



**DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS**

**SYCAMORE CANYON BUSINESS PARK WAREHOUSE PROJECT  
CITY OF RIVERSIDE, RIVERSIDE COUNTY, CALIFORNIA**

**Prepared for:  
Albert A. Webb Associates Inc.  
3788 McCray Street  
Riverside, California 92506**

**Contact: Cheryl DeGano**

**Prepared by:  
Amec Foster Wheeler Environment & Infrastructure, Inc.  
3120 Chicago Avenue, Suite 110  
Riverside, California 92507**

**Principal Investigator:  
Scott Crawford**

**June 2015  
Revised June 2016**

**Amec Foster Wheeler Project No. 1555400636**

---



## TABLE OF CONTENTS

	<b>PAGE</b>
ACRONYMS AND ABBREVIATIONS.....	III
1.0 INTRODUCTION .....	1-1
1.1 Project Description .....	1-1
1.2 Project Location .....	1-1
2.0 ENVIRONMENTAL SETTING.....	2-1
2.1 Existing Conditions.....	2-1
2.2 Hydrology.....	2-1
2.3 Vegetation.....	2-1
2.4 Soils.....	2-2
2.5 National Wetlands Inventory.....	2-2
3.0 REGULATORY FRAMEWORK.....	3-5
3.1 U.S. Army Corps of Engineers.....	3-5
3.1.1 Waters of the U.S. ....	3-5
3.1.2 Wetlands and Other Special Aquatic Sites.....	3-6
3.1.3 Supreme Court Decisions.....	3-6
3.2 Regional Water Quality Control Board.....	3-7
3.3 California Department of Fish and Wildlife.....	3-7
4.0 METHODS.....	4-1
5.0 RESULTS.....	5-1
5.1 Drainage 1.....	5-1
5.2 Drainage 2.....	5-2
5.3 Isolated Riparian Area.....	5-3
5.4 Isolated Poned Area.....	5-3
5.5 Agency Jurisdiction .....	5-3
6.0 REFERENCES .....	6-1

## LIST OF TABLES

Table 1	Summary of Jurisdictional Areas .....	5-1
---------	---------------------------------------	-----

## LIST OF FIGURES

Figure 1.	Regional Location Map .....	1-3
Figure 2.	Topographic Map.....	1-5
Figure 3.	Aerial Map .....	1-7
Figure 4.	Soils Map.....	2-3
Figure 5.	CDFW Jurisdictional Delineation Map.....	5-6
Figure 6.	USACE Jurisdictional Delineation Map .....	5-8

## **TABLE OF CONTENTS (Cont.)**

---

### **LIST OF APPENDICES**

---

APPENDIX A    SITE PHOTOGRAPHS

## ACRONYMS AND ABBREVIATIONS

---

Amec Foster Wheeler	Amec Foster Wheeler Environment and Infrastructure, Inc.
AMSL	above mean sea level
APN	assessor parcel number
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GIS	Geographic Information System
IP	Individual Permit
NEPA	National Environmental Policy Act
NL	not listed
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OBL	obligate
OHWM	ordinary high water mark
Rapanos	Rapanos v. U.S. and Carabell v. U.S.
RPW	relatively permanent waterway
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. USACE
TNW	traditionally navigable waterway
UPL	upland
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture, Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
WSC	Waters of the State of California
WUS	Waters of the United States

## **1.0 INTRODUCTION**

---

Albert A. Webb Associates (Webb) retained Amec Foster Wheeler Environment and Infrastructure, Inc. (Amec Foster Wheeler) to conduct a delineation of jurisdictional wetlands and waters on the Sycamore Canyon Business Park Warehouse Project.

This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the development of the proposed project. The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, and California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code. A draft report was prepared in June 2015 and revised in June 2016. The June revisions were in direct response to resource agency verification of the delineation effort.

