APPENDIX E

WETLANDS ASSESSMENT MEMO

AECOM
401 West A Street
Suite 1200
San Diego, CA 92101
www.aecom.com

619.610.7574 tel
619.610.7601 fax

Memorandum

To	Melissa Garcia, Senior Planner, City of San Diego Planning Department
Date	April 13, 2016
From	Bill Graham, AECOM Project Manager
CC:	John Messina, AECOM Botanist
Subject	**Wetland Assessment for University Community Plan PEIR**

Introduction

In support of the City of San Diego's (City) University Community Plan (UCP) Amendment (hereafter "Project") Program Environmental Impact Report (PEIR), AECOM, Inc. wetland ecologists conducted an informal jurisdictional waters and wetlands assessment of three study areas in the Project corridor. The three study areas consists of the following: 1) the Genesee Avenue Corridor at Rose Canyon, 2) the Regents Road Corridor at Rose Canyon, and 3) the Genesee Avenue Corridor at San Clemente Canyon (Figures 1, 2, and 3).

The purpose of this assessment was to verify and update the existing potential aquatic resources at these study areas and document any changes in conditions since the time of an earlier wetland delineation conducted by Merkel and Associates in 2004 at these three study areas for the Project. The current assessment did not include a formal delineation based on the USACOE guidelines (1987; 2006). Site conditions have changed in some instances resulting in some differences in the presence/absence of some communities and their extent since 2004. Additionally, the current assessment was restricted to the areas of permanent and temporary impacts previously identified in the 2006 EIR and did not cover the entire UCP Area. As such, discrepancies in the communities and acreages between the vegetation communities and waters of the U.S. and State is the result of the use of different databases and sources for the vegetation communities (based on 2006 reports) and the potential waters of the U.S. and State (based on the current assessment which was over a smaller area than the area assessed in 2004 by Merkel and Associates).

Background Research

Prior to conducting the field work, background information and GIS layers of the wetland delineation conducted by Merkel and Associates in 2004 in support of the *2006 University City North/South Transportation Corridor Study EIR* was reviewed.

In addition, the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2016) and the U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) (USGS 2016) were reviewed. According to the USFWS National Wetlands Inventory, the three study areas all support wetlands. The wetlands at all three study areas are all classified as non-tidal wetlands (palustrine system). The Genesee Avenue Corridor at San Clemente Canyon site is dominated by woody vegetation that is 6 m (20 feet) tall or taller (forested class); the remaining two study areas are dominated by woody vegetation that is less than 6 m (20 feet) tall (scrub-shrub class). The Genesee Avenue Corridor at San Clemente Canyon is characterized by a seasonally flooded water regime, i.e., surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface. Rose Creek (at both the Genesee Avenue Corridor at Rose Canyon, and the Regents Road Corridor at Rose Canyon), as well as the two tributaries to Rose Creek at the Regents Road Corridor, are characterized by a temporary flooded water regime, i.e., surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the growing season (USFWS 2016).

Rose Canyon and San Clemente creeks are both identified as blue-line streams by the NHD. The tributaries to Rose Canyon Creek at both the Genesee Avenue and Regents Road Corridors are also blue-line streams by the NHD (USGS 2016). All three study areas are within HU-4 Subregion 1807 and HU-8 Subbasin 18070304 and the Rose Canyon Subwatershed HUC 12 180703041101 (USGS 2016). Table 1 summarizes this data.

Table 1
National Wetlands Inventory and National Hydrography Dataset

Site	National Wetlands Inventory			National Hydrography Dataset	
	System	Class	Water Regime	HU-4 Subregion	HU-8 Subbasin
Genesee Avenue Corridor at Rose Canyon	Palustrine	Scrub-Shrub	Temporary Flooded	1807	18070304
Regents Road Corridor at Rose Canyon	Palustrine	Scrub-Shrub	Temporary Flooded	1807	18070304
Genesee Avenue Corridor at San Clemente Canyon	Palustrine	Forested	Seasonally Flooded	1807	18070304

Source: USFWS 2016, USGS 2016

The National Resource Conservation Service (NRCS) is the branch of the United States Department of Agriculture (USDA) that maps and summarizes general information regarding soils in the United States. Based on the NRCS data, the soil map units displayed in Table 2 show the various soil types underlying the Project site.

