JURISDICTIONAL DELINEATION REPORT

I-5 HOV LANE EXTENSION PROJECT
(I-5 BETWEEN AVENIDA PICO AND SAN JUAN CREEK ROAD)

CITIES OF SAN CLEMENTE, DANA POINT, AND SAN JUAN CAPISTRANO
ORANGE COUNTY, CALIFORNIA

12-ORA-05, PM 3.0/8.7
EA NO. 0F9600

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INTRODUCTION

The Orange County Transportation Authority (OCTA), in cooperation with the California Department of Transportation (Caltrans), the City of Dana Point, the City of San Clemente, and the City of San Juan Capistrano, is proposing to widen Interstate 5 (I-5) between Avenida Pico and San Juan Creek Road in south Orange County. The project objectives are to provide continuity of the I-5 mainline high occupancy vehicle (HOV) lane network within the project limits; maximize overall performance within the project limits by minimizing weaving conflicts at the termini of the HOV lanes and maintaining travel speeds for HOV lane users; provide intermittent auxiliary lanes, where needed, to relieve congestion at diverge and merge locations; minimize right-of-way acquisition; relieve congestion within interchange areas, on- and off-ramps, and local intersections; and reduce congestion on I-5 within the project limits. The project limits on I-5 extend from 0.1 mile (mi) south of the Avenida Pico Undercrossing (UC) (Post Mile [PM] 3.0) to 0.1 mi south of the San Juan Creek Road UC (PM 8.7). The proposed project will add one HOV lane in each direction on I-5 throughout the project limits, reestablish existing auxiliary lanes and construct new auxiliary lanes, and improve several existing on- and off-ramps. The regional location of the project and the project vicinity are shown in Figure 1.

The findings and conclusions presented in this report, including the location and extent of wetlands and other waters subject to regulatory jurisdiction, represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary until verified by the United States Army Corps of Engineers (Corps) and California Department of Fish and Game (CDFG).

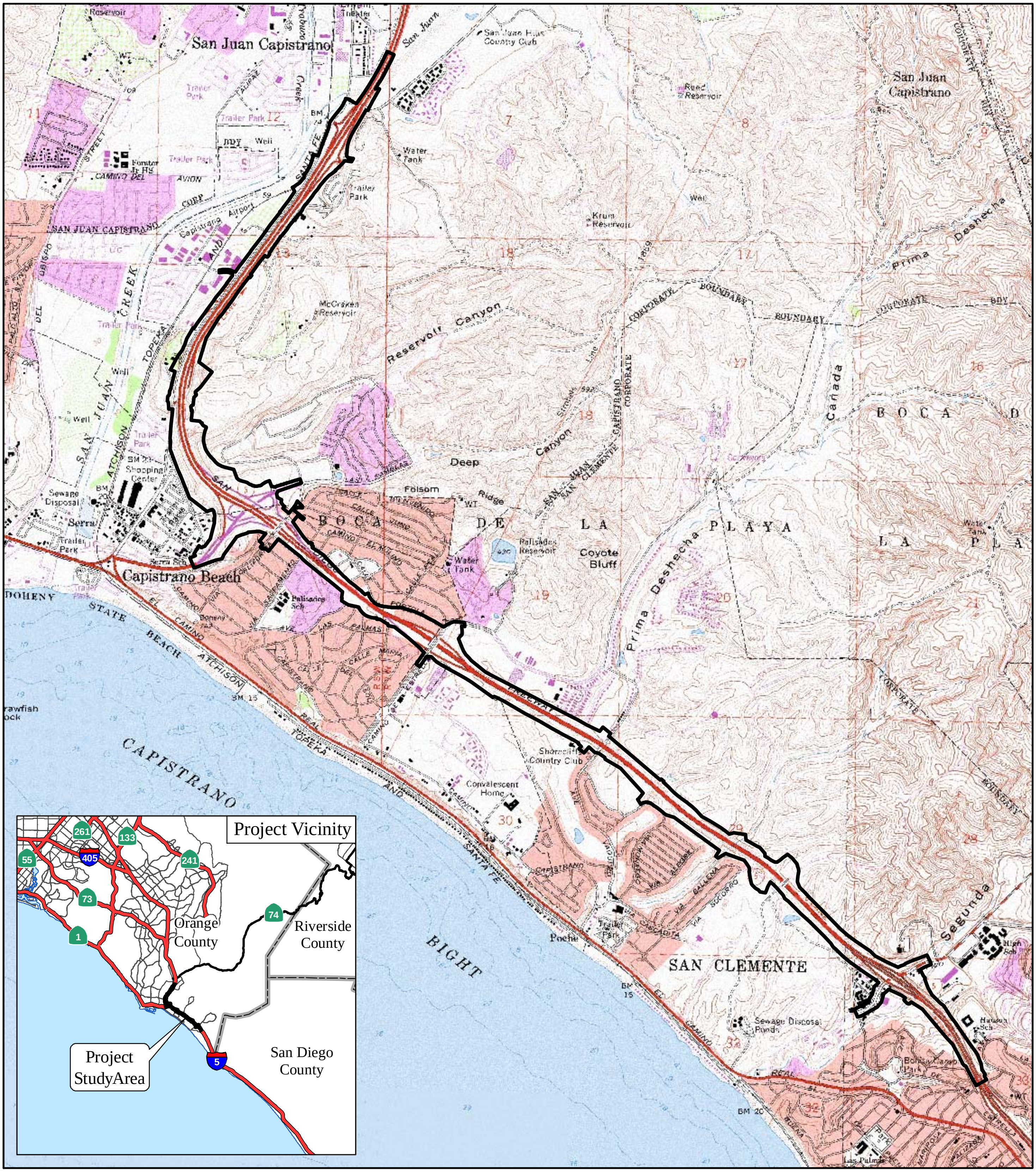
SITE DESCRIPTION

The biological study area (BSA) for the proposed project is located on the United States Geological Survey (USGS) *San Clemente* and *Dana Point*, California 7.5-minute series topographical quadrangles. The limits of the BSA are shown in detail in the figure in Appendix A, Potential Jurisdictional Areas. Land uses adjacent to the BSA include transportation, residential, commercial, industrial, recreational, and institutional uses and undeveloped land.

Elevations in the BSA range from approximately 100 to 200 feet (ft) above mean sea level (amsl). The topography is gentle rolling hills adjacent to I-5, with fairly steep canyons and hillsides of the Santa Ana Mountain foothills east of I-5.

The climate is classified as Mediterranean (i.e., arid climate with hot and dry summers and moderately mild and wet winters). The average annual precipitation is approximately 13.5 inches. Although most of the precipitation occurs from November to May, thunderstorms occur at all times of the year and can cause extremely high precipitation rates. Temperatures typically range between 45 and 85 degrees Fahrenheit (^{o}F).

The BSA is located within the San Juan Creek and San Clemente Coastal Streams Watersheds. The San Juan Creek and San Clemente Coastal Streams Watersheds cover approximately 134 and 18 square miles, respectively. Canyons and washes associated with tributaries from San Juan Creek and San Clemente Coastal Streams Watershed occur throughout the BSA. Within the BSA, runoff from



LEGEND

FIGURE 1

Project Location and Study Area

N

0 1500 3000
FEET

SOURCE: USGS 7.5' QUAD - Dana Point ('75); San Clemente ('75)

I-5 HOV Lane Extension Project

Regional Location and Project Vicinity

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I-5 discharges into drainage inlets via culverts, which discharge to San Juan Creek, Prima Deshecha Cañada, and Segunda Deshecha Cañada. All three named drainages ultimately drain to the Pacific Ocean.

San Juan Creek passes underneath I-5 at the northern project limits. Prima Deshecha Cañada passes underneath I-5 northwest of Avenida Vaquero. Segunda Deshecha Cañada passes underneath I-5 southeast of East Avenida Pico. Although San Juan Creek flows beneath I-5, it is not within the limits of construction for the project Build Alternatives; therefore, this creek is not considered to be within the BSA.

REGULATORY BACKGROUND

United States Army Corps of Engineers

The Corps regulates discharges of dredged or fill material into waters of the United States (U.S.). These waters include wetland and nonwetland bodies of water that meet specific criteria. Corps regulatory jurisdiction pursuant to Section 404 of the Clean Water Act (CWA) is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct; through a tributary system linking a stream channel with traditional navigable waters (TNW) used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations. The following definition of waters of the U.S. is from 33 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…;
>
> (2) All interstate waters including interstate wetlands;
>
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) … the use, degradation or destruction of which could affect interstate or foreign commerce…;
>
> (4) All impoundments of waters otherwise defined as waters of the United States under the definition; and
>
> (5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section."

The Corps typically regulates as waters of the U.S. any body of water displaying an ordinary high water mark (OHWM). Corps jurisdiction over nontidal waters of the U.S. extends laterally to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present (33 CFR 328.4). The OHWM is defined as "…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3). Corps jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

As discussed above, Corps regulatory jurisdiction under Section 404 of the CWA is founded on a connection between the water body in question and interstate commerce. This connection may be direct, through a tributary system linking a stream channel with TNW used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations. In the past, an indirect nexus could potentially be established if isolated waters provided habitat for migratory birds, even in the absence of a surface connection to a navigable water of the U.S. The 1984 rule that enabled the Corps to expand jurisdiction over isolated waters of this type became known as the Migratory Bird Rule. On January 9, 2001, the United States Supreme Court narrowly limited the Corps jurisdiction of "…nonnavigable, isolated, intrastate…" waters based solely on the use of such waters by migratory birds and, particularly, the use of indirect indicators of interstate commerce (e.g., use by migratory birds that cross state lines) as a basis for jurisdiction. The Court's ruling derives from the case *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, No. 99-1178 (SWANCC). The Supreme Court determined that the Corps exceeded its statutory authority by asserting CWA jurisdiction over an abandoned sand and gravel pit in northern Illinois, which provides habitat for migratory birds.

In 2006, the United States Supreme Court further considered the Corps jurisdiction of "…waters of the United States…" in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 Supreme Court 2208), collectively referred to as "Rapanos." The Supreme Court concluded that wetlands are "waters of the United States" if they significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as navigable. On June 5, 2007, the Corps issued guidance regarding the Rapanos decision. After consideration of public comments and agencies' experience, revised guidance was issued on December 2, 2008. This guidance states that the Corps will continue to assert jurisdiction over TNW, wetlands adjacent to TNW, relatively permanent nonnavigable tributaries that have a continuous flow at least seasonally (typically 3 months), and wetlands that directly abut relatively permanent tributaries. The Corps will determine jurisdiction over waters that are nonnavigable tributaries that are not relatively permanent and wetlands adjacent to nonnavigable tributaries that are not relatively permanent only after making a significant nexus finding. The Corps will generally not assert jurisdiction over swales or erosional features, or ditches excavated wholly in and draining only uplands that do not carry a relatively permanent flow of water. However, the Corps does reserve the right to regulate these waters on a case-by-case basis.

Furthermore, the preamble to the Corps regulations at CFR Section 328.3, Definitions, states that the Corps does not generally consider the following waters to be waters of the U.S. The Corps does, however, reserve the right to regulate these waters on a case-by-case basis.

- Nontidal drainage and irrigation ditches excavated on dry land
- Artificially irrigated areas that would revert to upland if irrigation ceased
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons

- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for purposes of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the U.S.

Waters found to be isolated and not subject to CWA regulation are often still regulated by the Regional Water Quality Control Board (RWQCB) under the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act), as described later in this section.

Wetlands

Wetland delineations for Section 404 purposes must be conducted according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (Regional Supplement) (Corps 2008) and the Corps *1987 Wetland Delineation Manual (*1987 Manual) (Environmental Laboratory 1987). Where there are differences between the two documents, the Regional Supplement takes precedence over the 1987 Manual.

The Corps and United States Environmental Protection Agency (EPA) define wetlands as follows:

> "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions."

To be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied for that particular wetland characteristic to be met. Several indicators may be analyzed to determine whether the criteria are satisfied.

