Determination Dat a Form. Soil co lor and characteristics were determined from moist soil samples using Munsell Soil Color Charts (Munsell Color 2000). Soils were evaluated by digging pits to a depth of approximatel y 16 inches, where possible. GPS position data was collected at each soil pit and included on project figures. Paired upland and wetland soil pits were e valuated in order to det ermine and delineate an abrupt wetland/upland boundary, where necessary. Hydri c soil asse ssments were predomi nately based upon the guidance provided in the Arid We st Regional Suppleme nt (USACE 2008b) and the Field Indicators of Hydric Soi ls (USDA-NRCS 2010). Supplemental soil infor mation for t he regional area was also evaluated within the Soil Surve y for Orange and the Western Part of Riverside County (USDA-NRCS 1978).

[2]Redoximorphic features are considered spots or blotches of different colors or shades of color interspersed within the dominant color in a soil layer - usually resulting from the presence of periodic reducing soil conditions.

3.2.1.3 Hydrology

Areas supporting a prevalence of hydrophytic vegetation and hydric soils were further evaluated for wetland hydrology. Hydrological information was determined through field observation, as well as analysis of recent precipitation data in the vicinity of the BSA in order to determine the presence/absence of primary and/or secondary hydrological indicators (i.e., surface water, saturation, sediment debris or drift deposits, watermarks, soil cracks, oxidized root channels, biotic or salt crusts, or other hydrological indicators [Lichvar and Wakely 2004; Lichvar et al. 2006; Lichvar and McColley 2008; USACE 2008b]).

3.2.1.4 Interstate or Foreign Commerce Connection

Areas that were identified as aquatic resources were further evaluated to determine if they had an Interstate or Foreign Commerce Connection. Areas that met the USACE's three technical criteria for wetlands and that have an Interstate or Foreign Commerce Connection were determined to be WoUS subject to USACE jurisdiction (USACE 2008b). Areas that were not vegetated, but contained an OHWM and hydrological connection to a TNW were also considered to be subject to USACE jurisdiction due to their Interstate Commerce Connection.

Currently, the following are assumed to have an Interstate or Foreign Commerce Connection (33 C.F.R. section 328.3 et seq.):

- Navigable waters;
- Wetlands adjacent to navigable waters;
- Non-navigable tributaries of navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months); and
- Wetlands that directly abut such tributaries.

3.2.2 CDFG Procedures and Data Collection Methods

Suspected CDFG jurisdictional areas were assessed in the field for the presence of streambeds containing a defined bed and bank and any associated riparian vegetation. Streambeds and suspected riparian habitats were evaluated using the CFG Code Section 1602 (et seq.) and guidance described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (ESD-CDFG 1994). The surface area of the channel for each feature was determined in the field with a sub-meter Trimble Geo XH GPS receiver. If adjacent bank, floodplain, and/or terrace areas were vegetated with riparian vegetation, then the feature plus any associated riparian vegetation was mapped and included as part of CDFG jurisdiction. Riparian vegetation mapping extended to the outer dripline of the vegetation associated with the bed, bank, and channel of any feature. Vegetation within and adjacent to features containing a defined bed, bank or channel were recorded based on Hickman (1993).

3.3 JURISDICTIONAL IMPACT ANALYSIS

To determine impact acreages within jurisdictional features, calculations of the quantity of permanent and temporary impacts were generated though an analysis of project design plans over aerial maps that detail the BSA's aquatic resource delineated limits. Any placement of permanent above-ground facilities within aquatic resources was considered a permanent impact. Temporary impacts included areas that would be returned to pre-project conditions after project implementation; these areas included construction work areas, access routes, and any other work areas that would incur temporary disturbance within jurisdictional features.

CHAPTER 4 RESULTS

This section presents the results of the delineation of USACE jurisdiction pursuant to Section 404 of the CWA; RWQCB legal authority in accordance with Section 401 of the CWA and Porter-Cologne; and CDFG jurisdiction pursuant to Section 1602 (et seq.) of the CFG Code. One named feature, the Santa Ana River, was observed and delineated within the BSA.

4.1 VEGETATION COMMUNITIES/LAND COVER TYPES

One vegetation community/land cover type, Disturbed/Developed, was observed within the BSA and is discussed below.

