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I-80/Hiddenbrooke Parkway Interchange Project Preliminary Delineation of Wetlands and Other Waters Solano County, California

Project #3328-21

Prepared for:

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December 1, 2020

Executive Summary

On July 17, 22, and 28, 2020, H. T. Harvey & Associates wetland ecologists performed a delineation of potentially jurisdictional waters on the I-80/Hiddenbrooke Parkway Interchange Project site in Solano and Napa counties, California. Approximately 29.90 acres were surveyed for jurisdictional waters (wetlands and other waters) that may be subject to regulation under Section 404 of the Clean Water Act (CWA) administered by the U.S. Army Corps of Engineers (USACE). The survey also delineated the extent of waters of the state that may be subject to regulation under the Section 401 of the CWA and the Porter Cologne Water Quality Control Act administered by the Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW). The on-site determination took into account drier than normal conditions during the 2019/2020 winter season relative to the 30-year normal, and the results are based on the conditions present at the time of the surveys. The study area is located in the Suisun Bay and San Pablo Bay (Hydrologic Unit Codes 18050001 and 18050002) watersheds.

In total, approximately 1.03 acres of potentially jurisdictional features were identified within the study area. These include approximately 0.75 acre of seasonal wetland, forested wetland (riparian trees rooted in wetlands), and perennial emergent wetland; 0.03 acre of unvegetated other waters as culvert; and 0.25 acre of other waters as an ephemeral drainage. However, all of these features are either ephemeral streams, are adjacent to ephemeral streams, or are only connected to the nearest waters of the U.S. via reaches of ephemeral stream and/or unchannelized sheet flow, and therefore under the current Navigable Waters Protection Rule would not be expected to be claimed as federal waters. Therefore, no Section 404 wetlands or waters of the U.S. were detected on-site.

Approximately 1.44 acres of potentially jurisdictional features as defined by the RWQCB were identified within the study area. These include seasonal wetland, forested wetland, perennial emergent wetland, mixed riparian woodland, riparian scrub, and culvert. CDFW jurisdictional features, as defined by bed and bank topography and including the mixed riparian woodland and riparian scrub, were also identified in the study area, totaling 0.66 acre.

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Habitat Type	Acres
Total Waters of the U.S.	0.00
Total Waters of the State	1.44
Seasonal wetland	0.42
Forested wetland	0.20
Perennial emergent wetland	0.13
Mixed riparian woodland	0.49
Riparian scrub	0.17
Culvert	0.03
Total CDFW Jurisdictional Habitats	0.66
Mixed riparian woodland	0.49
Riparian scrub	0.17
Total Non-jurisdictional Areas	28.46
Wetland Delineation Study Area Total	29.90

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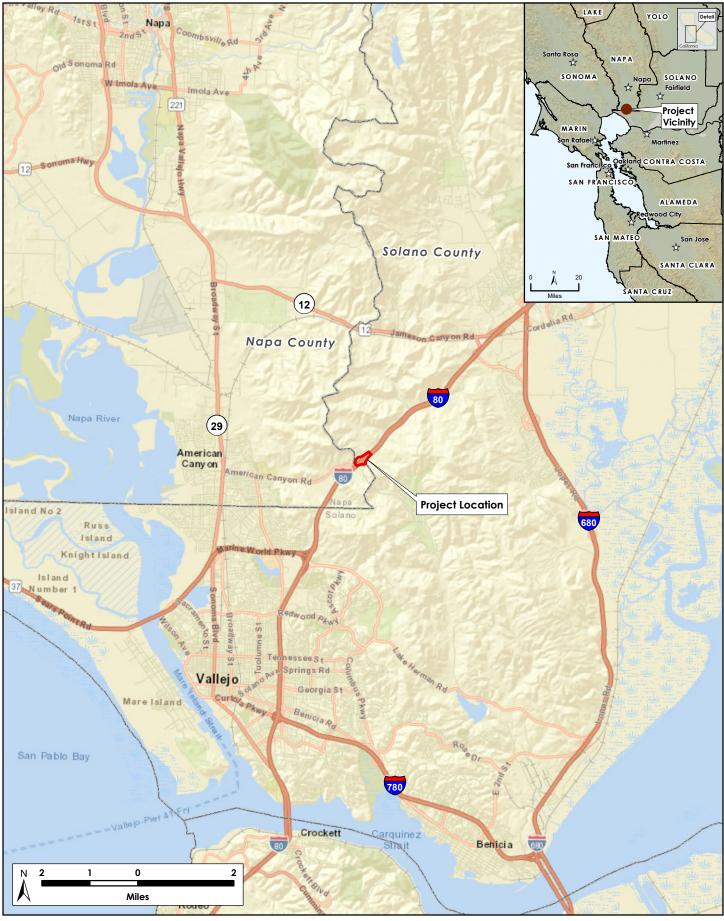
1.1 Study Area Description

The 29.90-acre delineation study area is located in unincorporated Solano and Napa counties along Interstate 80 (I-80) between postmiles 7.8 and 8.5 at Hiddenbrooke Parkway and American Canyon Road (Figure 1). The study area comprises the I-80/Hiddenbrooke Parkway/American Canyon Road interchange, as well as McGary Road, a frontage road that runs parallel to the existing I-80 ramps on the southeastern side of the interchange (Figure 2). Hiddenbrooke Parkway provides access to the Hiddenbrooke Golf Club and residential development surrounding the golf club. American Canyon Road provides access to predominantly residential areas of the City of American Canyon. The surrounding lands in Solano County are designated Exclusive Agricultural, and the surrounding lands in Napa County (at the southwest edge of the BSA) are designated Agriculture, Watershed, and Open Space. The wetland delineation described in this report focused on the undeveloped, vegetated areas of the study area, but the entirety of the study area was surveyed.

The study area is located within the *Cordelia, California* U.S. Geological Survey (USGS) 7.5-minute quadrangle (Figure 3). Elevations within the study area range from approximately 400 feet to 490 feet North American Vertical Datum of 1988 (NAVD88) (Google Earth 2020), with the highest elevations in the north-central and south-central portions of the study area. The climate in the vicinity of the study area is coastal Mediterranean, with most rain falling in the winter and spring, and summers being dry. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Climate conditions in the study area include a 30-year average of approximately 23.45 inches of annual precipitation with a monthly average temperature range from 47.8°F to 69.6°F (PRISM Climate Group 2020).

The site is predominantly underlain by one soil type, Dibble-Los Osos clay loams, 9–30% slopes (NRCS 2020a), which covers approximately 94.4% of the study area. The Dibble series contains clay loam texture down to a restrictive bedrock layer at 20–40 inches. The Los Osos series is similar with the exception of a transition from clay loam to clay before the restrictive layer. Both are considered well-drained soils. Two other soil types are present in in small amounts: Dibble-Los Osos clay loams, 30–50% slopes, eroded; and Rincon clay loam, 2–9% slopes. Figure 4 shows the soil units mapped by the National Resource Conservation Service (NRCS) within the study area, and Table 1 summarizes the associated texture, drainage classification, landform setting, and hydric soil status (NRCS 2020a, 2020b) for the four soil types found within the study area.

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sts3300\3328-01\21\Reports\Prelim Wetland Delineation\Fig 1 Vicinity Map.mxd ml

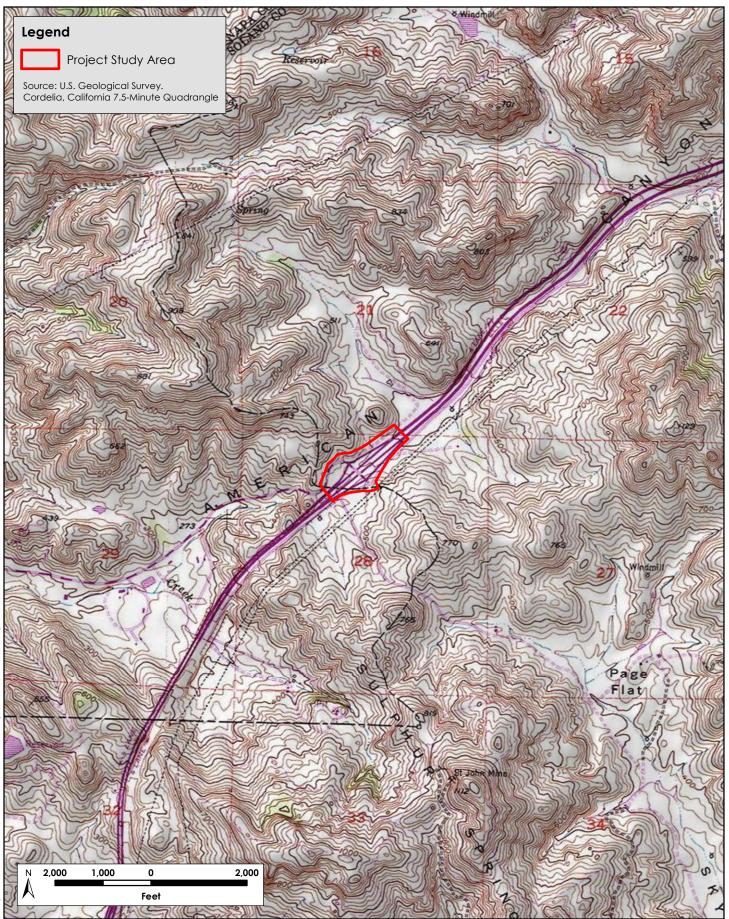
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Figure 1. Vicinity Map I-80/Hiddenbrooke Parkway Interchange Project – Preliminary Delineation of Wetlands and Other Waters, Solano County, California (3328-21) December 2020





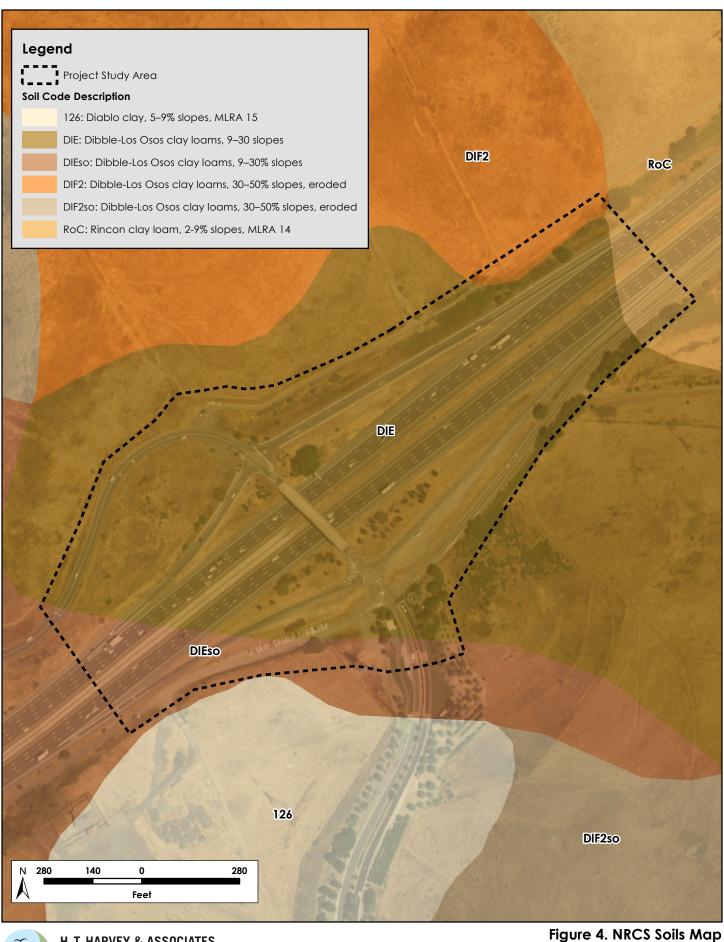
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Figure 3. USGS Topographic Map I-80/Hiddenbrooke Parkway Interchange Project – Preliminary Delineation of Wetlands and Other Waters, Solano County, California (3328-21) December 2020



