JURISDICTIONAL DELINEATION REPORT

LATERAL C-1 STORM DRAIN PROJECT

CITY OF WILDOMAR, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:
Albert A. Webb Associates Inc.
3788 McCray Street
Riverside, California 92506
Office: (951) 686-1070
Fax: (951) 788-1256

Contact: Cheryl DeGano

Prepared by:
AMEC Environment & Infrastructure, Inc.
3120 Chicago Avenue, Suite 110
Riverside, California 92507

Principal Investigator:
Scot Chandler

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TABLE OF CONTENTS

PAGE

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENTS (Cont.)

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AMEC	AMEC Environment and Infrastructure, Inc.
AMSL	above mean sea level
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
DBESP	Determination of Biologically Equivalent or Superior Preservation
District	Riverside County Flood Control and Water Conservation District
EPA	Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GIS	Geographic Information System
IP	Individual Permit
MSHCP	Multiple Species Habitat Conservation Plan
NEPA	National Environmental Policy Act
NL	not listed
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OBL	obligate
OHWM	ordinary high water mark
Rapanos	Rapanos v. U.S. and Carabell v. U.S.
RPW	relatively permanent waterway
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. USACE
TNW	traditionally navigable waterway
UPL	upland
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture, Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey

WSC	Waters of the State of California
WUS	Waters of the United States

1.0 INTRODUCTION

The City of Wildomar is proposing to develop the Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project (proposed project). Albert A. Webb Associates retained AMEC Environment and Infrastructure, Inc. (AMEC) to determine the potential for impacts to jurisdictional waters from the development of the proposed project.

This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the development of the proposed project. The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code, and the County of Riverside under the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

1.1 Project Description

The proposed project is being developed under a cooperative agreement between the City of Wildomar and the Riverside County Flood Control and Water Conservation District (District). The proposed project includes the installation of approximately 2,400 linear feet of an underground storm drain with an estimated diameter of 84 inches and 66 inches and will also include appurtenant structures. The project will connect to the existing reinforced concrete box culvert under Palomar Street that is part of the District's Wildomar Master Drainage Plan Lateral C. The proposed storm drain will was designed to safely carry the 100-year storm runoff.

1.2 Project Location

The study area encompasses 2.13 acres and includes a 15-foot buffer (30 feet wide) around the centerline of the proposed storm drain location and in some areas is wider where impacts are anticipated. The study area is located in the city of Wildomar, Riverside County, California (Figure 1). The proposed project is located along Refa Street from approximately Palomar Street to the Charles Street and Woshka Lane intersection. A 500-foot lateral will also extend northwesterly from the Charles Street and Refa Street intersection to Billie Ann Road. Specifically, the study area is located within Section 35 of Township 6 South, Range 4 West, as shown on the United States Geological Survey (USGS) 7.5 minute Wildomar, California quadrangle (Figure 2). The geographic coordinates near the middle of the site are 33.60091° North latitude and 117.26430° West longitude.

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Vicinity & Location
Wildomar Line C Project