4.1.1 DISTURBED/DEVELOPED

Disturbed/Developed lands within the BSA generally include roadways, residential and commercial developments, parking areas, vacant/disturbed lots, and other private/public infrastructure. Species composition in developed communities within the BSA is dominated by common, non-native, species as well as ornamental landscape species. No native habitats exist within these areas. Common ornamental species include Brazilian pepper tree (*Schinus terebinthifolius*), gum tree (*Eucalyptus* spp.), and oleander (*Nerium oleander*). Native ornamental species are occasionally present and include Freemont cottonwood (*Populus fremontii*) and western sycamore (*Plantanus racemosa*). Disturbed/Developed lands also contain disturbed lands that are either devoid of native vegetation (e.g., dirt lots) or contain areas dominated by ruderal vegetation (e.g., cleared/ruderal lots containing non-native grasses and annuals). Typical species present within these areas include non-native ripgut grass (*Bromus diandrus*), prickly lettuce (*Lactuca serriola*), common sow thistle (*Sonchus oleraceus*), cheeseweed (*Malva parviflora*), Russian thistle (*Salsola tragus*), red-stemmed filaree (*Erodium cicutarium*), foxtail barley (*Hordeum murinum*), and wild oats (*Avena fatua*). Typical native species within this community include telegraph weed (*Heterotheca grandiflora*), horseweed (*Conyza canadensis* and *C. bonariensis*), sunflower (*Helianthus annuus*), and dove weed (*Eremocarpus setigerus*).

4.2 HYDROLOGY

The BSA is located at an elevation range of approximately 89-138 ft above msl within a densely developed urban area that slopes to the southwest. The BSA spans three, 8-digit Hydrologic Unit Code (HUC) watersheds: the Seal Beach watershed (HUC 18070201), which drains a 52,208-acre area; the Santa Ana watershed (HUC 18070203), which drains a 1,083,419-acre watershed; and Newport Beach (HUC 18070204) which drains a 100,927-acre watershed (USDA-NRCS 2005; Figure 4-1). The Seal Beach and Newport Beach watersheds generally drain urban areas and have no hydrological input from upslope rivers or streams. Flows within these watersheds consist of storm water flows as well as runoff from residential and commercial facilities. The Santa Ana watershed, however, consists of a large watershed that drains both open, natural areas as well as urban areas. The main waterbody within the Santa Ana watershed is the Santa Ana River. The headwaters of the Santa Ana River extend from Riverside County, although much of the flow upslope of Lake Elsinore does not regularly drain

to the Santa Ana River. Flows within the Santa Ana River pass through the BSA and drain for approximately 9.1 miles before discharging into the Pacific Ocean. Flows within the Santa Ana River are typically seasonal, although a low volume flow from surface water runoff is usually present for much of the year within the lower reach through the BSA.

The regional climate within the vicinity of the BSA consists of hot and dry summer months with relatively cool, wetter winters. Seasonal rainfall occurs predominantly in the winter and spring months (Nov-April) and was well below average during the summer 2011 to spring 2012 period (NWS 2012). Precipitation data for the Long Beach, California region (Weather Station No. 045085) included the following:

- Seasonal precipitation from August 2011 to March 15, 2012 measured 4.63 inches
- Average annual precipitation is 12.26 inches (data from 1981-2010)

4.3 SOILS

Four regional soil series occur within the BSA, none of which are classified as hydric soils or contain hydric inclusions (USDA-NRCS 2012) (Figure 4-2):

- Hueneme Fine Sandy Loam, Drained (158)
- Mets Loamy Sand (136)
- Chino Silty Clay Loam, Drained (140)
- Mocho Loam, 0-2 Percent Slopes (166)

Figure 4-1 Regional Watersheds

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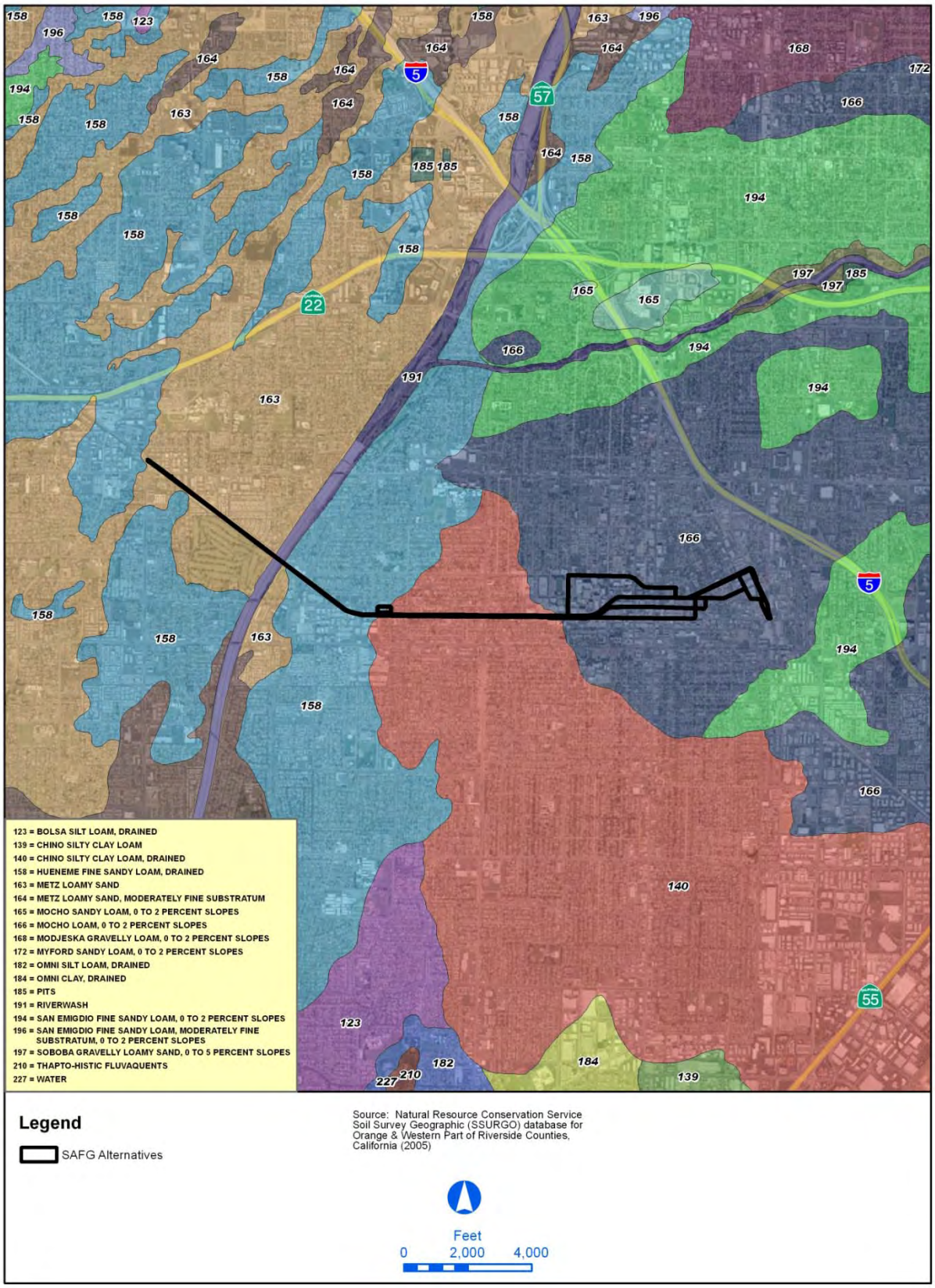
Figure 4-2 Soils



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4.4 DETERMINATION OF USACE JURISDICTION SUBJECT TO SECTION 404 OF THE CWA

One jurisdictional drainage feature, the Santa Ana River, was observed within the BSA and is described in detail in the following section. Total CWA jurisdiction within the BSA and impacts to this feature are provided in Table 2.

4.4.1 SANTA ANA RIVER

The Santa Ana River within the BSA is composed entirely of a concrete, trapezoidal flood control channel with no vegetation. It drains seasonal storm flows and excess perennial surface water runoff from a large watershed consisting of developed as well as open areas extending into Riverside County (Figure 4-3; Chapter 7, photos 1-2).

Hydrology within the Santa Ana River is relatively permanent (i.e., flowing for > 3 months) and contained several inches of flowing water within the low flow channel during the survey. It contains an OHWM consisting of primary hydrological indicators including water marks, sediment deposits, and debris deposits. Because the feature is concrete within the BSA, there are no hydric soils or wetlands present. The Santa Ana River contains an OHWM and sustains relatively permanent flows tributary to a TNW, and is therefore subject to USACE jurisdiction. Total jurisdiction and impacts resulting from the Project are provided in Table 2.

4.4.2 IMPACTS TO USACE JURISDICTION WITHIN THE SANTA ANA RIVER

The analysis presented below was completed for a design option that included new single-track bridges on each side of the existing Santa Ana River Bridge. The project descriptions for Streetcar Alternatives 1 and 2 have since been revised to only include a single-track bridge. The existing bridge would remain in its current location and condition. Because Streetcar Alternatives 1 and 2 now include one new bridge as opposed to two new bridges, fewer piers would be constructed in the channel than previously analyzed and the conclusions presented represent a conservative worst-case analysis.

The Project consists of a new bridge to be constructed on the south side of the existing bridge. The existing bridge would remain in place. The new bridge would require the construction of a new reinforced concrete pier support structure, estimated as 5' wide by 14 ft long (2x70 sq. ft) within USACE jurisdiction. Permanent impacts for the Project would be 0.003 acre (140 sq. ft) to non-wetland WoUS, all of which would occur within concrete-lined portions of the channel. Temporary impacts for the Projectwill include 0.382 acre of non-wetland WoUS and will consist of a temporary work area buffer extending 50-ft from the existing bridge. Once bridge construction is complete, the temporary work area would be returned to pre-construction conditions. Vehicle access is anticipated to occur from an existing access ramp on the west side of the channel, 1,500 ft north of the bridge, and just south of Fairview Street. Access to the construction site will occur during dry conditions within the concrete channel and outside of the low flow portion of the channel; the access route is not considered as a temporary impact for the purposes of this jurisdictional determination.

Table 2 Temporary and Permanent Impacts to USACE and RWQCB Jurisdiction

	Total Jurisdiction		Total impacts*			
Feature ID	Total Non-wetland WoUS (acres)	Total Wetland WoUS (acres)	Temporary Impacts to Non-wetland WoUS (acres)	Temporary Impacts to Wetland WoUS (acres)	Permanent Impacts to Non-wetland WoUS (acres)	Permanent Impacts to Wetland WoUS (acres)
Bridge Avoidance Alternative						
Santa Ana River	0.382	0.000	0.382	0.000	0.003	0.000

*Impacts are estimated based on preliminary design and subject to change

Figure 4-3 Jurisdictional Delineation Map

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4.5 DETERMINATION OF RWQCB JURISDICTION SUBJECT TO SECTION 401 OF THE CWA

RWQCB jurisdiction subject to Section 401 of the CWA applies to any feature that may involve a discharge of waste into WoUS subject to USACE jurisdiction pursuant to Section 404 of the CWA. The Santa Ana River, which is subject to CWA Section 404 jurisdiction, is also subject to CWA Section 401 Water Quality Certification (Figure 4-3; Chapter 7, photos 1-2). Total RWQCB jurisdiction subject to CWA Section 401, and impacts to this jurisdiction, is provided in Table 2.

4.6 DETERMINATION OF CDFG JURISDICTION SUBJECT TO SECTION 1602 (ET SEQ.) OF THE CFG CODE

One CDFG jurisdictional feature, the Santa Ana River, occurs within the BSA. The Santa Ana River is a modified natural drainage that contains a bed, bank, and channel (Figure 4-3; Chapter 7, photos 1-2). It is a constructed flood-control facility composed of concrete bed and banks and is unvegetated with no associated riparian vegetation beyond the banks. Because the Santa Ana River contains a bed and bank and supports at least minimal habitat for wild life and other biological resources, it is subject to CDFG jurisdiction pursuant to Section 1602 (et seq.) of the CFG Code. Total CDFG jurisdiction and temporary and permanent impacts within the BSA are provided in Table 3.

4.6.1 IMPACTS TO CDFG JURISDICTION

The analysis presented below was completed for a design option that included new single-track bridges on each side of the existing Santa Ana River Bridge. The project descriptions for Streetcar Alternatives 1 and 2 have since been revised to only include a single-track bridge. The existing bridge would remain in its current location and condition. Because Streetcar Alternatives 1 and 2 now include one new bridge as opposed to two new bridges, fewer piers would be constructed in the channel than previously analyzed and the conclusions presented represent a conservative worst-case analysis.

The Bridge Avoidance Alternative consists of two new bridges to be constructed on each side of the existing bridge. The existing bridge would remain in place. The new bridges would require the construction of four reinforced concrete piers within CDFG jurisdiction, each approximately 5’ wide by 14 ft long (4x70 sq. ft). Permanent impacts for the Bridge Avoidance Alternative would be 0.006 acre (280 sq. ft) to unvegetated Waters of the State (WoS), all of which would occur within concrete-lined portions of the channel. Temporary impacts for the Bridge Avoidance Alternative will include 0.520 acre of unvegetated WoS and will consist of a temporary work area buffer extending 50-ft from the existing bridge (0.520 acre). Vehicle access is anticipated to occur from an existing access ramp on the west side of the channel, 1,500 ft north of the bridge, and just south of Fairview Street. Access to the construction site will occur during dry conditions within the concrete channel and outside of the low flow portion of the channel; the access route is not considered as a temporary impact for the purposes of this jurisdictional determination.

Table 3 Temporary and Permanent Impacts to CDFG Jurisdiction

Feature ID	Total CDFG Jurisdiction (acres)	Temporary Impacts* to CDFG Jurisdiction (acres)	Permanent Impacts* to CDFG jurisdiction (acres)
Bridge Avoidance Alternative			
Santa Ana River	0.520	0.520	0.006

*Impacts are estimated based on preliminary design and subject to change

CHAPTER 5 RECOMMENDATIONS

Prior to ground-disturbing activities within the Santa Ana River, consultation with appropriate jurisdictional resource agencies (i.e., CDFG, USACE, and RWQCB) is recommended to verify delineation results. In addition, submittal and acquisition of all obligatory permits and authorizations is recommended prior to any ground breaking.

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CHAPTER 7 PHOTOGRAPH LOG

	**Photograph:** 1 **Date:** March 12, 2012 **Direction:** West **Location:** Santa Ana River
	**Photograph:** 2 **Date:** March 12, 2012 **Direction:** Southwest **Location:** Santa Ana River

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