

**Delineation of Jurisdictional Waters and Wetlands  
World Logistics Center Specific Plan  
City of Moreno Valley, Riverside County, California**

Sunnymead and El Casco USGS 7.5-minute Topographic Quadrangles  
Sections 1, 12, and 13 Township 3 South, Range 2 West and  
Sections 7, 8, 9, 16, 17, 18, 19, 20, and 21 Township 3 South, Range 3 West

Prepared for:

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Survey Date(s): September 2007 to March 2012  
Report Date: November 2012  
Revised: December 19, 2013

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## SECTION 1: SUMMARY

**Applicant Name:**

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### 1.1 - Introduction

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At the request of Highland Fairview Operating Company, Michael Brandman Associates (MBA) conducted an Assessment of Jurisdictional Waters and Wetlands for the World Logistics Center Specific Plan (WLCSP) area (2610), the 910-acre CDFW conservation buffer (within the San Jacinto Wildlife Area), the SDG&E Moreno Compressor Plant (194 acres), an indirect impact zone surrounding portions of the WLCSP (502 acres), potential offsite infrastructure facilities (302 acres) and additional survey areas (1,452 acres) associated with reduced specific plan boundary changes located in the City of Moreno Valley, western Riverside County, California. The original jurisdictional delineation fieldwork was completed on September 18, 2007 with a follow-up survey on March 14, 2012. The combined area (5,970 acres) is hereafter referred to as the survey area.

The World Logistics Center survey area encompasses approximately 5,970 acres of land in eastern Moreno Valley. A proposed General Plan Amendment and Zone Change covers much of the survey area, deleting the current residential mixed-use land uses (the Moreno Highlands Specific Plan) and replacing them with job-producing land uses (the World Logistics Center Specific Plan [WLCSP]) in the development areas. "Open space" and "public" uses will be provided in the undeveloped areas. An Environmental Impact Report for the project covers 3,714 acres of the 5,970 -acre survey area. The northerly 70 percent of the survey area is within the proposed WLCSP, which will function as the development regulations for the World Logistics Center, a 2,610-acre master-planned logistics complex. The most southerly 30 percent of the survey area (1,104 acres) will not be in the Specific Plan and will be designated for "open space" and "public" uses by the General Plan Amendment and Zone Change. The remaining 2,256 acres includes 302-acres of off-site utility improvements, 502 acres of indirect impact assessment, and 1,452 acres of additional biological survey area.

Offsite environmental impacts are associated with roadway and utility improvements. These include a series of detention basins in various canyons along the north side of Gilman Springs Road. Potential water reservoirs and an access road are proposed for a hillside east of Theodore Street/south of Ironwood Avenue and one east of Gilman Springs Road, south of SR-60. Sewer improvements are planned for Redlands Boulevard, Bay Avenue, Merwin Street, and Brodiaea Avenue. Water supply improvements are planned for Cottonwood Avenue, Eucalyptus Avenue, Merwin Street, Redlands

Boulevard, and Gilman Springs Road. Roadway improvements are planned for Redlands Boulevard and Gilman Springs Road. SR-60 will be improved with modifications to on- and off-ramps: these projects will be undertaken by CALTRANS and covered under separate environmental documents.

Finally, this jurisdictional delineation examines potential indirect impacts associated with both construction and operations of the proposed facilities on the WLCSP lands, as well as those in the survey area. Studies on indirect impacts are based on a combination of literature reviews, aerial photograph interpretation, and projects completed in some of the areas or adjacent areas.

This document has been prepared to meet the US Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB) standards and requirements.

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## 1.2 - Subject Features

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A 2007 investigation of the survey area showed that the previous survey area contained 11 individual drainage features and tributaries. Based on current site conditions and a larger survey area (2012), a total of 15 individual features were assessed to determine regulatory agency jurisdictional limits over all or part of any drainage feature within the World Logistics Center Specific Plan (WLCSP) survey area.

The 15 drainage features consist of two ephemeral drainages, three roadside ditches, seven isolated drainages, and three isolated features. Only two of the drainage features contain direct connectivity to a downstream Traditional Navigable Water (TNW) and are associated with off-site improvements necessary for project construction. The remaining 13 drainage features lack any direct connectivity to any downstream TNWs or any other Relatively Permanent Water (RPW). The three roadside ditches lack any riparian vegetation and only convey nuisance flows from localized runoff from the adjacent road. These flows eventually return to sheet flow within the survey area and have no direct connectivity.

The three isolated features include a water quality detention basin and two basins associated with previous cattle activities. The water quality basin is a temporary facility that was constructed to treat on site flows during the construction of the Skechers logistic facility located northwest of the survey area. The two isolated basins were previously used to collect runoff from a now-abandoned cattle facility. The facility included concrete lined areas to contain cattle in a dairy operation. The animal waste products would flow downhill and collect in the basins to protect downstream water quality. The concrete pens and holding facilities have been removed and the basins are no longer functioning. The basins do not have any recent evidence of ponding or other similar hydrologic indicators.

The remaining seven drainage features originate on site or immediately north of the survey area. These features are mostly human-made and are used to control downstream flows or to reduce erosion

impacts to adjacent agricultural fields. The soft soils within the survey area are highly erosive and the depth of the erosional features varies from two to three feet up to 30 feet. All seven drainage features eventually sheet flow into open grassland habitat with no direct connectivity to any downstream waters of the US.

## SECTION 2: JURISDICTIONAL METHODOLOGY

### 2.1 - Methodology Statement

This Delineation of Jurisdictional Waters and Wetlands was conducted in accordance with regulations set forth in 33 Code of Federal Regulations (CFR) Part 328 and the USACE guidance documents referenced below:

- USACE Wetlands Research Program Technical Report Y-87-1 (online edition), Wetlands Delineation Manual, Environmental Laboratory, 1987 (Wetland Manual).
- US Fish and Wildlife Service (USFWS) Classification of Wetlands and Deepwater Habitats of the United States, Lexis M. Cowardin, U.S. Department of Interior, Fish and Wildlife Service, FWS/OBS-79/31, December 1979, updated 1992 (Cowardin).
- USACE Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest, 2001 (Arid Southwest Guidelines)
- USACE Minimum Standards for Acceptance of Preliminary Wetlands Delineations, November 30, 2001 (Minimum Standards).
- USACE Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, December 2006 (Arid West Supplement).
- USACE Jurisdictional Determination Form Instructional Guidebook, May 30, 2007 (JD Form Guidebook).
- Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* and *Carabell v. United States* (June 5, 2007) (Rapanos Guidance).
- USACE A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States, August 2008 (OHWM Manual).
- Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2010).

### 2.2 - Pre-Survey Investigation

Prior to the recent field visit, a 200-scale (1 inch = 200 feet) aerial photograph (2011) of the survey area was procured and compared with the Sunnymead and El Casco, California, United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps to identify potential drainage features within the survey area as indicated from topographic changes or visible drainage patterns. The National Wetland Inventory was also reviewed to determine whether any wetland areas had been documented within the vicinity of the survey area. The United States Department of Agriculture

(USDA) Soil Survey Map was reviewed to identify the soil series that occur on the survey area. The previous jurisdictional delineation report was also reviewed to identify previous site conditions and estimated jurisdictional limits.

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### **2.3 - Field Investigation**

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MBA Biologists Scott Crawford and Steve Hongola and Regulatory Specialist Tom Mullen completed surveys to document waters and wetlands for the survey area on May 10 and September 18, 2007. On March 14, 2012, MBA conducted another site visit and assessment to update the previous documentation because more than 2 years had passed since the site was last evaluated. Information from the previous survey is included as part of this report because this report encompasses a range of surveys to understand the function and value of the drainage features onsite. This delineation work was conducted in accordance with procedures and criteria set forth in the “Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region” and the “1987 Corps of Engineers Wetlands Delineation Manual” (Wetlands Delineation Manual or Manual), which define jurisdictional wetlands as features containing three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. Data was collected in 2007 using a Magellan Explorist 600 global positioning system (GPS) unit with an accuracy of  $\pm 10$  feet. Data collected in 2012 used a Trimble GeoXt GPS unit with an accuracy of  $\pm 1$  feet (data sheets are available upon request). Potential drainage features and wetlands were also mapped on recent aerial photographs. Other tools used included a 30-meter tape measure, shovel, Munsell color chart, and digital camera.

The surveys were conducted on foot and all potentially jurisdictional features within the survey area and immediate vicinity were systematically inspected to record existing conditions and to determine the jurisdictional limits of waters and wetlands. Soil pits were dug to determine the limits of wetland soils (if any). All soil pits were sampled to a depth of at least 20 inches, if feasible. Indicators of hydrophytic vegetation were assessed. The site was carefully assessed for surface flow indicators (presence of hydrophytic vegetation, staining, cracked soil, ponding, etc.). The apparent flow regimes and corresponding hydrogeomorphic features were subsequently identified.

Suspected wetland areas were assessed to the outer reach of the applicable (hydrophytic) vegetative community or where ponded features are present, to the natural topographical rim of the depressional feature (whichever was greater). Features previously indicated as potentially jurisdictional on aerial photographs (dark/saturated areas, associated riparian vegetation, etc.) were field-verified during the site visit. USDA/ National Water and Climate Center (NRCS) soils records for Riverside County were also field-confirmed. Plant species for each vegetative community were identified and given an indicator status as prescribed in the National List of Vascular Plant Species that Occur in Wetlands (1988). All data collected was recorded in a field notebook and evaluated using the 2006 USACE Arid West Regional Guidance (available upon request).

USACE jurisdiction is based on the presence of a clearly defined OHWM and direct or indirect surface connectivity to downstream traditional navigable water (TNW) of the US. Offsite connectivity to downstream TNWs was made by (1) examining USACE online *Solid Waste Agency of Northern Cook County v. US Army Corps of Engineers*, 531 US 159 (2001) (SWANCC) determinations, (2) by examining both present and historical aerial photography, or (3) by physically following offsite drainage courses to their downstream confluence.

CDFW jurisdiction is based on the presence stream characteristics, which includes creeks and rivers as defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Stream-dependent riparian habitat is defined in the California Fish and Game Code (Section 2785) as “lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source.” CDFW jurisdictional limits are generally measured top of the bank to top of bank and also includes the canopy of any adjacent riparian vegetation.

Measurements were entered into Geographical Information System (GIS) ArcView software to identify the location and dimensions of potentially jurisdictional areas. The ArcView application was then used to compute USACE, CDFW, and RWQCB jurisdiction in acres. Acreage computations were verified using a 200-scale aerial photograph and field data.

### **2.3.1 - Field Conditions at time of Field Investigation**

Field conditions were dry and hot during the 2007 surveys, with winds blowing at approximately 0 to 5 miles per hour. During the survey, surface water was not present in any of the features investigated onsite. The Palmer Drought Severity Index (PDSI) indicated “extreme drought conditions” for September 18, 2007 (when the field assessment was conducted). Field conditions during the 2012 survey included winds from 0 to 5 miles per hour, with cool temperatures and partly cloudy skies. The area received rain within a week of the survey and additional storms were pending. The PDSI indicated “moderate drought conditions” for February 2012 (the month prior to conducting field survey).

## SECTION 3: ENVIRONMENTAL SETTING

### 3.1 - Location of the Property

The survey area includes approximately 5,970 acres, which includes offsite improvement for future infrastructure development. The survey area is generally located north of State Route (SR) 74, south of SR-60, east of Interstate (I) 215, and west of SR-79, in the City of Moreno Valley, Riverside County, California (Exhibit 1). The survey area is depicted on Sections 6, 7, 8, and 9, 16, 17, 18, 19, 20, and 21 of Township 3 South, Range 2 West and Sections 1, 12, and 13 of Township 3 South, Range 3 West within the Sunnymead and El Casco, California, USGS 7.5-minute topographic quadrangle maps (Exhibit 2). Specifically, it is north of the San Jacinto Wildlife Area, south of SR-60, east of Redlands Boulevard, and west of Gilman Springs Road (Exhibit 3). There are several offsite improvement areas located adjacent to the WLCSP area. These offsite improvement areas will be evaluated as potential locations for water tank facilities and associated waterlines for future development.

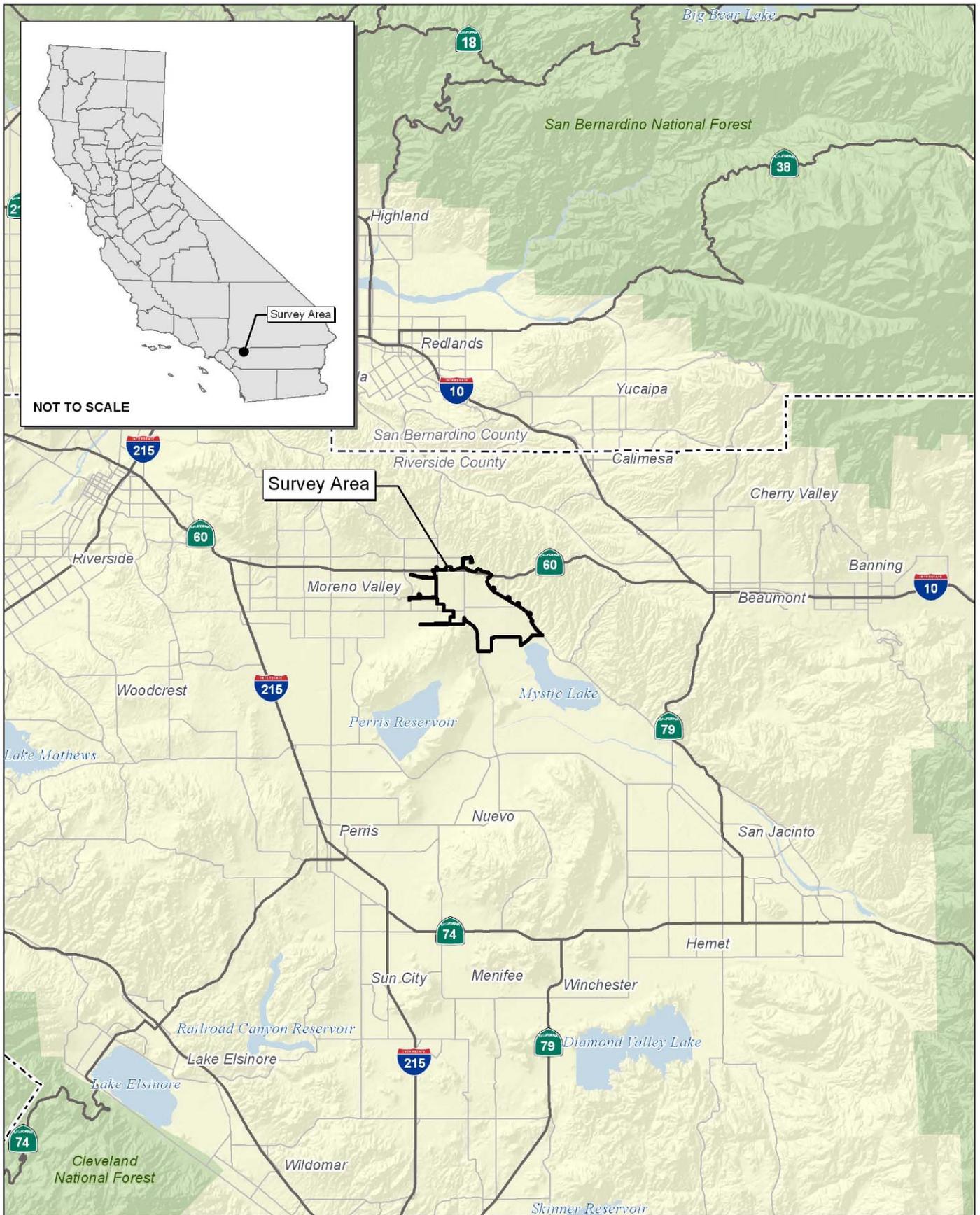
The survey area has historically been used for agricultural purposes. It is currently dominated by disked agricultural fields. All cattle activity onsite, including grazing activity, was stopped in early 2000's. General land use in the vicinity of the survey area includes SR-60, agricultural lands to the north, and agricultural lands intermixed with rural residences to the south, east, and west. In addition, the San Jacinto Wildlife Area (SJWA) occurs south of the survey area.

#### 3.1.1 - Directions to the Property

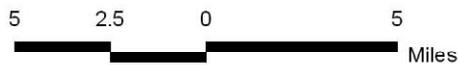
From Los Angeles driving east, take SR-60 east, exit at Redlands Boulevard, and proceed south. The survey area is located south and east of the end of the off ramp. From eastern Riverside County, take I-10 west to SR-60. Take SR-60 west and exit at Gilman Springs Road and head south. The survey area is located to the west.

#### 3.1.2 - Assessor's Parcel Numbers

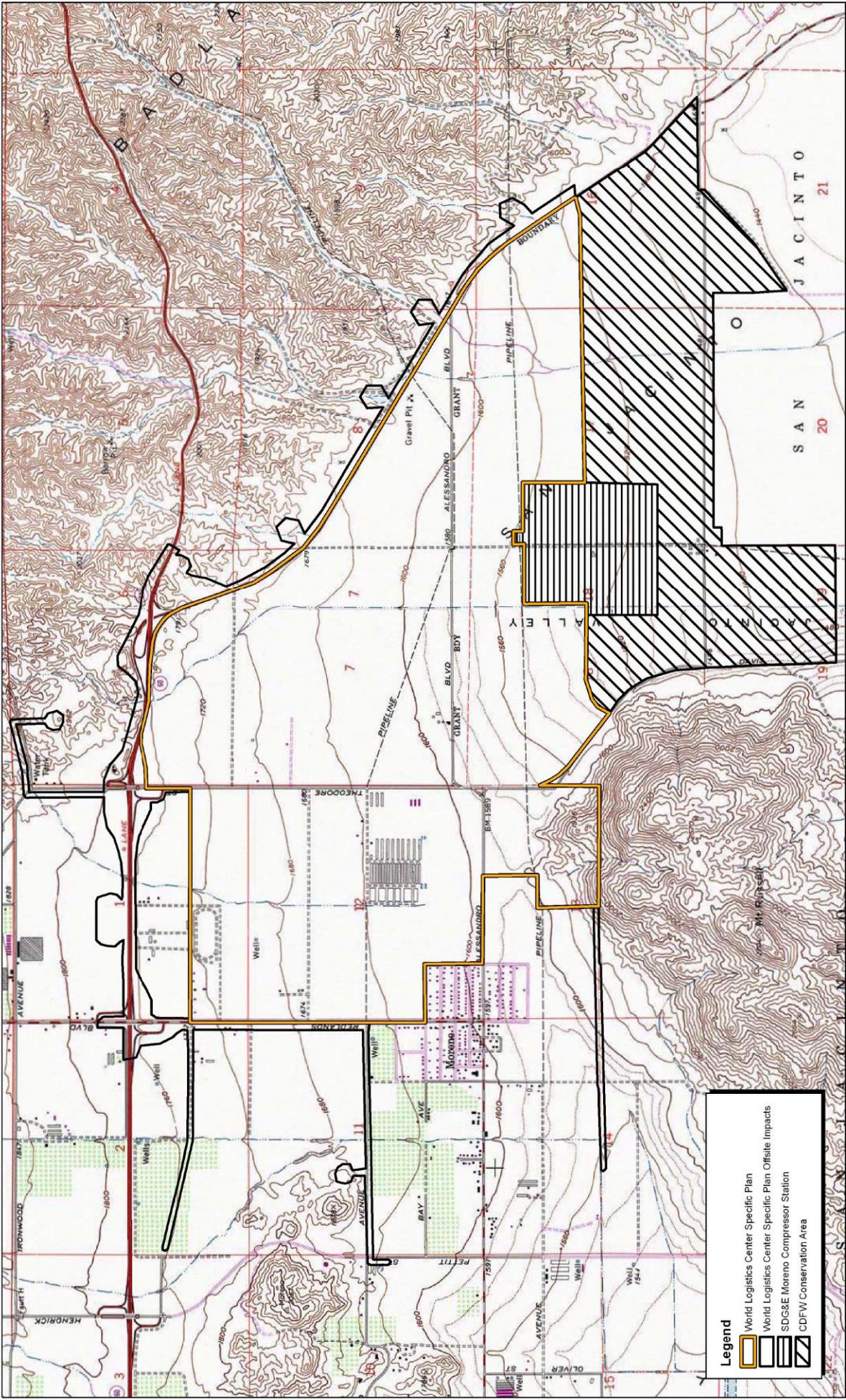
A complete list of the Assessor's Parcel Numbers (APNs) included in the survey area is found in Appendix E.