FIGURE
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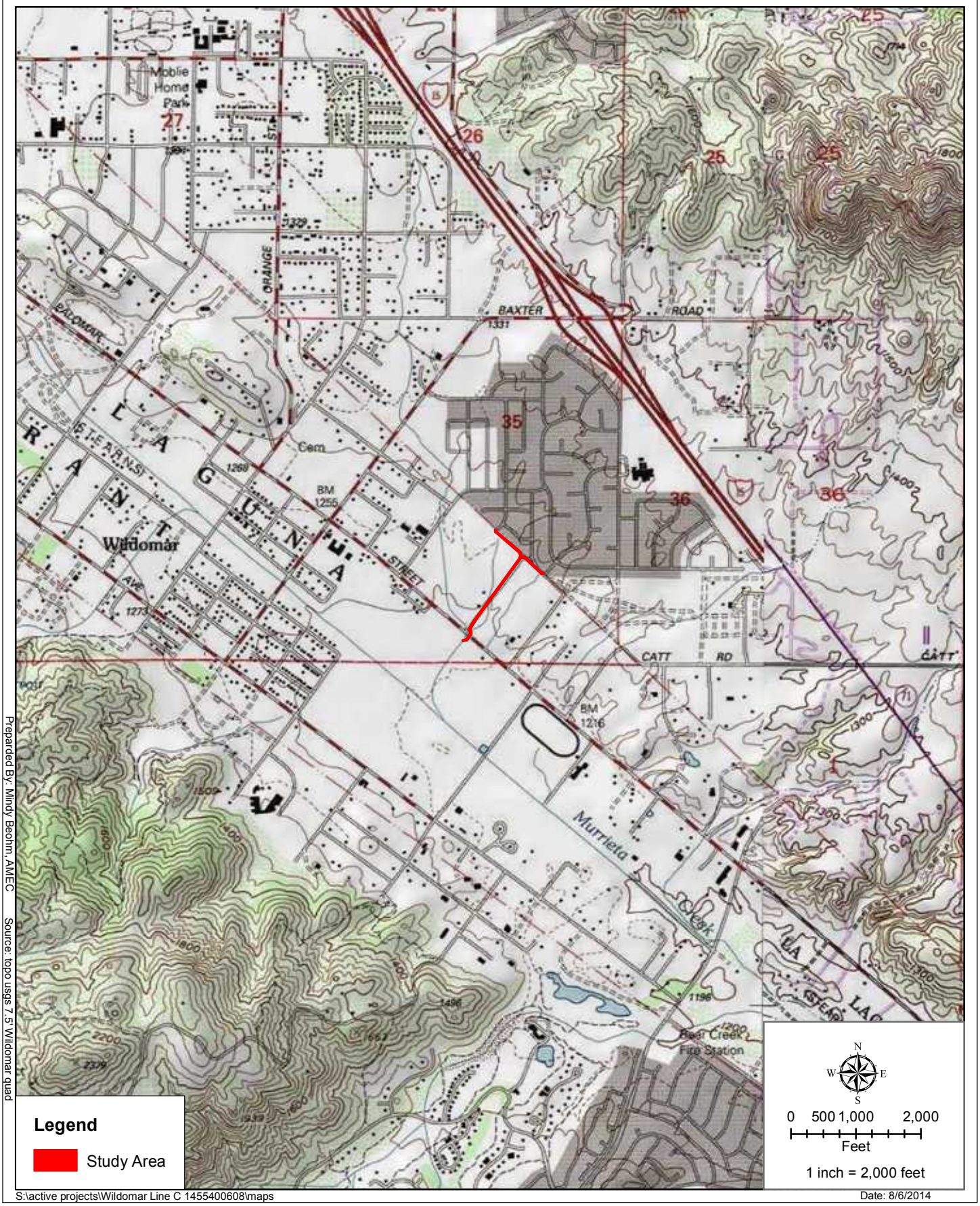

Prepared By: Mindy Beohm, AMEC

Source: topo usgs 7.5' Wildomar quad

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Topographic Map
Wildomar Line C Project

FIGURE
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2.0 ENVIRONMENTAL SETTING

2.1 Existing Conditions

A majority of the study area occurs within Refa Street, an unimproved dirt road. The remainder occurs along the undeveloped northeast edge of rural residential parcels adjacent to single-family tract homes.

The proposed project site is bordered to the northwest and southeast by large-lot rural residential housing, to the northeast by single-family tract homes, and to the southwest by single-family residential tract homes, large-lot rural residences, and undeveloped land.

Elevations within the study area range from approximately 1,270 feet above mean sea level (AMSL) along the northeast portion of the alignment, to 1,230 feet AMSL at the southwest end of the storm drain alignment.

2.2 Hydrology

The average rainfall for the area is 12.01 inches per year and the average snowfall is 0.6 inch per year (Western Regional Climate Center, 2014). Weather data was recorded at the nearby city of Lake Elsinore, approximately 6 miles northwest of the project site.