Hydrophytic vegetation and hydric soils indicators provide evidence that episodes of inundation have lasted more than a few days or have occurred repeatedly over a period of years, but do not confirm that an episode has occurred recently. Conversely, wetland hydrology indicators provide evidence that an episode of inundation or soil saturation occurred recently, but do not provide evidence that episodes have lasted more than a few days or have occurred repeatedly over a period of years. Because of this, if an area lacks one of the three characteristics under normal circumstances, the area is considered nonwetland under most circumstances.

Determination of wetland limits may be complicated by a variety of natural environmental factors or human activities, collectively called "difficult wetland situations," including cyclic periods of drought and flooding or highly ephemeral stream systems. During periods of drought, for example, bank return flows are reduced and water tables are lowered. This results in a corresponding lowering of the OHWM and invasion of upland plant species into wetland areas. Conversely, extreme flooding may create physical evidence of high water well above what might be considered ordinary and may allow the temporary invasion of hydrophytic species into nonwetland areas. In the highly ephemeral systems typical of southern California, these problems are encountered frequently. In these situations, professional judgment based on years of practical experience and extensive knowledge of local

ecological conditions comes into play in delineating wetlands. The Regional Supplement provides additional guidance for difficult wetland situations.

Hydrophytic Vegetation. Hydrophytic vegetation is plant life that grows and is typically adapted for life in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, herb, and woody vine layers) are considered hydrophytic. Hydrophytic species are those included on the *National List of Plant Species That Occur in Wetlands: California (Region 0)* (Reed 1988), published by the United States Fish and Wildlife Service (USFWS). Each species on that list is rated according to a wetland indicator category, as shown in Table A. To be considered hydrophytic, the species must have wetland indicator status (i.e., be rated as OBL, FACW, or FAC).

Table A: Hydrophytic Vegetation

Category	Rating	Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability > 99 percent)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67–99 percent)
Facultative	FAC	Equally likely to occur in wetlands and nonwetlands (estimated probability 34–66 percent)
Facultative Upland	FACU	Usually occur in nonwetlands (estimated probability 67–99 percent)
Obligate Upland	UPL	Almost always occur in nonwetlands (estimated probability > 99 percent)

The delineation of hydrophytic vegetation is typically based on the most dominant species from each vegetative stratum (strata are considered separately). When more than 50 percent of these dominant species are hydrophytic (i.e., FAC, FACW, or OBL), the vegetation is considered hydrophytic. In particular, the Corps recommends the use of the "50/20" rule (also known as the dominance test) from the Regional Supplement for determining dominant species. Under this method, dominant species are the most abundant species that immediately exceed 50 percent of the total dominance measure for the stratum, plus any additional species composing 20 percent or more of the total dominance measure for the stratum. In cases where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test, the prevalence index must be used. The prevalence index is a weighted average of all plant species within a sampling plot. The prevalence index is particularly useful when communities only have one or two dominants, where species are present at roughly equal coverage, or when strata differ greatly in total plant cover. In addition, Corps guidance provides that morphological adaptations may be considered when determining hydrophytic vegetation when indicators of hydric soil and wetland hydrology are present (Corps 2008). If the plant community passes either the dominance test or prevalence index after reconsideration of the indicator status of any plant species that exhibit morphological adaptations for life in wetlands, then the vegetation is considered hydrophytic.

Hydric Soils.[1] Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.[2] Soils are considered likely to meet the definition of a hydric soil when one or more of the following criteria are met:

1. All Histels except Folistels and Histosols except Folists;
2. Soils that are frequently ponded for a long duration or very long duration[3] during the growing season; or
3. Soils that are frequently flooded for a long duration or very long duration during the growing season.

Hydric soils develop under conditions of saturation and inundation combined with microbial activity in the soil that causes a depletion of oxygen. While saturation may occur at any time of year, microbial activity is limited to the growing season, when soil temperature is above biologic zero (the soil temperature at a depth of 20 inches [in], below which the growth and function of locally adapted plants are negligible). Biogeochemical processes that occur under anaerobic conditions during the growing season result in the distinctive morphologic characteristics of hydric soils. Based on these criteria, a National List of Hydric Soils was created from the National Soil Information System (NASIS) database and is updated annually.

The Regional Supplement has a number of field indicators that may be used to identify hydric soils. The Natural Resources Conservation Service (NRCS), (Schoeneberger 2002) has also developed a number of field indicators that may demonstrate the presence of hydric soils. These indicators include hydrogen sulfide generation, the accumulation of organic matter, and the reduction, translocation, and/or accumulation of iron and other reducible elements. These processes result in soil characteristics that persist during both wet and dry periods. Separate indicators have been developed for sandy soils and for loamy and clayey soils.

Wetland Hydrology. Under natural conditions, development of hydrophytic vegetation and hydric soils is dependent on a third characteristic: wetland hydrology. Areas with wetland hydrology are those where the presence of water has an overriding influence on vegetation and soil characteristics due to anaerobic and reducing conditions, respectively (1987 Manual). The wetland hydrology parameter is satisfied if the area is seasonally inundated or saturated to the surface for a minimum of 14 consecutive days during the growing season in most years (Regional Supplement 2008).

Hydrology is often the most difficult criterion to measure in the field due to seasonal and annual variations in water availability. Indicators commonly used to identify wetland hydrology include visual observation of inundation or saturation, watermarks, recent sediment deposits, surface scour, and oxidized root channels (rhizospheres) resulting from prolonged anaerobic conditions.

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1 The hydric soil definition and criteria included in the 1987 Manual are obsolete. Users of the Manual are directed to the United States Department of Agriculture (USDA) Natural Resources Conservation Service website for the most current information on hydric soils.

2 Current definition as of 1994 (Federal Register [FR] July 13, 1994).

3 A long duration is defined as a single event ranging from 7 to 30 days. A very long duration is defined as a single event that lasts longer than 30 days.

California Coastal Commission

The California Coastal Commission (CCC), through provisions of the California Coastal Act (CCA), is empowered to issue a Coastal Development Permit (CDP) for many projects located within the Coastal Zone. In areas where a local entity has a certified Local Coastal Program (LCP), the local entity can issue a CDP for a project only if that project is consistent with the LCP. The CCC, however, has appeal authority for parts of LCPs and retains jurisdiction over certain public trust lands and in areas without an LCP.

The CCC's definition of wetlands, as defined in Section 30121 of the CCA and Title 14, Section 13577 of the CCC's regulations, is different from the Corps definition of wetlands. According to the CCC's regulations, wetlands are defined as "…land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes." Both definitions focus on three fundamental wetland characteristics: hydrology, soils, and vegetation. However, while the Corps definition requires the existence of all three wetland characteristics for an area to be considered a wetland, the CCC's definition of wetlands is based on the existence of only two characteristics: wetland hydrology sufficient to either support a prevalence of hydrophytic vegetation or to promote the formation of hydric soils. (Exceptions include certain areas that lack wetland soils and vegetation.) It is noted that, under certain circumstances, reliable indicators of all required characteristics are not necessarily apparent, and areas may be delineated as wetlands by the Corps on the basis of indicators of only two of the three characteristics. The CCC routinely makes jurisdictional wetlands determinations based on the presence of one characteristic indicator (i.e., wetland soils or vegetation) under the assumption that wetland hydrology must be present for the indicator to be present. Nevertheless, the presence of wetland hydrology during some part of most years is fundamental to the existence of any wetland, and the CCC will sometimes discount vegetation or soil indicators when there is sufficient evidence to conclusively refute the presence of wetland hydrology.

California Department of Fish and Game

The CDFG, through provisions of the California Fish and Game Code (Section 1600 et seq.), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least an intermittent flow of water. The CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFG.

In obtaining CDFG agreements, the limits of wetlands are not typically determined. This is because the CDFG generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, mulefat, and other vegetation typically associated with the banks of a stream or lake shorelines and may not be consistent with Corps definitions. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas and may include additional areas that do not meet Corps criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream, away from frequently saturated soils).

Regional Water Quality Control Board

The California RWQCB is responsible for the administration of Section 401 of the CWA. Typically, the areas subject to RWQCB jurisdiction coincide with those of the Corps (i.e., waters of the U.S., including any wetlands). The RWQCB also asserts authority over waters of the State under waste discharge requirements pursuant to the Porter-Cologne Act.

METHODOLOGY

The fieldwork for this evaluation was conducted by LSA biologists Ingri Quon and Nicole West on November 30, and December 1, 2, 3, and 18, 2009. Where access was available, the study area was surveyed on foot for both federal and State jurisdictional areas. Where access was not available (e.g., no permission granted by property owner, inaccessibly steep slopes, or locked gate), areas were analyzed from property boundaries. In these instances, potentially jurisdictional areas were assumed present if resources were observed (e.g., riparian vegetation or drainages).

Areas of potential jurisdiction were evaluated according to the Corps and CDFG criteria. The boundaries of the potential jurisdictional areas were observed in the field and mapped on a series of aerial photographs (scale is 1 inch = approximately 200 ft), which together show the entire study area. Measurements of federal and State jurisdictional areas mapped during the course of the field investigation were determined by a combination of direct measurements taken in the field and measurements taken from the aerial photographs. During report preparation, all drainage systems were assigned a number in ascending order from northwest to southeast, for purposes of discussion only.

An analysis of the functions and values of each of the drainages is provided in Appendix B, Analyses of Functions and Values of Wetlands and Other Waters. Representative site photos are in Appendix C, Representative Site Photos. For the location of each drainage system, refer to the figure in Appendix A.

Areas supporting species of plant life potentially indicative of wetlands were evaluated according to routine wetland delineation procedures described in the Regional Supplement, to the best extent feasible. Some areas were not accessible due to steep topography. In these situations, the areas were observed from a distance and analyzed based on observable vegetation, adjacent conditions, and local knowledge. Representative sample plots were selected and examined in the field in those areas where wetland jurisdiction was in question or needed to be confirmed. The locations of sample plots and the potential jurisdictional areas are shown on the figures in Appendix A. At each sample plot, the dominant and subdominant plant species were identified and their wetland indicator status noted (Reed 1988). When possible, a small sample pit was dug at each plot to examine soil characteristics and composition. Soil matrix colors were classified according to the Munsell Soil Color Charts (Munsell Color 2000).

Hydrological conditions, including any surface inundation, saturated soils, groundwater levels, and/or other wetland hydrology indicators were noted. General site characteristics were also noted. Standard

data forms were completed for each sample plot; copies of these data forms are provided in Appendix D, Wetland Data Forms.

RESULTS

Drainage Descriptions

For the location of each drainage system, please see Appendix A.

Drainage 1. Drainage 1 is an artificially created drainage along northbound I-5 at the bottom of a ditch formed by the slopes leading up to northbound I-5 and the adjacent development (Appendix A, Sheets 2 and 3). Drainage 1 conveys flows in a northeasterly direction and discharges into a 74-inch square culvert underneath I-5, which may connect to San Juan Creek. It receives flows from the uphill development on the southeast of the freeway via a box culvert along the southeast part of the ditch. It also receives flows from the surface of I-5 via five 24-inch circular culverts spaced along the length of the ditch. Vegetation in this drainage consists of freshwater marsh habitat. Predominant hydrophytes associated with this drainage include arroyo willow (*Salix lasiolepis*, FACW), black willow (*Salix gooddingii*, OBL), mulefat (*Baccharis salicifolia*, FACW), and cattail (*Typha* sp., OBL). Because of the presence of hydrophytes, four soil pits (soil pits 4, 5, 6, and 7; the soil pit locations are shown in Appendix A, Potential Jurisdictional Areas) were dug to determine whether the area satisfied wetland criteria. In addition, these areas appear to contain water for sufficient duration to form hydric soils. Soil pit 4 at the southwest part of the drainage where the first flows originate did not meet the hydric soils indicator criteria. Soil pits 5, 6, and 7 were staggered along the remaining part of the drainage and met the hydric soils criteria as outlined in the Regional Supplement. Wetland hydrology indicators present include drift deposits and saturation (refer to the data sheets in Appendix D for more details). The central part of this drainage appeared to receive less flow than the majority of the drainage system, did not contain hydrophytic vegetation, and was therefore considered a nonwetland. As stated above, this drainage may connect to San Juan Creek, which discharges to the Pacific Ocean (a TNW). Because there may be a connection between Drainage 1 and a tributary system linking it to a TNW, the Corps may assert jurisdiction over Drainage 1, and a significant nexus determination is required.