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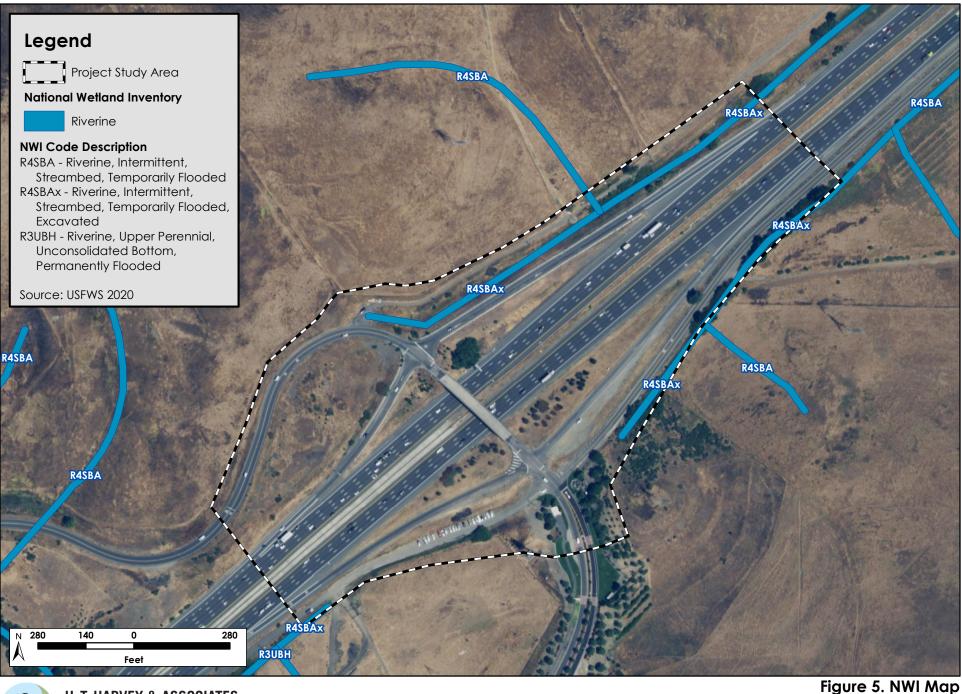
Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Landform	Hydric Status
126	Diablo clay, 5–9% slopes, MLRA 15	Clay	Well drained	Hillslopes, mountain slopes	No
DIE	Dibble-Los Osos clay Ioams, 9–30% slopes	Clay loam	Well drained	Mountains, summit	No
DIF	Dibble-Los Osos clay Ioam, 30–50% slopes	Clay loam	Well drained	Hills, summit	No
RoC	Rincon clay loam, 2– 9% slopes, MLRA 14	Clay loam	Well drained	Terrace, alluvial fans	No

Table 1. Soil Type, Texture, Drainage Classification, and Hydric Soil Status for Soil Types Occurring within the Study Area

Source: NRCS 2020

Note: MLRA = major land resource area

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) map of the study area is depicted in Figure 5. The NWI identified four aquatic feature within the study area (NWI 2020). The features are mapped as a riverine (R4SBA and R4SBAx). NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. (1979). These data are available for general reference purposes and do not necessarily correspond to the actual presence or absence of jurisdictional waters.





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Before the delineation survey was conducted, topographic maps and aerial photos of the study area were obtained and reviewed from several sources, such as the USGS topographic map (Figure 3), NRCS soils map (Figure 4), NWI (Figure 5), Google Earth software (Google Earth 2020), and UC Santa Barbara Library's collection of historic aerial photography (UCSB 2020).

On July 17 and 22, 2020, H. T. Harvey & Associates plant ecologist Robert Lee, MS, surveyed the study area identified in Figures 1 and 2. On July 28, 2020, Mr. Lee continued his investigation with assistance from H. T. Harvey & Associates senior ecologist Charles McClain, MS. The purpose of the survey was to identify the extent and distribution of wetlands and other waters that may be subject to regulation by the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). Weather conditions on all survey dates were warm, dry, and clear.

Mr. McClain and Mr. Lee performed a technical delineation of wetlands and other waters in a 29.90-acre area identified on the accompanying figures as the wetland delineation study area. The delineation was performed in accordance with the *Corps of Engineers 1987 Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987). Additionally, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0)* (Regional Supplement) (USACE 2008a) was followed to document site conditions relative to hydrophytic vegetation, hydric soils, and wetland hydrology. Further guidance contained in the Navigable Waters Protection Rule was consulted to make determinations on likely jurisdictional status of features that met wetland parameters. Mr. McClain and Mr. Lee performed preliminary mapping of the extent and distribution of wetlands and other waters of the U.S. that may be subject to regulation under Section 404 of the Clean Water Act (CWA) as well as waters of the state that may be subject to regulation under the Porter Cologne Water Quality Control Act, which is administered by the RWQCB. The following sections present descriptions of the methods used to identify Section 404 jurisdictional waters (wetlands and other waters).

2.1 Identification of Jurisdictional Waters

The "Routine Determination Method, On-Site Inspection Necessary (Section D)" outlined in the Corps Manual (Environmental Laboratory 1987), and the updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Arid West Regional Supplement (USACE 2008a) were used to examine the vegetation, soils, and hydrology on site. This three-parameter approach to identifying wetlands is based on the presence of a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

In addition to applying these survey methods, we compiled this report in accordance with guidance provided in *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016a) and *Information Requested for Verification of Corps Jurisdiction* (USACE 2016b). These documents list the information that must be submitted as part of a request for a jurisdictional determination, including:

- Vicinity map (Figure 1)
- Study area map (Figure 2)
- USGS quadrangle map (Figure 3)
- Soils map (Figure 4)
- NWI map (Figure 5)
- Biotic habitats map (Figure 6)
- Preliminary identification of waters map (Figure 7)
- Plant species observed (Appendix A)
- Current soil survey report (Appendix B)
- Data forms for wetlands sample points and ordinary high water mark (OHWM) datasheet (Appendix C)
- Written rationale for sample point choice (Section 3.1, "Observations, Rationales, and Assumptions")
- Color photos (Appendix D)
- Aquatic resources table (Appendix E)

During the survey, the study area was examined for topographic features, drainages, alterations to site hydrology or vegetation, and recent significant disturbance. A determination was then made as to whether normal environmental conditions were present at the time of the field survey. In the field, the techniques used to identify wetlands included digging soil pits to sample soil from various depths, observing the vegetation growing near the soil sample points, and characterizing the current surface and subsurface hydrologic features present near the sample points through both observation of indicators and direct observation of hydrology. Features meeting wetland vegetation, soil, and hydrology criteria were then mapped in the field using a Trimble GeoXTTM GPS unit capable of submeter accuracy. Connectivity or adjacency to waters of the U.S. were determined using the new guidance provided by the Navigable Waters Protection Rule.

2.1.1 Identification of Section 404 Jurisdictional Wetlands (Special Aquatic Sites)

Where wetland field characteristics were present, the surveyors examined vegetation, soils, and hydrology using the Routine Determination Method outlined in the Corps Manual (Environmental Laboratory 1987) and the updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Arid West Regional Supplement (USACE 2008a).

Hydrophytic Vegetation. Plants that can grow in soils that are saturated or inundated for long periods of time, which contain little or no oxygen when wetted, are considered adapted to those soils and are called hydrophytic. There are different levels of adaptation, as summarized in Table 2. Some plants can only grow in soils saturated with water (and depleted of oxygen), some are mostly found in this condition, and some are found equally in wet soils and in dry soils. Plants observed at each of the sample sites were identified to species,

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where possible, using *The Jepson Manual, Vascular Plans of California, Second Edition* (Baldwin et al. 2012). The wetland indicator status of each species was obtained from the *Arid West 2016 Regional Wetland Plant List* (Lichvar *et al.* 2016). Wetland indicator species are designated according to their frequency of occurrence in wetlands. For instance, a species with a presumed frequency of occurrence of 67–99% in wetlands is designated a facultative wetland indicator species. The wetland indicator groups, indicator symbol, and the frequencies of occurrence of species within wetlands, provided as a percentage, are shown in Table 2.

Indicator Category	Symbol	Frequency (%) of Occurrence in Wetlands ¹
Obligate	OBL	>99 (Almost always is a hydrophyte, rarely in uplands)
Facultative wetland	FACW	67–99 (Usually a hydrophyte but occasionally found in uplands)
Facultative	FAC	34–66 (Commonly occurs as either a hydrophyte or non-hydrophyte)
Facultative upland	FACU	1–33 (Occasionally is a hydrophyte, but usually occurs in uplands)
Upland	UPL	<1% (Rarely is a hydrophyte, almost always in uplands)
Not Listed	NI	Considered to be an upland species

Table 2.	Wetland Indicator Status Categories for Vascular Plants
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¹ Based on information contained in the Corps Manual (Environmental Laboratory 1987).

² Plant species that are not listed in the Arid West 2016 Regional Wetland Plant List (Lichvar et al. 2016) are considered UPL species in Appendix A—Plants Observed in the Study Area

Obligate and facultative wetland indicator species are hydrophytes that occur "in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicators when found growing in hydric soils that experience periodic saturation. Plant species that are not on the regional list of wetland indicator species are considered upland species. A complete list of the vascular plants observed within the study area, including their current indicator statuses, has been provided in Appendix A.

Hydric Soils. Up to 18 inches of the soil profile were examined for hydric soil indicators. The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as one formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper 12 inches of soil (NRCS 2010). Hydric soils include soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. In general, evidence of a hydric soil includes characteristics such as reducing soil conditions, soils with bright mottles and/or low matrix chroma, and soils listed as hydric by the U.S. Department of Agriculture (USDA) on the National Hydric Soils List (NRCS 2020b). Reducing soil conditions can also include circumstances where there is evidence of frequent ponding for long or very long duration. A long duration is defined as a period of inundation for a single event that ranges from 7 days to a month and very long is greater than 1 month (Environmental Laboratory 1987).

Munsell Soil Notations (Munsell 2009) were recorded for the soil matrix of each soil sample. The Munsell color system is based on three color dimensions: hue, value, and chroma. A brief description of each component of the system is described below, in the order they are used in describing soil color (i.e., hue/value/chroma):

- Hue. The Munsell Soil Color Chart is divided into five principal hues: yellow (Y), green (G), purple (P), blue (B), and red (R), along with intermediate hues such as yellow-red (YR) and green-yellow (GY). Example of commonly encountered hue numbers include 2.5YR, 10YR, and 5Y.
- 2. Value. Value refers to lightness, ranging from white to grey to black. Common numerical values for value in the Munsell Soil Color Chart range from 2 for saturated soils to 8 for faded or light colors. Hydric soils often show low-value colors when soils have accumulated sufficient organic material to indicate development under wetland conditions, but can show high-value colors when iron depletion has occurred, removing color value from the soil matrix. Value numbers are commonly reported as 8/, 2.5/, and 6/.
- 3. **Chroma**. *Chroma* describes the purity of the color, from "true" or "pure" colors to "pastel" or "washed out" colors. Chromas commonly range from 1 to 8, but can be higher for gleys. Soil matrix chroma values that are 1 or less, or 2 or less when mottling is present, are typical of soils that have developed under anaerobic conditions. Chroma numbers are listed, for example, as /1, /5, and /8.