The study area is within the Santa Margarita River watershed. The site receives hydrology from the residential tract home development to the northeast after which it flows through natural watercourses through the site. Runoff from the site generally flows southeast in a concrete lined channel for ¼ mile before reaching Murrieta Creek. Murrieta Creek flows for approximately 12 miles before reaching the Santa Margarita River. The Santa Margarita River flows for approximately 31 miles before reaching the Pacific Ocean.

The proposed storm drain will generally allow low flows to continue down the natural watercourse and high flows will be contained within the storm drain.

2.3 Vegetation

The study area is dominated by non-native grassland and developed dirt and asphalt roadways. Vegetation nomenclature follows The Jepson Manual, Vascular Plants of California, 2nd Edition (Baldwin, 2012). When The Jepson Manual does not list a common name, common name nomenclature follows the United States Department of Agriculture, Natural Resources Conservation Service (USDA) Plants Database (USDA, 2014a).

2.4 Soils

The USDA online Web Soil Survey (based on the 1971 *Soil Survey of Western Riverside Area, California*) (Soil Survey Staff, 2014) was consulted to determine the soil types mapped as occurring within the study area. Soils within the study area occur on alluvial fans and

terraces. These well drained to moderately well drained soils developed in alluvium derived from granite. The study area crosses eight different soil types (Figure 3) including:

- Greenfield sandy loam, eroded (GyC2) – This well drained soil occurs on terraces and alluvial fans with 2 to 8 percent slopes. It is composed of sandy loam on the surface and the parent material is composed of alluvium derived from granite.
- Hanford sandy loam (HfD) – This well drained soil occurs on alluvial fans with 2 to 15 percent slopes. It is composed of sandy loam on the surface and the parent material is composed of alluvium derived from granite.
- Monserate sandy loam (MmB) – This well drained soil occurs on alluvial fans with 0 to 5 percent slopes. It is composed of sandy loam on the surface and the parent material is composed of alluvium derived from granite.
- Monserate sandy loam, shallow, eroded (MnD2) – This well drained soil occurs on alluvial fans with 5 to 15 percent slopes. It is composed of sandy loam and the parent material is composed of alluvium derived from granite.
- Monserate sandy loam, shallow, severely eroded (MnE3) – This well drained soil occurs on alluvial fans with 15 to 25 percent slopes. It is composed of sandy loam and the parent material is composed of alluvium derived from granite.
- Pachappa fine sandy loam (PaA) – This well drained soil occurs on alluvial fans with 0 to 2 percent slopes. It is composed of fine sandy loam and the parent material is composed of alluvium derived from granite.
- Placentia fine sandy loam (PIB) – This moderately well drained soil occurs on alluvial fans and terraces with 0 to 5 percent slopes. It is composed of fine sandy loam and the parent material is composed of alluvium derived from granite.
- Placentia fine sandy loam (PID) – This moderately well drained soil occurs on alluvial fans and terraces with 5 to 15 percent slopes. It is composed of fine sandy loam and the parent material is composed of alluvium derived from granite.

The following soil types on the site occur on the National List of Hydric Soils: Hanford sandy loam (HfD), Placentia fine sandy loam (PIB), and Placentia fine sandy loam (PID) (USDA, 2014b).

2.5 National Wetlands Inventory

The United States Fish and Wildlife Service (USFWS) is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. The USFWS has developed a series of maps, known as the National Wetlands Inventory (NWI) to show wetlands and deepwater habitat. This geospatial information is used by Federal, State, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither designed nor intended to produce legal or regulatory products; therefore, wetlands identified by the NWI program are not the same as wetlands defined by the USACE.

Prepared By: Mindy Beohm, AMEC Source: NRCS soilsmart ca 679

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Soils Map
Wildomar Line C Project

FIGURE
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The NWI Mapper (USFWS, 2014) was accessed online to review mapped wetlands within the project study area. No NWI wetlands were identified. The nearest NWI wetland is located approximately ½ mile southeast of the southern extent of the study area. It is classified as a palustrine, emergent, temporarily flooded wetland. Upon review of aerial photography, it does not appear this feature still exists.

