TEXAS STREET PROJECT

CITY OF REDLANDS, SAN BERNARDINO COUNTY, CALIFORNIA
(Assessor Parcel Number 0167-041-01)

Delineation of State and Federal Jurisdictional Waters

Prepared For:

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December 2021

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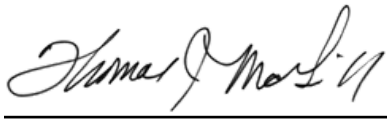
The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Travis J. McGill
Biologist/Director



Thomas J. McGill, Ph.D.
Managing Director

December 2021

Executive Summary

ELMT Consulting (ELMT) has prepared this Delineation of State and Federal Jurisdictional Waters Report for the proposed project located within Assessor Parcel Number (APN) 0167-041-01 – Texas Street Project (project site or site) located at in the City of Redlands, San Bernardino County, California. The jurisdictional delineation documents the regulatory authority of the U.S. Army Corps of Engineers (Corps), the Regional Water Quality Control Board (Regional Board), and the California Department of Fish and Wildlife (CDFW) pursuant to Section 401 and 404 of the Federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act, and Sections 1600 *et. seq.* of the California Fish and Game Code.[1]

One (1) unnamed ephemeral drainage feature (Drainage 1) was observed on the project site during the field delineation. The onsite drainage feature generally flows southeast to northwest across the northern boundary of the project site and is located at the toe of a slope approximately 0.11 mile south of the active channel of the Santa Ana River. Drainage 1 only conveys surface flow in direct response to precipitation and does not support riparian vegetation. The onsite drainage feature, after flowing offsite, appears to infiltrate and pond outside of the project boundary, south of the active channel of the Santa Ana River. Even though Drainage 1 appears to infiltrate/pond prior to flowing into the Santa Ana River, large flows within Drainage 1 would likely reach the active channel of the Santa Ana River. Therefore, Drainages 1 would qualify as waters of the United States under the jurisdiction of the Corps, and would qualify as "waters of the State" under the regulatory authority of the Regional Board and CDFW. Refer to Table ES-1 for a summary of on-site jurisdictional areas.

Table ES-1: Jurisdictional Areas

Jurisdictional Feature	Stream Flow	Cowardin Class	Class of Aquatic Resource	Corps/Regional Board Waters of the United States		CDFW Streambed		
				On-Site Jurisdiction		On-Site Jurisdictional Streambed		Associated Habitat
				Acreage	Linear Feet	Acreage	Linear Feet	Acreage
Drainage 1	Ephemeral	Riverine	Non-Section 10 Non-Wetland	0.06	820	0.06	820	0.67
			TOTALS	**0.06**	**820**	**0.06**	**820**	**0.67**

Approximately 0.06 acre (820 linear feet) of non-wetland waters of the United States occur onsite. Likewise, the onsite drainage features exhibit characteristics consistent with CDFW's methodology and would be considered CDFW streambed totaling 0.73 acre (820 linear feet), consisting of 0.06 acres of

[1] The field surveys for this jurisdictional delineation were conducted on November 17, 2021 pursuant to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps 2008); and *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (Corps 2017); *The MESA Field Guide: Mapping Episodic Stream Activity* (CDFW 2014); and a *Review of Stream Processes and Forms in Dryland Watersheds* (CDFW 2010).

streambed and 0.67 acre of associated Riversidean Alluvial Fan Sage Scrub (RAFSS) within boundaries of the project site.

Any impacts to on-site jurisdictional areas will require a Corps Clean Water Act Section 404 Permit, Regional Board CWA Section 401 Water Quality Certification, and a CDFW Section 1602 Lake or Streambed Alteration Agreement prior to project implementation. Refer to Sections 1-7 for a detailed analysis of site conditions and regulatory requirements.

Table of Contents

EXHIBITS

APPENDIX

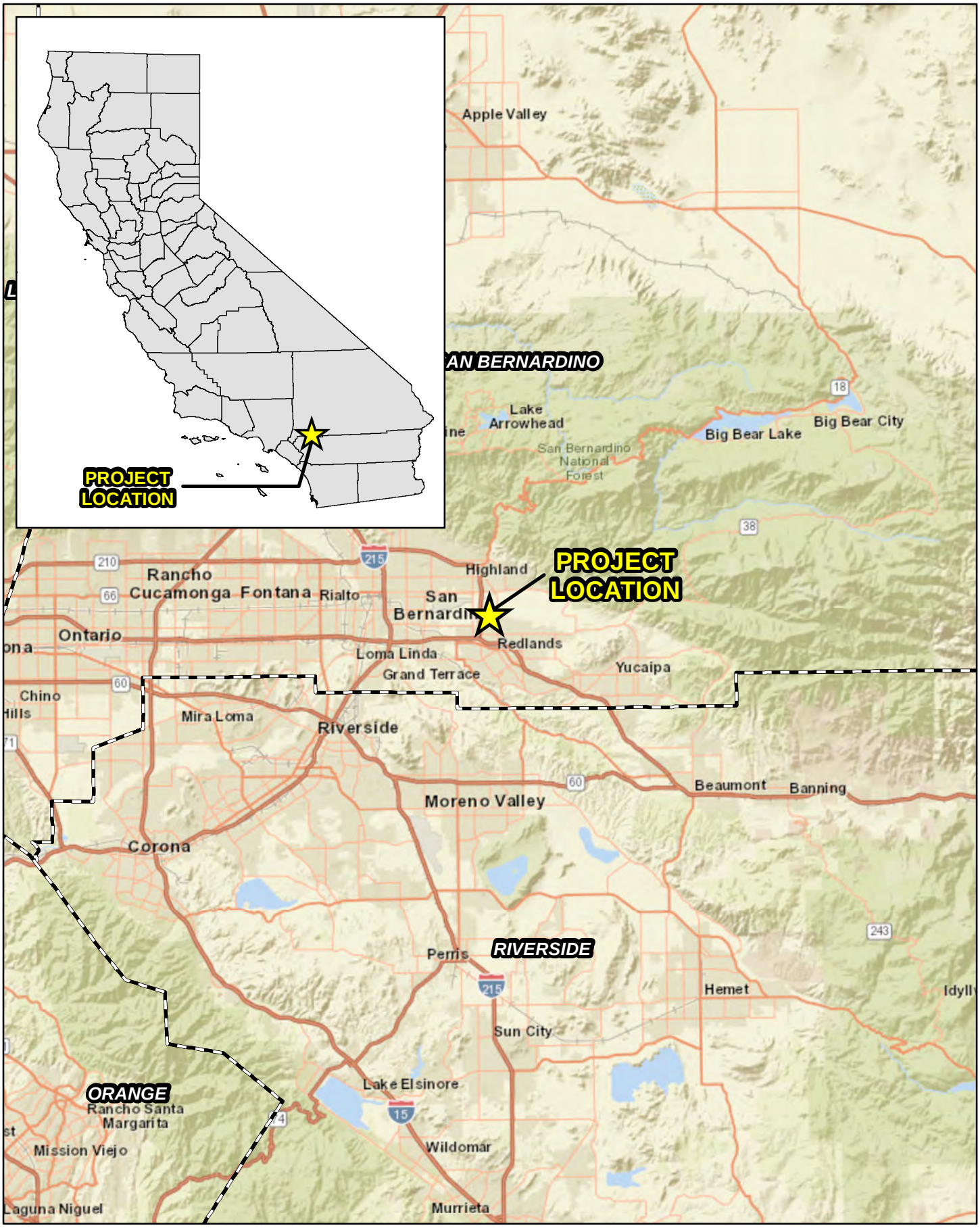
Section 1 Introduction

This delineation has been prepared for the proposed project located within Assessor Parcel Number (APN) 0167-041-01 – Texas Street Project (project site or site) in order to document the potential jurisdictional authority of the U.S. Army Corps of Engineers (Corps), the Regional Water Quality Control Board (Regional Board), and the California Department of Fish and Wildlife (CDFW) pursuant to Section 401 and 404 of the Federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act and Sections 1600 *et seq.* of the California Fish and Game Code. The analysis presented in this report is supported by field surveys and verification of site conditions conducted on November 17, 2021.