Drainage 2. Drainage 2 is a concrete trapezoidal channel that receives flows from I-5 and from adjacent upland developments and streets and conveys them southeast into a 24-inch reinforced concrete pipe (RCP). Drainage 2 is in the northern partof the BSA, west of I-5 and east of Camino Capistrano (Appendix A, Sheet 4). The width of the channel at the base and top are approximately 16 and 58 inches, respectively. The side slopes are approximately 1:1. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. The drainage feature conveys road and other local urban runoff and does not satisfy the criteria for a relatively permanent water. Drainage 2 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 3. Drainage 3 is a concrete v-ditch that receives flows from the adjacent uphill area that is currently graded. Drainage 3 is in the northern part of the BSA, where I-5 curves to the east (Appendix A, Sheet 4). Due to lack of access, this drainage was observed from the freeway right-of-way. The v-ditch width is approximately 31 inches, with slopes of approximately 1:1. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. The drainage does not satisfy the criteria for a relatively permanent water. Drainage 3 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

In addition, at the base of Drainage 3 is a patch of vegetation that is a combination of nonnative ruderal, native riparian, and ornamental species. This area was not accessible due to the steep topography. However, because this vegetation is associated with a drainage believed not to be jurisdictional by the Corps, this area is believed to be isolated and, therefore, not jurisdictional.

Drainage 4. Drainage 4 is a 48-inch concrete v-ditch with approximately 2:1 slopes. Drainage 4 conveys flows from the Camino las Ramblas northbound on-ramps to a 36-inch storm drain grate adjacent to northbound I-5 (Appendix A, Sheet 4). Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. The drainage feature conveys road runoff and does not satisfy the criteria for a relatively permanent water. Drainage 4 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 5. Drainage 5 is a 31-inch concrete v-ditch with 1:1 slopes. Drainage 5 conveys flows southeast from the residential development along Camino de Vista (Appendix A, Sheet 4). Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. The drainage feature conveys local residential runoff and does not satisfy the criteria for a relatively permanent water. In addition, Drainage 5 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 6. Drainage 6 is located parallel to Camino Capistrano (Appendix A, Sheet 4). Drainage 6 is an eroded channel with a 16-inch OHWM created by runoff from the adjacent commercial properties discharging from a 24-inch corrugated metal pipe. Runoff flows northeast through the eroded channel before sheet flowing across an approximately 11 ft wide area and entering a storm drain underneath the sidewalk adjacent to Camino Capistrano. Due to the lack of riparian vegetation, this area was not classified as a wetland. The drainage feature conveys local urban runoff and does not satisfy the criteria for a relatively permanent water. Drainage 6 was excavated on dry land in

topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 7. Drainage 7 conveys flows from the Camino las Ramblas southbound on-ramp (Appendix A, Sheets 6 and 7). Drainage 7 is an asphalt 2 ft wide path with a curb on one side. Runoff flows along the asphalt path southwest from the Via California Bridge to I-5. Due to the lack of riparian vegetation and concrete lining, this area was not classified as a wetland. The drainage feature conveys freeway runoff and does not satisfy the criteria for a relatively permanent water. In addition, Drainage 7 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 8. Drainage 8 is a concrete v-ditch that conveys flows west from the adjacent residential development (Appendix A, Sheet 6). The v-ditch is approximately 30 inches wide, with slopes ranging from 1:1 to 1:3. This drainage is in disrepair with numerous cracks. Due to the lack of riparian vegetation and concrete lining, this area was not classified as a wetland. The drainage feature conveys residential runoff and does not satisfy the criteria for a relatively permanent water. In addition, Drainage 8 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 9. Drainage 9 is a rectangular concrete channel with an approximately 28-inch base and 2-inch sides. Water enters Drainage 9 from under I-5 through a low flow detention basin with a check dam. Runoff flows southwest along Drainage 9 and discharges directly onto Via Canon (Appendix A, Sheet 6). Due to the lack of riparian vegetation and concrete lining, this area was not classified as a wetland. The drainage feature conveys local urban runoff and does not satisfy the criteria for a relatively permanent water. In addition, Drainage 9 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 10. Drainage 10 is located along northbound I-5 in the central part of the BSA (Appendix A, Sheet 8). Drainage 10 is a 31-inch concrete v-ditch with 1:1 slopes that conveys flows northward from the upslope commercial properties into a grated manhole. However, the part of the channel slopes uphill; therefore, runoff from this section flows south into the manhole. Due to the lack of riparian vegetation and concrete lining, this area was not classified as a wetland. The drainage feature

conveys local urban runoff and does not satisfy the criteria for a relatively permanent water. Drainage 10 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 11. Drainage 11 is a 38-inch concrete v-ditch with 1:1 slopes that conveys runoff southeast from the adjacent residential development (Appendix A, Sheet 8). Drainage 11 terminates abruptly and does not connect to the storm drain system. In addition, Drainage 11 is located in a valley, and the topography would most likely support a natural drainage. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. In addition, this drainage feature conveys road runoff and does not satisfy the criteria for a relatively permanent water. Drainage 11 was excavated on dry land in topography that would not naturally support a drainage. Because this drainage feature does not meet the Corps criteria for a direct or indirect connection to interstate commerce and the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 12. Drainage 12 is a 72-inch concrete trapezoidal channel with a 26-inch base and 1:1 slopes. Runoff enters Drainage 12 from under I-5 through a 26-inch RCP and flows southeast before discharging into another 26-inch RCP, which appears to eventually discharge into Drainage 14, Prima Deshecha Cañada (Appendix A, Sheet 8). As discussed above, Prima Deshecha Cañada connects to the Pacific Ocean (a TNW). Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. This drainage feature conveys local urban runoff and does not satisfy the criteria for a relatively permanent water. However, Drainage 12 is located in a valley where the topography would support a natural drainage. Because there may be a connection between this drainage and a tributary system linking it to a TNW and it is located in an area that would support a natural drainage, it is expected that the Corps may assert jurisdiction over Drainage 12, and a significant nexus determination is required.

Drainage 13 (Sections 13a and 13b). Flow discharges into Drainage 13 from a black plastic corrugated pipe beneath I-5 (Appendix A, Sheet 8). Drainage 13a is dominated by Brazilian and Peruvian pepper trees (*Schinus molle*, UPL) and pampas grass (*Cortaderia selloana*, UPL). Due to lack of hydrophytic vegetation, Drainage 13a was not classified as a wetland. Drainage 13b is dominated by cattail (*Typha* sp., OBL.). Because Drainage 13b was inaccessible, it is unknown whether it satisfies wetland criteria. However, the drainage supports hydrophytic vegetation; therefore, it was assumed to be a wetland. Drainage 13 appears to have a continuous flow at least 3 months of the year, and is therefore believed to be a relatively permanent water tributary to Prima Deshecha Cañada. Because of this, it is expected that the Corps will assert jurisdiction over Drainage 13, and a significant nexus determination is not required.

Drainage 14 (Prima Deshecha Cañada). Within the BSA, Prima Deshecha Cañada is a concrete channel that runs through the Shorecliff Golf Course and beneath I-5 through a 16 ft arched culvert. Prima Deshecha Cañada is a 15 ft concrete rectangular channel southwest of I-5 and a concrete trapezoidal channel with a 15 ft base northeast of I-5 (Appendix A, Sheet 9). Due to the lack of riparian vegetation and concrete lining, this drainage was not classified as wetland. Concrete staining demonstrated the limits of the OHWM, supporting this area to be classified as nonwetland waters of the U.S. At least a part of the Prima Deshecha Cañada is considered a TNW due to tidal influences at its mouth, which occurs approximately 0.5 mi from the BSA. Prima Deshecha Cañada appears to have a continuous flow at least 3 months of the year, and is therefore considered a relatively permanent water. It is expected that the Corps will assert jurisdiction over Drainage 14, and a significant nexus determination is not required.

Drainage 15. Drainage 15 is a 38-inch concrete trapezoidal channel with a 13-inch base and 1:1 slopes. Drainage 15 is located along northbound I-5, below the residential development on Calle Juarez (Appendix A, Sheet 9). Drainage 15 conveys flows both northwest and northeast from the uphill residential direction from the central part toward the two ends of the channel. Drainage 15 terminates abruptly on both ends and does not connect to the storm drain system. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. In addition, this drainage feature conveys local road runoff and does not satisfy the criteria for a relatively permanent water. Drainage 15 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 16. Drainage 16 is a 109-inch earthen channel created by a broken irrigation pipe below San Gorgonio Park (Appendix A, Sheet 9). Drainage 16 conveys flows in a southeast direction, terminates abruptly, and does not connect to the storm drain system. Vegetation within the standing water was dominated by hydrophytic vegetation, including curly dock (*Rumex crispus*, FACW-) and *Epilobium ciliatum* (FACW). Due to the presence of hydrophytic vegetation, a soil pit (soil pit 8) was dug at this location. Although wetland hydrology indicators, such as saturation, were present, hydric soils criteria as outlined in the Regional Supplement was not met. Therefore, this was classified as a nonwetland water. Should the irrigation line be repaired, it is probable that the hydrology necessary to support the hydrophytic vegetation would be terminated. In addition, Drainage 16 was excavated on dry land in topography that would not naturally support a drainage. Because this drainage feature does not meet the Corps criteria for a direct or indirect connection to interstate commerce and the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 17. Drainage 17 is a 10 ft wide, nearly level concrete drainage located in the valley below I-5 and the residential community along Calle Vista Torito (Appendix A, Sheet 9). Runoff enters the drainage from under I-5 through a 168-inch by 190-inch concrete low flow detention basin with a

12-inch high check dam. Runoff discharges from Drainage 17 into a 36-inch RCP and then most likely flows under the residential development into Drainage 21 (Cascadita Creek). There is little to no vegetation associated with this drainage. Due to the lack of riparian vegetation and concrete lining, this area was not classified as wetland. Concrete staining showed evidence of an OHWM, supporting this area to be classified as nonwetland waters of the U.S. Drainage 17 appears to have a continuous flow at least 3 months of the year, and is therefore believed to be a relatively permanent water. In addition, this drainage is located in a valley where the topography would support a natural drainage. Because of the reasons listed above, it is expected that the Corps will assert jurisdiction over Drainage 17, and a significant nexus determination is not required.

Drainage 18. Drainage 18 is a 36-inch trapezoidal channel with a 14-inch base and 1:2 slopes. Drainage 19 conveys flows west from the uphill residential development along Calle Frontera (Appendix A, Sheet 10). Drainage 18 terminates abruptly on both ends and does not connect to the storm drain system. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. In addition, this drainage feature conveys local road runoff and does not satisfy the criteria for a relatively permanent water. Drainage 18 was excavated on dry land in topography that would not naturally support a drainage. Because this drainage feature does not meet the Corps criteria for a direct or indirect connection to interstate commerce and the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 19. Drainage 19 is a 36-inch trapezoidal channel with a 14-inch base and 1:2 slopes. Drainage 19 conveys flows southeast from the uphill residential development along Calle Frontera (Appendix A, Sheet 10). Drainage 19 terminates abruptly on the southeast end; however, runoff continues over land and sheet flows into Drainage 20, which may discharge into Cascadita Creek. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. In addition, this drainage feature conveys local road runoff and does not satisfy the criteria for a relatively permanent water. Drainage 19 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 20. Drainage 20 is an artificially created detention basin along northbound I-5 in the bottom of a natural valley formed by the slopes leading up to northbound I-5 and the adjacent development (Appendix A, Sheet 10). Drainage 20 receives flows from a 23-inch round culvert under I-5 and discharges flows to a stand pipe that most likely discharges to Cascadita Creek (Drainage 21). Vegetation in this drainage consists of pampas grass (*Cortaderia selloana,* UPL), arroyo willow (*Salix lasiolepis*, FACW), and sand spikerush (*Eleocharis montevidensis,* FACW). Because of the presence of hydrophytes, five soil pits (soil pits 1, 2, 3, 9, and 10) were dug to determine whether the area satisfied wetland criteria. Soil pit 1, in the vicinity of an arroyo willow near the 23-inch circular culvert, met all three wetland criteria as outlined in the Regional Supplement and was classified as a wetland. Wetland hydrology indicators present include saturation (see the data sheets in Appendix D

for more details). Soil pits 2, 3, 9, and 10 did not meet all three wetland criteria. Therefore, the majority of the basin was classified as a nonwetland water. Because there may be a connection between Drainage 20 and a tributary system linking it to a TNW, it is expected that this drainage may be considered jurisdictional by the Corps. A significant nexus determination would be required for the Corps to assert jurisdiction over the drainage.