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3.0 REGULATORY FRAMEWORK

3.1 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the United States (WUS) pursuant to Section 404 of the CWA.

3.1.1 Waters of the U.S.

CWA regulations (33 CFR 328.3(a)) define WUS as follows:

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 WUS under the definition;
5. Tributaries of WUS;
6. The territorial seas;
7. Wetlands adjacent to WUS (other than waters that are themselves wetlands).

The USACE delineates non-wetland waters in the Arid West Region by identifying the ordinary high water mark (OHWM) in ephemeral and intermittent channels (USACE, 2008a). The OHWM is defined in 33 CFR 328.3(e) as:

> "…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses 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."

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

3.1.2 Wetlands and Other Special Aquatic Sites

Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. They are defined in 40 CFR 230 Subpart E.

3.1.3 Supreme Court Decisions

3.1.3.1 Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States issued a decision on Solid Waste Agency of Northern Cook County v. USACE, et al. (SWANCC) with respect to whether the USACE could assert jurisdiction over isolated waters. The ruling stated that the USACE does not have jurisdiction over "non-navigable, isolated, intrastate" waters.

3.1.3.2 Rapanos/Carabell

In the Supreme Court cases of Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the court attempted to clarify the extent of USACE jurisdiction under the CWA. The nine Supreme Court justices issued five separate opinions (one plurality opinion, two concurring opinions, and two dissenting opinions) with no single opinion commanding a majority of the Court. In light of the Rapanos decision, the USACE will assert jurisdiction over a traditional navigable waterway (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are a relatively permanent waterway (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a "significant nexus" with a TNW: non-navigable tributaries that are not RPWs, wetlands adjacent to non-navigable tributaries that are not RPWs, and wetlands adjacent to but that do not directly abut a non-navigable RPW.

A significant nexus determination includes an assessment of flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary. This assessment is to indicate whether they significantly affect the chemical, physical and biological integrity of downstream TNWs. Analysis of potentially jurisdictional

streams includes consideration of hydrologic and ecologic factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to traditional navigable waters, size of watershed, average annual rainfall, and average annual winter snow pack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to a TNW, the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

3.2 Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as “surface water or ground water, including saline waters, within the boundaries of the state”.

3.3 California Department of Fish and Wildlife

The State of California regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

> “An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake (CDFW, 2014).”

In general, under 1602 of the Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW, 2010). It has been the practice of CDFW to define a stream as “a body of water that flows perennially or episodically and that is defined by the area in a channel which water currently flows, or has flowed over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators” (Brady and Vyverberg, 2013). Thus, a channel is not defined by a specific flow event, nor by the path of surface water as this path might vary seasonally. Rather, it is CDFW’s practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point.

3.4 Western Riverside County MSHCP

Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, of the Western Riverside County MSHCP defines riparian/riverine areas as “lands

which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year".

Section 6.1.2 of the Western Riverside County MSHCP further defines vernal pools as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics and the definition of the watershed supporting vernal pool hydrology must be made on a case-by-case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records".

Areas meeting the definition of riparian/riverine or vernal pools which are artificially created are not included in these definitions, with the exception of wetlands created for the purposes of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses.

Preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report is required under the Western Riverside County MSHCP for projects that involve impacts to riparian/riverine resources and/or vernal pools. The purpose of the DBESP report is to ensure replacement of any lost functions and values of habitat as it relates to covered species.

4.0 METHODS

Prior to conducting delineation fieldwork, the following literature and materials were reviewed:

- Aerial photographs of the project site at a scale of 1:4800 with 5-foot elevation contours to determine the potential locations of USACE, RWQCB, and CDFW jurisdictional waters or wetlands;
- USGS topographic map (Figure 2) to determine the presence of any "blue line" drainages or other mapped water features;
- USFWS NWI maps to identify areas mapped as wetland features; and
- USDA soil mapping data (Figure 3).