Table 2
Soils

Map Symbol	Soil Name	Description
AtF	Altamont clay, 30 to 50% slopes	Well drained with very high runoff. Typically found on hills.
CfB	Chesterton fine sandy loam, 2 to 5% slopes	Moderately well drained with very high runoff. Typically found on hillslopes.
GaF	Gaviota fine sandy loam, 30 to 50 % slopes	Well drained with medium runoff. Typically found on hillslopes.
HrD2	Huerhuero loam, 9 to 15% slopes, eroded	Moderately well drained with very high runoff. Typically found on marine terraces.
HrE2	Huerhuero loam, 15 to 30% slopes, eroded	Moderately well drained with very high runoff. Typically found on marine terraces.
RfF	Redding cobbly loam, 15 to 50% slopes	Well drained with very high runoff. Typically found on terraces.
RhC	Redding-Urban Land complex, 2 to 9% slopes	Well drained with very high runoff. Typically found on marine terraces.
SbC	Salinas clay loam, 2 to 9% slopes	Well drained with high runoff. Typically found on alluvial fans.

Source: NRCS Soil Survey 2015

Soils at the Genesee Avenue Corridor at Rose Canyon are mapped as SbC adjacent to the Genesee Avenue Bridge and Riverwash (Rm) further upstream to the east. Riverwash occurs in intermittent stream channels and is typically sandy, gravelly or cobbly (Bowman 1973). Riverwash is listed as a hydric soil in San Diego County on the 2015 National Hydric Soils List (USDA-NRCS 2015).

Soils at the Regents Road Corridor at Rose Canyon are mapped as SbC along Rose Canyon Creek and the lower portion of the north-flowing tributary south of Rose Canyon. Soils at the upper portion of this tributary and the wet meadow are mapped as Altamont clay, 30 to 50 percent slopes (AtF). These well drained soils occur on upland slopes. Soils along the south-flowing tributary, north of Rose Canyon are mapped as Huerhuero loam 9 to 15 percent slopes, eroded (HrD2). This soil is a moderately well drained loam that has a clay subsoil (Bowman 1973). Neither of these soils are listed as a hydric soil in San Diego County on the 2015 National Hydric Soils List (USDA-NRCS 2015).

Soils at the Genesee Avenue Corridor at San Clemente Canyon are mapped as Salinas clay loam, 2 to 9 percent slopes (SbC). The Salinas series consists of well drained and moderately well drained clay loams that occur on flood plains and alluvial fans (Bowman 1973). This soil is not listed as a hydric soil in San Diego County on the 2015 National Hydric Soils List (USDA-NRCS 2015).

Survey Methodology

AECOM staff conducted reconnaissance level surveys of the three study areas to determine if the aquatic resources had changed in type and extent since the delineation performed by Merkel and Associates in 2004 (Merkel 2004). The reconnaissance level survey was conducted using the U.S. Army Corps of Engineers (USACOE) *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACOE 2008) as guidance to determine potential jurisdictional federal aquatic resources. Soil pits were not dug so estimates on federal jurisdictional limits were based on hydrophytic vegetation, hydrological indicators and/or limits of the ordinary high water mark (OHWM). State jurisdictional limits, which include resources under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and the Regional Water Quality Control Board (RWQCB) were estimated based on the limits of federal jurisdiction, top of stream banks or extent of riparian canopy, whichever was greater. Lastly, habitats that support hydrophytic vegetation, qualify as wetlands and under the City's jurisdiction as Environmental Sensitive Lands (City 2012) and were mapped as such. Table 3 summarizes the dates, and staff that conducted the assessment.

Table 3
Site Visits and Staff Personnel

Site	Date(s)	Staff
Genesee Avenue Corridor at San Clemente Canyon	March 18, 2016	John Messina and Michelle Maloney
	March 27, 2016	John Messina
Genesee Avenue Corridor at Rose Canyon	March 22, 2016	John Messina and Michael Ireland
Regents Road Corridor at Rose Canyon	March 22, 2016	John Messina and Michael Ireland
	March 27, 2016	John Messina

Results

Vegetation at all three study areas is a little more extensive than previously mapped. In most of these instances it appears that in some areas the vegetation has "filled in" gaps between some vegetation stands that were previously mapped as separate stands but now are more contiguous. This accounts for some of the increases in jurisdictional areas (especially state jurisdictional waters). Additionally, the extent of potential federal jurisdictional waters was less than what was identified in the wetland delineation conducted by Merkel and Associates in 2004. Differences in the assessments for each site are provided below in the site subsections. Table 4 summarizes the potential federal and state jurisdictional waters and wetlands that qualify as Environmental Sensitive Lands (ESL) by the City, at the three study areas.

Table 4
Potential Federal and State Jurisdictional Waters (in acres)

Vegetation Communities	Jurisdiction		
	ACOE	CDFW & RWQCB	City of San Diego
Genesee Avenue Corridor at Rose Canyon			
Southern cottonwood-willow riparian forest	0.42	1.12	1.12
Southern willow scrub	0.03	0.18	0.18
Non-wetland waters of the U.S./streambed	0.03	0.03	0.03
Total	**0.48**	**1.33**	**1.33**
Regents Road Corridor at Rose Canyon			
Southern cottonwood-willow riparian forest	0.61	1.78	1.78
Southern willow scrub	0.33	1.74	1.74
Non-wetland waters of the U.S./streambed	0.15	0.15	0.15
Herbaceous riparian	-	0.16	0.16
Total	**1.06**	**3.83**	**3.83**
Genesee Avenue Corridor at San Clemente Canyon			
Southern cottonwood-willow riparian forest	0.86	1.88	1.88

Genesee Avenue Corridor at Rose Canyon

Southern cottonwood-willow riparian forest occurs along Rose Creek and its north-flowing tributary, west of Genesee Avenue (Attachment A, Photograph 7). This community is dominated by arroyo willow with western sycamore and Fremont's cottonwood (*Populus fremontii*) as scattered emergents along the creek. Poison oak is the dominant shrub species. Water cress (*Nasturtium officinale*) is the dominant understory herbaceous species, with cattails (*Typha* sp.) common plantain, pale spike-rush, and common celery (*Apium graveolens*) as minor associates.

Water was flowing through Rose Creek and its tributaries at the time of the assessment. There appears to be a constriction to flow under the Genesee Avenue Bridge (presence of concrete culverts) as the riparian vegetation upstream is much wider in extent than immediately downstream of the bridge and there is a significant amount of ponding upstream of the bridge. Because of this impoundment, there is an abrupt transition from wetland to upland species below the tree canopy. As such, much of the community east (upstream) of the Genesee Avenue Bridge is considered federal jurisdictional waters including wetlands. Though no soil pits were dug, the soils were saturated and very likely contain hydric soil indicators. Much of the understory herbaceous species are wetland indicators species (e.g. water cress and cattails are obligate wetland species). State-only jurisdictional riparian habitat is restricted to the outer edges of the forest canopy where the trees canopy extends beyond the limits of Rose Creek's banks.

On the west side of Genesee Avenue, the north-flowing tributary to Rose Creek support southern willow scrub habitat. This stream course has been greatly altered from its historical route by urban development. More recently, a new sewer line has been constructed on the

manufactured slopes on the west side of Genesee Avenue. These slopes abut the riparian habitat along this tributary, and the extent of habitat is less than what was assessed by Merkel and Associates in 2004. These slopes have been hydroseeded but have very sparse vegetation cover. Currently, the upstream extent of the natural stream is at the trailhead at Genesee Avenue. The limits of OHWM are based on the limits of the stream channel bed. Further, upslope an OHWM is absent and the vegetation abruptly changes to chaparral.