Drainage 21 (Cascadita Creek). Drainage 21, Cascadita Creek, flows along a part of the Shorecliff Golf Course to the Pacific Ocean (Appendix A, Sheet 10). This drainage appeared to consist of hydrophytic vegetation dominated by cattail (*Typha* sp., OBL). Drainage 21 is in a valley and the topography would most likely support a natural drainage. Because this drainage was inaccessible, it is unknown whether it is a relatively permanent water or satisfies wetland criteria. Because the drainage supports hydrophytic vegetation, it was assumed to be a wetland. If it is a relatively permanent water, then the Corps would most likely assert jurisdiction over this drainage. If it is not a relatively permanent water, then a significant nexus determination would be required for the Corps to assert jurisdiction over the drainage.

Drainage 22. Drainage 22 is adjacent to the East Avenida Pico southbound off-ramp (Appendix A, Sheet 11). Drainage 22 is a 46-inch wide flat concrete swale that conveys runoff from the off-ramp in a southeast direction into a 34-inch grate leading to the storm drain system. Due to the lack of riparian vegetation and concrete lining, this area was not classified as a wetland. The drainage feature conveys urban runoff and does not satisfy the criteria for a relatively permanent water. Drainage 22 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 23. Drainage 23 is adjacent to the East Avenida Pico southbound on-ramp (Appendix A, Sheet 11). Drainage 23 is a 34-inch flat asphalt swale that conveys runoff from the on-ramp northwest into a 34-inch grate leading to the storm drain system. Due to the lack of riparian vegetation and concrete lining, this area was not classified as a wetland. The drainage feature conveys local urban runoff and does not satisfy the criteria for a relatively permanent water. Drainage 23 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 24. Drainage 24 is a concrete rectangular channel that conveys flows from the adjacent parking lot into Segunda Deshecha Cañada, approximately 20 ft to the southeast (Appendix A, Sheet 12). Drainage 24 was excavated on dry land in topography that would not naturally support a drainage. Because the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 25 (Segunda Deshecha Cañada). Within the BSA, Segunda Deshecha Cañada is a trapezoidal concrete channel with an approximately 8 ft bottom that passes through a 20 ft tall arched culvert beneath I-5 just east of Avenida Pico (Appendix A, Sheet 12). Due to the lack of riparian vegetation and concrete lining, this area was not classified as wetland. Concrete staining demonstrated the limits of the OHWM, supporting this area to be classified as nonwetland waters of the U.S. At least a part of the Segunda Deshecha Cañada is considered a TNW due to tidal influences at its mouth, which is approximately 0.5 mi from the BSA. Segunda Deshecha Cañada appears to have a continuous flow at least 3 months of the year, and is therefore considered a relatively permanent water. It is expected that the Corps will assert jurisdiction over Drainage 25, and a significant nexus determination is not required.

Drainage 26. Drainage 26 is a 48-inch concrete v-ditch with 1:1 slopes. Drainage 26 conveys flows northwest from the adjacent commercial properties (Appendix A, Sheet 12). Drainage 26 terminates abruptly and does not connect to the storm drain system. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. In addition, this drainage feature conveys local road runoff and does not satisfy the criteria for a relatively permanent water. Drainage 26 was excavated on dry land in topography that would not naturally support a drainage. Because this drainage feature does not meet the Corps criteria for a direct or indirect connection to interstate commerce and the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will *not* assert jurisdiction over this drainage as nonwetland waters of the U.S.

Drainage 27. Drainage 27 is a 49-inch concrete v-ditch with 1:1 slopes. Drainage 27 conveys flows west from a 26-inch RCP beneath I-5 and discharges into Drainage 26 (Appendix A, Potential Jurisdictional Areas, Sheet 12). Drainage 27 terminates abruptly and does not connect to the storm drain system. Due to the lack of riparian vegetation and the presence of a concrete lining, this area was not classified as wetland. In addition, this drainage feature conveys local road runoff and does not satisfy the criteria for a relatively permanent water. Drainage 27 was excavated on dry land in topography that would not naturally support a drainage. Because this drainage feature does not meet the Corps criteria for a direct or indirect connection to interstate commerce and the Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow, it is expected that the Corps will not assert jurisdiction over this drainage as nonwetland waters of the U.S.

Corps Jurisdiction: Nexus to Navigable Waters

San Juan Creek, Prima Deshecha Cañada, and Segunda Deshecha Cañada all eventually discharge into the Pacific Ocean (a TNW). At least parts of these creeks are considered a TNW due to tidal influences at their mouths, approximately 0.5 mi from the BSA.

Corps Jurisdiction: Potential Nonjurisdictional Areas

The drainages within the BSA are composed of a mixture of natural earthen bottoms and concrete-lined channels. All these drainages have been altered in some form or are wholly humanmade. According to the Corps guidance, drainage features may be excluded from CWA jurisdiction if they are wholly in and drain only uplands and do not carry relatively permanent water, or they are low-volume swales. In addition, there is one area of riparian vegetation (associated with Drainage 3) within the BSA that is believed not to be jurisdictional. This area was not accessible due to the steep topography. Nevertheless, it is degraded by invasive nonnative ruderal and ornamental species. Because this vegetation is associated with a drainage believed not to be jurisdictional by the Corps, this area is believed to be isolated and, therefore, not jurisdictional. See Appendix A for the locations of these drainages and riparian vegetation.

The majority of the drainages in the BSA are potentially nonjurisdictional to the Corps, as described below.

The Corps typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow. Therefore, it is expected that the Corps will not assert jurisdiction over Drainages 2 through 10, 15, 19, and 22 through 24.

Drainages 11, 16, 18, 26, and 27 terminate abruptly and therefore do not meet the Corps criteria for a direct or indirect connection to interstate commerce. In addition, these drainages were excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow. Therefore, it is expected that the Corps will not assert jurisdiction over these drainages.

The total area of potential nonjurisdictional waters is 0.6 acre (ac). All of the nonjurisdictional waters within the BSA would not satisfy Corps wetland criteria should the Corps assert jurisdiction. Specific information regarding each drainage system is provided in the following section. See Appendix A for the locations of these drainages.

Corps Jurisdiction: Potential Nonwetland Waters of the U.S.

There are seven drainages (Drainage 1, 12, 13a, 14, 17, 20, and 25) in the BSA where potential Corps jurisdictional nonwetland waters occur.

Drainage 1 is an artificially created drainage that may connect to San Juan Creek, which discharges to the Pacific Ocean (a TNW). It is unknown whether Drainage 1 flows into San Juan Creek. Due to the presence of hydrophytic vegetation and wetland hydrology, soil pits were dug in this drainage to determine whether hydric soils were present. Although parts of this drainage were determined to satisfy all three wetland criteria as outlined in the Regional Supplement, the central and southwest parts of this drainage appeared to receive less flow than the majority of the drainage system, did not contain hydrophytic vegetation, and were therefore considered a nonwetland. Because there may be a connection between Drainage 1 and a tributary system linking it to a TNW, the Corps may assert jurisdiction over Drainage 1, and a significant nexus finding is required.

Drainage 12 is a concrete channel that appears to be tributary to Prima Deshecha Cañada, which discharges to the Pacific Ocean (a TNW). Drainage 12 is not a relatively permanent water; however, it is located in a valley where the topography would support a natural drainage. Because there may be a connection between this drainage and a tributary system linking it to a traditional navigable water and it is located in an area that would support a natural drainage, it is expected that the Corps may assert jurisdiction over Drainage 12 after conducting a significant nexus determination.

Drainage 13a is a relatively permanent water with an earthen bottom and a tributary to Prima Deshecha Cañada. Because it is a relatively permanent water that lacks hydrophytic vegetation, it is expected to be considered a jurisdictional nonwetland water by the Corps. No significant nexus determination is required for Drainage 13 per Corps guidance (Regional Supplement 2008).

Drainage 14, Prima Deshecha Cañada is a relatively permanent water contained in a concrete channel that discharges to the Pacific Ocean (a TNW). Concrete staining demonstrated the limits of the OHWM, supporting this area to be classified as nonwetland waters of the U.S. At least a part of the Prima Deshecha Cañada is considered a TNW due to tidal influences at its mouth, which is approximately 0.5 mi from the BSA. It is expected that the Corps will assert jurisdiction over Drainage 14. No significant nexus determination is required for Drainage 14 per Corps guidance (Regional Supplement 2008).

Drainage 17 is a relatively permanent water with a concrete bottom that most likely discharges to Drainage 21, Cascadita Creek, which discharges to the Pacific Ocean. Because Drainage 17 is a relatively permanent water, it is expected that the Corps will assert jurisdiction over Drainage 17, and a significant nexus determination is not required.

Drainage 20 is an artificially created detention basin that most likely discharges to Cascadita Creek (Drainage 21). Because of the presence of hydrophytes, soil pits were dug to determine whether the area satisfied wetland criteria. The majority of the basin did not contain hydric soils and was classified as a nonwetland water. Because there may be a connection between Drainage 20 and a tributary system linking it to a TNW, this drainage may be considered jurisdictional by the Corps. A significant nexus determination would be required for the Corps to assert jurisdiction over this drainage.

Drainage 25, Segunda Deshecha Cañada is a relatively permanent water contained in a concrete channel that discharges to the Pacific Ocean. Concrete staining demonstrated the limits of the OHWM, supporting this area to be classified as nonwetland waters of the U.S. At least a part of the Segunda Deshecha Cañada is considered a TNW due to tidal influences at its mouth, which is approximately 0.5 mi from the BSA. It is expected that the Corps will assert jurisdiction over Drainage 25. No significant nexus determination is required for Drainage 25 per Corps guidance (Regional Supplement 2008).

The total acreage of potential Corps nonwetland waters of the U.S. in the BSA area is 0.5 ac. Appendix A, Potential Jurisdictional Areas, provides details regarding the locations of these potential nonwetland areas.

Corps Jurisdiction: Potential Wetland Waters of the U.S.

There are only four drainages (Drainages 1, 13b, 20 and 21) within the BSA where potential Corps jurisdictional wetlands occur, as shown in the figures in Appendix A, Potential Jurisdictional Areas.

Drainage 1 is an artificially created drainage that may connect to San Juan Creek, which discharges to the Pacific Ocean (a TNW). Due to the presence of hydrophytic vegetation and wetland hydrology, soil pits were dug in this drainage to determine whether hydric soils were present. Parts of this drainage were determined to satisfy all three wetland criteria as outlined in the Regional Supplement. Because there may be a connection between Drainage 1 and a tributary system linking it to a TNW, the Corps may assert jurisdiction over Drainage 1. A significant nexus determination would be required for the Corps to assert jurisdiction over this drainage.

Drainage 13b is a relatively permanent water with an earthen bottom and is a tributary to Prima Deshecha Cañada. Because access was not available to this part of Drainage 13b, no soil pits were taken to determine whether the area satisfied wetland criteria. This drainage appeared to consist of hydrophytic vegetation dominated by cattail (*Typha* sp.). Because Drainage 13b is a relatively permanent water that contains hydrophytic vegetation, it is expected to be considered a jurisdictional wetland by the Corps, and a significant nexus determination is not required.

Drainage 20 is an artificially created detention basin that most likely discharges to Cascadita Creek (Drainage 21). Because of the presence of hydrophytes, soil pits were dug to determine whether the area satisfied wetland criteria. A small part of this drainage met all three wetland criteria as outlined in the Regional Supplement and was classified as a wetland. Because there may be a connection between Drainage 20 and a tributary system linking it to a TNW, this drainage may be considered jurisdictional by the Corps. A significant nexus determination would be required for the Corps to assert jurisdiction over this drainage.

