Jurisdictional Delineation Report for Waters of the U.S. and State of California

Study Site: Colorado Lagoon

Prepared for:

City of Long Beach
333 W. Ocean Boulevard
Long Beach, CA 90802

Moffatt & Nichol
3780 Kilroy Airport Way
Long Beach, Ca 90806

Prepared by:

Tidal Influence, LLC
1340 E. Florida St.
Long Beach, Ca 90802

June 2013

Table of Contents

Figures

Tables

Appendices

Acronyms

ACOE	United States Army Corps of Engineers
CCA	California Coastal Act
CCC	California Coastal Commission
CDFW	California Department of Fish & Wildlife
CEQA	California Environmental Quality Act
CFWC	California Fish and Wildlife Code
CPRC	California Public Resource Code
CWA	Clean Water Act
CWC	California Water Code
EO	Executive Order
GPS	Global Positioning System
JDR	Jurisdictional Delineation Report
MHTL	Mean high tide line
OHWM	Ordinary High Water Mark
RHA	Rivers and Harbors Act
RWQCB	Regional Water Quality Control Board
SLC	State Lands Commission
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WMA	Los Cerritos Channel and Alamitos Bay Water Management Area

1.0 Introduction

1.1 Historical Background

In 2004 the City of Long Beach completed a Restoration Feasibility Study for the Colorado Lagoon in cooperation with the California Coastal Conservancy. This report set the framework for a comprehensive restoration project focused on improving water quality and enhancing the Lagoon's beneficial uses like aquatic recreation, public education, and tidal wetland habitats. While motive for the feasibility project came from the historic documentation of high bacteria counts, the need for this project was catalyzed by the discovery of high levels of inorganic (notably heavy metals) and organic (notably DDT and PCBs) in the Lagoon's sediments. Furthermore, the hydraulic modeling as part of the feasibility study demonstrated the Lagoon's poor tidal circulation in the form of long residence times and a severely muted tidal prism. From 2007 through 2011, the Lagoon's beaches received 'F' grades each year regardless of the season (Heal the Bay 2011). In 2011 Heal the Bay ranked Colorado Lagoon as one of its "Top 10 Biggest Beach Bummers" in its 2011 Annual Beach Report Card.

In 2008 The City of Long Beach certified an Environmental Impact Report for the Colorado Lagoon Restoration Project. This project is split into two phases. Phase one is focused on restoring the current footprint of the Lagoon through storm drains upgrades or removal, cleaning of the approximately 900' culvert, dredging and disposal of contaminated sediments, re-contouring of intertidal slopes, and the re-vegetation of potential habitat areas. Phase two is focused on creating a daylighted connection between Marine Stadium and Colorado Lagoon in the form of full tidal channel running through Marina Vista Park. In 2010 the City of Long Beach approved conceptual plan 4a as the preferred alternative for this tidal channel connection. This design alternative would create an estimated 2.4 acres of new coastal habitat including tidal wetlands, intertidal mudflats, and subtidal eelgrass and rocky bottom habitats (Moffatt and Nichol, 2008).

In July 2012 the construction portion of Phase 1 of the Colorado Lagoon restoration project was completed. Re-vegetation of the Lagoon's habitat area is currently underway. While Colorado Lagoon still received an 'F' grade from Heal the Bay during wet winter samples, the site was not listed on the Biggest Beach Bummer list in 2012 due to an A grade during winter dry samples and a B grade during summer dry samples (Heal the Bay, 2013).

1.2 Proposed Project

As part of the Colorado Lagoon Restoration Project's 2nd phase the City of Long Beach is exploring the prospects for the creation of a Mitigation Bank. The City is working to determine the amount of credits that can be generated as part of this phase of the project. Three potential credits sources are being explored: 1) credits for the creation of subtidal eelgrass habitat, 2) credits for the creation of the tidal channel in Marina Vista Park, and 3) credits for functional lift of wetlands and marine habitat in the Phase 1 area through the creation of the tidal channel.

1.3 Purpose of Assessment

This report presents the results of a jurisdictional wetlands delineation study conducted by Tidal Influence, LLC at Colorado Lagoon under contract with the City of Long Beach. The study defines the current geographic extent of potential wetlands and waters subject to the jurisdiction of the United States and the State of California in order to showcase the prospects for creating

new wetlands or associated aquatic habitats within the project boundary. While a similar study was completed by LSA in 2007-08, this study was required due to major restorative alterations that have occurred to the site since that time.

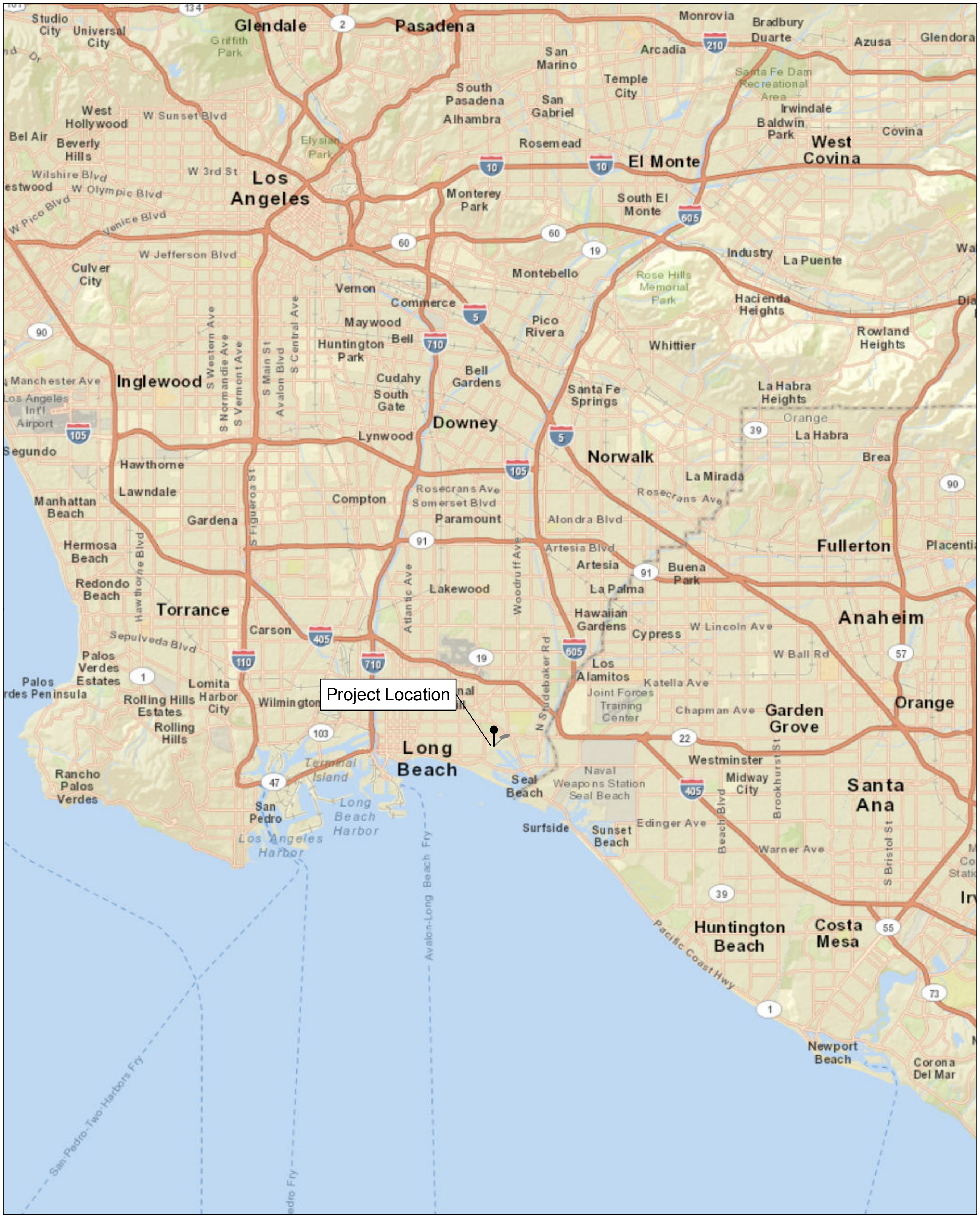
The findings and conclusions presented in this report, including the location and extent of waters of the U.S. and State (including wetlands) subject to regulatory jurisdiction, represent the professional opinion of Tidal Influence and should be considered preliminary until verified by representatives from potential jurisdictional regulatory agencies, namely the United States Army Corps of Engineers (ACOE), the California Department of Fish and Wildlife (CDFW), and the California Coastal Commission (CCC). This report address the requirements of related federal and state policies that govern wetlands including the federal Clean Water Act (CWA) and the California Fish and Wildlife Code that broadly apply to wetlands, as well as the California Coastal Act that pertains specifically to wetlands within the reaches of the Coastal Zone. This report has been prepared for use by the City of Long Beach's Technical Advisory Committee for this project, which includes representatives from ACOE, CDFW, and CCC.