The NRCS Web Soil Survey (NRCS 2020a) was consulted to determine which soil types have been mapped in the study area (Table 1, Figure 4). Detailed descriptions of these soil types are provided in Appendix B.

Wetland Hydrology. Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime. Primary indicators might include visual observation of surface water (A1), high water table (A2), soil saturation (B1), and hydrogen sulfide odor (C1). Secondary indicators might include a passing score for the FAC-neutral test (D5) and saturation visible on aerial imagery (C9). Each of the sample points was examined for positive field indicators (primary and secondary) of wetland hydrology, following the guidance provided in the Regional Supplement.

2.1.2 Identification of Section 404 Jurisdictional Other Waters

Surveys were also conducted within the study area for "other waters", which includes lakes, slough channels, seasonal ponds, tributary waters, non-wetland linear drainages, and salt ponds. Such areas are identified by the (seasonal or perennial) presence of standing or running water and generally lack hydrophytic vegetation. In non-tidal or muted tidal waters, USACE jurisdiction extends to the ordinary high water mark (OHWM), which is defined in 33 CFR Part 328.3 as "the line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris." Potential other waters were mapped within the study area.

In concert with USACE's efforts to revise the wetland delineation manuals and make them more specific to different geographic regions of the United States, as described above, efforts have been initiated by USACE to develop an OHWM delineation manual. In particular, two relatively recent publications have attempted to further refine the definition of OHWM and the delineation of the OHWM in the Arid West (including California):

- A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (USACE 2008b)
- Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2010)

For purposes of the current study, the identification of the OHWM in the field was based on observation of a suite of natural geomorphic field indicators that have formed during channel-forming events. These features included staining of rocks and culverts, erosion of soil to bedrock, and channel bed morphology, among other factors.

The presence of one or more of the natural geomorphic field indicators listed above, taking into consideration such factors as size of the watershed, channel slope, landscape setting, elevation, gradient, land use practices, and soil type, was taken as direct evidence of an OHWM, and such channels, if exhibiting intermittent or perennial hydrology, were identified as "other waters."

2.2 Identification of Waters of the State

The Porter Cologne Water Quality Control Act (Porter-Cologne) broadly defines waters of the State as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Where forested riparian habitat is not present, jurisdiction is taken to the top of bank or levee. Where forested habitat occurs, the outer canopy of any riparian trees rooted within top of bank may be considered jurisdictional as these trees can provide allochthonous input to the channel below.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCB to impact.

The 2019 Procedures also clarify that wetland-upland boundaries for wetlands comprising waters of the state should be set using the USACE delineation framework (Environmental Laboratory 1987, USACE 2008a), with

one important distinction. Some areas in California function as wetlands despite lacking abundant wetland vegetation. For example, non-vegetated playas, tidal flats, and some types of seasonal wetlands provide a variety of wetland functions, including water filtration, groundwater recharge, and the support of wetland wildlife. While USACE procedures require 5% vegetative cover to be considered a wetland rather than "other waters," the RWQCB has determined that no such minimum vegetative cover is necessary for an area to be considered a wetland under the State Wetland Definition. Waters of the state were identified within the study area.

2.3 Identification of CDFW Jurisdiction

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A stream is defined in Title 14, California Code of Regulations §1.72, as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. Jurisdiction does not include tidal areas such as tidal sloughs unless there is freshwater input. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code §2786 defines riparian habitat as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats. CDFW jurisdictional habitats were mapped within the study area.

The following vegetation/land cover types were mapped within the study area: (1) California annual grassland, (2) developed/landscaped, (3) ditch, (4), ephemeral drainage, (5) perennial emergent wetland, (6), riparian woodland/scrub, and (7) seasonal wetland (Figure 6). Thirteen sample points (SPs) and one OHWM transects were examined to identify jurisdictional features (Figure 7; Appendix C). Within the study area, we detected 0.00 acres of potential federal jurisdictional waters regulated by USACE, 1.44 acres of potentially jurisdictional waters regulated by RWQCB, and 0.66 acre of potentially jurisdictional riparian habitat regulated by CDFW (Figures 7 and 8, Table 3). The results of the delineation are described below.

Habitat Type	Acres
Total Waters of the U.S.	0.00
Total Section 401 Waters of the State	1.44
Seasonal wetland	0.42
Forested wetland	0.20
Perennial emergent wetland	0.13
Mixed riparian woodland	0.49
Riparian scrub	0.17
Culvert	0.03
Total CDFW Jurisdictional Habitats	0.66
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Total Non-jurisdictional Areas	28.46
Wetland Delineation Study Area Total	29.90

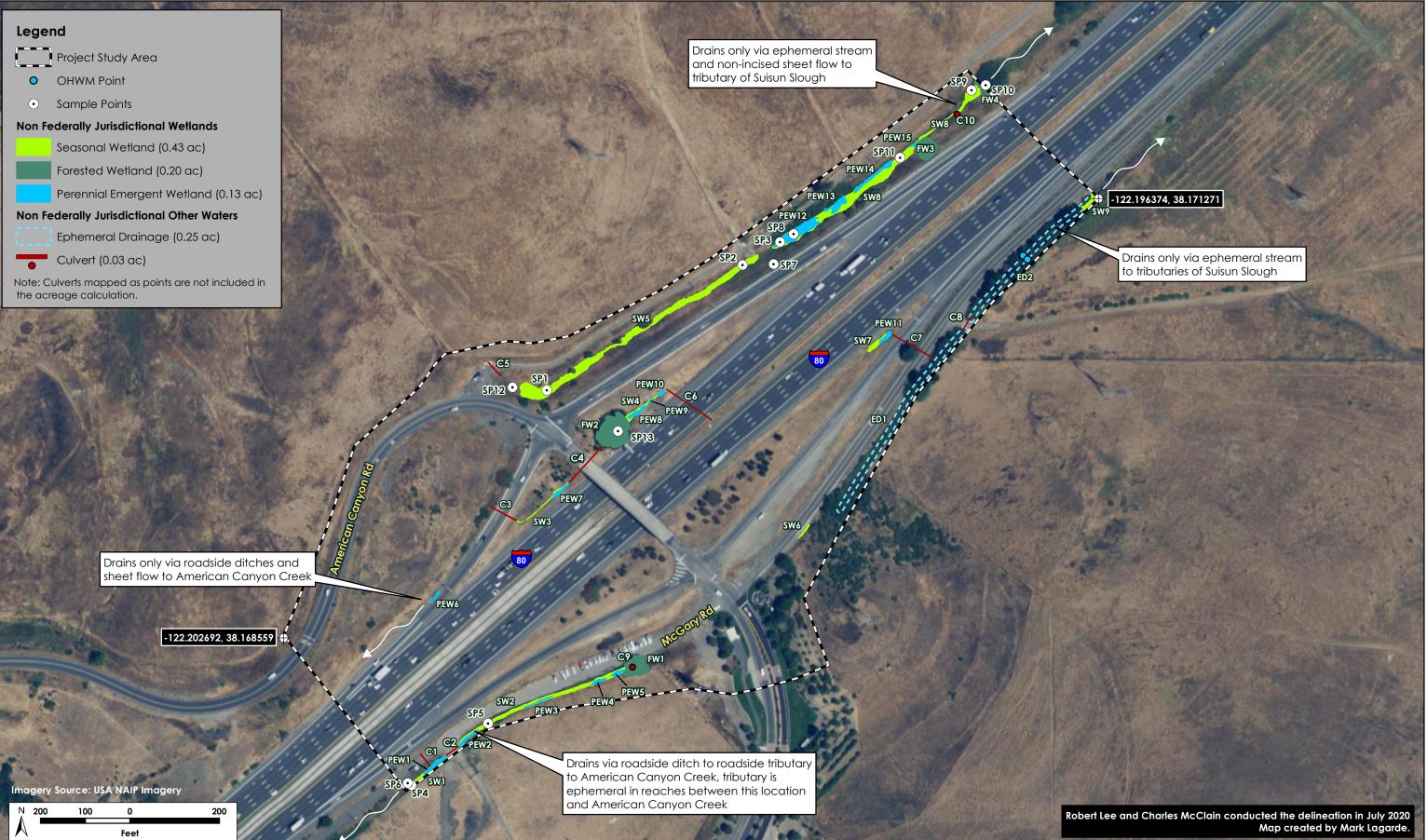
 Table 3.
 Summary of Potential Jurisdictional Waters and Wetlands within the Delineation Study Area





Figure 6. Biotic Habitats Map

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Figure 7. Preliminary Delineation of Waters of the U.S. I-80/Hiddenbrooke Parkway Interchange Project – Preliminary Delineation of Wetlands and Other Waters, Solano County, California (3328-21) December 2020

Information assembled during this investigation and pertinent to the identification of jurisdictional wetlands and other waters is presented in the first five appendices of this report. In addition, Appendix E provided at the end of this document is included as an electronic attachment in Microsoft Excel format, per USACE (2016b) guidelines.

- Appendix A—Plants observed in the study area
- Appendix B—NRCS Soil Survey of Solano County, California
- Appendix C—USACE Arid West Wetland Data Forms and OHWM Transect Forms
- Appendix D—Photos of the study area
- Appendix E—Aquatic Resources Table

3.1 Observations, Rationales, and Assumptions

Site conditions observed during the delineation survey are reported here, along with pertinent background information and precipitation data.

3.1.1 Background Information

The preliminary delineation assumes that normal circumstances prevailed at the time of the July 2020 survey, and results are based upon the conditions present at the time of the survey. The survey was performed using the "Routine Method of Determination" using three parameters, as outlined in the Regional Supplement, and utilizing 2020 guidance on the Navigable Waters Protection Rule.

Elevations in the study area range approximately 400–490 feet above sea level (Figure 3) (Google 2020). The topography of the study area ranges from relatively flat along I-80, to gently rolling hills to the north and south. The topography slopes downhill southwestward on the western portion of the study area and downhill northeastward on the eastern portion of the study area. The study area is located within the Suisun Bay and San Pablo Bay (Hydrologic Unit Codes 18050001 and 18050002) watersheds (USGS 2020).

3.1.2 Precipitation Data

The survey took place in the summer of 2020, during the dry season. Relative to the 30-year climate normal (23.45 inches annually), precipitation in the study area was lower than the normal range of precipitation for the 12-month period leading up to the delineation. Total precipitation recorded in the area from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average (1981–2010) for that same time period (PRISM Climate Group 2020). Total precipitation recorded in the study area was drier than normal during the 2019/2020 winter season as well, which began with significant rains in December 2019, but then included a drier than usual January, February, March, and April. Total precipitation recorded in the area from December 2019 through April 2020 was 9.99 inches, which is approximately 54.5% of the 30-year average (1981–2010) for that period, and would be considered below the normal range of precipitation (PRISM Climate

Group 2020). These conditions were taken into account when assessing the biotic habitats present on the site. Hydrology was considered naturally problematic. Despite the below average annual precipitation, boundaries of wetlands remained clear owing to the presence of hydrophytic vegetation and hydric soil indicators.