Drainage 21, Cascadita Creek, flows to the Pacific Ocean (a TNW). Access to this area was not available due to lack of permission from the property owners. Because this drainage was inaccessible, it is unknown whether it is a relatively permanent water or satisfies wetland criteria. Because the drainage supports hydrophytic vegetation, it was assumed to be a wetland. If it is a relatively permanent water, then the Corps would most likely assert jurisdiction over this drainage. If it is not a relatively permanent water, then a significant nexus determination will be required for the Corps to assert jurisdiction over this drainage.

The total acreage of potential Corps wetland waters in the BSA is 0.5 ac. See below for specific information regarding each drainage system. Appendix A, Potential Jurisdictional Areas, provides details regarding the locations of these potential wetland areas.

CCC Jurisdiction

Potential for CCC jurisdiction exists because part of the BSA (southwest of the SR-1/I-5 interchange) is located within the Coastal Zone. Areas within the Coastal Zone satisfying the Corps jurisdictional criteria for waters and wetlands of the U.S., as described above, would also be subject to CCC jurisdiction as wetlands pursuant to the CCA. However, there are no Corps waters or wetlands within the Coastal Zone part of the BSA. Additionally, there are no other areas in the BSA where

hydrophytic vegetation or hydric soils indicators or wetland hydrology occur in the Coastal Zone. Therefore, there are no CCC jurisdictional wetlands in the BSA.

CDFG Jurisdiction

All the areas satisfying the Corps jurisdictional criteria for waters of the U.S. and adjacent wetlands are also subject to CDFG jurisdiction pursuant to Section 1602 of the California Fish and Game Code. In addition, streambed banks and adjacent riparian areas extending beyond the limits of the Corps jurisdiction are considered subject to CDFG jurisdiction. However, there are areas of riparian vegetation within the BSA that are believed not to be jurisdictional because they are not associated with a river, stream, or lake. The figures in Appendix A, Potential Jurisdictional Areas, show the extent of CDFG jurisdiction in the BSA.

The total acreage of CDFG jurisdiction within the study area is 1.4 ac, which exceeds the total area delineated as Corps jurisdiction (i.e., 1.0 ac) by 0.4 ac.

RWQCB Jurisdiction

Because there is no public guidance on determining RWQCB jurisdictional areas, jurisdiction was determined based on the federal definition of wetlands (three-parameter) and other waters of the U.S. (OHWM) as recommended by the *September 2004 Workplan* (SWRCB 2004). The total area of potential RWQCB jurisdiction is 1.0 ac.

CONCLUSIONS

Corps Jurisdiction

The majority of the drainages in the BSA are potentially nonjurisdictional to the Corps because they are wholly in and drain only uplands and do not carry relatively permanent water.

Table B shows the total potential Corps jurisdictional and nonjurisdictional areas within the BSA.

Table B: Potential Corps Jurisdictional and Nonjurisdictional Areas

Potential Corps Areas	Area (ac)
Jurisdictional Wetlands	0.5
Jurisdictional Nonwetlands	0.5
Nonjurisdictional Areas	0.6
Total Area	**1.6**

ac = acres
Corps = United States Army Corps of Engineers

CCC Jurisdiction

There are no CCC jurisdictional wetlands within the BSA.

CDFG Jurisdiction

The total acreage of CDFG jurisdiction within the study area is 1.4 ac, which exceeds the total area delineated as Corps jurisdiction (i.e., 1.0 ac) by 0.4 ac.

RWQCB Jurisdiction

The total area of potential RWQCB jurisdiction was based on the total potential Corps jurisdiction. The area of potential RWQCB jurisdiction is 1.0 ac.

DISCLAIMER

The findings and conclusions presented in this report, including the locations and extents of wetlands and other waters subject to regulatory jurisdiction (or lack thereof), represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary until verified by the Corps, CDFG, and RWQCB.

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APPENDIX A

POTENTIAL JURISDICTIONAL AREAS

LEGEND

- Biological Study Area
- Soil Pit
- Non-Jurisdictional Riparian Habitat
- Potential CDFG Jurisdictional Area

Corps

- Potential Jurisdictional Wetland Area
- Potential Jurisdictional Non-Wetland Area
- Potential Non-Jurisdictional Area

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SOURCE: Bing (2009); LSA (2010)

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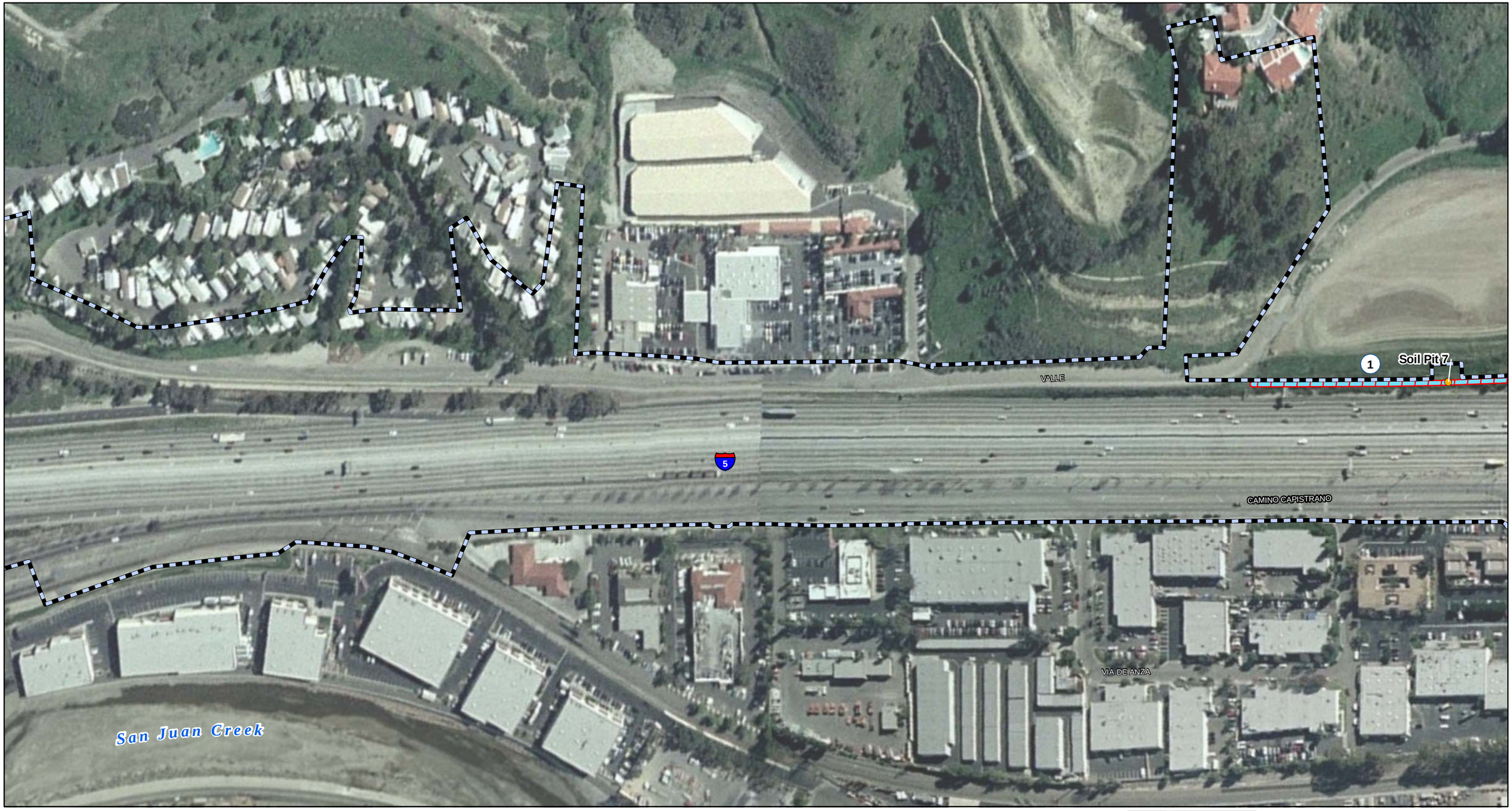
APPENDIX A
Sheet 1 of 13

I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600



LEGEND

- Biological Study Area
- Soil Pit
- Non-Jurisdictional Riparian Habitat
- Potential CDFG Jurisdictional Area

Corps

- Potential Jurisdictional Wetland Area
- Potential Jurisdictional Non-Wetland Area
- Potential Non-Jurisdictional Area

0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

I:\RMN0901\GIS\JD.mxd (9/10/2010)

APPENDIX A
Sheet 2 of 13

I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600

LEGEND

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- Soil Pit
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0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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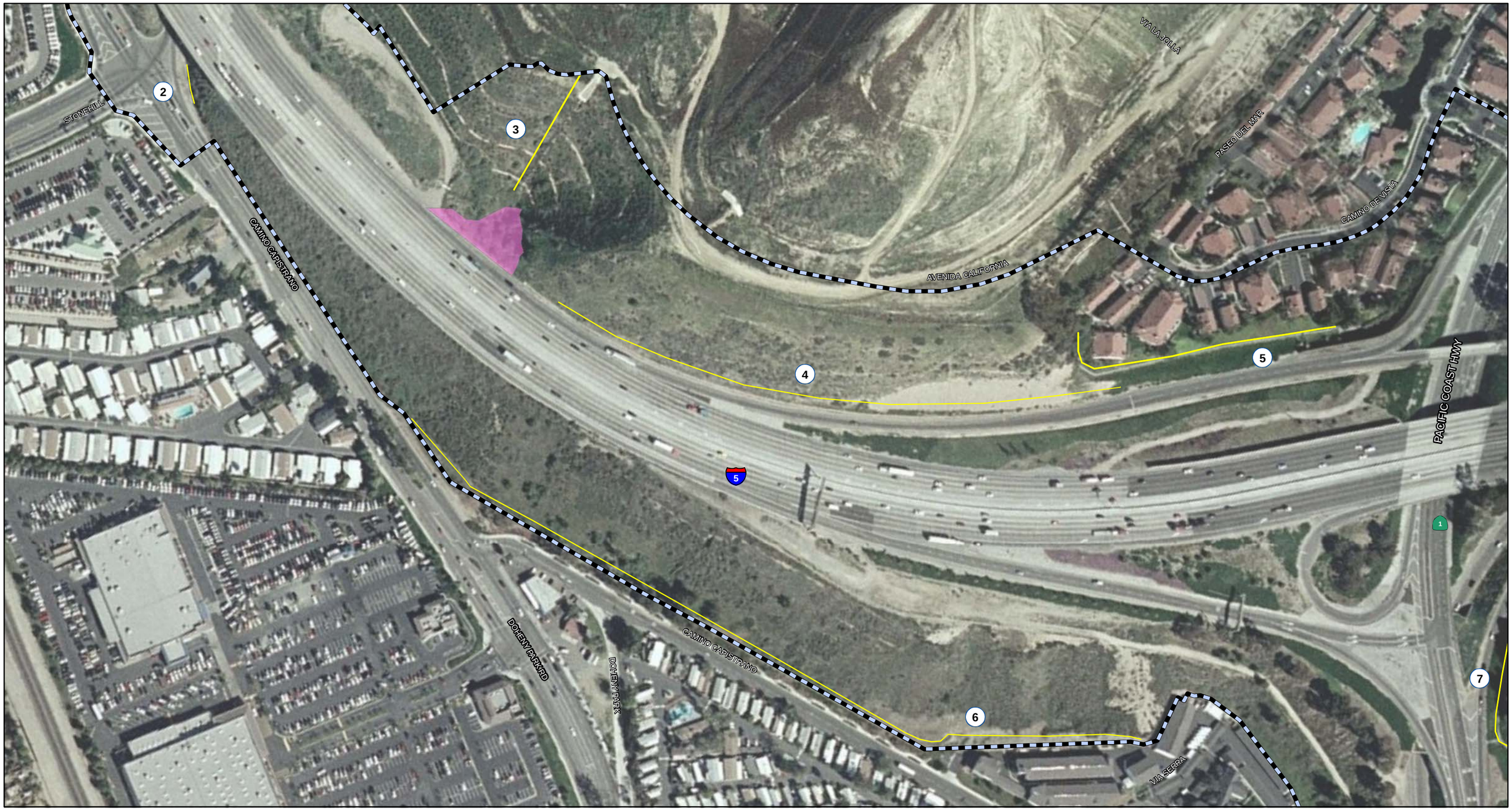
APPENDIX A
Sheet 3 of 13