1.4 Project Location

The project area is centrally located at Latitude 33.7713, Longitude -118.1326 primarily in section 4 of Township 5 South, and Range 12 West, on the United Stated Geological Survey (USGS) Long Beach, California 7.5-minute series topographical quadrangle (**Figure 1**). This location is in Los Angeles County, California within the City of Long Beach (**Figure 2**). The project boundary encompasses 33.22 acres in southeast Long Beach. The project area is bounded by 6th Street and Little Recreation Golf Course to the North, Park Avenue and Appian way to the West, Colorado Street and Eliot Street to the South and Monrovia Avenue and Marina Vista Park to the East. The project area has two land owners. The State Lands Commission (STC) owns the portions within the tidelands that include everything below the mean high water line, while the City of Long Beach owns the remainder of the project area. The City of Long Beach has a lease agreement with STC that identifies them as the day-to-day operations manager for the Lagoon.

1.5 Site Description

Before development encroached, the project area was located in the northwestern portion of a 2400 acre tidal wetlands complex. In 1923, the naturally occurring tidal wetlands of Alamitos Bay were dredged to form the Lagoon and Marine Stadium. Colorado Lagoon has been managed by the City of Long Beach since that time as a multi-use facility that supports several picnic/park areas, a recreational beach, a swimming area, several buildings, and coastal wetland habitats. The Lagoon became the site for the 1932 Los Angeles Olympic U.S. Diving Trails and was separated from Marine Stadium (the site for rowing competitions) by tide gates designed to maintain an adequate water depth during diving events. In the late 1960s, the north end of Marine Stadium was filled in preparation for a never-executed, cross-town freeway. Instead, this filled area became part of Marina Vista Park. Presently, the Lagoon's nearly 18-acre tidal water body is connected to Alamitos Bay via a 900-foot box culvert that runs under Marina Vista Park into Marine Stadium. A golf course, parking lots, recreational beaches, parks, roadways and residential areas border the Lagoon. These urban impacts have marginalized the historic natural habitats. Much of the project area has been subject to a restoration project over the past 4 years and the distribution of habitat has shifted considerably. Ten habitat types were identified within the project area including southern coastal salt marsh, Diegan coastal sage scrub, southern dune



C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\MXD\WD_Regional_20130523.mxd

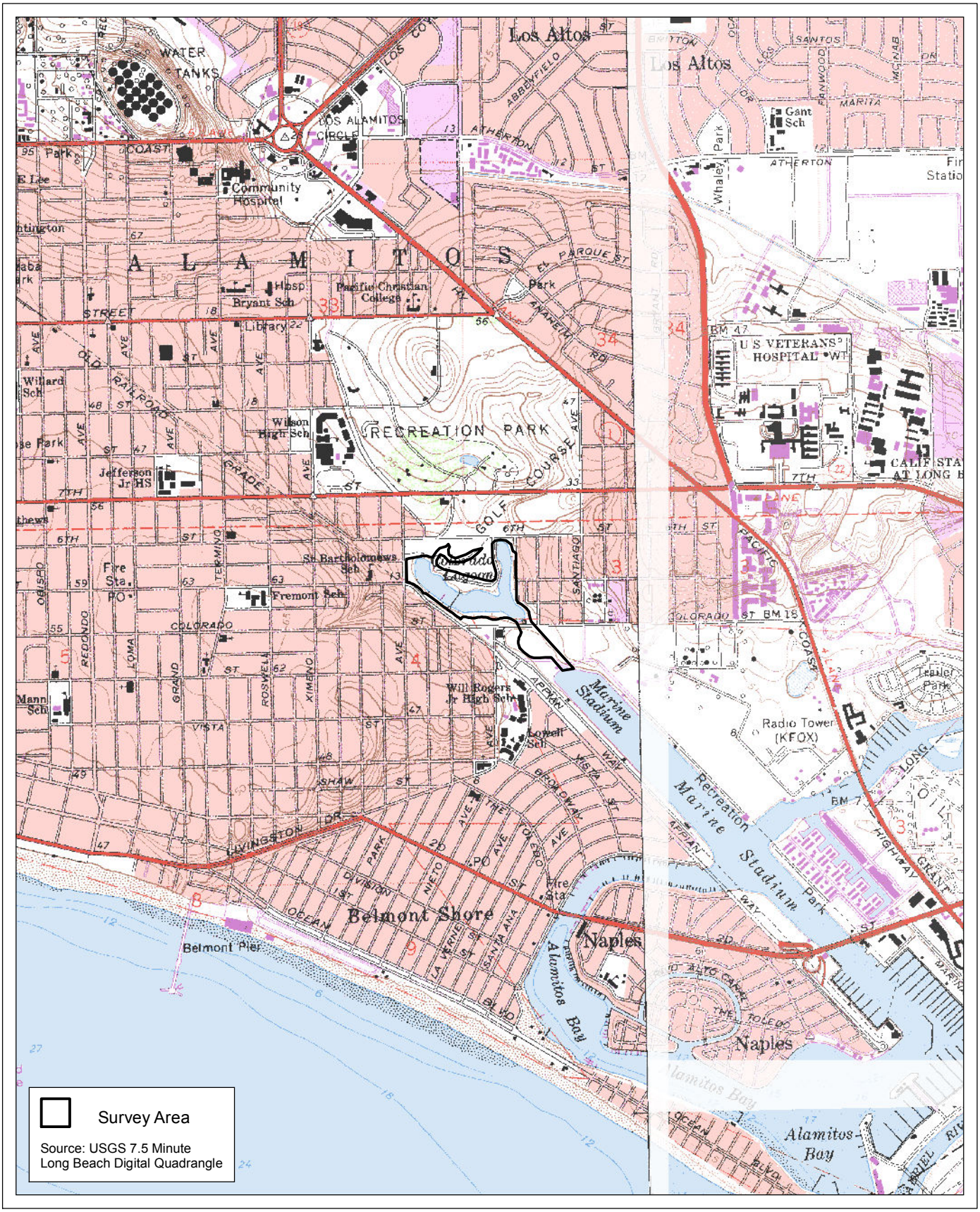
Regional Vicinity

N

5 2.5 0 5 Miles

Tidal Influence

Figure 1. Regional Vicinity Map



Project Vicinity

2,000 1,000 0 2,000 Feet

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\Fig2_ProjVicinity.PDF

Figure 2. Project Vicinity Map

scrub, subtidal marine (including eelgrass beds), intertidal flats, rocky shoreline, sandy beach, ornamental vegetation, ruderal vegetation, and developed land (**Figure 3**).

1.5.1 Vegetation

Southern coastal salt marsh is the one type of riparian and wetlands vegetation community presently occurring within the Colorado Lagoon project area.

Southern Coastal Salt Marsh (Holland Code 52120): This plant community is found within a 2 to 3 meter intertidal elevation range along sheltered inland margins of bays, lagoons, and estuaries subject to regular inundation by sea water. It is dominated by highly productive, herbaceous and suffrutescent, salt tolerant hydrophytes forming moderate to dense cover up to one meter tall. The plant species are usually segregated by elevation and form distinct zones that are dependent on environmental factors such as frequency and length of tidal inundation, salinity levels, and nutrient status. *Spartina foliosa* (Pacific cordgrass) dominates the low marsh, *Salicornia pacifica* (common pickleweed) the middle marsh, and *Arthrocnemum subterminale* (Parish's glasswort) the upper marsh.