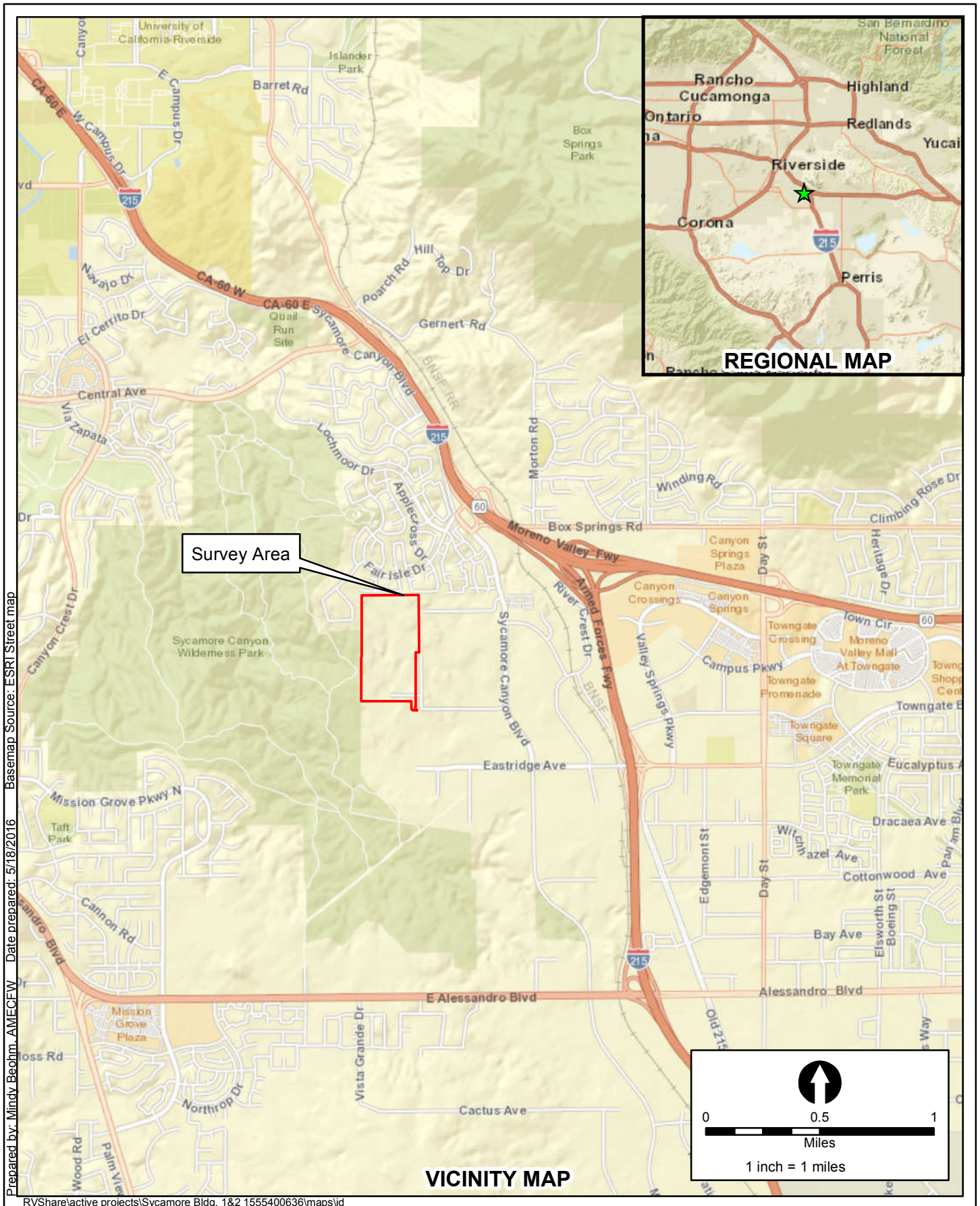
### **1.1 Project Description**

The proposed project involves the development of two industrial buildings and associated parking spaces within a 76-acre project site. The two buildings total approximately 1.4 million square feet with standard auto parking and trailer stalls. Water quality features associated with the project site include a water quality basin, the relocation of the main drainage channel to the western edge of the project site, and depressed landscaping.

### **1.2 Project Location**

The project site is generally located north of Alessandro Boulevard, south of State Route 60, east of Interstate 15, and west of Interstate 215 (Exhibit 1). The project site is located in Section 4 of Township 3 South, Range 4 West, as shown on the United States Geological Survey (USGS) 7.5 minute Riverside East, Ca. quadrangle (Figure 2). The elevation of the gently rolling project site ranges between 1,530 and 1,620 feet above sea level. The geographic coordinates near the middle of the site are 33.939250° North latitude and 117.307438° West longitude.

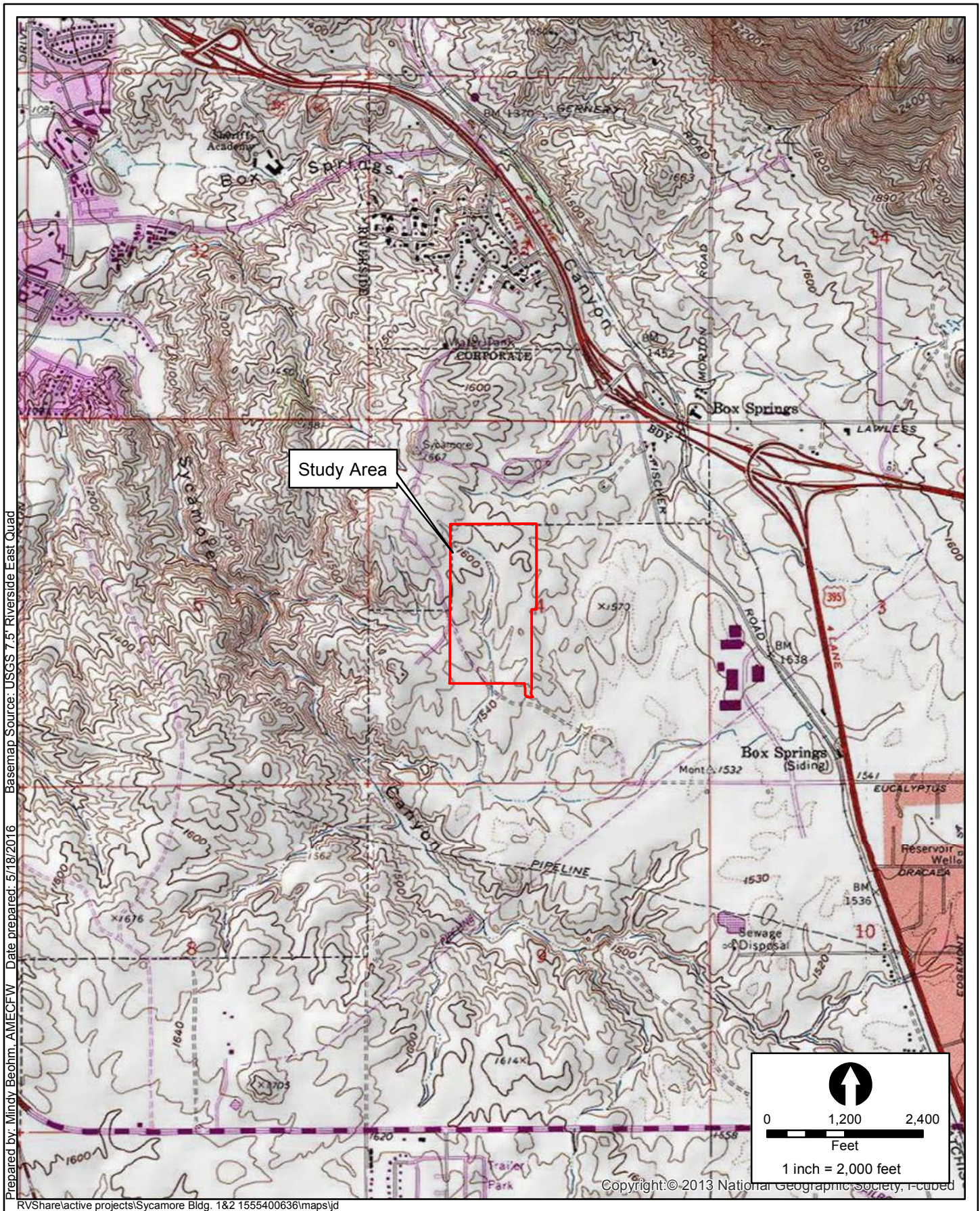
The project area is specifically located north of Sierra Ridge Drive, south of Sutherland Drive, east of the Sycamore Canyon Wilderness Park, and west of Sycamore Canyon Boulevard, and encompasses Assessor's Parcel Numbers: 263-020-003, through -006, 263-300-001 through -006, 263-300-025, 263-300-029, 263-300-030, 263-300-033, 263-300-034, 263-300-035, and 263-300-036 (Figure 3).