I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600



LEGEND

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- Potential Jurisdictional Non-Wetland Area
- Potential Non-Jurisdictional Area

0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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APPENDIX A
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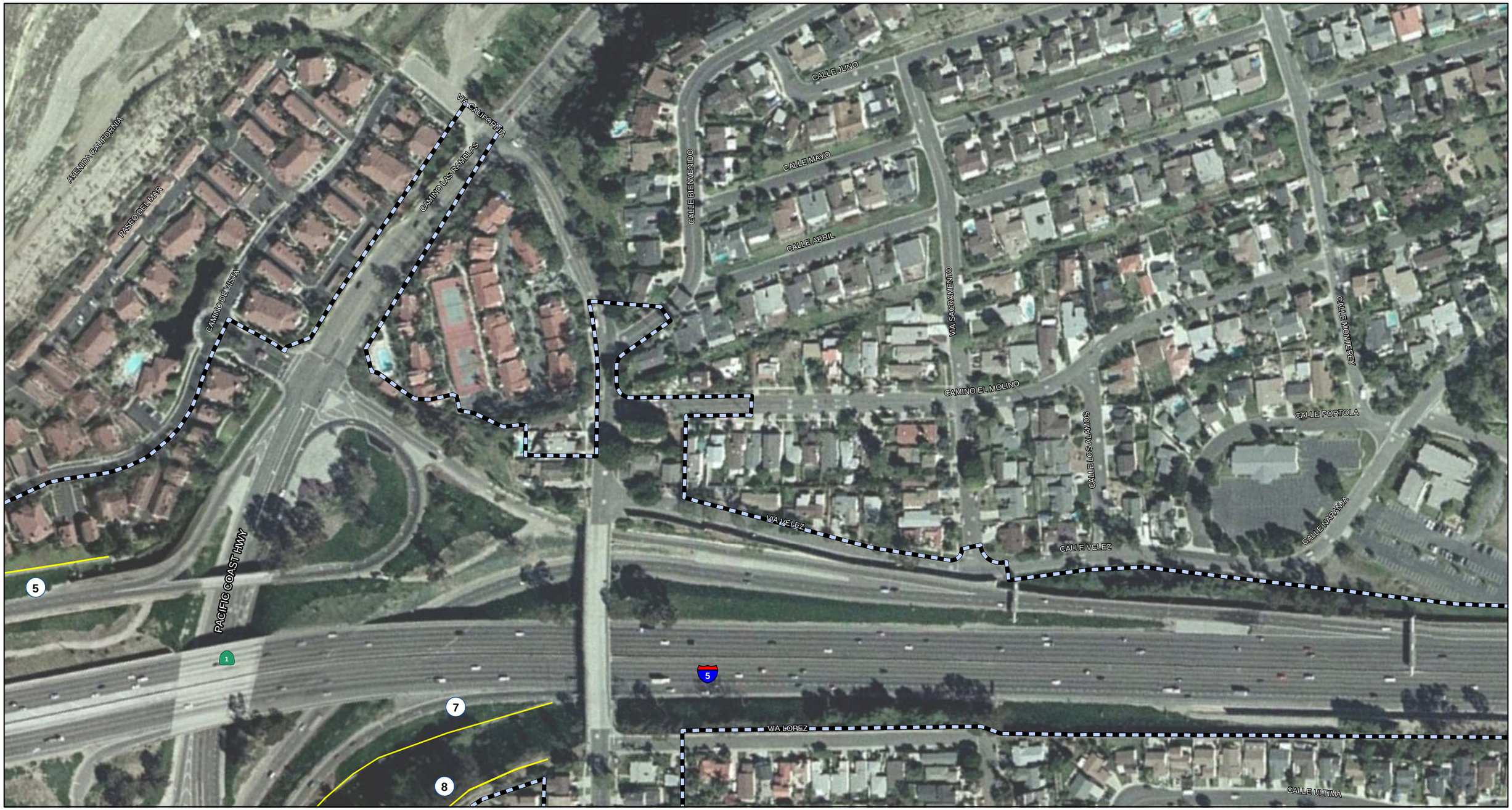
I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600



LEGEND

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- Potential Non-Jurisdictional Area

0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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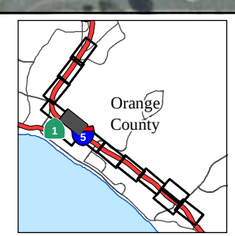

APPENDIX A
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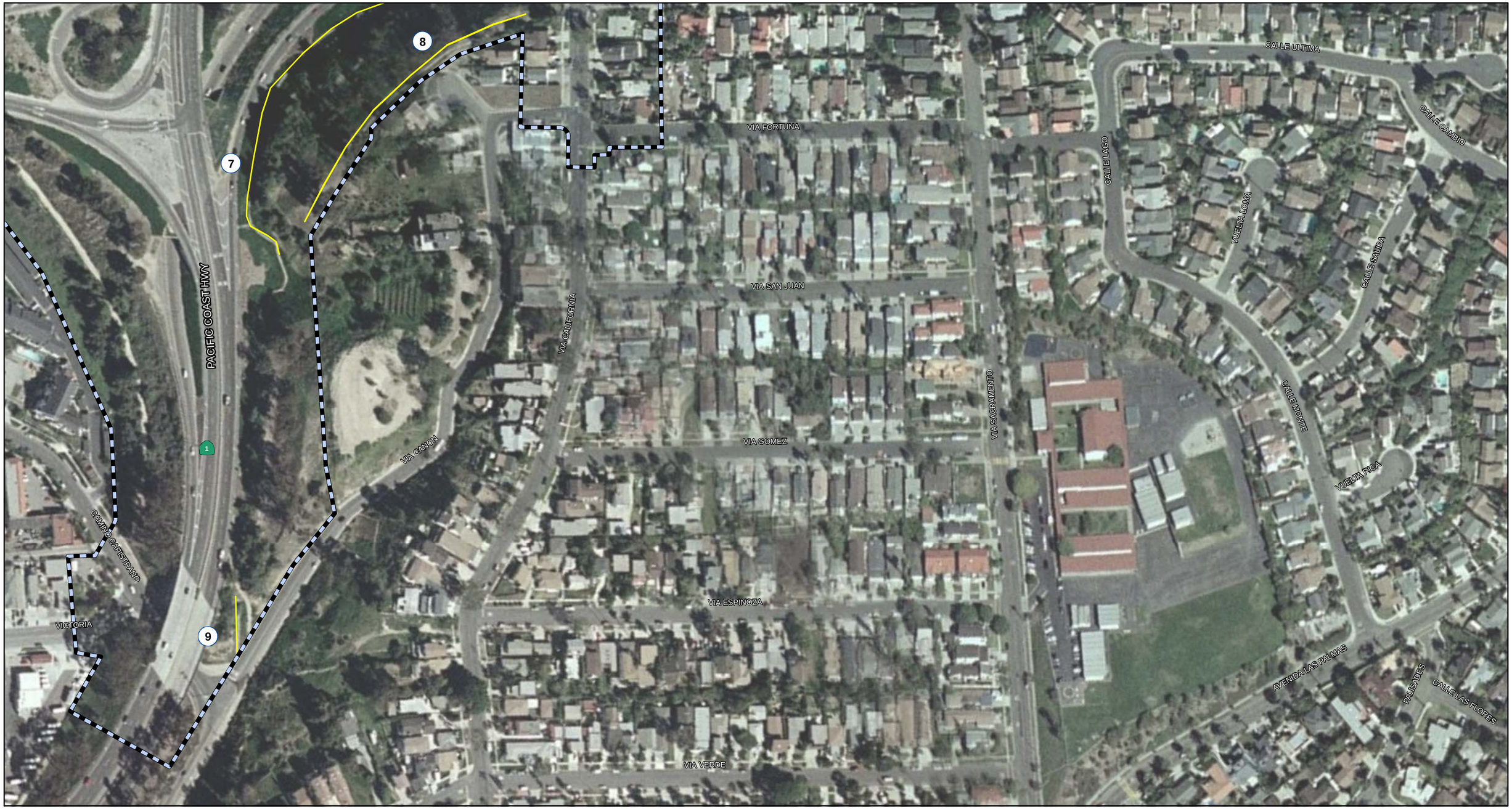
I-5 HOV Lane Extension Project
Potential Jurisdictional Areas
12-ORA-005 PM 3.0/8.7
EA# 0F9600



LEGEND

- Biological Study Area
- Soil Pit
- Non-Jurisdictional Riparian Habitat
- Potential CDFG Jurisdictional Area

Corps

- Potential Jurisdictional Wetland Area
- Potential Jurisdictional Non-Wetland Area
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0 100 200
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SOURCE: Bing (2009); LSA (2010)

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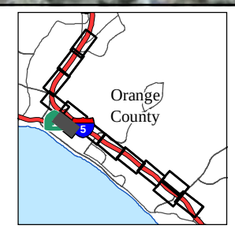

APPENDIX A
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I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600

CALLE JUANITA
CALLE CARMELITA
CALLE REAL
CALLE NARANJA
CALLE HIGA
CAMINO EL MOLINO
CAMINO DE LOS MARES
CALLE PORTOLA
5
CAMINO DE ESTRELLA
CALLE PALOMA
CALLE ROSITA
CALLE LOS ROBLES
AVENIDA LAS PALMAS
CALLE DOLORES
CALLE MARIA
CALLE CANDIO

LEGEND

Biological Study Area
Soil Pit
Non-Jurisdictional Riparian Habitat
Potential CDFG Jurisdictional Area

Corps

Potential Jurisdictional Wetland Area
Potential Jurisdictional Non-Wetland Area
Potential Non-Jurisdictional Area

0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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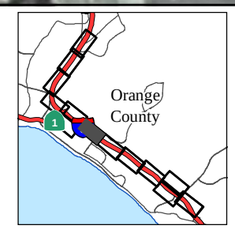

APPENDIX A
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I-5 HOV Lane Extension Project
Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600

LEGEND

- Biological Study Area
- Soil Pit
- Non-Jurisdictional Riparian Habitat
- Potential CDFG Jurisdictional Area

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- Potential Jurisdictional Non-Wetland Area
- Potential Non-Jurisdictional Area

0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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APPENDIX A
Sheet 8 of 13

I-5 HOV Lane Extension Project
Potential Jurisdictional Areas
12-ORA-005 PM 3.0/8.7
EA# 0F9600

LEGEND

- Biological Study Area
- Soil Pit
- Non-Jurisdictional Riparian Habitat
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0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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I-5 HOV Lane Extension Project
Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600

LEGEND

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SOURCE: Bing (2009); LSA (2010)

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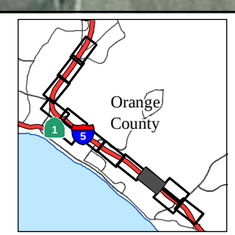

APPENDIX A
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I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600

VIA TECA
VIA GAVILAN
VIA ZUMAQUE
AVENIDA PLATANAR
CALLE CIDRA
AVENIDA OLIVA
VIA CEREZA
PASEO LARO
AVENIDA FACETA
VIA GOLONDRINA
VIA MERLA
CALLE FRONTERA
AVENIDA ESPADA
VIA CONCHA
AVENIDA FUENTES
CALLE OLA VERDE
AVENIDA RICO
Segunda Deshecha Canada
25
24
5

LEGEND

- Biological Study Area
- Soil Pit
- Non-Jurisdictional Riparian Habitat
- Potential CDFG Jurisdictional Area

Corps

- Potential Jurisdictional Wetland Area
- Potential Jurisdictional Non-Wetland Area
- Potential Non-Jurisdictional Area

0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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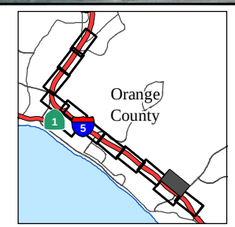