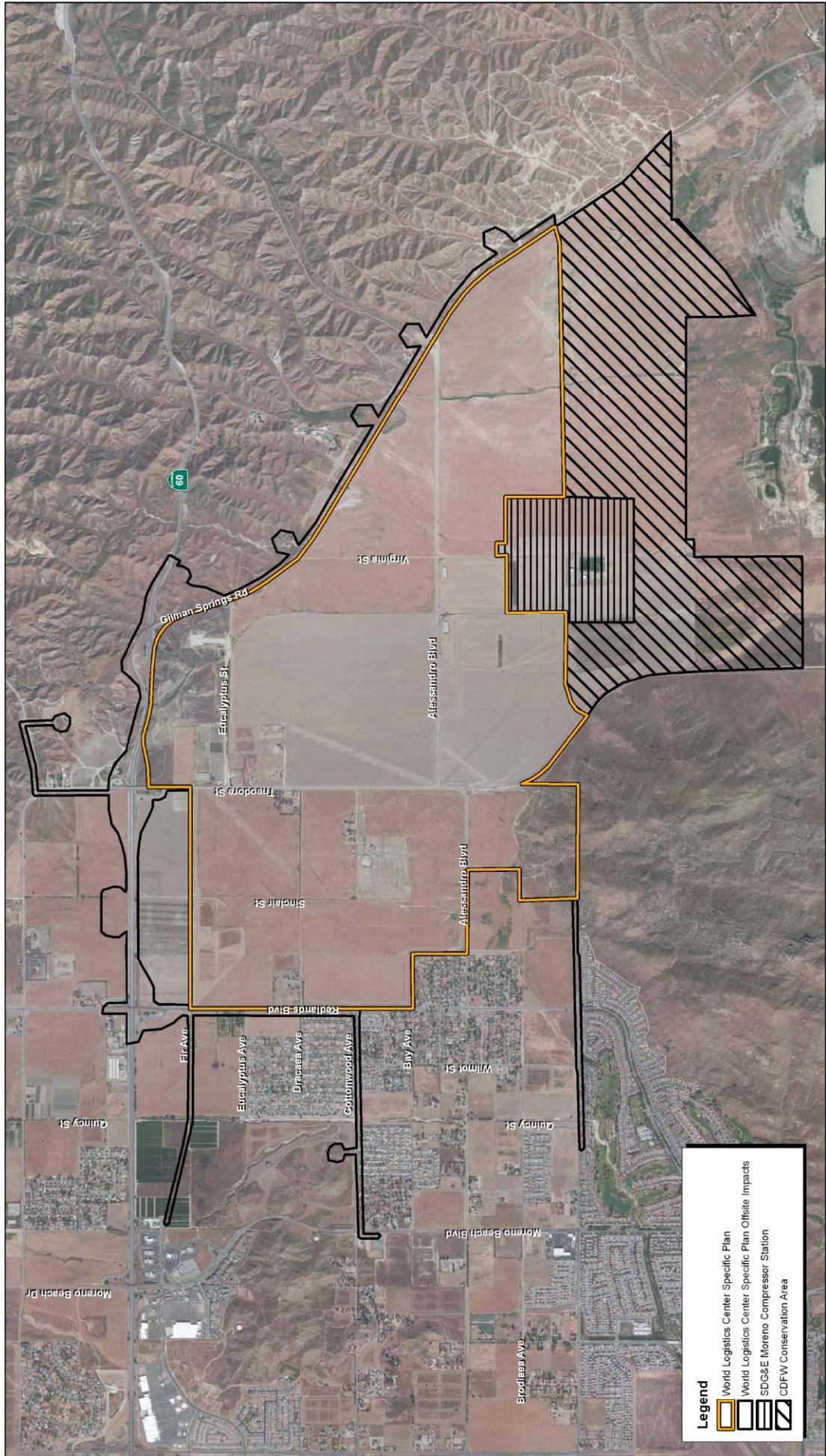
Source: Census 2000 Data, The CaSIL, FCS-MBA GIS 2013.



## Exhibit 1 Regional Location Map



Source: TOPO USGS Sumnymead, CA (1978) and El Casco (1976), 7.5' DRG.



Source: ESRI Aerial Imagery, FCS-MBA Field Survey and GIS Data, 2013.



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Exhibit 3  
Local Vicinity Map  
Aerial Base

HIGHLAND FAIRVIEW, OPERATING COMPANY • WORLD LOGISTICS CENTER SPECIFIC PLAN  
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS

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## 3.2 - Land Uses

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The majority of the survey area is currently disked and used for agricultural practices, including dry land farming. Seven occupied rural residential structures are scattered throughout the survey area. General land use in the vicinity of the survey area includes transportation via highway SR-60, active agricultural land to the north and mixed active agricultural, residential, and rural residential land to the west. Undeveloped lands are located to the south and east. The SJWA, located south of the project site, contains a 9,000 acre restored wetland as well as several thousand acres of disked agricultural lands. It is the first state wildlife area to use reclaimed water to enhance its wetlands.

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## 3.3 - Topography

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The survey area is located at the northern extent of the San Jacinto and Moreno Valleys, northeast of Mount Russell, and southwest of the Badlands. A human-made lake (Mystic Lake) is located south of the survey area and Lake Perris State Recreation Area (LPSRA), also associated with a human-made lake, lies directly to the southwest. The survey area is relatively flat with minimal topographic relief, with a slight slope to the south. It has an elevation range of approximately 1,440 to 1,800 feet above mean sea level.

The runoff on site generally flows south. The southwestern corner of the survey area drains to the western side of Mount Russell. The rest of the survey area flows on the east side of Mount Russell toward Mystic Lake.

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## 3.4 - Hydrology

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### 3.4.1 - Pertinent Hydrogeomorphic Features

The 15 drainage features consist of 2 ephemeral drainages (Drainage 12 and 15), 3 roadside ditches (Drainage 1, Drainage 5, and Drainage 6), 7 isolated drainage features (Drainage 2, 4, 7, 8, 9, 10, and 11), and 3 isolated basins (Drainage 3, Drainage 13, and Drainage 14). All drainage features appear to be ephemeral channels or isolated features with a variety of widths and depths. Only Drainages 12 and 15 directly flow into a TNW. The remaining features eventually sheet flow prior to connecting to any downstream features and therefore are considered isolated features.

### 3.4.2 - Watershed Description

The survey area is located within the San Jacinto watershed (Exhibit 4). The San Jacinto River drains approximately 766 square miles, generally to Railroad Canyon Reservoir (Canyon Lake) and is identified by the USGS cataloging unit number 18070202 (Table 1). Much of the survey area, however, drains toward Mystic Lake Duck Club. The site is located within the semi-arid region of western Riverside County to the east of the San Bernardino Mountains and to the south of the San Gabriel Mountains.

**Table 1: Watershed Information**

Hydrologic Information	Description	Acres	Square Miles	Percent of Watershed
Hydrologic (Cataloging) Unit	San Jacinto (18070202)	490,225	766	27
Hydrologic Area	Perris	217,460	340	12
Hydrologic Area	San Jacinto	242,032	378	13
Hydrologic Sub-Area	Perris Valley	106,455	166	6
Hydrologic Sub-Area	Gilman Hot Springs	193,597	302	11

Sources of water supplying the site include natural runoff from precipitation and flows from adjacent agricultural fields to the north and open space areas to the north and east. The survey area drains via sheet-flow, swales, and small roadside ditches. Runoff from Drainages 1, 2, 3, 4, 12, 13, and 15 appear to sheet flow prior to entering the City of Moreno Valley storm drain system and then enter the Perris Valley Channel (previously known as the Perris Valley Storm Drain, or PVSD), which flows to the San Jacinto River and then to Canyon Lake (a TNW). Runoff from Drainages 5, 6, 7, 8, 9, 10, and 11 exit the southern portion of the survey area and drain toward Mystic Lake. Drainage 14 is completely isolated with no evidence of flows.

### **3.4.3 - Water Quality within the Drainage Area and Receiving Waters - 303(d) Listing**

The project site contains no drainage features with a 303d listing. The closest recorded feature with a 303d listing is the Canyon Lake (Railroad Canyon Reservoir), which has non-point source pathogens with an estimated size of 463 acres. Canyon Lake is over 15 river-miles southwest of the project site.

The majority of the drainage features on site are mostly isolated upland swales with significant upstream eroded features. The isolated nature of the drainage features do not provide a direct connectivity to downstream drainages. Therefore, these isolated drainage features on site do not contribute to downstream pollution.

The off-site improvements may impact drainage features that are directly connected to downstream waters of the state that eventually flow into Canyon Lake. However, due to the distance from Canyon Lake the drainage features that may potentially be impacted are not likely to provide a significant amount of pollution to downstream drainage features.

### **3.4.4 - Drainage Patterns**

Sources of water supplying the project site include storm water runoff from upstream portions of the survey area and stormwater runoff and nuisance flows conveyed to the survey area via underground storm drain culverts along the northern portion of the project site. From the project site, runoff from off-site drainage features continue southwest for 15.7 river miles before it enters Canyon Lake (RPW)

and ultimately discharges to the Pacific Ocean, a TNW, approximately 82.7 river miles southwest of the project site (Table 2).

**Table 2: Distance to Downstream Resources**

Project Waters (Drainage)	Distance to Downstream RPW (Canyon Lake )		Distance to TNW (Pacific Ocean)	
	River Miles	Aerial Miles	River Miles	Aerial Miles
Unnamed Drainage Feature	15.7	13.5	82.7	44.6

### 3.4.5 - Federal Emergency Management Agency (FEMA) Flood Map

The project site is outside of the 500-year floodplain (Exhibit 5). However, a small portion of the southwestern corner of the survey area as well as some potential off-site improvements are within the 100-year floodplain.

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## 3.5 - Seasonal Climate Variation

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The Moreno Valley area is subject to both seasonal and annual variations in temperature and precipitation. Daily temperatures are at an average daily low in December and January (40.0 degrees Fahrenheit [°F]) and at an average daily high in August (95.0°F). Precipitation is typically greatest in the winter months from December through March, reaching a peak average rainfall in February (3.04 inches). Approximately 70 percent of the annual rainfall occurs during these months. Average precipitation is lowest from May through October, with a minimum average low in July of 0.10 inches. Annual average precipitation at the City of Moreno Valley is 11.4 inches.

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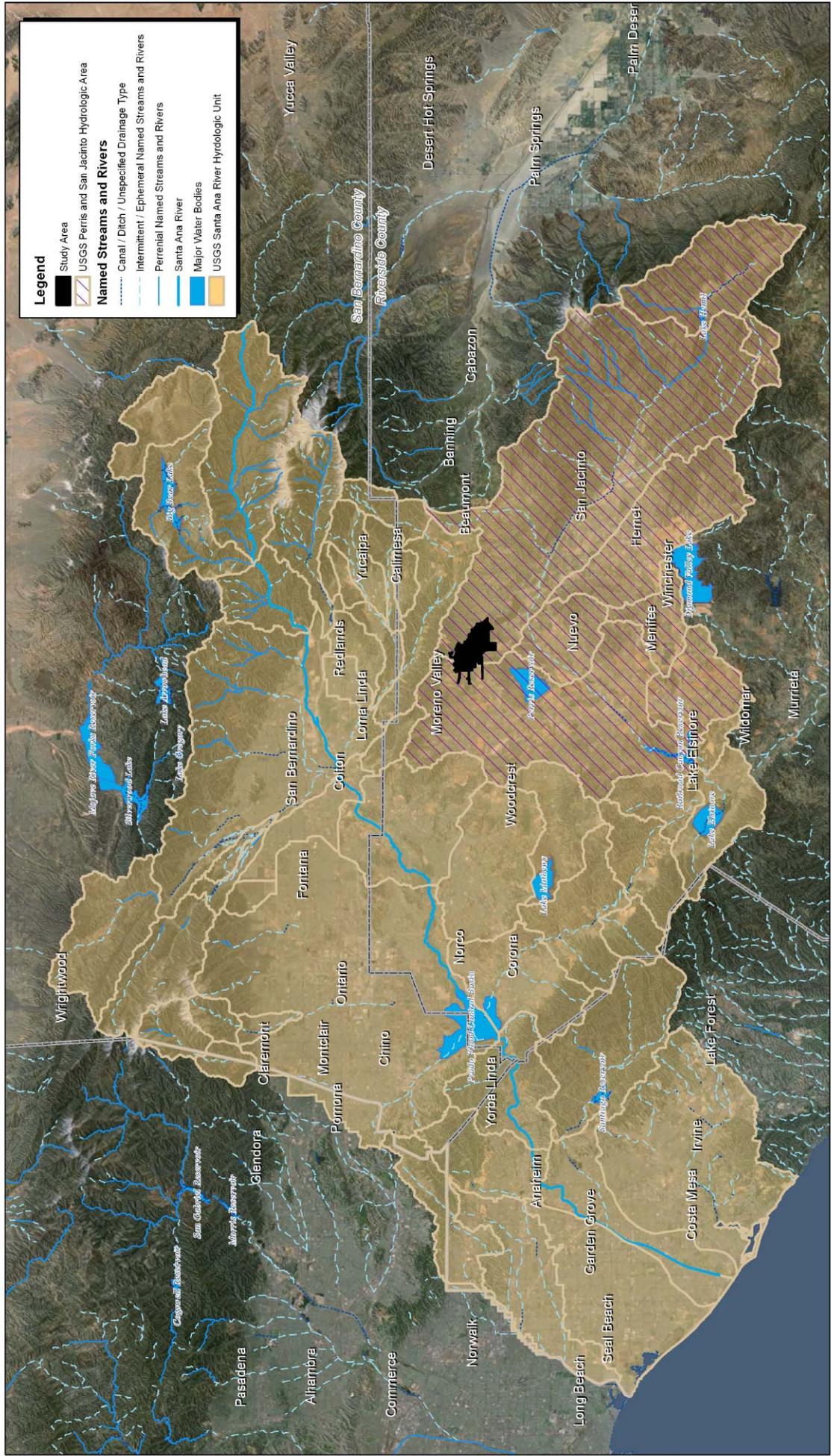
## 3.6 - Soils

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The survey area contains 14 different soil-mapping units belonging to 11 different soil series (Exhibit 4). A soil series is a group of soils with similar profiles. These profiles include major horizons with similar thicknesses, arrangement, and other distinct characteristics. The survey area is dominated by a consociation of San Emigdio loam (SgA and SgC) and San Emigdio fine sandy loam (SeC2), with smaller inclusions of Arbuckle loam (AkC), Badland (BaG), Cieneba rocky sandy loam (CkF2), Gorgonio loamy sandy (GhC and GhD), Greenfield sandy loam (GyA, GyC2, GyD2, and GyE2), Hanford coarse sandy loam (HcC and HcD2), Metz gravelly sandy loam (MID), Metz loamy fine sand (MfA), Metz loamy sand (MdC and MeD), Ramona sandy loam (RdD2), Rockland (RtF), San Emigdio fine sandy loam (SeA, SeC2, and SeD2), San Emigdio loam (SgA and SgC), and San Timoteo loam (SmE2).

The surface horizon of these soils is characterized by value/chroma ranges from 2.5Y 6, 4/2 to 10YR 3-6/2-3 on the Munsell Soil Color Chart. The surface horizon within these soils is usually dry from April to November. These soil series are geographically grouped and share many similar

characteristics and are often found in stream bottoms, floodplains, and/or alluvial fans. These soils are formed from decomposed granite/sedimentary rock, ranging in depth from 22 to 74 inches, and are generally well-drained to excessively well-drained. Some soils in the Badland, Gorgonio, and Metz series (BaG, GkD, and MeD) are identified as hydric soils in western Riverside County soil surveys. The survey area contains two soil mapping units considered hydric: Badlands and Metz loamy sandy. Hydric soil conditions were not observed during the field evaluation (Exhibit 6).

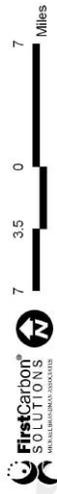


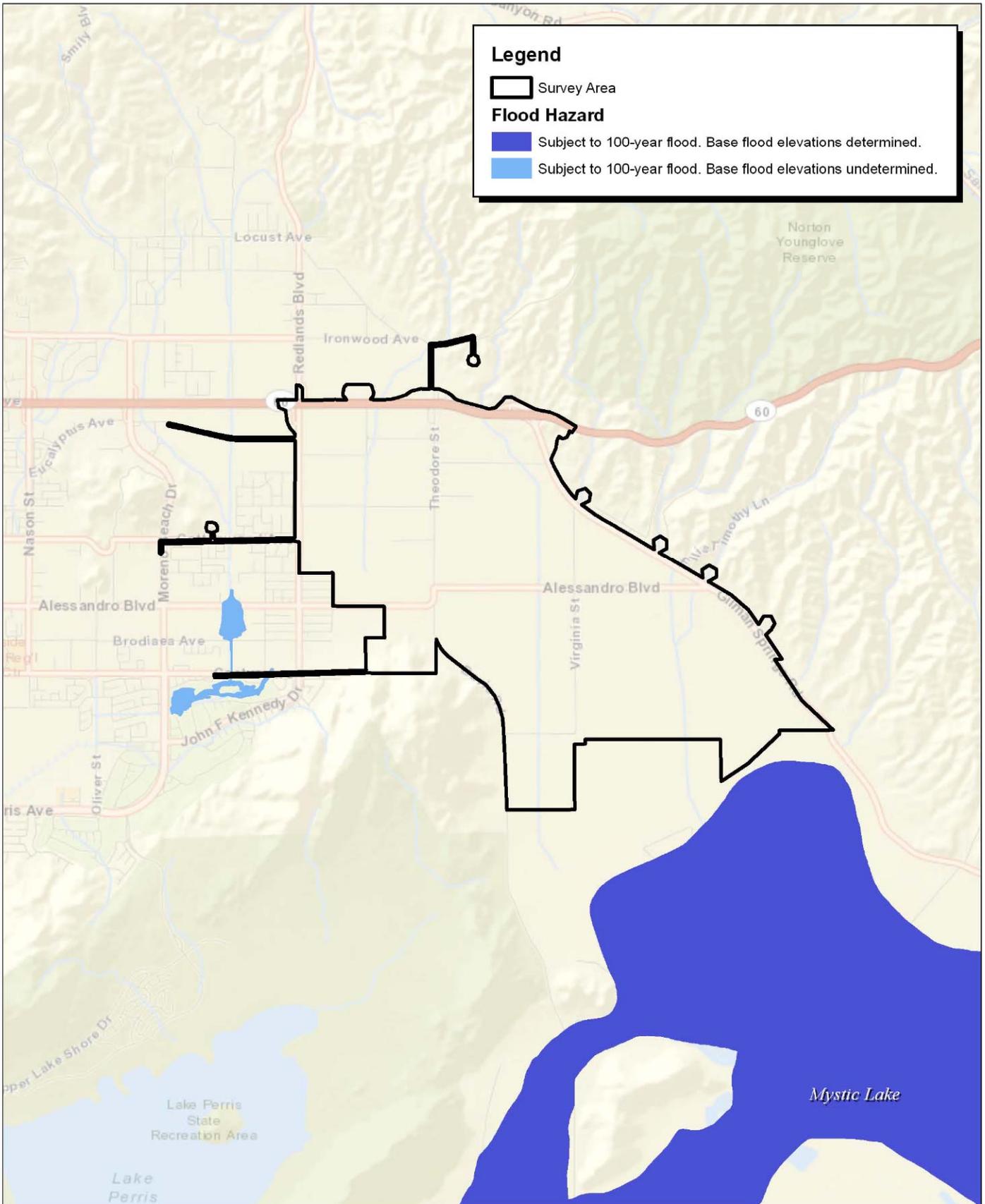
**Legend**

- Study Area
- USGS Perris and San Jacinto Hydrologic Area
- Named Streams and Rivers**
- Canal / Ditch / Unspecified Drainage Type
- Intermittent / Ephemeral Named Streams and Rivers
- Perennial Named Streams and Rivers
- Santa Ana River
- Major Water Bodies
- USGS Santa Ana River Hydrologic Unit

**Exhibit 4**  
**Watershed / Drainage Map**

Source: ESRI Aerial Imagery, FCS-MBA Field Survey and GIS Data, 2013.

