Appendix H

Wetland Delineation for the East-West Connector Project

Delineation of Wetlands and Other Waters for the East-West Connector Project

Prepared for:

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408/434-2244

May 2008

ICF Jones & Stokes. 2008. Delineation of Wetlands and Other Waters for the East-West Connector Project. May. (ICF J&S 00703.07.) San Jose, CA. Prepared for: T.Y. LIN International.

8/14/08 320101 - EAST/WEST
Scanned copies to T.W., F.L., Mee Lee, M. Wood
Original File 199 Permits

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

AUG 11 2008

RECEIVED
AUG 14 2008
T.Y. LIN-OAK

Regulatory Division

SUBJECT: File Number 2008-00012

ACTA Project Controls Team
Attn: Mr. Arthur Dao
1333 Broadway, Suite 300
Oakland, California 94612

Dear Mr. Dao:

This letter is written in response to your submittals of December 28, 2007, and June 6, 2008, requesting confirmation of the extent of Corps of Engineers' jurisdiction at the East-West Connector Project located between I-880 on the west and Mission Boulevard on the east within the cities of Fremont and Union City in Alameda County, California (see attached list of APNs).

Enclosed is a map showing the extent and location of Corps of Engineers' jurisdiction. We have based this jurisdictional delineation on the current conditions on the site as verified during a site visit performed by our staff on February 25, 2008. A change in those conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. However, if there has been a change in circumstances that affects the extent of Corps jurisdiction, a revision may be completed before that date.

All proposed work and/or structures extending bayward or seaward of the line on shore reached by: (1) mean high water (MHW) in tidal waters, or (2) ordinary high water in non-tidal waters designated as navigable waters of the United States, must be authorized by the Corps of Engineers pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. Section 403). Additionally, all work and structures proposed in unfilled portions of the interior of diked areas below former MHW must also be authorized under Section 10 of the same statute.

All proposed discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands.

Your proposed activity is within our jurisdiction and a permit will be required for your project. Application for Corps authorization should be made to this office using the application form available at our website (http://www.spn.usace.army.mil/regulatory/index.html). To avoid delays it is essential that you enter the file number at the top of this letter into Item No. 1 of the application. The application must include plans showing the location, extent and character of the proposed activity, prepared in accordance with the requirements. You should note, in planning your project, that upon receipt of a properly completed application and plans, it may be necessary to advertise the proposed work by issuing a Public Notice for a period of 30 days.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

Should you have any questions regarding this matter, please call Paula Gill of our Regulatory Division at 415-503-6776. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Robert Smith

for Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copy Furnished (w/o enclosures):
CA SWRCB, Sacramento, CA

Copy Furnished (with enclosures):
CA RWQCB, Oakland, CA
T.Y. Lin International, Attn: Mr. Tom Wintch, 1111 Broadway, Suite 2150, Oakland CA 94607
ICF, Attn: Ms. Kate Giberson, 2841 Junction Ave, Suite 114, San Jose, 95134

ICF Jones & Stokes
an ICF International Company

Memorandum

Date: June 30, 2008

To: Paula Gill, U.S. Army Corps of Engineers

cc: Tom Wintch, Francis Lo Wood – TYLIN International

Alex Hardy, Rob Preston – ICF Jones & Stokes

From: Kate Giberson, EIR Project Manager

Subject: **East-West Connector Project – Errata to the Wetland Delineation Report (May 2008)**

This memo lists the revisions that have been made to the Wetland Delineation Report (May 2008) to correct a typographical error on the impact acreage for the Line M Channel. Revisions are shown in strikeout-underline text with strikeout text (~~text~~) showing deletions and underline text (text) showing additions.

The estimated project impacts total 0.23 acres for the Line M Channel (not 0.14 acres), as determined in preparation of later drafts of the document. While the acreage was corrected in the Exhibit A figure of the May 2008 version of the report, the updated acreage was not corrected elsewhere in the text.

Please contact us if you have any questions (Kate: 408-434-2244, Alex: 415-296-0524, Rob: 916-737-3000).

Page ES-2, first complete paragraph

In summary, 10.14 acres of jurisdictional wetlands and ~~3.13~~3.22 acres of jurisdictional other waters are located in the study area. A 2.85-acre detention basin in the study area is not subject to Corps jurisdiction.

Page 3-1, first paragraph

A total of 10.14 acres of potentially jurisdictional wetlands and ~~3.13~~ 3.22 acres of potentially jurisdictional other waters are located in the study area. All wetlands and other waters mapped within the study area are directly or indirectly hydrologically connected to San Francisco Bay. The types of wetlands and other waters at each site are listed below and shown on Exhibit A in Appendix A. Descriptions of the different types of wetlands and other waters identified in the study area are provided below, and representative photographs are provided in Appendix D.

Page 4-1, first paragraph under "Jurisdictional Information" heading

The results of our assessment indicate that ~~13.27~~ 13.36 acres of potential waters of the United States are located in the study area. Of this total, 10.14 acres are wetlands and ~~3.13~~ 3.22 acres are other waters. Table 2 summarizes the potential waters of the United States in the study area.

Page 4-2, Table 2

Table 2. Summary of Jurisdictional Waters of the United States in the Study Area

Jurisdictional Feature	Acreage
Alameda Creek Flood Control Channel	
Wetlands	4.24
Open Water	2.85
Old Alameda Creek historic channel	
Wetlands	5.10
Crandall Creek	0.14
Line M Channel	~~0.14~~0.23
Detention Basin 2C	0.80
Total	**~~13.27~~13.36**

Contents

Tables and Figures

Acronyms and Abbreviations

1987 Manual	U.S. Army Corps of Engineers Wetlands Delineation Manual
Arid West Supplement	Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region
BART	Bay Area Rapid Transit District
CFR	Code of Federal Regulations
CWA	Clean Water Act
GPS	global positioning system
I-880	Interstate 880
JD	jurisdictional determination
OHWM	ordinary high-water mark
RPWs	relatively permanent waters
SR 238	State Route 238
TNW	traditional navigable waterway
USACE	U.S. Army Corps of Engineers

Executive Summary

This report presents the results of a delineation of wetlands and other waters conducted for the proposed East-West Connector between State Route 238 (SR 238) and Interstate 880 (I-880), which occurs mostly within urban areas of the cities of Fremont and Union City, Alameda County, California. The delineation area encompasses approximately 195.5 acres.

Fieldwork for the delineation was conducted by Jones & Stokes wetland specialists and soil scientists on October 9 and 10, 2007, using the routine on-site determination method described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (1987 Manual) (Environmental Laboratory 1987) and, where applicable, in accordance with methods identified in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (U.S. Army Corps of Engineers 2006). Other waters of the United States were mapped and delineated in the field in accordance with the guidelines in U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05, dated December 7, 2005.

This report provides a summary of the wetlands and other waters that would likely be subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). A draft jurisdictional determination (JD) form was completed using the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook*, dated May 30, 2007 (U.S. Army Corps of Engineers 2007).

The field delineation determined that no traditional navigable waters are located in the study area. Three relatively permanent waters[1] (RPWs) including Alameda Creek Flood Control Channel, Crandall Creek, and the Line M Channel; one wetland directly abutting Alameda Creek Flood Control Channel (a RPW in the study area); and one wetland adjacent to, but not directly abutting, the historic channel of Old Alameda Creek (a RPW in the study area).

A description of the wetlands and other water features delineated in the study area is provided in Section 3, *Results*, of this report, and their locations are depicted in the figures in Appendix A. The jurisdictional status of each feature in the study area is discussed in Section 4, *Jurisdictional Assessment*, of this report. All wetland boundaries and jurisdictional determinations presented in this report were field inspected by Paula Gill, USACE, San Francisco District, on February 25, 2008. At the request of Ms. Gill, additional field work to

[1] RPWs are defined as waters that flow year-round or have continuous flow at least seasonally (typically 3 months).

characterize the wetlands in the detention basins adjacent to Line M Channel was performed on March 18, 2008.

In summary, 10.14 acres of jurisdictional wetlands and 3.13 acres of jurisdictional other waters are located in the study area. A 2.85-acre detention basin in the study area is not subject to Corps jurisdiction.

Section 1
Introduction and Site Description

Introduction

This report presents the results of the Jones & Stokes delineation of waters of the United States, including wetlands, for the proposed East-West Connector between State Route 238 (SR 238) and Interstate 880 (I-880), which occurs mostly within urban areas of the cities of Fremont and Union City, Alameda County, California.

This report is organized as shown below.

- Section 1, *Introduction and Site Description*, presents a brief introduction of the project and summarizes the vegetation, geology, soils, and hydrology of the study area.
- Section 2, *Delineation Methods*, describes field delineation methods.
- Section 3, *Results*, presents the results of the wetland delineation.
- Section 4, *Jurisdictional Assessment*, presents a preliminary jurisdictional overview.
- Section 5, *References*, lists the references cited in the text.
- Section 6, *Preparers*, lists the persons who conducted the wetland delineation surveys and/or prepared the report.
- Appendix A, *Wetland Delineation Map*, presents a graphic depiction of the results of the wetland delineation.
- Appendix B, *Plants Observed in the Delineation Study Area*, lists all plant species documented during the field survey.
- Appendix C, *Wetland Determination Forms*, contains the forms on which data points were documented.
- Appendix D, *Representative Site Photographs*.

Project Description

The East West Connector Project is located within the cities of Fremont and Union City in southern Alameda County, California. The proposed project would provide a connection between I-880 on the west and Mission Boulevard

(SR 238) on the east (Figure 1). This connection would be accomplished through a combination of constructing a new roadway segment and widening two existing roadways. The entire project alignment would be approximately 2.6 miles long.

The project location is on the Newark 7.5-minute quadrangle in an unsurveyed section of Township 4 South, Range 1 West (formerly the Potrero de los Cerritos and Arroyo de la Alameda land grants). The geographic coordinates of the site are 37.57512° N, 122.01831° W.

Site Description

The study area for this wetland delineation consisted of the area encompassed by the limits of ground disturbance for the proposed project (see Appendix A). The delineation study area encompasses approximately 195.5 acres.

Vegetation

Most of the study area consists of residential or commercial development, much of which is hardscape, including buildings, parking lots, driveways, and sidewalks. The native vegetation has been replaced with grass lawns and ornamental plantings. Vegetation along the historic channel of Old Alameda Creek consists of willow scrub on the banks and herbaceous wetlands on the channel bottom. Herbaceous wetlands are also present along Alameda Creek Flood Control Channel and Line M Channel that is tributary to Alameda Creek Flood Control Channel. A list of plant species observed in the study area, including the scientific name and wetland indicator status (Reed 1988) of each species, is provided in Appendix B.

Urban Landscaping

Urban landscaping consists of shade and street trees, hedges and shrubs, and lawns and gardens. Most of these species are nonnative perennials, such as blue gum (*Eucalyptus globulus*) and Canary Island pine (*Pinus canariensis*), although some natives are included, such as California redwood (*Sequoia sempervirens*). Also included in this vegetation type are ruderal (disturbance-adapted) species that occur in disturbed areas adjacent to the paved and landscaped areas.

Willow Scrub

Willow scrub is a woody riparian plant community that occurs at and above the ordinary high-water mark (OHWM) along the historic channel of Old Alameda Creek. The dominant canopy species are arroyo willow (*Salix lasiolepis*) and sandbar willow (*Salix exigua*). Other common canopy species include blue elderberry (*Sambucus mexicanus*), red willow (*Salix laevigata*), and northern

Jones & Stokes

Figure 1
Project Location

California black walnut (*Juglans hindsii*). The understory, typically, is dense and dominated by Himalaya blackberry (*Rubus armeniacus*). Where canopy openings occur, the understory consists of annual grassland, characterized by nonnative annual grasses in association with native and nonnative forbs.

Herbaceous Wetland

Herbaceous wetlands are present in the historic channel of Old Alameda Creek, along Alameda Creek Flood Control Channel, and along Line M Channel. The vegetation is dominated by emergent hydrophytes, but ruderal species are also present. The distribution of species is heterogeneous, with patches dominated by hardstem bulrush (*Scirpus acutus*), cattails (*Typha angustifolia, T. latifolia*), swamp timothy (*Crypsis schoenoides*), common cocklebur (*Xanthium strumarium*), smartweed (*Polygonum amphibium, P. punctatum*), jointgrass (*Paspalum dilatatum*), and bentgrass (*Agrostis* sp.).

Geology and Soils

Geology

The geology of the study area is mapped as Quaternary (≤ 10,000-year-old) sediments. These sediments include consolidated and semi-consolidated alluvium, lake, playa, and terrace deposits. They are mostly nonmarine, but the area does include marine deposits near the coast (Jennings 1977).

Soils

In terms of general soil map units, the entire study area has been mapped as the Sycamore-Yolo unit, characterized by nearly level well-drained and poorly drained silt loams on floodplains and alluvial fans.

Several detailed soil map units are present in the study area. Figure 2 shows these detailed soil map units; Table 1 provides additional information on the characteristics of each soil map unit.

Table 1. Soils in Study Area

Soil Map Unit Number	Soil Map Unit Name	Dominant Soil Texture	Restrictive Layer	Depth to Restrictive Layer (inches)	Drainage Class	Hydric Criteria
107	Clear Lake clay, 0%–2% slopes, drained	Clay	Water table	36–60	Poorly drained	2B3, 4
111	Danville silty clay loam, 0%–2% slopes	Silty clay loam	Water table	> 80	Well drained	2B3
112	Danville silty clay loam, 2%–9% slopes	Silty clay loam	Water table	> 80	Well drained	–
DaB	Danville silty clay loam, 3%–10% slopes	Silty clay loam	Water table	> 80	Well drained	–
131	Omni silty clay loam, drained	Clay	Water table	60–72	Poorly drained	2B3
135	Pits, gravel	NA	–	–	–	–
143	Sycamore silt loam, drained	Silt loam	Water table	> 80	Poorly drained	2B3
161	Yolo silt loam, 0%–2% slopes	Silt loam	Water table	> 80	Well drained	2B3
162	Water	NA	–	–	–	–

Explanation of hydric criteria codes:

1. All Histels, except for Folistels, and Histosols, except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either
      1. a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2. a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6 inches/hour in all layers within a depth of 20 inches, or
      3. a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 inches/hour in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for a long or very long duration during the growing season.
4. Soils that are frequently flooded for a long or very long duration during the growing season.

Sources: U.S. Department of Agriculture 2007a, 2007b.

Hydrology

The study area is located in the Alameda Creek watershed, and the project is located in the San Francisco Bay hydrologic unit (HUC 18050004). The Alameda Creek Flood Control Channel is the dominant hydrological feature in the study area. Old Alameda Creek is a portion of the ancestral stream channel that no longer experiences stream flow. The historic channel of Old Alameda

Creek receives a relatively small amount of localized drainage from the area bounded by Alvarado-Niles Road, Rock Avenue and the BART tracks via flood control facility Line N-12, which is made up of a series of pipes and culverts. In addition, the historic channel of Old Alameda Creek is available to provide overflow drainage for the Quarry Lakes (outside the study area) via a 36-inch culvert during heavy storm events. However, according to the East Bay Regional Park District staff that operate the Lakes, there has never been an overflow from the Lakes into Old Alameda Creek.

Crandall Creek is a native stream that has been channelized outside the study area; within the study area, it is culverted below ground but reemerges above ground outside the study area. In addition, there is a channelized stream called the Line M Channel that drains the hills east of the study area and flows into the Alameda Creek Flood Control Channel.

The nearest traditional navigable waterway (TNW) to the study area is Alameda Creek Flood Control Channel, located at the extent of the 100-year high tide, which is 2.2 river miles (1.6 linear miles) downstream from the study area.[2] Where the Alameda Creek becomes tidal, it is renamed Coyote Hills Slough, part of San Francisco Bay. From the study area, Old Alameda Creek flows approximately 0.5 mile into the Alameda Creek Flood Control Channel. Both Crandall Creek and the Line M Channel flow approximately 1.5 miles into Coyote Hills Slough/Alameda Creek Flood Control Channel via underground storm sewers and aboveground channels.

[2] For the purposes of this report, TNWs are those navigable waterways defined by the U.S. Army Corps of Engineers, (33CFR 329.12), at <http://www.usace.army.mil/cw/cecwo/reg/33cfr329.htm>. Accessed: November 8, 2007.

	Soil Type	Acres in Project Area	Percent of Project Area
107	Clear Lake clay, 0 to 2 percent slopes, drained	19.5	10.0
111	Danville silty clay loam, 0 to 2 percent slopes	1.6	0.8
112	Danville silty clay loam, 2 to 9 percent slopes	7.8	4.0
DaB	Danville silty clay loam, 3 to 10 percent slopes	3.8	1.9
131	Omni silty clay loam, drained	1.3	0.7
135	Pits, gravel	13.0	6.6
143	Sycamore silt loam, drained	22.1	11.3
161	Yolo silt loam, 0 to 2 percent slopes	117.1	59.9
162	Water	9.2	4.7

0 250 500 750 1,000 Feet

1 inch equals 500 feet

N

Soils Type Boundary (NRCS SSURGO soils)

Project Limits

I-238/880 East-West Connector

Figure 2

SOILS

Jones & Stokes

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Section 2
Delineation Methods

Fieldwork for the delineation took place over 2 days, October 9 and 10, 2007. The delineation was conducted by Jones & Stokes wetland specialists (botanist, soil scientist) using the routine on-site determination method described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (1987 Manual) (Environmental Laboratory 1987) and, where applicable, in accordance with the methods identified in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (U.S. Army Corps of Engineers 2006). Other waters of the United States were mapped and delineated in the field in accordance with U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05, dated December 7, 2005.

As detailed in the Arid West Supplement, data on vegetation, soil, and hydrology characteristics, which were used as the basis for wetland boundary determinations, were collected and recorded on Arid West Supplement data forms[3] (Appendix C). The boundaries of nontidal, nonwetland waters (i.e., tributaries and relatively permanent waters [RPWs]) were delineated at the OHWM as defined in 33 Code of Federal Regulations (CFR) 328.3. The OHWM represents the limit of potential U.S. Army Corps of Engineers (USACE) jurisdiction over nontidal waters (e.g., streams and ponds) in the absence of adjacent wetlands (33 CFR 328.04).

A Trimble GeoXT global positioning system (GPS) unit, typically accurate to less than 1 horizontal meter, was used to record the location of jurisdictional boundaries, data points, and other pertinent features (such as culvert locations) wherever possible. Where satellite reception was poor (such as under a dense tree canopy or in very steep terrain), aerial photograph interpretation was used to supplement the GPS data. The GPS data were downloaded and superimposed onto recent color orthorectified aerial photographs and edited as necessary to generate the delineation maps for the study area.

Following the field delineation, water bodies and wetland features in the study area were assigned to one of three types of potential waters of the United States based on the standards presented in the *Rapanos* decision[4] (see Section 4,

[3] Arid West Supplement Data Form, version 11-1-2006.

[4] In 2006, the Supreme Court addressed the jurisdictional scope of Section 404 of the CWA, specifically the term "waters of the United States," in *Rapanos v. U.S.* and in *Carabell v. U.S.* (hereafter referred to as *Rapanos*). The Rapanos decision provides two new analytical standards for determining whether water bodies that are not TNWs, including wetlands adjacent to those non-TNWs, are subject to CWA jurisdiction: (1) if the water body is relatively permanent, or if the water body is a wetland that directly abuts a relatively permanent water body, or (2) if a water

Preliminary Jurisdictional Determination) and mapped accordingly. A wetlands verification visit was conducted with Paula Gill, USACE, San Francisco District, on February 25, 2008. At the request of Ms. Gill, additional field work to characterize the wetlands in the detention basins adjacent to the Line M Channel was performed on March 18, 2008. Methods used to delineate these wetlands were the same as described above.

body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs. As a result of this decision, the U.S. Environmental Protection Agency (EPA) and USACE developed guidance requiring the application of the two standards described above, as well as a greater level of documentation, to support an agency JD for a particular water body.

Section 3
Results

Wetlands

A total of 10.14 acres of potentially jurisdictional wetlands and 3.13 acres of potentially jurisdictional other waters are located in the study area. All wetlands and other waters mapped within the study area are directly or indirectly hydrologically connected to San Francisco Bay. The types of wetlands and other waters at each site are listed below and shown on Exhibit A in Appendix A. Descriptions of the different types of wetlands and other waters identified in the study area are provided below, and representative photographs are provided in Appendix D.

Seasonal Wetland

A seasonal herbaceous wetland is located in the historic channel of Old Alameda Creek. A paired set of representative data points was selected for this wetland, including one wetland point and one upland point. The vegetation is dominated by hydrophytes, and the hydrology appears to be seasonal and intermittent. The channel receives hydrologic inputs from precipitation, runoff, and a small area of localized drainage via Line N-12. At the time of the survey, one short section of the channel was inundated at the time of the survey, but most of the channel was dry.

Because of the urban nature of the surrounding area, this wetland has the potential to provide significant water quality and wildlife habitat functions. Wildlife may use the wetland for nesting and foraging, and the channel provides a migration corridor through the area. The wetland supports water quality functions, trapping sediment and removing nutrients or toxicants, and the channel provides appreciable surface water storage. The wetland affords scenic value for local residents because it provides a natural open space in an otherwise highly developed landscape. However, because of the surrounding urban influence, the wetland has been adversely affected by trash dumping, unauthorized camping, and invasive exotic plants.

A seasonal wetland is also present along the Alameda Creek Flood Control Channel. The wetland was classified as seasonal because the vegetated portion of the channel lies between the OHWM and the normal low-flow channel. The vegetation is dominated by hydrophytes, similar to that found in the historic

channel of Old Alameda Creek. However, the hydrology is dependent primarily on seasonal flooding rather than rainfall. The wetland functions provided are similar to those listed above for the Alameda Creek Flood Control Channel, but this wetland also provides storage capacity for floodwater.

Other Waters

Perennial Drainage

Alameda Creek Flood Control Channel

The Alameda Creek Flood Control Channel is the major hydrologic feature in the study area. The trapezoid-shaped channel, which drains the entire study area, is characterized by a mild gradient and somewhat dense herbaceous vegetation along the banks. Flowing water along the entire reach of the channelized stream was observed in the study area on October 9 and 10, 2007, indicating that it is a RPW.

Crandall Creek

Crandall Creek is the second-most dominant hydrologic feature in the study area, draining the southeastern corner of the study area and flowing into Coyote Hills Slough outside the study area. Within the study area, it is routed underground; the aboveground portion of Crandall Creek is just outside the study area on both sides. Standing water was observed along most of its reach in the study area on October 9 and 10, 2007, indicating that it is a RPW.

Line M Channel

The Line M Channel, a man-made drainage feature that replaced a natural drainage feature, is classified as a RPW in the study area. The stream, which has been channelized through the study area, starts in the hills to the north and east. Standing water was observed along its entire reach in the study area on October 9 and 10, 2007, indicating that it is a RPW.

Detention Basins

Basin 2C

Basin 2C was created in October, 1999 (Wolfe pers. comm.). It was constructed in uplands adjacent to Line M Channel to serve as a stormwater detention basin for the Park Ridge Phase II and III residential development project and to

compensate for the loss of 0.276 acres of seasonal wetlands that were filled in and adjacent to creeks on the project site. The source of water for the basin appears to be stormwater runoff from the adjacent residential areas. Should the basin fill, overflow would enter the Line M Channel via a lower section of the berm along the channel.

Nine data were established to characterize the vegetation, soils, and hydrology of Basin 2C (Appendix C). The vegetation is dominated by grasses and annual and perennial forbs and is a mosaic of areas dominated by hydrophytic species and areas dominated by upland species. The soils are clay to clay loam. The upper horizon has with a matrix value of 3 and a chroma of 1 or 2. Where hydrophytic vegetation is present, the matrix value of the lower horizons is 4. However, distinct or prominent redox concentrations were not noted. Portions of the detention were observed to be inundated during the February 25, 2008 verification visit. No inundation was observed on March 18, 2008, although the soils were moist. However, evidence of wetland hydrology included matted vegetation and etiolation and yellowing of the grasses where the water has been standing.

The areas with hydrophytic vegetation were delineated as wetlands based on the vegetation and evidence of wetland hydrology. Because the wetlands were recently created, they may not have been in place long enough to develop hydric soil conditions, although the lower matrix value indicates that the depletion of matrix has started.

New Basin

The detention basin located between Green Street and the Bay Area Rapid Transit District (BART) tracks was constructed in 2006 to serve as stormwater detention for the KB Homes development just south of the recently constructed Green Street bridge. The basin was constructed in uplands on the site of a former iron works (see photo 20080313124224, May 6, 1975). In addition to receiving stormwater from adjacent developments, water is drained into the basin from the Line M Channel and is pumped back into the Line M Channel.

On October 9, 2007, the basin was dry and unvegetated. On February 25, 2008, the basin was inundated more than six feet deep. It was still inundated about six feet deep on March 18, 2008.

Section 4
Jurisdictional Assessment

Waters of the United States

This jurisdictional assessment has been prepared in keeping with guidance in the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (U.S. Army Corps of Engineers 2007). The information presented in this section had been provided to assist the USACE to make the jurisdictional determination.

As detailed in the jurisdictional determination (JD) guidebook, the types of waters listed below, which were identified in the study area, are considered waters of the United States.

- Alameda Creek Flood Control Channel
- Line M Channel
- Crandall Creek
- wetland fringe of Alameda Creek Flood Control Channel
- historic channel of Old Alameda Creek
- Detention Basin 2C

Jurisdictional Information

The results of our assessment indicate that 13.27 acres of potential waters of the United States are located in the study area. Of this total, 10.14 acres are wetlands and 3.13 acres are other waters. Table 2 summarizes the potential waters of the United States in the study area.

Table 2. Summary of Jurisdictional Waters of the United States in the Study Area

Jurisdictional Feature	Acreage
Alameda Creek Flood Control Channel	
Wetlands	4.24
Open Water	2.85
Old Alameda Creek historic channel	
Wetlands	5.10
Crandall Creek	0.14
Line M Channel	0.14
Detention Basin 2C	0.80
Total	**13.27**

In terms of Other Waters, this section describes the characteristics of non-TNW's that flow directly or indirectly into a TNW. There are three non-TNW's that flow directly or indirectly into a TNW: Alameda Creek Flood Control Channel, the Line M Channel, and Crandall Creek. These waters are considered RPW's. The watershed size of Alameda Creek is approximately 695 square miles.

Alameda Creek Flood Control Channel

The Alameda Creek Flood Control Channel is a non-TNW that flows directly into a TNW. From the project area, the closest TNW is approximately 1.6 linear miles and 2.2 river miles away. Alameda Creek Flood Control Channel becomes navigable at the extent of the tidal influence, at which point the waterway is renamed as Coyote Hills Slough and is considered a part of San Francisco Bay. The flow route to the closest TNW is as follows: Alameda Creek Flood Control Channel (aka Coyote Hills Slough at 100-year high-tide line and below) flows into San Francisco Bay. Since the Alameda Creek Flood Control Channel is considered a RPW, the project waters are ≤ 1 mile from a RPW.

The Alameda Creek Flood Control Channel has been manipulated (man altered) because the naturally occurring Alameda Creek has been channelized and rerouted. Properties of the tributary, with respect to top of bank are a width of approximately 100 feet across, 5 feet depth and a 3:1 side slope ratio. The primary substrates include silt, sand and gravel. The Flood Control Channel is approximately 50% vegetated (on both sides of the creek) with mostly hydrophytic vegetation. The condition of the tributary is very stable because there is abundant vegetation lining the banks on both sides.

The geometry of the tributary is relatively straight, and the gradient is shallow, with a slope of 0–1 percent. There were riffle and pool complexes observed within the study area. This tributary provides naturally seasonal flow with year

round inputs from urban runoff, with an estimated average number of flow events between 2 and 5 events per year. Surface flow is confined because the tributary has been channelized. This tributary has a well defined bed and bank and an OHWM defined by a clear, natural line impressed on the bank, vegetation matted down, bent, or absent, sediment deposition, the presence of litter and debris and an abrupt change in plant community.

In terms of chemical characteristics, the water was cloudy brown in color, presumably from sediment. In terms of biological and physical characteristics, this tributary has a wetland fringe, adjacent to a RPW, characterized by an herbaceous seasonal wetland. The area of this Waters of the United States is approximately 7.1 acres and the quality seems to be intact.

Line M Channel

The Line M Channel is a non-TNW that flows indirectly into a TNW. The Line M Channel flows into the Alameda Creek Flood Control Channel approximately two river miles upstream from the 100-year high tide line. Water from Line M Channel flows through two tributaries before entering a TNW. Since the Line M Channel is considered a RPW, the project waters are ≤ 1 mile from a RPW.

The Line M Channel has been manipulated (man altered) because the naturally occurring creek has been channelized and rerouted. Properties of the tributary, with respect to top of bank are a width of approximately 8 feet across, 2 feet depth and a 2:1 side slope ratio. The primary substrates include silt and sand. The Line M Channel is 100% vegetated (on both sides of the creek) with mostly upland vegetation. The condition of the tributary is very stable because there is abundant vegetation lining the banks on both sides.

The geometry of the tributary is relatively straight, and the gradient is shallow, with a slope of 0–1 percent. There were no riffle and pool complexes observed within the study area. This tributary provides naturally seasonal flow with year round inputs from urban runoff, with an estimated average number of flow events between 2 and 5 events per year. Surface flow is confined because the tributary has been channelized. This tributary has a well defined bed and bank and an OHWM defined by a clear, natural line impressed on the bank, vegetation matted down, bent, or absent, the presence of litter and debris and an abrupt change in plant community.

In terms of chemical characteristics, the water was cloudy brown in color, presumably from sediment. The area of this water of the United States is approximately 0.22 acres and the quality seems to be intact.

Crandall Creek

Crandall Creek is a non-TNW that flows indirectly into a TNW. Crandall Creek flows into the Alameda Creek Flood Control Channel approximately 1.5 river

miles upstream from the 100-year high tide line. Water from Line M Channel flows through two tributaries before entering a TNW. Since Crandall Creek is considered a RPW, the project waters are ≤ 1 mile from a RPW.

In terms of tributary characteristics, Crandall Creek has been manipulated (man altered) because the naturally occurring creek has been channelized and rerouted. Properties of the tributary, with respect to top of bank are a width of approximately 8 feet across, 1–2 inch depth and a 1:1 side slope ratio. The primary substrate is concrete. Crandall Creek is 100% non-vegetated (within the study area). The condition of the tributary is very stable because the creek has been channelized.

The geometry of the tributary is relatively straight, and the gradient is shallow, with a slope of 0–1 percent. There were no riffle and pool complexes observed within the study area. This tributary provides naturally seasonal flow with year round inputs from urban runoff, with an estimated average number of flow events between 2 and 5 events per year. Surface flow is confined because the tributary has been channelized. This tributary has a well-defined bed and bank and an OHWM defined by a clear, natural line impressed on the concrete bank.

In terms of chemical characteristics, the water was cloudy brown in color, presumably from sediment. The area of this Waters of the United States is approximately 0.14 acres and the quality seems to be intact.

Wetlands

Three areas of wetlands were delineated. Contained within the OHWM of the Alameda Creek Flood Control Channel are 4.24 acres of wetlands adjacent to a RPW. This is a riverine fringe of herbaceous seasonal wetland along both banks of the Alameda Creek Flood Control Channel. The flow relationship with the RPW is intermittent because when the water level in the Alameda Creek Flood Control Channel drops, the wetland receives no hydrological input. Surface flow of wetland is confined because when channel has low flow, wetland has no surface flow. This wetland is approximately1.6 linear miles and 2.2 river miles to the nearest TNW: Coyote Hills Slough. The flow is from wetland to waters and the approximate location of the wetlands is within the 2-year or less floodplain.

Contained within the historic channel of Old Alameda Creek are 5.1 acres of seasonal, herbaceous wetlands which are adjacent to, but not directly abutting, a RPW (the Alameda Creek Flood Control Channel), which is connected by flow-controlled culverts to the Old Alameda Creek. The flow relationship with the RPW is uncertain or intermittent because flows to Alameda Creek Flood Control Channel (and from the nearby Quarry Lakes) have not been known to occur according to Alameda Flood Control District staff and East Bay Regional Park District staff. However, the historic channel of Old Alameda Creek does receive hydrologic inputs from precipitation, runoff, and a small area of localized drainage via Line N-12. Surface flow of the wetland is confined within the historic channel of Old Alameda Creek. This wetland is approximately1.6 linear

miles and 2.2 river miles to the nearest TNW (Coyote Hills Slough). The flow is from wetland to waters, and the approximate location of the wetlands is within the 20–50 year floodplain. Basin 2C contains 0.80 acres of wetlands that are adjacent to Line M Channel, which is a non-TNW that flows indirectly into a TNW.

Non-Jurisdictional Features

The New Basin (2.85 acres) was excavated in uplands and serves for stormwater detention. It is separated from Basin 2C and Line M Channel by the railroad grade and is not connected physically or hydrologically with any water of the United States, although water can be transferred from Line M Channel into the basin and from the basin to Line M. Therefore, the New Basin is not subject to jurisdiction under Section 404.

Section 5
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Personal Communication

Wolfe, Bruce H. Chief, Watershed Management Division, California Regional Water Quality Control Board. Conditional waiver of waste discharge requirements and water quality certification for the Park Ridge Phase II and III Residential Development Project, City of Union City, Alameda County. Letter to Judy Bendix, Sycamore Associates. Undated.

Section 6
Preparers

The following persons conducted the wetland delineation surveys and/or prepared this report.

Chris Voigt	Soil scientist
Rob Preston	Botanist
Paul Glendening	GIS specialist
John Mathias	Editor
Carol-Anne Hicks	Publication

Appendix A

Wetland Delineation Maps

WETLANDS AND WATERS OF THE U.S.

Feature	Area (ac.)
Jurisdictional	
Alameda Creek Flood Control Channel	
Wetlands	4.24
Waters	2.85
Old Alameda Creek Historic Channel	
Wetlands	5.10
Crandall Creek	
Waters	0.14
Line M Channel	
Waters	0.23
Basin 2C	
Wetlands	0.87
Non-jurisdictional	
New Detention Basin	2.85

0 250 500 750 1,000 Feet

1 inch equals 400 feet

N

Project Limits
Detention Basin
Wetlands
Wetland Data Point
Waters of the U.S.

Exhibit A
Delineation of Wetland and Other Waters of the U.S.

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April 16, 2008

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Appendix B

Plants Observed in the Delineation Study Area

Scientific Name	Common Name	Habitat*	Status
Acer negundo	box elder	scr	FACW
Agrostis sp.	bentgrass	wetl	
Alisma plantago-aquatica	water plantain	wetl	OBL
Amaranthus sp.	amaranth	gr	
Artemisia biennis	biennial wormwood	wetl	FAC
Artemisia douglasiana	mugwort	scr, gr	FACW
Arundo donax	giant reed	scr	FACW
Aster subulatus	annual saltmarsh aster	wetl	FACW
Atriplex triangularis	fat hen	gr	FACW
Avena fatua	wild oats	gr	UPL
Baccharis pilularis	coyote brush	scr	UPL
Beta vulgaris	common beet	gr	FACU
Bidens frondosa	beggar-ticks	wetl	FACW
Bromus diandrus	ripgut brome	gr	UPL
Bromus hordeaceus	soft chess	gr	FACU
Callistemon sp.	bottlebrush tree	cult	UPL
Chenopodium ambrodioides	Mexican tea	wetl	FAC
Cirsium vulgare	bull thistle	gr	FACU
Conium maculatum	poison hemlock	scr, gr	FACW
Convolvulus arvensis	field bindweed	gr	UPL
Conyza bonariensis	South American horseweed	wetl, gr	UPL
Conyza canadensis	Canada horseweed	wetl	UPL
Cortaderia selloana	pampas grass	scr	UPL
Cotoneaster pannosa	silverleaf cotoneaster	scr	UPL
Crypsis schoenoides	swamp timothy	wetl	OBL
Cynodon dactylon	Bermudagrass	wetl	FAC
Cyperus eragrostis	umbrella sedge	wetl	FACW
Dittrichia graveolens	stinkweed	wetl	UPL
Eleocharis sp.	spikerush	wetl	OBL
Epilobium brachycarpum	panicled willow-herb	gr	UPL
Epilobium ciliatum	hairy willow-herb	wetl	FACW
Eschscholzia californica	California poppy	gr	UPL
Eucalyptus camaldulensis	red gum	cult	UPL
Eucalyptus globulus	blue gum	cult	UPL
Euphorbia lathyris	gopher plant	wetl	UPL
Euthamia occidentalis	western goldenrod	wetl	OBL
Gnaphalium luteo-album	weedy cudweed	wetl	FACW
Hedera helix	English ivy	scr	UPL

Scientific Name	Common Name	Habitat*	Status
Heliotropium curassavicum	salt heliotrope	wetl, gr	OBL
Hirschfeldia incana	Mediterranean mustard	gr	UPL
Hordeum marinum	Mediterranean barley	gr	FAC
Juglans hindsii	Northern California black walnut	scr	FAC
Kickxia elatine	sharp-leaved fluellin	gr	NI
Lactuca serriola	prickly lettuce	wetl, gr	FAC
Lepidium latifolium	perennial peppercress	gr	FACW
Lolium multiflorum	Italian ryegrass	gr, wetl	FAC
Lotus corniculatus	bird's-foot trefoil	gr	FAC
Lythrum hyssopifolium	hyssop loosestrife	wetl	FACW
Mahonia sp.	barberry	cult	
Malva sp.	cheeseweed	gr	UPL
Melilotus alba	white sweet-clover	wetl	FACU
Nasturtium officinale	watercress	wetl	OBL
Nicotiana glauca	tree tobacco	scr	FAC
Paspalum distichum	jointgrass	wetl	OBL
Phalaris aquatica	Harding grass	wetl	FAC
Phalaris paradoxa	paradox canary grass	gr	UPL
Phyla nodiflora	common frog-fruit	wetl	FACW
Picris echioiodes	bristly ox-tongue	wetl, gr	FAC
Pinus canariensis	Canary Islands pine	cult	UPL
Piptatherum miliaceum	smilo grass	wetl, gr	UPL
Plantago major	English plantain	wetl	FACW
Polygonum amphibium	water smartweed	wetl	OBL
Polygonum lapathifolium	willow-weed	wetl	OBL
Polygonum punctatum	dotted smartweed	wetl	OBL
Polypogon monspeliensis	annual rabbit's-foot grass	wetl	FACW
Populus balsamifera subsp. trichocarpa	black cottonwood	scr	FACW
Quercus sp.	oak	cult	UPL
Raphanus sativus	wild radish	gr	UPL
Rhamnus californica	California coffeeberry	scr	UPL
Rorippa curvisiliqua	curve-pod yellowcress	wetl	OBL
Rosa californica	California wild rose	scr	FAC
Rubus armeniacus	Himalaya blackberry	scr	FAC
Rubus ursinus	California blackberry	scr	FACW
Rumex conglomeratus	whorled dock	wetl	FACW
Rumex crispus	curley dock	wetl, gr	FACW
Salix exigua	narrow-leaved willow	scr	OBL

Scientific Name	Common Name	Habitat*	Status
Salix laevigata	red willow	scr	FACW
Salix lasiolepis	arroyo willow	scr	FACW
Sambucus mexicanus	blue elderberry	scr	FAC
Scirpus acutus	hardstem bulrush	wetl	OBL
Sequoia sempervirens	California redwood	cult	UPL
Silybum marianum	milk thistle	gr	UPL
Solanum americanum	black nightshade	wetl	FAC
Tragopogon sp.	salsify	gr	UPL
Trifolium hirtum	rose clover	gr	UPL
Typha angustifolia	narrow-leaved cattail	wetl	OBL
Typha latifolia	broad-leaved cattail	wetl	OBL
Verbascum thapsus	common mullein	gr	UPL
Vicia sativa	common vetch	gr	FACU
Xanthium strumarium	common cocklebur	wetl	FAC

**Habitat: wetl = herbaceous wetland; gr = annual grassland; cult = urban landscaping; scr = willow scrub*

Appendix C

Wetland Determination Forms

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WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Union City, CA** Data Point: **Dp1**

Applicant/Owner: **Ty-Lin** State: **CA** Date: **9/9/2007**

Investigator(s): **Voigt, Rob Preston** Section, Township, Range: **T4S, R1W, unsurveyed section**

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

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Yolo Silt Loam** NWI classification:

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

Are Vegetation **no** Soil **no** or Hydrology **no** significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

Are Vegetation **no** Soil **no** or Hydrology **no** naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	**Yes**	**X**	**No**	
Hydric Soil Present?	**Yes**	**X**	**No**	
Wetland Hydrology Present?	**Yes**	**X**	**No**	

Is the Sampled Area within a wetland? **Yes** **X** **No**

Remarks:

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Typha angustifolia	20%	Y	OBL
2. Xanthium strumarium	30%	Y	FAC
3. Polygonum amphibium	20%	Y	OBL
4. Scirpus acutus	10%	N	OBL
5. Rumex crispus	< 5%	N	FACW
6. Cyperus eragrostis	< 5 %	N	FACW
7.			
8.			
Total Cover:	90%		
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum 10% % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC 100% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic vegetation indicators

X Dominance test is >50%

Prevalence index is ≤ 3.0[1]

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

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** **X** **No**

Remarks:

SOIL

Data point: Dp1

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]	Contrast[3]	Texture	Comments
0-2	10YR4/1	100						sl	oxidized rhizospheres
2-20	10YR4/2	65	7.5YR 3/4	35	Fe-c	m, pl, rc	d	sl	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix

[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- X Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** X **No** ___

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Union City, CA** Data Point: **Dp2**

Applicant/Owner: **Ty-Lin** State: **CA** Date: **9/9/2007**

Investigator(s): **Chris Voigt, Rob Preston** Section, Township, Range: **T4S, R1W, unsurveyed section**

Landform (hillslope, terrace, etc.): **Riparian channel** Local relief (concave, convex, none): **none** Slope (%): **5**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Yolo Silt Loam** NWI classification:

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

Are Vegetation **no** Soil **no** or Hydrology **no** significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

Are Vegetation **no** Soil **no** or Hydrology **no** naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a wetland? Yes No **X**

Remarks:

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1. Salix lasiolepis	< 5%	N	FACW
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Avena fatua	30%	Y	UPL
2. Lolium multiflorum	30%	Y	FAC
3. Bromus diandrus	30%	Y	UPL
4. Vicia sativa	< 5%	N	FACU
5. Cirsium vulgare	< 5%	N	FACU
6. Hirschfeldia incana	< 5%	N	UPL
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum (regardless of size)			
1.			
2.			
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: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC 33% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	30	x 3 =	90
FACU species	4	x 4 =	16
UPL species	62	x 5 =	310
Column Total:	98 (A)		420 (B)

Prevalence Index = B/A = 4.29

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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes No **X**

Remarks:

SOIL

Data point: Dp2

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]	Contrast[3]	Texture	Comments
0-14	10YR 4/4	95	7.5YR 4/2	5	Fe-c	m, pl, rc	d	cl	
14-20	10YR4/2	75	7.5YR 4/2	25	Fe-c	m, pl, rc	f	sicl	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** ___ **No** X

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-1**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **concave** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

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

Remarks:

Recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Lolium multiflorum	20	Y	FAC
2. Picris echioides	20	Y	FAC
3. Lotus corniculatus	20	Y	FAC
4. Hordeum marinum subsp. gussoneanum	40	Y	FAC
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC 100% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-4	10YR 3/2							c	
4-18	10YR 4/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)
- ___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** X **No** ___

Remarks: Matrix slightly depleted, although redox features not evident

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3)
- X 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- X 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** X **No** ___

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

Remarks: Grasses etiolated due to water stress

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-2**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **convex** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

Hydrophytic Vegetation Present?	Yes	No X
Hydric Soil Present?	Yes	No X
Wetland Hydrology Present?	Yes	No X

Is the Sampled Area within a wetland? Yes No X

Remarks:

Upland area in recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Vicia sativa	80	Y	FACU
2. Picris echioides	10	Y	FAC
3. Geranium dissectum	10	Y	UPL
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC 0% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes No X

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-18	10YR 3/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** ___ **No** X

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-3**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **Basin** Local relief (concave, convex, none): **concave** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

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

Remarks:

Recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Lotus corniculatus	30	Y	FAC
2. Geranium dissectum	30	Y	UPL
3. Vulpia myuros	30	Y	FACU
4. Lolium multiflorum	5	N	FAC
5. Picris echioides	5	N	FAC
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC 33% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	30	x 4 =	120
UPL species	30	x 5 =	150
Column Total:	100 (A)		390 (B)

Prevalence Index = B/A = 3.9

Hydrophytic vegetation indicators

N Dominance test is >50%

N 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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-6	10YR 3/1							c	
6-18	10YR 4/1.5							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)
- ___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** ___ **No** X

Remarks: Matrix slightly depleted, although redox features not evident

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** ___ **No** X

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-4**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **convex** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

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

Remarks:

Recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Vicia sativa	80	Y	FACU
2. Bromus diandrus	20	Y	UPL
3. Picris echioides	<1	N	FAC
4. Beta vulgarus	<1	N	UPL
5. Geranium dissectum	<1	N	UPL
6. Lolium multiflorum	<1	N	FAC
7.			
8.			
Total Cover:			
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC 0% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic vegetation indicators

N 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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-18	10YR 3/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** ___ **No** X

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-5**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **concave** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

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

Remarks:

Recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Hordeum marinum subsp. gussoneanum	40	Y	FAC
2. Picris echioides	40	Y	FAC
3. Geranium dissectum	20	Y	UPL
4. Avena fatua	<1	N	UPL
5. Vicia sativa	<1	N	UPL
6. Lotus corniculatus	<1	N	FAC
7. Senecio vulgaris	<1	N	NI
8. Rumex crispus	<1	N	FACW
Total Cover:	100%		
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC 67% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic vegetation indicators

Y 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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-8	10YR 3/1							cl	
8-18	10YR 4/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)
- ___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** X **No** ___

Remarks: Matrix slightly depleted, although redox features not evident

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3)
- X 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- X 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** X **No** ___

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

Remarks: Matted vegetation, grasses etiolated due to water stress

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-6**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **convex** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

Hydrophytic Vegetation Present?	**Yes**		**No**	X
Hydric Soil Present?	**Yes**		**No**	X
Wetland Hydrology Present?	**Yes**		**No**	X

Is the Sampled Area within a wetland? **Yes** **No** X

Remarks:

Recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Avena fatua	50	Y	UPL
2. Vulpia myuros	15	N	FACU
3. Geranium dissectum	25	Y	UPL
4. Lolium multiflorum	5	N	FAC
5. Picris echioides	5	N	FAC
6. Lactuca serriola	<1	N	FAC
7. Vicia sativa	<1	N	UPL
8. Bromus diandrus	<1	N	UPL
Total Cover:	100%		
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC 0% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic vegetation indicators

N 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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-18	10YR 3/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** ___ **No** X

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-7**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **convex** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

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

Remarks:

Recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Bromus diandrus	60	Y	UPL
2. Geranium dissectum	40	Y	UPL
3. Tragopogon sp.	<1	N	UPL
4. Picris echioides	<1	N	FAC
5. Rumex crispus	<1	N	FACW
6.			
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC 0% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-18	10YR 3/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** ___ **No** X

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-8**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **concave** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

Hydrophytic Vegetation Present?	**Yes**	X	**No**	
Hydric Soil Present?	**Yes**	X	**No**	
Wetland Hydrology Present?	**Yes**	X	**No**	

Is the Sampled Area within a wetland? **Yes** X **No**

Remarks:

Recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Hordeum marinum subsp. gussoneanum	80	Y	FAC
2. Picris echioides	10	N	FAC
3. Geranium dissectum	10	Y	UPL
4. Vulpia myuros	<1	N	FACU
5. Lolium multiflorum	<1	N	FAC
6. Lotus corniculatus	<1	N	FAC
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC 100% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic vegetation indicators

Y 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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-6	10YR 3/1							c	
6-18	10YR 4/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)
- ___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** X **No** ___

Remarks: Matrix slightly depleted, although redox features not evident

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3)
- X 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- X 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** X **No** ___

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

Remarks: Matted vegetation, grasses etiolated due to water stress

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

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Jones & Stokes

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **East-West Connector** City/County: **Alameda** Data Point: **2C-9**

Applicant/Owner: **ACTA** State: **CA** Date: **3/25/2008**

Investigator(s): **R. Preston** Section, Township, Range: **T4WS, R1W**

Landform (hillslope, terrace, etc.): **basin** Local relief (concave, convex, none): **convex** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: Long: Datum:

Soil Map Unit Name: **Clear Lake clay, 0-2% slopes** NWI classification:

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

Are Vegetation Soil or Hydrology significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

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

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

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

Remarks:

Upland area within recently developed wetlands

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum (woody plants <3"dbh)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum (non-woody plants, regardless of size)			
1. Bromus diandrus	40	Y	UPL
2. Geranium dissectum	50	Y	UPL
3. Avena fatua	10	N	UPL
4. Picris echioides	<1	N	FAC
5. Beta vulgaris	<1	N	UPL
6. Lactuca serriola	<1	N	FAC
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum (regardless of size)			
1.			
2.			
Total Cover:			

% Bare ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species that are OBL, FACW, or FAC 0% (A/B)

Prevalence index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Total:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/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 soils and wetland hydrology must be present

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks:

SOIL

Data point: 2C-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]	Contrast[3]	Texture	Comments
0-18	10YR 3/1							c	

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

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)
- ___ 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 Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ 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) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	**Wetland Hydrology**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___ (12 inch determination)	**Present?** **Yes** ___ **No** X

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam	
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam	
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam	
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay	
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay	
		si - silt	c - clay	

Rock Fragments

gr - gravelly	xcb - extremely cobbly
vgr - very gravelly	st - stony
xgr - extremely gravelly	vst - very stony
cb - cobbly	xst - extremely stony
vcb - very cobbly	

Appendix D

Representative Site Photographs

Photo 1. Alameda Creek, looking upstream at Paseo Padre Parkway.

Photo 2. Alameda Creek, looking downstream at Paseo Padre Parkway.

Photo 3. Adventitious roots on willow in Historic Alameda Creek.

Photo 4. Wetland in Historic Alameda Creek.