3.1.3 Site Conditions and Observations

The majority of the study area is California annual grassland and developed/landscaped (Figure 6). Developed/landscaped areas consist of roads, bare gravel along roadsides, a utility building, a steel transmission tower, an artificial waterfall, and landscaping/planted vegetation. Concrete ditches convey water from hillslopes near the entrance to the Hiddenbrooke development during and immediately following rain events, as well as runoff from irrigated landscape and overflow from the artificial waterfall. A concrete ditch situated between the eastbound and westbound lanes of I-80 conveys runoff to drainages on either side of the freeway. Earthen ditches excavated in uplands and situated along the I-80 westbound onramp and the I-80 eastbound offramp consist of California annual grassland and sparse facultative wetland vegetation. An ephemeral drainage situated below a series of concrete-lined ditches along the south side of McGary Road east of Hiddenbrooke Parkway has a distinct bed and banks, and an OHWM characterized by breaks-in-slope and exposed tree roots. Aerial imagery taken March 1, 1970 (USCB 2020) indicates this drainage was once a well-maintained, unvegetated irrigation ditch that conveyed natural and artificial runoff from surrounding uplands and pastures northeastward along I-80. Seasonal and perennial wetland vegetation occupies low-lying areas excavated in uplands alongside and between roads. These areas receive runoff from hillslopes, roads, ditches, culverts, and irrigated landscapes. Trickling flows and shallow standing water were observed in low-lying areas along the south side of McGary Road (Figure 6), however these appeared to be from irrigation runoff from nearby landscaping at the intersection rather than groundwater. No other flows were observed.

3.1.4 Rationale for Sample Point Choice

Thirteen sample points and one OHWM transect were selected to document conditions in representative jurisdictional and non-jurisdictional areas (Figure 7, Appendix C, Appendix D). Rationale for wetland data form sample point locations are summarized below.

- SP1 was chosen to investigate a low-lying area between the I-80 westbound offramp and an unpaved frontage road. The area receives seasonal runoff from hillslopes, roads (paved and unpaved), and a culvert situated beneath the frontage road. SP1 is dominated by a facultative species, beardless wildrye (*Elymus triticoides*). The location is in a landscape position that is likely to collect or concentrate water (concave surface) and is subject to periodic sedimentation due to its proximity to a culvert. The vegetation is bent in the direction of flow, which is an indicator of wetland hydrology (B10, Drainage Patterns).
- SP2 was selected to characterize a concave surface in the same low-lying area as SP1, but at a lower elevation and in an area dominated by an obligate species, iris leaved rush (*Juncus xiphioides*).

- SP3 was selected to characterize a concave surface in the same low-lying area as SP1 and SP2, but at a lower elevation and in an area dominated by an obligate and a facultative wetland species, iris leaved rush and slender willow herb (*Epilobium ciliatum*). Saturation was encountered 17 inches below the soil surface.
- SP4 was placed to investigate a concave surface in a low-lying area along the south side of McGary Road south of Hiddenbrooke Parkway. The low-lying area receives seasonal runoff and landscape irrigation runoff from hillslopes, paved roads, and culverts. SP4 is dominated by a facultative species, bristly oxtongue (*Helminthotheca echioides*). Surface soil cracks are present, which is an indicator of wetland hydrology (B6).
- SP5 was chosen to investigate a concave surface in the same low-lying area as SP4, but at a higher elevation and in an area dominated by bird's foot trefoil (*Lotus corniculatus*), a facultative species. Algal mats are present, which is an indicator of wetland hydrology (B12, Biotic Crust).
- SP6 was taken in a hillslope next to SP4. The location is dominated by an upland and a facultative species, ripgut brome (*Bromus diandrus*) and bristly ox-tongue.
- SP7 was selected to investigate a hillslope next to SP2 and SP3 downslope of the westbound I-80 offramp. The location is dominated by a facultative species, wild teasel (*Dipsacus fullonum*).
- SP8 was selected to investigate a concave surface in the same low-lying area as SP1, SP2, and SP3, but at a lower elevation and in an area dominated by an obligate species, cattail (*Typha* sp.). Saturation was encountered 12 inches below the soil surface, which is an indicator of wetland hydrology (A3).
- SP9 was selected to investigate a concave surface in the same low-lying area as SP1, SP2, SP3, SP8, and SP11, but at a lower elevation and in an area dominated by an obligate species, iris leaved rush. The vegetation is bent in the direction of flow, which is an indicator of wetland hydrology (B10, Drainage Patterns).
- SP10 was chosen to investigate a concave surface in the same low-lying area as SP1, SP2, SP3, SP8, SP9, and SP11, but at a lower elevation and in a forested area dominated by arroyo willow (*Salix lasiolepis*), a facultative wetland species. Oxidized rhizospheres were observed along living roots, which is an indicator of wetland hydrology (C3).
- SP11 was placed to investigate a concave surface in the same low-lying area as SP1, SP2, SP3, SP8, SP9, and SP10, but at an elevation between SP8 and SP9 and in an area dominated by bristly ox-tongue, a facultative species. Oxidized rhizospheres were observed along living roots, which is an indicator of wetland hydrology (C3).
- SP12 was chosen to investigate a concave surface in the same low-lying area as SP1, SP2, SP3, SP8, SP9, SP10, and SP11 but at a higher elevation and in an area dominated by ripgut brome, an upland species.

- SP13 was taken to investigate a concave surface in a forested low-lying area between the westbound I-80 offramp and westbound I-80. The low-lying area receives seasonal runoff from hillslopes, paved roads, and culverts situated beneath I-80 and the I-80/Hiddenbrooke Parkway overpass. SP13 is dominated by red willow (*Salix laevigata*), a facultative wetland species.
- OHWM-1 was chose to characterize an ephemeral drainage south of and parallel to McGary Road, east of Hiddenbroke Parkway.

3.1.5 Photo Points

Photo point labels, coordinates, and rationales for photodocumentation are presented in Table 4 and depicted on Figure 6. Photos are presented in Appendix D.

Label	Latitude, Longitude	Depiction
Photo 1	38.17009, -122.20067	Seasonal wetland (SW5) dominated by beardless wild rye (Elymus triticoides) at SP1.
Photo 2	38.17086, -122.19915	Seasonal wetland (SW5) dominated by iris leaved rush (<i>Juncus xiphioides</i>) at SP2.
Photo 3	38.17100, -122.19886	Perennial emergent wetland (PEW12) dominated by iris leaved rush and slender willow herb (<i>Epilobium ciliatum</i>) at SP3.
Photo 4	38.16766, -122.20172	Seasonal wetland (SW1) dominated by bristly ox- tongue (<i>Helminthotheca echioides</i>) at SP4.
Photo 5	38.16804, -122.20112	Seasonal wetland (SW2) dominated by bird's foot trefoil (Lotus corniculatus) at SP5.
Photo 6	38.16767, -122.20175	Upland at SP6 next to Photo 4 (SP4).
Photo 7	38.17087, -122.19891	Upland at SP7 next to Photo 2 (SP2) and Photo 3 (SP3).
Photo 8	38.17105, -122.19876	Perennial emergent wetland (PEW12) dominated by cattail (<i>Typha</i> sp.) at SP8.
Photo 9	38.17194, -122.19737	Seasonal wetland (SW8) dominated by iris leaved rush at SP9.
Photo 10	38.17197, -122.19726	Forested wetland (FW4) dominated by arroyo willow (<i>Salix Iasiolepis</i>) at SP10.
Photo 11	38.17152, -122.19793	Seasonal wetland (SW8) dominated by bristly ox- tongue at SP11.
Photo 12	38.17010, -122.20094	Upland at SP12 next to Photo 1 (SP1).
Photo 13	38.16984, -122.20012	Forested wetland (FW2) dominated by red willow (Salix laevigata) at SP13.
Photo 14	38.17092, -122.19694	Ordinary high-water mark of the ephemeral drainage (ED2) at OHWM-1, defined by presence of break in slope.

Table 4. Coordinates and Rationale for Photo Points

Label	Latitude, Longitude	Depiction
Photo 15	38.17092, -122.19694	Ordinary high-water mark of the ephemeral drainage (ED2) at OHWM-1, defined by presence of exposed tree roots.

Note: FW = forested wetland, OWHM = ordinary high-water mark, PEW = perennial emergent wetland, SP = sample point, SW = seasonal wetland.

3.2 Identification of Potential Section 404 Wetlands

Approximately 0.75 acre of potential USACE jurisdictional wetlands occupy the study area, consisting of three wetland types: seasonal wetland, forested wetland, and perennial emergent wetland (Figure 7). However, although these features conformed to the physical definition of three-parameter wetlands, they are all either adjacent to ephemeral streams not expected to be claimed as waters of the U.S. under the Navigable Waters Protection Rule, or only have connection to navigable waters or their tributaries via ephemeral stream, roadside ditch, or sheet flow. Therefore, of the 0.75 acres of potential jurisdictional wetlands, none are considered USACE jurisdictional. A summary of the wetland data form results is presented in Table 5. Completed data forms are provided in Appendix C.

3.2.1 Seasonal Wetland

Nine seasonal wetlands (SW1 through SW9) (Figure 7 and Appendix E) occupying 0.42 acre have sufficient three-parameter characteristics to be considered potentially jurisdictional. These features are represented by SP1, SP2, SP4, SP5, SP9, and SP11. The seasonal wetlands are dominated by hydrophytic vegetation, including beardless wildrye (FAC), iris leaved rush (OBL), bristly ox-tongue (FAC), and bird's foot trefoil (FAC). The soils are predominantly clay and exhibit hydric soil indicators, including prominent redox concentrations in the top 12 inches of a dark soil (F6) and depleted matrix (F3). The soil at SP1 is subject to sediment accumulation due to its proximity to a culvert, and is considered problematic. The soil at SP4 is disturbed, consisting of fill. Indicators of wetland hydrology are generally absent due to drier than average conditions; however, each feature is situated in a landscape position that is likely to collect water (concave surface), and primary and secondary wetland hydrology indicators were observed, including algal mats (B6) and vegetation bent in the direction of flow (B10).

3.2.2 Forested Wetland

Four forested wetlands (FW1 through FW4) (Figure 7 and Appendix E) occupying 0.20 acre have sufficient three-parameter characteristics to be considered potentially jurisdictional. These features are represented by SP10 and SP13. The forested wetlands are dominated by hydrophytic vegetation, including arroyo willow (FACW), red willow (FACW), and Baltic rush (*Juncus balticus*). The soils are primarily clay loam and exhibit prominent redox concentrations in the top 12 inches of a dark soil (F6). Indicators of wetland hydrology are generally absent due to drier than average conditions; however, each feature is situated in a landscape position that is likely to collect water (concave surface), and a primary indicator of wetland hydrology—oxidized rhizospheres along living roots (C3)—was observed at SP10.