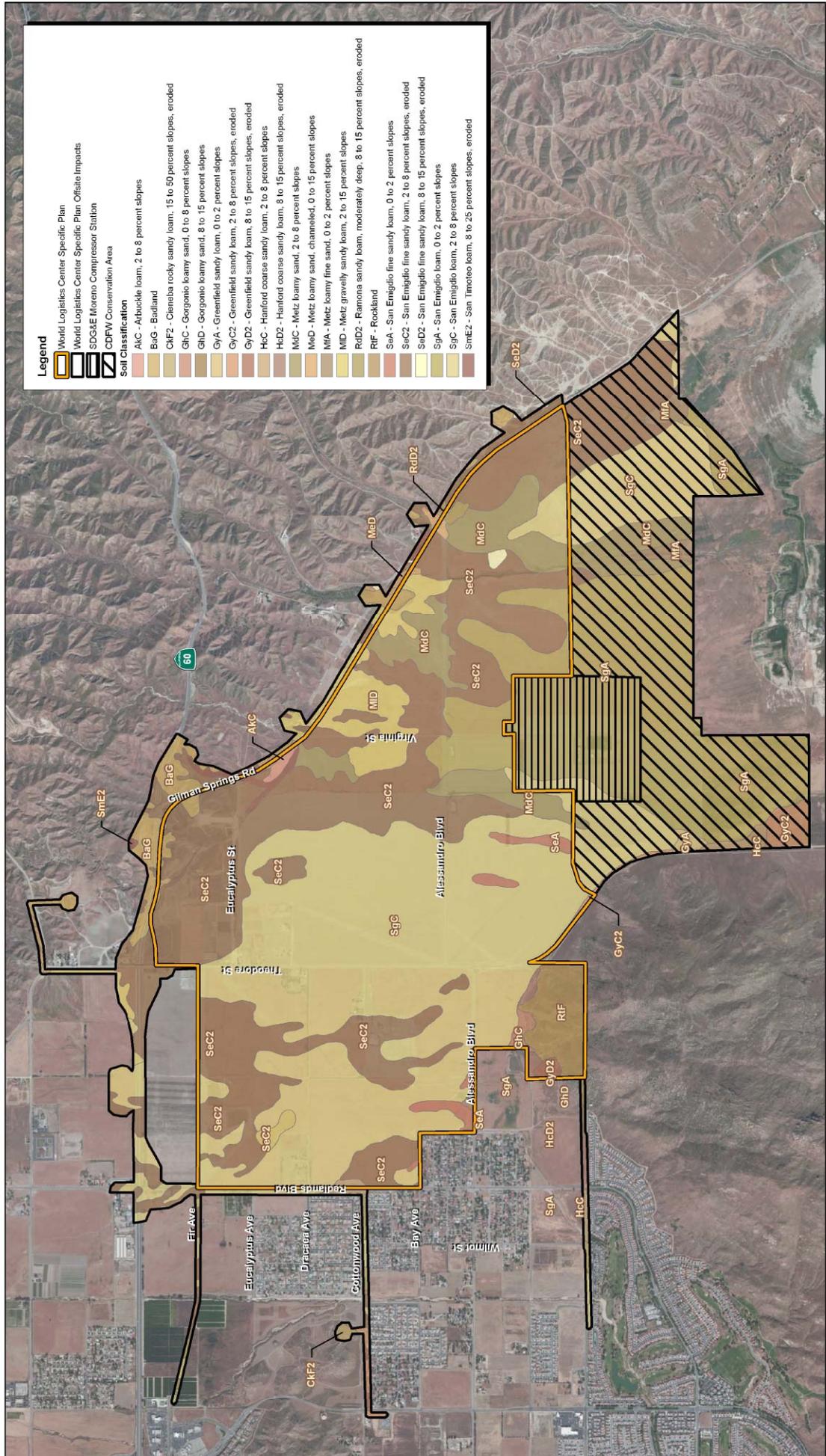




Source: ESRI USA Prime Imagery, FEMA Flood Data.



## Exhibit 5 FEMA Flood Zones



**Legend**

- World Logistics Center Specific Plan
- World Logistics Center Specific Plan, Offsite Impacts
- SDG&E Moreno Compressor Station
- CDFW Conservation Area

**Soil Classification**

- AkC - Atubuckle loam, 2 to 8 percent slopes
- BaG - Badland
- CkF2 - Chencha rocky sandy loam, 15 to 50 percent slopes, eroded
- GhC - Gorgonio loamy sand, 0 to 8 percent slopes
- GhD - Gorgonio loamy sand, 8 to 15 percent slopes
- GyA - Greenfield sandy loam, 0 to 2 percent slopes
- GyC2 - Greenfield sandy loam, 2 to 8 percent slopes, eroded
- GyD2 - Greenfield sandy loam, 8 to 15 percent slopes, eroded
- HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
- HcD2 - Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
- MdC - Metz loamy sand, 2 to 8 percent slopes
- MdD - Metz loamy sand, channelled, 0 to 15 percent slopes
- MfA - Metz loamy fine sand, 0 to 2 percent slopes
- MfD - Metz gravelly sandy loam, 2 to 15 percent slopes
- RdD2 - Ramona sandy loam, moderately deep, 8 to 15 percent slopes, eroded
- RfF - Rockland
- SvA - San Emigdio fine sandy loam, 0 to 2 percent slopes
- SeC2 - San Emigdio fine sandy loam, 2 to 8 percent slopes, eroded
- SeD2 - San Emigdio fine sandy loam, 8 to 15 percent slopes, eroded
- SgA - San Emigdio loam, 0 to 2 percent slopes
- SgC - San Emigdio loam, 2 to 8 percent slopes
- SmeE2 - San Timoteo loam, 8 to 25 percent slopes, eroded

**Exhibit 6  
USDA Soils Map**

Source: ESRI Aerial Imagery, USDA Soils Data.

2,200 1,100 0 2,200 Feet

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### 3.7 - Vegetation

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Six plant communities were identified within the survey area: extensive agriculture (e.g., dry land farming), Riversidean sage scrub, Riversidean alluvial fan sage scrub, mule fat scrub, southern willow scrub, and non-native grassland. Extensive agriculture occurs throughout the survey area with isolated patches of the other vegetation communities. Several of the drainage features in the eastern portion of the survey area contain linear stands of mule fat scrub associated with the agricultural drainage swales and ephemeral drainage features. All plant communities are heavily disturbed due to disking and other agricultural related activities. The vegetation that is present is dominated by ruderal (weedy) annual species, such as short-pod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), bindweed (*Convolvulus arvensis*), white horse nettle (*Solanum elaeagnifolium*), and non-native grasses such as slender oats (*Avena barbata*), and rip-gut brome (*Bromus diandrus*).

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### 3.8 - Coastal Zone Evaluation

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The survey area is not within the coastal zone as defined by the California Coastal Act. As such, a Coastal Zone Management Act consistency determination is not required.

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### 3.9 - Critical Habitat

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No USFWS designated Critical Habitat for any species is present within the survey area.

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### 3.10 - Biological Resource Documents

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Biological resources are described in the Habitat Assessment MSHCP Consistency Analysis, World Logistics Center Specific Plan, prepared by FCS/MBA, in 2012 and revised in 2013.

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### 3.11 - Cultural / Historic Resource Documents

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An assessment of on site historical properties is required by the USACE in administering the Section 404 Permitting Program. According to General Condition No. 12 of the USACE Nationwide Permit Program, pursuant to the federal National Historic Preservation Act (NHPA), the presence of significant cultural resources must be determined prior to submittal of the Section 404 Application.

A cultural resources assessment has been prepared by MBA (MBA 2012, revised in 2013). No evidence of significant cultural resources exist onsite.

## **SECTION 4: JURISDICTIONAL DELINEATION RESULTS**

The following section provides a detailed discussion of jurisdictional and non-jurisdictional drainages within the survey area and includes findings related to vegetative communities, topography, soils, hydrology, and wetlands for each of these features. These findings have been made in accordance with the U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook for an approved jurisdictional determination.

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### **4.1 - Summary of Jurisdictional Findings**

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A total of 15 drainage features were identified within the survey area. Two of these features were determined to connect to downstream TNW or RPWs via surface flow connection and therefore, two of the 15 features are under USACE jurisdiction. Exhibit 7 illustrates the site locations from where the Appendix D site photographs were taken. USACE Jurisdictional Areas Maps are included in Exhibit 8.

A previous draft jurisdictional delineation was completed in 2007 for the Highland Fairview Operating Company - Logistics Building, which is located in the northwestern portion of Specific Plan Area. Based on regulatory agency review and the FEIR, Drainage Features 1, 2, 3, 4, and 5 were determined to be non-jurisdictional.

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### **4.2 - Rationale for Jurisdictional Determinations**

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A detailed discussion of each hydrogeomorphic feature found on the site and the rationale for supporting the jurisdictional determination follows. Two drainage features within the survey area (Drainages 12 and 15) flow directly into a RPW and/or a TNW via surface flows during rain events. These two drainage features exhibit characteristics necessary to be considered jurisdictional by USACE. Drainages 1, 5, and 6 are roadside ditches. Drainages 2, 4, 7, 8, 9, 10, and 11 are agricultural ditches/swales, or in one case, a gully. Drainage 3, 13, and 14 are isolated basins, none of which should be under USACE jurisdiction.

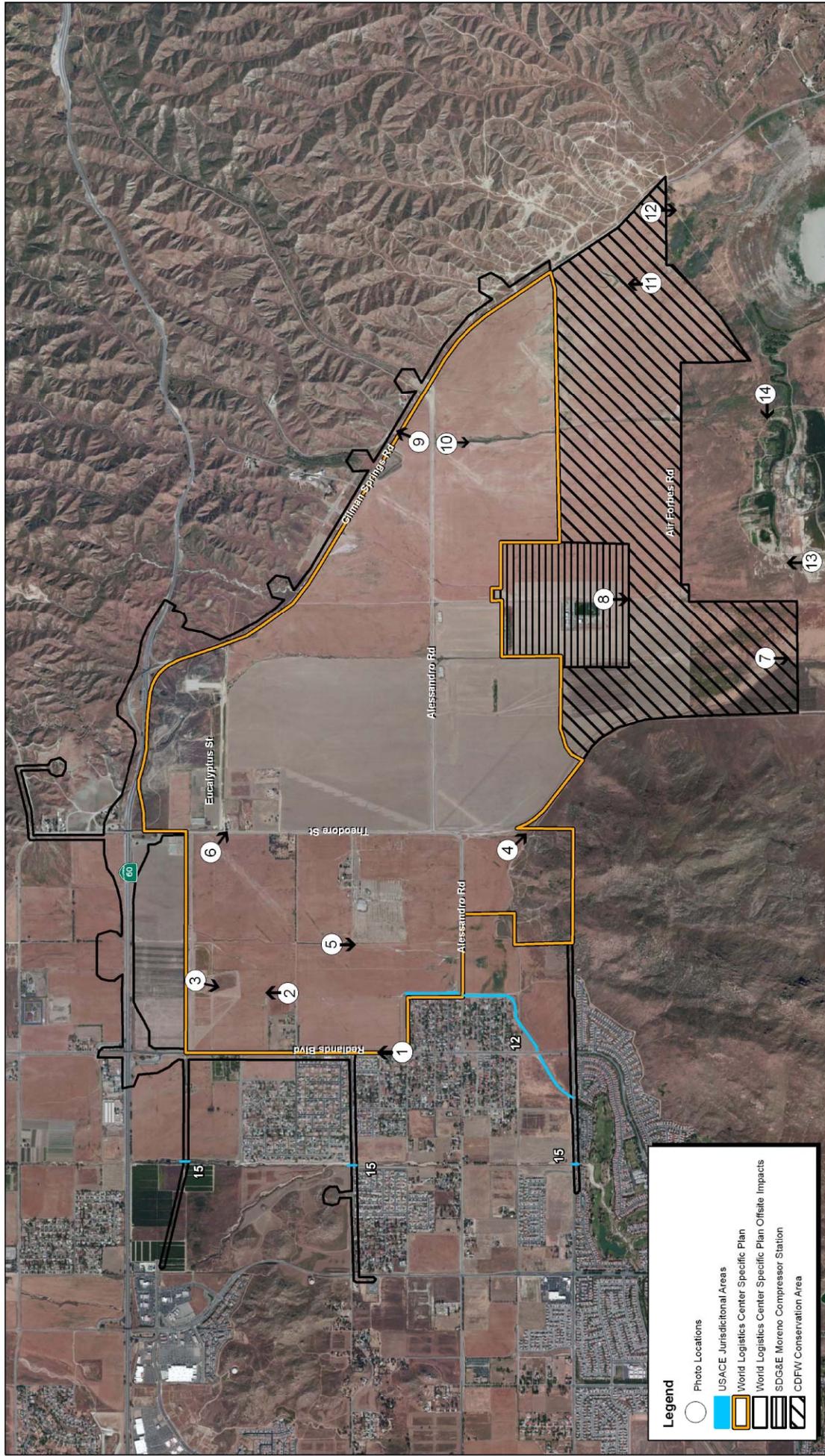
No clear distinction is made between agricultural ditches and swales within this project because some of these drainages combine both characteristics. Portions of some swales within the project were excavated for use as agricultural drainage ditches.

The majority of these features provide no significant biological or hydrological function. The majority of these features also display little to no evidence of a bed and bank or OHWM and no direct connectivity to any navigable waters of the US. The watershed does not receive a sufficient amount of snowpack to affect downstream flows.

The CDFW will assert jurisdiction over lakes and streambeds and associated riparian vegetation, regardless of their connectivity (or lack of connectivity) to downstream navigable waters. The Fish and Game Code, beginning with Section 1600, however, requires CDFW to make a “specific and detailed” determination that fish and wildlife resources are present and would be “substantially adversely” affected by project activities. However, the CDFW makes all final Section 1600 jurisdictional determinations.

Drainage features that are not under federal jurisdiction via CWA (Section 404) will also not be subject to RWQCB jurisdiction via CWA Section 401. The RWQCB may however, independently assert jurisdiction over isolated and other waters excluded from federal jurisdiction via California’s Porter-Cologne Water Quality Act. Typically, jurisdiction under Porter-Cologne is asserted where “beneficial uses” are identified for the respective resource.

The roadside ditches that run along the east side of Redlands Boulevard and the east and west side of Theodore Street and were determined to be non-jurisdictional ditches excavated wholly in, and draining only, uplands that do not carry relatively permanent water flows (MBA 2007c).



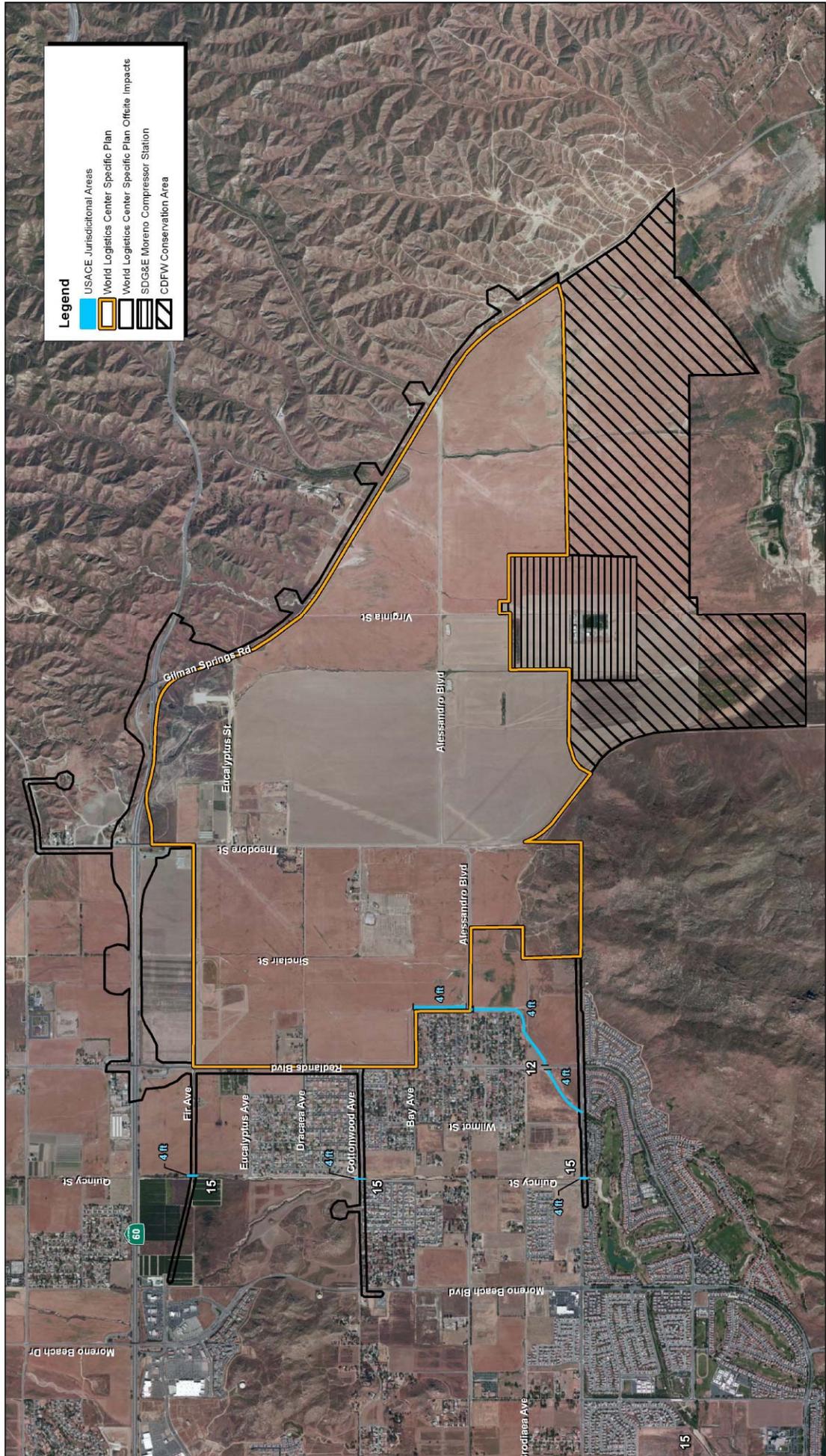
Source: ESRI Aerial Imagery, FCS-MBA Field Survey and GIS Data, 2013.