Along the north side of the railroad tracks is an intermittent stream that has a defined bed and bank with an OHWM (Attachment A, Photograph 8). This appears to be an erosional feature and not a natural stream. The feature's headwaters are at Genesee Avenue and flows to the east to a patch of willows that is likely hydrologically connected to Rose Creek. As such, this feature is considered federal non-wetland WOUS and state waters.

Table 4 provides a summary of the jurisdictional areas. A total of 0.48 acre of federal jurisdictional waters (including potential wetlands); 1.33 acres of potential state jurisdictional waters (including potential wetlands and riparian habitat); and 1.33 acres of wetlands under City of San Diego's jurisdiction were identified within the survey area (Figure 4). Site conditions at the Genesee Avenue Corridor at Rose Canyon have not noticeably changed since the wetland delineation conducted by Merkel and Associates in 2004 as the results of the current assessment are consistent with the results of the previous delineation.

Regents Road Corridor at Rose Canyon

Southern cottonwood-willow riparian forest occurs along Rose Creek, with dominated by arroyo willow with western sycamore and Fremont's cottonwood (*Populus fremontii*) as scattered emergent along the creek (Attachment A, Photograph 9).

Along the southern floodplain of Rose Creek there is low spot between the toe of the north-facing slopes and the riparian forest that collects water and supports a mixture of herbaceous, wetland species that was previously identified as a native grassland/wet meadow (Merkel 2004). This herbaceous riparian community is dominated by bristly ox-tongue, Hooker's evening-primrose (*Oenothera elata* subsp. *hookeri*) and willow dock (*Rumex salicifolius*). Several individuals of arroyo willow and coyote bush (*Baccharis pilularis* subsp. *consanguinea*) are scattered along the upper periphery of this community (Attachment A, Photograph 11).

Southern willow scrub occurs along the tributaries to the Rose Creek at this site. Arroyo willow was the sole dominant along these tributaries. One tributary flows north from the residential development on the southern bluffs at the terminus of Regents Road (from the south) (Attachment A, Photographs 12 and 13). The wetland delineation conducted by Merkel and Associates in 2004 delineated jurisdictional waters much further upslope along this drainage than the current assessment. The wetland delineation conducted by Merkel and Associates in 2004 mapped jurisdictional waters with coastal and valley freshwater marsh, up a steep manufactured slope to the residential development. This area is now overgrown with Hottentot-fig (*Carpobrotus edulis*) with no visible bed and bank or wetland/riparian plant species.

A second tributary flows south from north of the railroad tracks (Attachment A, Photograph 14). These tributaries are primarily maintained by urban runoff from the surrounding urban areas. The south-flowing tributary north of the railroad tracks “headwaters” are at a broken concrete stormwater pipe so this is not likely a natural feature. This feature is within the earth trail with southern willow scrub adjacent. This feature has an OHWM and is hydrologically connected to Rose Creek via a concrete culvert under the railroad tracks and therefor would be considered non-wetland waters of the U.S. and state waters.

Both tributaries appear to support more riparian vegetation than assessed during wetland delineation conducted by Merkel and Associates in 2004. This is due to urban runoff from surrounding development on the mesas, which likely contributed to growth in vegetation, reduced flow rates, and more subsurface water stored within the channel. Such events allowed more water for continued growth.

Lastly, an unvegetated, erosional feature flows east along the hiking trail north of the Atchinson, Topeka, and Santa Fe Railroad (AT&SF) for a very short distance (approximately 100 feet before it dissipates at the start of a construction zone along the AT&SF railroad tracks. This feature has an OHWM with headwaters at the toe of the upland slopes with minor connectivity to the south-flowing tributary to Rose Creek. The connection is at the headwaters where there is some evidence of minor flow across the dirt hiking trail. As such, this feature would be considered non-wetland waters of the U.S. and state waters.

Water was flowing through Rose Creek and both of its tributaries at the time of this assessment. Most vegetation was rooted along the banks above or at the OHWM. In most instances, the OHWM corresponded to the banks of the low flow channel and/or the upslope extent of cobbles and coarse sediments. Though soil pits were not dug, the extent of federal jurisdictional wetlands is assumed to be a narrow band of vegetation along the lower channel banks as most of the banks rise abruptly from the channel bed. As such, the limits of federal jurisdictional waters (including both unvegetated waters and adjacent wetlands) closely approximates the NWI mapping (narrow band of jurisdiction along the creek) with a larger area of state jurisdictional riparian habitat.

As shown in Table 4, there was a total of 1.06 acres of federal jurisdictional waters (including potential wetlands), 3.83 acres of potential state jurisdictional waters (including potential wetlands and riparian habitat), and 3.83 acres of wetlands under City of San Diego’s jurisdiction identified within the survey area (Figure 5).

The current assessment of potential federal jurisdictional waters is less extensive than the wetland delineation conducted by Merkel and Associates in 2004. The wetland delineation conducted by Merkel and Associates in 2004 classified potential federal jurisdictional areas that were on the floodplains of Rose Creek some distance from the channel and above the OHWM as observed during the current assessment. Though no soil pits were dug, these areas of habitat would not likely qualify as adjacent wetlands as well. However, these areas did qualify as state jurisdictional waters.

Patches of coastal and valley freshwater marsh were previously mapped for the aforementioned tributaries to Rose Creek. However, these areas have converted to southern willow scrub, likely due to changes in hydrology from growth in vegetation.

Genesee Avenue Corridor at San Clemente Canyon

Southern cottonwood-willow riparian forest occurs along San Clemente Creek west of Genesee Avenue (Attachment A, Photographs 1-6). Dominant tree species include: western sycamore (*Platanus racemosa*), arroyo willow (*Salix lasiolepis*) and coast live oak (*Quercus agrifolia*). Dominant shrub species include poison oak (*Toxicodendron diversiloba*) and mule fat (*Baccharis salicifolia*). Common plantain (*Plantago major*) was the most common understory species. Panic veldt grass (*Ehrharta erecta*), bristly ox-tongue (*Helminthotheca echioides*) and pale spike-rush (*Eleocharis macrostachya*) were associate species, also present in the understory.

Water was flowing through San Clemente Creek at the time of this assessment (with the exception of some sparsely vegetated cobble sandbars). Most vegetation was rooted along the banks above or at the OHWM. In most instances, the OHWM corresponded to the banks of the low flow channel and/or the upslope extent of cobbles and coarse sediments. Though soil pits were not dug, the extent of federal jurisdictional wetlands is assumed to be a narrow band of vegetation along the lower channel banks as most of the banks rise abruptly from the channel bed. Mid-channel cobble bars are included within the limits of federal waters. As such, the federal jurisdictional waters (including both unvegetated waters and adjacent wetlands) closely approximates the NWI mapping i.e. narrow band of jurisdiction along the creek (NWI 2016) with a larger area of state-only jurisdictional riparian habitat.

As shown in Table 4, there were a total of 0.86 acre of federal jurisdictional waters (including potential wetlands), 1.88 acres of potential state jurisdictional waters (including potential wetlands and riparian habitat), and 1.88 acres of wetlands under City of San Diego's jurisdiction within the survey area (Figure 3).

The wetland delineation conducted by Merkel and Associates in 2004 classified potential federal jurisdictional areas that were on steep slopes at a much higher in elevation (10-20 feet) than the adjacent stream channels and included areas above the OHWM that are dominated by coast live oaks (*Quercus agrifolia*) and poison oak (*Toxicodendron diversiloba*) that were not wetland indicator species. The current assessment did not classify these areas on the slopes above San Clemente Creek as federal jurisdictional areas, but only as state jurisdictional and City ESL wetlands. As such it was determined during the current assessment that federal jurisdictional waters were less at this site than what was previous assessed by Merkel and Associates in 2004.

References

Bowman. 1973. *Soil Survey of the San Diego.* U.S. Department of Agriculture, Soil Conservation Service and Forest Service in cooperation with University of California Agricultural Experiment Station; U.S. Department of the Interior, Bureau of Indian Affairs and Department of the Navy, U.S. Marine Corps. Issued December 1973.

City of San Diego. 2012. San Diego Municipal Code, Land Development Code, Biology Guidelines. Amended April 23, 2012.

Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

U.S. Army Corps of Engineers. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0),* ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Geological Society (USGS). 2016. National Hydrography Dataset. http://nhd.usgs.gov/ accessed March 15, 2016

U.S. Fish and Wildlife Service (USFWS). 2016. National Wetlands Inventory. http://www.fws.gov/wetlands/ accessed March 15, 2016.

Attachments

Figures 1 through 3 – Potential Federal & State Jurisdictional Aquatic Resources
Attachment A – Photographs 1 through 15

FIGURES

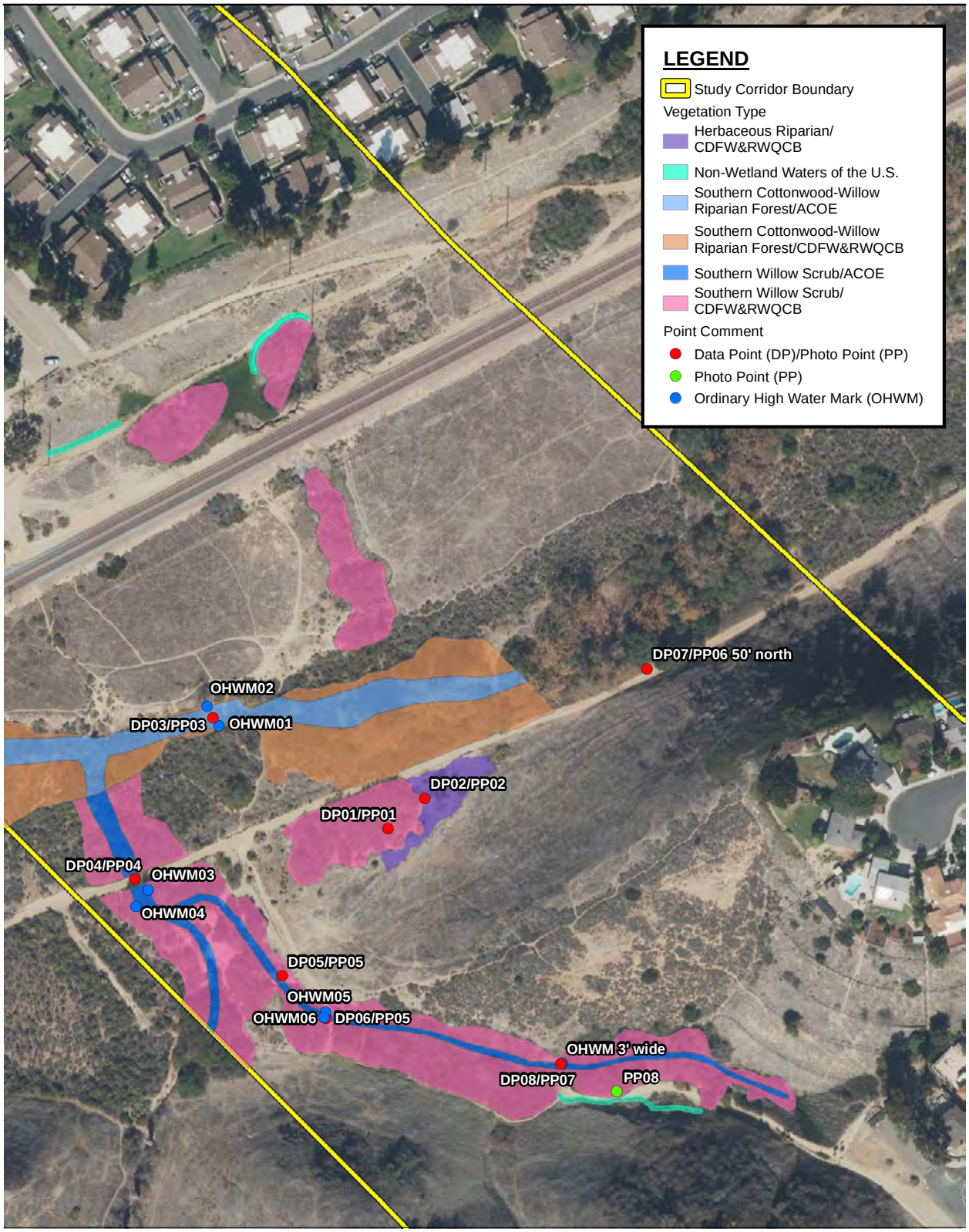
Source: SanGIS 2015; SANDAG 2014; Esri.

150 75 0 150 Feet

Scale: 1:1,800; 1 inch = 150 feet

Figure 1
Potential Federal & State Jurisdictional Aquatic Resources
Genesee Avenue Corridor at Rose Canyon

Path: P:_6044\60446078_University_Com_Plan_Amend_EIR\900-CAD-GIS\922_Maps\Wetland_Memo\WetlandMemo_Fig1.mxd, 4/11/2016, daniel_arellano



Source: SanGIS 2015; SANDAG 2014; Esri.

200 100 0 200 Feet

Scale: 1:2,400; 1 inch = 200 feet

Figure 2
Potential Federal & State Jurisdictional Aquatic Resources
Regents Road Corridor at Rose Canyon

Path: P:_6044\60446078_University_Com_Plan_Amend_EIR\900-CAD-GIS\922_Maps\Wetland_Memo\WetlandMemo_Fig2.mxd, 4/11/2016, daniel_arellano

Source: SanGIS 2015; SANDAG 2014; Esri.

125 62.5 0 125 Feet

Scale: 1:1,500; 1 inch = 125 feet

Figure 3
Potential Federal & State Jurisdictional Aquatic Resources
Genesee Avenue Corridor at San Clemente Canyon

Path: P:_6044\60446078_University_Com_Plan_Amend_EIR\900-CAD-GIS\922_Maps\Wetland_Memo\WetlandMemo_Fig3.mxd, 4/11/2016, daniel_arellano

ATTACHMENT A

PHOTOGRAPHS 1 THROUGH 15

ATTACHMENT A

PHOTOGRAPHS GENESEE AVENUE BRIDGE/MARIAN BEAR CITY PARK

Photograph 1. Southern riparian forest along San Clemente Creek. Data Point 1/Photo Point 1

Photograph 2. Southern riparian forest along San Clemente Creek. Data Point 2/Photo Point 2

Photograph 3. Southern riparian forest along San Clemente Creek. Data Point 3/Photo Point 3

Photograph 4. Southern riparian forest along San Clemente Creek. Data Point 4/Photo Point 4

Photograph 5. Southern riparian forest along San Clemente Creek. Data Point 5/Photo Point 5

Photograph 6. Southern riparian forest along San Clemente Creek. Data Point 6/Photo Point 6

PHOTOGRAPHS GENESEE AVENUE BRIDGE/ROSE CANYON CITY PARK

Photograph 7. Southern riparian forest along Rose Creek. Data Point 100/Photo Point 100

Photograph 8. Non-wetland waters of the U.S. north of Rose Creek.

PHOTOGRAPHS REGENTS ROAD BRIDGE/ROSE CANYON CITY PARK

Photograph 9. Southern riparian forest along Rose Creek. Data Point 3/Photo Point 3

Photograph 10. Southern willow scrub along Rose Creek. Data Point 1/Photo Point 1

Photograph 11. Herbaceous riparian along Rose Creek. Data Point 2/Photo Point 2

Photograph 12. Southern willow scrub along north-flowing tributary to Rose Creek. Data Point 6/Photo Point 6

Photograph 13. Southern willow scrub along north-flowing tributary to Rose Creek. Data Point 8/Photo Point 8

Photograph 14. Southern willow scrub along south-flowing tributary to Rose Creek.

Photograph 15. Headwaters of south-flowing tributary to Rose Creek