Field surveys of the study area were conducted by AMEC biologist Scot Chandler on 25 July 2014. Surveys consisted of walking the entire study area and identifying potentially jurisdictional water features. Visual observations of vegetation types and changes in hydrology were used to locate areas for evaluation. Weather conditions during delineation fieldwork were conducive for surveying with generally clear skies.

USACE regulated WUS, including wetlands, and RWQCB WSC were delineated according to the methods outlined in and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE, 2008a). The extent of WUS was determined based on indicators of an OHWM. The OHWM width was measured at points wherever clear changes in width occurred.

Federally regulated wetlands were identified based on the Wetlands Delineation Manual (USACE, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2008b). Additional data was recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled in order to classify an area as a wetland under the jurisdiction of the USACE: 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology. Details of these criteria are described below:

- **Hydrophytic Vegetation.** The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE, 2008b). An OBL indicator status refers to plants that almost always occur in wetlands. A FACW indicator status refers to plants that usually occur in wetlands, but may occur in non-wetlands. A FAC indicator status refers to plants that occur in wetlands and non-wetlands. Other wetland indicator statuses include facultative upland (FACU) which refers to plants that usually occur in non-wetlands, but may occur in wetlands, upland (UPL) for species that almost never occur in wetlands, and NL for plants that are not listed on the National Wetland Plant

List. The wetland indicator status used for this report follows the 2013 National Wetland Plant List (Arid West Region) (Lichvar, 2013).

- **Hydric Soils**. The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the Munsell Soil Color Charts (Gretag/Macbeth, 2000).
- **Wetland Hydrology.** The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987 and 2008b).

Areas meeting all three parameters would be designated as USACE wetlands. There were no wetlands identified in the study area during this investigation based of the absence of hydric soil indicators and/or wetland hydrology.

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds (CDFW, 2010). Specifically, CDFW jurisdiction was delineated by measuring the elevations of land that confine a stream to a definite course when its waters rise to their highest level and to the extent of associated riparian vegetation.

Riparian/riverine areas jurisdictional under the MSHCP were mapped similar to CDFW jurisdiction except where there was riparian vegetation not associated with a watercourse.

To determine jurisdictional boundaries, the surveyor walked the length of the drainage within the project area and recorded the centerline with a Trimble GeoXH global positioning system. The width of the drainage was determined by the OHWM and bankfull width measurements at locations where transitions were apparent. Other data recorded included bank height and morphology, substrate type, and all vegetation within the streambed and riparian vegetation adjacent to the streambed. Upon completion of fieldwork, all data collected in the field were incorporated into a Geographic Information System (GIS) along with basemap data. The GIS was then used to quantify the extent of jurisdictional waters.

Upstream and downstream connectivity of waterways was reviewed in the field and on aerial photographs and topographic maps to determine jurisdictional status according to the CWA, SWANCC, and Rapanos. Ephemeral washes with a physical connection to the Pacific Ocean were determined to be potential WUS as well as WSC and CDFW streambeds.

5.0 RESULTS

The study area contains two jurisdictional drainages identified as Drainage A and B and a riparian area not associated with a drainage identified as Riparian Area C. The Jurisdictional Delineation Map (Figure 4) identifies all on-site jurisdictional areas and includes photo point locations and the direction the photo was taken. Table 1 includes a list of jurisdictional areas identified in the project area, their area of temporary and permanent impacts, and length of waterway within the project study area.

The USACE, in combination with the Environmental Protection Agency (EPA), when necessary, reserves the ultimate authority in making the final jurisdictional determination of WUS and the RWQCB reserves the ultimate authority in making the final jurisdictional determination of WSC. Additionally, CDFW and the County of Riverside have ultimate discretion in the determination of their jurisdiction.