This jurisdictional delineation explains the methodology undertaken by ELMT Consulting (ELMT) to define the regulatory authority of the aforementioned regulatory agencies and documents the findings made by ELMT. This report documents the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies.

1.1 PROJECT LOCATION

The site is generally located east of State Route 210, north of Interstate 10, south of the Santa Ana River and east of State Route 38 in the City of Redlands, San Bernardino County, California (Exhibit 1, *Regional Vicinity*)/ The project site is depicted on the Redlands quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 15 of Township 1 South, Range 3 West (Exhibit 2, *Site Vicinity*). Specifically, the project site is bordered by Texas Street on its western boundary, north of Domestic Avenue, west of Clementine Street, and south of the Santa Ana River within Assessor Parcel Number (APN) 0167-041-01 (Exhibit 3, *Project Site*).



DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS
REDLANDS - TEXAS STREET PROJECT

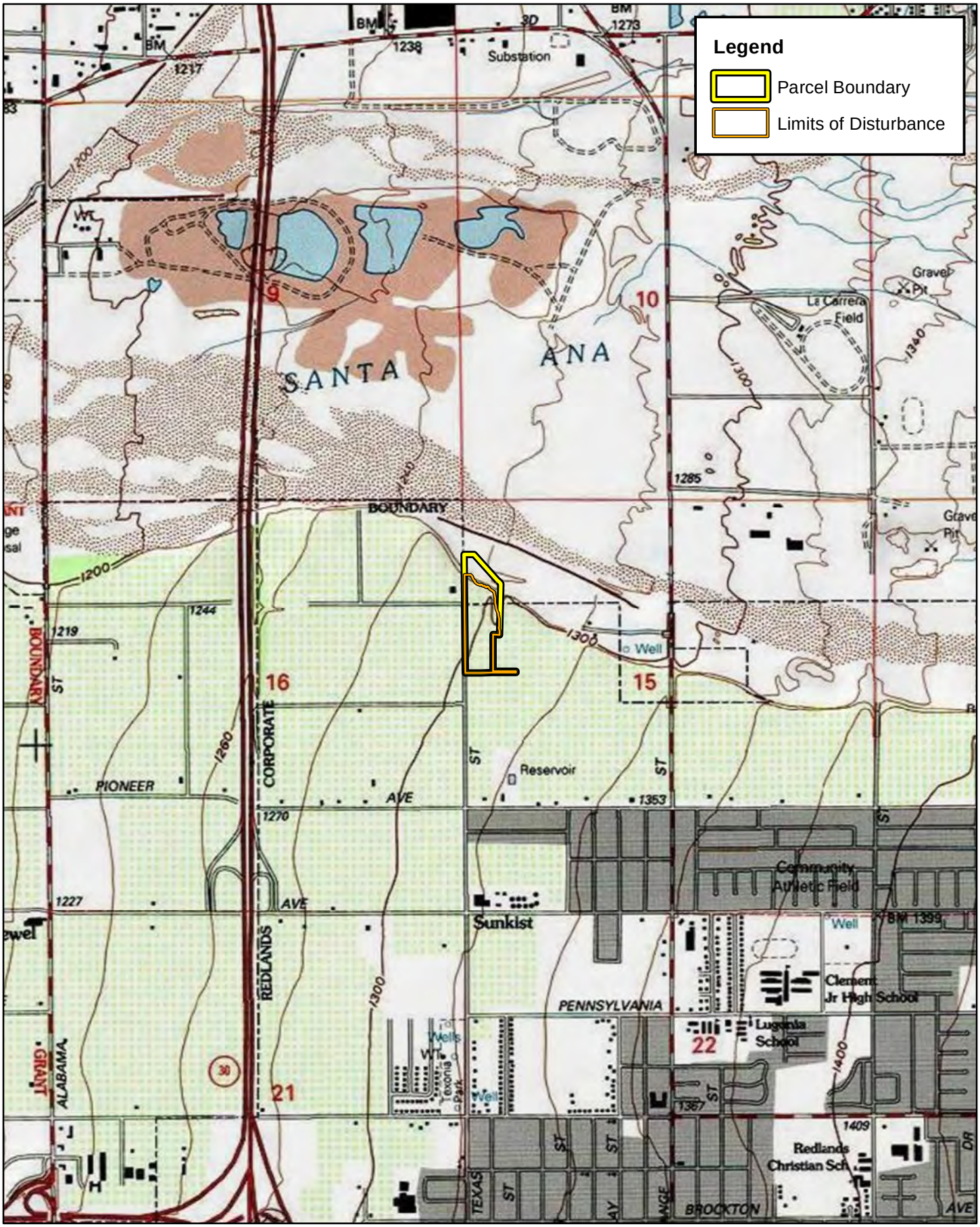
Regional Vicinity

ELMT CONSULTING

0 2.5 5 10 Miles

Source: World Street Map, San Bernardino County

Exhibit 1



DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS
REDLANDS - TEXAS STREET PROJECT

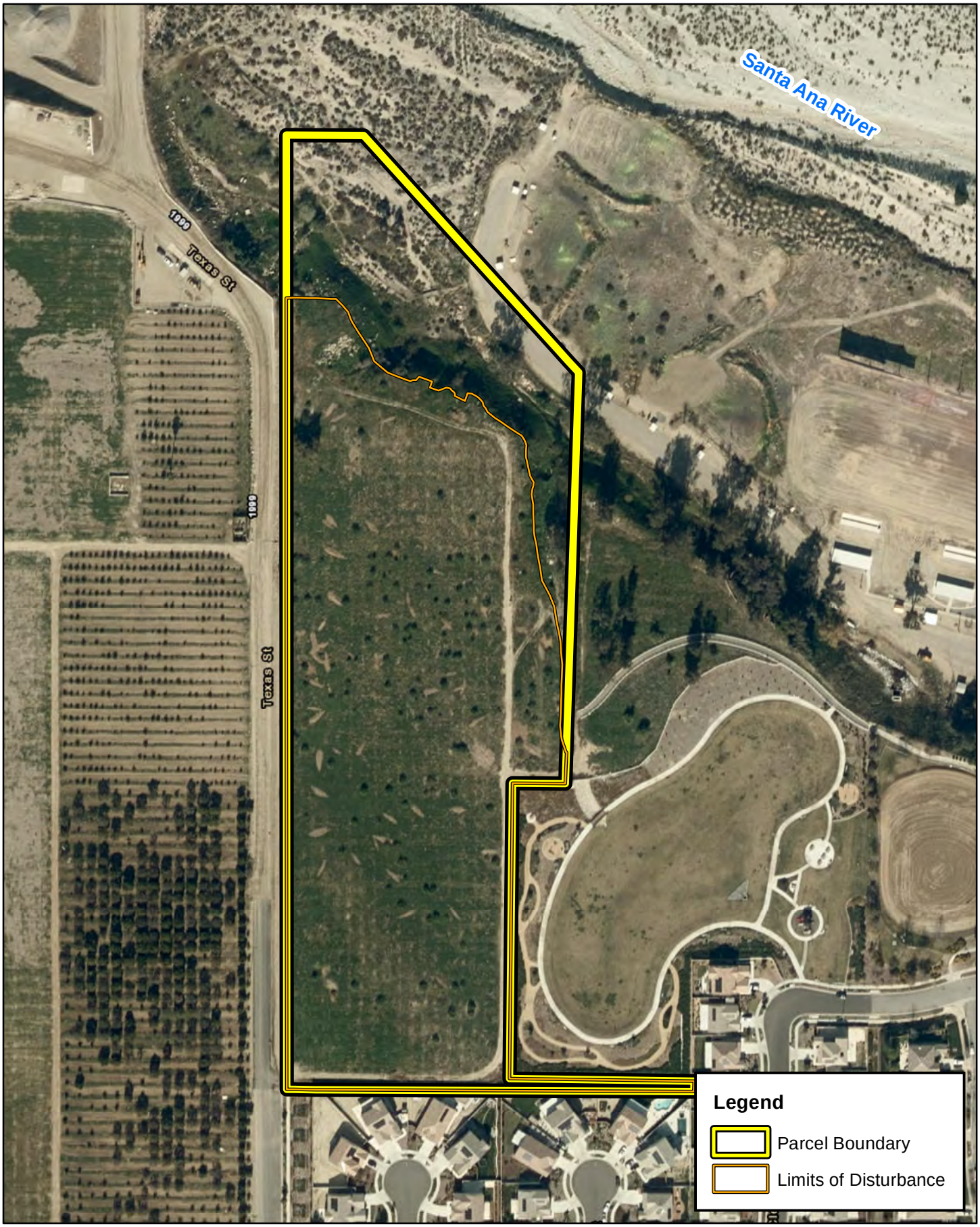
Site Vicinity

ELMT CONSULTING

0 1,000 2,000 4,000 Feet

Source: USA Topographic Map, San Bernardino County

Exhibit 2



DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS
REDLANDS - TEXAS STREET PROJECT

ELMT CONSULTING

0 125 250 500 Feet

Source: ESRI Aerial Imagery, San Bernardino County

Project Site

Exhibit 3

Section 2 Regulations

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Division regulates activities pursuant to Section 404 of the CWA, Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act. The Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act and the CDFW regulates activities under Sections 1600 *et seq*. of the California Fish and Game Code.