3.2.3 Perennial Emergent Wetland

Fourteen perennial emergent wetlands (PEW1 through PEW14) (Figure 7 and Appendix E) occupying 0.13 acre have sufficient three-parameter characteristics to be considered potentially jurisdictional. These features are represented by SP3 and SP8. The perennial emergent wetlands are dominated by hydrophytic vegetation, including iris leaved rush (OBL), slender willow herb (FACW), and cattail (OBL). The soils are primarily clay and exhibit prominent redox concentrations in the top 12 inches of a dark soil (F6). Indicators of wetland hydrology are generally absent due to drier than average conditions; however, each feature is situated in a landscape position that is likely to collect water (concave surface), and a primary wetland hydrology indicator—saturation (A3)—was observed at SP8.

3.2.4 Drainage Connections to Waters of the U.S.

The wetlands discussed above are located on either side of I-80 and the on- and off-ramps and frontage roads in all four "quadrants" of the intersection (Figure 7). The topography on and surrounding the site includes hills to the northwest and southeast of I-80, which direct flows to the lower area near the highway, as well as the Hiddenbrooke interchange being the general high point in this area of I-80. Therefore, water collected in roadside ditches near the road drains generally to the southeast towards Green Valley Creek and tributaries feeding Suisun Slough for the areas on the eastern side of the interchange, and generally to the west or southwest toward American Canyon Creek for the areas on the western side of the interchange. In the northeast quadrant of the interchange, features such as SW5, SW8, FW8, and PEW12-15 drain along I-80 within roadside ditches and some areas of sheet flow before crossing to the south under I-80 to flow into tributaries to Suisun Slough. In the southeast quadrant SW6, SW7, and SW9 are adjacent or drain directly via culverts into ephemeral streams ED1 and ED2, which flows to the east to drain via Green Valley Creek to Suisun Slough. PEW6 and 7 and SW3 in the northwest quadrant drain via excavated ditches and sheet flow to American Canyon Creek to the west. Finally, features in the southwest quadrant including SW1 and SW2, PEW1-5, and FW1 drain in an excavated ditch to intercept a natural tributary to American Canyon Creek. However, this tributary is ephemeral in several reaches before intercepting American Canyon Creek. Because all features are adjacent directly to ephemeral streams or are located upstream of ephemeral streams prior to a connection to a navigable waters or jurisdictional tributary, none have been considered jurisdictional waters of the U.S.

3.3 Identification of Potential Section 404 Other Waters

Approximately 0.28 acre of potential USACE jurisdictional other waters occupy the study area as ED1 and ED2 (Figure 7). However, although these features conformed to the physical definition of a linear watercourse connected to downstream waters and bearing Ordinary High Water Marks and indicators of regular flows, they are both ephemeral streams not expected to be claimed as waters of the U.S. under the Navigable Waters Protection Rule. Culverts mapped on the site connected these streams and other wetlands on the project site, and are not connected intermittent or perennial tributaries to waters of the U.S. Therefore, of the 0.28 acres of potential jurisdictional other waters, none are considered USACE jurisdictional (see Section 3.2.4). A summary

of the other waters data form results is presented in Table 5. Completed data forms are provided in Appendix C.

3.3.1 Ephemeral Drainage

Two ephemeral drainage features (ED1 and ED2) (Figure 7 and Appendix E) occupy 0.25 acre within a lowlying drainage with a distinct bed and a bank. The ephemeral drainage segments are situated at the base of hillslopes in the remnants of a historic irrigation ditch that was maintained free of vegetation, as depicted on an aerial photograph dated March 1, 1970 (UCSB 2020). They receive seasonal runoff and landscape irrigation runoff from the hillslopes, paved roads, concrete-lined ditches, and landscaped areas. The features are separated by a culvert (C8) and appear to convey flow toward an unnamed tributary of Green Valley Creek to the east. A small amount of water was present in the drainage at the time of the survey, but irrigation in the nearby landscaping was draining to this area at the time and this hydrology was artificial rather than high groundwater. The soils are clay loam, and support primarily of coast live oak (*Quercus agrifolia*) (UPL), arroyo willow (FACW), Himalayan blackberry (*Rubus armeniacus*) (FAC), coyote brush (*Baccharis pilularis*) (UPL), and poison oak (*Toxicodendron diversilobum*) (FACU). The OHWM is 12-feet-wide and identified by a break in slope and exposed tree roots. The area below the OHWM generally lacks vegetation; however, the canopies of trees and shrubs rooted within the bank are dense and cover the low flow channel.

3.3.2 Culverts

Ten culvert features (C1 through C10) (Figure 7 and Appendix E) occupying approximately 0.03 acre and 563.0 linear feet were mapped within the study area; however, the extent of two culverts (C9 and C10) could not be determined during the field survey or on the basis of readily available information. The culverts are situated beneath roads and other developed areas. They drain water from hillslopes and landscaped areas to and away from low-lying areas, ditches, and ephemeral drainage adjacent roads.

Name	Sampling Rationale	Hydrophytic Vegetation?	Hydric Soil?	Wetland Hydrology?	Overall Wetland Assessment
SP1	Seasonal wetland between the I-80 westbound offramp and an unpaved frontage road.	Yes	Yes	Yes	A 3-parameter wetland
SP2	Seasonal wetland between the I-80 westbound offramp and an unpaved frontage road.	Yes	Yes	Yes	A 3-parameter wetland
SP3	Perennial emergent wetland between the I-80 westbound offramp and an unpaved frontage road.	Yes	Yes	Yes	A 3-parameter wetland
SP4	Seasonal wetland along the south side of McGary Road south of Hiddenbrooke Parkway.	Yes	Yes	Yes	A 3-parameter wetland
SP5	Seasonal wetland along the south side of McGary Road south of Hiddenbrooke Parkway.	Yes	Yes	Yes	A 3-parameter wetland
SP6	Upland adjacent to SP4.	No	No	No	Not a 3-parameter wetland
SP7	Upland adjacent to SP2 and SP3.	Yes	No	No	Not a 3-parameter wetland
SP8	Perennial emergent wetland between the I-80 westbound offramp and an unpaved frontage road.	Yes	Yes	Yes	A 3-parameter wetland
SP9	Seasonal wetland between westbound I-80 and an unpaved frontage road.	Yes	Yes	Yes	A 3-parameter wetland
SP10	Forested wetland between westbound I-80 and an unpaved frontage road.	Yes	Yes	Yes	A 3-parameter wetland
SP11	Seasonal wetland between the I-80 westbound offramp and an unpaved frontage road.	Yes	Yes	Yes	A 3-parameter wetland
SP12	Upland adjacent to SP1.	No	No	No	Not a 3-parameter wetland
SP13	Forested wetland between westbound I-80 offramp and westbound I-80.	Yes	Yes	Yes	A 3-parameter wetland

Table 5. Summary of Sample Point Locations and Results

3.4 Identification of Section 401 Potentially Jurisdictional Waters of the State

Approximately 1.44 acres of potential waters of the state (RWQCB jurisdiction) occupy the study area, consisting of areas meeting physical definitions of wetlands and waters per USACE guidance but outside Section 404 jurisdiction due to the Navigable Waters Protection Rule, as described above, and mixed riparian woodland and riparian scrub, which are described below (Figure 8; Appendix D, Photo 15).

3.4.1 Mixed Riparian Woodland

Mixed riparian woodland occupies 0.49 acre of the study area and is situated along the bed and banks of the ephemeral drainage. The mixed riparian woodland is dominated by arroyo willow, coast live oak, and Fremont cottonwood (*Populus fremontii*). The understory is mostly unvegetated and covered with leaf litter, but some portions contain patches of poison oak, Himalayan blackberry, and rushes (*Juncus* sp.).

3.4.2 Riparian Scrub

Riparian scrub occupies 0.17 acre of the study area and is situated along the bed and banks of the ephemeral drainage between stands of mixed riparian woodland. The riparian scrub lacks tree canopy and is dominated by Himalayan blackberry.

3.5 Identification of CDFW Potentially Jurisdictional Habitats

Approximately 0.66 acre of CDFW potentially jurisdictional habitats occupy the study area, consisting of mixed riparian woodland and riparian scrub along the ephemeral drainage (Figure 8). These habitats are described above in Section 3.4.

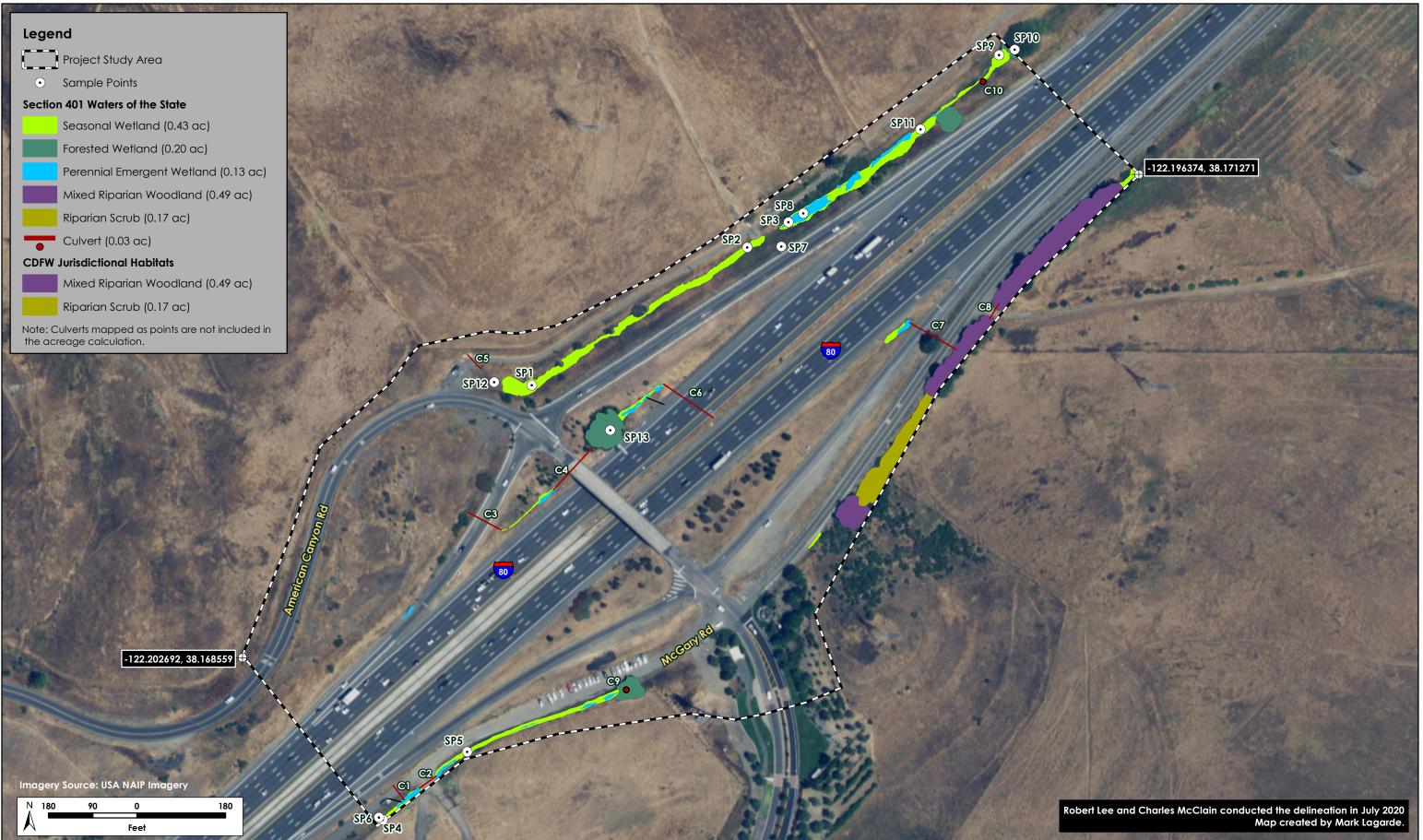
3.6 Areas Not Meeting the Regulatory Definition of Waters of the U.S./State/CDFW

Approximately 28.46 acres of the study area do not meet the regulatory definition of state or federal waters, wetlands, or riparian habitats. These portions of the study area consist of California annual grassland, developed/landscaped areas, and ditches excavated in uplands and carrying primarily roadside or irrigation runoff (Figure 6). These ditches occur in upland landscape positions and do not meet the USACE or RWQCB criteria for wetlands, or the CDFW criteria for riparian areas.

Three of the 13 sample points recorded in the study area were taken within California annual grassland (Figure 7). These areas are represented by SP6, SP7, and SP12 (Appendix C; Appendix D, Photos 6, 7, and 12). None have three-parameter characteristics sufficient to meet the definition of a jurisdictional wetland or be considered other waters by the USACE. Vegetation consists of upland and facultative species such as ripgut brome (UPL), bristly ox-tongue (FAC), wild teasel (FAC), bishop's weed (*Ammi majus*) (UPL), Italian thistle (*Carduus pycnocephalus*) (UPL), brome fescue (*Festuca bromoides*) (FACU), soft chess (*Bromus hordeaceus*) (FAC), and

Italian ryegrass (*Festuca perennis*). Soils are clay loam with few to no mottles and no other indicators of regular inundation (i.e., organic buildup or streaking). Wetland vegetation dominated by wild teasel (FAC) is present at SP7; however, the soil does not contain redox features, and no wetland hydrology indicators were observed. The hydrophytic vegetation at SP7 is supported by runoff from the I-80 westbound offramp. The California annual grassland also includes small patches of coyote brush, mostly along the margins of the seasonal wetland north of the I-80 eastbound offramp, and on the south side of McGary Road east of the artificial water feature. Plantings of native oak trees (*Quercus* spp.) (UPL) between Interstate 80 and the onramps and offramps, as well as a few isolated silver wattle (*Acacia dealbata*) (UPL) trees, were also mapped to this habitat type. Soils were observed to be clay loam with no mottles and no other indicators of regular inundation (i.e., organic buildup or streaking).

Ditches throughout the study area were dug in uplands, drain uplands, and do not appear to be re-constructions of historic drainages (Appendix D, Photos 16 and 17). Therefore, they were considered to be non-jurisdictional.



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I-80/Hiddenbrooke Parkway Interchange Project – Preliminary Delineation of Wetlands and Other Waters, Solano County, California (3328-21)

Figure 8. Preliminary Delineation of Waters of the State and CDFW Jurisdictional Habitats December 2020

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Appendix A. Plants Observed in the Study Area

Family	Botanical Name	Common Name	Wetland Indicato Status
Asteraceae	Leontodon saxatilis	hawkbit	FACU
	Logfia gallica	narrowleaf cottonrose	UPL
	Madia gracilis	slender tarweed	NL
	Pseudognaphalium stramineum	cottonbatting plant	FAC
	Silybum marianum	milk thistle	NL
	Sonchus asper ssp. asper	sow thistle	FAC
	Sonchus oleraceus	sow thistle	UPL
	Tragopogon porrifolius	salsify	NL
Berberidaceae	Nandina domestica (ornamental)	heavenly bamboo	NL
Brassicaceae	Brassica nigra	black mustard	NL
	Brassica rapa	common mustard	FACU
	Cardamine oligosperma	bitter cress	FAC
	Hirschfeldia incana	hoary mustard	NL
	Nasturtium officinale	watercress	OBL
	Raphanus sativus	jointed charlock	NL
Caryophyllaceae	Silene gallica	common catchfly	NL
	Spergularia rubra	red sandspurry	FAC
Convolvulaceae	Convolvulus arvensis	field bindweed	NL
	Bolboschoenus maritimus ssp. paludosus	alkali bulrush	OBL
	Carex praegracilis	field sedge	FACW
	Cyperus eragrostis	tall flatsedge	FACW
Dipsacaceae	Dipsacus fullonum	Fuller's teasel	FAC
Fabaceae	Acacia dealbata	silver wattle	NL
	Acmispon americanus	Spanish lotus	UPL
	Lotus corniculatus	bird's foot trefoil	FAC
	Lupinus bicolor	annual lupine	NL
	Lupinus sp.	lupine	NL
	Medicago polymorpha	bur clover	FACU
	Melilotus albus	white sweetclover	FACU
	Melilotus indicus	annual yellow sweetclover	FACU
	Trifolium angustifolium	narrow leaved clover	NL

Family	Botanical Name	Common Name	Wetland Indicato Status
	Trifolium glomeratum	clustered clover	NL
	Trifolium hirtum	rose clover	NL
	Vicia sativa ssp. sativa	spring vetch	FACU
	Quercus agrifolia	coast live oak	NL
	Quercus douglasii	blue oak	NL
	Quercus lobata	valley oak	FACU
Gentianaceae	Centaurium tenuiflorum	slender centaury	FACW
	Erodium botrys	broad leaf filaree	FACU
	Erodium cicutarium	red stemmed filaree	NL
	Geranium dissectum	cutleaf geranium	NL
Hypericaceae	Hypericum perforatum	Klamath weed	FACU
Iridaceae	Sisyrinchium bellum	western blue eyed grass	FACW
Juglandaceae	Juglans sp.	walnut	NL
Juncaceae	Juncus balticus ssp. ater	Baltic rush	FACW
	Juncus bufonius	toad rush	FACW
	Juncus patens	spreading rush	FACW
	Juncus xiphioides	iris leaved rush	OBL
Lamiaceae	Mentha pulegium	pennyroyal	OBL
	Mentha spicata	spearmint	OBL
	Rosmarinus officinalis (ornamental)	rosemary	NL
	Stachys sp.	hedge nettle	NL
Linaceae	Linum bienne	narrow leaved flax	NL
Lythraceae	Lythrum hyssopifolia	hyssop loosestrife	OBL
Malvaceae	Malva nicaeensis	bull mallow	NL
	Malva parviflora	cheeseweed	NL
	Malva pseudolavatera	Cornish mallow	NL
Oleaceae	Olea sp. (ornamental)	olive	NL
Onagraceae	Epilobium brachycarpum	tall annual willowherb	FAC
	Epilobium ciliatum	slender willowherb	FACW
Orobanchaceae	Bellardia trixago	Mediterranean lineseed	NL
Papaveraceae	Eschscholzia californica	California poppy	NL
	Fumaria capreolata	white ramping fumitory	NL
Plantaginaceae	Kickxia elatine	sharp leaved fluellin	UPL
-	Plantago lanceolata	English plantain	FAC
Poaceae	Agrostis sp.	bent grass	NL

Family	Botanical Name	Common Name	Wetland Indicator Status
-	Aira caryophyllea	silver hairgrass	FACU
	Avena sp.	wild oats	NL
	Brachypodium distachyon	purple false brome	NL
	Briza minor	little rattlesnake grass	FAC
	Bromus caroli-henrici	weedy brome	NL
	Bromus diandrus	ripgut brome	NL
	Bromus hordeaceus	soft chess	FACU
	Bromus sp.	brome	NL
	Cortaderia selloana	pampas grass	FACU
	Ehrharta erecta	panic veldt grass	NL
	Elymus caput-medusae	medusa head	NL
	Elymus triticoides	beardless wildrye	FAC
	Festuca arundinacea	tall fescue	FACU
	Festuca bromoides	brome fescue	FACU
	Festuca idahoensis	Idaho fescue	FACU
	Festuca myuros	rattail fescue	FACU
	Festuca perennis	Italian ryegrass	FAC
	Holcus lanatus	velvet grass	FAC
	Hordeum murinum	wall barley	FACU
	Paspalum dilatatum	dallis grass	FAC
	Phalaris aquatica	Harding grass	FACU
	Poa pratensis	Kentucky bluegrass	FAC
	Polypogon monspeliensis	annual beard grass	FACW
	Stipa pulchra	purple needlegrass	NL
Polygonaceae	Persicaria hydropiperoides	false waterpepper	OBL
	Polygonum aviculare	prostrate knotweed	FAC
	Rumex crispus	curly dock	FAC
	Rumex pulcher	fiddle dock	FAC
	Rumex transitorius	willow dock	FACW
Primulaceae	Anagallis arvensis	scarlet pimpernel	FAC
Rosaceae	Heteromeles arbutifolia	toyon	NL
	Prunus cerasifera	cherry plum	NL
	Pyracantha sp.	firethorn	NL
	Rosa californica	California wild rose	FAC
	Rosa sp. (ornamental)	rose	NL

Family	Botanical Name	Common Name	Wetland Indicator Status
	Rubus armeniacus	Himalayan blackberry	FAC
Rubiaceae	Galium aparine	cleavers	FACU
Salicaceae	Populus fremontii ssp. fremontii	Fremont cottonwood	FAC
	Salix laevigata	red willow	FACW
	Salix lasiolepis	arroyo willow	FACW
Sapindaceae	Aesculus californica	California buckeye	NL
Solanaceae	Solanum americanum	American black nightshade	FACU
Themidaceae	Triteleia laxa	Ithuriel's spear	NL
Typhaceae	Typha latifolia	broad-leaved cattail	OBL
Verbenaceae	Verbena sp. (ornamental)	vervain	NL

Note: OBL=obligate, FACW=facultative wetland, FAC=facultative, FACU=facultative upland, UPL=upland, NL=not listed



United States Department of Agriculture

Natural Resources Conservation

Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Napa County, California, and Solano County, California

I-80/Hiddenbrooke Parkway Interchange Project



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

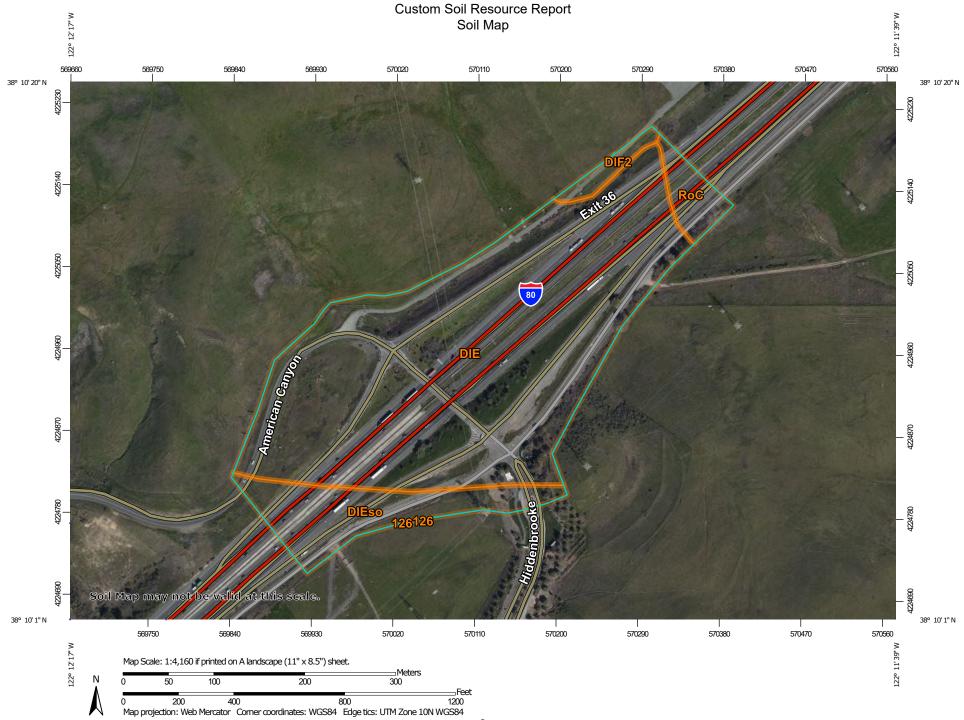
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



	MAP L	EGEND)	MAP INFORMATION
	terest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.
Soils	Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points Point Features	© ⊘ ►	Very Stony Spot Wet Spot Other Special Line Features	Warning: Soil Map may not be valid at this scale. Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed
© × ×	Blowout Borrow Pit Clay Spot Closed Depression	Water Fea Transport	Streams and Canals tation Rails	scale. Please rely on the bar scale on each map sheet for map measurements.
◇ ※ …	Gravel Pit Gravelly Spot Landfill	* * *	Interstate Highways US Routes Major Roads	Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
ي ج ا	Lava Flow Marsh or swamp Mine or Quarry	Backgrou	Local Roads Ind Aerial Photography	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.
© ~	Miscellaneous Water Perennial Water Rock Outcrop Saline Spot			This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Soil Survey Area: Napa County, California Survey Area Data: Version 13, May 29, 2020
+ :: =	Sandy Spot Severely Eroded Spot Sinkhole			Soil Survey Area: Solano County, California Survey Area Data: Version 14, May 29, 2020
þ ø	Slide or Slip Sodic Spot			Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2019—Apr 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
126	Diablo clay, 5 to 9 percent slopes, MLRA 15	0.0	0.0%
DIEso	Dibble-Los Osos clay loams, 9 to 30 percent slopes	3.8	12.7%
Subtotals for Soil Survey Area		3.8	12.7%
Totals for Area of Interest		29.9	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DIE	Dibble-Los Osos clay loams, 9 to 30 percent slopes	24.5	81.8%
DIF2	Dibble-Los Osos clay loams, 30 to 50 percent slopes, eroded	0.6	1.9%
RoC	Rincon clay loam, 2 to 9 percent slopes, MLRA 14	1.1	3.6%
Subtotals for Soil Survey Area		26.1	87.3%
Totals for Area of Interest		29.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Napa County, California

126—Diablo clay, 5 to 9 percent slopes, MLRA 15

Map Unit Setting

National map unit symbol: 2w63c Elevation: 30 to 1,130 feet Mean annual precipitation: 16 to 32 inches Mean annual air temperature: 56 to 60 degrees F Frost-free period: 290 to 365 days Farmland classification: Prime farmland if irrigated

Map Unit Composition

Diablo and similar soils: 90 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Diablo

Setting

Landform: Hillslopes, mountain slopes Down-slope shape: Convex, linear Across-slope shape: Convex, linear Parent material: Residuum weathered from calcareous shale

Typical profile

A1 - 0 to 5 inches: clay A2 - 5 to 18 inches: clay Bkss1 - 18 to 30 inches: clay Bkss2 - 30 to 39 inches: clay Ck - 39 to 53 inches: clay Cr - 53 to 79 inches: bedrock

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: 40 to 59 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C Ecological site: R015XD001CA - CLAYEY Hydric soil rating: No

Minor Components

Cropley

Percent of map unit: 5 percent Landform: Depressions Landform position (two-dimensional): Toeslope Down-slope shape: Linear, concave Across-slope shape: Linear, concave Hydric soil rating: No

Aridic haploxererts, moderately deep

Percent of map unit: 5 percent Landform: Hillslopes, mountain slopes Down-slope shape: Convex, linear Across-slope shape: Convex, linear Hydric soil rating: No

DIEso—Dibble-Los Osos clay loams, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: wd67 Elevation: 100 to 2,000 feet Mean annual precipitation: 20 to 30 inches Mean annual air temperature: 57 to 61 degrees F Frost-free period: 225 to 260 days Farmland classification: Not prime farmland

Map Unit Composition

Dibble and similar soils: 60 percent Los osos and similar soils: 30 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dibble

Setting

Landform: Mountains Landform position (two-dimensional): Summit Landform position (three-dimensional): Center third of mountainflank Down-slope shape: Convex Across-slope shape: Convex Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 13 inches: clay loam *H2 - 13 to 30 inches:* clay loam *H3 - 30 to 59 inches:* bedrock

Properties and qualities

Slope: 9 to 30 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock Drainage class: Well drained Runoff class: Very high Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water capacity: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D Ecological site: R015XE020CA Hydric soil rating: No

Description of Los Osos

Setting

Landform: Mountains Landform position (two-dimensional): Backslope Landform position (three-dimensional): Center third of mountainflank Down-slope shape: Concave Across-slope shape: Concave Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 7 inches: clay loam *H2 - 7 to 25 inches:* clay *H3 - 25 to 59 inches:* bedrock

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D Ecological site: R015XE020CA Hydric soil rating: No

Minor Components

Millsholm

Percent of map unit: 5 percent Hydric soil rating: No

Los gatos Percent of map unit: 5 percent Hydric soil rating: No

Solano County, California

DIE—Dibble-Los Osos clay loams, 9 to 30 percent slopes

Map Unit Setting

National map unit symbol: h9lb Elevation: 100 to 2,000 feet Mean annual precipitation: 20 to 30 inches Mean annual air temperature: 57 to 61 degrees F Frost-free period: 225 to 260 days Farmland classification: Not prime farmland

Map Unit Composition

Dibble and similar soils: 60 percent *Los osos and similar soils:* 30 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Dibble

Setting

Landform: Mountains Landform position (two-dimensional): Summit Landform position (three-dimensional): Center third of mountainflank Down-slope shape: Convex Across-slope shape: Convex Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 13 inches: clay loam *H2 - 13 to 30 inches:* clay loam *H3 - 30 to 59 inches:* bedrock

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D Ecological site: R015XE020CA Hydric soil rating: No

Description of Los Osos

Setting

Landform: Mountains

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Center third of mountainflank Down-slope shape: Concave Across-slope shape: Concave Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 7 inches: clay loam H2 - 7 to 25 inches: clay H3 - 25 to 59 inches: bedrock

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D Ecological site: R015XE020CA Hydric soil rating: No

Minor Components

Los gatos

Percent of map unit: 5 percent *Hydric soil rating:* No

Millsholm

Percent of map unit: 5 percent Hydric soil rating: No

DIF2—Dibble-Los Osos clay loams, 30 to 50 percent slopes, eroded

Map Unit Setting

National map unit symbol: h9lc Elevation: 100 to 2,000 feet Mean annual precipitation: 20 to 30 inches Mean annual air temperature: 57 to 61 degrees F Frost-free period: 225 to 260 days Farmland classification: Not prime farmland

Map Unit Composition

Dibble and similar soils: 60 percent *Los osos and similar soils:* 30 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Dibble

Setting

Landform: Hills Landform position (two-dimensional): Summit Landform position (three-dimensional): Center third of mountainflank Down-slope shape: Convex Across-slope shape: Convex Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 3 inches: clay loam H2 - 3 to 20 inches: clay loam H3 - 20 to 59 inches: bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e Land capability classification (nonirrigated): 6e Hydrologic Soil Group: D Ecological site: R015XF006CA - Steep Clayey Hills Hydric soil rating: No

Description of Los Osos

Setting

Landform: Mountains Landform position (two-dimensional): Backslope Landform position (three-dimensional): Center third of mountainflank Down-slope shape: Concave Across-slope shape: Concave Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 1 inches: clay loam *H2 - 1 to 20 inches:* clay *H3 - 20 to 59 inches:* bedrock

Properties and qualities

Slope: 30 to 50 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock Drainage class: Well drained Runoff class: Very high Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water capacity: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 6e Land capability classification (nonirrigated): 6e Hydrologic Soil Group: D Ecological site: R015XE020CA Hydric soil rating: No

Minor Components

Millsholm

Percent of map unit: 5 percent Hydric soil rating: No

Los gatos

Percent of map unit: 5 percent Hydric soil rating: No

RoC—Rincon clay loam, 2 to 9 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2tb8p Elevation: 10 to 3,110 feet Mean annual precipitation: 11 to 33 inches Mean annual air temperature: 56 to 62 degrees F Frost-free period: 250 to 320 days Farmland classification: Prime farmland if irrigated

Map Unit Composition

Rincon and similar soils: 90 percent *Minor components:* 10 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Rincon

Setting

Landform: Terraces, alluvial fans Down-slope shape: Linear Across-slope shape: Linear Parent material: Clayey alluvium derived from sedimentary rock

Typical profile

A - 0 to 6 inches: clay loam Ap - 6 to 18 inches: clay loam Bt - 18 to 52 inches: clay Btk - 52 to 64 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C Ecological site: R014XE025CA - FINE LOAMY BOTTOM