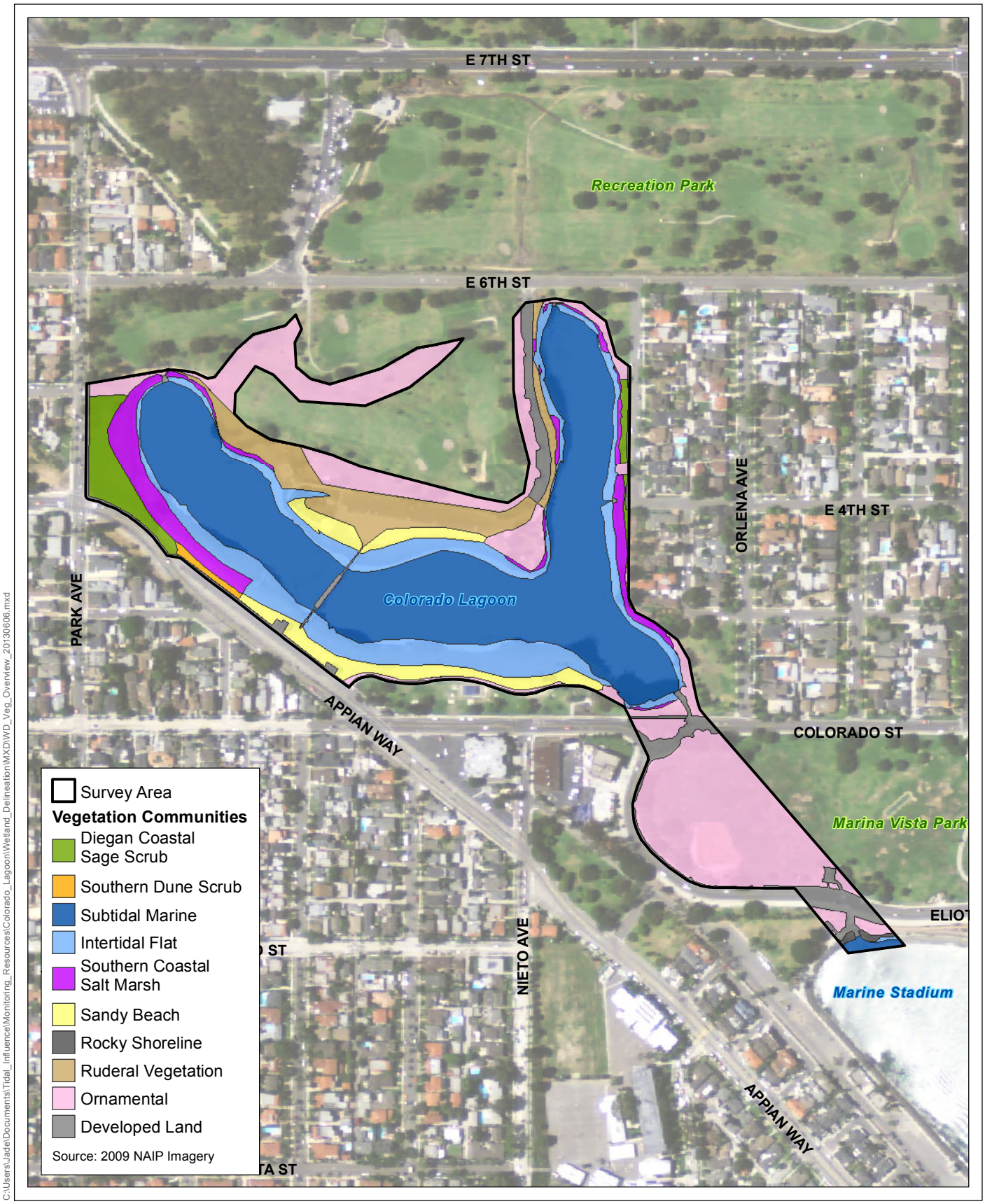
1.5.2 Soils

A search of the United States Department of Agriculture's (USDA) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) indicates that there is no recent soil data for the Colorado Lagoon. The project location is within the United States Geological Survey (USGS) Long Beach7.5-minute quadrangle. As described by this project's Environmental Impact report:

> "The site lies within the southwestern block of the Los Angeles Basin, which is comprised of a low alluvial floodplain. The floodplain is bound by a line of elongated low hills, folds, and faults, which delineate the northwest-trending Newport-Inglewood Structural Zone. Prior to extensive dredging of the Colorado Lagoon (Lagoon) and Marine Stadium area in the 1920s, the site was a tidal mudflat that received alternating alluvial deposits of marine sands, organic silts and clays, and fluvial deposits. In the 1960s, the previously dredged area between what is now the north end of Marine Stadium and the south end of the Lagoon was filled and the existing underground box culvert constructed. This was done as part of the construction for the then-proposed Pacific Coast Freeway. This "filled" area is now Marina Vista Park.
>
> Consistent with the project area's history, the soil underlying the project site is characterized by predominately younger alluvial deposits and artificial fill. Younger alluvial deposits consist of Holocene alluvial soft clay, silt, silty sand, and sand. The artificial fill soils within Marina Vista Park have a lot of variation with no consistent pattern of stratification among sites. Soils testing indicates that the fill consists of undifferentiated young and old soils, which generally include clay, sandy clays, and silty sand."

1.5.3 Hydrology

The entire Colorado Lagoon project area occurs within the San Gabriel River Watershed (Hydrologic Unit Code [HUC] 18070106) and is located within the Regional Water Quality



Existing Vegetation Communities Overview

400 200 0 400 Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\FigX_Veg_Overview.PDF

Figure 3. Existing Vegetation Communities within the Survey Area

Control Board (RWQCB) Los Angeles Region 4, Los Angeles Hydrologic Basin Planning Area. The approximately 640 square mile San Gabriel River Watershed encompasses over 37 cities and is bordered by the San Gabriel Mountains to the north, San Bernardino/Orange County to the east, the Los Angeles River to the west and the Pacific Ocean to the south. Colorado Lagoon also occurs within the Los Cerritos Channel and Alamitos Bay Water Management Area (WMA) of the San Gabriel River Watershed. The WMA is located between the Los Angeles and San Gabriel Rivers and drains to the same general area as the San Gabriel River. The Los Cerritos Channel and Alamitos Bay comprise the main water bodies of the WMA (Moffatt and Nichol, 2005).

The Colorado Lagoon's immediate watershed is identified as Basin 21 in the City of Long Beach Storm Water Management Plan (2001). Basin 21 is 1,172 acres and is made up of 773 acres of residential, 125 acres of commercial, 55 acres of institutional, and 219 acres of open space. The watershed ranges in elevation from 125 feet above mean sea level at the northwestern portion to sea level within the Lagoon. The watershed is almost entirely built out; remaining open space includes the City Recreation Park Area, consisting of two golf courses and adjacent park areas, the Pacific Electric right-of-way greenbelt, and to a lesser degree the picnic and park areas surrounding the Lagoon. The Colorado Lagoon occurs within the Federal Emergency Management Agency (FEMA) Flood Zone X and Flood Zone AE (FEMA FIRM panel #0601360025C).

The average rainfall for this survey area is 12.94 inches. Colorado Lagoon currently receives high flow run-off from 3 large storm drains that are outfitted with low flow diversion systems and trash separation devices. Another smaller storm drain enters the lagoon via a vegetated bioswale that treats run-off coming from the Little Recreation Golf Course.

2.0 Regulatory Background

The Colorado Lagoon project site is located within Long Beach, California containing wetland and other aquatic features, environments and habitats. These waters and wetland features are regulated under federal and state laws. Each of the laws is administered independently and in coordination by the following federal and state agencies: ACOE, United States Fish and Wildlife Service (USFWS), the United States Environmental Protection Agency (USEPA), CCC, CDFW and RWQCB.

If determined applicable by the respective agencies, this Jurisdictional Delineation Report (JDR) provides information for the City of Long Beach to apply for the following authorizations, permits, and policy compliance:

2.1 Federal Regulations

- Section 404 of the Clean Water Act (CWA) (as regulated by ACOE and USEPA)
- Section 401 of the CWA (as regulated by RWQCB)
- Section 10 of the Rivers and Harbors Act (RHA) (as regulated by ACOE)
- Executive Order 11990 (federal protection of wetlands) (regulated by relevant federal agencies)

2.2 State of California Regulations

- California Public Resource Code (CPRC) Division 20 Section 30000 *et seq*. (California Coastal Act) (as regulated by the CCC)
- Section 13000 *et seq.* of the California Water Code (CWC) (the 1969 Porter-Cologne Water Quality Act) (as regulated by RWQCB)
- California Fish and Wildlife Code (CFWC) Chapter 6 Section 1600 *et seq*. (as regulated by CDFW)
- CPRC Division 5 Chapter 7 Section 5810 *et seq.* (preservation of wetlands; as administered by CDFW and other relevant state resource agencies)
- Executive Order W-59-93 (state policy guidelines for wetlands conservation)

2.3 Description of Federal Regulations

2.3.1 Clean Water Act (CWA)

Pursuant to Section 404 of the CWA, ACOE regulatory jurisdiction is built upon a connection or nexus between the water body and interstate commerce. The connection may be direct, through a tributary system linking a stream channel with navigable waters used in interstate or foreign commerce, or indirect, through a nexus identified in the ACOE regulation. ACOE regulates any activity that would result in the discharge of dredged or fill material into jurisdictional waters of the U.S., which include those waters listed in 33 Code of Federal Regulations 328. ACOE has the principal authority to issue CWA Section 404 Permits with review by the USEPA. The RWQCB certifies that any discharge into jurisdictional waters of the U.S. will comply with state water quality standards, pursuant to Section 401 of the CWA. RWQCB is the lead authority to determine a CWA Section 401 Water Quality Certification or Waiver according to the USEPA.

2.3.2 Rivers and Harbors Act (RHA)

The ACOE regulates discharges of dredged or fill material into waters of the United States. These waters include wetland and non-wetland bodies of water that meet specific criteria. Pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 US Code [u.s.c.] 403), ACOE regulatory jurisdiction, regulates almost all work in, over and under waters listed as "navigable waters of the U.S." The ACOE regulates activity that results in the alteration of a navigable water of the United States, including the excavation or filling of any such water.

2.3.3 Executive Order 11990

Each federal agency is responsible for preparing the implementing procedures for carrying out the provisions of the Executive Order (EO) 11990. The EO's purpose is to "minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." Each agency must avoid undertaking, or providing assistance, for any destructive or degrading activity located in wetlands unless the head of the agency finds that there is no "practical alternative" to such activity to the extent permitted by law. Additionally, public review of any plans or proposals for new construction in wetlands must be provided.

2.4 Description of State Regulations

2.4.1 California Coastal Act (CCA)

The California Coastal Commission regulates for coastal resources within the Coastal Zone under jurisdiction of the California Coastal Act of 1976 (CCA), pursuant to Section 30000 *et seq.* of the CPRC. Of important note for Jurisdictional Delineations of California projects, the CCC

retains authorization, permitting, and policy compliance jurisdiction over any portion of a project that is in state waters, on land up to the mean high tide line (MHTL), lands subject to the public trust, or at the discretion of CCC.

2.4.2 Lake and Streambed Alteration Program

The California Department of Fish and Wildlife is authorized to regulate activity that would alter the flow, bed, channel, or bank of streams and lakes, pursuant to Section 1600 *et seq*. of the CDFW. The channel, bed, or bank of a lake, river, or stream comprises the jurisdictional waters of the state. The CDFW extends its jurisdictional limit to the top of the bank of a stream or lake, or to the continuous outer edge of its riparian extent, whichever is wider.

2.4.3 Porter-Cologne Water Quality Control Act

In addition to the federal CWA regulatory jurisdiction of the RWQCB mentioned above, the RWQCB is authorized to regulate activity that would result in discharge of waste and fill material to waters of California (including saline waters), "isolated" waters and/or wetlands (e.g., vernal pools and seeps), and groundwater within the boundaries of the state (CWC § 13050[e]), pursuant to Section 13000 *et seq*. of the CWC (the 1969 Porter-Cologne Water Quality Control Act [Porter-Cologne]). RWQCB also adopts and implements water quality control plans that are designed to maintain each region within the state's "unique characteristics" with regard to natural water quality, actual and potential beneficial uses, maintaining water quality, and addressing the water quality problems of that region. Beneficial uses of state waters are identified within the Porter-Cologne Act that may be protected against degradation and include preservation and enhancement of fish, wildlife, designated biological habitats of special significance, and other aquatic resources or preserves.

2.5 Definition of Wetlands

The jurisdictional regulations of the various federal and state agencies are further utilized to establish the appropriate definition of "wetlands" of a particular study site. The Colorado Lagoon is subject to the wetland definitions identified by various characteristics as outlined by the United States Army Corps of Engineers, United States Fish and Wildlife Service, the California Coastal Commission and the California Department of Fish and Wildlife. Each agency, working in accordance to their legislative authority, defines "wetlands" differently and each definition is referenced to identify jurisdictional authority.

2.5.1 Federal Wetlands Definitions

Federal definitions of what constitutes "wetlands" are primarily derived from two Federal Agencies: the United States Army Corps of Engineers and the United States Fish and Wildlife Service. The USFWS wetland definition and classification system is based on *Classification of Wetland and Deepwater Habitats of the United States* (Cowardin et al. 1979); however, the ACOE definition is used for regulatory purposes. Wetland delineations for Section 404 purposes as regulated by the ACOE must be conducted according to the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Regional Supplement ACOE 2006) and the Corps of Engineers 1987 Wetland Delineation Manual. Where there are differences between the two documents, the Regional Supplement takes precedence over the 1987 Manual.

The ACOE defines wetlands as: "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."

A federal jurisdictional wetland delineation states that an area must possess three wetland characteristics: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology. The wetland characteristics have mandatory criteria that must be satisfied in order for that particular characteristic to be met. The indicators may be analyzed to determine whether the criteria are satisfied and are listed below.

Hydrophytic Vegetation

Hydrophytic vegetation is plant life that is adapted for life in permanently or periodically saturated soil identified according to a wetland indictor category as included on the Army Corps of Engineers' National Wetland Plant List (Lichvar, 2012). The different indicator categories are based on the probability of occurrence in wetlands: Obligate Wetlands, Facultative Wetlands, Facultative, Facultative Upland, and Obligate Upland. The Obligate Wetlands, Facultative Wetlands and Facultative categories are considered hydrophytic and the delineation of the hydrophytic vegetation is based on more than 50 percent of the plant species identified in these three categories.

If the plant community passes the dominance test or prevalence index, the vegetation is considered hydrophytic. The dominance test uses the "50/20" rule from the Regional Supplement for determining dominant species. The most abundant species that exceed 50 percent of the total sample survey, plus additional species that comprise 20 percent of the total dominance measure, indicate dominance. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (percent cover). It is a more comprehensive analysis of the hydrophytic status of the community than one based on just a few dominant species

Hydric Soils

Soils defined as hydric soils form under conditions of "saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Hydric soils are defined when one or more of the following criteria are met: all histels except folistels and histosels except folists; or soils that frequently ponded for long duration or very long duration during the growing season; or soils that are frequently flooded for long duration or very long duration during the growing season.

Hydric soils are developed when microbial activity causes oxygen depletion with conditions of saturation and hydrologic inundation. Microbial activity is limited to the growing season and when the soil temperature is above biological zero.

The Regional Supplement is used to identify hydric soils under a variety of field indicators that include: hydrogen sulfide generation; accumulation of organic matter; and reduction, translocation, and/or accumulation of iron and other reducible elements.

Wetland Hydrology
Wetland hydrology can be a challenging criterion to measure in the field due to variations in water availability seasonally and annually. Visual observation of inundation or saturation, watermarks, recent sediment deposits, surface scour, and oxidized root channels are some of the indicators used to identify wetland hydrology. Wetland hydrology is satisfied if the area is seasonally inundated or saturated to the surface for a minimum of 14 consecutive days during the growing season.

2.5.2 State of California Definition of Wetlands

The State of California applies a broader definition of what constitutes a "wetland" than the Federal government. Two primary State agencies are responsible for defining "wetlands", the California Coastal Commission and the California Department of Fish and Wildlife. The CDFW essentially relies on the USFWS wetland definition and classification system based on *Classification of Wetland and Deepwater Habitats of the United States* (Cowardin et al. 1979). The CDFW acts as a primary consultant to the CCC and the CCC regulates wetland delineation within what is identified as the Coastal Zone along the coast of California. Through provisions of the California Coastal Act, jurisdictional wetland delineations within the Coastal Zone are conducted based on the "one-parameter method" to define the presence and jurisdictional extent of state wetlands. Under the CCA, wetlands are defined as follows: "land within the Coastal Zone [that] may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens". Additionally, wetlands are further 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 the Federal and State definitions focus on the three fundamental wetland characteristics: hydrology, soils, and vegetation. While the ACOE 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 promote the formation of hydric soils.

It is noted that, under circumstances, reliable indicators of all required characteristics are not necessarily apparent, and areas may be delineated as wetlands by the ACOE 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 in order for the indicator to be present. Nevertheless, the presence of wetland hydrology during some portion of most years is fundamental to the existence of any wetland, and the CCC will sometimes disregard vegetation or soil indicators when there is sufficient evidence to conclusively refute the presence of wetland hydrology.

3.0 Methodology

3.1 Presurvey Investigations

A distinct project boundary was determined prior to conducting formal investigations in the field for this JDR. The extent of the project boundary was designed to encompass all the areas with potential for generating mitigation credits. The boundary included a buffer area above the high tide line and waters of the U.S. identified previously by LSA in February 2008. Once the boundary was determined Tidal Influence ecologists closely reviewed former reports to determine areas that were critical to investigate in the field. A grid was overlayed on the project area and sampling points were chosen where the grid intersected areas that were either previously identified as potential waters of the U.S. and State (including wetlands) or new areas that had potential after the recent dredging, re-contouring and re-vegetation efforts. A total of 16 points were originally selected for investigation throughout the project area.

3.2 Field Survey

The fieldwork for this investigation was conducted by Tidal Influence ecologists Eric Zahn, Taylor Parker and Jade Dean on April 16th and 17th. Initially a general field reconnaissance of the project area was conducted on April 11th and each of the 16 remotely selected survey points was visited. The remotely selected points were shifted based on field conditions and the exact locations were documented with a handheld Garmin Oregon 550t Global Positioning System (GPS) and marked with a flag. All ecological observations were documented during this reconnaissance.

After the initial field reconnaissance was completed, a delineation of jurisdictional waters (including wetlands) occurring within the survey area was conducted by the three Tidal Influence ecologists. A field delineation was considered for each of the original 16 survey points and in doing so, 3 points were eliminated so that a total of 13 points were selected for analysis (**Figure 4**). Each of these 13 points was evaluated according to routine wetland delineation procedures described in the 1987 Manual and the 2008 Arid West Regional Supplement.

At each sample point, the existence of significantly disturbed conditions, naturally problematic conditions, and "normal circumstances" were considered and recorded on the Wetlands Determination Data Form for the Arid West Region. All notable site conditions were recorded including observations of recent restoration activity or management of that area as wetlands.

Within an approximately 1 meter squared area around the sample point, the dominant and subdominant plant species were identified and the wetland indicator status was noted for each plant species. A sampling location was determined to support hydrophytic vegetation if more that 50% of the dominant species were listed as Obligate (OBL), Facultative Wetland (FACW), or Facultative (FAC) species on the Army Corps of Engineers' National Wetland Plant List (Lichvar, 2012) or if the hydrophytic plant prevalence index was less than or equal to 3.0.

A soil pit was dug at each of the points to investigate soil characteristics and the potential for hydric soil indicators. All soil pits (field data points for soil inspection and observation) were dug to a depth of 20 inches below natural grade or to the point of obstruction (e.g., compaction or debris) if a 20-inch-deep soil pit was not possible. Soil pits were located in obvious wetland and non-wetland areas to determine the wetland/non-wetland boundary and the presence or absence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\MXD\WD_SoilPit_20130523.mxd

Sample Locations

N

350 175 0 350 Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\Fig6_SampleLocations.PDF

Figure 4. Locations of Field Survey Sample Points

of hydric soils. Each pit was examined for changes in texture with depth. The depth of each soil texture type was indicated and soil matrix colors were determined and recorded for each soil texture type according to the Munsell Soil Color Charts (2009). Subsurface soil taken from soil pits was also analyzed visually for redoximorphic features and other hydric soil indicators using Field Indicators of Hydric Soils in the United States: A guide for Identifying and Delineating Hydric Soils (USDA, 2006). A sampling location was determined to support hydric soils if at least one hydric soil indicator was present in the soil pit or if problematic hydric soils indicators were observed.

Finally, each sample point was surveyed for the presence of wetland hydrology indicators, including primary indicators like surface water, saturation, biotic crust, salt crust, aquatic invertebrates, and/or other primary wetland hydrology indicators; and secondary indicators like drainage patterns, saturation visible on aerial imagery, and/or other secondary wetland hydrology indicators. Soil pits were utilized to determine the presence or absence of many of these indicators. A sampling location was determined to support wetlands hydrology if at least one primary indicator or at least two secondary indicators were observed.

Field data collected by hand on the wetland determination data forms were transcribed to electronic copies during which any existing data gaps were filled and all data was processed to ensure data quality assurance and quality control.

4.0 Results

Potential jurisdictional waters (including wetlands) occurring within the survey area were delineated and mapped based on federal and state delineation guidance, methodology, and regulatory framework and code, as described above. All waters and wetlands (including final acreages and types) delineated within this survey area are considered potential waters of the U.S. prior to a formal jurisdictional determination performed by ACOE. The final determination issued by ACOE may remove or include portions of delineated waters documented in this jurisdictional delineation report.

The total area of potential waters of the U.S. and State (including wetlands) within the survey area and a general discussion of the policy governing these regulated areas is provided below. Per ACOE mapping guidelines, the results were mapped on a current color aerial photograph at a scale of 1 inch = 200 feet (**Appendix A**), however, an overview map of the entire survey area is shown in **Figure 5**. Refer to the attached Wetlands Determination Data Forms (**Appendix B**) for a full description of sample point results.

4.1 Vegetation:

Several vegetation communities were identified within the project area including southern coastal salt marsh, Diegan coastal sage scrub, southern dune scrub, ornamental vegetation, and ruderal vegetation. Southern coastal salt marsh is the one type of riparian and wetlands vegetation community presently occurring within the Colorado Lagoon that contains hydrophytic species that when prevalent meet the criterion for ACOE jurisdictional wetlands. The dominant species that compose this plant community at Colorado Lagoon are *Batis maritima* (OBL), *Salicornia pacifica* (OBL), *Distichlis spicata* (FAC), *Suaeda esteroa* (FACW), *Jaumea carnosa* (OBL), *Spergularia marina* (FACW), and *Limonium californicum* (FACW). A total of 1.61 acres

Jurisdictional Delineation Overview

400 200 0 400 Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\FigX_JD_Overview.PDF

Figure 5. Map of the Potential Jurisdictional Waters of the U.S. and State (including wetlands) within the Survey Area

of southern coastal salt marsh was identified and these areas are indicated in **Figure 3.** A list of hydrophytic plant species identified within the survey area is provided in **Table 1.**

Table 1. Complete list of hydrophytic plant species identified within the survey area

Scientific Name	Common name	Arid West Region Indicator Status
Tree Species Growth Habit		
Alnus rhombifolia	White Alder	FACW
Platanus racemosa	Western Sycamore	FAC
Salix gooddingii	Black Willow	FACW
Salix lasiolepis	Arroyo Willow	FACW
Umbellularia californica	California Laurel	FAC
Washingtonia robusta	Mexican Fan Palm	FACW
Shrub Species Growth Habit		
Baccharis salicifolia	Mulefat	FAC
Isocoma menziesii	Coast Goldenbush	FAC
Rosa californica	California Rose	FAC
Suaeda taxifolia	Woolly Sea-blite	FACW
Herbaceous Species Growth Habit		
Anemopsis californica	Yerba Mansa	OBL
Arthrocnemum subterminale	Glasswort	FACW
Atriplex prostrata	Fat-hen	FACW
Atriplex semibaccata	Austrailian Salt Bush	FAC
Atriplex watsonii	Watson's Salt Bush	FACW
Bassia hyssopifolia	Five-hook Bassia	FAC
Batis maritima	Saltwort	OBL
Cakile maritima	Sea Rocket	FAC
Cotula coronipifolia	Brass Buttons	OBL
Cressa truxillensis	Alkali Weed	FACW
Cuscuta salina	Salt Marsh Dodder	OBL
Cyperus eragrostis	Tall Flatsedge	FACW
Distichlis littoralis	Shore Grass	OBL
Distichlis spicata	Salt Grass	FAC
Eleocharis macrostachya	Spike Rush	OBL
Frankenia salina	Alkali Heath	FACW
Jaumea carnosa	Fleshy Jaumea	OBL
Juncus acutus ssp. leopoldii	Spiny Rush	FACW
Leymus triticoides	Alkali Rye	FAC
Limonium californicum	Sea Lavender	FACW
Limonium ramosissimum	Algerian Sea-lavender	FACW
Mesymbryanthemum nodiflorum	Slender-leaved Ice Plant	FAC
Muhlenbergia rigens	Deergrass	FAC
Parapholis incurva	Sickle Grass	FAC
Paspalum dilatatum	Dallis Grass	FAC
Plantago lanceolata	English Plantain	FAC
Plantago major	Common Plantain	FAC
Polypogon monspeliensis	Rabbit's Foot Grass	FACW
Salicornia bigelovii	Annual Pickleweed	OBL
Salicornia pacifica	Common Pickleweed	OBL
Schoenoplectus robustus	Salt Marsh Bulrush	OBL
Sisyrinchium bellum	Blue-Eyed grass	FACW
Sonchus asper ssp. asper	Prickly sow thistle	FAC
Spartina foliosa	Pacific Cordgrass	OBL
Spergularia marina	Sand Spurry	FACW
Sporobolus airoides	Alkali Dropseed	FAC
Suaeda esteroa	Estuary Sea-blite	FACW
Sueada calceoliformis	Horned Sea-blite	FACW
Triglochin concinna	Arrow-grass	OBL
Typha domingensis	Southern Cattail	OBL
Zostera marina	Eelgrass	OBL

4.2 Soil:
The locations of the 13 soil pits used to investigate the presence of hydric soil are depicted in **Figure 4**. The soil pit locations were chosen to determine if jurisdictional wetlands extended above the Ordinary High Water Mark (OHWM) where indicators of hydrophytic vegetation appeared to be present. Indicators for hydric soils were found in pits 1, 2, 3, and 13. The soils in these locations were all sandy to sandy-clay and therefore the leading hydric soil indicator in each instance was the presence of sandy redox. Furthermore, naturally problematic soils were determined for points 1 and 5 due to those areas being the subject of recent grading and their current status of being actively managed as wetlands. It was clear that the soils composing the shoreline areas around Colorado Lagoon are sandy fill mixed with a variety of rubble like asphalt and concrete. Therefore, it could be considered that the soils that compose the Colorado Lagoon's shoreline are all naturally problematic as was concluded by LSA in 2008.

One soil pit was dug in Marina Vista Park where hydrophytic vegetation species were found and a salt crust was observed on the surface. These soils contained more loam content than those found around the perimeter of the Lagoon, were highly compacted, and despite regular irrigation there were no indicators of hydric soils.

4.3 Hydrology
The presence of wetland hydrology indicators is evident around the entire perimeter of Colorado Lagoon most notably by the presence of high tide line water marks and tidal drainages. Of the 13 locations surveyed for the presence of wetlands hydrology, sample points 1, 3, 5, 9, 10, and 13 contained indicators. Of these points all but sample point 10 were within the reach of the highest high tide. The mean high tide line was not delineated in the field due to the fact that this boundary is encompassed by the limits of Section 404 jurisdiction that extends to the highest high water line.

Sample point 10 was located in Marina Vista Park where hydrophytic vegetation species were found and the presence of salt crust indicated the presence of wetlands hydrology. Naturally problematic wetlands hydrology existed at sample point 6 due to that area being the subject of recent grading and its current status of being actively managed as a wetland-upland transition zone.

5.0 Conclusions
5.1 Jurisdictional Waters of the U.S. and State
The extent and distribution of the collective area of jurisdictional waters of the U.S. and State occurring within the study site is 18.17 acres. Of these approximately 18.17 acres of delineated aquatic features, approximately 18.16 acres are potential jurisdictional waters of the U.S. and State and approximately 0.01 acres are potential jurisdictional waters of the State exclusively. A summary of the jurisdictional waters of the U.S. and state, with the corresponding regulatory authority, occurring within the survey area, is provided in **Table 2** and mapped in **Figure 5**.

Table 2. Summary of the Potential Jurisdictional Waters of the U.S. and State Occurring within the Survey Area

Type of Potential Jurisdictional Waters of the U.S. and State	Regulatory Authority	Area (acres)
Potential Jurisdictional Waters of the U.S.		
Navigable Water	ACOE and CCC	18.16
	Subtotal Potential Jurisdictional Waters of the U.S.	18.16
Potential Jurisdictional Waters of the State		
Upper Salt Marsh	CCC	0.01
	Subtotal Potential Jurisdictional Waters of the State	0.01
	Grand Total Jurisdictional Waters	18.17

5.2 ACOE Jurisdiction

5.2.1 ACOE Section 10 Jurisdiction

The marine water in Colorado Lagoon is separated from Alamitos Bay by approximately 900 ft of developed park land. Alamitos Bay is a navigable water of the U.S. that is an extension of the Pacific Ocean (a navigable water of the U.S.). Colorado Lagoon is tidally influenced through a direct connection to Alamitos Bay via an approximately 12 ft wide and 8 feet tall box culvert. Thus the Lagoon's marine water is consider as Waters of the U.S. and is subject to ACOE jurisdiction to the mean high water line under Section 10 of the Rivers and Harbors Act.

5.2.2 ACOE Section 404 Jurisdiction

Due to the direct connection with Alamitos Bay, the marine water in Colorado Lagoon is considered as Waters of the U.S. and is subject to ACOE jurisdiction at least to the high tide line under Section 404 of the Clean Water Act. In certain areas where wetland vegetation and soils are present the ACOE jurisdiction extended above the OHWM. The limits of ACOE Section 404 jurisdiction were also extended beyond the observed OHWM to the limits of the highest high water mark where wetland vegetation and soils were lacking. In addition, several areas satisfy all three criteria for ACOE jurisdictional wetlands.

Pursuant to the Clean Water Act, ACOE will assert jurisdiction over traditional navigable waters and their adjacent wetlands. This site has a well documented direct connection to a designated navigable water of the United States. Due to this connection, ACOE will likely verify that a "significant nexus determination" is not required to determine the jurisdictional status of this site. There is a total of 18.16 acre of waters potentially subject to ACOE jurisdiction, of which 1.63 acres is wetland waters and 16.53 acres are non-wetland waters of the United States. A map of potential ACOE jurisdictional areas is provided in **Figure 5** and summarized in **Table 2**.

5.3 CDFW Jurisdiction

CDFW asserts jurisdiction only over wetland areas that are a part of a river, stream, or lake as defined by CDFW. This association is not present within this survey area and all potential wetlands on the site are associated with southern coastal salt marsh habitat. Coastal salt marshes are typically associated with and influenced by marine systems. Since salt marshes tend not to

be regulated under the California Fish and Wildlife Code, there are no potential CDFW jurisdictional areas within the survey area.

5.4 CCC Jurisdiction

Pursuant to the California Coastal Act the CCC will assert jurisdiction over all of the areas satisfying the ACOE jurisdictional criteria for waters and wetlands of the United States. This jurisdictional area usually tends to be more inclusive and extensive than that of ACOE due to the CCC employment a "one-parameter" approach to delineating jurisdictional wetlands. As described previously CCC wetlands need only contain wetlands hydrology and, hydrophytic vegetation or hydric soils. So is the case at this site with a total of 18.17 acres potentially subject to CCC wetland jurisdiction, 0.01 more acres than that of ACOE. This difference is due to areas existing where salt marsh (wetland) vegetation extended beyond the limit of the highest high water mark and existed regardless of the presence of hydric soil indicators. Due to hydrologic and geologic conditions, there were no hydric soils that extended beyond the limit of the highest high water mark. A map of potential CCC jurisdictional areas is provided in **Figure 5** and summarized in **Table 2**.

6.0 References

Cowardin, L., V. Carter, F. Golet, and E. LaRoe 1979 *Classification of Wetlands and Deepwater Habitats of the United States.*U.S. Department of Interior. U.S. Fish and Wildlife Service. FWS/OBS-79/31. December 1979.

Hickman, J.C., ed 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley and Los Angeles, CA 1,400pp

Lichvar, R.W., and S.M. McColley. August 2008 *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual.*

Lichvar, R.W., D.C. Finnegan, M.P. Ericsson., and W. Ochs 2006 *Distribution of Ordinary High Water Mark (OHWM) Indicators and Their Reliability in Identifying the Limits of "Waters of the United States" in Arid Southwestern Channels*.

LSA Associates, Inc. May 2008. *Draft Environmental Restoration Project, Colorado Lagoon Restoration Project.*

Moffatt and Nichol. February 2005. *Colorado Lagoon Restoration Feasibility Study Final Report*.

Moffatt and Nichol. June 2010. *Alternatives Analysis Report Phase 2 Study, Colorado Lagoon Restoration Project*.

Natural Resource Conservation Service. 2011a. *National List of Hydric Soils*. Available at http://soils.usda.gov/use/hydric/

Natural Resource Conservation Service. 2011b. *Web Soil Survey*. Available at http://websoilsurvey.nrcs.usda.gov/app/

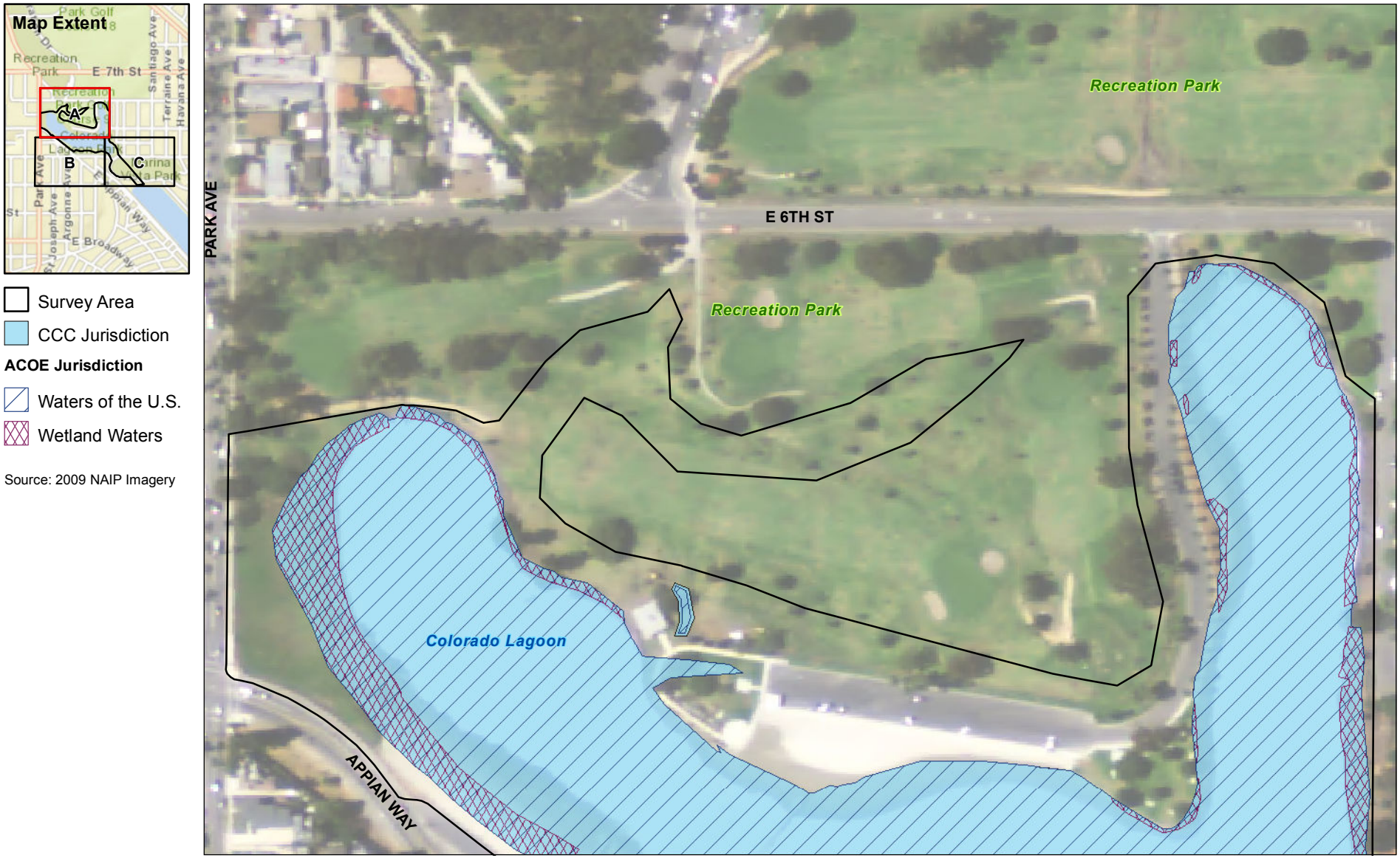
U.S. Army Corps of Engineers. 2006. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. ed J.S. Wakely, R. W. Lichvar, and C.V. Noble. Vicksburg, MS: United States Army Engineer Research and Development Center.

U.S. Army Corps of Engineers. October 2012. *National Wetland Plant List.*

U.S. Fish and Wildlife Service. 1996. *National List of Vascular Plant Species that Occur in Wetlands*. Available at http://library.fws.gov/Pubs9/wetlands_plantlist96.pdf

Appendix A

Maps of the Potential Jurisdictional Waters of the U.S. and State (including wetlands) in accordance with ACOE Mapping Guidelines where the scale is 1-inch equaling 200ft



C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\MXD\WD_JD_20130607.mxd

Jurisdictional Delineation

N

200 100 0 200

Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\FigX_JD.PDF

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\MXD\WD_JD_20130607.mxd

Jurisdictional Delineation

200 100 0 200 Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\FigX_JD.PDF

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\MXD\WD_JD_20130607.mxd

Jurisdictional Delineation

200 100 0 200 Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\FigX_JD.PDF

Appendix B

Wetland Delineation Data Forms for Arid West Region

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/17/2013

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 1

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7721 | Long: -118.1350 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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	☐	
Hydric Soil Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:Meter squared)			
1. *Distichlis spicata*	85	yes	FACW
2. ____			
3. ____			
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____		= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= 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: 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	____	x1 = ____
FACW species	25	x2 = 50
FAC species	____	x3 = ____
FACU species	____	x4 = ____
UPL species	____	x5 = ____
Column Totals:	25 (A)	50 (B)

Prevalence Index = B/A = 2.0

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: The hydrophytic vegetation was problematic due to patchiness within a playa habitat

Project Site: Colorado Lagoon

SOIL

Sampling Point: 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/3	100	N/A	N/A			Sandy Clay	
6-8	2.5Y 2.5/1	100	10YR 6/8	100	CS	M	Sandy Clay	
8-15	10YR 2/2	100	N/A	N/A			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: N/A

Depth (Inches): N/A

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Recently developed (2009) bioswale wetland area adjacent to golf course. Lack of proper time for hydric soil indicators to develop.

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: Location connected to Lagoon via an underground culvert

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/17/2013

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 2

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7720 | Long: -118.1350 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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	☐	
Hydric Soil Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:Meter squared)			
1. *Jaumea carnosa*	45	yes	OBL
2. *Distichlis spicata*	45	yes	FAC
3. *Atriplex triangularis*	10	yes	FACW
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____	100	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= 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:	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	45	x1 =	45
FACW species	10	x2 =	20
FAC species	45	x3 =	135
FACU species	____	x4 =	____
UPL species	____	x5 =	____
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.0

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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR2/1	100	10YR6/8	100	CS	M	Sandy Clay Loam	
12-15	2.5YR3/2	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 Soils Present? **Yes** ☒ **No** ☐

Remarks:

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 DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/17/2013

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 3

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7725 | Long: -118.1358 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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	☐	
Hydric Soil Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☒ **No** ☐
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: Upper salt marsh habitat

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:Meter squared)			
1. *Spergularia marina*	90	yes	FACW
2. *Distichlis spicata*	5	no	FAC
3. *Salicornia pacifica*	5	no	OBL
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____		= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= 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:	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	5	x1 = 5
FACW species	90	x2 = 180
FAC species	5	x3 = 15
FACU species	____	x4 = ____
UPL species	____	x5 = ____
Column Totals:	100 (A)	200 (B)

Prevalence Index = B/A = 2.0

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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/3	100					Loam	
8-10	7.5YR2/4	100	10YR6/8	100	CS	M	Sand	
10-12	10YR3/4	100					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 Soils Present? **Yes** ☒ **No** ☐

Remarks:

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: Aquatic intertebrate shells present. Location at base of freshwater drainage from golf course in the lagoon.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/17/2013

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 4

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7725 | Long: -118.1359 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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 ☒		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:____)			
1. *Plantago major*	10	no	FAC
2. *Cynadon dactylon*	40	yes	FACU
3. *Sonchus oleraceus*	10	no	UPL
4. *Pennisetum clandestinum*	40	yes	UPL
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____		= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= 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: 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	____	x1 =	____
FACW species	____	x2 =	____
FAC species	10	x3 =	30
FACU species	40	x4 =	160
UPL species	50	x5 =	250
Column Totals:	100 (A)		440 (B)

Prevalence Index = B/A = 4.4

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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-12	10YR2/2	100	10Y/R	100	CS	M	sandyloam	

[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 Soils Present? **Yes** ☒ **No** ☐

Remarks: Location near the apex of a drainage from the golf course into the lagoon.

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 DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/17/2013

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 5

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7718 | Long: -118.1367 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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	☐	
Hydric Soil Present?	Yes	☐	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☒ **No** ☐
Wetland Hydrology Present?	Yes	☐	No	☐	

Remarks: Location was recently (2012) graded as part ofbank resloping restoraiton effort.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:Meter squared)			
1. *Distichlis littoralis*	5	no	OBL
2. *Distichlis spicata*	5	no	FAC
3. ____			
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____	20	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= 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:	0	(A)
Total Number of Dominant Species Across All Strata:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

	Total % Cover of :	Multiply by:
OBL species	5	x1 = 5
FACW species	____	x2 = ____
FAC species	5	x3 = 15
FACU species	____	x4 = ____
UPL species	____	x5 = ____
Column Totals:	10 (A)	20 (B)

Prevalence Index = B/A = 2.0

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: Recently re-vegetated salt marsh habitat currently being managed.

Project Site: Colorado Lagoon

SOIL Sampling Point: 5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR2/2	100					SiltyClay	

[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 Soils Present? **Yes** ☒ **No** ☐

Remarks: Recently developed wetland area.

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: Location with reach of highest high tides of the year.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/17/2013

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 6

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7718 | Long: -118.1367 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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 ☐		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Location was recently (2012) re-vegetated and is managed as a wetlands-uplands transition zone that will have a mixture of hydrophytic vegetation and upland species growing in non-hydric soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:____)			
1. *Opuntia littorlis*	10	no	UPL
2. *Isocoma menziesii*	10	no	FAC
3. ____			
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____	20	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= 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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

	Total % Cover of :	Multiply by:
OBL species	____	x1 = ____
FACW species	____	x2 = ____
FAC species	10	x3 = 30
FACU species	____	x4 = ____
UPL species	____	x5 = ____
Column Totals:	10 (A)	30 (B)

Prevalence Index = B/A = 3.0

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: Recently re-vegetated salt marsh-sage scrub transition zone habitat currently being managed.

Project Site: 4/17/2013

SOIL

Sampling Point: 6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR2/2	100					Clay Loam	
3-12	10YR3/4	100					SandyLoam	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks: Managed wetland-upland tranistion zone habitat.

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: Salt crust from soil relocation during wetlands slope grading as part of restoration effort.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/16/13

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 7

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7708 | Long: -118.1350 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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 ☒		
Hydric Soil Present?	Yes ☐	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☐	No ☐		

Remarks: **Survey location on am atrificial sandy beach maintained with no vegetation. Point selected to define wetlands edge.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____		= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= Total Cover	
% Bare Ground in Herb Stratum 100	% 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: 0 (B)

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

Prevalence Index worksheet:

Total % Cover of :		Multiply by:	
OBL species	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = 0

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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	2.5YR4/2	100					Sand	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks:

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 DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/16/13

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 8

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7700 | Long: -118.1317 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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 ☐		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Maintained park area with irrigation system along edge of lagoon.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____	____	____	____
2. ____	____	____	____
3. ____	____	____	____
4. ____	____	____	____
50% = ____, 20% = ____	____	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. *Cotula coronapifolia*	5	no	OBL
2. *Cynadon dactylon*	20	yes	FACU
3. ____	____	____	____
4. ____	____	____	____
5. ____	____	____	____
50% = ____, 20% = ____	25	= Total Cover	
Herb Stratum (Plot size:____)			
1. ____	____	____	____
2. ____	____	____	____
3. ____	____	____	____
4. ____	____	____	____
5. ____	____	____	____
6. ____	____	____	____
7. ____	____	____	____
8. ____	____	____	____
50% = ____, 20% = ____	____	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____	____	____	____
2. ____	____	____	____
50% = ____, 20% = ____	____	= Total Cover	
% Bare Ground in Herb Stratum 25	% Cover of Biotic Crust 50		

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	5	x1 =	5
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	20	x4 =	80
UPL species	____	x5 =	____
Column Totals:	25 (A)		85 (B)

Prevalence Index = B/A = 3.4

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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					silty clay	heavily compacted

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil was extremely compacted silty clay that was too dense to display hydric indicators.

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: This location is a concave depression that receive regular irrigationin a park setting. Water from the irrigation pools on the surface due to the compacted soil conditions and attracts waterfowl whose droppings aid in the creation of the biotic crust.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/16/13

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 9

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7700 | Long: -118.1317 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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 ☐		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Point of investigation is between waters of US and the maintained parkinvestigation in point 8. Location appears to be a former fill area based on the numerous large pieces of concrete surrounding the point and chunks of debris found in the soil pit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:____)			
1. *Distichlis spicata*	100	yes	FAC
2. ____			
3. ____			
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____	100	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= 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:	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	____	x1 = ____
FACW species	____	x2 = ____
FAC species	100	x3 = 300
FACU species	____	x4 = ____
UPL species	____	x5 = ____
Column Totals:	100 (A)	300 (B)

Prevalence Index = B/A = 3.0

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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 9

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100					SandyLoam	
3-12	7.5YR3/4	100					ClayLoam	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks: Soil contained chunks of concreate. Appears to be artifical fill material.

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 DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/16/13

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 10

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7693 | Long: -118.1313 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: N/A

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 ☐		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Investigation point location in one of several depressed areas within Marina Vista Park where vegetation is sparse and salt crust on the surface is apparent. Patches of halyphytic plant species have established around the edges of these depressions.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:____)			
1. *Parapholis incurva*	15	yes	FAC
2. *Cotula coronipifolia*	10	no	OBL
3. *Spergularia marina*	25	yes	FACW
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____		= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= Total Cover	
% Bare Ground in Herb Stratum 50	% 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	10	x1 =	10
FACW species	25	x2 =	50
FAC species	15	x3 =	45
FACU species	____	x4 =	____
UPL species	____	x5 =	____
Column Totals:	50 (A)		105 (B)

Prevalence Index = B/A = 2.1

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:

Project Site: _____

SOIL Sampling Point: _____

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	2.5YR3/2	100					sandyclaylo	am

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks: Fill material in irrigated park

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: Salt crust is likely present due to the use of marine sediment to fill in this area in the 1950's. The presence of Horn Snail shells further supports this conclusion. Salts in the surrounding park soils have been leached to this depression, thus creating wetland hyrdology indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/16/13

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 11

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7709 | Long: -118.1318 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: N/A

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 ☐		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:Meter Squared)			
1. *Cressa truxilensis*	15	yes	FACW
2. *Parapholis incurva*	40	yes	FAC
3. *Distichlis spicata*	15	yes	FAC
4. *Mesembryanthemum nodiflorum*	1	no	FAC
5. *Lycium californicum*	5	no	UPL
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____	76	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= Total Cover	
% Bare Ground in Herb Stratum 24	% 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	____	x1 = ____
FACW species	15	x2 = 30
FAC species	56	x3 = 168
FACU species	____	x4 = ____
UPL species	5	x5 = 25
Column Totals:	76 (A)	223 (B)

Prevalence Index = B/A = 2.93

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: Upper salt marsh plant community

Project Site: Colorado Lagoon

SOIL Sampling Point: 11

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y3/2	100					Sand	
12-15	2.5Y4/3	100					SandyLoam	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks: 0-12 inches contained more organics than 12-15 inches. Sandy soils indicate the presence of fill material.

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 DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/16/13

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 12

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7732 | Long: -118.1327 | Datum: WGS 84

Soil Map Unit Name: ____ | NWI classification: Freshwater Pond Wetland

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 ☒		
Hydric Soil Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☐**
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1. ____			
2. ____			
3. ____			
4. ____			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. ____			
2. ____			
3. ____			
4. ____			
5. ____			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size:____)			
1. *Malva parviflorum*	15	yes	UPL
2. *Bassia hyssopifolia*	10	yes	FAC
3. *Cressa truxilensis*	10	no	FACW
4. ____			
5. ____			
6. ____			
7. ____			
8. ____			
50% = ____, 20% = ____	35	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1. ____			
2. ____			
50% = ____, 20% = ____		= Total Cover	
% Bare Ground in Herb Stratum 75	% 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	____	x1 = ____
FACW species	10	x2 = 20
FAC species	10	x3 = 30
FACU species	____	x4 = ____
UPL species	15	x5 = 75
Column Totals:	35 (A)	125 (B)

Prevalence Index = B/A = 3.57

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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 12

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	2YR2/2	100					gravelysand	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks: Large pieces of gravel and chunks of asphalt fill found at invesigation pit and in soil pit. Soil is heavily compacted.

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: Pieces of aquatic invertebrate shells found as part of fill material.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: Colorado Lagoon | City/County: Long Beach/Los Angeles | Sampling Date: 4/16/13

Applicant/Owner: City Of Long Beach/State Lands Commission | State: CA | Sampling Point: 13

Investigator(s): Eric Zahn/Taylor Parker/Jade Dean | Section, Township, Range: T 5S/R 12W, Section 4

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

Subregion (LRR): C | Lat: 33.7713 | Long: -118.1326 | Datum: WGS 84

Soil Map Unit Name: _____ | NWI classification: Freshwater Pond Wetland

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 ☐		
Hydric Soil Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: **Intertdial i**nvestigation point at the base of a small retaining wall just adjacent to disturbance from a recent dredging project.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50% = _____, 20% = _____		= Total Cover	
Sapling/Shrub Stratum (Plot size:_____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
50% = _____, 20% = _____		= Total Cover	
Herb Stratum (Plot size:_____)			
1. *Salicornia pacifica*	50	yes	OBL
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
50% = _____, 20% = _____	50	= Total Cover	
Woody Vine Stratum (Plot size:_____)			
1. _____			
2. _____			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 50	% 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	50	x1 =	50
FACW species	_____	x2 =	_____
FAC species	_____	x3 =	_____
FACU species	_____	x4 =	_____
UPL species	_____	x5 =	_____
Column Totals:	50 (A)		50 (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:

Project Site: Colorado Lagoon

SOIL Sampling Point: 13

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (Moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR3/3	95	10YR6/8	5	C	PL	SandyClay	

[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 Soils Present? **Yes** ☒ **No** ☐

Remarks:

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:

Appendix C

Survey Area Photos

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\MXD\WD_SoilPit_20130523.mxd

Sample Locations

350 175 0 350 Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\Fig6_SampleLocations.PDF

Photo Locations

350 175 0 350 Feet

Tidal Influence

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\Finished_Maps\Fig7_PhotoLocations.PDF

C:\Users\Jade\Documents\Tidal_Influence\Monitoring_Resources\Colorado_Lagoon\Wetland_Delineation\MXD\WD_PhotoLocations_20130523.mxd

Soil Pit 1.

Soil Pit 2.

Soil Pit 3.

Soil Pit 4.

Soil Pit 5.

Soil Pit 6.

Soil Pit 7.

Soil Pit 8.

Soil Pit 9.

Site Photographs

Tidal Influence

C:\Users\Jade\Documents\Tidal Influence\Monitoring Resources\Colorado Lagoon\Wetland Delineation\Finished Maps

Soil Pit 10.

Soil Pit 11.

Soil Pit 12.

Soil Pit 13.

Soil Pit 13. Soil Detail.

Site Photographs

Tidal Influence

C:\Users\Jade\Documents\Tidal Influence\Monitoring Resources\Colorado Lagoon\Wetland Delineation\Finished Maps

Photo Location 1. View north.

Photo Location 2. View south.

Photo Location 3. View southwest.

Photo Location 4. View northwest.

Photo Location 5. View southeast.

Photo Location 6. View northwest.

Photo Location 7. View southeast.

Photo Location 8. View northwest.

Photo Location 9. View east.

Site Photographs

Tidal Influence

Photo Location 10. View south.

Photo Location 11. View west.

Photo Location 12. View southeast.

Photo Location 13. View southeast.

Photo Location 14. View north.

Photo Location 15. View south.

Photo Location 16. View east.

Site Photographs

Tidal Influence