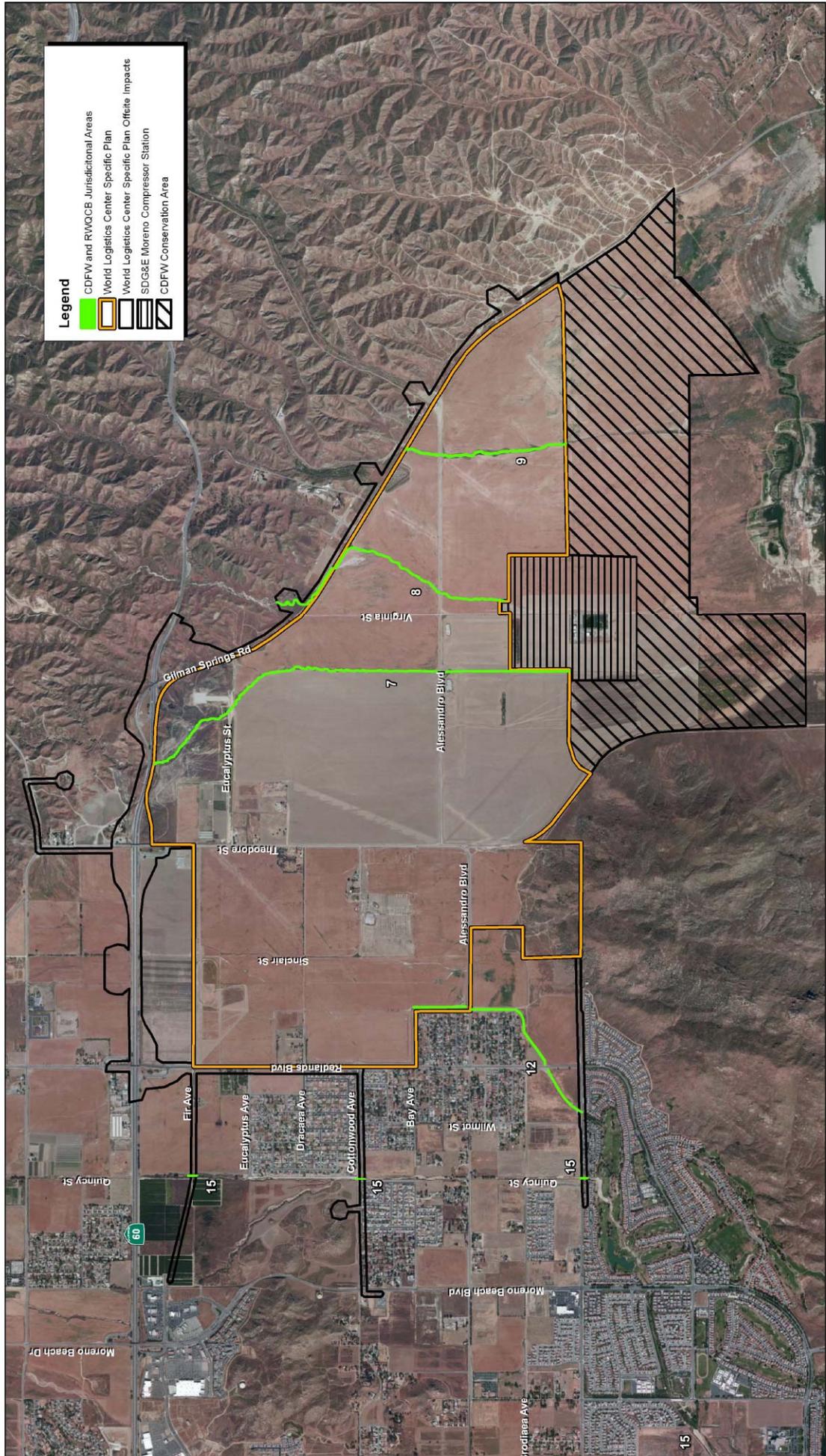
26100025 • 12/2013 | 7\_photos.mxd

## Exhibit 7 Photograph Location Map

HIGHLAND FAIRVIEW OPERATING COMPANY • WORLD LOGISTICS CENTER SPECIFIC PLAN  
DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS



**Exhibit 8**  
**USACE Jurisdictional Areas**



**Legend**

- CDFW and RWQCB Jurisdictional Areas
- World Logistics Center Specific Plan
- World Logistics Center Specific Plan Offsite Impacts
- SDG&E Moreno Compressor Station
- CDFW Conservation Area



Source: ESRI Aerial Imagery, FCS-MBA Field Survey and GIS Data, 2013.



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**Exhibit 9**  
**CDFW and RWQCB Jurisdictional Areas**  
 DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS

HIGHLAND FAIRVIEW OPERATING COMPANY • WORLD LOGISTICS CENTER SPECIFIC PLAN

Data points were taken at sample locations that appeared to exhibit evidence of the three parameters necessary to be considered a wetland by USACE: hydrophytic vegetation, hydric soils, and wetland hydrology. Representative photographs were taken throughout the survey area (Appendix D). The locations of data points and photographs are presented in Exhibit 7. Descriptions of the 15 drainage features are provided in detail below and illustrated in Exhibit 6 and Exhibit 7.

#### 4.2.1 - Drainage 1 (Ephemeral Roadside Ditch)

Drainage 1 is an ephemeral roadside ditch, approximately 18 inches wide, that originates from nuisance flow along Redlands Boulevard. The roadside ditch transitions from a paved roadside ditch to an incised soft-bottom earthen ditch that runs from north to south along the eastern side of Redlands Boulevard (Appendix D, Photograph 1). The drainage is not a designated blue-line feature on the Sunnymead, California 7.5-minute USGS topographic quadrangle. The drainage originates immediately south of the SR-60 freeway and flows within a concrete and/or asphalt-lined channel. The drainage feature passes through a number of small culverts associated with residential access roads and continues south where it ultimately enters the City's storm drain system and outlets into the Perris Valley Channel. This large engineered storm drain is tributary to Reach 3 of the San Jacinto River, which is tributary to Railroad Canyon Reservoir (Canyon Lake), a TNW. The distance from the point where the ditch leaves the survey area to Canyon Lake is approximately 14.5 linear (straight-line) miles and approximately 21.0 river miles.

Storm and nuisance flows entering the drainage originate primarily from offsite locations to the west and north of the survey area. These flows enter the system by sheet-flow over Redlands Boulevard.

Vegetation within and around the drainage is limited or absent. In general, the area in which the drainage is located is highly disturbed. The channel itself is unvegetated, presumably as a result of increased scouring during high flow periods and poor soil conditions. Where vegetation does occur along the drainage, it is limited to upland species including sparse non-native herbaceous annual forbs and grasses including short-pod mustard, Russian thistle (*Salsola tragus*), ripgut brome (*Bromus diandrus*), and red brome (*Bromus madritensis* ssp. *rubens*). These species are also present in surrounding upland areas. Hydrophytic vegetation was not observed within or adjacent to any portion of the drainage.

USDA Soils Maps/Surveys indicate the presence of San Emigdio and Hanford soil series within the drainage. Soils actually observed within the active channel are dominated by coarse sand and cobbly sand and were not consistent with published soil survey data. Much of the upper horizon contains asphalt and other unnatural aggregate, further evidence of the overall disturbance of the feature. These disturbed soils are prevalent within the banks of the feature as well. A soil pit was excavated in the middle reach of the drainage, downstream from Fir Avenue. The soils observed at this sample location were non-hydric mineral soils with coarse sand and fine sand textures. Due to the high mineral content and very coarse sandy character, no matrix color reading could be sampled within the

upper 6-inch horizon of this feature. The lower 14-inch horizon indicated a matrix color of 10YR 5/4 with sandy and fine sand texture. No hydric soil indicators were observed at this sample location. The lack of hydric soil indicators along a majority of the roadside ditch is likely due to a lack of sufficient hydrology necessary to create hydric soil conditions. The soils within Drainage 1 are highly permeable and have high percolation rates, thereby reducing the potential for anaerobic conditions.

### **SWANCC Evaluation**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 1 does not exhibit significant hydrological connectivity to downstream navigable waters and does not maintain contiguous surface connectivity to those downstream resources (TNWs). Specifically, after flowing intermittently through earthen and asphalt drainages, flows enter an offsite storm drain system and flow subsurface for a considerable distance before flowing into the Perris Valley Channel. As such, the feature appears to be isolated and should be excluded from jurisdiction via the SWANCC decision. A significant nexus evaluation is provided below to clarify this conclusion.

### **Rapanos/Significant Nexus Evaluation**

Notwithstanding the potential exclusion from jurisdiction via SWANCC, the feature does not maintain a significant nexus to downstream TNWs.

The joint guidance issued by the Environmental Protection Agency (EPA) and the USACE, asserts that ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry relatively permanent flows of water are generally not waters of the US because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters (see Memorandum Re. CWA Jurisdictional Following the US Supreme Court Decision in *Rapanos v. United States*, June 5, 2007).

Drainage 1 is a roadside ditch that maintains continuous flows only during substantial rain events. Similarly, due to the rapid rate of soil percolation, these flows are present only briefly in the drainage. Furthermore, given the distance to downstream navigable waters (approximately 21 river miles to Canyon Lake), low regional precipitation (11.4 inches/year), and absence of vegetation or riparian habitat, the drainage does not provide a significant hydrological or ecological benefit to downstream resources and therefore does not maintain a significant nexus to the downstream TNW.

### **USACE Jurisdictional Conclusions**

Because Drainage 1 lacks surface connectivity, and is a roadside ditch draining only upland areas and without a significant nexus to downstream navigable waters it should not be considered jurisdictional waters of the US and not subject to CWA Section 404 jurisdiction.

### **CDFW Jurisdictional Conclusions**

Though portions of the drainages do maintain a bed and bank, no fish or wildlife resources have been identified within the drainage. Similarly, because the drainage is ephemeral, unvegetated, provides no cover, and does not appear to provide habitat linkage or other benefits to wildlife resources, the feature should not be subject to CDFW jurisdiction.

### **RWQCB Jurisdictional Conclusions**

Drainage 1 drains a relatively small area and is unlikely to make significant contributions to recharge groundwater supplies. Similarly, the drainage is largely unvegetated and probably has little benefit for flood control or nutrient/pollutant trapping. As such, Drainage 1 should not be subject to RWQCB jurisdiction under CWA Section 401 or Porter-Cologne.

### **4.2.2 - Drainage 2 (Agricultural Ditch/Swale)**

Drainage 2 is an agricultural ditch/swale with no clearly defined bed and bank or OHWM (Appendix D, Photograph 2). The drainage runs from north to south, and is contained within the western portion of the survey area. This ditch is not a designated blue-line feature, and was artificially created for agricultural activities. Drainage 2 terminates in the southwestern portions of the site, where it sheet flows before entering 3 underground culverts beneath Alessandro Boulevard. During a major rain event in 2008, many of the residences west of the survey area were damaged from floodwaters. In an attempt to protect the homes, an earthen berm was created along the perimeter of the survey area and all sheet flows are now diverted into Drainage 2 and conveyed beneath Alessandro Boulevard.

Drainage 2 originates as a highly disturbed ephemeral swale within extensive agricultural land that has been heavily disturbed and disked for decades. The feature terminates south of Bay Avenue, and presumably conveys sheet-flow that percolates into the soil. This feature has an inconsistent channel and is presently undetectable throughout portions of its length. Vegetation associated with Drainage 2 is limited to sparse non-native herbaceous annual forbs and grasses including short-pod mustard, Russian thistle, ripgut brome, and red brome, with a predominance of bare ground in the herbaceous layer. No hydrophytic vegetation occurs within any portion of the feature.

Soils observed within Drainage 2 are dominated by San Emigdio loam with a small inclusion of San Emigdio fine sandy loam, and do not contain any attributes typical of hydric soils. The upper soil horizon has been disturbed as a result of disking and other agricultural-related activities.

### **USACE Jurisdictional Conclusions**

Because Drainage 2 is a swale feature lacking any definable flow regime (OHWM), it does not constitute waters of the US and is not considered subject to USACE jurisdiction under CWA Section 404.

### **CDFW Jurisdictional Conclusions**

Because Drainage 2 is an agricultural ditch/swale lacking a definable bed and bank feature or other streambed characteristics, therefore the feature will not likely be subject to CDFW jurisdiction under Fish and Game Code 1600.

### **RWQCB Jurisdictional Conclusions**

Drainage 2 is an agricultural ditch/swale lacking a consistent flow regime (OHWM) and therefore does not appear to meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” (via Porter-Cologne). As such, Drainage 2 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

### **4.2.3 - Drainage 3 (Temporary Detention Basin)**

Drainage from upland swales north of SR-60 are diverted around the Skecher’s Logistics Center and are discharged into a temporary detention basin for water quality purposes. This detention basin is designated Drainage 3. The basin appears to be designed for large flows, but does have an overflow feature at the downstream end of the basin. However, there is no evidence of discharge downstream of the detention basin during ordinary rain events. Therefore, this drainage is considered an isolated drainage. Vegetation within Drainage 3 is limited primarily to non-native herbaceous annual forbs and grasses and a few mule fat (*Baccharis salicifolia*).

Drainage 3 is a large flow detention basin that lacks an OHWM and is not expected to be subject to USACE jurisdiction under CWA Section 404.

### **CDFW Jurisdictional Conclusions**

Because Drainage 3 is an isolated artificially created detention lacking a definable bed and bank feature or other streambed characteristics, therefore the feature will not likely be subject to CDFW jurisdiction under Fish and Game Code 1600.

### **RWQCB Jurisdictional Conclusions**

Drainage 3 is an isolated artificially created detention lacking a consistent flow regime (OHWM) and therefore does not appear to meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” (via Porter-Cologne). As such, Drainage 3 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

### **4.2.4 - Drainage 4 (Agricultural Ditch/Swale)**

Drainage 4 is a north to south trending drainage contained within the northwestern portions of the survey area. This drainage is an unnamed designated blue-line feature, and was likely a natural occurring drainage feature prior to the agricultural use. The drainage is maintained by the artificial channeling of water from agricultural development. The Skecher’s Logistic Center currently contains

nuisance flows onsite and no longer conveys flows to down stream ephemeral drainages; therefore, Drainage 4 currently lacks a definable bed and bank feature and has no evidence of an OHWM.

Drainage 4 originates just south of the Skecher's Logistic Center and continues south as a highly disturbed upland swale within extensive agricultural land that has been heavily disturbed and disked. The feature continues for approximately 4,700 linear feet. The feature terminates and sheet-flows into the agricultural fields. This feature has an inconsistent channel and is presently undetectable throughout portions of its length. Drainage 4 contains no continuous bed and bank feature or noticeable OHWM. Vegetation associated with Drainage 4 is limited to sparse non-native herbaceous annual forbs and grasses including tree tobacco (*Nicotiana glauca*), short-pod mustard, Russian thistle, ripgut brome, and red brome, with a predominance of bare ground in the herbaceous layer. No dominance of hydrophytic vegetation was observed within any portions of the feature.

Soils observed within Drainage 4 are dominated by both San Emigdio loam and San Emigdio fine sandy loam, and do not contain any hydric soil indicators. The upper soil horizon has been disturbed as a result of disking and other farming-related activities.

#### **USACE Jurisdictional Conclusions**

Because Drainage 4 is a swale feature lacking any definable flow regime (OHWM), it does not constitute waters of the US and is not considered subject to USACE jurisdiction under CWA Section 404 jurisdiction.

#### **CDFW Jurisdictional Conclusions**

Because Drainage 4 is a gully lacking a streambed or any other characteristic, which would otherwise define it as CDFW jurisdictional waters, the feature will not be subject to CDFW jurisdiction under Fish and Game Code 1600.

#### **RWQCB Jurisdictional Conclusions**

Drainage 4 is a gully lacking a consistent flow regime (OHWM) and therefore does not meet the minimum requirements to be properly considered either "waters of the US" (via Section 404) or "waters of the state" via Porter-Cologne. As such, Drainage 4 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

#### **4.2.5 - Drainage 5 (Ephemeral Roadside Ditch)**

Drainage 5 is a shallow ephemeral roadside ditch that runs from north to south along the central portion of the survey area, west of and parallel to, Theodore Street. This drainage runs for approximately 6,000 linear feet within the survey area. This unnamed feature is not a designated blue-line feature on the USGS Sunnymead, California 7.5-minute topographic quadrangle, and was likely created by the artificial channeling of water as a result of previous road construction (from SR-60 and Theodore Street) and agricultural development in the area. Drainage 5 conveys nuisance

flows along Theodore Street that are derived from offsite locations upstream to the north and west, but which do not have direct connectivity to downstream waters of the US.

This roadside ditch originates from an offsite underground catch basin associated with SR-60. Flows enter the survey area from the outfall of an existing concrete culvert from the east-bound Theodore Street off-ramp. The flows are contained within a soft-bottom eroded channel for the entire length of the feature within the survey area. The feature contains little to no vegetation and is considered highly disturbed. Drainage 5 continues offsite as a highly disturbed, shallow, and unvegetated earthen channel. Further offsite to the south, the feature continues as a soft-bottom earthen channel with no observable OHWM and no definable bed and bank feature, and sheet-flows near Alessandro Boulevard. There are several downstream and offsite portions of the feature that contain an observable bed and bank feature. Further south, evidence of some localized flows resulting from storm events were observed. However, the feature eventually sheet flows and is not detectible prior to flowing into Mystic Lake. There is no clear hydrologic connectivity to downstream navigable waters of the US.

Drainage 5 has an average width of 2 feet throughout the majority of its length within the survey area. Similar to Drainage 1, Drainage 5 is a roadside ditch that contains little or no vegetation and is considered highly disturbed and heavily scoured. The channel itself is comprised of coarse sand and other aggregate, and is primarily unvegetated. Overall, there is a predominance of bare ground in the herbaceous layer, and no dominance of hydrophytic vegetation within any portion of the feature. Vegetation associated with Drainage 5 is limited to sparse non-native herbaceous annual species similar to the remaining features onsite, including short-pod mustard, Russian thistle, riggut brome, and red brome. These species also occur with upland areas adjacent to the feature.

Soils observed within the active channel of Drainage 5 are dominated by coarse sand and cobbly sand and do not contain hydric soil indicators. The upper horizon contains a predominance of sand and some unnatural aggregate contributing to the disturbance of the feature. A soil pit was excavated in the upper reach of this feature onsite. The soils observed at this sample location were non-hydric mineral soils with coarse sand and sand texture. Due to the high mineral content and very coarse sandy character, no matrix color reading could be made within the entire 20-inch deep soil pit sample. No hydric soil indicators were observed at this sample location. The predominance of sand suggests high permeability of the soil leading to high percolation rates and the lack of anaerobic or hydric conditions.

### **SWANCC Evaluation**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 5 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south along Theodore Street for almost 2 miles, the drainage enters an open-space south of Alessandro Boulevard, where the OHWM becomes intermittent before

finally disappearing altogether in the undeveloped area just south of Alessandro Boulevard. As such, Drainage 5 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

#### **USACE Jurisdictional Conclusions**

Drainage 5 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, or do not have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

#### **CDFW Jurisdictional Conclusions**

Because Drainage 5 is a shallow ephemeral roadside ditch lacking a defined bed and bank or other streambed characteristic, the feature will not likely be subject to CDFW jurisdiction under Fish and Game Code 1600.

#### **RWQCB Jurisdictional Conclusions**

Drainage 5 is a shallow ephemeral roadside ditch lacking a consistent flow regime (OHWM) and therefore does not meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne. As such, Drainage 5 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

#### **4.2.6 - Drainage 6 (Ephemeral Roadside Ditch)**

Drainage 6 is a shallow ephemeral roadside ditch that runs from north to south along the central portion of the survey area, east of and parallel to, Theodore Street. The drainage runs for approximately 2,000 linear feet within the survey area. This unnamed feature is not a designated blue-line feature on the USGS Sunnymead, California 7.5-minute topographic quadrangle, and was likely created by the artificial channeling of water as a result of previous road construction (from SR-60 and Theodore Street) and agricultural development in the area. Drainage 6 conveys nuisance flows along Theodore Street derived from offsite locations upstream to the north and east, but does not have direct connectivity to downstream waters of the US.

This roadside ditch originates from an offsite underground culvert beneath SR-60. Flows enter the survey area from the outfall of an existing concrete culvert from the westbound Theodore Street on-ramp. The flows are contained within a soft-bottom eroded channel for the entire length of the feature onsite. The feature contains little to no vegetation and is considered highly disturbed. Drainage 6 terminates as sheet-flow within an actively disked agricultural field just south of Alessandro Boulevard. There is no clear hydrologic connectivity to any downstream navigable waters of the US.

Drainage 6 has an average width of 2 feet throughout the majority of its length within the survey area. Similar to Drainage 5, Drainage 6 is a roadside ditch that contains little or no vegetation and is highly disturbed and heavily scoured. The channel itself is comprised of coarse sand and aggregate. Overall, there is a predominance of bare ground in the herbaceous layer, and no dominance of hydrophytic vegetation within any portion of the feature. Vegetation associated with Drainage 6 is limited to sparse non-native herbaceous annual species similar to the remaining features onsite, including short-pod mustard, Russian thistle, riggut brome, and red brome. These species are also prevalent throughout the upland areas adjacent to the feature.

Similar to Drainage 5, soils observed within the active channel of Drainage 6 are dominated by San Emigdio loam and Greenfield sandy loam with small inclusions of Rockland and Hanford coarse sandy loam, which are not designated as hydric soils. The upper horizon contains a predominance of sand and some unnatural aggregate contributing to the disturbance of the feature. A soil pit was excavated in the upper reach of this feature onsite. The soils observed at this sample location were non-hydric mineral soils with coarse sand and sand texture. Due to the high mineral content and very coarse sandy character, no matrix color reading could be made within the entire 20-inch deep soil pit of this feature. No hydric soil indicators were observed at this sample location. The predominance of sand suggests high permeability of the soil leading to high percolation rates and the lack of anaerobic or hydric conditions.

#### **SWANCC Evaluation**

The SWANCC decision excluded isolated features from USACE jurisdiction. Like Drainage 5, Drainage 6 flows along the east side of Theodore Street and does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south along Theodore Street for almost 2 miles, the drainage enters an open-space south of Alessandro Boulevard where the OHWM becomes intermittent before finally disappearing altogether in the undeveloped area north of Mystic Lake. As such, Drainage 6 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

#### **USACE Jurisdictional Conclusions**

Drainage 6 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, or do not have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

### **CDFW Jurisdictional Conclusions**

Because Drainage 6 is a shallow ephemeral roadside ditch lacking a defined bed and bank or other streambed characteristic, the feature will not likely be subject to CDFW jurisdiction under Fish and Game Code 1600.