APPENDIX A
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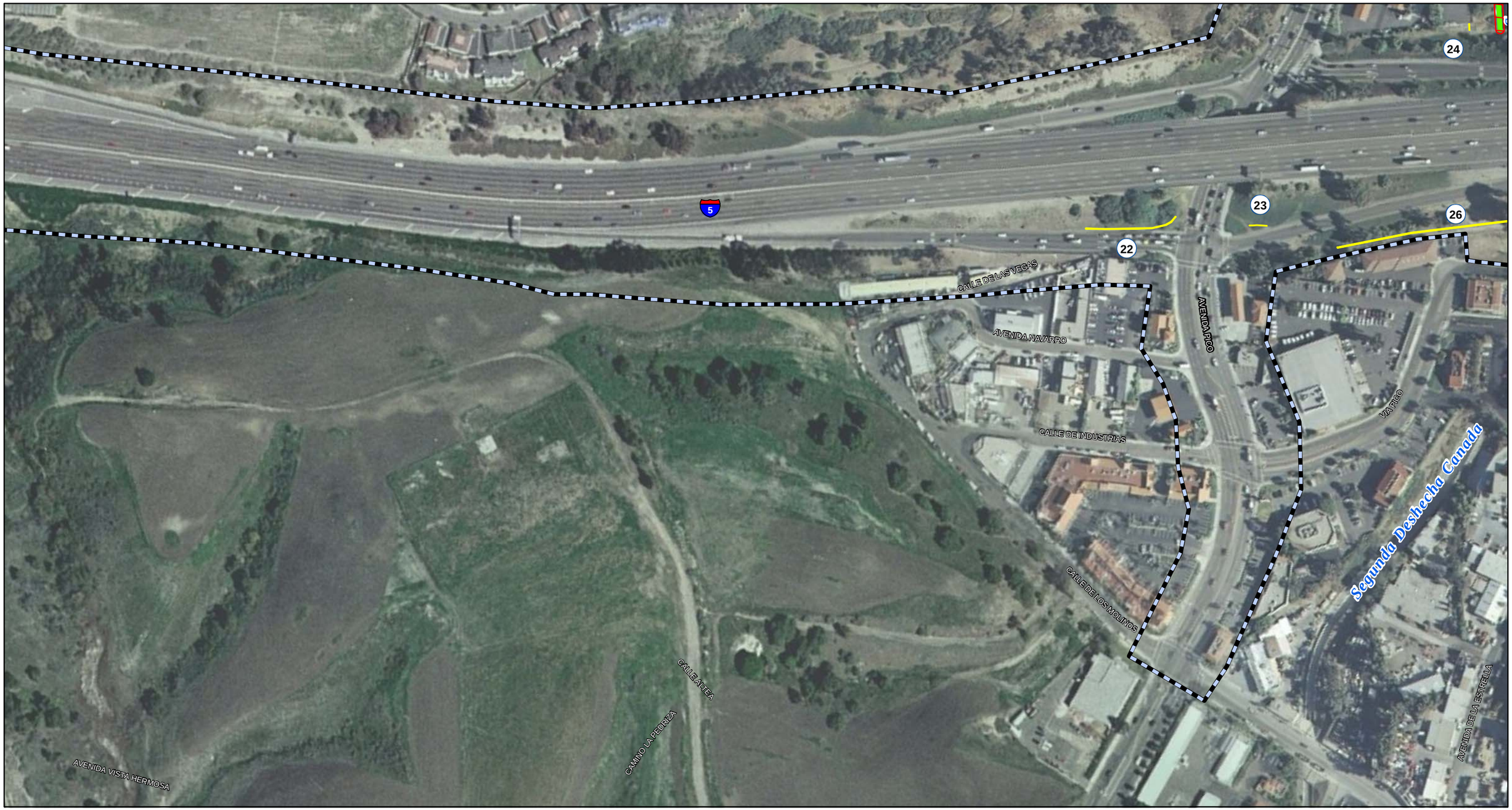
I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600



LEGEND

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- Soil Pit
- Non-Jurisdictional Riparian Habitat
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Corps

- Potential Jurisdictional Wetland Area
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- Potential Non-Jurisdictional Area

0 100 200
FEET

SOURCE: Bing (2009); LSA (2010)

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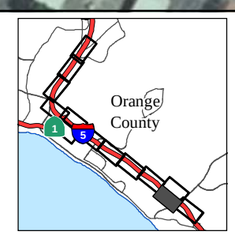

APPENDIX A
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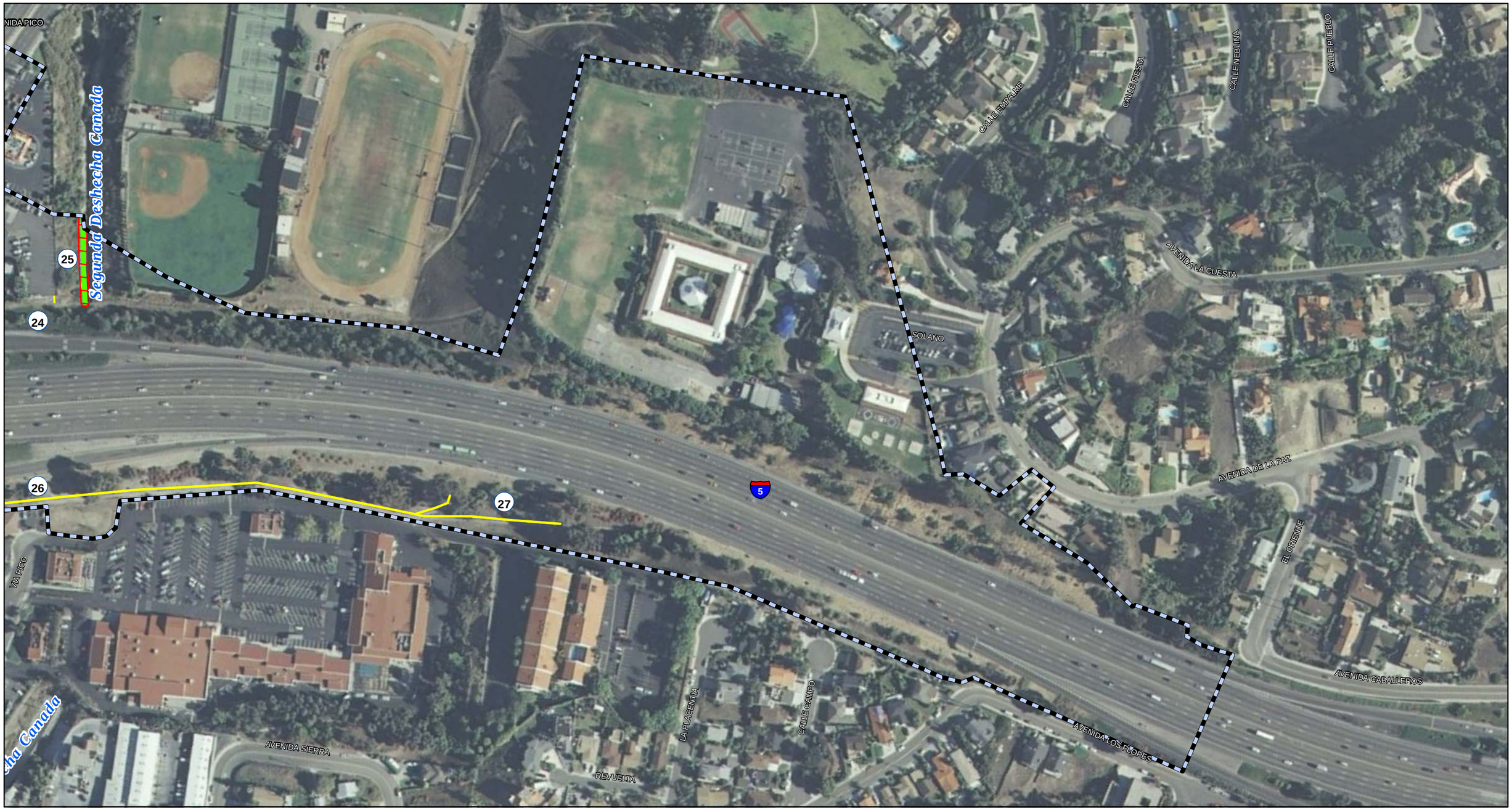
I-5 HOV Lane Extension Project
Potential Jurisdictional Areas

12-ORA-005 PM 3.0/8.7
EA# 0F9600



LEGEND

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- Soil Pit
- Non-Jurisdictional Riparian Habitat
- Potential CDFG Jurisdictional Area

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- Potential Non-Jurisdictional Area

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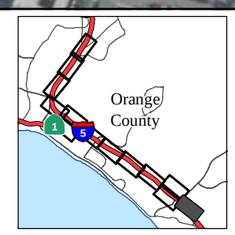

APPENDIX A
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I-5 HOV Lane Extension Project

Potential Jurisdictional Areas

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EA# 0F9600

APPENDIX B

ANALYSIS OF FUNCTIONS AND VALUES OF WETLANDS AND OTHER WATERS

APPENDIX B

ANALYSIS OF FUNCTIONS AND VALUES OF WETLANDS AND OTHER WATERS

The following is a qualitative assessment of the functions and values attributable to the identified wetlands and other potential jurisdictional waters in the biological study area (BSA). All wetlands and other waters have some degree of functionality, and no single wetland can perform all the functions considered below. The following functions are analyzed at low, moderate, or high value levels. Each individual drainage is analyzed in Table B-1 based on the criteria outlined below.

Hydrologic Regime. This function is the ability of a wetland or stream to absorb and store water belowground. The degree of this saturation is dependent on the soil composition and is affected by prior flooding events. For example, clay soils possess more pore space than sandy soils. However, the smaller pore size slows the rate at which water is absorbed and released; therefore, clay soil has a lower capacity to store water than sandy soils. The storage of water belowground allows for the fluctuation between anaerobic and aerobic conditions that benefit environmental conditions necessary for microbial cycling.

Flood Storage and Flood Flow Modification. This function is determined based on the ability of a wetland or stream at which the peak flow in a watershed can be attenuated during major storm events and during peak domestic flows to take in surface water that may otherwise cause flooding. This is dependent on the size of the wetland or stream, the amount of water it can hold, and the location in the watershed. For instance, larger wetlands or streams that have a greater capacity to receive waters have a greater ability to reduce flooding. In addition, areas high in the watershed may have more ability to reduce flooding in downstream areas, but areas lower in the watershed may have greater benefits to a specific area. Vegetation, shape, and the configuration of the wetland or stream may also affect flood storage by dissipating the energy of flows during flood events.

Sediment Retention. Removal of sediment is the process that keeps sediments from migrating downstream. This is accomplished through the natural process of sediment retention and entrapment. This function is dependent on the sediment load being delivered by runoff into the watershed. Similar to above, the vegetation, shape, and configuration of a wetland will also affect sediment retention if water is detained for long durations, as would be the case with dense vegetation, a bowl-shaped watershed, or slow-moving water. This function would be demonstrated (i.e., high) if the turbidity of the incoming water is greater than that of the outgoing water.