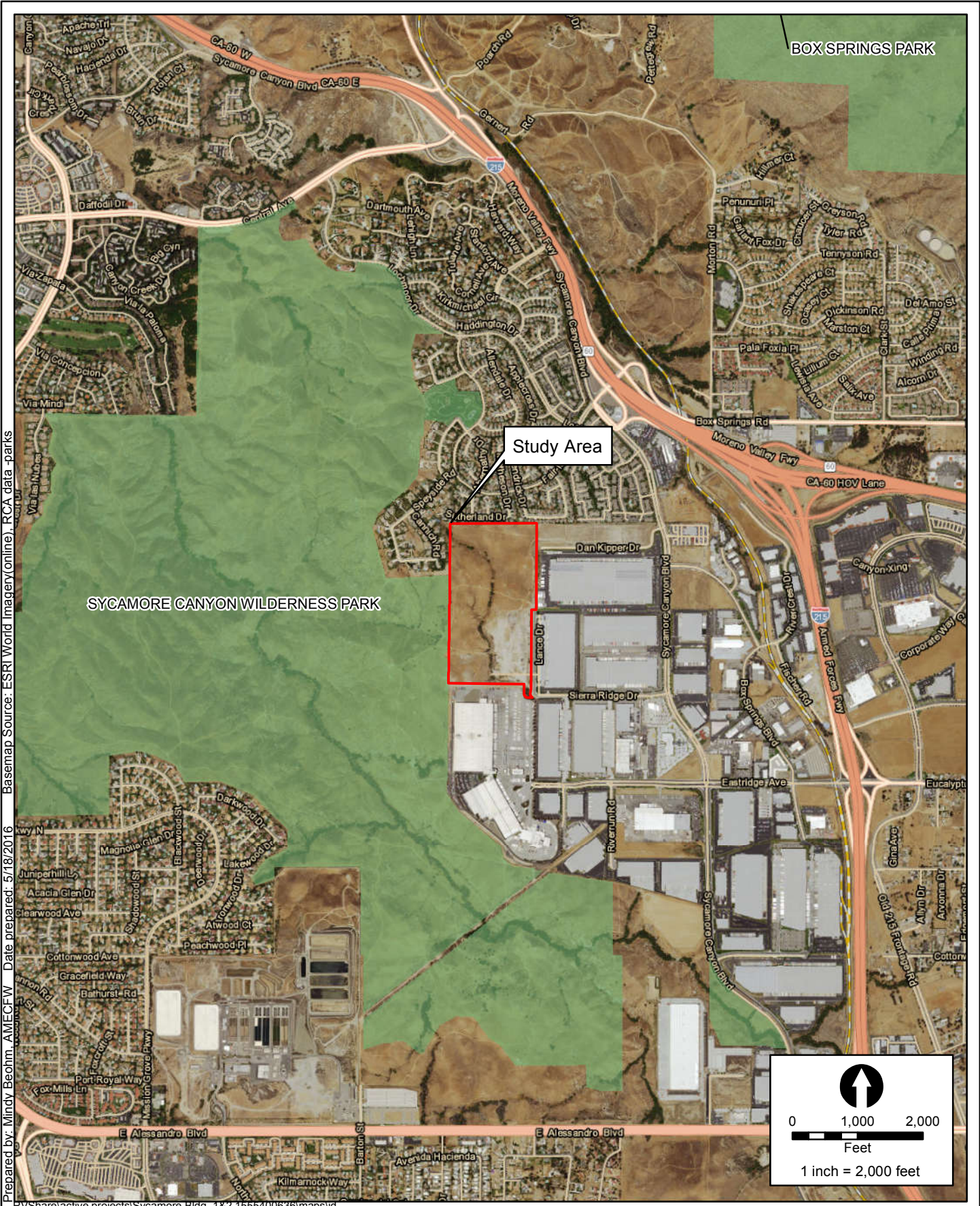


Regional and Vicinity Map  
Sycamore Canyon Business Park Warehouse Project

**FIGURE**

**1**





Prepared by: Mindy Boehm, AMECFW Date prepared: 5/18/2016 Basemap Source: ESRI World Imagery(online), RCA data -parks  
 R:\Share\active projects\Sycamore Bldg. 1&2 1555400636\maps\jd

Aerial Map

SYCAMORE CANYON BUSINESS PARK WAREHOUSE PROJECT

FIGURE

3





## 2.0 ENVIRONMENTAL SETTING

---

### 2.1 Existing Conditions

The study area is currently undeveloped with no existing structures. It is dominated by non-native grassland with ephemeral drainages containing sparse riparian vegetation, and a small isolated ponded area. The study area appears to be regularly mowed for fire control purposes. Surrounding land uses include preserved open space to the west as part of Sycamore Canyon Wilderness Park, warehouses to the east and south, and single-family residential to the north.

### 2.2 Hydrology

The average rainfall for the area is 8.2 inches per year with no average snowfall (Western Regional Climate Center, 2015). Weather data was recorded at the nearby March Field, approximately 4 miles southeast of the project site.

Storm flows and nuisance flows enter the project site from an underground culvert northwest of the project site. Standing water was observed immediately downstream of the culvert, but percolates prior to any flows entering the project site. Surface flows likely enter the project during and immediately following large storm events. Therefore, the drainage feature on-site is considered an ephemeral drainage.

Runoff from the site exits near the south-central boundary and flows within a paved commercial development prior to entering a natural drainage approximately 1,400 feet southwest of the project site. The flows continue in a nature drainage feature for approximately 1.5 miles before it enters a golf course and otherwise urbanized setting. The drainage is then conveyed through flood control devices for approximately 4.5 miles before entering the Santa Ana River Channel.

### 2.3 Vegetation

The project site is dominated by a number of non-native weedy species such as short pod mustard (*Hirschfeldia incana*), common fiddleneck (*Amsinckia intermedia*), ripgut grass (*Bromus diandrus*), red brome (*Bromus madritensis ssp. rubens*), and yellow-star thistle (*Centaurea solstitialis*). Riparian habitat associated with the drainage feature on-site includes red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix gooddingii*), narrow-leaf willow (*Salix exigua*), Fremont cottonwood (*Populus fremontii, subsp. fremontii*), and mule fat (*Baccharis salicifolia*). Vegetation nomenclature follows The Jepson Manual, Vascular Plants of California, 2nd Edition (Baldwin, 2012). When The Jepson Manual does not list a common name, common name nomenclature follows the United States Department of Agriculture, Natural Resources Conservation Service (USDA) Plants Database (USDA, 2015a).

## 2.4 Soils

The USDA NCRS maintains an online searchable soils database, the Web Soil Survey (USDA, 2015), which was consulted during the project literature search in order to determine the soil associations and soil types occurring on the project site. The following mapping units occur on the site (Figure 4):

- Cienaba sandy loam, 8 to 15 percent slopes, eroded (ChD2)
- Cienaba sandy loam, 15 to 50 percent slopes, eroded (ChF2)
- Fallbrook sandy loam, 8 to 15 percent slopes, eroded (FaD2)
- Fallbrook fine sandy loam, shallow, 8 to 15 percent slopes, eroded (FkD2)
- Hanford coarse sandy loam, 2 to 8 percent slopes (HcC)
- Vista coarse sandy loam, 8 to 15 percent slopes, eroded (VsD2)

The NRCS does not list any of the soils within the project site as hydric soils.

## 2.5 National Wetlands Inventory

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

There are no NWI wetland areas mapped within the project site.

Prepared by: Mindy Boehm, AMECFW Date prepared: 5/18/2016 Basemap Source: solismart-ca 679

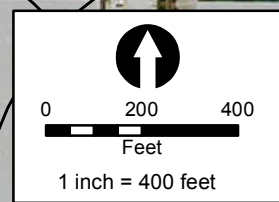


### Legend



Study Area

- ChD2: Cieneba sandy loam, 8-15% slopes, eroded
- ChF2: Cieneba sandy loam, 15-50%t slopes, eroded
- FaD2: Fallbrook sandy loam, 8-15% slopes, eroded
- FkD2: Fallbrook fine sandy loam, shallow, 8-15%t slopes, eroded
- HcC: Hanford coarse sandy loam, 2-8% slopes
- VsD2: Vista coarse sandy loam, 8-15% slopes, eroded



R:\Share\active projects\Sycamore Bldg. 1&2 1555400636\maps\syd



### Soils Map

### SYCAMORE CANYON BUSINESS PARK WAREHOUSE PROJECT

### FIGURE

# 4

## **3.0 REGULATORY FRAMEWORK**

---

### **3.1 U.S. Army Corps of Engineers**

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

#### **3.1.1 Waters of the U.S.**

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

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

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

“...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

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

### **3.1.2 Wetlands and Other Special Aquatic Sites**

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

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

### **3.1.3 Supreme Court Decisions**

#### **3.1.3.1 Solid Waste Agency of Northern Cook County**

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

#### **3.1.3.2 Rapanos/Carabell**

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

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

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

### **3.2 Regional Water Quality Control Board**

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

### **3.3 California Department of Fish and Wildlife**

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

“An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake (CDFW, 2015).”

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

## 4.0 METHODS

---

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

- Aerial photograph of the project site at a scale of 1:2400;
- USGS topographic map (Figure 2) to determine the presence of any “blue line” drainages or other mapped water features;
- USDA soil mapping data (Figure 4); and
- USFWS NWI maps to identify areas mapped as wetland features.

Field surveys of the study area were conducted by Amec Foster Wheeler biologist Scott Crawford on 2 June 2015. Surveys consisted of walking the entire study area and identifying potentially jurisdictional water features. Visual observations of vegetation types and changes in hydrology were used to locate areas for evaluation. Weather conditions during delineation fieldwork were conducive for surveying with generally clear skies, a temperature of 65 degrees Fahrenheit and winds between 0 and 2 miles per hour.

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

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

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

List. The wetland indicator status used for this report follows the 2013 National Wetland Plant List (Arid West Region) (Lichvar, 2014).

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

The main drainage feature identified within the project site is typical of dryland fluvial systems with sporadic riparian vegetation and sand bottom channels. No potential wetlands were identified based on soil (dry, coarse sands) and vegetation within the active channel (mostly facultative upland and uplands). Therefore, no wetland data sheets were collected.

CDFW jurisdiction was delineated by measuring the elevations of land that confine a stream to a definite course when its waters rise to their highest level and to the extent of associated riparian vegetation.

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

Upstream and downstream connectivity of waterways was reviewed in the field and on aerial photographs and topographic maps to determine jurisdictional status according to the CWA, SWANCC, and Rapanos.



## 5.0 RESULTS

The study area contains one major drainage feature identified as Drainage 1, a small tributary identified as Drainage 2, an isolated riparian area, and a small isolated ponded area. The Jurisdictional Delineation Map (Figures 5 and 6) identifies all on-site jurisdictional drainages and their widths and includes the photo point locations and the direction of the photo. Table 1 includes a list of waterways identified in the project area, their jurisdictional status and area of jurisdiction, Cowardin classification, and length of waterway within the project study area.

The USACE, in combination with the Environmental Protection Agency (EPA), when necessary, reserves the ultimate authority in making the final jurisdictional determination of WUS and the RWQCB reserves the ultimate authority in making the final jurisdictional determination of WSC. Additionally, CDFW has ultimate discretion in the determination of their jurisdiction. The acreage calculations within Table 1 were verified by CDFW and USACE in February 2016.

**Table 1**  
**Summary of Jurisdictional Areas**

Drainage ID	USACE Jurisdiction	WSC and CDFW Jurisdiction (acres)	Length (feet)	Latitude/ Longitude	Cowardin Class	Class of Aquatic Resource
Drainage 1	0.39	1.65	3,112	33.938589/ -117.307570	R4SBJ	non-section10-non wetland
Drainage 2	0.02	0.02	626	33.938487/ -117.308406	R4SBJ	non-section10-non wetland
Ponded Area	0.00	0.21	(80)	33.935623/ -117.306729	R4SBJ	non-section10-non wetland
Isolated Riparian Habitat	0.00	0.24	(165)	33.935005/ -117.305659	R4SBJ	non-section10-non wetland
<b>Total</b>	0.41	2.12	3,738	n/a	n/a	n/a

WSC – Waters of the State of California

CDFW – California Department of Fish and Wildlife

R4SBJ – Riverine, Intermittent, Streambed Intermittently Flooded based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et. al., 1979).

### 5.1 Drainage 1

Drainage 1 is shown on Figures 5 and 6 and representative photographs are located in Appendix A (Photos 1 through 4 and 7 through 9). Drainage 1 enters the project site at the northwestern corner and flows east for approximately 760 feet before turning to the south. The drainage extends for an additional 2,352 feet before exiting the site near the south-

central portion of the project site for a total of 3,112 linear feet. The streambed varies in width from sheet-flow near the central portion of the drainage to about 45 feet in width at the southern extent of the drainage within the project site, with an average width of 5 feet. The jurisdictional boundary was delineated by a change in the character of the substrate from a loamy sand in the upland areas to coarse sand in the jurisdictional areas. Several soil pits were dug to determine the presence of hydric soils. The drainage feature contains coarse sand with no organic streaking. Therefore, the project site does not contain any wetlands.

The banks of Drainage 1 vary from undetectable near the central portion of the drainage to 12 feet in depth at the southern property boundary with an average depth of about 4 feet. The drainage feature is located within gently sloping areas with minimal topographic relief. The streambed of Drainage 1 was sporadically vegetated with mulefat, cheeseweed, short pod mustard, and yellow-star thistle. Other riparian vegetation found adjacent to the active streambed includes red willow, arroyo willow, Goodding's black willow, narrow-leaf willow, and Fremont's cottonwood.

There is a single upland swale tributary and two small artificially created channels that convey surface flows from the disturbed area on the eastern portion of the project site to Drainage 1. The tributary is described below as Drainage 2. The other two features are relatively short, created in an otherwise upland area, and were incorporated in the jurisdictional limits of Drainage 1, but are not discussed as separate features.

Based on this jurisdictional delineation, Drainage 1 consists of a total of 0.39 acre of WUS and WSC, under USACE and RWQCB jurisdiction and 1.65 acres of CDFW streambed. The drainage feature is approximately 3,112 linear feet within the project site.

## **5.2 Drainage 2**

Drainage 2 is tributary to Drainage 1, located in the central portion of the drainage, and consists of an upland swale with intermittent evidence of flows. This feature contains a dense stand of red brome and short pod mustard and representative photographs are located in Appendix A (Photos 5 and 6). Evidence of flows was intermittent and often difficult to locate. This feature forks about 250-feet from the confluence with the main drainage. Each fork extends for an additional 150-feet before evidence of flows is no longer visible. The drainage width varies from 1 to 3 feet with an average width of 2 feet. The drainage varies in depth from sheet flows to about 6 inches. There was no evidence of wetland hydrology, hydric soils, or hydrophytic vegetation within the drainage. Therefore, this feature is considered a non-wetland ephemeral upland swale.

Based on this jurisdictional delineation, Drainage 2 consists of a total of 0.02 acre of WUS and WSC, under USACE and RWQCB jurisdiction and 0.02 acre of CDFW streambed. The drainage feature is approximately 626 linear feet within the project site.

### **5.3 Isolated Riparian Area**

There is a small riparian area in the southeastern portion of the project site and is described as an artificially created habitat due to urbanized run-off in an otherwise upland area. This feature was created during the sand and gravel operation and was recorded to occur as early as 2009 and a representative photograph is located in Appendix A (Photo 11). The southeastern portion of the project site is no longer used as a construction staging area for the surrounding warehouse development. The riparian area is isolated from any upstream and/or downstream habitat and there is no ordinary high water mark. Sheet flow in this area enters an underground storm drain that conveys surface flows directly to water quality basin prior to entering Sycamore Canyon on the west side of the existing warehouse buildings. This feature contains a moderate stand of willows and mulefat that has grown on this site for the last 7 years.

Based on this jurisdictional delineation, the riparian area consists of a total of 0.24 acre of WSC under RWQCB and CDFW. The riparian feature is approximately 165 linear feet in length within the project site.

### **5.4 Isolated Poned Area**

There is a small ponded area in the southern portion of the project site and is described as an artificially created feature in an otherwise upland area. This feature was created during the sand and gravel operation and was recorded to occur as early as 2009 and a representative photograph is located in Appendix A (Photo 10). The project site is no longer an active sand and gravel area within the southeastern portion of the project site. The ponded area is isolated and has no downstream connectivity to Drainage 1 or any other downstream tributary. This feature contains a three-inch layer of loam, then an extremely compact layer of sand that prohibits percolation. There is no vegetation within the ponded area, which was dry during the survey. Recent aerial photographs depict the ponded area with an average width of approximately 80 feet. This area is best described as an open water feature and not a wetland.

Based on this jurisdictional delineation, the ponded area consists of a total of 0.21 acre of WSC under RWQCB and CDFW jurisdiction. The drainage feature is approximately 80 linear feet in width within the project site.

### **5.5 Agency Jurisdiction**

Runoff from the site exits near the south-central portion of the project site and generally flows south onto the paved industrial area. The flows eventually deposit into an off-site water quality basin before flowing into Sycamore Canyon Creek. The flows eventually enter the Santa Ana River channel, a relatively permanent water (RPW) approximately 7 miles downstream of the project site. The Santa Ana River flows another 45 miles before terminating at the Pacific Ocean, a traditional navigable water (TNW).

The on-site drainage does not flow directly into a TNW; however, run-off from the project site does flow into a tributary of a TNW and therefore is considered WUS under USACE jurisdiction (pers. com. Peggy Bartels). The USACE is ultimately responsible for jurisdictional determinations, and this report was prepared based on the information and direction provided by the USACE during the field verification meeting.

The USACE has two ways to prepare a Jurisdictional Delineation report. This first option is known as an Approved Jurisdictional Delineation, which is generally used to request the USACE to provide an analysis to determine if the on-site drainages are within their jurisdiction. This process requires an assessment and verification of the Jurisdictional Delineation by the EPA. However, when a Preliminary Jurisdictional Delineation is used, the client assumes USACE jurisdiction for processing purposes and eliminates the need to perform a significant nexus evaluation and the lengthy EPA review and approval process. If any portions of the drainage feature is impacted due to project development, a permit will be required from USACE under Section 404 of the Clean Water Act.

Based on the size of the drainage feature, project related activities will impact less than 0.5 acre, therefore the project would qualify for permitting under the Nationwide Permit Process. However, since the drainage feature impacts include more than 300 linear feet, the applicant must request a waiver of the 300-foot requirement. This regulatory permitting strategy is at the discretion of the USACE.

The on-site drainages exhibit signs of water flow and patches of adjacent riparian habitat and are therefore considered waters of the state under RWQCB and CDFW jurisdiction. A separate certification will be required from the RWQCB under Section 401 of the Clean Water Act.

Also, as a waters of the state, a separate permit will be required from CDFW under Section 1602 of the California Fish and Game Code. This is a completely separate permitting process and there are no drainage size thresholds. Any impact to a CDFW streambed will require a permit from CDFW.

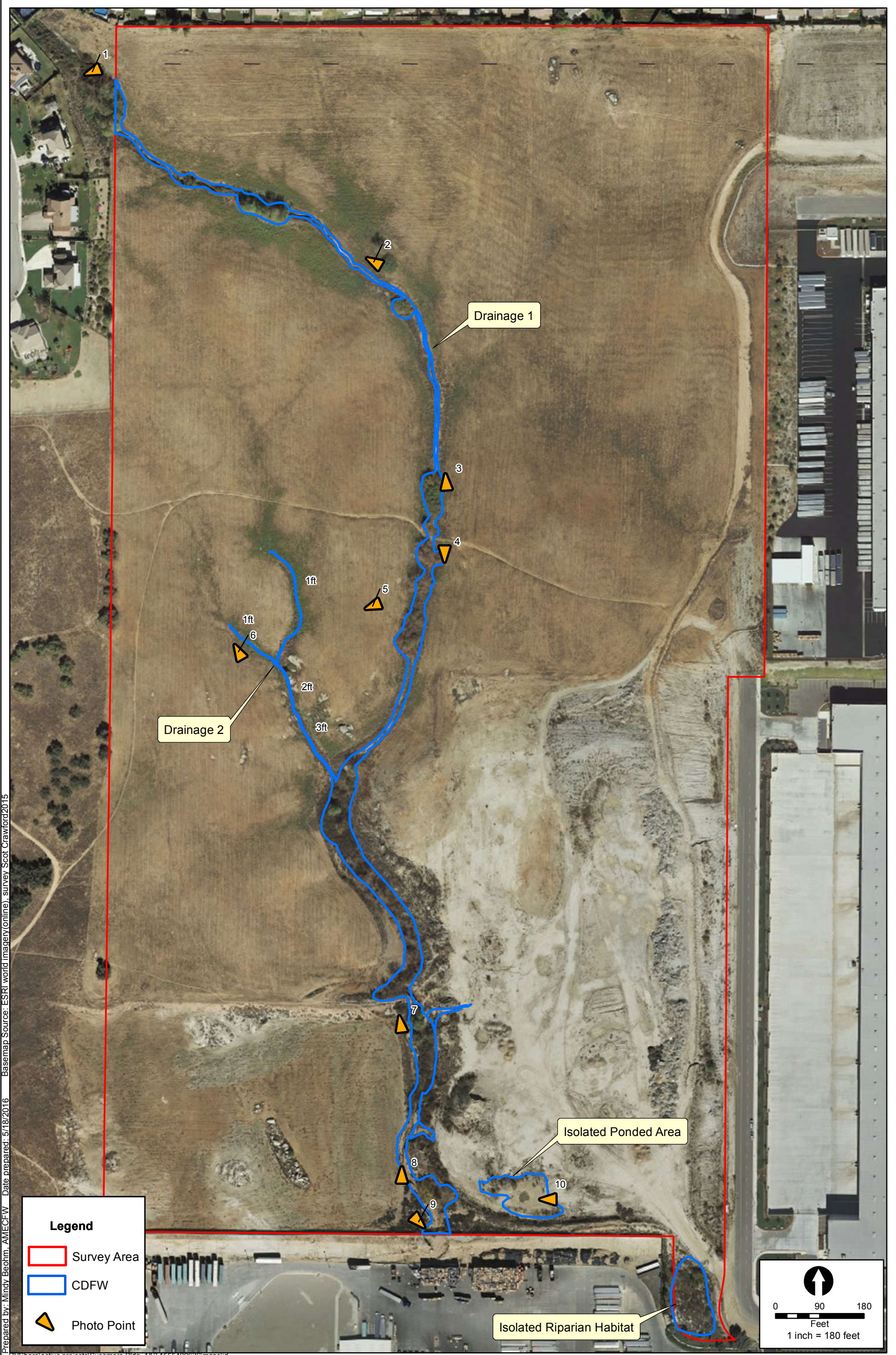


USACE/RWQCB Jurisdictional Delineation Map

SYCAMORE CANYON BUSINESS PARK WAREHOUSE PROJECT

FIGURE

5



Prepared by: Mindy Boehm, AMIECFW Date prepared: 5/18/2016 Basemap Source: ESRI world imagery(online), survey Scot Crawford2015  
 R:\Share\active projects\Sycamore Bldg. 1&2 1555400636\maps\jd

## 6.0 REFERENCES

---

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson manual: vascular plants of California*, second edition. University of California Press, Berkeley.
- Brady, Roland H. III, Kris Vyverberg. 2013. *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants*. California Energy Commission. Publication Number: CEC-500-2014-013.
- California Department of Fish and Wildlife (CDFW). 2010. *A Review of Stream Processes and Forms in Dryland Watersheds*. Prepared by Kris Vyverberg, Conservation Engineering. 32 p.
- CDFW. 2015. *Fish and Game Code of California*. <http://www.leginfo.ca.gov/calaw.html>.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior.
- Gretag/Macbeth. 2000. *Munsell color*. New Windsor, NY.
- Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. *The National Wetland Plant List: 2014 Update of Wetland Ratings*. *Phytoneuron* 2014-41: 1-42.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. *Web Soil Survey*. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed 11 May 2015.
- U.S. Army Corps of Engineers (USACE). 1987. *Wetlands Delineation Manual, Technical Report Y-8*. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. + append.
- USACE. 2008a. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. A Delineation Manual*. Lichvar and McColley. August.
- USACE. 2008b. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. September.
- United States Department of Agriculture, Natural Resources Conservation Service (USDA). 2015a. *The PLANTS Database*. (<http://plants.usda.gov>, 11 May 2015). National Plant Data Team, Greensboro, NC 27401-4901 USA.
- USDA. 2015b. *List of Hydric Soils*. Available online at: [http://www.nrcs.usda.gov/wps/PA\\_NRCSCconsumption/download?cid=stelprdb1248596&ext=xlsx](http://www.nrcs.usda.gov/wps/PA_NRCSCconsumption/download?cid=stelprdb1248596&ext=xlsx)
- U.S. Fish and Wildlife Service. 2015. *National Wetlands Inventory Mapper*. Available online at: <http://www.fws.gov/wetlands/Data/Mapper.html>. Accessed 11 May 2015.

Western Regional Climate Center. 2015. Desert Research Institute. Available online at:  
<http://www.wrcc.dri.edu/coopmap>. Accessed 11 May 2015.



## **APPENDIX A**

### **SITE PHOTOGRAPHS**



Photo 1 – Looking west at the 36-inch underground culvert that conveys nuisance flow from the adjacent residential development. This photo was taken in an off-site location.



Photo 2 – Looking northwest at the northern extent of the project site. This portion of the drainage is relatively unvegetated with a clearly incised bed and bank feature. Arroyo willow is located in the foreground.

---

SITE PHOTOGRAPHS



Photo 3 – Looking north from the central portion of the drainage. There is a noticeable change in soils, but little to no bank feature. Vegetation within the channel is limited to upland species, with the exception of a few mule fat species.



Photo 4 – Looking south at the southern portion of the project site. This portion of the drainage has an intermittent 6-foot wide ordinary high water mark, with adjacent riparian habitat.

---

SITE PHOTOGRAPHS



Photo 5 – Looking southwest at the confluence of two upland swales. The two swales converge approximately 200 feet upstream of the main channel. These features have intermittent bed and bank features.



Photo 6 – Looking at the northern most extent of the western upland swale. There is little to no discernible bed and bank feature at this location.

---

SITE PHOTOGRAPHS



Photo 7 – Looking northwest at the artificially created berm area located in the southern portion of the project site. It appears that this feature may have been used as a flood control device to control downstream flood events.



Photo 8 – Looking north at the downstream portion of the main drainage channel. The drainage at this location is approximately 12 feet deep. Vegetation is dominated by mule fat and buckwheat.

---

SITE PHOTOGRAPHS



Photo 9 – Looking at the downstream extent of the main drainage. The drainage flows off-site in a highly eroded soft-bottom channel.



Photo 10 – Looking west at an isolated ponded area located in the southern portion of the projects site. The ponded area was artificially created as part of the previous sand and gravel operation and is located in an otherwise upland area.

---

SITE PHOTOGRAPHS