### **RWQCB Jurisdictional Conclusions**

Drainage 6 is a shallow ephemeral roadside ditch lacking a consistent flow regime (OHWM) and therefore does not meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne. As such, Drainage 6 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

### **4.2.7 - Drainage 7 (Agricultural Ditch/Swale)**

Drainage 7 is an agricultural ditch/swale that runs from north to south and was likely a naturally occurring drainage feature prior to agricultural use. This feature originates in the Badlands north of the survey area. From beneath SR-60, the drainage feature continues south as an undisturbed ephemeral drainage and passes beneath highway SR-60 through a corrugated steel-pipe. The drainage continues as a soft-bottom channel with a dense stand of mule fat scrub with scattered willows. This habitat continues down stream for approximately 1,300 feet before the channel reverts back to an unvegetated soft-bottom channel. The drainage continues to the south and eventually reverts back to a mule fat scrub habitat immediately south of Alessandro Road. This portion of the channel is approximately 30 feet wide and 1,500 feet in length. The drainage continues in an unvegetated soft bottom channel until it reaches the southern extent of the CDFW conservation buffer area, where it again reverts back to a mule fat scrub community. This portion of the channel extends for approximately 600 feet and then reverts back to an unvegetated channel. The drainage eventually sheet-flows within an existing agricultural field south of the survey area and west of Mystic Lake within the SJWA, with no direct hydrologic connection to any TNW or RPW.

Vegetation observed within Drainage 7 is limited primarily to non-native herbaceous annual forbs and grasses, including short pod mustard, Russian thistle, ripgut brome, and red brome. Other sub-dominant species observed include tree tobacco, mule fat (*Baccharis salicifolia*), tarragon (*Artemisia dracunculus*), and Jimson weed (*Datura wrightii*). Additionally, there is a predominance of bare ground in the herbaceous layer. There is an intermittent dominance of hydrophytic vegetation observed within 3 separate reaches of the feature associated with patches of mule fat. There is no clearly defined bed and bank features throughout the drainage feature.

Soils observed within Drainage 7 are dominated by both San Emigdio loam and San Emigdio fine sandy loam, and do not contain any hydric soil indicators. Small inclusions of Badlands and Metz loamy sand also occur within the drainage. These soils can be considered hydric. There is no evidence of hydrophytic vegetation within areas designated as Badland or Metz loamy sand. The

soils within Drainage 7 are permeable and promote very high percolation rates, thereby reducing the potential for any anaerobic or hydric conditions.

### **SWANCC Analysis**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 7 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs) and lacks a discernible continuous OHWM. As such, Drainage 7 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

### **USACE Jurisdictional Conclusions**

Drainage 7 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, nor do they have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

### **CDFW Jurisdictional Conclusions**

Because Drainage 7 is an agricultural ditch/swale with a clearly defined bed and bank feature within the WLCSP area and contains some riparian habitat, therefore this feature will likely be subject to CDFW jurisdiction under Fish and Game Code 1600. This drainage has an average width of approximately 4 feet across and has an overall length of 10,789 feet within the WLCSP. The total acre of CDFW jurisdictional area within Drainage 7 is 1.01 acres.

### **RWQCB Jurisdictional Conclusions**

Drainage 7 is an agricultural ditch/swale with fairly consistent flow regime (OHWM) and therefore meets the minimum requirements to be properly considered “waters of the state” via Porter-Cologne Act. As such, 1.01 acres of Drainage 7, within the WLCSP area, should be subject to RWQCB jurisdiction under the Porter-Cologne Act.

### **4.2.8 - Drainage 8 (Agricultural Ditch/Swale)**

Drainage 8 is an agricultural ditch/swale within the survey area. The majority of this feature is similar in form and function to Drainage 7. This feature originates in the Badlands north of the survey area. This is an undisturbed ephemeral feature with an unvegetated channel. Drainage 8 passes to the south beneath SR-60 within a corrugated steel culvert. The drainage then continues to the south as an agricultural ditch/swale for approximately 8,800 linear feet before it terminates within the CDFW conservation buffer area, which is now the northern portion of the SJWA, allowing flows to sheet-flow within the southern portion of the survey area. This drainage is physically interrupted by agricultural activities at several locations and no longer flows continuously throughout its length.

Drainage 8 appears to have been created as a result of artificial water channeling from agricultural development.

Dominant vegetation associated with Drainage 8 is limited to sparse non-native herbaceous annual forbs and grasses including tree tobacco, annual sunflower, and red brome. Other plant species observed within portions of these features include mule fat, horehound, and white horse nettle (*Solanum elaeagnifolium*). Scattered ruderal vegetation within the feature is dominated by tumbleweed (*Amaranthus albus*), annual sunflower (*Helianthus annuus*), and tree tobacco. No dominance of hydrophytic vegetation was observed within any portions of these features.

Soils observed within Drainage 8 are dominated by Metz gravelly sandy loam, San Emigdio loam, and San Emigdio fine sandy loam. The soils within Drainage 8 are permeable and promote very high percolation rates, thereby reducing the potential for any anaerobic or hydric conditions.

### **SWANCC Analysis**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 8 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south to the southern property boundary, the OHWM disappears altogether in the undeveloped area north of Mystic Lake. As such, Drainage 8 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

### **USACE Jurisdictional Conclusions**

Drainage 8 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, nor do they have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

### **CDFW Jurisdictional Conclusions**

Because Drainage 8 is an agricultural ditch/swale with a clearly defined bed and bank feature within the WLCSP area and contains some riparian habitat, therefore this feature will likely be subject to CDFW jurisdiction under Fish and Game Code 1600. This drainage has an average width of approximately 4.0 feet across and has an overall length of 6,630 feet within the WLCSP. The total acre of CDFW jurisdictional area within Drainage 8 is 0.61 acres.

### **RWQCB Jurisdictional Conclusions**

Drainage 8 is an agricultural ditch/swale with fairly consistent flow regime (OHWM) and therefore meets the minimum requirements to be properly considered “waters of the state” via Porter-Cologne Act. As such, 0.61 acres of Drainage 8 should be subject to RWQCB jurisdiction under the Porter-Cologne Act.

#### 4.2.9 - Drainage 9 (Ephemeral Drainage)

Drainage 9 is similar to Drainages 7 and 8 in that it occurs within a routinely disturbed agricultural field, however, Drainage 9 is much larger in depth and width. The segment of Drainage 9 that occurs within the survey area is approximately 1.3 miles long with an average OHWM ranging from 3 to 12 feet. This feature enters the survey area from an underground box culvert beneath Gilman Springs Road, flows in a southerly direction, and enters a small culvert beneath Alessandro Boulevard. The drainage then continues to the south as an ephemeral, highly erosive, drainage feature before transitioning to an agricultural swale and eventually sheet-flows at the southern edge of the survey area. This drainage is physically interrupted by agricultural activities at several locations off site and no longer flows continuously throughout its length. Drainage 9 appears to have been created as a result of artificial water channeling from agricultural development and natural run-off from the adjacent Badlands and has been greatly incised over time due to highly erosive soils.

This channel conveys flows during and immediately following large storm events. South of Gilman Springs Road, the drainage continues as an ephemeral drainage. To the south of Alessandro Boulevard, this drainage is deeply incised and gradually decreases in size to the south. The drainage feature contains signs of scouring and/or excessive erosion. It also contains a significant change in soil texture with a defined main channel and a single upland shelf. The drainage channel is dominated by Metz loamy sand and San Emigdio fine sandy loam with a small inclusion of Metz loamy fine sand.

The majority of the drainage contains little or no vegetation along the channel bed. Vegetation is limited to the upland areas above the OHWM and dominated by coastal sage scrub species. Dominant plant species include California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), desert brittlebush (*Encelia farinosa*), California sagebrush (*Artemisia californica*), and short-pod mustard. Other plant species observed within the channel include scale-broom (*Lepidospartum squamatum*), California aster (*Lessingia filaginifolia*), mayweed (*Anthemis cotula*), and four-winged saltbush (*Atriplex canescens*).

Soil within the drainage contains a noticeable change in texture from surrounding upland habitats. The sandy deposits contain no evidence of organic streaking or other hydric conditions. The drainage feature contains an intermittent OHWM with evidence of frequent disturbance due to the dumping of trash and other human related activities. This portion of the drainage feature does not meet the requirements for hydric soils.

#### SWANCC Analysis

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 9 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south to the southern property boundary, the OHWM disappears

altogether in the undeveloped area north of Mystic Lake. As such, Drainage 9 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

#### **USACE Jurisdictional Conclusions**

Drainage 9 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, nor do they have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

#### **CDFW Jurisdictional Conclusions**

Drainage 9 contains a clearly defined bed and bank feature for Alessandro Road to the southern edge of the CDFW conservation buffer area. This active channel, along with sporadic native scrub habitat, is subject to CDFW jurisdiction under Fish and Game Code 1600. However, the CDFW makes all final Section 1600 jurisdictional determinations. This drainage has an average width of approximately 10 feet across and has an overall length of 3,940 feet within the WLCSP. The total acre of CDFW jurisdictional area within Drainage 9 is 0.90 acres.

#### **RWQCB Jurisdictional Conclusions**

Drainage 9 is clearly defined channel, with a consistent flow regime (OHWM) and therefore meets the minimum requirements to be properly considered a “waters of the state” via Porter-Cologne Act. As such, Drainage 9 should be subject to RWQCB jurisdiction under the Porter-Cologne Act. As such, 0.90 acres of Drainage 9 should be subject to RWQCB jurisdiction under the Porter-Cologne Act.

#### **4.2.10 - Drainage 10 (Agricultural Ditch/Swale)**

Drainage 10 runs for approximately 2,700 linear feet across the survey area, with an intermittent OHWM that averages 1 foot in width. This feature originates within the survey area and flows in a southerly direction before exiting the area. Immediately outside the survey area, the feature terminates and sheet-flows with no direct hydrologic connectivity to downstream waters of the US.

This ephemeral drainage feature conveys flows during and immediately following large storm events. It contains signs of scouring and/or excessive erosion. The channel contains an intermittent OHWM.

The majority of the drainage contains little to no vegetation and does not meet the minimum criteria for hydrophytic vegetation. The dominant vegetation is tree tobacco and California buckwheat.

The drainage channel is dominated by San Emigdio fine sandy loam and Metz loamy fine sand, which are typical soils within the survey area. Soil within the drainage contains a noticeable change in texture from surrounding upland habitats. The sandy deposits contain no evidence of organic

streaking or other hydric soils. This portion of the drainage feature does not meet the requirements for hydric soils.

### **SWANCC Analysis**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 10 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south to the southern property boundary the OHWM disappears altogether in the undeveloped area north of Mystic Lake. As such, Drainage 10 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

### **USACE Jurisdictional Conclusions**

Drainage 10 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, or they do not have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

### **CDFW Jurisdictional Conclusions**

Because Drainage 10 is an ephemeral drainage lacking a clearly defined streambed or any other characteristic, which would otherwise define it as CDFW jurisdictional waters, the feature will not be subject to CDFW jurisdiction under Fish and Game Code 1600. However, the CDFW makes all final Section 1600 jurisdictional determinations.

### **RWQCB Jurisdictional Conclusions**

Drainage 10 is lacking a consistent flow regime (OHWM) and therefore does not appear to meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne. As such, Drainage 10 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

### **4.2.11 - Drainage 11 (Agricultural Ditch/Swale)**

Drainage 11 is approximately 800 linear feet long within the survey area. It includes no clearly defined OHWM. This feature originates within the survey area and flows in a southerly direction before exiting the site. The drainage feature terminates offsite and flows travel as sheet-flow with no direct hydrologic connectivity to downstream waters of the US.

This ephemeral drainage feature conveys flows during and immediately following large storm events. It contains signs of scouring and/or excessive erosion. The channel contains an OHWM.

The majority of the drainage contains little to no vegetation and does not meet the minimum criteria for hydrophytic vegetation.

The drainage channel is dominated by San Emigdio fine sandy loam and Metz loamy fine sand, which are typical soils within the survey area. Soil within the drainage contains a noticeable change in texture from surrounding upland habitats. The sandy deposits contain no evidence of organic streaking or other hydric soils.

The drainage feature contains no wetland hydrology indicators. The drainage feature does not meet the criteria for jurisdictional wetlands under the 3-criteria wetland determination guidelines.

### **SWANCC Analysis**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 11 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south to the southern property boundary the OHWM disappears altogether in the undeveloped area north of Mystic Lake. As such, Drainage 11 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

### **USACE Jurisdictional Conclusions**

Drainage 11 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, or they do not have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

### **CDFW Jurisdictional Conclusions**

Because Drainage 11 is an ephemeral drainage lacking a clearly defined streambed or any other characteristic, which would otherwise define it as CDFW jurisdictional waters, the feature will not be subject to CDFW jurisdiction under Fish and Game Code 1600. However, the CDFW makes all final Section 1600 jurisdictional determinations.

### **RWQCB Jurisdictional Conclusions**

Drainage 11 is lacking a consistent flow regime (OHWM) and therefore does not appear to meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne. As such, Drainage 11 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

### **4.2.12 - Drainage 12 (Ephemeral Roadside Ditch)**

Drainage 12 is the downstream continuation of Drainage 2. Drainage 12 originates downstream of the Alessandro Boulevard Crossing and was created as part of a flood control project along the western portion of the survey area. The portion of the drainage within and/or immediately adjacent to the survey area includes a large earthen swale with no clearly defined OHWM. This feature

originates within the survey area and flows in a southerly direction before exiting the survey area in an underground culvert. The drainage feature transitions into an ephemeral drainage feature with a clearly defined OHWM and noticeable bed and bank features just outside of the survey area.

This ephemeral drainage feature conveys flows during and immediately following large storm events. It contains a round-bottom earthen swale within the survey area. The channel contains no evidence of an OHWM of bed and bank features within the survey area.

The majority of the drainage contains little to no vegetation and does not meet the minimum criteria for hydrophytic vegetation.

The drainage channel is dominated by San Emigdio loam and Hanford coarse sandy loam, which are typical soils within the survey area. Soil within the drainage contains a noticeable change in texture from surrounding upland habitats. The sandy deposits contain no evidence of organic streaking or other hydric soils.

The drainage feature contains no wetland hydrology indicators. The drainage feature does not meet the criteria for jurisdictional wetlands under the 3-criteria wetland determination guidelines.

#### **SWANCC Analysis**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 12 does exhibit a clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south in an upland swale, a clearly defined OHWM is visible in an off site location as the drainage bends to the southwest. As such, Drainage 12 is not considered an isolated feature and is subject to USACE jurisdiction. The downstream portion of drainage 12, located in an off-site location also has a clearly defined bed and bank feature and should not be excluded from jurisdiction via the SWANCC decision.

#### **USACE Jurisdictional Conclusions**

The entire length of Drainage 12 contains a clearly defined OHWM and should not be excluded from USACE jurisdiction via SWANCC. The average OHWM is approximately 3 to 4 feet in width with an overall length of 5,435 linear feet. Approximately 1,300 linear feet of the drainage feature is within the WLCSP and will likely be removed during project development. The remaining portion of the drainage (approximately 4,135 linear feet) will likely be relocated to a manufactured channel that will include soft bottom drainage with reinforced banks. The total amount of drainage area under USACE is 0.47 acres.

#### **CDFW Jurisdictional Conclusions**

Because Drainage 12 is an ephemeral drainage feature with a clearly defined streambed, which would otherwise define it as CDFW jurisdictional waters. The feature will be subject to CDFW jurisdiction under Fish and Game Code 1600. However, the CDFW makes all final Section 1600 jurisdictional

determinations. This drainage has an average width of approximately 3 to 4 feet across and has an overall length of 5,435 linear feet. The total acre of CDFW jurisdictional area within Drainage 9 is 0.47 acres.

#### **RWQCB Jurisdictional Conclusions**

Drainage 12 is an ephemeral drainage a consistent flow regime (OHWM) and therefore meets the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne Act. As such, Drainage 12 is subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne. As such, 0.47 acres of Drainage 12 should be subject to RWQCB jurisdiction under the Porter-Cologne Act.

#### **4.2.13 - Drainage 13 (Agricultural Basin)**

Drainage 13 is approximately 1,500 linear feet long within the survey area and terminates as an isolated basin. It includes no clearly defined OHWM. This feature originates within a hillside area in the southern portion of the survey area and flows in a northerly direction before sheet flowing within the survey area, south of Alessandro Road. The drainage feature terminates at the base of the rolling hills in an area historically used for cattle grazing. The drainage sheet-flows with no direct hydrologic connectivity to downstream waters of the US.

This ephemeral drainage portion of this feature conveys flows during and immediately following large storm events. It contains intermittent signs of scouring and/or excessive erosion. The channel contains an intermittent OHWM, but terminates at the detention basin at the bottom of the hillside slope. This feature is no longer maintained for agricultural purposes. Currently, drainage from this feature sheet flow through the basin and into the disk agricultural fields, where it percolates into the soil and is no longer detectible.

The majority of the drainage contains little to no vegetation and does not meet the minimum criteria for hydrophytic vegetation.

The drainage channel is dominated by Gorgonio loamy sand and rocklands, which are typical soils within the southern portion of the survey area. Soil within the drainage contains a noticeable change in texture from surrounding upland habitats. The sandy deposits contain no evidence of organic streaking or other hydric soils.

The drainage feature contains no wetland hydrology indicators. The drainage feature does not meet the criteria for jurisdictional wetlands under the 3-criteria wetland determination guidelines.

#### **SWANCC Analysis**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 13 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing north to the southern property boundary the OHWM disappears

altogether and sheet flows into an undeveloped area in the southwestern extent of the Specific Plan Area. As such, Drainage 13 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

#### **USACE Jurisdictional Conclusions**

Drainage 13 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, or they do not have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

#### **CDFW Jurisdictional Conclusions**

Because Drainage 13 is lacking a streambed or any other characteristic, which would otherwise define it as CDFW jurisdictional waters, the feature will not be subject to CDFW jurisdiction under Fish and Game Code 1600. However, the CDFW makes all final Section 1600 jurisdictional determinations.

#### **RWQCB Jurisdictional Conclusions**

Drainage 13 is lacking a consistent flow regime (OHWM) and therefore does not appear to meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne. As such, Drainage 13 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne Act.

#### **4.2.14 - Drainage 14 (Agricultural Basin)**

Drainage 14 exists as 2 isolated, human-made, catch basins that receive nuisance flows and agricultural runoff from concrete cattle containment areas adjacent to the basins. They are located south of Alessandro Road, adjacent to Drainage 7 but do not directly connect to that drainage. There is no upstream or downstream connection to any other drainage features. There is no evidence of prolonged ponding within these basins.

Vegetation in the western catch basin is comprised of southern willow scrub and includes plant species such as Fremont’s cottonwood (*Populus fremontii*), black willow (*Salix goodingii*), sandbar willow (*Salix laevigata*), and mulefat. The plant community is primarily composed of a moderate density of trees with a few understory plants. Vegetation in the eastern catch basin is comprised of tree tobacco, Peruvian pepper tree (*Schinus molle*), salt cedar (*Tamarisk aphylla*), and olive (*Olea europaea*).

The catch basins were previously used to treat polluted runoff from cattle holding pens located immediately north of the catch basins. Over the last 5 years, the concrete slabs have been removed and the surrounding area is no longer used for cattle purposes. Therefore, the basins no longer

receive the amount of flows or pollutants that they normally would under previous site conditions. Vegetation is slowly deteriorating due to a lack of available moisture that was previously available. Portions of the western drainage feature meet the minimum criteria for hydrophytic vegetation, however, the vegetation appears to be decreasing in overall health.

The catch basins are dominated by San Emigdio Loam, San Emigdio fine sandy loam, and Metz loamy fine sand, which are typical soils within the survey area. Soil within the drainage contains a noticeable change in texture from surrounding upland habitats. The sandy deposits contain no evidence of organic streaking or other hydric soils.

The catch basins contain no wetland hydrology indicators. The drainage feature does not meet the criteria for jurisdictional wetlands under the 3-criteria wetland determination guidelines.

### **SWANCC Analysis**

The SWANCC decision excluded isolated features from USACE jurisdiction. Drainage 14 does not exhibit any clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, this area contains completely isolated ponded areas, as such, Drainage 14 is an isolated feature and should be excluded from jurisdiction via the SWANCC decision.

### **USACE Jurisdictional Conclusions**

Drainage 14 should be excluded from USACE jurisdiction via SWANCC. Additionally, according to the USACE Jurisdictional Form Institutional Guidebook, ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water generally are not jurisdictional under the CWA. Similarly, swales are generally not waters of the US because they are not tributaries, or they do not have a significant nexus to TNWs. Therefore, the feature is not considered jurisdictional according to USACE.

### **CDFW Jurisdictional Conclusions**

Because Drainage 14 is a completely isolated feature lacking a streambed or any other characteristic which would otherwise define it as CDFW jurisdictional waters, the feature will not be subject to CDFW jurisdiction under Fish and Game Code 1600. However, the CDFW makes all final Section 1600 jurisdictional determinations.

### **RWQCB Jurisdictional Conclusions**

Drainage 14 lacks a consistent flow regime (OHWM) and therefore does not appear to meet the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne Act. As such, Drainage 14 should not be subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne.

#### **4.2.15 - Drainage 15 (Ephemeral Drainage)**

Drainage 15 is located west of the project site and flows in a north-south direction. The drainage originates at the intersection of Juniper Avenue and Pettit Street, approximately 1.3 miles northwest of the project site. The drainage is contained within a soft-bottom earthen channel and is generally described as an unvegetated channel with sparse riparian vegetation. There is a direct downstream connection to waters of the US. This drainage flows into the downstream portion of Drainage 12 listed above, in an existing golf course area.

Drainage 15 crosses several proposed offsite project elements and only a portion of the drainage feature is associated with the project site. The drainage contains a clearly defined OHWM.

This ephemeral drainage feature conveys flows during and immediately following large storm events. It contains signs of scouring and excessive erosion. The channel contains a clearly defined OHWM at the location where the proposed off-site project feature is located.

The majority of the drainage contains little to no vegetation and does not meet the minimum criteria for hydrophytic vegetation.

The drainage channel is dominated by San Emigdio fine sandy loam, which is a typical soil scattered throughout the project site. Soil within the drainage contains a noticeable change in texture from surrounding upland habitats. The sandy deposits contain no evidence of organic streaking or other hydric soils.

The drainage feature contains no wetland hydrology indicators. The drainage feature does not meet the criteria for jurisdictional wetlands under the 3-criteria wetland determination guidelines

#### **SWANCC Analysis**

The SWANCC decision excludes isolated features from USACE jurisdiction. Drainage 15 does exhibit a clear hydrological connectivity or surface connectivity to downstream navigable waters (TNWs). Specifically, after flowing south to the existing golf course, it continues southwest in the Perris Valley Storm Drain. As such, Drainage 15 directly connected to downstream waters of the US.

#### **USACE Jurisdictional Conclusions**

The entire length of Drainage 15 contains a clearly defined OHWM and should not be excluded from USACE jurisdiction via SWANCC. The average OHWM is approximately 3 feet in width with an overall length of 680 linear feet within the proposed off-site improvement areas. None of the drainage is located within the WLCSP and much of the drainage will likely be avoided during construction. The total amount of drainage area under USACE is 0.01 acres.

### **CDFW Jurisdictional Conclusions**

Because Drainage 15 is an ephemeral drainage feature with a clearly defined streambed, which would otherwise define it as CDFW jurisdictional waters. The feature will be subject to CDFW jurisdiction under Fish and Game Code 1600. However, the CDFW makes all final Section 1600 jurisdictional determinations. This drainage has an average width of approximately 3 to 4 feet across and has an overall length of 680 linear feet. The total acre of CDFW jurisdictional area within Drainage 15 is 0.01 acres.

### **RWQCB Jurisdictional Conclusions**

Drainage 14 is an ephemeral drainage a consistent flow regime (OHWM) and therefore meets the minimum requirements to be properly considered either “waters of the US” (via Section 404) or “waters of the state” via Porter-Cologne Act. As such, Drainage 15 is subject to RWQCB jurisdiction under either CWA Section 401 or Porter-Cologne. As such, 0.01 acres of Drainage 15 should be subject to RWQCB jurisdiction under the Porter-Cologne Act.

Table 3: Summary of Significant Nexus Factors

Factors	More than Speculative or Insubstantial Effect														
	Drainage 1	Drainage 2	Drainage 3	Drainage 4	Drainage 5	Drainage 6	Drainage 7	Drainage 8	Drainage 9	Drainage 10	Drainage 11	Drainage 12	Drainage 13	Drainage 14	Drainage 15
<b>Hydrological Factors</b>															
Volume, duration, and frequency of flow, including consideration of certain characteristics of the tributary, including historic records of flow, flood predictions, gauge data, and personal observations (OHWM, shelving, water staining, sediment sorting and scouring)	N	N	N	N	N	N	Y	Y	Y	N	N	Y	N	N	Y
Proximity to the TNW. (If a tributary is too far from the TNW, its remoteness is more likely to make the impact on the TNW speculative.)	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	Y
Contextual hydrological factors, including (1) size of the watershed, (2) average annual rainfall, and (3) average annual snow pack	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
The presence of a tributary or wetland within the flood plain. (It should be noted, however, that a significant nexus determination cannot be based solely on presence of the water body within or outside the flood plain.)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<b>Ecological Factors</b>															
The ability of the tributary and its adjacent wetlands (if any) to carry pollutants and flood waters to TNW	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	Y
The ability of the tributary and its adjacent wetlands (if any) to provide aquatic habitat that supports biota of a TNW	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
The ability of adjacent wetlands to trap and filter pollutants or store flood water	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
The ability to maintain water quality	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

## SECTION 5: SUMMARY AND CONCLUSIONS

Drainages on the survey area were investigated and delineated by MBA in 2007; results were confirmed and updated in 2012. A total of 15 primary drainage features were identified during these combined surveys. A number of sub-drainages or tributaries were also identified. Jurisdiction for each drainage and/or sub-drainage or tributary was evaluated for jurisdiction under Section 404 of the CWA as administered by USACE, Section 401 of the CWA as administered by RWQCB, and Section 1600 of the CDFW Code as administered by the CDFW.

Regulatory guidance following legal decisions that affect jurisdictional determinations has been issued since MBA performed the original delineation in 2007. In addition, new methodology documents have been issued by the USACE. These things, along with changing field conditions and a slight revision in the survey area boundary, resulted in the current findings by MBA in 2013.

Based on 2013 findings, one of the 15 features identified within the WLCSP was determined to be jurisdictional waters of the U.S. under Section 404 of the CWA (Drainage 12). In addition, a second drainage was also determined to be under USACE jurisdiction, and is located at an off-site location and is associated with potential off-site improvements (Drainage 15). No jurisdictional wetlands were identified. However, the USACE makes all final jurisdictional determinations.

A total of five drainage features are under the jurisdiction of the RWQCB and CDFW and include Drainage features 7, 8, 9, 12, and 15 totaling 3.00 acres and 27,474 linear ft. All three of these drainage features will likely be impacted during construction of the WLCSP.

The Specific Plan also incorporates a number of potential off-site improvements. All off-site improvements west of Redlands Boulevard may potentially impact drainage features likely considered jurisdictional by USACE. Portions of drainage 12 and 15 will likely be impacted by linear infrastructure improvements necessary for the proposed project. Once these off-site improvements have been finalized, a project specific jurisdictional delineation will be required in order to document the existing conditions, potential impacts, and recommended mitigation measures.

**Table 4: Jurisdictional Area Acreage**

Drainage Feature	Description	USACE Acres	CDFW//RWQCB Acres	Linear Feet	Average Width
Drainage 7	Agricultural ditch/swale	0.00 Acres	1.01 Acres	10,789 ft.	4.00
Drainage 8	Agricultural ditch/swale	0.00 Acres	0.61 Acres	6,630 ft.	4.00
Drainage 9	Agricultural ditch/swale	0.00 Acres	0.90 Acres	3,940 ft.	10.00
Drainage 12	Ephemeral drainage	0.47 Acres	0.47 Acres	5,435 ft.	3.75
Drainage 15	Ephemeral drainage	0.01 Acres	0.01 Acres	680 ft.	3.00
Totals	N/A	0.48 Acres	3.00 Acres	27,474 ft.	N/A

## SECTION 6: REFERENCES

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## **Appendix A: Regulatory Compliance**

## REGULATORY COMPLIANCE

Regulatory permitting for dredge and fill activities involves a compliance framework requiring interaction with federal, state and local agencies, often involving a diverse number of statutes and regulations.

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### FEDERAL STATUTES AND REGULATIONS - USACE

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#### Clean Water Act Section 404

Pursuant to Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. Regulated activities include but are not limited to, grading, placing of riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material. In general, any activity, which proposes to carry out an activity, which will temporarily or permanently affect areas delineated as waters of the US, including wetlands, typically requires prior authorization from the USACE, pursuant to Section 404 of the Clean Water Act (CWA). Successful applications will put forth projects with a valid purpose, which generally comply with the avoidance, minimization and mitigation (no net loss) goals of the USACE.

#### Nationwide Permits v. Individual Permits

Nationwide permits (NWP) are a type of general permit issued by the Chief of Engineers and are designed to expedite the regulatory process for those types of projects/activities expected to have minimal impacts on jurisdictional areas.

The nationwide permitting program is reauthorized every five years. The current NWP program became effective on March 19, 2007 and includes 49 different nationwide permit categories including “Linear Transportation Projects” (NWP 14), “Residential Developments” (NWP 29), “Commercial and Institutional Developments” (NWP 39) and “Stormwater Management Facilities” (NWP 43) among others. Each NWP establishes thresholds, which trigger the need for submitting a pre-construction notification (PCN) to the USACE and which set upper limits to accepted impacts based on the total acreage and/or linear feet of impacts, which result from project. Exceeding these limits will require processing an Individual Permit (IP), which may involve a significantly longer processing time.

#### Federal Jurisdiction over Waters and Wetlands

The USACE will assert jurisdiction over waters that are presently used or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. The definition of “Waters of the U.S.,” are set forth in the Code of Federal Regulations (CFR) 328.3. The term “waters of the United States” means:

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, 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;
  - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; and
  - (iii) Which are used or could be used for industrial purpose by industries in interstate commerce.
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
- (6) The territorial seas;
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section. (Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States), and
- (8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

Subsequent to the U.S. Supreme Court decision in *Rapanos, et al v. United States* (2006) the Environmental Protection Agency (EPA) and the USACE (the agencies) issued a joint memorandum (Clean Water Act Jurisdiction Following *Rapanos v. United States*, (June 5, 2007)), which integrates the *Rapanos* standards with the process presented in 33 CFR 328.3(a).

Pursuant to the memorandum, federal jurisdiction will be asserted over the following categories of water bodies:

- (TNWs): TNW, including territorial seas;
- Wetlands adjacent to TNWs;

- (RPWS): Non-navigable tributaries of TNWs with relatively permanent water flow that are flow directly or indirectly to TNWs. “Relatively permanent” means water flowing for at least three months of the year. (Usually, perennial streams and some intermittent streams); and
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs.

In addition, the agencies will assert jurisdiction over the following categories of water bodies only if, based on fact-specific analysis, the water body is determined to have a significant nexus with a TNW:

- (Non-RPWs): Non-navigable tributaries that do not have relatively permanent water flow that flow directly or indirectly into TNWs (Usually ephemeral and some intermittent streams);
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs; and
- Wetlands adjacent to, but not directly abutting RPWs that flow directly or indirectly into TNWs.

“A significant nexus exists if the tributary, in combination with all of its adjacent wetlands has more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a TNW.”

The agencies will not assert jurisdiction over the following geomorphic features:

- “Swales or erosional features (e.g., gullies small washes characterized by low volume, infrequent or short duration flows),” and
- “Ditches (including roadsides ditches) excavated wholly in and draining only uplands that do not carry relatively permanent water flows.”

The agencies now require that all determinations for non-navigable waters, isolated-waters and/or wetlands be evaluated by the USACE and EPA before making a final jurisdictional determination.

In the absence of wetlands, the lateral extent of federal jurisdiction over non-tidal waters of the U.S. is defined by the ordinary high water mark (OHWM). The OHWM is defined in 33 CFR 328.3, 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.”

In June 2001, the USACE South Pacific Division issued Guidelines for Jurisdictional Delineations for Waters of the United States in the Arid Southwest. The purpose of this document was to aid delineators in assessing the physical characteristics of dry land drainage systems in the Arid West. With respect to jurisdictional determinations, the factors for determining waters of the U.S. include evaluating the flow regime geomorphic feature, and general indicators of flow. These methods are

consistent with the criteria set forth in 328.3(a) and 328.3(e), but are also subject to guidance set forth in the Rapanos guidance, including “significant nexus determinations,” as appropriate.

Subject to Rapanos limitations, Federal Jurisdiction will extend to “adjacent” wetlands. “Adjacent” means “bordering contiguous or neighboring.” According to the USACE Wetlands Delineation Manual, Technical Report, (1987) three criteria must be satisfied to classify an area as a jurisdictional wetland:

1. A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation);
2. Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and
3. Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

The USACE has established regional guidance to address specific regional variations in wetlands determinations. These regional guidance documents supplement the 1987 manual. The Interim Regional Supplement for the Arid West was published in December 2006. Similarly Draft guidance for Western Mountains, Valleys and Coast Regions” was published in April, 2007. In performing its delineations, MBA applies these supplemental guidance as appropriate.

Resulting from the 2001 US Supreme Court in Solid Waste Agency of North Cook County v. USACE (SWANCC) case, federal jurisdiction will not reach wholly intra-state wetlands, which are not “adjacent” to a jurisdictional stream course. Similarly, as previously established, the Rapanos decision may further limit jurisdiction, on a case-specific basis, where a significant nexus determination is required.

### **Primary General Conditions (GC) of 404 Permits**

#### **GC # 4: Compliance with the Migratory Bird Treaty Act**

The MBTA protects all common wild birds found in the US except the house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, and wild turkey. Resident game birds are managed separately by each state. The MBTA makes it unlawful for anyone to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs.

The primary responsibility for complying with the Migratory Bird Treaty Act (MBTA) is that of the project proponent (permittee) and is independent of Department of the Army permitting processes (404). It should be noted, however, that the nationwide permitting program (General Condition 4) does require that

breeding areas for migratory birds in waters of the United States must be avoided to the maximum extent practicable.

#### **GC # 17: Compliance with Federal Endangered Species Act**

In administering the Section 404 permitting program, the USACE is required to abide by Section 7(a) (2) of the Federal Endangered Species Act (ESA), which requires federal agencies to consult with the United States Fish and Wildlife Service (USFWS) “to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.” As a result, the presence of federally listed species must be determined prior to submittal of the Section 404 application. In the nationwide permitting program, compliance with the ESA is set forth in general condition (GC 17)

The USFWS administers the Federal Endangered Species Act. The ESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. The ESA defines as “endangered” any plant or animal species that is in danger of extinction throughout all or a significant portion of its known geographic range. A “threatened” species is a species that is likely to become endangered. A “proposed” species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

Section 9 of the ESA prohibits “take” of threatened or endangered species. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Take can include disturbance to habitats used by a threatened or endangered species during any portion of its life history. The presence of any federally threatened or endangered species in a project area generally imposes severe constraints on development, particularly if development would result in take of the species or its habitat. Under the regulations of the ESA, the USFWS may authorize take when it is incidental to, but not the purpose of, an otherwise lawful act.

#### **GC # 18: Compliance with National Historic Preservation Act**

In processing a Section 404 permit, the USACE is required to comply with section 106 of the National Historic Preservation Act (NHPA). Section 106 consultation is triggered when historic or archaeological sites are potentially affected by the proposed project. In the nationwide permitting program, compliance with the NHPA is set forth in general condition (GC 18). The USACE will initiate section 106 consultation with the appropriate state agency (SHPO in California) with federal oversight (ACHP). The process usually requires one month from the date the USACE triggers consultation with the state agency.

#### **GC # 21: Compliance with Section 401 of the Clean Water Act**

In connection with notification to the USACE under Section 404 of the Clean Water Act (CWA), pursuant to 33 CFR Part 330, a written request for Section 401 water quality certification must be submitted to the RWQCB to ensure that no degradation of water quality will result from the proposed

project. Subject to CWA section 401(a)(1), the USACE cannot issue a section 404 dredge/fill permit until such time as a CWA section 401 Water Quality Certification (WQC) has been approved by the applicable RWQCB. In the nationwide permitting program, compliance with the Section 401 is set forth in general condition (GC 21).

In order to meet the requirements of the RWQCB for issuance of a 401-water quality certification, the project proponent must provide assurances that the project will not adversely affect the water quality of receiving water bodies. A written request for 401 water quality certification must be prepared and submitted to the RWQCB for review. The request will include a detailed project description, a description of proposed impacts, identification and discussion of beneficial uses of affected receiving waters (as described within the appropriate Basin Plan), a water quality plan identifying project-specific Best Management practices (BMPs), discussion of other approvals and certifications being obtained, a conceptual restoration plan, and a completed notification form.

CEQA Compliance: Pursuant to Title 23, Section 3856(f) of the California Code of Regulations (CCR), the Regional Water Quality Control Board (RWQCB) may not issue a Clean Water Act (Section 401) Water Quality Certification (WQC) for a project before being provided with (and having had ample time to review) a copy of the final CEQA documentation prepared for the project. Upon formal request for certification, water quality certification should be forthcoming within 90-120 days of completion of the CEQA process.

Fee Structure: Subject to California Code of Regulations (CCR), Title 23, §3833, a section 401 application must be accompanied by an initial deposit of not less than \$500.00. If the initial deposit does not cover the agency's application review costs, the RWQCB may require an additional (one-time) amount using the calculus set forth in section 2200(e), Title 23, of the California Code of Regulations.

#### **GC # 22: Compliance with the Coastal Zone Management Act**

In administering the Section 404 permitting program, the USACE is required to abide by Section 307(c)(1) of the Coastal Zone Management Act (CZMA). This requirement is set forth in General Condition No. 22 of the NWP (2007) program and detailed in 33 CFR 330.4(d). This condition requires the USACE to provide a consistency determination and receive state agreement prior to the authorization of activities affecting land, water, or natural resources within the coastal zone.

The California "Coastal zone" means that land and water area within the State extending seaward to the state's outer limit of jurisdiction, including all offshore islands, and extending inland generally 1,000 yards from the mean high tide line of the sea. In significant coastal estuarine, habitat, and recreational areas it extends inland to the first major ridgeline paralleling the sea or five miles from the mean high tide line of the sea, whichever is less, and in developed urban areas the zone generally extends inland less than 1,000 yards. The coastal zone does not include the area of jurisdiction of the

San Francisco Bay Conservation and Development Commission, established pursuant to Title 7.2 (commencing with Section 66600) of the Government Code, nor any area contiguous thereto, including any river, stream, tributary, creek, or flood control or drainage channel flowing into such area.

**Appendix B:  
Jurisdictional Wetlands and  
Significant Nexus Determination**

## CRITERIA FOR WETLAND DETERMINATIONS

### USACE

As defined in 33 CFR part 328.3(a)(7) and as established by current case law, the USACE will currently assert jurisdiction over wetlands adjacent to waters of the U.S., except for those wetlands adjacent to other wetlands.

The term “wetlands” means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence or vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR part 328.3(b)).

Typically, the term “adjacent” means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent (33 CFR part 328.3(c)). Similarly, the wetland must be adjacent to either a navigable in-fact water way or tributary thereof. Where “adjacency” cannot be established, the wetlands will be determined to be an “isolated” non-jurisdictional feature unless an independent nexus to interstate or foreign commerce can be established pursuant to 33 CFR part 328.3(a)(3). (Also, see *SWANCC v. US*, 2001).

Based on the standards established in *Rapanos v. U.S.*, the USACE will not assert jurisdiction over wetlands where: (1) the wetlands are adjacent to non-navigable tributaries that lack relatively permanent flows, or (2) wetlands are adjacent to but not abutting non-navigable tributaries with relatively permanent water, unless in both cases the relevant portion (reach) of the drainage, together with all of its wetlands, have a significant nexus to a TNW.

According to the USACE Wetlands Delineation Manual, Technical Report (1987), three criteria must be satisfied to classify an area as a jurisdictional wetland:

1. Hydrophytic Vegetation: A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation);
2. Hydric Soils: Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils), and
3. Wetland Hydrology: Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

The USACE has established regional guidance to address specific regional variations in wetlands determinations. These regional guidance documents supplement the 1987 manual, The Interim Regional Supplement for the Arid West, which was published in December 2006. Similarly, Draft

guidance for Western Mountains, Valleys and Coast Regions” was published in April 2007. In performing its delineations, MBA applies this supplemental guidance as appropriate.

As established in both the USACE 87 Manual and the “Arid West” regional guidance, the following criteria apply.

### **Hydrophytic Vegetation**

Hydrophytic vegetation is defined as plant life growing in water, soil, or substrate that is at least periodically deficient in oxygen because of excessive water content. The USFWS has published the National List of Vascular Plant Species That Occur in Wetlands, (1996 National Summary, hereafter NLVPS) and divided plants into 5 groups based on their “wetland indicator status:”

1. Obligate wetland plants (OBL) that occur almost always in wetlands under natural conditions;
2. Facultative wetland plants (FACW) that usually occur in wetlands but occasionally are found in upland areas;
3. Facultative plants (FAC) that are equally likely to occur in wetlands as well as upland;
4. Facultative upland plants (FACU) that usually occur in upland areas but occasionally are found in wetlands; and
5. Upland plants (UPL) that occur almost always in upland areas under natural conditions.

Plus (+) and minus (-) values, used in identifying indicator status in the NLVPS are not applied when evaluating plants in the arid west region. In the arid west, an area is deemed to have hydrophytic vegetation when it (1) passes the dominance test; (2) has a prevalence index  $\leq 3$ ; (3) morphological adaptations are present; or (4) the area is a “problem area.” (See Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, December 2006.)

**Dominance Test:** An area has hydrophytic vegetation when, under normal circumstances, more than 50 percent of the composition of dominant plant species (using the 50/20 rule) from all strata are obligate wetland (OBL), facultative wetland (FACW) and/or facultative species (FAC). If the plant community passes the dominance test, then the vegetation is hydrophytic and no further vegetation analysis is required. If the plant community fails the dominance test, and indicators of hydric soil and/or wetland are absent then hydrophytic vegetation is absent unless the site meets requirements for a problematic wetland situation.

**Prevalence Test:** In areas failing the dominance test yet having indicators of hydric soil and wetland hydrology, the vegetation must be re-evaluated using the “prevalence index” (PI). The prevalence index takes into account all plant species in the community, not just a few dominants. The index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL =1, FACW =2, FAC = 3, FACU = 4, and

UPL = 5) and weighting is by abundance (percent cover). The sum of the weighted indicator values are then divided by the sum of the percent cover values for each indicator type. Where the PI value is  $\leq 3$ , the area is considered positive for hydrophytic vegetation. Generally, the index is a more comprehensive analysis of the hydrophytic status of the community than one based on just a few dominant species. The index is particularly useful: (1) in communities only one or two dominants; (2) in highly diverse communities where many species may be present at roughly equal coverage; and (3) when strata differ greatly in total plant cover. The prevalence index is used on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.

**Morphological Adaptations:** In areas failing both the dominance test and prevalence test, yet having indicators of hydric soil and wetland hydrology, hydrophytic vegetation will still be deemed present when the morphological adaptations are present. In the arid west, the most common morphological adaptations are adventitious roots and shallow root systems developed on or near the soil surface on FACU species. If more than 50 percent of the FACU species have morphological adaptations, then these species are classified as FAC species and the dominance test and/or prevalence index are recalculated. The vegetation is hydrophytic if either test is positive.

### **Hydric Soils**

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. "Long enough" generally means 1 week during the growing season and soils that are saturated for this period usually support hydrophytic vegetation. The criteria for establishing the presence of hydric soils vary among different types of soils and between normal circumstances, disturbed areas, and problem areas. Due to their wetness during the growing season, hydric soils usually develop certain morphological properties that can be readily observed in the field. Prolonged anaerobic soil conditions typically lower the soil redox potential, causing a chemical reduction of some soil components, mainly iron oxides and manganese oxides. This reduction is typically reflected by the presence of iron or manganese concretions, gleying, or mottling. Other field indicators of hydric soils include the presence of sulfidic material, an aquic or peraquic moisture regime, or a spodic horizon. (All organic soils, with the exception of Folists, are classified as hydric soils.)

### **Wetland Hydrology**

Wetland hydrology is permanent or periodic inundation, or soil saturation for a significant period during the growing season. Numerous factors influence the wetness of an area, including precipitation, stratigraphy, topography, soil permeability, and plant cover. At certain times of the year in most wetlands, and in certain types of wetlands at most times, wetland hydrology is quite evident, since surface water or saturated soils may be observed. Yet, in many instances, especially along the uppermost boundary of wetlands, hydrology is not readily apparent. Despite this limitation, hydrologic indicators can be useful for confirming that a site with hydrophytic vegetation and hydric

soils still exhibits wetland hydrology. While hydrologic indicators are sometimes diagnostic of the presence of wetlands, they are generally either operationally impracticable (e.g. in the case of recorded data) or technically inaccurate (e.g., in the case of some field indicators) for delineating wetland boundaries.

The following hydrologic indicators, while not necessarily indicative of hydrologic events during the growing season or in wetlands alone, do provide evidence that inundation or soil saturation has occurred at some time: visual observation of inundation, visual observation of soil saturation, oxidized channels (rhizospheres) associated with living roots and rhizomes, water marks, drift lines, waterborne sediment deposits, water-stained leaves, surface scoured areas, morphological plant adaptations, and hydric soil characteristics.

### **Problem Areas and Atypical Situations**

In the arid west some wetlands may periodically lack indicators of hydrophytic vegetation, hydric soils or wetland hydrology due to normal (natural) seasonal or annual variability. Similarly, indicators in some areas may be affected by atypical situations brought about by recent human activities or unusual natural events. The Arid West Regional Guidance sets forth a number of procedures to identify and analyze problems areas. Examples of problem areas and atypical situations may include:

#### **Problematic Vegetation:**

- **Temporal Shifts in Vegetation:** plant communities in playas, vernal pools, seepas, and springs change in response to seasonal climatic fluctuations. These changes may result from:
  - Seasonal shifts in plant communities between normal wet/dry season
  - Drought Conditions lasting more than one growing season.
- **Sparse and Patchy Vegetation:** A seasonal pond must have at least 5 percent plant cover to be considered vegetated. To be considered jurisdictional, unvegetated areas may be considered as other waters of the U.S. if they exhibit Ordinary High Water (OHW) indicators as set forth in 33 CFR 328.3
- **Riparian Areas:** Where there is high variability in wetland vegetation indicator status between the different strata. (Usually the tree stratum has wetter indicator status than other strata.)
- **Areas Affected by Grazing:**
  - **Managed Plant Communities:** horticulture, tilling/disking.
- **Areas Affected by Fires, Floods and Other Natural Disturbances:**
  - *Vigor and Stress Response to Wetland Conditions:* horticulture is either robust or impeded by hydric soils, and/or wetland hydrology.

Problematic Hydric Soils:

- Moderately to Very Strong Alkaline Soils: Redox concentrations and depletions are not always evident in soils with pH of 7.9 or higher.
- Volcanic Ash: Soils of volcanic origin are high in silica content and low in redoximorphic minerals such as iron, manganese, and sulfur.
- Vegetated Sand and Gravel Bars within Flood Plains: Flood plains may lack hydric soil indicators because seasonal flooding deposits new layers of soil material or the deposited material may lack redoximorphic minerals.
- Recently Developed Wetlands: may include mitigation sites, wetland management areas, unintentionally produced wetlands (flood irrigation, leaking water pipes, etc).
- Seasonally Ponded Soils: depressional wetlands, usually with perched systems above a restrictive soil layer (hardpan or clay) where the saturation depth or saline conditions prohibit hydric soil indicators.
- Soils with Relict or Induced hydric Soil Indicators: in some areas redoximorphic features in hydric soils were formed in the recent or distant past when conditions were substantially wetter than at present. Hydric soil indicators may persist in low land areas which were historically flooded (such as in California's Central Valley) even though the area has been drained for agricultural purposes. Alternatively, hydric soils indicators in upland areas may have formed historically from flood irrigation or like agricultural activities that no longer persist.

Problematic Wetland Hydrology:

- Site Visits During the Dry Season: Hydrophytic vegetation may be absent or diminished during the dry-season (when evapo-transpiration exceeds precipitation). When possible the site should be visited (or re-visited) during the normal wet season.
- Periods with Below Normal Rainfall: Rainfall in the 3-month period prior to the site visit should be compared to historical averages from the National Water and Climate Center (NRCS). Rainfall should be between the high and low 30 percent probability values.
- Drought Years: Areas subject to drought conditions particularly lasting several years may affect wetland hydrology indicators. The Palmer Drought Severity Index (PDSI)—known operationally as the Palmer Drought Index (PDI)—attempts to measure the duration and intensity of the long-term drought-inducing circulation patterns. Long-term drought is cumulative, so the intensity of drought during the current month is dependent on the current weather patterns plus the cumulative patterns of previous months. Since weather patterns can change almost literally overnight from a long-term drought pattern to a long-term wet pattern, the PDSI (PDI) can respond fairly rapidly. PDSI values range between -6 and +6 with negative values indicating dry periods and positive values indicating wet periods:
  - (-4 to -6) - Extreme Drought;

- (-3) - Severe Drought;
  - (-2) - Moderate Drought; and
  - (-1) - Mild Drought.
- 
- Years with Unusually Low Winter Snowpack: the hydrology of areas with water-sheds in adjacent mountain regions may be affected by annual variability in the liquid equivalent of the snow pack.
  - Reference Sites: If indicators of hydric soil and hydrophytic vegetation are present on a site that lacks wetland hydrology indicators, the site may be considered to be a wetland if the landscape setting, topography, soils, and vegetation are substantially the same as those on nearby reference areas.
  - Hydrology Tools: A collection of methods can be used to determine whether wetland hydrology is present on a potential wetland site that lacks indicators due to disturbances or other reasons (particularly in agricultural areas).
  - Long-term Hydrological Monitoring: Areas may be monitored over long periods of time.

## **Appendix C: Glossary of Terms**

## GLOSSARY OF TERMS

Term	Source	Page	Definition
<i>Abutting</i>	6	69	Wetlands that are not separated from the tributary by an upland feature such as a berm or dike.
<i>Adjacent</i>	7	N/A	Bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are “adjacent wetlands.”
<i>Aerial Miles</i>	6	53	The straight line (linear) distance between water bodies.
<i>Aggradation</i>	10	69	An increase in the channel bed elevation through deposition of sediment.
<i>Arroyo</i>	10	69	Entrenched ephemeral streams with vertical walls that form in desert environments.
<i>Assemblage</i>	10	69	A collection of individual plant species.
<i>Avulsion</i>	10	69	The rapid diversion of flow from one channel into another due to blockage of the channel by sediment or debris.
<i>Best Management Practices (BMPs)</i>	4	11196	Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.
<i>Calcrete</i>	10	69	Conglomerate consisting of surficial sand and gravel cemented into a hard mass by calcium carbonate.
<i>Caliche rubble</i>	10	69	Fragments of a sedimentary rock formed by evaporation and precipitation of calcite (CaCO <sub>3</sub> ) in soil, sediments, or preexisting rock.
<i>Clean Water Act (CWA) of 1972</i>	NA	NA	Also known as the Federal Water Pollution Control Act (FWPCA) 33U.S.C.A §§1251 to 1387 (alternatively cited as §§101 – 607). The primary goal as defined in §1251(a) is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Jurisdiction to regulate “waters of the United States,” vested under this Act include: §303 (Water Quality Standards and implementation Plans), §311 (Spill Program and <i>Oil Pollution Act</i> ), §401 (State Water Quality Certification), §402 (National Pollutant Discharge Elimination System – NPDES), §404 (Permits for dredge or fill material).
<i>Clean Water Act (CWA) §303</i>	NA	NA	Section 303 Water Quality Standards Program: Under this program, State and authorized Indian Tribes establish water quality standards for navigable waters to “protect the public health or welfare” and “enhance the quality of water,” “taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agriculture, industrial, and other purposes, and also taking into consideration their use and value for navigation.”

Term	Source	Page	Definition
<i>Clean Water Act (CWA) §311</i>	NA	NA	Section 311 Spill Program and the Oil Production Act (OPA): Under this program, the CWA addresses pollution from both oil and hazardous substance releases. Together with the Oil Pollution Act, it provides EPA and the U.S. Coast Guard with the authority to establish a program for preventing, preparing for, and responding to, spills that occur in navigable waters of the United States.
<i>Clean Water Act (CWA) §401</i>	NA	NA	Section 401 State Water-Quality Certification: Provides that no Federal permit or license for activities that might result in a discharge to navigable waters may be issued unless a CWA Section 401 water quality certification is obtained from or waived by States or authorized Tribes.
<i>Clean Water Act (CWA) §402</i>	NA	NA	Section 402 National Pollutant Discharge Elimination Program (NPDES): This program established a permitting system to regulate point source discharges of pollutants (other than dredged or fill material) into waters of the United States.
<i>Clean Water Act (CWA) §404</i>	NA	NA	Section 404 Dredged and Fill Material Permit Program: This program established a permitting system to regulate discharges of dredged or fill material into waters of the United States.
<i>Clonal Species</i>	10	69	A group of genetically identical individuals growing in a given location, all originating vegetatively (not sexually) from a single ancestor
<i>Compensatory Mitigation</i>	4	11196	The restoration, establishment (creation), enhancement, or reservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization has been achieved.
<i>Currently Serviceable</i>	4	11196	Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
<i>Debris Flow</i>	10	69	A moving mass of rock fragments, soil, and mud where more than 50 percent of the particles are larger than sand-sized.
<i>Desert pavement</i>	10	69	Tightly interlocking gravel at the surface formed after years of surface exposure in the absence of active streamflow over the surface
<i>Desert varnish</i>	10	69	A thin, dark, shiny film, composed of iron oxide with traces of manganese oxide and silica, formed on the surface of pebbles, boulders, and rock outcrops in desert regions after long exposure.
<i>Discharge</i>	4	11196	The term “discharge” means any discharge of dredged or fill material and any activity that causes or results in such a discharge.
<i>Diurnal Tide Level</i>	9	NA	The arithmetic mean of mean higher high water and mean lower low water.
<i>Divide</i>	10	69	High ground that forms the boundary of a watershed.
<i>Drift</i>	10	70	Organic debris oriented to flow direction(s) (larger than small twigs).

Term	Source	Page	Definition
<i>Effective discharge</i>	10	70	Discharge that is capable of carrying a large proportion of sediment over time.
<i>Enhancement</i>	4	11196	The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
<i>Ephemeral Stream</i>	4	11196	An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
<i>Establishment (Creation)</i>	4	11196	The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.
<i>Facultative Plants (FAC)</i>	1	14	Plants with a similar likelihood (estimated probability of 33 percent to 67 percent) of occurring in both wetlands and non-wetlands.
<i>Facultative Wetland Plants (FACW)</i>	1	14	Plants that occur usually (estimated probability >67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent) in non-wetlands.
<i>Facultative Upland Plants (FACU)</i>	1	14	Plants that occur sometimes (estimated probability 1 percent to <33 percent) in wetlands, but occur more often (estimated probability >67 percent to 99 percent) in non-wetlands.
<i>Flashy discharge pattern</i>	10	70	Periods of no flow or low-magnitude, high-frequency events separated by short-duration, high-magnitude, low-frequency events.
<i>Floodplain</i>	10	70	That portion of a drainage basin (see watershed), adjacent to the channel, that is covered by sediments deposited during overbank flood flow.
<i>Great Diurnal Range (GT)</i>	9	NA	The difference in height between mean higher high water and mean lower low water.
<i>Greenwich High Water Interval (HWI)</i>	9	NA	The average interval (in hours) between the moon's transit over the Greenwich meridian and the following high water at a location.
<i>Greenwich Low Water Interval (LWI)</i>	9	NA	The average interval (in hours) between the moon's transit over the Greenwich meridian and the following low water at a location.
<i>Headcut</i>	10	70	An abrupt vertical drop in the bed of a stream channel that is an active erosion feature.
<i>Herbaceous</i>	10	70	Pertaining to plants with little or no woody tissue.

Term	Source	Page	Definition
<i>High tide line (HTL)</i>	7	N/A	The term “high tide line” means the line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.
<i>Historic Property</i>	4	11196	Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization which meet the National Register criteria (36 CFR part 60).
<i>Hydraulic parameters</i>	10	70	Slope, roughness, channel geometry, discharge, velocity, turbulence, fluid properties, sediment size, etc.
<i>Hydraulic roughness</i>	10	70	Channel boundary characteristic contributing to energy losses, commonly described by Manning’s roughness coefficient (n).
<i>Hydric soil</i>	10	70	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.
<i>Hydrological Units</i>	8	1-3	As prescribed by the USGS, refers to the four levels of subdivisions, used for the collection and organization of hydrological data. The hierarchy of hydrological units include: (1) Regions (2) Subregions (3) Accounting Units, and (4) Cataloging Units. The identifying codes associated with these units are “hydrological unit codes.”
<i>Hydrological Units – “Regions”</i>	8	3	The first level of USGS hydrological classification, which divides the Nation into 21 Major geographic areas. These geographic areas (hydrologic areas based on surface topography) contain either the drainage area of a major river, or the combined drainage areas of a series of rivers. Most of California is located within region “18.” Notable exceptions include the Tahoe basin (“Great Basin Region 16”) and the Colorado River (“Lower Colorado Region 15”). All smaller hydrological units with the region begin with the region number (18).

Term	Source	Page	Definition
<i>Hydrological Units – “Subregions”</i>	8	3	The second level of USGS hydrological classification, divides the 21 regions into 222 subregions (nationally). A subregion includes the area drained by a river system a reach of a river and its tributaries in that reach, a closed basin(s), or a group of streams forming a coastal drainage area. Within Region 18, the state of California includes 10 sub-regions.
<i>Hydrological Units – “Accounting Units”</i>	8	3	The third level of USGS hydrological classification, subdivides many of the subregions in accounting units. These 352 hydrologic accounting units nest within, or are equivalent to, the subregions. The accounting units are used by the Geological Survey for designing and managing the National Water Data Network. Within Region 18, the state of California includes 16 Accounting Units.
<i>Hydrological Units – “Cataloging Units”</i>	8	3	The fourth level of USGS hydrological classification is the cataloging unit, the smallest element in the hierarchy of hydrologic units. A cataloging unit is a geographic area representing part of all of a surface drainage basin, a combination of drainage basins, or a distinct hydrological feature. There are 2,150 cataloging units in the United States. Within Region 18, the state of California includes 135 cataloging units.
<i>Hydrologic regime</i>	10	70	Characteristic pattern of precipitation, runoff, infiltration, and evaporation affecting a water body.
<i>Hydromesic</i>	10	70	Physiographic class; soil retains water for long periods of time, will drain.
<i>Hyper-concentrated flow</i>	10	71	Suspension flow with large suspended sediment concentrations (i.e., greater than 1 to 3 percent).
<i>Independent utility</i>	4	11196	A test to determine what constitutes a single and complete project in the USACE regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.
<i>Intermittent stream</i>	4	11196	An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.
<i>Litter</i>	10	71	Organic debris oriented to flow direction(s) (small twigs and leaves).

Term	Source	Page	Definition
<i>Loss of Waters of the United States</i>	4	11196	Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a water body, or change the use of a water body. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an Nationwide Permit (NWP); it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.
<i>Mean Diurnal High Water Inequality (DLQ)</i>	9	NA	The difference in height of the two low waters of each tidal day for a mixed or semidiurnal tide.
<i>Mean Diurnal High Water Inequality (DHQ)</i>	9	NA	The difference in height of the two high waters of each tidal day for a mixed or semidiurnal tide.
<i>Mean Lower Low Water (MLLW)</i>	9	NA	The average of the lower low water height of each tidal day observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent datum of the National Tidal Datum Epoch.
<i>Mean Low Water (MLW)</i>	9	NA	The average of all the low water heights observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent data of the National Tidal Datum Epoch.
<i>Mean Higher High Water (MHHW)</i>	9	NA	The average of the higher high water height of each tidal day observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent data of the National Tidal Datum Epoch.
<i>Mean High Water (MHW)</i>	9	NA	The average of all the high water heights observed over the National Tidal Datum Epoch. For stations with shorter series, comparison of simultaneous observations with a control tide station is made in order to derive the equivalent data of the National Tidal Datum Epoch.
<i>Mean Range of Tide (MN)</i>	9	NA	The difference in height between mean high water and mean low water.

Term	Source	Page	Definition
<i>Mean Sea Level (MSL)</i>	9	NA	The arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; e.g. monthly mean sea level and yearly mean sea level.
<i>Mean Tide Level (MTL)</i>	9	NA	The arithmetic mean of mean high water and mean low water.
<i>Non-tidal wetland</i>	4	11196	A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).
<i>National Tidal Datum Epoch</i>	9	NA	The specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values (e.g., mean lower low water, etc.) for tidal data. It is necessary for standardization because of periodic and apparent secular trends in sea level. The present NTDE is 1983 through 2001 and is actively considered for revision every 20-25 years. Tidal data in certain regions with anomalous sea level changes (Alaska, Gulf of Mexico) are calculated on a Modified 5-Year Epoch.
<i>Obligate Wetland Plants (OBL)</i>	1	14	Plants that occur almost always (estimated probability >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1 percent) in non-wetlands.
<i>Obligate Upland Plants (UPL)</i>	1	14	Plants that occur rarely (estimated probability <1 percent) in wetlands, but occur almost always (estimated probability >99 percent) in non-wetlands under natural conditions.
<i>Open Water</i>	4	11196	For purposes of the NWP, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.
<i>Ordinary High Water Mark</i>	7	N/A	The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.
<i>Ordinary High Water Mark</i>	4	11196	An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Term	Source	Page	Definition
<i>Perennial Stream</i>	4	11197	A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
<i>Pioneer Species</i>	10	71	A species that colonizes a previously uncolonized area.
<i>Practicable</i>	4	11197	Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.
<i>Pre-construction notification</i>	4	11197	A request submitted by the project proponent to the USACE for confirmation that a particular activity is authorized by a NWP. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a NWP, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by a NWP.
<i>Preservation</i>	4	11197	The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.
<i>Rating curve</i>	10	71	A curve that illustrates the relationship between depth (stage) and the amount of flow (discharge) in a channel.
<i>Reach</i>	10	71	Segment of a stream channel.
<i>Re-establishment</i>	4	11197	The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.
<i>Rehabilitation</i>	4	11197	The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.
<i>Relatively Permanent Water (RPW)</i>	5,	5,69	In the context of CWA jurisdiction post- <i>Rapanos</i> , a water body is “relatively permanent” if it flows year-round or its flow is continuous at least “seasonally,” (typically 3 months). Wetlands adjacent to a “relatively permanent” tributary are also jurisdictional if those wetlands directly abut such a tributary.

Term	Source	Page	Definition
<i>Relevant Reach</i>	6	40	With respect to “significant nexus determinations,” the “relevant reach” will include all tributary waters of the same order. Typically this will include the tributary and all adjacent wetlands reaching downstream from the project site to the confluence with the next tributary or upstream to a similar confluence.
<i>Restoration</i>	4	11197	The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.
<i>Riffle and pool complex</i>	4	11197	Riffle and pool complexes are special aquatic sites under CWA Section 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. Pools are characterized by a slower stream velocity, a streaming flow, a smooth surface, and a finer substrate.
<i>Riparian area</i>	4	11197	Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects water bodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20, in the NWP.)
<i>River Miles</i>	6	53	The flowing distance between the water bodies in question. Typically not a straight line; rather, the measurement is based on how far the water will travel from water body A to water body B. For example, the water in a meandering tributary will flow further than water flowing in a channelized tributary provided the two water bodies are the same distance apart in the landscape.
<i>Ruderals</i>	10	71	Disturbance-adapted herbaceous plant.
<i>Scour</i>	10	71	Soil and debris movement.
<i>Sheetflood</i>	10	71	Sheet of unconfined floodwater moving down a slope; a relatively low-frequency, high-magnitude event.
<i>Sheetflow</i>	10	71	Overland flow occurring in a continuous sheet; a relatively high-frequency, low-magnitude event.
<i>Shellfish seeding</i>	4	11197	The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Term	Source	Page	Definition
<i>Shift-adjusted rating curve</i>	10	71	A curve that reflects changes (shifts) in the rating for a gage. Ratings may change due to erosion or deposition within the streambed or growth of riparian vegetation.
<i>Significant Nexus</i>	5	40	In the context of CWA jurisdiction post- <i>Rapanos</i> , a water body is considered to have a “significant nexus” with a traditional navigable water if its flow characteristics and functions in combination with the ecological and hydrological functions performed by all wetlands adjacent to such a tributary, affect the chemical, physical, and biological integrity of a downstream traditional navigable water.
<i>Single and complete project</i>	4	11197	The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a “single and complete project” is all crossings of a single water of the United States (i.e., a single water body) at a specific location. For linear projects crossing a single water body several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate water bodies, and crossings of such features cannot be considered separately.
<i>Station Datum</i>	9	NA	A fixed base elevation at a tide station to which all water level measurements are referred. The datum is unique to each station and is established at a lower elevation than the water is ever expected to reach. It is referenced to the primary bench mark at the station and is held constant regardless of changes to the water level gauge or tide staff. The datum of tabulation is most often at the zero of the first tide staff installed.
<i>Stormwater management</i>	4	11197	Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.
<i>Stormwater management facilities</i>	4	11197	Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.
<i>Stream bed</i>	4	11197	The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the ordinary high water marks, are not considered part of the streambed.

Term	Source	Page	Definition
<i>Stream channelization</i>	4	11197	The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.
<i>Stream Order</i>	NA	NA	A method of numbering streams as part of a drainage basin network. The smallest unbranched mapped tributary is called first order, the stream receiving the tributary is called second order, and so on.
<i>Stream power</i>	10	71	The rate of doing work, or a measure of the energy available for moving rock, sediment, or woody or other debris in a stream channel, as determined by discharge, water surface slope, and the specific weight of water.
<i>Structure</i>	4	11197	An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.
<i>Succession</i>	10	41	Changes in the composition or structure of an ecological community.
<i>Tidal waters</i>	7	N/A	The term "tidal waters" means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.
<i>Tidal wetland</i>	7	N/A	A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channel-ward of the high tide line, which is defined at 33 CFR 328.3(d).
<i>Traditional Navigable Waters (TNW)</i>	6	68	A "traditional navigable water" includes all the "navigable waters of the United States," defines in 33 CFR §329, and by numerous decisions of the Federal courts, plus all other waters that are navigable-in-fact. Pursuant to 33 CFR §329: Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events that impede or destroy navigable capacity. The USACE is currently drafting new regulations defining TNWs.

Term	Source	Page	Definition
<i>Transmission loss</i>	10	72	Loss of discharge due to infiltration of flow into the channel bed and banks.
<i>Tributary</i>	6	69	A “tributary,” as defined in the <i>Rapanos</i> guidance document, means a natural, man-altered, or man-made water body that carries directly or indirectly into a traditional navigable water. For the purposes of determining significant nexus with a traditional navigable water, a “tributary” is the entire reach of the stream that is of the same order (i.e., from the point of confluence, where two lower order streams meet to form the tributary, downstream to the point such tributary enters a higher order stream).
<i>Upland Plants (UPL)</i>	1	14	Plants that occur rarely (estimated probability <1 percent) in wetlands, but occur almost always (estimated probability >99 percent) in non-wetlands under natural conditions.
<i>Vegetated shallows</i>	4	11197	Vegetated shallows are special aquatic sites under CWA Section 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as sea grasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.
<i>Wash</i>	10	72	Broad gravelly dry bed of an intermittent stream.
<i>Waterbody</i>	4	11197	For purposes of the NWP, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent—meaning bordering, contiguous, or neighboring—to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.
<i>Watershed (Drainage basin)</i>	10	72	An area of land that drains to a single outlet and is separated from other watersheds by a divide.

Term	Source	Page	Definition
<i>Waters of The United States</i>	7	N/A	<p>The term “waters of the United States” means:</p> <ol style="list-style-type: none"> <li>(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;</li> <li>(2) All interstate waters including interstate wetlands;</li> <li>(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:                         <ol style="list-style-type: none"> <li>(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or</li> <li>(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or</li> <li>(iii) Which are used or could be used for industrial purpose by industries in interstate commerce;</li> </ol> </li> <li>(4) All impoundments of waters otherwise defined as waters of the United States under the definition;</li> <li>(5) Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;</li> <li>(6) The territorial seas;</li> <li>(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section, (Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA [other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition] are not waters of the United States.) and</li> <li>(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA.</li> </ol>
<i>Wetlands</i>	1,2,7	N/A	<p>The term “wetlands” means 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. The criteria for determining wetlands is set forth in the USACE Wetlands Delineation Manual (1987) and relevant Regional Supplements (Arid West, December 2006)</p>
<i>Xeric</i>	10	72	Relating or adapted to an extremely dry habitat.
<p>Sources:</p> <ol style="list-style-type: none"> <li>1. USACE Wetlands Delineation Manual, January 1987</li> <li>2. USACE Guidelines for Jurisdictional Determinations for Waters of the United States in the Arid Southwest, June 2001</li> <li>3. USACE Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, December 2006</li> <li>4. FEDERAL REGISTER: Department of Defense; Department of the Army, Corps of Engineers, Re-issuance of Nationwide Permits; Notice, March 12, 2007</li> </ol>			

Term	Source	Page	Definition
5.	EPA/USACE Joint Memorandum: Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in <i>Rapanos v. United States</i> and <i>Carabell v. United States</i> , (June 5, 2007)		
6.	USACE Jurisdictional Delineation Form Instructional Guidebook, May 30, 2007		
7.	Code of Federal Regulations (CFR): 33 CFR 328.3 Definitions of Waters of the United States and/or 33 CFR 329 Definitions of Navigable Waters of the United States.		
8.	USGS Hydrologic Unit Maps, U.S. Geological Survey Water-Supply Paper 2294 (1994), by Paul R. Seaber, F. Paul Kapinos, and George L Knapp.		
9.	Center for Operational Oceanographic Products and Services.		
10.	USACE, A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States, August 2008		

## **Appendix D: Site Photographs**



Photograph 1: Looking north at the downstream portion of Drainage 1 as it exits the project site.



Photograph 2: Looking north at Drainage 2 from the western portion of the project site. This ephemeral feature is typical throughout the agricultural fields and is an artificial drainage created in an previous upland area.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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## Appendix D Site Photographs 1 and 2



Photograph 3: Looking southwest from the northeast corner of the temporary detention basin south of the Sketcher's Logistic Center. This area contains ruderal vegetation and is of low habitat quality.



Photograph 4: Looking south at the road-side ditch associated with flows along the west side of Theodore Street (Drainage 5). At this location, there is no evidence of any OHWM or bed and bank features.

Source: Michael Brandman Associates, 2012.



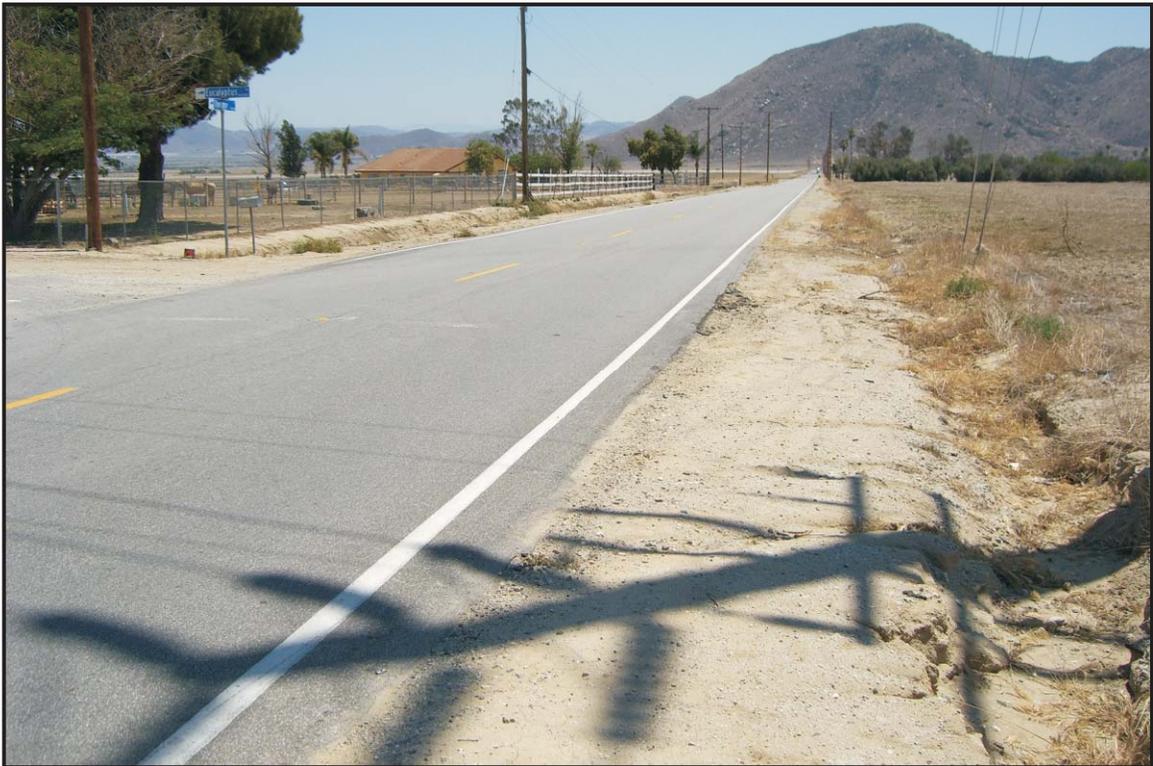
Michael Brandman Associates

26100025 • 10/2012 | sitephotos3and4.cdr

## Appendix D Site Photographs 3 and 4



Photograph 5: Looking south at the southern extent of Drainage 4 before it sheet flows in the extensive agricultural area.



Photograph 6: Looking southeast at the corner of Theodore Street and Eucalyptus Street. Drainage 5 is in the foreground and Drainage 6 is in the background.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

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## Appendix D Site Photographs 5 and 6



Photograph 7: Looking south at the southern extension of Drainage 7. The mulefat shrub in the background indicates the beginning of sheet flow for this drainage.



Photograph 8: Looking south from the northern portion of Drainage 8. Virginia Street and existing utility lines shown on the right side of the photo.

Source: Michael Brandman Associates, 2012.



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## Appendix D Site Photographs 7 and 8



Photograph 9: Looking northeast at Drainage 9 at the Gilman Springs Road crossing. No evidence of an OHWM at this location.



Photograph 10: Looking south at the large erosional area associated with Drainage 9 just south of Alessandro Boulevard. Large amounts of trash are scattered throughout this portion of the drainage.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

26100025 • 10/0212 | sitephotos9and10.cdr

## Appendix D Site Photographs 9 and 10

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Photograph 11: Looking northeast at the southern extent of Drainage 10 before it flows offsite. Riparian vegetation ends at this point.



Photograph 12: View of Drainage 11 as it flows off the project site to the south. The feature sheet flows after a short distance and does not have direct connectivity to Mystic Lake, shown in the distance.

Source: Michael Brandman Associates, 2012.

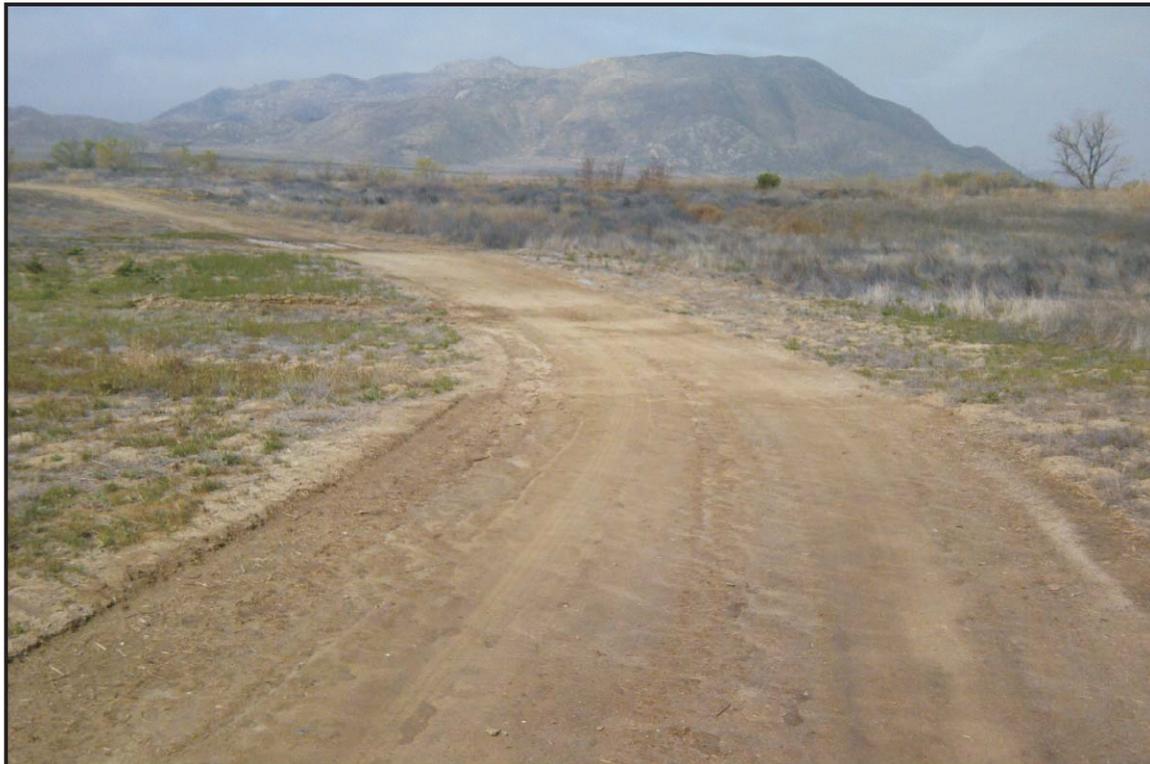


Michael Brandman Associates

## Appendix D Site Photographs 11 and 12



Photograph 13: Looking south at the southern extent of Drainage 7 after the confluence with Drainage 5. The drainage continues in an upland swale for approximately 300 feet before it sheet flows and is no longer detectable.



Photograph 14: Looking west at the southern extent of Drainage 9. At this point, the drainage no longer has an OHWM and sheet flows for approximately 1,000 feet before entering the artificially created ponded features adjacent to Mystic Lake.

Source: Michael Brandman Associates, 2012.



Michael Brandman Associates

## Appendix D Site Photographs 13 and 14

## **Appendix E: Assessor's Parcel Numbers**

**Survey area Parcel Numbers**

Assessor's Parcel Numbers				
42204009	42204010	42204014	42204015	422070005
422070006	422070010	422070014	422070017	422070018
422070019	422070020	422070021	422070022	422070029
422070030	422070031	422070032	422070033	422070034
422070035	422070036	422070037	422080001	422080002
422080003	422080004	422110001	422130001	422130002
422130003	423250001	423250002	423250007	423250008
423250009	423250010	423250011	423250012	423250013
423250018	423260001	423260002	423260003	423260004
423260005	423260006	423260007	423260008	423260009
423270003	423270004	423270006	423270007	423270008
423270009	423270017	423270018	423280001	423280002
423280003	423280004	423280005	423280006	423280007
423280008	423280009	423300002	423300004	423300009
423300010	423310001	423310002	423310003	423310004
423310005	423310006	423310008	478210054	478210055
478220001	478220002	478220003	478220004	478220005
478220006	478220007	478220009	478220010	478220011
478220012	478220013	478220014	478220015	478220016
478220017	478220018	478220019	478220020	478220021
478220022	478220023	478220024	478220025	478220026
478220027	478220028	478220029	478220030	478220031
478230001	478230002	478230003	478230004	478230005
478230006	478230007	478230008	478230009	478230010
478230011	478230014	478230015	478230016	478230017
478230019	478230020	478240002	478240003	478240005
478240006	478240007	478240008	478240011	478240012
478240013	478240014	478240015	478240016	478240017
478240019	478240021	478240022	478240023	478240024
478240025	478240026	478240027	478240028	478240029
478240030	478240031	478240032	478240033	478240034
488350003	488350004	488350005	488350006	488350007
488350008	488350009	488350010	488350012	488350013
488350014	488350015	488350019	488350021	488350023
488350025				