Table B-1: Functions and Values of Drainages within the Study Area

Drainage Number	Hydrologic Regime	Flood Storage and Flood Flow Modification	Sediment Retention	Nutrient Retention and Transformation	Toxicant Trapping	Social Significance	Wildlife Habitat	Aquatic Habitat
1	High	High	High	High	High	Low	Moderate	Low
2	Low	Low	Low	Low	Low	Low	Low	Low
3	Low	Low	Low	Low	Low	Low	Low	Low
4	Low	Low	Low	Low	Low	Low	Low	Low
5	Low	Low	Low	Low	Low	Low	Low	Low
6	Low	Low	Low	Low	Low	Low	Low	Low
7	Low	Low	Low	Low	Low	Low	Low	Low
8	Low	Low	Low	Low	Low	Low	Low	Low
9	Low	Low	Low	Low	Low	Low	Low	Low
10	Low	Low	Low	Low	Low	Low	Low	Low
11	Low	Low	Low	Low	Low	Low	Low	Low
12	Low	Low	Low	Low	Low	Low	Low	Low
13a	Low	Low	Low	Low	Low	Low	Low	Low
13b	High	High	High	High	High	Moderate	High	Low
14 (Prima Deshecha Cañada)	Low	Low	Low	Low	Low	Low	Low	Low
15	Low	Low	Low	Low	Low	Low	Low	Low
16	Low	Low	Low	Low	Low	Low	Low	Low
17	Low	Low	Low	Low	Low	Low	Low	Low
18	Low	Low	Low	Low	Low	Low	Low	Low
19	Low	Low	Low	Low	Low	Low	Low	Low
20	High	High	High	Low	Moderate	Low	Moderate	Low
21 (Cascadita Creek)	High	High	High	High	High	Moderate	High	High
22	Low	Low	Low	Low	Low	Low	Low	Low
23	Low	Low	Low	Low	Low	Low	Low	Low
24	Low	Low	Low	Low	Low	Low	Low	Low
25 (Segunda Deshecha Cañada)	Low	Low	Low	Low	Low	Low	Low	Low
26	Low	Low	Low	Low	Low	Low	Low	Low
27	Low	Low	Low	Low	Low	Low	Low	Low

Nutrient Retention and Transformation. Nutrient cycling consists of two variables: uptake of nutrients by plants and detritus turnover, in which nutrients are released for uptake by plants downstream. Wetland systems in general are much more productive with regard to nutrients than upland habitats. The regular availability of water associated with the wetland or stream may cause the growth of plants (nutrient uptake) and associated detritivores and generate nutrients that may be utilized by a variety of aquatic and terrestrial wildlife downstream.

Toxicant Trapping. The major processes by which wetlands remove nutrients and toxicants are by trapping sediments rich in nutrients and toxicants, by absorption to soils high in clay content or organic matter, and through nitrification and denitrification in alternating oxic and anoxic conditions. Removal of nutrients and toxicants is closely tied to the processes that provide for sediment removal.

Social Significance. This is a measure of the probability that a wetland or stream will be used by the public because of its natural features, economic value, official status, and/or location. This includes its being used by the public for recreational uses, such as boating, fishing, birding, walking, and other passive recreational activities. A wetland or stream that is used as an outdoor classroom, is a location for scientific study, or is near a nature center would have a higher social significance standing.

Wildlife Habitat. General habitat suitability is the ability of a wetland to provide habitat for a wide range of wildlife. Vegetation is a large component of wildlife habitat. As plant community diversity increases along with connectivity with other habitats, so does potential wildlife diversity. In addition, a variety of open water, intermittent ponding, and perennial ponding is also an important habitat element for wildlife.

Aquatic Habitat. The ability of a wetland or stream to support aquatic species requires that there be ample food supply, pool and riffle complexes, and sufficient soil substrate. Food supply is typically in the form of aquatic invertebrates and detrital matter from nearby vegetation. Pool and riffle complexes provide a variety of habitats for species diversity as well as habitat for breeding and rearing activities. Species diversity is directly related to the complexity of the habitat structure.

APPENDIX C

REPRESENTATIVE SITE PHOTOS

Representative vegetation present along Drainage 1.

Representative concrete pipe conveying flow from Drainage 1.

Representative box culvert conveying flow from Drainage 1.

Soil pit within cat-tails at Drainage 1 that does not display characteristics of hydric soils.

APPENDIX C
1 of 3
I-5 HOV Lane Extension Project

Representative Site Photos
12-ORA-5 PM 3.0/8.7
EA #0F9600

Drainage 12 - Representative of concrete trapezoidal channels in the BSA.

Drainage 14 - Prima Deshecha Cañada

Drainage 24 - Representative of concrete v-ditches in the BSA.

Drainage 25 - Segunda Deshecha Cañada

Drainage 17 outlet of concrete channel displaying continuous flow.

Drainage 20 dominated by pampas grass.

Representative soil pit at Drainage 20 displaying characteristics of hydric soils.

Flows from Drainage 20 exit the basin through a stand pipe.

APPENDIX D

WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Clemente/Orange Sampling Date: 11/30/09
Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: Pit 1/WP7
Investigator(s): Nicole West, Ingri Quon Section, Township, Range:
Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): none Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis (arroyo willow)	30	yes	FACW
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20'x20')			
1. Cortaderia selloana (pampas grass)	10	yes	UPL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species 30	x 2 = 60
FAC species	x 3 =
FACU species	x 4 =
UPL species 10	x 5 = 50
Column Totals: 40 (A)	110 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: Pit 1/WP7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/2	95	5YR 5/8	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Redox concentrations prominent

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0-14

Wetland Hydrology Present? Yes X No ___

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

Remarks:

After ~ 30 min the 14 inch hole filled with 4" of water

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Clemente/Orange Sampling Date: 11/30/09
Applicant/Owner: OCTA/Caltrans State: _____ Sampling Point: Pit 2/UP6
Investigator(s): Nicole West, Ingrid Section, Township, Range: _____
Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): none Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10'x10')			
1. Cortaderia selloana (pampas grass)	50	Yes	UPL
2.			
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Unknown grass (necratic)	30		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species 50	x 5 = 250
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: Pit 2, WP6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/1	30	7.5YR 5/8	5	C	M	silty clay loam	
0-14	10YR 4/3	65	7.5YR 5/8	5	C	M	"	"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): pit filled with water

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Bottom of pit filled with water (3" deep) after ~20 min

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Clemente/Orange Sampling Date: 11/30/09

Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: Pit 3/WP5

Investigator(s): Nicole West, Ingri Quon Section, Township, Range: _____

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

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
No surface moisture

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10'x10')			
1. Baccharis pilularis (coyote bush)	10	No	UPL
2. Cortaderia selloana (pampas grass)	10	No	UPL
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Unknown grass (necrotic)	90	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species 20	x 5 =	100
Column Totals: 20 (A)		100 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
Pit outside primary pampas grass area in grassy open area

SOIL

Sampling Point: Pit 3/WP5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 4/3	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Dry

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Juan Capistrano/Orange Sampling Date: 12/1/09
Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: Pit 4 / WP12
Investigator(s): Nicole West, Ingri Quon Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes X No	

Remarks:
South end of Cap. School Dist. Drainage

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' x 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis (arroyo willow)	15	Yes	FACW
2. Salix goodingii (black willow)	15	Yes	OBL
3.			
4.			
	30	= Total Cover	

Sapling/Shrub Stratum (Plot size: 30' x 30')			
1. Baccharis salicifolia (mulefat)	30	Yes	FACW
2. Typha Sp. (cattail)	25	Yes	OBL
3.			
4.			
5.			
	55	= Total Cover	

Herb Stratum (Plot size: 30 x 30')			
1. Cyperus eragrostis (umbrella sedge)	<5	NO	FACW
2. Cynodon dactylon (bermuda grass)	5	NO	FAC
3. Xanthium strumarium (cocklebur)	<1	No	FAC+
4. Rumex crispus	<1	No	FACW-
5. Conium maculatum (hemlock)	<1	No	FACW
6. Pulicaria paludosa (Spanish sunflower)	<1	No	UPL
7.			
8.			
	14	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum <5 % Cover of Biotic Crust

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:
Dense vegetation but narrow

SOIL

Sampling Point: Pit 4/WP 12

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	4/2 2.5Y	95					silty clay loam	
0-2	2/1 10YR	5						
2-14	3/1 2.5Y	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- X Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0-14"

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

12/11/09

Project/Site: I-5 HOV City/County: San Juan Capistrano/Orange Sampling Date: Pit 5/WP13

Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: _____

Investigator(s): Nicole West, Ingri Quon Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' X 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis (arroyo willow)	20	Yes	FACW
2. Salix gooddingii (black willow)	20	Yes	FACW
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' X 10')			
1. Baccharis salicifolia (mulefat)	20	Yes	FACW
2. Typha sp. (cattail)	30	Yes	OBL
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 10' X 10')			
1. Cyperus eragrostis (umbrella sedge)	2	No	FACW
2. Pulicaria paludosa (Spanish sunflower)	2	No	UPL
3. Rumex crispus	2	No	FACW-
4.			
5.			
6.			
7.			
8.			
	6	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 4 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Dense vegetation but narrow

SOIL

Sampling Point: Pit 5/WP13

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 4/2	80	10YR 6/6	15	C	PL, M	silty clay loam	
0-14	2.5Y 3/2	5	10YR 6/6	15	C	PL, M	" "	"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

redox along roots
redox is prominent
Has depleted matrix

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- X Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 0-14"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Juan Capistrano/Orange Sampling Date: 12/1/09
Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: Pit 6 / UP16
Investigator(s): Nicole West, Ingri Quan Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix laevigata (red willow)	5	No	FACW
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10'x10')			
1. Typha sp. (cattail)	30	Yes	OBL
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. Pulicaria paludosa (Spanish fleabane)	40	Yes	UPL
2. Cyperus eragrostis (umbrella sedge)	5	No	FACW
3. Cynodon dactylon (bermudagrass)	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: Pit 6 / WP 16

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	2.5 Y 4/3	100					silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- X Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 6-7" bgs filled w/ water

Wetland Hydrology Present? Yes X No _____

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

Remarks:

14" pit filled w/ 7-8" water

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Juan Capistrano Sampling Date: 12/1/09
Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: Pit 7, WP 20
Investigator(s): Nicole West, Engri Quon Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix laevigata (red willow)	10	No	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Typha sp. (cattail)	80	Yes	OBL
2. Tamarisk Ramosissima	10	No	Fac
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: Pit 7, WP20

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	2.5 Y 2.5/1	80					Silty clay loam	
0-14	Gley 1 2.5/N	10					"	" "
0-14	10 YR 4/3	10					"	" "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Slight hydrogen sulfide smell

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- X Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0-14"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Clemente/Orange Sampling Date: 12/18/09
Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: PIT 8/WP1
Investigator(s): Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: drainage due to broken irrigation pipe

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10x10ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Schinus molle (Peruvian pepper)	50	yes	UPL
2.			
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10ft)			
1. Limonium sp. (status)	30	yes	OBL
2. Baccharis pilularis (coyote bush)	5	no	UPL
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot size: 10x10 ft)			
1. Rumex crispus	15	No	FACW-
2. Polypogon monspeliensis	5	No	FACW+
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 30	x 1 = 30
FACW species 20	x 2 = 40
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 55	x 5 = 275
Column Totals: 95 (A)	345 (B)

Prevalence Index = B/A = 363

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: Pit 8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	2.5Y 3/1	90					silty clay	
6-10	10YR 4/4	10					sandy loam	
12-14	10YR 4/4	100					sandy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Not depleted matrix
NO redox

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Clemente/Orange Sampling Date: 12/18/09
Applicant/Owner: OCTA/Caltrans State: CA Sampling Point: Pit 9/WP2
Investigator(s): Nicole West, Ingri Quon Section, Township, Range: _____
Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis (arroyo willow)	10	No	FACW
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10'x10')			
1. Cortaderia selloana (pampas grass)	15	Yes	UPL
2. Baccharis pilularis (coyote bush)	5	Yes	UPL
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 10'x10')			
1. unknown grass (necrotic)	20	Yes	
2. Picris echioides (ox tongue)	5	No	FAC*
3.			
4.			
5.			
6.			
7.			
8.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 10	x 2 = 20
FAC species 5	x 3 = 15
FACU species _____	x 4 = _____
UPL species 20	x 5 = 100
Column Totals: 35 (A)	135 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: Pit 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 4/2	95	7.5Y 3/4	5	C	M	silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: not gleyed, reduced prominant redox → depleted matrix

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

soil moist, not saturated

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-5 HOV City/County: San Clemente, Orange Sampling Date: 12/16/09

Applicant/Owner: OCTA, Caltrans State: CA Sampling Point: Pit 10/WP3

Investigator(s): Section, Township, Range:

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. Cortaderia selloana (pampas grass)	45	Yes	UPL
2. Eleocharis montevidensis (sand spikerush)	50	Yes	FACW
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Pluchea odorata	5	No	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0 = Total Cover		

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 50	x 2 =	100
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 45	x 5 =	225
Column Totals: 95 (A)		325 (B)

Prevalence Index = B/A = 3.42

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: Pit 10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 4/2	95					clay	
0-14			7.5YR 5/8	2	C	PL		
0-14			7.5YR 5/6	3	C	PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks: redox along roots + matrix
not gleyed
redox prominent
depleted matrix

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

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

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 0-14

Wetland Hydrology Present? Yes X No ____

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

Remarks: