Initial Study - Appendix C

JURISDICTIONAL DELINEATION REPORT

HELIX Environmental Planning

Bayshore Bikeway Segment 8B Project

Jurisdictional Delineation Report

Federal Project No. RPSTPLE-6066(102)

May 19, 2016

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Bayshore Bikeway Segment 8B Project
Jurisdictional Delineation Report

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I. INTRODUCTION

This report presents the results of a formal jurisdictional delineation performed by HELIX Environmental Planning, Inc. (HELIX) for the Bayshore Bikeway Segment 8B project (project) located in the Cities of San Diego and Chula Vista, San Diego County, California. The delineation was conducted to identify and map existing wetland and water resources potentially subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344), Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA, California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 et seq. of the California Fish and Game Code, and California Coastal Commission (CCC) pursuant to the California Coastal Act. This information is necessary to evaluate jurisdictional impacts and permit requirements associated with the proposed project.

This report presents HELIX's best efforts to quantify the extent of potential Waters of the U.S. (WUS), CDFW jurisdictional areas, and CCC wetlands within the study area using the current regulations, written policies, and guidance from the regulatory agencies. Only the USACE, RWQCB, CDFW, and CCC can make a final determination of jurisdictional boundaries.

A. PROJECT DESCRIPTION

The San Diego Association of Governments (SANDAG) proposes to construct a Class I bikeway facility in the south San Diego Bay area. The proposed Class I facility, which is a path that provides a separated right-of-way for the exclusive use of people walking and riding bikes, is a portion of Segment 8B of the Bayshore Bikeway as described in the *Bayshore Bikeway Plan* dated March 17, 2006. The bikeway would extend a distance of approximately 0.25 mile adjacent to Bay Boulevard between Palomar Street in the City of Chula Vista and the main entrance to the South Bay Salt Works facility in the City of San Diego. The proposed project would help close the gap between two existing Class I facilities, Bayshore Bikeway Segment 8A and Bayshore Bikeway Segment 9, and would contribute to the vision of implementing the Bayshore Bikeway, which consists of a 24-mile regional bicycle facility around San Diego Bay to provide more transportation options and a scenic connection to employment centers, recreation facilities, and tourist destinations along the Bayfront.

The proposed project would extend southward along Bay Boulevard from Palomar Street over an existing drainage ditch near Palomar Street and continue over the drainage ditch adjacent to Bay Boulevard and just east of inactive railroad tracks previously part of the Coronado Belt Line to the main driveway of the South Bay Salt Works facility. The proposed bikeway would include an eight-foot-wide bike path with two to three-foot-wide shoulders. The bike path would cross over the drainage ditch near Palomar Street on a bridge structure. From Palomar Street to Ada Street, the bike path would be constructed as a cantilevered deck over the western side of the existing drainage ditch that runs adjacent to the west side of Bay Boulevard. South of Ada Street, the bike path would be constructed at grade on disturbed land. Additional improvements would include installation of a new storm drain inlet and culvert just north of Palomar Street, curb and gutter, chain link fencing along the west side of the bike path, railing along the east side of the deck, lighting, minor grading, bike lane striping, utilities improvements and relocations, and other improvements as required by the cities of San Diego and Chula Vista and SANDAG.

To accommodate the proposed bike path, acquisition of a portion of one narrow, linear, privately owned parcel adjacent to the west side of Bay Boulevard would be required. This property is mostly undeveloped and contains a vegetated drainage ditch, utility poles and overhead electrical power lines, and disturbed areas between Bay Boulevard and San Diego and Arizona Eastern railroad right-of-way.

Construction of the project is estimated to occur in 2017 and take approximately seven months to complete. Staging is anticipated to occur on vacant property on the east side of Bay Boulevard between Stella Street and Ada Street. Construction access would be provided via Bay Boulevard.

B. SITE DESCRIPTION

The project site is generally located in the southwestern portion of San Diego County (Figure 1). More specifically, the 6.86-acre study area lies west of Interstate 5, extending from Palomar Street to just south of the main entrance to the South Bay Salt Works facility in the Cities of San Diego and Chula Vista (Figure 2). The study area occupies a portion of Section 16 within Township 18 South, Range 2 West of the U.S. Geological Survey (USGS) 7.5-minute Imperial Beach quadrangle (Figure 3).

The study area consists of an approximately 135-foot-wide corridor along Bay Boulevard from Palomar Street to just past the main entrance to the South Bay Salt Works facility. The biological study area contains developed land, including the Bay Boulevard roadway, South Bay Salt Works, and frontages of commercial properties; disturbed land on vacant properties, and portions of the South Bay Salt Works; unnamed vegetated drainage ditches, an inactive railroad corridor that was previously part of the Coronado Belt Line, and utility poles and overhead electrical power lines (Figure 4).