2.1 U.S. ARMY CORPS OF ENGINEERS

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the discharge of dredged or fill material into waters of the United States, including wetlands, pursuant to Section 404 of the CWA. The Corps and EPA define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States."

On April 21, 2020, the Environmental Protected Agency and Corps published a final rule defining the scope of waters subject to federal regulation under the Clean Water Act ("Navigable Waters Protection Rule"). The rule codifies the long-standing exclusion of "water-filled depressions constructed or excavated upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel." (33 CFR 328.3(b)(9); *see also* 85 FR 22252, 22323 (Apr. 21, 2020).)

However, on August 30, 2021, the United States District Court vacated the 2020 EPA final rule (*Pascua Yaqui Tribe vs. Environmental Protection Agency*) and reverted back to the Pre-2015 regulatory definition and practice.

2.2 REGIONAL WATER QUALITY CONTROL BOARD

Pursuant to Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity which may result in any discharge to waters of the United States must provide certification from the State or Indian tribe in which the discharge originates. This certification provides for the protection of the physical, chemical, and biological integrity of waters, addresses impacts to water quality that may result from issuance of federal permits and helps insure that federal actions will not violate water quality standards of the State or Indian tribe. In California, there are nine Regional Boards that issue or deny certification for discharges to waters of the United States and waters of the State, including wetlands, within their geographical jurisdiction. The State Water Resources Control Board (SWRCB) assumes this responsibility when a project has the potential to result in the discharge to waters within multiple Regional Boards.

Additionally, the California Porter-Cologne Water Quality Control Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline

waters. The Porter-Cologne Water Quality Control Act has become an important tool post *Solid Waste Agency of Northern Cook County vs. United States Corps of Engineers*[2] (SWANCC) and *Rapanos v. United States*[3] (Rapanos) court cases with respect to the State's regulatory authority over isolated and insignificant waters. Generally, any applicant proposing to discharge waste into a water body must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include discharge of dredged and fill material into water bodies.

Under the State Water Resources Control Board Sate Wetland Definition, an area is a wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

2.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Sections 1600 *et seq.* of the California Fish and Game Code establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not substantially adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided. Pursuant to Section 1602 of the California Fish and Game Code, a notification must be submitted to the CDFW for any activity that will divert or obstruct the natural flow or alter the bed, channel, or bank (which may include associated biological resources) of a river or stream or use material from a streambed. One CDFW guidance document, although not a formally adopted rule or policy, requires notification for activities taking place within rivers or streams that flow perennially or episodically and that are defined by the area in which surface water currently flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical and biological indicators. If the project will not "substantially adversely affect an existing fish or wildlife resource," following notification to CDFW, the project may commence without an agreement with CDFW. (Fish & G. Code, § 1602(a)(4)(A)(i).)

[2] Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001)
[3] Rapanos v. United States, 547 U.S. 715 (2006)

Section 3 Methodology

The analysis presented in this report is supported by field surveys and verification of site conditions conducted on November 17, 2021. ELMT conducted a field delineation to determine the jurisdictional limits of "waters of the State" and jurisdictional streambed (including potential wetlands), located within the boundaries of the project site. While in the field, jurisdictional features were recorded on an aerial base map at a scale of 1" = 50' using topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin Map62 Global Positioning System to record and identify specific widths for ordinary high water mark (OHWM) indicators and the locations of photographs, soil pits, and other pertinent jurisdictional features, if present. This data was then transferred as a .shp file and added to the Project's jurisdictional exhibits. The jurisdictional exhibits were prepared using ESRI ArcInfo Version 10 software.

3.1 WATERS OF THE UNITED STATES

In the absence of adjacent wetlands, the limits of the Corps jurisdiction in non-tidal waters extend to the OHWM, which is defined as "*. . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*"[4] Indicators of an OHWM are defined in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2008). An OHWM can be determined by the observation of a natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; presence of litter and debris; wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and/or change in plant community.

Pursuant to the Corps Wetland Delineation Manual (Corps 1987), the identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soils, and wetland hydrology. In order to qualify as a wetland, a feature must exhibit at least minimal characteristics within each of these three parameters. It should also be noted that both the Regional Board and CDFW follow the methods utilized by the Corps to identify wetlands. For this project location, Corps jurisdictional wetlands are delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps 2008).

3.2 WATERS OF THE STATE

3.2.1 REGIONAL WATER QUALITY CONTROL BOARD

The California *Porter-Cologne Water Quality Control Act* gives the Regional Board very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline

[4] CWA regulations 33 CFR §328.3(e).

waters. The Regional Board shares the Corps' methodology for delineating the limits of jurisdiction based on the identification of OHWM indicators and utilizing the three parameter approach for wetlands.

3.2.2 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Sections 1600 *et seq*. of the California Fish and Game Code applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. CDFW Regulations define "stream" as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." (14 Cal. Code Regs., § 1.72.) For this project location, CDFW jurisdictional limits were delineated using this definition of "stream."

Section 4 Literature Review

ELMT conducted a thorough review of relevant literature and materials to preliminarily identify areas that may fall under the jurisdiction of the regulatory agencies. A summary of materials utilized during ELMT's literature review is provided below and in Appendix A, *Documentation*. In addition, refer to Section 8 for a complete list of references used throughout the course of this delineation.

4.1 WATERSHED REVIEW

The project site is located within the Santa Ana River Watershed (HUC 18070203). The Santa Ana River watershed is located in southern California, south and east of the City of Los Angeles. The watershed includes much of Orange County, the northwestern corner of Riverside County, the southwestern corner of San Bernardino County, and a small portion of Los Angeles County. The watershed is bounded on the south by the Santa Margarita watershed, on the east by the Salton Sea and Southern Mojave watersheds, and on the north/west by the Mojave and San Gabriel watersheds. The watershed is approximately 2,800 square miles in area.

The Santa Ana River Watershed is located in the Peninsular Ranges and Transverse Ranges Geomorphic Provinces of Southern California (California Geological Survey Note 36). The highest elevations (upper reaches) of the watershed occur in the San Bernardino Mountains (San Gorgonio Peak – 11,485 feet in elevation), eastern San Gabriel Mountains (Transverse Ranges Province; Mt. Baldy – 10,080 feet in elevation), and San Jacinto Mountains (Peninsular Ranges Province, Mt. San Jacinto – 10,804 feet in elevation). Further downstream, the Santa Ana Mountains and the Chino Hills form a topographic high before the river flows into the Coastal Plain (in Orange County) and into the Pacific Ocean. Primary slope direction is northeast to southwest, with secondary slopes controlled by local topography.

This watershed is in an arid region, and therefore has little natural perennial surface water. Surface waters start in the upper erosion zone of the watershed, primarily in the San Bernardino and San Gabriel Mountains. This upper zone has the highest gradient and soils/geology that do not allow large quantities of percolation of surface water into the ground. Flows consist mainly of snowmelt and storm runoff from the lightly developed San Bernardino National Forest; this water is generally high quality at this point. In this zone, the Santa Ana River is generally confined in its lateral movement, contained by the slope in the mountainous regions. In the upper valley, flows from the Seven Oaks Dam to the City of San Bernardino consist mainly of storm flows, flows from the San Timoteo Creek, and groundwater that is rising due to local geological conditions. From the City of San Bernardino to the City of Riverside, the river flows perennially, and it includes treated discharges from wastewater treatment plants. From the City of Riverside to the recharge basins below Imperial Highway, river flow consists of highly treated wastewater discharges, urban runoff, irrigation runoff, and groundwater forced to the surface by shallow/rising bedrock. Near Corona, the river cuts through the Santa Ana Mountains and the Puente-Chino Hills. The river then flows into the Orange County Coastal Plain; the channel lessens and the gradient decreases. In a natural environment, a river in this area would have a much wider channel, increased meandering, and increased sediment build-up. However, much of the Santa Ana River channel in this area has been contained in

concrete-lined channels, which modifies the flow regime and sediment deposition environment. The only major tributary of the Santa Ana River in Orange County is Santiago Creek, which joins the river in the City of Santa Ana.

4.2 LOCAL CLIMATE

San Bernardino County is characterized by cool winter temperatures and warm summer temperatures, with its rainfall occurring almost entirely in the winter. Relative to other areas in Southern California, winters are colder with chilly to cold morning temperatures common. Climatological data obtained for the City of Fontana indicates the annual precipitation averages 14.77 inches per year. Almost all of the precipitation occurs in the months between November and March, with hardly any occurring in July. The wettest month is March, with a monthly average total precipitation of 3.49 inches. The average maximum and minimum temperatures for the region are 80 and 53 degrees Fahrenheit (°F) respectively with July and August (monthly average 95° F) being the hottest months and December (monthly average 44°F) being the coldest. Temperatures during the site visit were in the low-70s (°F) with clear skies.

4.3 USGS TOPOGRAPHIC QUADRANGLE

The USGS 7.5 Minute Series Topographic Quadrangle maps show geological formations and their characteristics, describing the physical setting of an area through contour lines and major surface features including lakes, rivers, streams, buildings, landmarks, and other factors that may fall under an agency's jurisdiction. Additionally, the maps depict topography through color and contour lines, which are helpful in determining elevations and latitude and longitude within the project site.

The project site is depicted on the Redlands quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series within Section 15 of Township 1 South, Range 3 West. According to the topographic map, the project site consists entirely of vacant/undeveloped land that historically supported agricultural fields on a bluff above the Santa Ana River.

Elevation on the developable (limits of disturbance on the southern portion of the project site, on the cliff above the Santa Ana River) portion of project site ranges from to 1,290 to 1,310 feet above mean sea level, is generally flat with no areas of significant topographic relief. The property slopes steeply at the northern end and drops from 1,290 to 1,257 feet at the southern edge of the Santa Ana River wash.

4.4 AERIAL PHOTOGRAPHS

Prior to conducting the field delineation, ELMT reviewed current and historical aerial photographs (1985-2021) of the project as available from Google Earth Pro Imaging. Aerial photographs can be useful during the delineation process, as they often indicate the presence of drainage features and riverine habitat within the boundaries of the project site, if any.

According to the 1994 through 2021 aerial photographs, the project site has been exposed to a variety of disturbances, primarily from agricultural use. The southern two thirds of the project site, on the bluff above the Santa Ana River, historically supported an active citrus grove until 2004/2005. In 2006, the citrus grove appears too no longer be active, and the citrus trees begin to be removed. In 2016/2017 the housing

development immediately to the south and the park immediately to the east begin to be developed. In the 2021 aerial, all of the citrus trees were removed from the project site. A homeless encampment can be seen near the middle of the eastern boundary of the project site.

Due to existing and historical land uses, no native plant communities or natural communities of special concern were observed on the upland portion of project site (southern two thirds). The southern two thirds of the project site support vacant, undeveloped land that has been subject to a variety of anthropogenic disturbances associated with historic citrus groves and clearing activities. The southern two thirds of the project site supports one (1) land cover types that would be classified as disturbed. Refer to Appendix B, *Site Photographs*.

4.5 SOILS

Soils within and adjacent to the Project site were researched prior to the field delineation using the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Custom Soil Resource Report for Riverside County, Coachella Valley Area. Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color).

Based on the NRCS USDA Web Soil Survey, the developable portion of the project site is underlain by Hanford sandy loam (0 to 2 percent slopes), and the northern portion of the site is underlain by Psamments, Fluvents and frequently flooded soils. Soils on the developable portion of the site have been mechanically disturbed and heavily compacted from previous anthropogenic disturbances (i.e., agricultural activities).

4.6 HYDRIC SOILS LIST OF CALIFORNIA

ELMT reviewed the USDA NRCS Hydric Soils List of California in an effort to verify whether on-site soils are considered to be hydric[5]. It should be noted that lists of hydric soils along with soil survey maps provide off-site ancillary tools to assist in wetland determinations, but they are not a substitute for field investigations. The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. According to the hydric soils list, Psamments, Fluvents and frequently flooded soils have been listed as hydric in San Bernardino County, Southwestern Part.

4.7 NATIONAL WETLANDS INVENTORY

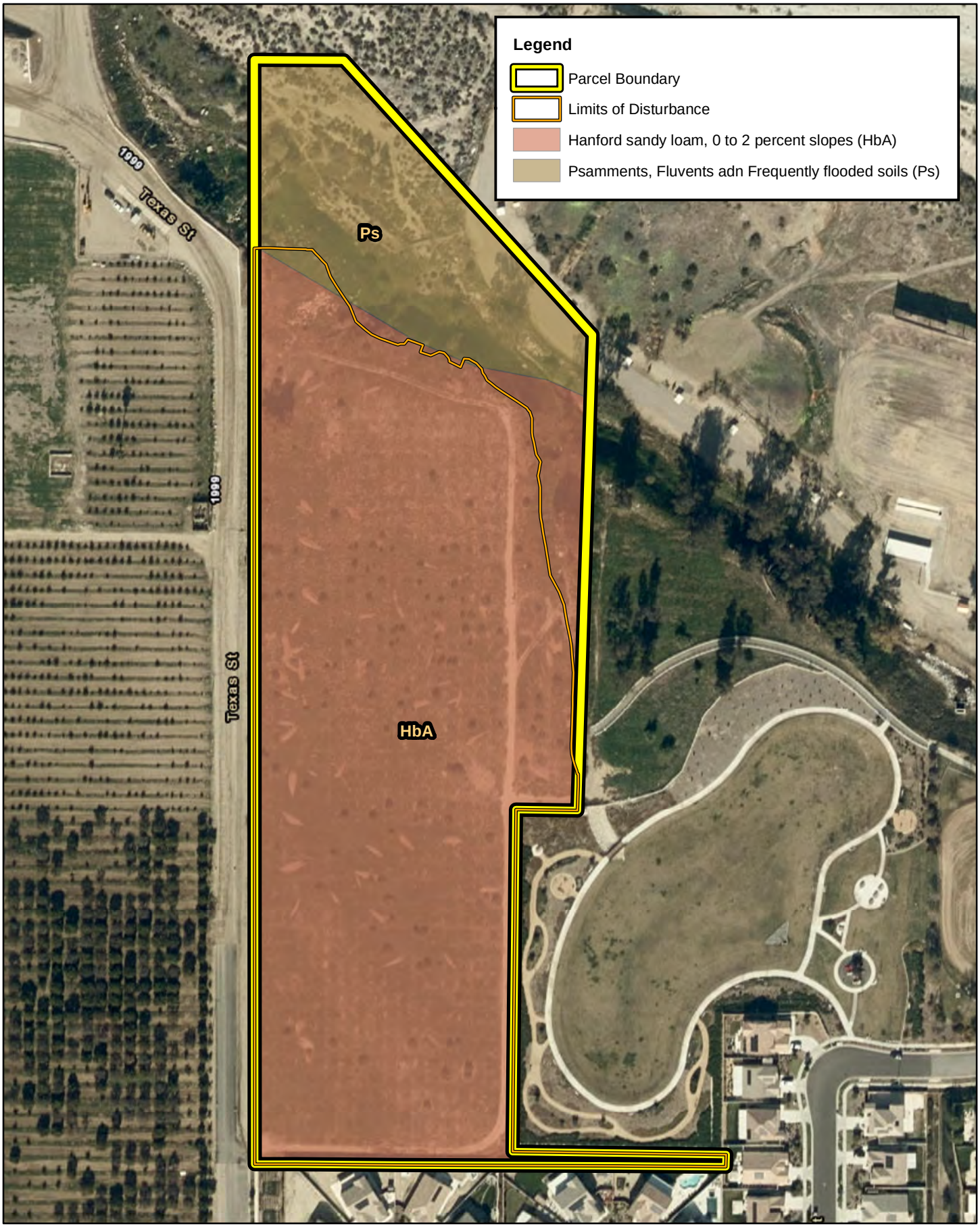
ELMT reviewed the U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory maps. Based on this review, no wetland features have been mapped within the boundaries of the project site. One (1) riverine resource was mapped north of the project site in association with the Santa Ana River. The active

[5] A hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

channel of the Santa Ana River is located approximately 350 feet north of the northern boundary of the project site. Refer to Appendix A, *Documentation*.

4.8 FLOOD ZONE

The Federal Emergency Management Act (FEMA) website was searched for flood data for the project site. Based on Flood Insurance Rate Map No. 06071C8704H the majority of the site, southern two thirds on the bluff above the Santa Ana River, is located within Other Areas-Zone X – areas determined to be outside of the 0.2% annual chance floodplain, and the northern third of the site is located within Other Flood Areas-Zone X – areas of 0.2% annual chance flood hazard, and 1% annual chance flood. Refer to Appendix A, *Documentation*.



DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS
REDLANDS - TEXAS STREET PROJECT

Soils

ELMT CONSULTING

0 125 250 500 Feet

Source: ESRI Aerial Imagery, Soil Survey Geographic Database, San Bernardino County

Exhibit 4

Section 5 Site Conditions

ELMT biologists Travis J. McGill conducted a field delineation on November 17, 2021 to verify existing site conditions and document the extent of potential jurisdictional areas within the boundaries of the project site. ELMT field staff encountered no limitations during the field delineation.

5.1 ON-SITE FEATURES

5.1.1 DRAINAGE FEATURE

One (1) unnamed ephemeral drainage feature (Drainages 1) was observed within the boundaries of the project site during the field delineation (refer to Exhibit 5, *Jurisdictional Areas*). ELMT carefully assessed the site for depressions, inundation, presence of hydrophytic vegetation, staining, cracked soil, ponding, and indicators of active surface flow and corresponding 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. Suspected jurisdictional areas were checked for the presence of definable channels, soils, and hydrology.

The onsite drainage feature generally flows in a southeast to northwest direction across the northern third project site. Drainage 1 originates near the northeast corner of the project site and flows northwest before existing on the northwest corner of the project site.

No surface water was present within the drainage during the site visit; however, evidence of an OHWM was observed via scour, changes in substrate, shelving, and lack of vegetation. The OWHM ranged from approximately 1-15 feet in width throughout the length of the drainage. In general, Drainage 1 only conveys surface flow in direct response to precipitation and does not support riparian vegetation. Drainage 1 is located at the toe of the slope that separates the southern two thirds of the site from the northern third of the site and is located approximately 0.11 mile south of the active channel of the Santa Ana River. The onsite drainage feature, after flowing offsite, appears to infiltrate and pond outside of the project boundary, south of the active channel of the Santa Ana River.

The drainages feature, at the origin, primarily consisted of loose/sandy substrate with minimal vegetation. Where vegetated, the drainages supported upland scrub indicative of the surrounding area.

The northern portion of the site also supports an intermediate Riversidean Alluvial Fan Sage Scrub (RAFSS) plant community. Plant species observed in the RAFSS habitat included scalebroom (*Lepidoswpartum squamatum*), California Buckwheat (*Eriogonum fasciculatum*), yerba santa (*Eriodictyon californicum*), brittlebush (*Encelia farinosa*), and Santa Ana River woollystar (*Eriastrum densifolium*).

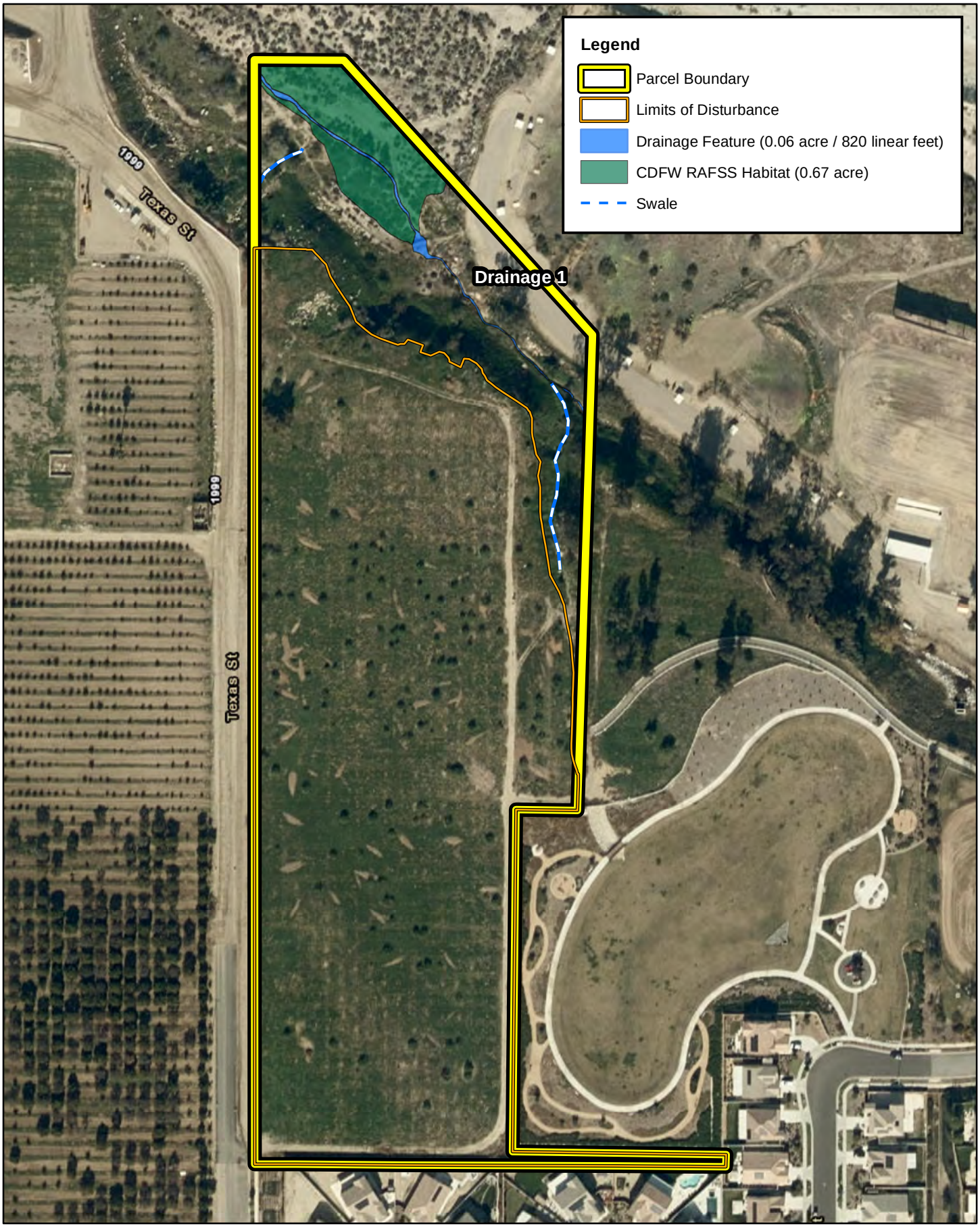
5.1.2 SWALES

Two (2) swales were also observed onsite. One swale is located near the northwest corner of the project site and is created from the roadside ditch associated with Texas Street. Storm flows flow along Texas Street and eventually flow down the bluff on the northern third of the project. The other swale is located in

the middle of the eastern boundary of the project site and is associated with a topographic low spot. A homeless encampment is located within this topographic low spots and storm flows are conveyed to the north. These swales are erosional features on the bluff above the northern third of the project site and did not have a defined bed and bank and are not jurisdictional.

5.1.3 WETLAND FEATURES

In order to qualify as a wetland, a feature must exhibit all three wetland parameters (i.e., vegetation, soils, and hydrology) described in the Corps Arid West Regional Supplement. Although evidence of hydrology (i.e., scour, changes in substrate, shelving) was present within the onsite drainages, these areas were primarily dominated by upland plant species. Further, water does not persist long enough on the project site to create hydric soil (anaerobic) conditions, and none of the onsite drainages supported a dominance of hydrophytic vegetation. As a result, no features onsite meet the Corps' or Regional Board's wetland definition to qualify as jurisdictional wetlands.



DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS
REDLANDS - TEXAS STREET PROJECT

Jurisdictional Areas

ELMT CONSULTING

0 125 250 500 Feet

Source: ESRI Aerial Imagery, San Bernardino County

Exhibit 5

Section 6 Findings

This report presents ELMT's best effort at determining the extent of jurisdictional features using the most up-to-date regulations, written policy, and guidance from the regulatory agencies.

6.1 U.S. ARMY CORPS OF ENGINEERS DETERMINATION

6.1.1 WATERS OF THE UNITED STATES DETERMINATION

Peak flows within Drainage 1 flow into the Santa ana River (Relatively Permanent Water) which is ultimately tributary to the Pacific Ocean (Traditional Navigable Water). Therefore, Drainage 1 would qualify as waters of the United States and fall under the regulatory authority of the Corps.

6.1.2 FEDERAL WETLAND DETERMINATION

An area must exhibit all three wetland parameters described in the Corps Arid West Regional Supplement to be considered a jurisdictional wetland. Based on the results of the field delineation, it was determined that no areas within the project site met all three wetland parameters. Therefore, no jurisdictional wetland features exist within the project site.

6.2 REGIONAL WATER QUALITY CONTROL BOARD

6.2.1 WATERS OF THE STATE DETERMINATION

The onsite drainage feature exhibits characteristics consistent with the Regional Board's methodology and would likely be considered jurisdictional waters of the State. Approximately 0.06 acre (820 linear feet) of non-wetland waters of the State occur onsite.

6.2.2 STATE WETLAND DETERMINATION

Under the State Water Resources Control Board Sate Wetland Definition, an area is a wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

Based on the results of the field delineation, it was determined that no areas within the project site meet the State Wetland Definition. Therefore, no state wetland features exist within the project site.

6.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The onsite drainage feature and associated RAFSS habitat exhibits characteristics consistent with CDFW's methodology and would be considered CDFW streambed. Approximately 0.73 acre (820 linear feet) of CDFW jurisdiction was mapped within boundaries of the project site, consisting of 0.06 acre of jurisdictional streambed and 0.67 acre of associated habitat.

Section 7 Regulatory Approval Process

The following is a summary of the various permits, certifications, and agreements that may be necessary prior to construction and/or alteration within jurisdictional areas. Ultimately the regulatory agencies make the final determination of jurisdictional boundaries and permitting requirements.

7.1 UNITED STATES ARMY CORPS OF ENGINEERS

The Corps regulates discharges of dredged or fill materials into waters of the United States, including wetlands, pursuant to Section 404 of the CWA. If any impacts occur to Drainage 1, it will be necessary for the Applicant to acquire a CWA Section 404 permit prior to impacts occurring within Corps jurisdictional areas. If any impacts occur to Drainage 1, they will likely result in the loss of less than ½-acre of Corps jurisdiction (non-wetland waters), and it would be anticipated that the proposed project can be authorized via a Nationwide Permit (NWP).

7.2 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board regulates discharges to surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. The Regional Board's jurisdiction extends to all waters of the State and U.S., including wetlands. If any impacts to Drainage 1occur, for a Corps Section 404 permit to be approved, a Section 401 Water Quality Certification from the Regional Board will be required. The Regional Board also requires a Section 401 Certification Application Fee, which is dependent on the amount and type of impacts (i.e., acreage, linear feet, and project type). It should also be noted that the Regional Board requires that California Environmental Quality Act (CEQA) compliance be obtained prior to issuance of the water quality certification.

7.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Pursuant to Section 1602 of the California Fish and Game Code, the CDFW regulates any activity that will divert or obstruct the natural flow or alter the bed, channel, or bank (which may include associated biological resources) of a river or stream. Therefore, any impacts to the on-site jurisdictional areas will require a Section 1602 Streambed Alteration Agreement from the CDFW prior to project implementation, if the project will have a substantial adverse impact on an existing fish or wildlife resource. The notification fee is based on the term and cost of a project. The Section 1602 Streambed Alteration Agreement will not be issued until all fees are paid to the CDFW.

7.4 RECOMMENDATIONS

It is recommended that this delineation be forwarded to the regulatory agencies for their review and concurrence. The concurrence/receipt would solidify findings noted within this report.

Section 8 References

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Appendix A Documentation

U.S. Fish and Wildlife Service

National Wetlands Inventory

Texas Street Project

December 10, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

NOTES TO USERS

se in administering the National Flood Insurance Program. It
nly identify all areas subject to flooding, particularly from local
of small size. The **community map repository** should be
date updated or additional flood hazard information.

detailed information in areas where Base Flood Elevations
odways have been determined, users are encouraged to consult
and Floodway Data and/or Summary of Stillwater Elevations
within the Flood Insurance Study (FIS) report that accompanies
should be aware that BFEs shown on the FIRM represent
ot elevations. These BFEs are intended for flood insurance
only and should not be used as the sole source of flood
tion. Accordingly, flood elevation data presented in the FIS
e utilized in conjunction with the FIRM for purposes of
e floodplain management.

Flood Elevations shown on this map apply only landward of
m Vertical Datum of 1988 (NAVD 88). Users of this FIRM should
oastal flood elevations are also provided in the Summary of
e tables in the Flood Insurance Study report for this jurisdiction.
In the Summary of Stillwater Elevations tables should be used for
e floodplain management purposes when they are higher than
en on this FIRM.

Floodways were computed at cross sections and interpolated
ctions. The floodways were based on hydraulic considerations
uirements of the National Flood Insurance Program. Floodway
pertinent floodway data are provided in the Flood Insurance
e jurisdiction.

in Special Flood Hazard Areas may be protected by **flood**
res. Refer to Section 2.4 "Flood Protection Measures" of the
Study report for information on flood control structures for this

sed in the preparation of this map was Universal Transverse
one 11 North. The **horizontal datum** was NAD 83, GRS80
ces in datum, spheroid, projection or UTM zones used in the
DMs for adjacent jurisdictions may result in slight positional
features across jurisdiction boundaries. These differences do
racy of this FIRM.

n this map are referenced to the North American Vertical Datum
lood elevations must be compared to structure and ground
ced to the same **vertical datum**. For information regarding
en the National Geodetic Vertical Datum of 1929 and the
Vertical Datum of 1988, visit the National Geodetic Survey
ww.ngs.noaa.gov or contact the National Geodetic Survey at
ss:

ervices

Survey

ighway
land 20910-3282

elevation, description, and/or location information for **bench**
this map, please contact the Information Services Branch
Geodetic Survey at **(301) 713-3242**, or visit its website at
hb.gov.

rmation shown on this FIRM was derived from digital
collected by the U.S. Department of Agriculture Farm Service
gery was flown in 2005 and was produced with a 1-meter ground

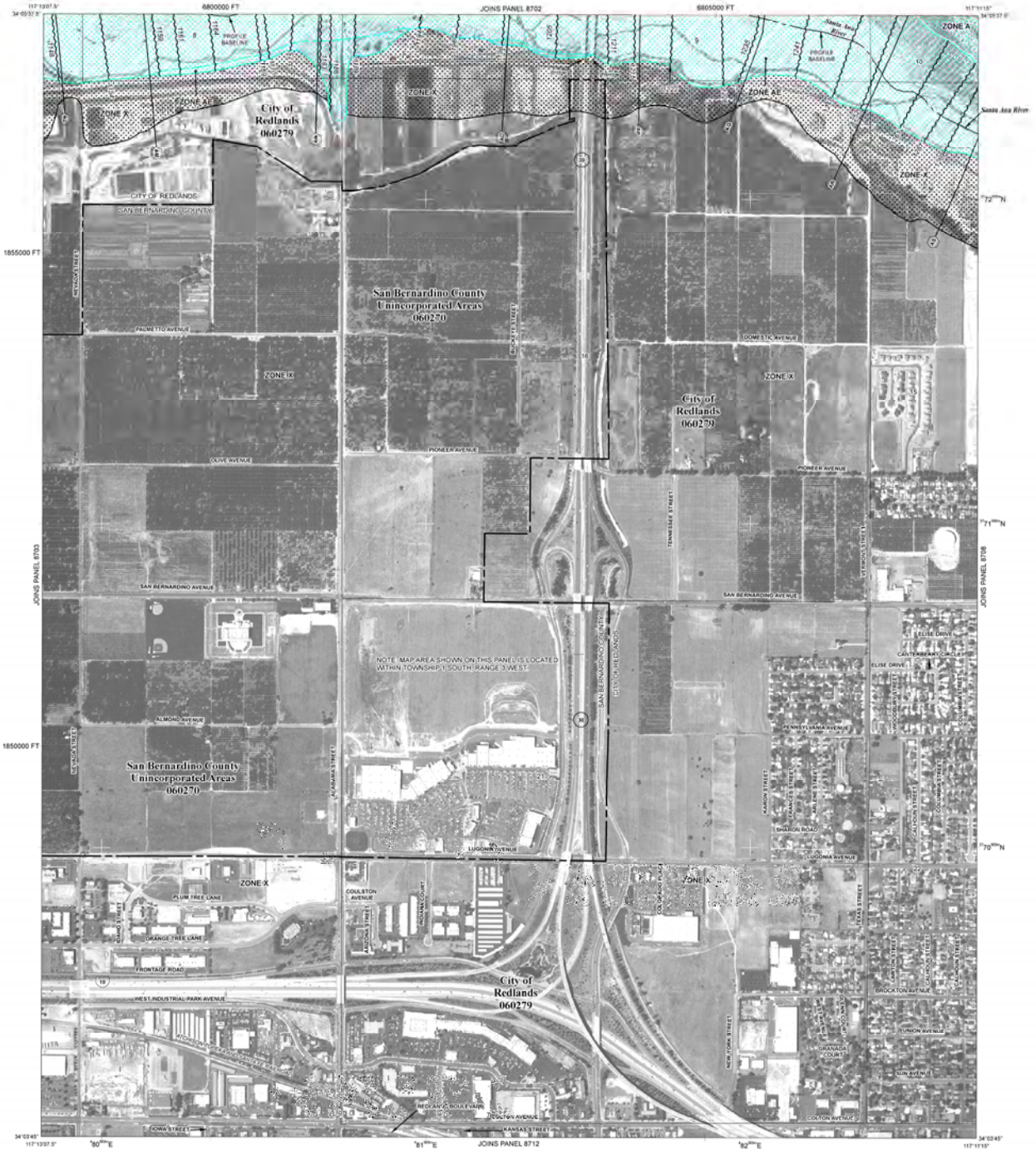
lect more detailed and up-to-date stream channel configurations
on the previous FIRM for this jurisdiction. The floodplains and
re transferred from the previous FIRM may have been adjusted
e new stream channel configurations. As a result, the Flood
way Data tables in the Flood Insurance Study Report (which
tive hydraulic data) may reflect stream channel distances that
shown on this map.

shown on this map are based on the best data available at the
. Because changes due to annexations or de-annexations may
r this map was published, map users should contact appropriate
to verify current corporate limit locations.

e separately printed **Map Index** for an overview map of the
e layout of map panels; community map repository addresses;
ommunities table containing National Flood Insurance Program
ommunity as well as a listing of the panels on which each
ed.

A Map Service Center at 1-800-358-9616 for information on
associated with this FIRM. Available products may include
Letters of Map Change, a Flood Insurance Study report, and/or
this map. The FEMA Map Service Center may also be reached
8-9620 and its website at http://msc.fema.gov/.

ons about this map or questions concerning the National Flood
n in general, please call **1-877-FEMA MAP** (1-877-336-2627) or
bsite at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO
BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the f
chance of being equaled or exceeded in any given year. The Special Flood
areas subject to flooding by the 1% annual chance flood. Areas of Special Fl
Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is
elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of pon
Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping
depths determined. For areas of alluvial fan flood
determined.

ZONE AR — Special Flood Hazard Area formerly protected from the
flood by a flood control system that was subsequently d
indicates that the former flood control system is being
restored to provide the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood
protection system under construction; no Base
determined.

ZONE V — Coastal flood zone with velocity hazard (wave actio
Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave ac
Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that
of encroachment so that the 1% annual chance flood can be carried without s
an flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual
average depths of less than 1 foot or with drainag
1 square mile; and areas protected by levees from 1% a

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance

ZONE D — Areas in which flood hazards are undetermined, but pos

COASTAL BARRIER RESOURCES SYSTEM (CBRS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard
boundary dividing Special Flood Hazard Are
Flood Elevations, flood depths or flood velocit

513 — Base Flood Elevation line and value; elevation

(EL. 987) — Base Flood Elevation value where uniform wi
in feet*

* Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

D — D — Transect line

87°07'45", 32°22'30" — Geographic coordinates referenced to the
Datum of 1983 (NAD 83), Western Hemisphere

4426mN — 1000-meter Universal Transverse Mercator gri
11N

600000 FT — 5000-foot grid ticks: California State Plane co
system, zone V (FIPSZONE 0405), Lambert C
projection

DX5510 x — Bench mark (see explanation in Notes to Use
FIRM panel)

M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
March 18, 1996

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANE
August 28, 2008 - to update corporate limits, to change Base Flood Elevations a
Hazard Areas, to update map format, to add roads and road names, and to incor
Issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer
Map History table located in the Flood Insurance Study report for this ju

To determine if flood insurance is available in this community, cont
agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FE

150 0 150 30

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 8704

FIRM

FLOOD INSURANCE

SAN BERNARDINO COUNTY, CALIFORNIA AND INCORPORATED A

PANEL 8704 OF 9400

(SEE MAP INDEX FOR FIRM P

CONTAINS:

COMMUNITY	NUMBER
REDLANDS, CITY OF	060279
SAN BERNARDINO COUNTY	060270

Notice to User: The **Map Number** s
used when placing map orders; the
shown above should be used on insura
subject community.

M

AUG

Federal Emergency Manag

Appendix B Site Photographs

Photograph 1: Looking north along the western boundary of the project site at the roadside ditch associated with Texas Street.

Photograph 2: Looking at the discharge point of the roadside ditch, just outside of the project footprint near the southwest corner of the site on the bluff above the Santa Ana River.

Photograph 3: Swale associated with the roadside ditch on the project site.

Photograph 4: Concrete debris in the swale associated with the roadside ditch onsite.

Photograph 5: Looking south towards the northern boundary of the project site at the RAFSS on the northern boundary. The slope separating the upland habitat form the Santa Ana River is heavily vegetated with non-native grasses.

Photograph 6: RAFSS habitat on the northern boundary of the project site.

Photograph 7: RAFSS habitat on the northern boundary of the project site.

Photograph 8: RAFSS habitat on the northern boundary of the project site.

Photograph 9: Looking northwest at Drainage 1 at the toe of the slope on the northern boundary of the project site.

Photograph 10: Looking southeast at Drainage 1.

Photograph 11: Small bridge in the middle of Drainage 1 that conveys flows via several culverts.

Photograph 12: Drainage 1 downstream of the culverts.

Photograph 13: View of the beginning portion of the swale on the eastern boundary of the project site, where a homeless encampment is located.

Photograph 14: Swale dominated with non-native grasses on the northeast corner of the site.

Photograph 15: View of the bluff separating the southern two thirds and the northern third of the site.

Appendix C Methodology

WATERS OF THE UNITED STATES

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of "waters of the U.S.," including wetlands, pursuant to Section 404 of the Clean Water Act (CWA). The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. The Corps and EPA define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." In order to further define the scope of waters protected under the CWA, the Corps and EPA published the Clean Water Rule on June 29, 2015. Pursuant to the Clean Water Rule, the term "*waters of the United States*" is defined as follows:

(i) 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.

(ii) All interstate waters, including interstate wetlands[1].

(iii) The territorial seas.

(iv) All impoundments of waters otherwise defined as waters of the United States under the definition.

(v) All tributaries[2] of waters identified in paragraphs (i) through (iii) mentioned above.

(vi) All waters adjacent[3] to a water identified in paragraphs (i) through (v) mentioned above, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters.

(vii) All prairie potholes, Carolina bays and Delmarva bays, Pocosins, western vernals pools, Texas coastal prairie wetlands, where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (i) through (iii) meantioned above.

(viii) All waters located within the 100-year floodplain of a water identified in paragraphs (i) through (iii) mentioned above and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (i) through (v) mentioned above, where they

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1 The term *wetlands* means 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 for life in saturated soil conditions.

2 The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (iv) mentioned above), to a water identified in paragraphs (i) through (iii) mentioned above, that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark.

3 The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (i) through (v) mentioned above, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like.

are determined on a case-specific basis to have a significant nexus to a waters identified in paragraphs (i) through (iii) mentioned above.

The following features are not defined as "waters of the United States" even when they meet the terms of paragraphs (iv) through (viii) mentioned above:

(i) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act.

(ii) Prior converted cropland.

(iii) The following ditches:

- (A) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
- (B) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
- (C) Ditches that do not flow, either directly or through another water, into a water of the United States as identified in paragraphs (i) through (iii) of the previous section.

(iv) The following features:

- (A) Artificially irrigated areas that would revert to dry land should application of water to that area cease;
- (B) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
- (C) Artificial reflecting pools or swimming pools created in dry land;
- (D) Small ornamental waters created in dry land;
- (E) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
- (F) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of a tributary, non-wetland swales, and lawfully constructed grassed waterways; and
- (G) Puddles.

(v) Groundwater, including groundwater drained through subsurface drainage systems.

(vi) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

(vii) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

WETLANDS

For this project location, Corps jurisdictional wetlands are delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps 2008). This document is one of a series of Regional Supplements to the Corps Wetland Delineation Manual (Corps 1987). The identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. In order to be considered a wetland, an area must exhibit at least minimal characteristics within these three (3) parameters. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. In the field, vegetation, soils, and evidence of hydrology are examined using the methodology listed below and documented on Corps wetland data sheets, when applicable. It should be noted that both the Regional Board and the CDFW jurisdictional wetlands encompass those of the Corps.

Vegetation

Nearly 5,000 plant types in the United States may occur in wetlands. These plants, often referred to as hydrophytic vegetation, are listed in regional publications by the U.S. Fish and Wildlife Service (USFWS). In general, hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during growing season. Hydrophytic vegetation decisions are based on the assemblage of plant species growing on a site, rather than the presence or absence of particular indicator species. Vegetation strata are sampled separately when evaluating indicators of hydrophytic vegetation. A stratum for sampling purposes is defined as having 5 percent or more total plant cover. The following vegetation strata are recommended for use across the Arid West:

- *Tree Stratum:* Consists of woody plants 3 inches or more in diameter at breast height (DBH), regardless of height;
- *Sapling/shrub stratum:* Consists of woody plants less than 3 inches DBH, regardless of height;
- *Herb stratum:* Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size; and,
- *Woody vines:* Consists of all woody vines, regardless of size.

The following indicator is applied per the test method below.[4] Hydrophytic vegetation is present if any of the indicators are satisfied.

[4] Although the Dominance Test is utilized in the majority of wetland delineations, other indicator tests may be employed. If one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present, then the Prevalence Test (Indicator 2) may be performed. If the plant community satisfies the Prevalence Test, then the vegetation is hydric. If the Prevalence Test fails, then the Morphological Adaptation Test may be performed, where the delineator analyzes the vegetation for potential morphological features.

Indicator 1 – Dominance Test

Cover of vegetation is estimated and is ranked according to their dominance. Species that contribute to a cumulative total of 50% of the total dominant coverage, plus any species that comprise at least 20% (also known as the "50/20 rule") of the total dominant coverage, are recorded on a wetland data sheet. Wetland indicator status in California (Region 0) is assigned to each species using the *National Wetland Plant List, version 2.4.0* (Corps 2012). If greater than 50% of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation is considered to be met. Plant indicator status categories are described below:

- *Obligate Wetland (OBL):* Plants that almost always occur in wetlands;
- *Facultative Wetland (FACW):* Plants that usually occur in wetlands, but may occur in non-wetlands;
- *Facultative (FAC):* Plants that occur in wetlands and non-wetlands;
- *Facultative Upland (FACU):* Plants that usually occur in non-wetlands, but may occur in wetlands; and,
- *Obligate Upland (UPL):* Plants that almost never occur in wetlands.

Hydrology

Wetland hydrology indicators are presented in four (4) groups, which include:

Group A – Observation of Surface Water or Saturated Soils

Group A is based on the direct observation of surface water or groundwater during the site visit.

Group B – Evidence of Recent Inundation

Group B consists of evidence that the site is subject to flooding or ponding, although it may not be inundated currently. These indicators include water marks, drift deposits, sediment deposits, and similar features.

Group C – Evidence of Recent Soil Saturation

Group C consists of indirect evidence that the soil was saturated recently. Some of these indicators, such as oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur in the soil profile, indicate that the soil has been saturated for an extended period.

Group D – Evidence from Other Site Conditions or Data

Group D consists of vegetation and soil features that indicate contemporary rather than historical wet conditions, and include shallow aquitard and the FAC-neutral test.

If wetland vegetation criteria is met, the presence of wetland hydrology is evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil test pits. The lateral extent of the hydrology indicators are used as a guide for locating soil pits for evaluation of hydric soils and jurisdictional areas. In portions of the stream where the flow is divided by multiple channels with intermediate sand bars, the entire area between the channels is considered within the OHWM and the wetland hydrology indicator is considered met for the entire area.

Soils

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper 16-20 inches.[5] The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. It should also be noted that the limits of wetland hydrology indicators are used as a guide for locating soil pits. If any hydric soil features are located, progressive pits are dug moving laterally away from the active channel until hydric features are no longer present within the top 20 inches of the soil profile.

Once in the field, soil characteristics are verified by digging soil pits along each transect to an excavation depth of 20 inches; in areas of high sediment deposition, soil pit depth may be increased. Soil pit locations are usually placed within the drainage invert or within adjoining vegetation. At each soil pit, the soil texture and color are recorded by comparison with standard plates within a *Munsell Soil Chart* (2009). Munsell Soil Charts aid in designating color labels to soils, based by degrees of three simple variables – hue, value, and chroma. Any indicators of hydric soils, such as organic accumulation, iron reduction, translocation, and accumulation, and sulfate reduction, are also recorded.

Hydric soil indicators are present in three groups, which include:

<u>All Soils</u>

"All soils" refers to soils with any United States Department of Agriculture (USDA) soil texture. Hydric soil indicators within this group include histosol, histic epipedon, black histic, hydrogen sulfide, stratified layers, 1 cm muck, depleted below dark surface, and thick dark surface.

<u>Sandy Soils</u>

"Sandy soils" refers to soil materials with a USDA soil texture of loamy fine sand and coarser. Hydric soil indicators within this group include sandy mucky mineral, sandy gleyed matrix, sandy redox, and stripped matrix.

[5] According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (Corps 2008), growing season dates are determined through on-site observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature.

Loamy and Clayey Soils

"Loamy and clayey soils" refers to soil materials with a USDA soil texture of loamy very fine sand and finer. Hydric soil indicators within this group include loamy mucky mineral, loamy gleyed matrix, depleted matrix, redox dark surface, depleted dark surface, redox depressions, and vernal pools.

SWANCC WATERS

The term "isolated waters" is generally applied to waters/wetlands that are not connected by surface water to a river, lake, ocean, or other body of water. In the presence of isolated conditions, the Regional Board and CDFW take jurisdiction through the application of the OHWM/streambed and/or the 3 parameter wetland methodology utilized by the Corps.