PRELIMINARY JURISDICTIONAL DETERMINATION

For

ORANGE COUNTY WATER DISTRICT

BALL ROAD BASIN GENERAL PLAN AMENDMENT AND ZONE CHANGE PROJECT ANAHEIM, CALIFORNIA

PREPARED BY:

April 2013

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List of Abbreviated Terms

CDFW	California Department of Fish and Wildlife
CFG	California Fish and Game
CFR	Code of Federal Regulations
CWA	Clean Water Act
CWC	California Water Code
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
OHWM	Ordinary High Water Mark
NWI	National Wetland Inventory
PJD	Preliminary Jurisdictional Determination
Project	Ball Road Basin General Plan Amendment and Zone Change Project
Porter-Cologne	Porter-Cologne Water Quality Control Act
Rapanos Decision	John A. Rapanos v. United States; and June Carabell v. United States Army Corps of Engineers
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County vs. USACE
SWRCB	State Water Regional Control Board
TNW	Traditional Navigable Water
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
WDR	Report of Waste Discharge
WoUS	Waters of the United States
WoS	Waters of the State

1.0 INTRODUCTION

This Preliminary Jurisdictional Determination (PJD) 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) legal authority in accordance with 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 Wildlife (CDFW) jurisdiction pursuant to Section 1600 (et seq.) of the California Fish and Game (CFG) Code for the Orange County Water District's Ball Road Basin Project in the City of Anaheim (City), California (hereafter referred to as the "Project"). The Project is located within the Orange U.S. Geological Survey (USGS) 7.5-Minute Topographic Quadrangle Map within an un-sectioned portion of the Santiago de Santa Ana Land Grant of the (USGS 1978) (Figure 1). The intended use of this report is to disclose and evaluate any special aquatic resource areas[1] within the 19.5-acre Project Site (Figure 2).

This document presents NOREAS Inc.'s best effort at estimating special aquatic resource area boundaries using the most up-to-date regulations, written policies, and guidance from the USACE, RWQCB, and CDFW. Nonetheless, a PJD is by definition only advisory in nature because the affected party has elected to voluntarily waive, or set aside questions regarding long term regulatory jurisdiction in the interest of expeditiously advancing the subject Project (Regulatory Guidance Letter 08-02, USACE 2008c). However, only the USACE, RWQCB, and CDFW can make a final determination of special aquatic resource area boundaries and jurisdiction.

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

The USACE regulates discharge of fills to Waters of the United States (WoUS[2]) through Section 404 of the CWA. The Project Site includes WoUS consisting of 6.5 acres. Within the 6.5 acres of WoUS, 1.6 acres of included USACE-defined wetlands were documented (Figure 3).

1.2 SUMMARY OF RWQCB JURISDICTION PURSUANT TO SECTION 401 OF THE CWA AND PORTER-COLOGNE

The RWQCB administers the CWA Section 401 Water Quality Certification Program and Porter-Cologne. Total CWA Section 401 jurisdiction within the Project Site is 6.5 acres (Figure 3).

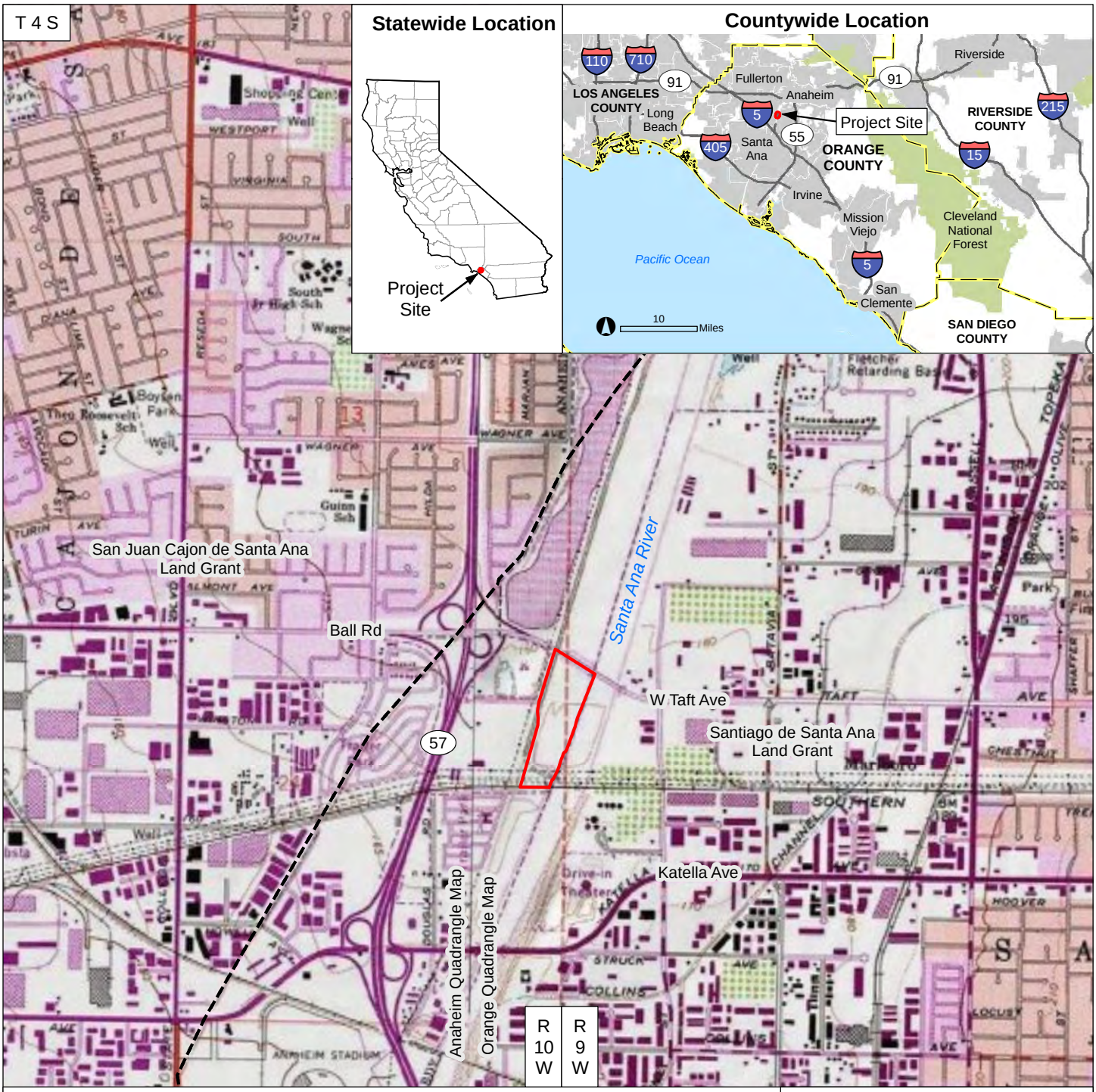
[1] For the purposes of this document, special aquatic resource areas are being defined as the potential limits of: USACE jurisdiction pursuant to Section 404 of the CWA; the RWQCB legal authority in accordance with Section 401 of the CWA and Porter-Cologne; and CDFW's jurisdiction pursuant to Section 1600 (et seq.) of the CFG Code.

[2] The term WoUS is defined as follows (33 CFR 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 CDFW JURISDICTION PURSUANT TO SECTION 1600 (ET SEQ.) OF THE CFG CODE

Pursuant to Section 1600 (et seq.) of the CFG Code, the CDFW regulates diversions, obstructions, or changes to the flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. The Project Site contains one features that has a definable bed and bank and which provides functions and values for local and migrant wildlife. This features is subject to CFG Code Section 1600 (et seq.) jurisdiction as a Waters of the State (WoS[3]). Total CFG Code Section 1600 (et seq.) jurisdiction within the Project Site is 6.5 acres (Figure 3).

[3] The term WoS is defined as follows Section 13050(e) of the CWC: any surface water or groundwater, including saline waters, within the boundaries of California



Project Site

Land Grant Boundary

County Boundary (inset)

Urban Area (inset)

Interstate (inset)

Water Body (inset)

0 1,000 2,000 Feet

1 inch = 2,000 feet

The Project Site is approximately 19.5 acres. It is located on the Orange USGS 7.5-minute quadrangle map; San Bernardino Meridian Township 4 South, Range 9 and 10 West, in an unsectioned portion of the Santiago de Santa Ana Land Grant.

Southwest corner coordinates are:
WGS84 Latitude 33.812246, Longitude -117.873634; UTM Zone 11 North Northing 3741682, Easting 419144.
Northeast corner coordinates are:
WGS84 Latitude 33.816562, Longitude -117.870325; UTM Zone 11 North Northing 3742158, Easting 419454.

Data Sources:
- ESRI StreetMap North America 2010
- ESRI US topo maps accessed Jun 2013

Map Prepared: 6-12-13

Prepared by:

NOREAS
Environmental Engineering and Science

Ball Road

Figure 1. Regional Location

Project Site

Freeway

Major Road

Metrolink Line

0 500 1,000 Feet

1 inch = 1,000 feet

Data Source:
- Bing Maps accessed June 2013, imagery date range: May - Aug 2010

Map Prepared: 6-7-13

Prepared by:

NOREAS
Environmental Engineering and Science

Ball Road/PJD

Figure 2. Site Vicinity

Project Site

Freeway

Major Road

Metrolink Line

Wetland Determination Sample Point Location

Boundaries of the Waters of the U.S. and State (6.5 acres)

USACE-Defined Wetland (1.6 acres)

Ordinary High Water Mark

0 100 200 300 Feet

1 inch = 300 feet

Data Sources:
- BingMaps accessed Jun 2013, imagery date range: May - Aug 2010

Map Prepared: 6-7-13

Prepared by:

NOREAS
Environmental Engineering and Science

Ball Road

Figure 3. Waters of the U.S. and State

2.0 LOCATION AND LAND USE WITHIN THE PROJECT VICINITY

As stated previously, the Project Site can be found on the Orange USGS 7.5-Minute Topographic Quadrangle Map within the San Bernardino Meridian – Township 4 South, Range 9 and 10 West, in an un-sectioned portion of the Santiago de Santa Ana Land Grant. The approximate 19.5-acre Project Site is located in the southeastern portion of the City, consists of three separate parcels (APNs 253-473-01, 253-631-32, and 253-631-39), and is bounded by the Santa Ana River Center Levee and River to the east, Ball Road and the Burris Basin to the north, the Union Pacific Railroad to the south, and South Phoenix Club Drive (also referred to as South Auto Center Drive) to the west. More specifically, the Project is located within a 220 acre-foot inactive recharge basin adjacent to the River, at an approximate elevation of 160 feet above mean sea level. The floor of the basin is approximately 20 feet below the surrounding grade level (Figure 1).

Currently, the Project Site is empty of standing water; however, some nuisance runoff water from the surrounding areas is intermittently present. The majority of the Project Site is disturbed and includes ruderal vegetation as the OCWD - in the past, has used the Project Site for ground water recharge. The subject vegetation is associated with fuel modification and weed abatement activities performed by OCWD. The Project Site also includes various storm drains, culverts, and water outlets. These structures are synthetically engineered storm water and urban runoff convey facilities that support the capture and movement of flows from upper elevation washes, creeks, rivers and the Chantilly Storm Drain to the Santa Ana River. Flows within the vicinity of the Project Site are directed southwest before draining into the Pacific Ocean.

3.0 REGULATORY OVERVIEW

3.1 REVIEW OF USACE JURISDICTION PURSUANT TO SECTION 404 OF THE CWA

3.1.1 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 into WoUS pursuant to Section 404 of the CWA and to permit work and the placement of structures in navigable WoUS pursuant to the Rivers and Harbors Act of 1899.

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 a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 Code of Federal Regulations [CFR] § 328.3[e]). In 2005, the USACE issued a Regulatory Guidance Letter (05-05) and 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).

USACE-Defined Wetlands

Wetlands are defined in 33 CFR § 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a dominance of vegetation typically adapted for life in saturated soil conditions." The methodology set forth in the USACE Wetland Manual generally requires 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 percent 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 percent of the growing season during a normal rainfall year (Note: for most of low-lying southern California, 5 percent of the growing season is equivalent to approximately 18 days).

3.1.2 USACE Terminology

The following definitions are from the Rapanos Guidance Memoranda (USACE 2007b, 2008a): "Adjacent" as defined in USACE and United States Environmental Protection Agency (EPA) regulations, means "bordering, contiguous, or neighboring." Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.' Wetlands that are not separated from a tributary by upland features, such as a berm or dike, are considered "abutting."

A "tributary" means a natural, man-altered, or man-made water body that carries flow directly or indirectly into a Traditional Navigable Water (TNW). For purposes of determining "significant nexus" with a TNW, 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 CFR § 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 "relatively permanent" if its flow is year-round or its flow is continuous at least "seasonally," (e.g., typically three months). Wetlands adjacent to a "relatively permanent" tributary are also jurisdictional if those wetlands directly abut such a tributary (USACE 2007b).

3.1.3 Review of RWQCB Jurisdiction Pursuant to Section 401 of the CWA and Porter-Cologne

The RWQCB regulates fills to WoUS under the Section 401 Water Quality Certification, which in most instances, mirrors 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. 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 WoS, and prospective dischargers are required to submit a Report of Waste Discharge (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 RWQCB's 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.

3.1.4 Review of CDFW Jurisdiction Pursuant to Section 1600 (et seq.) of the California Fish and Game Code

Pursuant to Division 2, Chapter 6 §1600-1602 et seq. of the CFG Code, CDFW 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 California Code of Regulations 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." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways for fish and wildlife.

For clarification, the CDFW 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 CDFW) as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to CFG Code provisions.

4.0 METHODS

4.1 LITERATURE REVIEW

Prior to conducting fieldwork, the following literature and databases were reviewed to determine watershed characteristics and the locations/types of aquatic resources that may be present within the Project Site:

- City of Anaheim Initial Study for the Ball Road Basin General Plan Amendment and Zone Change (City 2012);
- Orange Topographic Map 7.5 minute USGS topographic quadrangle map (1978);
- 2013 color aerial photographs (Bing Maps 2013);
- Google Earth version 5.2.1.1588 (February 2013);
- Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2005);
- Natural Resource Conservation Service, Watershed Boundary Dataset (USDA-NRCS 2013);
- Environmental Protection Agency Enviromapper for water (EPA 2013);
- 1996 Federal Emergency Management Agency (FEMA) Floodplain Maps;
- National Wetlands Inventory (NWI) (USFWS 2013); and
- University of California precipitation data (CIMIS Weather Station #75) (UC 2013);

4.2 PROCEDURES AND FIELD DATA COLLECTION TECHNIQUES

4.2.1 CWA Procedures and Data Collection Methods

A routine, on-site, field determination was conducted within the Project Site for USACE-defined WoUS and wetlands on February 27 and 28, 2013 using the methods set forth in the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplement (USACE 2008b). The Project Site was surveyed in February and March 2013 in order to determine the presence/absence and boundaries of potential special aquatic resources (i.e., WoS, WoUS and wetlands) that were identified in literature review as well as through field observations. Areas that were determined to have an OHWM were further analyzed for a dominance of hydrophytic vegetation, hydric soils, and hydrology as described below.

Total jurisdictional limits were delineated for WoUS and WoS based on the presence of a well-defined OHWM and/or wetland boundary. Identification and location of the OHWM followed guidance provided in Lichvar and Wakely (2004), Lichvar et al. (2006), and Lichvar and McColley (2008). Elevation points where evidence of an OHWM existed (debris racks, water marks, etc.) were captured with a laser level (CTS/Berger LM 30PKG Complete Leveling Laser Package), geographically referenced, and projected as the OHWM. Potential WoS, USACE-defined wetlands, and WoUS were delineated in the field with a sub-meter Trimble GeoXH

Global Positioning System (GPS) receiver. The surface area of each feature was then calculated with Geographic Information Systems in order to determine total jurisdiction within the Project Site.

The evaluation process for USACE-defined wetlands considered vegetation, soils, and hydrological parameters—in that order—of suspected lands within the Project Site using the methods for routine onsite determinations set forth in the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplement (USACE 2008b). Potential wetland and WoUS were also evaluated using the criteria set forth in the USACE and EPA CWA jurisdiction guidance documents following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States (USACE 2007a; USACE 2007b; USACE 2008a). Wetland determination data were recorded on Arid West Wetland Determination Data Forms (Version 2.0) (Appendix A) and representative photographs of each feature were taken (Appendix B).

Vegetation

Vegetation within special aquatic resource areas was recorded on Arid West Wetland Determination Data Forms. Plant species were determined based on Jepson Manual: Higher Plants (Baldwin et al. 2012) 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). During the field delineation, plants were categorized based on their probability to occur in wetlands or uplands according to the wetland indicator status listed in Table 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 67-99%).
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 that contributed to a cumulative total of 50 percent of the total dominant coverage plus any other species comprising at least 20 percent coverage)

(USACE 2008b). Absolute, rather than relative vegetation cover was used in determining dominant species coverage.

Vegetation Communities

Vegetation communities were determined within the Project Site as well. Evaluations of vegetation communities were primarily limited to regions present within the OHWM and/or bed/bank, plus the outer limits of associated riparian vegetation – as appropriate. Vegetation communities were identified according to the percent cover of dominant plant species observed within each community. Vegetation community classifications were based on a visual estimation of characteristic dominant flora within a community following Holland 1986; Sawyer, Keeler-Wolf, and Evens 2009.

Soils

Soil texture, matrix, redoximorphic features[4] (e.g., mottles), and any 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, mottles (e.g., iron or manganese concretions), histic epipedons, organic layers, gleization, sulfidic odor, or other primary hydic soil indicators listed on an Arid West Wetland Determination Data Form. Soil color and characteristics were determined from moist soil peds using Munsell Soil Color Charts (Munsell Color 2000). Soils were evaluated by digging pits to a depth of approximately 16-20 inches, where possible. GPS data were collected at each soil pit (Figure 3). Where necessary, upland and wetland soil pits were evaluated to delineate the wetland/upland boundary. Hydric soil assessments were predominately based upon the guidance provided in the Arid West Regional Supplement (USACE 2008b) and Field Indicators of Hydric Soils (USDA-NRCS 2010).

Hydrology

Hydrology was evaluated in areas suspected of seasonal inundation and/or saturation to the surface during the growing season; provided that the soil and vegetation parameters were met as defined in the Wetlands Delineation Manual (EL 1987). Recent precipitation data were analyzed to evaluate the frequency and amount of rainfall events within the Project Site and on surrounding lands (UC 2011). Hydrological information was determined for features by signatures on aerial photographs as well as field analysis of the presence/absence of primary or secondary hydrological indicators (e.g., surface water, saturation, sediment or drift deposits, watermarks, soil cracks, oxidized root channels, biotic or salt crusts) as listed on the Arid West Wetland Determination Data Form.

[4] 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.

Interstate or Foreign Commerce Connection

Areas that were identified as special aquatic resources were further evaluated to determine if they have an Interstate or Foreign Commerce connection. Areas that met the USACE's three technical criteria for wetlands and that had 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 CFR 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 three months); and
- Wetlands that directly abut such tributaries.

4.2.2 Porter-Cologne Procedures and Data Collection Techniques

Any lands that were deemed not to be within the jurisdiction of the CWA, but had potential jurisdiction as a WoS pursuant to Porter-Cologne (e.g., isolated surface or ground waters and/or wetlands) were assessed in the field by utilizing field delineation methods described above for CWA jurisdiction with few exceptions; legal authority was not excluded based on a lack of interstate or foreign commerce connection, a negative significant nexus analysis for non-Relatively Permanent Waters, or for isolated waters and/or wetlands.

4.2.3 CDFW Procedures and Data Collection Methods

Suspected CDFW jurisdictional locales were assessed in the field for the presence of definable streambeds (i.e., having a bed, bank, and channel) and any associated riparian habitat. Streambeds and suspected riparian habitats were evaluated using the CFG Code Section 1600 et seq. and guidance described in A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607 (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 CDFW) as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to CFG Code provisions.

Total CDFW jurisdictional limits were delineated within the Project Site wherever a defined bed, bank, and/or channel existed. The dimensions (i.e., linear length, width, and area) were determined based on the top-of-bank limits with a Trimble GeoXH GPS. If adjacent bank, floodplain, and/or terrace areas were vegetated with riparian species, then the feature - plus any associated riparian vegetation was mapped and included as part of CDFW jurisdiction. Vegetation communities within and adjacent to the Project Site containing a defined bed, bank, or channel were generally recorded based on Holland 1986; Sawyer, Keeler-Wolf, and Evens 2009.

5.0 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 CDFW jurisdiction pursuant to Section 1600 (et seq.) of the CFG Code. All potential jurisdictional lands were delineated within the Project Site (Figure 3). Data Forms are included as Appendix A and representative photographs of jurisdictional areas are included as Appendix B to illustrate the range of conditions observed.

5.1 SOILS

Three soil types occur within the Project Site, all three are classified as hydric soils (Natural Resource Conservation Service, Soil Survey Geographic Database [SSURGO] [USDA-NRCS accessed February 2013]; Figure 4):

- Metz loamy sand (0.01-acres);
- Riverwash (18.7-acres); and
- Pits (0.8-acres).

5.2 HYDROLOGY

The watershed encompassing the Project Site is the Lower Santa Ana Watershed (Hydrologic Unit Code 1807020310), which drains over 67,108-acres through a series of upper elevation washes, creeks, rivers and the Chantilly Storm Drain to the River (USDA-NRCS 2013; Figure 5). The watershed also can be further defined into the following sub-watersheds; Aliso Creek-Santa Ana River Subwatershed (HUC12: 180702031001) Walnut Canyon-Santa Ana River Sub-Watershed (HUC12: 180702031002) and Greenville Banning-Santa Ana River Subwatershed (HUC12: 180702031003). Flows within the vicinity of the Project Site are directed southwest for approximately 13.5 miles before draining into the Pacific Ocean.

The FEMA flood zone, which was demarcated in 1996 (FEMA 1996), is depicted on Figure 6. Figure 6 illustrates the extent of FEMA's 100-year flood zone, which includes the Project Site. The Project Site also includes hydrologic features (e.g., Freshwater Emergent Wetland [4.3 acres], Freshwater Pond [6.1 acres], and Riverine [0.01 acre]) identified by the NWI (USFWS 2013; Figure 7). Hydrologic features identified within the Project Site by NWI are depicted on Figure 7.

The regional climate within the vicinity of the Project Site consists of hot and dry summer months with relatively cool and wetter winters. Seasonal rainfall occurs predominantly in the winter and spring months (November – April). Precipitation data from the Irvine, California region (CIMIS Weather Station No. 75), located approximately 12 miles west of the Project Site are detailed below:

- Seasonal precipitation prior to the field surveys measured 7.66 inches (March 2012 – February 2013)
- Average annual precipitation within the region is 12.82 inches (Western Regional Climate Center 2013)
- The last significant rainfall event with precipitation in excess of 0.1 inch prior to field delineation was on February 19, 2013 and measured 0.32 inches

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

The Project Site was delineated and described in detail below (Table 2 and Figure 3). Wetland Determination Data Forms are provided in Appendix A and representative photographs are provided in Appendix B.

Table 2. Summary of Potential Jurisdiction within the Project Site

USACE jurisdiction	RWQCB jurisdiction	CDFW jurisdiction
6.5 acres	6.5 acres	6.5 acres

The Project Site consists of a 19.5-acre inactive ground water recharge basin that includes an OHWM and is considered subject to CWA jurisdiction as administered by the USACE. The Project Site is collocated with one WoUS consisting of 6.5 acres - of which 1.6 acres satisfy the USACE's-definition of wetlands (Figure 3). The northwest corner of the Project Site is designed to receive discharges from the adjacent offsite basin system and urban development. The water flowing from the north is contained within a human-made berm such that it forms a long linear trough within the Project Site. The southern end of this trough flows into a culvert which dumps into a second, much smaller basin, that is connected via a large concrete box culvert to the River. The River directs flows for 13.5 miles before entering the Pacific Ocean. The Pacific Ocean is considered to be the first downstream TNW for the Project.

The Project Site is actively maintained, except for a thin band (20 feet wide) of freshwater marsh habitat, dominated by cattails (*Typha ssp*.); the vegetation along the sides and bottom is actively removed presumably to maximize flood capacity. Although the majority of the soils within the bottom of the basin are sandy, pockets of clays and loams occur. The western edge of the Project Site has two additional discharge points; both consisting of 36 inch culverts which likely discharge storm water from the adjacent road and immediate upslope watershed.

The Project Site is not identified as a blue line hydrologic feature on the 1978 USGS topographic quadrangle map; but contains an OHWM with primary hydrological indicators consisting of debris racks, water marks etc. Hydrology within the Project Site occurs as a result of surface water flow from the Chantilly Storm Drain and storm water runoff from two additional local

storm drains that enter the Project Site from the northwest. Water from an adjacent ground water percolation basin can overflow into the Project Site, but this occurs rarely.

5.4 DETERMINATION OF RWQCB JURISDICTION SUBJECT TO SECTION 401 OF THE CWA AND PORTER-COLOGNE

RWQCB jurisdiction subject to Section 401 of the CWA applies to 6.5 acres within the Project Site; total RWQCB jurisdiction within the Project Site is provided in Table 2.

5.5 DETERMINATION OF CDFG JURISDICTION SUBJECT TO SECTION 1600 (ET SEQ.) OF THE CFG CODE

CDFW jurisdiction pursuant to Section 1600 (et seq.) of the CFG Code totals 6.5-acres. Total CDFW jurisdiction within the Project Site is provided in Table 2.

Project Site

Freeway

Major Road

Metrolink Line

Soils

Metz Loamy Sand (0.01 acre)

Riverwash (18.7 acres)

Pits (0.8 acre)

0 200 400 Feet

1 inch = 400 feet

Data Sources:
- BingMaps accessed Jun 2013, imagery date range: May - Aug 2010
- NRCS Web Soil Survey accessed Jun 2013

Map Prepared: 6-12-13

Prepared by:

NOREAS
Environmental Engineering and Science

Ball Road/PJD

Figure 4. Soils

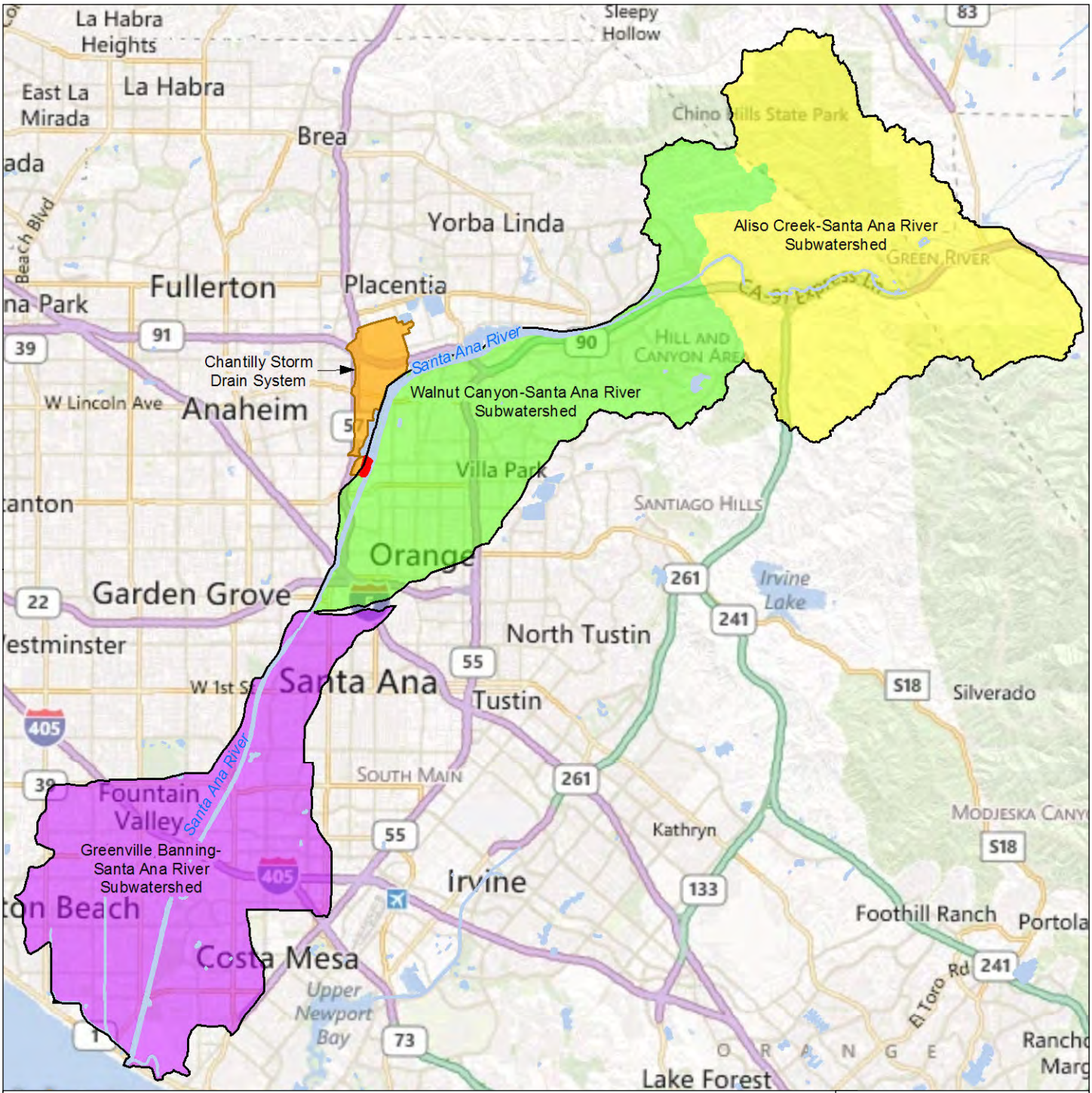
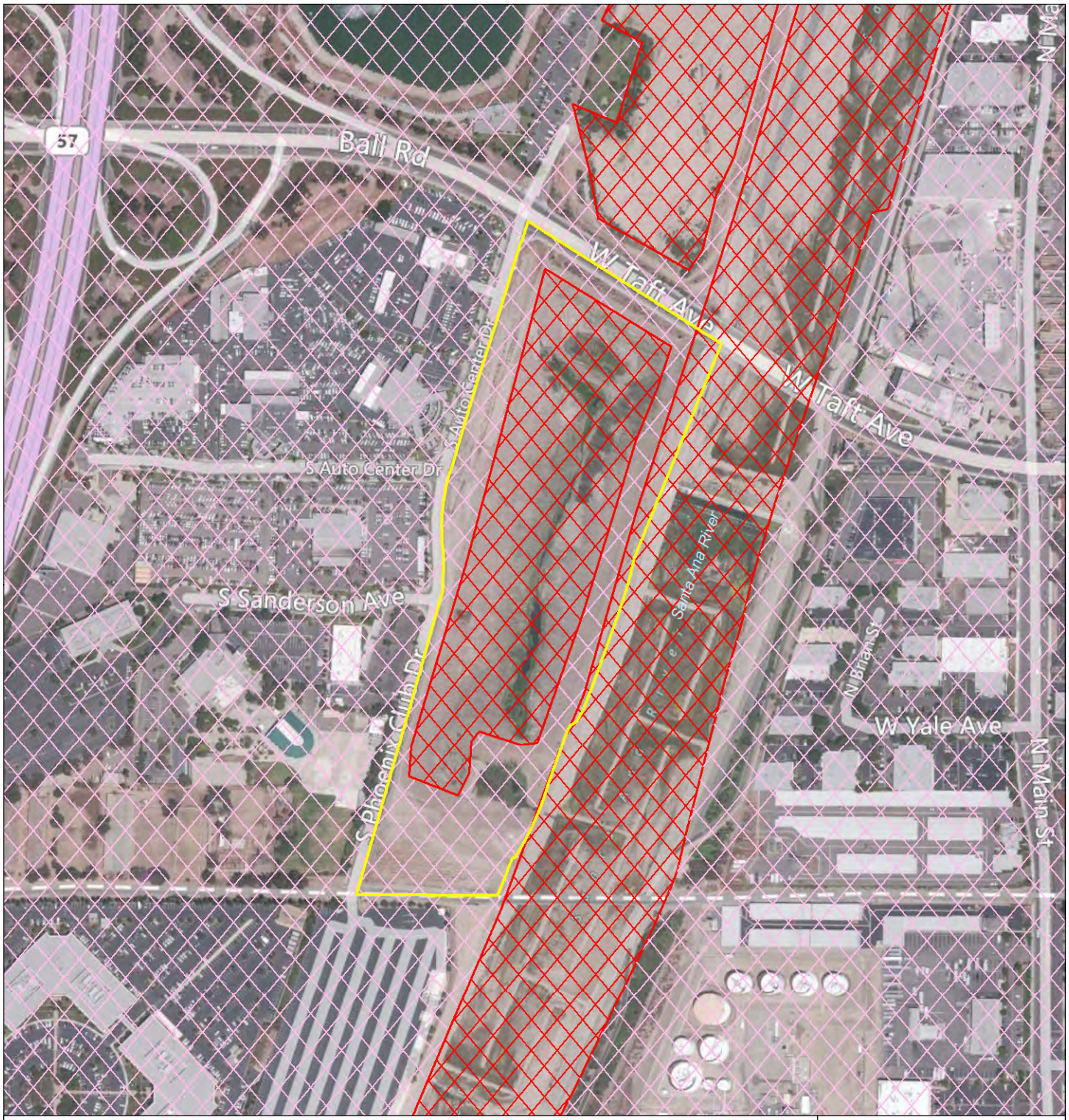


Figure 5. Watershed



Project Site

Freeway

Major Road

Metrolink Line

FEMA Floodplain Zones

100-year Flood Zone (1% Annual Chance of Flood)

Area of Moderate Flood Hazard, Between the Limits of the 100- and 500-year Flood

0 200 400 Feet

1 inch = 400 feet

Data Sources:
- BingMaps accessed Jun 2013, imagery date range: May - Aug 2010
- FEMA National Flood Hazard Layer accessed Jun 2013

Map Prepared: 6-7-13

Prepared by:

NOREAS
Environmental Engineering and Science

Ball Road/PJD

Figure 6. FEMA Floodplain Zones

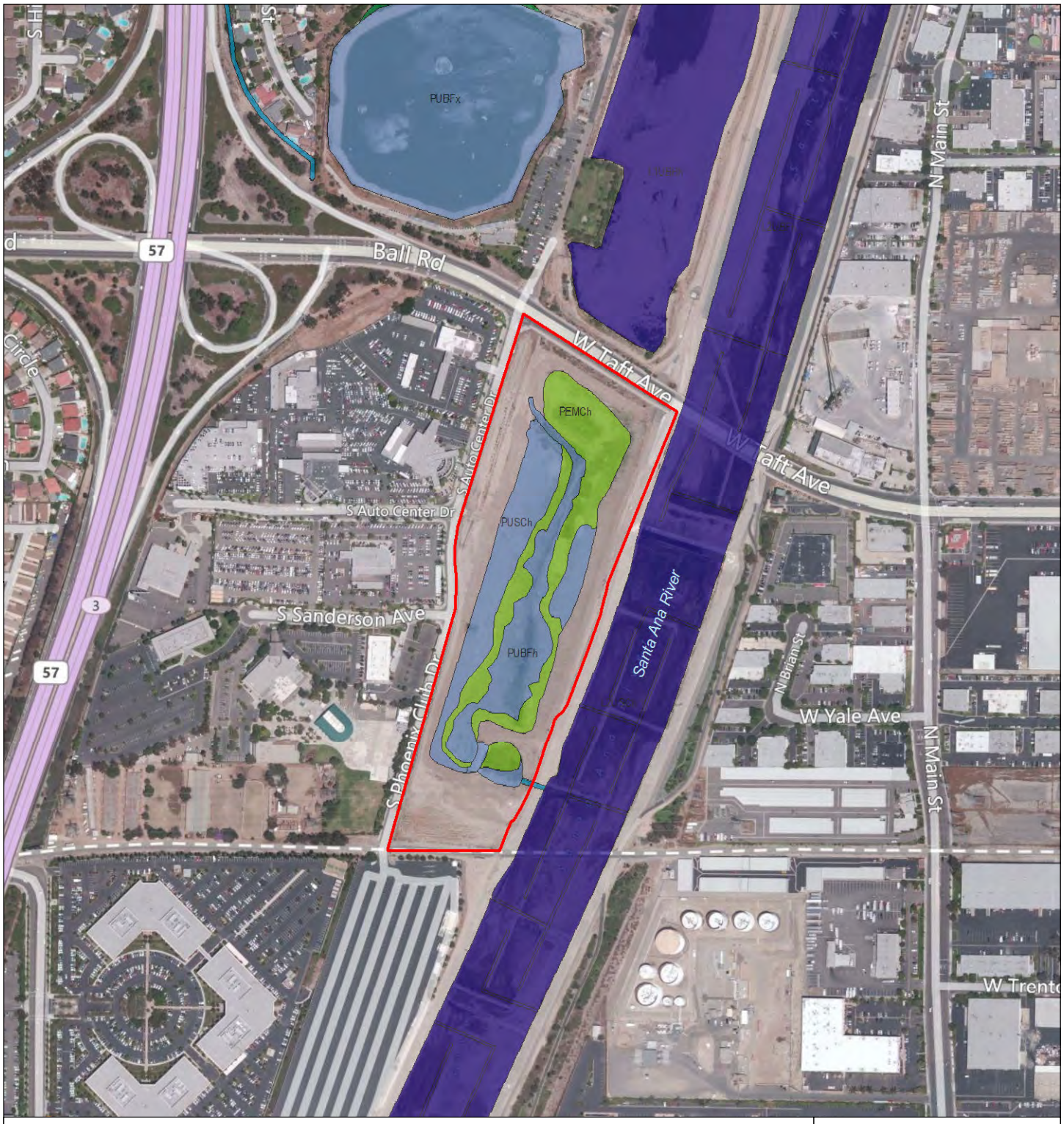


Figure 7. National Wetland Inventory

6.0 RECOMMENDATIONS

The following compliance implementation guidance is provided as a means of avoiding and minimizing adverse impacts to special aquatic resource areas that occur, or have the potential to occur, within the Project Site.

1. Prior to undertaking ground-disturbing activities within or immediately adjacent to any aquatic resource areas, the appropriate resource agencies should be consulted (e.g., CDFW, USACE, or RWQCB) to verify PJD results and complete any obligatory discretionary permits/authorizations.
2. Please note that the Project Site includes more than 0.5 acres of WoUS and WoS – therefore the use of the USACE's Nationwide Permit Program may be prohibited.
3. If a specific development is approved that includes a discharge of dredge or fill material within a special aquatic resource area (i.e., development of residential houses or commercial logistics center) as a result of the Project, then on and off-site mitigation options, or other recommendations relative to project design, purpose and need, and compensation to impact ratio would need to be vetted with the appropriate resource agencies.

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APPENDIX A – USACE WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Ball Road | City/County: Anaheim/Orange | Sampling Date: February 28, 2013

Applicant/Owner: OCWD | State: CA | Sampling Point: 1

Investigator(s): B.Helm, L. Hulse | Section, Township, Range: Township 4 South, Range 9 and 10 West, in an un-sectioned portion of the Santiago de Santa Ana Land Grant

Landform (hillslope, terrace, etc.): N/A | Local relief (concave, convex, none): concave | Slope (%): 1

Subregion (LRR): C | Lat: 33.812246, | Long: -117.873634; | Datum: 11 S

Soil Map Unit Name: N/A | NWI classification: non-wetland

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

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

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

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

Hydrophytic Vegetation Present?	Yes ☒	No ☐		
Hydric Soil Present?	Yes ☐	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*		n/a*	-
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 ft diameter)			
1.		n/a*	-
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10 ft diameter)			
1. *Typha latifolia*	50	yes	OBL
2. *Cyndodon doctylm*	5	no	FACU
3. *Xenthium strumorium*	10	no	FAC
4. *Cyperus inuslucratus*	15	no	FACW
5. *Conyza condensis*	3	no	FACU
6. *Lepidum latifolium*	1	no	FAC
7.			
8.			
50% = 42, 20% = 17	84	= Total Cover	
Woody Vine Stratum (Plot size: 10 ft diameter)			
1. *N/A*			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 13	% Cover of Biotic Crust 3		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	50	x1 =	50
FACW species	15	x2 =	30
FAC species	11	x3 =	33
FACU species	8	x4 =	32
UPL species	0	x5 =	0
Column Totals:	84 (A)		145 (B)

Prevalence Index = B/A = 1.7

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0[1]

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

☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:

Project Site: Gilman Springs Road Project

SOIL

Sampling Point: 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	10	--	--	--	--		
4-6	10YR 4/1	80	--	--	--	--		
6-16	10YR5/2	100						

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☒ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (Inches): ____

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Top 2-3 inches has been removed therefore SI is approproate.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches): ____
Water Table Present?	Yes	☒	No	☐	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches): 16

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Ball Road | City/County: Anaheim/Orange | Sampling Date: February 28, 2013

Applicant/Owner: OCWD | State: CA | Sampling Point: 2

Investigator(s): B.Helm, L. Hulse | Section, Township, Range: Township 4 South, Range 9 and 10 West, in an un-sectioned portion of the Santiago de Santa Ana Land Grant

Landform (hillslope, terrace, etc.): N/A | Local relief (concave, convex, none): concave | Slope (%): 1

Subregion (LRR): C | Lat: 33.812246, | Long: -117.873634; | Datum: 11 S

Soil Map Unit Name: N/A | NWI classification: non-wetland

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

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

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

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

Hydrophytic Vegetation Present?	Yes ☐	No ☒		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: **Vegetation has been removed.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:10 ft diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *N/A*			-
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size:10 ft diameter)			
1. *N/A*			-
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size:10 ft diameter)			
1. *N/A*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50% = , 20% =	84	= Total Cover	
Woody Vine Stratum (Plot size:10 ft diameter)			
1. *N/A*			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum		% Cover of Biotic Crust	

Dominance Test Worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of :	Multiply by:
OBL species	x1 =
FACW species	x2 =
FAC species	x3 =
FACU species	x4 =
UPL species	x5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

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

☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ☐ No ☐**

Remarks:

Project Site: Gilman Springs Road Project

SOIL

Sampling Point: 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 6/3	100	--	--	--	--	SAND	
6-16	10YR 6/2	100	--	--	--	--	SAND	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (Inches): _____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

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

Remarks:

APPENDIX B – PHOTOGRAPH LOG

	Photograph:1 Direction: South
	Photograph:2 Direction: North

	Photograph:3 Direction: North
	Photograph:4 Direction: North

	Photograph:5 Direction: West
	Photograph:6 Direction: South East