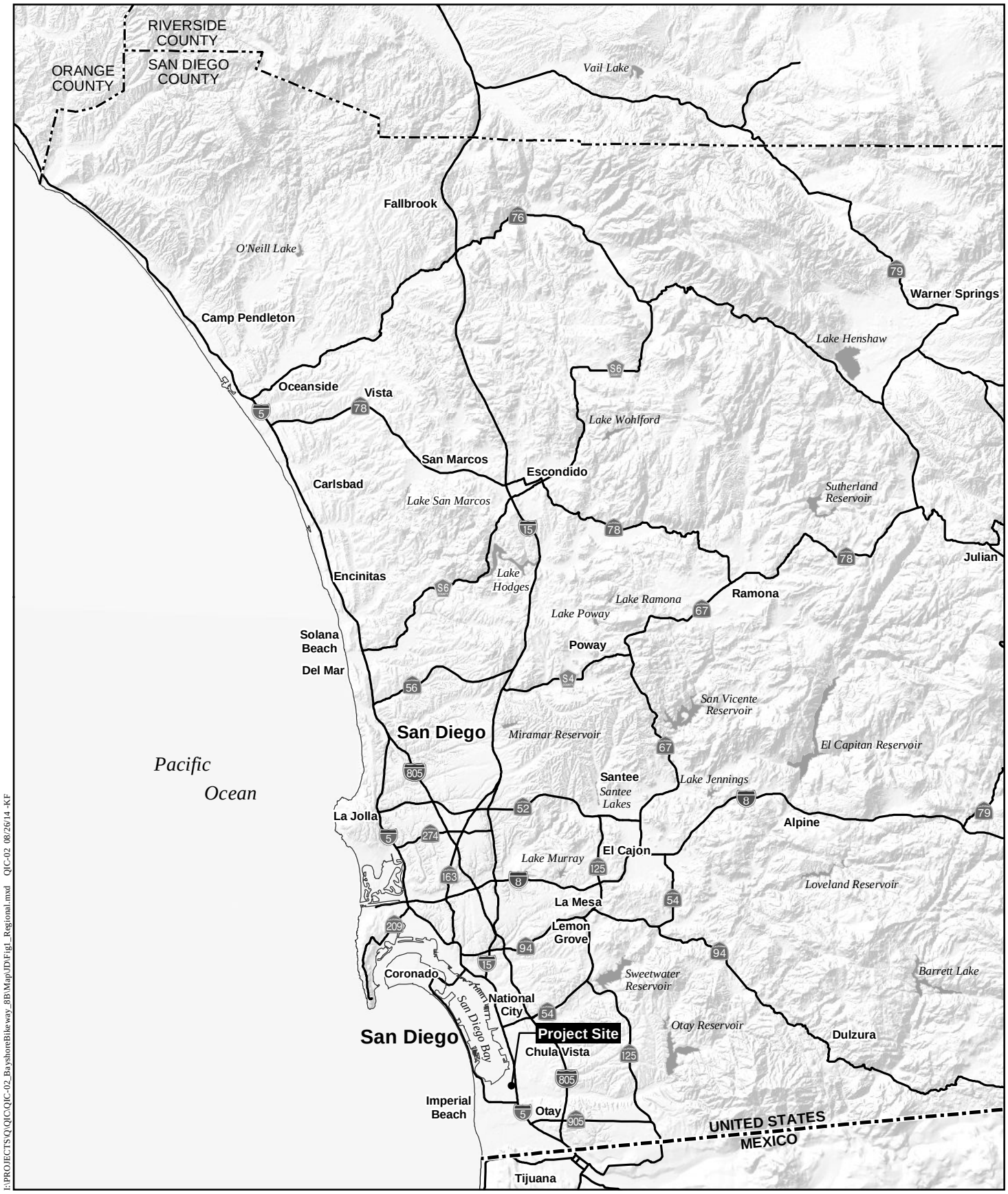
Surrounding land uses consist of commercial, industrial, and residential lands to the north and east of the study area, salt evaporation ponds and salt works processing facilities and an inactive railroad corridor to the west, and salt evaporation ponds and commercial, industrial, and residential lands to the south.

The study area is within the Otay Valley Hydrologic Area of the Otay Hydrologic Unit. Topography within the study area is relatively flat, with elevations ranging from approximately four to 30 feet above mean sea level. A total of two soil types are mapped within the study area (Table 1; Figure 5 [Bowman 1973]).

Table 1
SOIL TYPES MAPPED IN THE STUDY AREA*

MAP SYMBOL	MAP UNIT NAME	ACREAGE
HrC2	Huerhuero loam, 5 to 9 percent slopes, eroded:	6.0
W	Water	0.7

*Pursuant to the Natural Resources Conservation Service (NRCS) Soil Survey (Bowman 1973).



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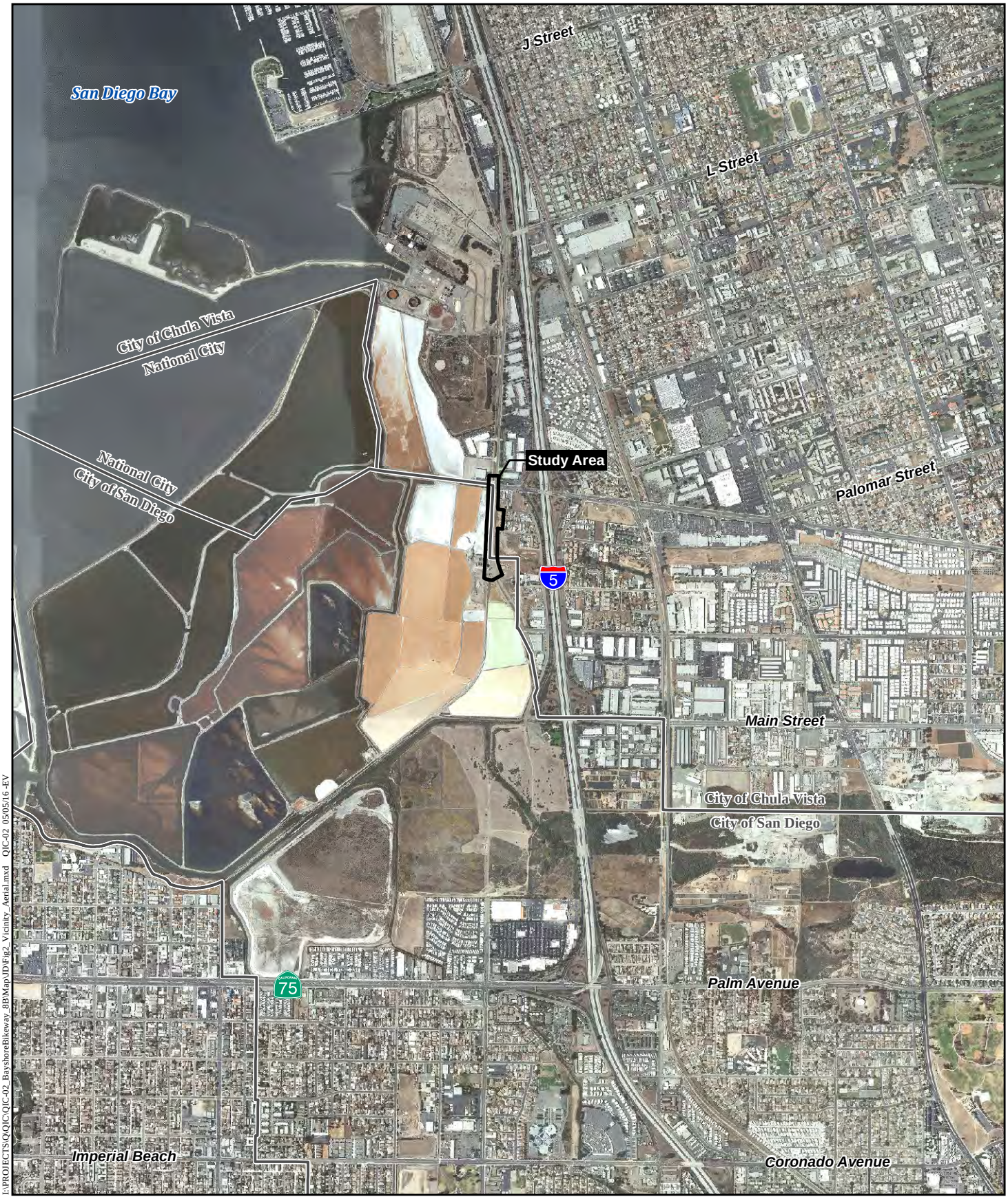
Regional Location Map

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

N 0 8 Miles

Figure 1



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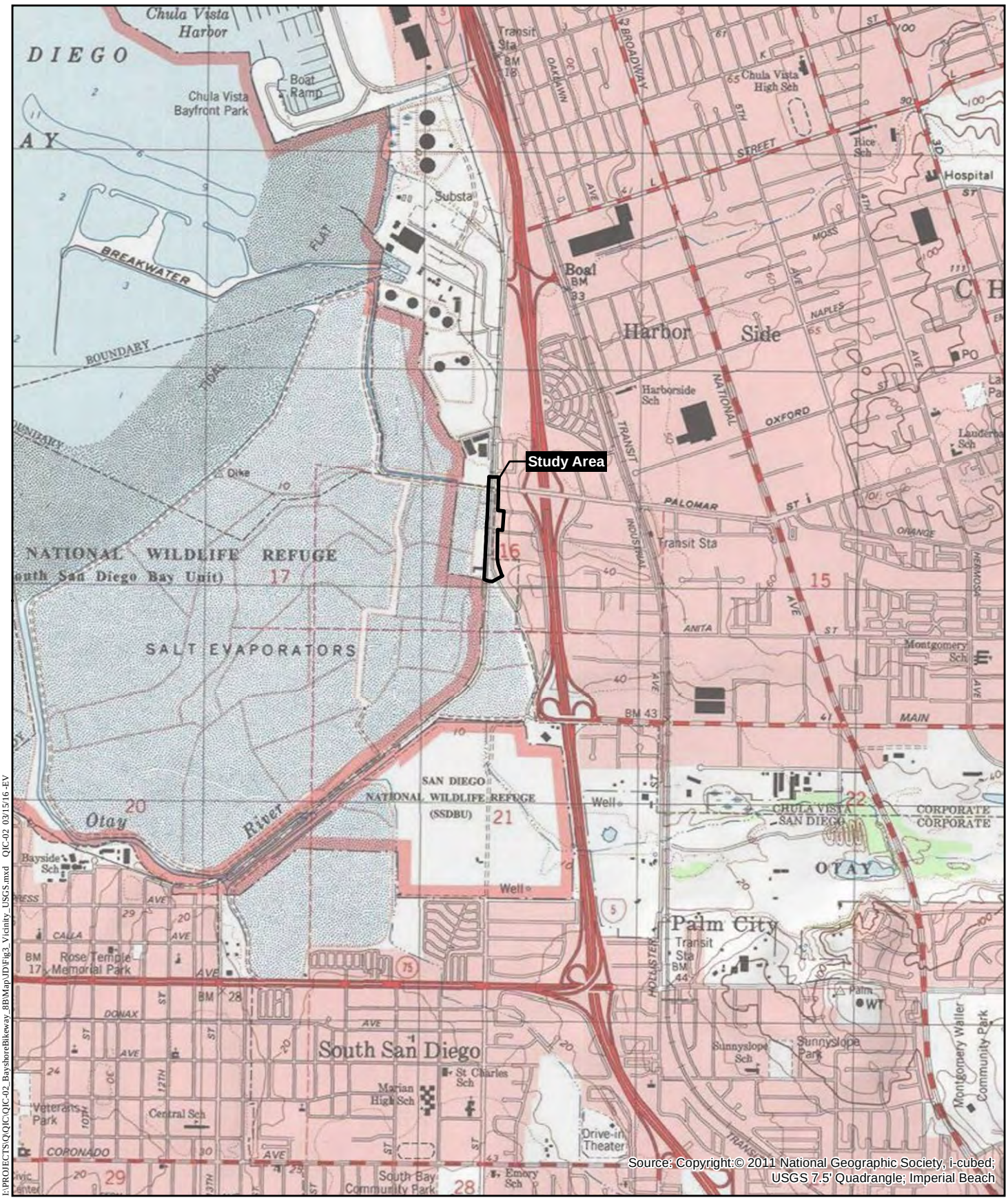
Project Vicinity Map (Aerial Photograph)

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

N 0 2,000 Feet

Figure 2



Source: Copyright:© 2011 National Geographic Society, i-cubed; USGS 7.5' Quadrangle; Imperial Beach

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Project Vicinity Map (USGS Topography)

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

N 0 2,000 Feet

Figure 3

Study Area
Coastal Brackish Marsh
Freshwater Marsh
Herbaceous Wetland
Open Water
Non-native Grassland
Ornamental
Disturbed Habitat
Developed Land

Note: Vegetation community mapping revised from LSA 2013.

Bay Boulevard
Palomar Street
Stella Street
Ada Street
Dorothy Street

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Vegetation

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

N 0 120 Feet

Figure 4

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Soils

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

N 0 120 Feet

Figure 5

II. METHODS

Prior to beginning fieldwork, aerial photographs (1"=100' scale), the local soil survey, USGS quadrangle maps, and previously collected jurisdictional delineation data (LSA 2013) were reviewed to determine the location of potential jurisdictional areas that may be affected by the project. HELIX biologists Stacy Nigro and Laura Moreton conducted a formal jurisdictional delineation and collected data in the study area on July 30, 2014, as well as in an expanded study area that was subsequently removed from the project (a bike path was previously proposed to extend to Main Street to connect with the existing Bayshore Bikeway Segment 9).

A. U.S. ARMY CORPS OF ENGINEERS (USACE)/WATERS OF THE U.S.

Potential USACE wetland boundaries were determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Regional Supplement (USACE 2008a). Other references included memoranda (USACE 2007; Grumbles and Woodley 2007) that help clarify the wetland manual and recent court decisions.

The results presented here are also consistent with recent court decisions, as outlined and applied by the USACE (USACE 2007; Grumbles and Woodley 2007) and Environmental Protection Agency (EPA; 2007). These publications explain that the EPA and USACE will assert jurisdiction over traditional navigable waters (TNW) and tributaries to TNWs that are a relatively permanent water body (RPW), which has year-round or continuous seasonal flow. For water bodies that are not RPWs, a significant nexus evaluation is used to determine if the non-RPW is jurisdictional. As an alternative to the significant nexus evaluation process, a preliminary jurisdictional delineation (PJD) may be submitted to the USACE. The PJD treats all waters and wetlands on a site as if they are jurisdictional WUS (USACE 2008b). An overview of USACE wetlands and jurisdictional WUS definitions is presented in Appendix A.

Plants were identified according to The Jepson Manual: Vascular Plants of California (Baldwin et al. [2012]). Wetland affiliations of plant species follow the National Wetland Plant List (Lichvar et al 2014). Soils information was taken from the U.S. Department of Agriculture's (USDA's) Web Soil Survey (NRCS 2013) and Bowman (1973). Soil chromas were identified according to Munsell's Soil Color Charts (Kollmorgen 1994).

A total of two wetland delineation sampling points were taken in the study area in locations representative of potentially jurisdictional areas. Soil pits were excavated at one of the two sampling points. The sampling point where a soil pit was not excavated was completely inundated with standing water. The soil pit was excavated to a depth of 12 inches, which is the maximum depth used in the USACE's descriptions of hydric soil indicators. Soil samples were evaluated for hydric soil indicators (e.g., hydrogen sulfide [A4], sandy redox [S5], depleted matrix [F3], redox dark surface [F6], and redox depressions [F8]). Sampling points also were inspected for primary wetland hydrology indicators (e.g., surface water [A1], saturation [A3], water marks [non-riverine, B1], sediment deposits [non-riverine, B2], drift deposits [non-riverine, B3], surface soil cracks [B6], inundation visible on aerial imagery [B7], salt crust

[B11], aquatic invertebrates [B13], hydrogen sulfide odor [C1], and oxidized rhizospheres along living roots [C3]) and secondary (e.g., water marks [riverine, B1], sediment deposits [riverine, B2], drift deposits [riverine, B3], drainage patterns in wetlands [B10], shallow aquitard [D3], and positive FAC neutral test [D5]).

Areas were determined to be potential non-wetland WUS if there was evidence of regular surface flow (e.g., bed and bank) but either the vegetation or soils criterion was not met. Jurisdictional limits for these areas were defined by the ordinary high water mark (OHWM), which is defined in 33 CFR Section 329.11 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 the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas."

The USACE jurisdictional areas were further divided into tidal and non-tidal WUS, as impact limits for linear transportation projects are less for tidal waters than for non-tidal waters. The determination of tidal waters versus non-tidal waters was based on a review of high tide elevations, channel elevations, channel locations, site observations, and representative plant species present. Because of their proximity to San Diego Bay, WUS within the study area were considered tidal if they have a bottom elevation equal to or lower than mean high tide elevations for the area, support coastal brackish marsh, or displayed evidence of water backing up from downstream tidal areas.

Standard USACE wetland delineation data forms were completed for each sampling point in the field and are included in Appendix C. Photographs taken of the sampling points and study area are included in Appendix D.

B. CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW)

Potential CDFW jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within potential CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). Riparian habitat is not defined in Title 14, but the section refers to vegetation and habitat associated with a stream. The CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream. Definitions of CDFW jurisdictional areas are presented in Appendix B (Section II).

C. CALIFORNIA COASTAL COMMISSION (CCC)

Potential CCC jurisdictional boundaries (i.e., coastal streams and wetlands) were determined based on the "one-parameter" definition which only requires evidence of a single parameter to establish wetland conditions: "Wetland shall be 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, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate."

III. RESULTS AND DISCUSSION

A. PRESENCE OF WETLAND INDICATORS

1. Hydrophytic Vegetation

Hydrophytic vegetation is present in portions of the potential jurisdictional areas in the study area. Characteristic hydrophytic species observed included pickleweed (*Salicornia pacifica*), saltmarsh bulrush (*Bolboschoenus maritimus* ssp. *paludosus*), cattail (*Typha* sp.), California bulrush (*Schoenoplectus californicus*), and curly dock (*Rumex crispus*). Plant species observed within the sampling points are presented in Table 2, along with their wetland indicator status.

Table 2
PLANT SPECIES OBSERVED WITHIN THE WETLAND DELINEATION SAMPLING POINTS

SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS†
Ambrosia psilostachya	western ragweed	FACU
Bolboschoenus maritimus ssp. *paludosus*	saltmarsh bulrush	OBL
Cyperus eragrostis	flat sedge	FACW
Elymus triticoides	creeping wild rye	FAC
Euthamia occidentalis	western goldenrod	FACW
Festuca perennis‡	ryegrass	FAC
Polypogon monspeliensis‡	annual beardgrass	FACW
Rumex crispus‡	curly dock	FAC
Schoenoplectus californicus	California bulrush	OBL
Typha sp.	cattail	OBL

†OBL=obligate wetland species, FACW=facultative wetland species, FAC=facultative species, FACU=facultative upland species. Please see Appendix A for further explanation of indicator status. Pursuant to Lichvar et al (2014).
‡Non-native species.

2. Wetland Hydrology

The following wetland hydrology indicators, as defined by the USACE (USACE 2008a), were observed in jurisdictional areas in the study area: surface water, water-stained leaves, and FAC-neutral test.

3. Hydric Soil

Redox dark surface was the only hydric soil indicator, as defined by the USACE (USACE 2008a), observed in portions of the jurisdictional areas within the study area.

B. DESCRIPTION OF JURISDICTIONAL HABITATS

Potential jurisdictional resources within the study area occur as a series of earthen ditches comprising an unnamed drainage with multiple reaches connected by culverts (referred to herein as Drainages 1A-1E). Potential jurisdictional habitats observed include coastal brackish marsh, freshwater marsh, herbaceous wetland, open water, and unvegetated streambed. Depictions of potential WUS, CDFW jurisdictional habitat, and CCC wetlands within the study area are presented in Figures 6, 7, and 8, respectively.

Climatic conditions and hydrologic conditions within the study area were typical for the time of year and normal circumstances were present. Vegetation, soil, and hydrology were not found to be significantly disturbed or naturally problematic (i.e., periodically lacking indicators of hydrophytic vegetation, hydric soil, or wetland hydrology due to normal seasonal or annual variability). All potential non-wetland WUS displayed evidence of a consistent OHWM and discernible streambed and bank. Based on a review of aerial imagery and topographic maps, all drainages within the study area are presumed to have downstream connectivity to San Diego Bay, and ultimately the Pacific Ocean.

1. Coastal Brackish Marsh

Coastal brackish marsh is the dominant wetland vegetation community within the study area, occurring along several drainage reaches, including Drainages 1A, 1D, and 1E. Pickleweed is the most common species present, with lesser coverage by saltmarsh bulrush, saltmarsh fleabane (*Pluchea odorata*), flat sedge, spearscale (*Atriplex prostrata*), California bulrush, cocklebur (*Xanthium strumarium*), five-hook bassia (*Bassia hyssopifolia*), and castor-bean (*Ricinus communis*). This habitat is potential CDFW and CCC wetland, and the lower elevation portions are potential USACE wetland.

2. Freshwater Marsh

Freshwater marsh occurs within Drainage 1C, consisting of a single stand of cattail with scattered flat sedge (*Cyperus eragrostis*). This habitat is potential USACE, CDFW, and CCC wetland.

3. Herbaceous Wetland

Herbaceous wetland within the study area occurs in portions of Drainages 1B and 1C. Species observed include creeping wild rye (*Elymus triticoides*), cattail, curly dock, and flat sedge. This habitat is potential USACE, CDFW, and CCC wetland.

Study Area
Photo Location
Sampling Point
Culvert

Wetlands

Coastal Brackish Marsh
Freshwater Marsh
Herbaceous Wetland
Herbaceous Wetland (width in feet)

Non-wetland Waters

Open Water
Non-wetland Waters of the U.S. (width in feet)

Note: Jurisdictional habitat mapping revised from LSA 2013.

Bay Boulevard
Palomar Street
Stella Street
Ada Street
Dorothy
1A
1B
1C
1D
1E
2'
3'
SP1
SP2
1
2
3

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USACE Jurisdictional Areas

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

0 120 Feet

Figure 6

Study Area
Photo Location
Sampling Point
Culvert
Coastal Brackish Marsh
Freshwater Marsh
Herbaceous Wetland
Open Water
Streambed
Herbaceous Wetland (width in feet)
Streambed (width in feet)

Note: Jurisdictional habitat mapping revised from LSA 2013.

Bay Boulevard
Palomar Street
Stella Street
Ada Street
Dorothy Street
1A
1E
1D
1B
1C
3'
3'
4'
SP1
SP2
1
2
3

I:\PROJECTS\Q\QIC\QIC-02_BayshoreBikeway_8B\Map\JDFig7_State.mxd QIC-02 05/05/16 -EV

CDFW Jurisdictional Areas

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

N 0 120 Feet

Figure 7

Study Area
Photo Location
Sampling Point
Culvert
Coastal Brackish Marsh
Freshwater Marsh
Herbaceous Wetland
Open Water
Streambed
Herbaceous Wetland (width in feet)
Streambed (width in feet)

Note: Jurisdictional habitat mapping revised from LSA 2013.

Bay Boulevard
Palomar Street
Stella Street
Ada Street
Dorothy Street
1A
1E
1D
1B
1C
3'
3'
4'
SP1
SP2
1
2
3

I:\PROJECTS\Q\QIC\QIC-02_BayshoreBikeway_8B\Map\JDFig8_CCC-.mxd QIC-02 05/19/16 -EV

California Coastal Commission Jurisdictional Areas

BAYSHORE BIKEWAY SEGMENT 8B

HELIX Environmental Planning

N 0 120 Feet

Figure 8

4. Open Water

Areas designated as open water within the study area consist of portions of drainages that lack vegetation and have standing water for all or portions of the year. This community type is found along portions of Drainages 1C, 1D, and 1E, and is interspersed with coastal brackish marsh, freshwater marsh, and herbaceous wetland. Open water within the study area is potential USACE, CDFW, and CCC wetland.

5. Streambed

Streambed within the study area consists of drainages characterized by upland vegetation (i.e., portions of Drainage 1B) and disturbed banks occurring upslope of wetland vegetation (i.e., portions of Drainages 1A, 1C, 1D, and 1E). Streambed within the study area is potential USACE, CDFW, and CCC jurisdiction.

C. SAMPLING POINTS

Below is a summary of the two wetland delineation sampling points taken in the study area.

1. Sampling Point 1

This sampling point was located in freshwater marsh along Drainage 1C (Figures 6, 7, and 8). Cattail, a wetland plant, was the only dominant species present, thus meeting the USACE's wetland vegetation criterion. A soil pit was not excavated as the area was inundated. Hydric soil was assumed present based on dominance by obligate vegetation combined with extended periods of inundation and an abrupt wetland edge. Wetland hydrology was indicated by one primary indicator (surface water [A1]). This sampling point met all three of the USACE wetland criteria and is considered potential USACE wetland. This sampling point is also considered potential CDFW and CCC wetland based on dominance of wetland vegetation.

2. Sampling Point 2

This sampling point was located in herbaceous wetland along Drainage 1B (Figures 6, 7, and 8). Both of the dominant species were wetland plants (creeping wild rye and ryegrass), thus meeting the USACE's wetland vegetation criterion. A soil pit excavated to 12 inches revealed the presence of a hydric soil indicator (redox dark surface [F6]). Wetland hydrology was indicated by one primary indicator (water-stained leaves [B9]). This sampling point met all three of the USACE wetland criteria and is considered potential USACE wetland. This sampling point is also considered potential CDFW and CCC wetland based on dominance of wetland vegetation.

D. JURISDICTIONAL HABITAT SUMMARY

Jurisdictional habitats within the study area include coastal brackish marsh, freshwater marsh, herbaceous wetland, open water, and unvegetated streambed (Figure 6, 7, and 8). A total of 0.42 acre of potential USACE jurisdiction/WUS, 0.54 acre of potential CDFW jurisdiction, and 0.54 acre of potential CCC wetlands were delineated within the study area (Tables 3 through 5).

1. USACE Jurisdiction – Waters of the U.S.

Potential USACE jurisdiction within the study area totals 0.42 acre, comprised of 0.39 acre of wetland WUS and 0.03 acre of non-wetland WUS (Figure 6; Table 3). Of this, a total of 0.34 acre of potential USACE jurisdiction was considered tidally influenced (Table 3).

Table 3
USACE JURISDICTIONAL AREAS/WATERS OF THE U.S.
WITHIN THE STUDY AREA*

HABITAT	ACREAGE		
	Tidal	Non-tidal	Total
Wetlands			
Coastal brackish marsh	0.31	0	0.31
Freshwater marsh	0.02	0	0.02
Herbaceous wetland	0	0.06	0.06
Subtotal	**0.33**	**0.06**	**0.39**
Non-wetland Waters			
Open water	0.01	0.01	0.02
Streambed	0	0.01	0.01
Subtotal	**0.01**	**0.02**	**0.03**
TOTAL	**0.34**	**0.08**	**0.42**

*Acreage is rounded to the nearest 0.01 acre; thus, totals reflect rounding.

2. CDFW Jurisdiction

Potential CDFW jurisdiction within the study area totals 0.54 acre (Table 4; Figure 7).

Table 4
CDFW JURISDICTIONAL AREAS
WITHIN THE STUDY AREA*

HABITAT	ACREAGE
Coastal brackish marsh	0.31
Freshwater marsh	0.02
Herbaceous wetland	0.06
Open water	0.02
Streambed	0.13
TOTAL	**0.54**

*Acreage is rounded to the nearest 0.01 acre, thus, total reflects rounding.

3. CCC Jurisdiction – Coastal Wetlands

Potential CCC jurisdiction within the study area totals 0.54 acre (Table 5; Figure 8).

Table 5
CALIFORNIA COASTAL COMMISSION WETLANDS WITHIN THE STUDY AREA*

HABITAT	ACREAGE
Coastal brackish marsh	0.31
Freshwater marsh	0.02
Herbaceous wetland	0.06
Open water	0.02
Streambed	0.13
TOTAL	**0.54**

*Acreage is rounded to the nearest 0.01 acre; thus, total reflects rounding.

IV. CONCLUSION

A. FEDERAL PERMITTING

1. U.S. Army Corps of Engineers

Permanent and temporary fills and discharges (impacts) to WUS are regulated by USACE under Section 404 of the CWA (33 USC 401 *et seq*.; 33 USC 1344; USC 1413; and Department of Defense, Department of the Army, Corps of Engineers 33 CFR Part 323). The proposed project activities are anticipated to require a Clean Water Act Section 404 permit from the San Diego Section of the Los Angeles District USACE. The proposed activities would be considered consistent with those covered under Nationwide Permit (NWP) 14 for Linear Transportation Projects if impact acreage thresholds of one-half acre for non-tidal waters and one-third acre for tidal waters are not exceeded. Notification to the USACE through the preparation of a Pre-Construction Notification (PCN) requesting authorization under NWP 14 is expected to be required.

Under NWP 14, notification to the USACE and preparation of a PCN would not be required if the project would not result in the following: (1) permanent loss of more than 0.10 acre of WUS; (2) temporary or permanent discharges into special aquatic sites, including wetlands; (3) potential effects on species listed under the ESA; and (4) potential effects on resources protected under the National Historic Preservation Act.

B. STATE PERMITTING

1. Regional Water Quality Control Board

A CWA Section 401 Water Quality Certification administered by the State Water Resources Control Board (SWRCB) or RWQCB must be issued prior to any 404 Permit. The USACE jurisdictional areas addressed in this report would also be subject to 401 Certification by the RWQCB. Submittal of Request for Water Quality Certification is expected to be required prior to project activities to the San Diego RWQCB. There are no isolated waters or wetlands under RWQCB jurisdiction within the survey area that would be subject to the State Porter-Cologne Water Quality Control Act only.

2. California Department of Fish and Wildlife

The CDFW regulates temporary and permanent alterations or impacts to streambeds or lakes under California Fish and Game Code 1602. The CDFW requires a Streambed Alteration Agreement (SAA) for projects that will divert or obstruct the natural flow of water; change the bed, channel, or bank of any stream; or use any material from a streambed. The SAA is a contract between the applicant and CDFW stating what activities can occur in the riparian zone and stream course (California Association of Resource Conservation Districts 2002). Notification of Lake or Streambed Alteration is expected to be required to the South Coast Region CDFW.

3. California Coastal Commission

The CCC, through provisions of the California Coastal Act, is authorized to issue a Coastal Development Permit (CDP) for 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 only if it is consistent with the LCP. The CCC, however, has appeal authority for portions of LCPs and retains jurisdiction over certain public trust lands and in areas without an LCP. The study area is within the Coastal Zone and project approval would require issuance of a CDP from the City of Chula Vista and the CCC, as the City of San Diego does not have an LCP for the portion of the project within its jurisdiction.

V. REFERENCES

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Appendix A

FEDERAL JURISDICTIONAL INFORMATION

Appendix A
FEDERAL JURISDICTIONAL INFORMATION

Wetlands and "Waters of the U.S." Definitions

The U.S. Army Corps of Engineers (USACE; Federal Register 1982) and the Environmental Protection Agency (Federal Register 1980) jointly define wetlands as "[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987).

The official definition of "Waters of the U.S." and their limits of jurisdiction (as they may apply) are defined by the USACE' Regulatory Program Regulations (Section 328.3, paragraphs [a] 1-3 and [e], and Section 328.4, paragraphs [c] 1 and 2) as follows:

All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; all waters including interstate wetlands, all other waters such as interstate lakes, rivers, streams [including intermittent streams], mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such water, which are or could be used by interstate travelers for recreation or other purposes; or from which fish or shellfish are or could be taken and sold in interstate commerce; or which are or could be used for industries in interstate commerce; or wetlands adjacent to waters [other than waters that are themselves wetlands].

Non-tidal Waters of the U.S. The limits of jurisdiction in non-tidal waters: In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or when adjacent wetlands are present, the jurisdiction extends to the limit of the adjacent wetlands.

The term ordinary high water mark (OHWM) means that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation (scouring), the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Waters of the U.S. must exhibit an OHWM or other evidence of surface flow created by hydrologic physical changes. These physical changes include (Riley 2005):

- Natural line impressed on the bank
- Shelving
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining
- Change in plant community

Jurisdictional areas also must be connected to Waters of the U.S. (Guzy and Anderson 2001; U.S. Supreme Court 2001).

As a consequence of the U.S. Supreme Court decision in Rapanos v. United States, a memorandum was developed regarding Clean Water Act jurisdiction (Grumbles and Woodley 2007). The memorandum states that the EPA and the USACE will assert jurisdiction over traditional navigable waters (TNW), wetlands adjacent to TNW, tributaries to TNWs that are a relatively permanent water body (RPW), and wetlands adjacent to TNW. An RPW has year round flow or continuous seasonal flow (i.e., typically for three months or longer). Jurisdiction over other waters (i.e., non TNW and RPW) will be based on a fact specific analysis to determine if they have a significant nexus to a TNW.

Pursuant to the USACE Instructional Guidebook (USACE and EPA 2007), the significant nexus evaluation will cover the subject reach of the stream (upstream and downstream) as well as its adjacent wetlands (Illustrations 2 through 6, USACE and EPA 2007). The evaluation will include the flow characteristics, annual precipitation, ability to provide habitat for aquatic species, ability to retain floodwaters and filter pollutants, proximity of the subject reach to a TNW, drainage area, and the watershed.

Wetland Criteria

Wetland boundaries are determined using three mandatory criteria (hydrophytic vegetation, wetland hydrology, and hydric soil) established for wetland delineations and described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Following is a brief discussion of the three criteria and how they are evaluated.

Vegetation

"Hydrophytic vegetation is defined herein as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987).

The wetland indicator status (obligate upland, facultative upland, facultative, facultative wetland, obligate wetland, or no indicator status) of the dominant plant species of all vegetative layers is determined. Species considered to be hydrophytic include the classifications of facultative,

facultative wetland, and obligate wetland as defined by the U.S. Fish and Wildlife Service (1988; Table A-1). The percent of dominant wetland plant species is calculated. The hydrophytic vegetation criterion is considered to be met if it meets the "Dominance Test," "Prevalence Index," or the vegetation has morphological adaptations for prolonged inundation.

Table A-1
DEFINITIONS OF PLANT INDICATOR CATEGORIES

INDICATOR CATEGORIES	ABBREVIATION	PROBABILITY OF OCCURRING IN WETLANDS
Obligate wetland	OBL	Occur almost exclusively in wetlands (99 percent probability of occurring in a wetland).
Facultative wetland	FACW	Usually found in wetlands (67 to 99 percent probability of occurring in a wetland) but occasionally in uplands.
Facultative	FAC	Equally likely to occur in wetland (34 to 66 percent probability) or non-wetland.
Facultative upland	FACU	Usually occur in non-wetlands but occasionally found in wetlands (1 to 33 percent probability of occurring in a wetland).
Obligate upland	UPL	Occur almost exclusively in non-wetlands (1 percent probability of occurring in a wetland).

Hydrology

"The term 'wetland hydrology' encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic reducing conditions, respectively" (Environmental Laboratory 1987).

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year (approximately 18 days for most of low-lying southern California). Hydrology criteria are evaluated based on the characteristics listed below (USACE 2008). Where positive indicators of wetland hydrology are present, the limit of the OHWM (or the limit of adjacent wetlands) is noted and mapped. Evidence of wetland hydrology is met by the presence of a single primary indicator or two secondary indicators.

Primary

- surface water (A1)
- high water table (A2)
- saturation (A3)
- water marks (B1; non-riverine)
- sediment deposits (B2; non-riverine)
- drift deposits (B3; non-riverine
- 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)

Secondary

- watermarks (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)

In the absence of all other hydrologic indicators and in the absence of significant modifications of an area's hydrologic function, positive hydric soil characteristics are assumed to indicate positive wetland hydrology. This assumption applies unless the site visit was done during the wet season of a normal or wetter-than-normal year. Under those circumstances, wetland hydrology would not be present.

Soils

"A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Natural Resource Conservation Service [NRCS] 2004).

Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation. Soil matrix and mottle colors are identified at each sampling plot using a Munsell soil color chart (Kollmorgen 1994). Generally, an 18-inch or deeper pit is excavated with a shovel at each sampling plot unless refusal occurs above 18 inches.

Soils in each area are closely examined for hydric soil indicators, including the characteristics listed below. Hydric soil indicators are presented in three groups. Indicators for "All Soils" (A) are used in any soil regardless of texture, indicators for "Sandy Soils" (S) area used in soil layers with USDA textures of loamy fine sand or coarser, and indicators for "Loamy and Clayey Soils" (F) are used with soil layers of loamy very fine sand and finer (USACE 2008).

- histosols (A1)
- histic epipedons (A2)
- black histic (A3)
- hydrogen sulfide (A4)
- stratified layers (A5)
- 1 cm muck (A9)
- 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)
- 2 cm muck (A10)
- reduced vertic (F18)
- red parent material (TF2)

Hydric soils may be assumed to be present in plant communities that have complete dominance of obligate or facultative wetland species. In some cases, there is only inundation during the growing season and determination must be made by direct observation during that season, recorded hydrologic data, testimony of reliable persons, and/or indication on aerial photographs.

Non-wetland Waters of the U.S.

The non-wetland Waters of the U.S. designation is met when an area has periodic surface flows but lacks sufficient indicators to meet the hydrophytic vegetation and/or hydric soils criteria. For purposes of delineation and jurisdictional designation, the non-wetland Waters of the U.S. boundary in non-tidal areas is the OHWM as described in the Section 404 regulations (33 CFR Part 328).

USGS Mapping

The USGS Quad maps are one of the resources used to aid in the identification and mapping of jurisdictional areas. Their primary uses include understanding the subregional landscape position of a site, major topographical features, and a project's position in the watershed.

In our experience the designation of watercourse as a blue-line stream (intermittent or perennial) on USGS maps has been unreliable and typically overstates the hydrology of most streams. This has also been the experience of others, including the late Luna Leopold. Leopold was a hydrologist with USGS from 1952 to 1972, Professor in the Department of Geology and Geophysics, and Department of Landscape Architecture, University of California, Berkeley from 1972 to 1986, and Professor Emeritus from 1987 until his death in 2006. In regard to stream mapping on USGS maps, Dr. Leopold opined that ". . . blue lines on a map are drawn by nonprofessional, low-salaried personnel. In actual fact, they are drawn to fit a rather personalized aesthetic."

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Appendix B

STATE JURISDICTIONAL INFORMATION

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STATE JURISDICTIONAL INFORMATION

California Department of Fish and Wildlife Regulations

The California Department of Fish and Wildlife (CDFW; Department) regulates alterations or impacts to streambeds or lakes (wetlands) under Fish and Game Code Sections 1600 through 1616 for any private, state, or local government or public utility-initiated projects. The Fish and Game Code Section 1602 requires any entity to notify the Department before beginning any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers and streams as well as lakes in the state.

In order to notify the Department, a person, state, or local governmental agency or public utility must submit a complete notification package and fee to the Department regional office that serves the county where the activity will take place. A fee schedule is included in the notification package materials. Under the Permit Streamlining Act (Government Code Sections 65920 et seq.), the Department has 30 days to determine whether the package is complete. If the requestor is not notified within 30 days, the application is automatically deemed to be complete.

Once the notification package is deemed to be complete, the Department will determine whether the applicant will need a Lake or Streambed Alteration Agreement (SAA) for the activity, which will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an SAA is required, the Department will conduct an on-site inspection, if necessary, and submit a draft SAA that will include measures to protect fish and wildlife resources while conducting the project. If the applicant is applying for a regular SAA (less than five years), the Department will submit a draft SAA within 60 calendar days after notification is deemed complete. The 60-day time period does not apply to notifications for long-term SAAs (greater than 5 years).

After the applicant receives the SAA, the applicant has 30 calendar days to notify the Department whether the measures in the draft SAA are acceptable. If the applicant agrees with the measures included in the draft SAA, the applicant will need to sign the SAA and submit it to the Department. If the applicant disagrees with any measures in the draft SAA, the applicant must notify the Department in writing and specify the measures that are not acceptable. Upon written request, the Department will meet with the applicant within 14 calendar days of receiving the request to resolve the disagreement. If the applicant fails to respond in writing within 90 calendar days of receiving the draft SAA, the Department may withdraw that SAA. The time periods described above may be extended at any time by mutual agreement.

After the Department receives the signed draft SAA, the Department will make it final by signing the SAA; however, the Department will not sign the SAA until it both receives the notification fee and ensures that the SAA complies with the California Environmental Quality

Act (Public Resources Code Section 21000 et seq.). After the applicant receives the final agreement, the applicant may begin the project the agreement covers, provided that the applicant has obtained any other necessary federal, state and/or local authorizations.

Water Resource Control Board Regulations

Section 401 Water Quality Certification

Whenever a project requires a federal Clean Water Act (CWA) Section 404 permit or a Rivers and Harbors Act Section 10 permit, it must first obtain a CWA Section 401 Water Quality Certification. The Regional Water Quality Control Board (RWQCB) administers the 401 Certification program. Federal CWA Section 401 requires that every applicant for a Section 404 permit must request a Water Quality Certification that the proposed activity will not violate state and federal water quality standards.

Porter-Cologne Water Quality Control Act

The State Water Resource Control Board (SWRCB) and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) as described in the California Water Code (SWRCB 2008). The California Water Code is the State's version of the Federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal. State waters that are not federal waters may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue Waste Discharge Requirements (WDRs) or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

REFERENCES

California Association of Resource Conservation Districts. 2002. Guide to Watershed Project Permitting for the State of California. Available at URL: http://www.carcd.org/permitting/pguide.pdf.

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Date unknown. Streambed/Lake Alteration Notification Guidelines.

Appendix C

DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bayshore Bikeway Segment 8B City/County: Chula Vista/San Diego Sampling Date: July 30, 2014

Applicant/Owner: SANDAG State: CA Sampling Point: 1

Investigator(s): S. Nigro, L. Moreton Section, Township, Range: 16/18S/2W

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

Subregion (LRR): C Lat: 32.6025 Long: -117.0924 Datum: _____

Soil Map Unit Name: HrC2 Huerhuero loam, 5 to 9 percent slopes, eroded NWI classification: Not on NWI maps

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

USACE, CDFW, and CCC wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' x 20')			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10' x 20')			
1. Typha sp.	75	X	OBL
2. Bolboschoenus maritimus ssp paludosus	20		OBL
3. Polypogon monspeliensis	5		FACW
4. Euthamia occidentalis	5		FACW
5. Schoenoplectus californicus	5		OBL
6.			
7.			
8.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 10' x 20')			
1. N/A			
2.			
	0 = Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

✔ 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 _____

Remarks:

Hydrophytic vegetation present. Vegetation community = freshwater marsh.

Photos 21 and 22.

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
no pit								

[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 ___

Remarks:

Hydric soil criterion assumed met - plot with standing water in dry season, dominated by obligate vegetation with an abrupt wetland edge.

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 ___ Depth (inches): 4

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Wetland hydrology criterion met.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Bayshore Bikeway Segment 8B City/County: Chula Vista/San Diego Sampling Date: July 30, 2014

Applicant/Owner: SANDAG State: CA Sampling Point: 2

Investigator(s): S. Nigro, L. Moreton Section, Township, Range: 16/18S/2W

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

Subregion (LRR): C Lat: 32.6033 Long: -117.0923 Datum: _____

Soil Map Unit Name: HrC2 Huerhuero loam, 5 to 9 percent slopes, eroded NWI classification: Not on NWI maps

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

USACE, CDFW, and CCC wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' x 20')			
1. N/A			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10' x 20')			
1. Elymus triticoides	40	X	FAC
2. Festuca perennis	20	X	FAC
3. Rumex crispus	15		FAC
4. Ambrosia psilostachya	15		FACU
5. Typha sp.	5		OBL
6. Cyperus eragrostis	5		FACW
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 10' x 20')			
1. N/A			
2.			
	0 = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

✔ 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 _____

Remarks:

Hydrophytic vegetation present. Vegetation community = herbaceous wetland

Photos 26 and 27.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5 YR 2.5/2	93	7.5 YR 2/4	7	C	M	snd cly lm	

[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** ___

Remarks:

Hydric soil criterion met.

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 ✔ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✔ **No** ___

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

Remarks:

Wetland hydrology criterion met.

Appendix D

SAMPLING POINTS AND SITE PHOTOS

Sampling Point 1. USACE, CDFW, and CCC freshwater marsh wetland within Drainage 1C in the central portion of the study area.

Sampling Point 2. USACE, CDFW, and CCC herbaceous wetland within Drainage 1B in the central portion of the study area.

Photo 1. Looking north at USACE, CDFW, and CCC coastal brackish marsh wetland within Drainage 1A in the northern portion of the study area.

Photo 2. Looking northwest at USACE, CDFW, and CCC herbaceous wetland along Drainage 1C in the southern portion of the study area.

Photo 3. Looking south at USACE, CDFW, and CCC coastal brackish marsh wetland along Drainage 1D in the northern portion of the study area.