Table 1
Summary of Impacts to Jurisdictional Areas

Jurisdictional Area	WUS, WSC, CDFW and MSHCP Jurisdiction (acres)		CDFW and MSHCP Jurisdiction Only (acres)		MSHCP Jurisdiction Only (acres)		Length (feet)
	Temp. Impacts	Perm. Impacts	Temp. Impacts	Perm. Impacts	Temp. Impacts	Perm. Impacts	
Drainage A	0.033	0.004	0.003	0.006	0	0	77
Drainage B	0	0	0	0	0	0	0
Riparian Area C	0	0	0	0	0	0.153	315
Total	0.033	0.004	0.003	0.006	0	0.153	392

MSHCP – Western Riverside County Multiple Species Habitat Conservation Plan
WUS – Waters of the United States
WSC – Waters of the State
CDFW – California Department of Fish and Wildlife

5.1 Drainage A

Drainage A is shown on Figure 4 and in Appendix A, Photos 1 through 3. Drainage A begins at a storm drain outlet at the south end of Billie Ann Road. The storm drain outlets onto a concrete flow spreading structure that is densely vegetated with broad-leaved cattail (*Typha latifolia*, OBL). The broad-leaved cattails appear to be growing in a thin layer of decaying vegetation. A wetland sampling point was recorded in the spreading structure (Sampling Point 1) and was determined to not exhibit wetland characteristics due to a lack of hydric soils. After the spreading structure, the drainage flows south through an area of dense saltgrass (*Distichlis spicata*, FAC). There are no cut banks or other signs of water flow in this area likely due to the spreading structure reducing the velocity of flows to sheetflow. Jurisdictional limits in this area were delineated to the extent of saltgrass. A wetland

sampling point was recorded in this area (Sampling Point 2) which was determined to not be a wetland due to a lack of hydric soils and wetland hydrology. Drainage A then continues south outside of the study area for 1,050 feet before traversing the study area again where it crosses under Refa Street in a 3-foot reinforced concrete pipe. The vegetation on the northwest side of Refa Street is ornamental trees associated with the adjacent residence. Drainage A then continues off-site for 500 feet before entering the study area again at the south end of Refa Street where it flows through un-grouted rip-rap and into a box culvert that conveys it beneath Palomar Avenue. The rip-rap area directly upstream of the culvert is sparsely vegetated with tocalote (*Centaurea melitensis*, NL) and shortpod mustard (*Hirschfeldia incana*, NL), both non-native species. The soils within Drainage A ranged from clay loam in the upstream portion to coarse sand with gravel in the downstream section.

5.2 Drainage B

Drainage B is shown on Figure 4 and in Appendix A, Photo 5. Drainage B enters the study area through a concrete storm drain outlet structure on the south side of Charles Street. Directly downstream of the outlet structure, there are Goodding's black willow (*Salix gooddingii*, FACW) and Mexican fan palm (*Washingtonia robusta*, FACW).

5.3 Riparian Area C

Riparian Area C is shown on Figure 4 and in Appendix A, Photo 4. Riparian Area C consists of a strip of willow trees (*Salix* sp.) and a single pepper tree (*Schinus* sp.) near the north end of Refa Street that is not associated with a watercourse. This area meets the definition of riparian/riverine under the MSHCP but is not within USACE, RWQCB, or CDFW jurisdiction due to the lack of an associated watercourse.

5.4 Jurisdictional Determination

Drainage A is an ephemeral stream that likely flows for less than 3 months per year, and would therefore be classified as a non-RPW by the USACE. Drainage A flows into an RPW, Murrieta Creek ¼ mile downstream of the study area; another RPW, the Santa Margarita River, 12 miles downstream of the study area; and a TNW, the Pacific Ocean, approximately 43 river miles downstream of the study area.

Drainage A has a surface water connection to a TNW, and therefore would be considered a jurisdictional WUS based on SWANCC. Due to the proximity of Drainage A to Murrieta Creek and the Santa Margarita River, it is likely that the USACE would consider it to have a "significant nexus" with a TNW, and be considered a jurisdictional WUS based on Rapanos.

The USACE is ultimately responsible for jurisdictional determinations, and this report has been prepared to provide the necessary information to assist the USACE with that determination. An Approved Jurisdictional Determination could be requested of the USACE to provide an analysis to determine if Drainage A has a "significant nexus" to the Pacific Ocean, and is therefore a jurisdictional WUS. Otherwise the project proponent can request a

Jurisdictional Delineation Map

Wildomar Line C Project

FIGURE 4

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Preliminary Jurisdictional Determination in which the USACE assumes jurisdiction over Drainage A, and process permits accordingly.

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6.0 IMPACTS TO JURISDICTIONAL AREAS

The proposed development plan was overlaid on the jurisdictional delineation boundary using GIS to determine the extent of impacts to jurisdictional areas. Albert A. Webb Associates engineered the project and provided AMEC with the development plan. Generally, the project will cause temporary impacts to a 30-foot wide area centered on the proposed storm drain and permanent impacts will be caused by rip-rap and concrete transition structures.

The existing storm drain outlets at the north end of Drainages A and B will connect directly to the proposed storm drain. High flows will be conveyed through the proposed storm drain and low flows will be conveyed through the existing watercourses. The new storm drain at the north end of Drainage A will connect directly to the existing storm drain outlet causing temporary impacts in that area. Where Drainage A crosses beneath Refa Street, the existing culvert will be removed and then replaced in the same location after the storm drain is installed. A small area (25 square feet) of rip-rap will be added to the downstream end of the culvert in this area causing permanent impacts. At the downstream end of Drainage A, a concrete transition structure will be placed in the rip-rap portion of streambed directly upstream of the existing culvert causing permanent impacts.

The new storm drain at the north end of Drainage B will connect within the existing concrete outlet structure and will not cause any impacts to the streambed downstream of the outlet structure.

Permanent impacts to Riparian Area C will be caused by the storm drain outlet that feeds it being incorporated into the new storm drain. This connection will not allow low flows to continue naturally and all flows will be contained in the new storm drain. Table 2 portrays the proposed impacts to jurisdictional waters in the on-site jurisdictional areas.

Table 2
Total Project Impacts by Agency

Impacts	US Army Corps of Engineers (acre)	Regional Water Quality Control Board (acre)	California Department of Fish and Wildlife (acre)	Multiple Species Habitat Conservation Plan (acre)
Temporary	0.033	0.033	0.036	0.036
Permanent	0.004	0.004	0.011	0.164

6.1 Permitting Requirements

The proposed project requires temporary and permanent impacts to jurisdictional areas and therefore, authorizations from the USACE, RWQCB, CDFW, and County of Riverside may be required as described below.

6.1.1 U.S. Army Corps of Engineers

The two most common types of permits issued by USACE under Section 404 of the CWA to authorize the discharge of dredged or fill material into WUS are: a nation-wide permit (NWP) or an individual permit (IP).

NWPs are general permits for specific categories of activities that result in minimal impacts to aquatic resources.

NWP 43 can be used for stormwater management facilities. This NWP authorizes the construction of new stormwater management facilities including stormwater detention and retention basins, water control structures, outfall structures, emergency spillways, and low impact development integrated management features such as vegetated filter strips and grassed swales. The discharge must not cause the loss of greater than ½ acre WUS, including the loss of no more than 300 linear feet of streambed , unless for intermittent and ephemeral streambeds the district engineer waives the 300 linear feet limit by making a written determination concluding that the discharge will result in minimal adverse effects. The permittee must submit a pre-construction notification to the USACE district engineer prior to commencing the activity. The proposed project would likely qualify under NWP 43.

For project impacts that do not meet the provisions of an existing NWP, the USACE would require an IP. An IP requires detailed analysis and compliance with the USACE formal review process. This process includes preparation of an alternatives analysis as required by EPA Section 404(b)(1) Guidelines and the National Environmental Policy Act (NEPA), and requires compliance with NEPA's environmental review process. This process provides opportunities for public notice and comment.

The USACE must comply with the federal Endangered Species Act and Section 106 of the National Historic Preservation Act when issuing a NWP or IP.

6.1.2 Regional Water Quality Control Board

The project area is within the jurisdiction of the San Diego RWQCB (Region 9). Under Section 401 of the CWA, the RWQCB must certify that the discharge of dredged or fill material into WUS does not violate state water quality standards.

The RWQCB also regulates impacts to WSC under the Porter Cologne Water Quality Control Act through issuance of a Construction General Permit, State General Waste Discharge Order, or Waste Discharge Requirements, depending upon the level of impact and the properties of the waterway.

In addition to the formal application materials and fee (based on area of impact), a copy of the appropriate California Environmental Quality Act (CEQA) documentation must be included with the application.

6.1.3 California Department of Fish and Wildlife

A 1602 Streambed Alteration Agreement is required for all activities that alter streams and lakes and their associated riparian habitat. In addition to the formal application materials and fee (based on cost of the project), a copy of the appropriate CEQA documentation must be included with the application.

6.1.4 Western Riverside County MSHCP

Preparation of a DBESP report is required under the MSHCP for projects that involve impacts to riparian/riverine resources and/or vernal pools. The purpose of the DBESP report is to ensure replacement of any lost functions and values of habitat as it relates to covered species.

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APPENDIX A

SITE PHOTOGRAPHS

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Photo 1 – View of the upstream end of Drainage A showing the cattail area where the existing storm drain outlets and the area of saltgrass before it forms an incised channel.

Photo 2 – View of where the proposed storm drain will cross beneath an existing culvert. Rip-rap will be placed at the culvert outlet.

Photo 3 – View of the downstream end of Drainage A where a concrete transition structure will be placed.

Photo 4 – View of the approximate location where the proposed storm drain will temporarily impact Riparian Area B.

Photo 5 – View of the storm drain outlet structure of Drainage B.

APPENDIX B

WETLAND DETERMINATION DATA FORMS

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wildomar Line C City/County: Wildomar/Riverside Sampling Date: 7-25-2014

Applicant/Owner: City of Wildomar State: CA Sampling Point: 1

Investigator(s): Scot Chandler Section, Township, Range: 35, T6S, R4W

Landform (hillslope, terrace, etc.): Spreading basin Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): C Lat: 33.60320 Long: -117.26402 Datum: Nad 83

Soil Map Unit Name: HfD, Hanford Sandy loam NWI classification: none

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

Are Vegetation NO, Soil Yes, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation NO, Soil Yes, or Hydrology NO 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Sampling point in concrete spreading structure.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	_____	x 2 =	_____
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X 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 X No _____

Remarks:

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0								

[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: Concrete

Depth (inches): 0

Hydric Soil Present? Yes _____ No X

Remarks:

Concrete lined spreading structure. Typha is growing in thin layer of decaying vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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 X No _____

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

Remarks: Hydrology fed by Storm drain outlet.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wildomar Line C City/County: Wildomar/Riverside Sampling Date: 7-25-2014
Applicant/Owner: City of Wildomar State: CA Sampling Point: 2
Investigator(s): Scot Chandler Section, Township, Range: 35, T6S, R4W
Landform (hillslope, terrace, etc.): Channel bottom Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): C Lat: 33.60320 Long: -117.26409 Datum: Nad 83
Soil Map Unit Name: Hanford sandy loam HfD NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation No, Soil No, or Hydrology No 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 X No _____
Hydric Soil Present? Yes _____ No X
Wetland Hydrology Present? Yes _____ No X

Is the Sampled Area within a Wetland? Yes _____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Distichlis spicata	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 90	x 3 =	270
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 90 (A)		270 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X 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 X No _____

Remarks:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5 YR 3/2	100	none				Clay loam	

[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: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil moist. Does not meet any hydric soil criteria.

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks: No signs of wetland hydrology present.