Minor Components

Lockwood

Percent of map unit: 2 percent Hydric soil rating: No

Capay

Percent of map unit: 2 percent Hydric soil rating: No

Arbuckle

Percent of map unit: 2 percent Hydric soil rating: No

Cropley

Percent of map unit: 2 percent Hydric soil rating: No

Brentwood

Percent of map unit: 1 percent Hydric soil rating: No

Antioch

Percent of map unit: 1 percent Hydric soil rating: No

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Appendix C. USACE Arid West Wetland Data Forms and OHWM Datasheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: I-80/Hiddenbrooke Parkway Intercha	inge	City/Cou	unty: <u>Unincorpo</u>	orated/Solano	Sampling	Date: July 17	, 2020
Applicant/Owner: <u>City of Vallejo</u>				State: California	Sampling	Point: SP1	
Investigator(s): R. Lee		Section	/Township/Rang	ge: <u>S28/T4N/R3W</u>			
Landform (hillslope, terrace, etc.): Swale		Local R	elief (concave, o	convex, none): <u>Cor</u>	ncave	Slope (%):	2
Subregion (LRR): Mediterranean California (LRR C	<u>)</u> Lat: <u>3</u>	38.17009		Long: <u>-122.20067</u>		Datum: W	GS84
Soil Map Unit Name: Dibble-Los Osos clay loams	, 9–30% slop	bes		NWI	classification	R4SBAx -	Riverine
Are climatic / hydrologic conditions on the site typica	al for this time	e of year?	Yes No	o <u>X</u> (If no	, explain in R	emarks.)	
Are Soil or Hydrology Vegetation	significantly	/ disturbed?	Are "No	ormal Circumstances	" present?	Yes X	No
Are Soil X or Hydrology X Vegetation	naturally pr	oblematic?	(If need	ded, explain any answ	vers in Rema	rks.)	
SUMMARY OF FINDINGS – Attach site	map show	wing sam	pling point	locations, trans	ects, impo	ortant featu	ures, etc.
Hydrophytic Vegetation Present? Yes X	No						
Hydric Soil Present? Yes X			Is the Sample	d Area	Yes X	No	
Wetland Hydrology Present? Yes X	No		within a Wetla	and?	100 <u>X</u>		
Remarks:							
Point taken to investigate a swale between the I-80 hillslopes, roads (paved and unpaved), and a culver August 2019 through July 2020 was 11.75 inches, w	t situated be	neath the fro	ontage road. Hy	drology is naturally p	roblematic be	cause precipit	
VEGETATION							
Tree Stratum (Plot size: <u>NA</u>)	Absolute Cover %	Dominant Species?	Indicator Status	Dominance Test	worksheet:		
1				Number of Dominant S That Are OBL, FACW,		1	(A)
2				Total Number of Domin	ant		
3				Species Across All Stra		1	(B)
4				Demonst of Deminorst C			
Total Cover: <u>Sapling/Shrub Stratum</u> (Plot size: <u>NA</u>)				Percent of Dominant S That Are OBL, FACW,		100%	(A/B)
1				Prevalence Inde	x worksheet		
2.				Total % Co	ver of:	Multip	bly by:
3.				OBL species		x 1 =	
4.				FACW species			
5.				FAC species		x 3 =	
Total Cover:				FACU species		x 4 =	
Herb Stratum (Plot size: <u>5-foot radius</u>)				UPL Species		x 5 =	
1. Elymus triticoides	80	Х	FAC	Column totals		(A)	(B)
2. Helminthotheca echioides	15		FAC	-			
3. Bromus diandrus	5		NL	Prevalence In	dex = B/A	=	
4. Foeniculum vulgare	3		NL	Hydrophytic Veg	etation Indic	ators:	
5. Bromus caroli-henrici	2		NL	X Dominance T	ext is >50%		
6. Rumex crispus	2		FAC	Prevalence In			
7. Bromus hordeaceus	1		FACU			¹ (Provide su	pporting
8. Carduus pycnocephalus	1		NL			a separate sh	
Total Cover:	109			Problematic H	lvdrophytic V	egetation1 (F:	xplain)
<u>Woody Vine Stratum</u> (Plot size: <u>NA</u>)				¹ Indicators of hydric		C (• •
1				present.			
2Total Cover:			<u> </u>	Hydrophytic Vegetation	Vec	Y No	
	Cover of Bioti	ic Crust	0	Present?	Yes	<u>X</u> No _	
Remarks: More than 50% of the dominant plant species acros	s all strata a	re rated OBL	_, FACW, or FA	C.			

SOIL

Depth	Matrix	%	-	edox Feat %		Loc ²	Texture	Remarks
(inches) 0-5	Color (moist) 10YR 3/2	100	Color (moist)	/0	Type ¹	LUC	SiCL	Remarks
<u> </u>	10YR 3/2	94	5YR 5/8	1	С	M	C	Prominent redox
0-12	7.5YR 2.5/1	<u> </u>	311(3/0		<u> </u>	111	0	
12-20	2.5Y 3/2	93	10YR 4/6	5	С	М	SC	More gravel, prominent redox
12 20	7.5YR 2.5/1	2	101111 1/0		<u> </u>			More graves, preniment redex
ype: C=Con	centration, D=Dep	letion, RM=R	educed Matrix, CS=C	overed or C	Coated Sand	Grains	² Location: PL=Po	re Lining, RC=Root Channel, M=Matrix.
dric Soil Ind	dicators: (Applica	ble to all LR	Rs, unless otherwise	e noted.)			Indicators	for Problematic Hydric Soils ³ :
Histos	sol (A1)		Sar	ndy Redox	(S5)		1	cm Muck (A9) (LRR C)
	Epipedon (A2)			pped Matri				cm Muck (A10) (LRR B)
	Histic (A3)				Mineral (F1)			educed Vertic (F18)
	gen Sulfide (A4)				Matrix (F2)			ed Parent Material (TF2)
	ied Layers (A5) (L l Muck (A9) (LRR D)			bleted Matr			<u> </u>	ther (Explain in Remarks)
	ted Below Dark Su				Surface (F7)			
_	Dark Surface (A12			dox Depres				
_	/ Mucky Mineral (S			nal Pools (³ Indicators	of hydrophytic vegetation and wetland
	/ Gleyed Matrix (S4				10)		hydrology	must be present, unless disturbed or
		.,					problema	tiC.
	Layer (If preser	nt):						
Type:	None	nt):						
Type:		nt):					Hydric S	oil Present? Yes <u>X</u> No
Type: Depth (ir emarks:	None nches): <u>NA</u>							
Type: Depth (ir emarks: ne area is ir proximity t	None nches): <u>NA</u> n a landscape po to a culvert. The	osition that i					rface, swale) and	l is subject to periodic sedimentation due t
Type: Depth (ir emarks: ne area is ir proximity t a depth of	None nches): <u>NA</u> n a landscape po to a culvert. The 12 inches.	osition that i					rface, swale) and	l is subject to periodic sedimentation due t
Type: Depth (ir emarks: e area is ir proximity t a depth of YDROLO	None nches): <u>NA</u> n a landscape po to a culvert. The 12 inches.	osition that i soil has a 4					rface, swale) and	oil Present? Yes X No I is subject to periodic sedimentation due t prominent redox concentrations as begin
Type: Depth (ir emarks: ne area is ir proximity t a depth of YDROLC /etland Hy	None nches): <u>NA</u> n a landscape po to a culvert. The 12 inches. DGY drology Indicat	osition that i soil has a 4 ors:		iving a ma			rface, swale) and	is subject to periodic sedimentation due t prominent redox concentrations as begin
Type: Depth (ir emarks: he area is ir proximity t a depth of YDROLC /etland Hy rimary India	None nches): <u>NA</u> n a landscape po to a culvert. The 12 inches. DGY drology Indicat	osition that i soil has a 4 ors:	1-inch thick layer ha	iving a ma	atrix value o		rface, swale) and	is subject to periodic sedimentation due t prominent redox concentrations as begin
Type: Depth (ir emarks: the area is ir proximity t a depth of YDROLO Vetland Hy rimary India	None hches): <u>NA</u> h a landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum	osition that i soil has a 4 ors:	1-inch thick layer ha	iving a ma	B11)		rface, swale) and	l is subject to periodic sedimentation due t prominent redox concentrations as begin <u>Secondary Indicators (2 or more required</u>
Type: Depth (ir emarks: ne area is ir proximity t a depth of YDROLO /etland Hy rimary India Surfac High V	None hches): NA h a landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum ce Water (A1)	osition that i soil has a 4 ors:	uired: check all tha	iving a ma it apply) Salt Crust (Biotic Crust	B11)	f 3 and chr	rface, swale) and	l is subject to periodic sedimentation due to prominent redox concentrations as begin <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine)
Type: Depth (ir emarks: he area is ir proximity t a depth of YDROLC	None hches): NA h a landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum ce Water (A1) Water Table (A2)	osition that i soil has a 4 ors: n of one req	uired: check all tha	it apply) Salt Crust (Biotic Crust	B11) t (B12)	f 3 and chr	rface, swale) and	A is subject to periodic sedimentation due to prominent redox concentrations as begin <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Type: Depth (ir emarks: a area is ir proximity t a depth of YDROLC /etland Hy rimary India Surfac High V Satura Water	None hches): NA h a landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum ce Water (A1) Water Table (A2) ation (A3)	osition that i soil has a 4 ors: n of one req iverine)	uired: check all tha	tt apply) Salt Crust (Biotic Crust Aquatic Inv	B11) t (B12) ertebrates (B	f 3 and chr 13) C1)	rface, swale) and oma of 2 and 5%	A is subject to periodic sedimentation due to prominent redox concentrations as begin Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
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Type: Depth (ir emarks: he area is ir proximity t a depth of YDROLC Vetland Hy Primary India Control Surface High V Satura Water Sedim Drift D	None hches): NA h a landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonr hent Deposits (B2)	osition that i soil has a 4 ors: a of one req iverine) (Nonriverine riverine)	L-inch thick layer ha	tt apply) Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized Rl Presence o	B11) t (B12) ertebrates (B Sulfide Odor (hizospheres a	13) C1) along Living on (C4)	rface, swale) and oma of 2 and 5%	A is subject to periodic sedimentation due t b prominent redox concentrations as begin Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2)
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Type: Depth (ir emarks: a area is ir proximity t a depth of YDROLC YDROLC YCTANA YDROLC YCTANA YOROLC YCTANA YOROLC YCTANA YOROLC YCTANA YOROLC YCTANA YOROLC YCTANA Sedim Sedim Sedim Sedim Sedim Surfac Surfac Unuda	None hches): NA h a landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonr hent Deposits (B2) Deposits (B3) (Non ce Soil Cracks (B6) ation Visible on Ae -stained Leaves (E vations: her Present?	osition that i soil has a 4 ors: of one req iverine) (Nonriverine riverine) ; rial Imagery (39)	4-inch thick layer ha	tt apply) Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized RI Presence o Recent Iron Thin Muck S Other (Expl	B11) t (B12) ertebrates (B Sulfide Odor (hizospheres a of Reduced Irc n Reduction in Surface (C7) lain in Remarl ches): <u>N</u>	f 3 and chr 13) C1) along Living on (C4) n Plowed Soi ks) <u>A</u>	rface, swale) and oma of 2 and 5%	A is subject to periodic sedimentation due to prominent redox concentrations as begin Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
Type: Depth (ir emarks: he area is ir proximity t a depth of YDROLC /etland Hy rimary India //etland Hy rimary India //etland Hy Satura // Satura // Satura	None hoches): NA ha landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonr hent Deposits (B2) Deposits (B3) (Non ce Soil Cracks (B6) ation Visible on Ae -stained Leaves (E vations: ter Present? Present?	osition that i soil has a 4 ors: of one req iverine) (Nonriverine riverine)) rial Imagery (39) Yes	L-inch thick layer ha	tt apply) Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized RI Presence o Recent Iron Thin Muck S Other (Expl Depth (in	B11) t (B12) ertebrates (B Sulfide Odor (hizospheres a of Reduced Irc n Reduction in Surface (C7) lain in Remart ches): <u>N/</u> ches): <u>N/</u>	13) C1) along Living on (C4) n Plowed Soi ks) A A	rface, swale) and oma of 2 and 5% Roots (C3)	A is subject to periodic sedimentation due to prominent redox concentrations as begin Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
Type: Depth (ir Depth (ir emarks: a depth of YDROLO Yetland Hy rimary India Guidant Satura Water Drift D Surfac Drift D Surfac Ununda Water ield Obser urface Wat /ater Table aturation P	None hoches): NA ha landscape po to a culvert. The 12 inches. DGY drology Indicat cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonr hent Deposits (B2) Deposits (B3) (Non ce Soil Cracks (B6) ation Visible on Ae -stained Leaves (E vations: ter Present? Present?	iverine) (Nonriverine) (Nonriverine) (iterine) (Xonriverin	L-inch thick layer ha	tt apply) Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized RI Presence o Recent Iron Thin Muck Other (Expl Depth (in Depth (in	B11) t (B12) ertebrates (B Sulfide Odor (hizospheres a of Reduced Irc n Reduction in Surface (C7) lain in Remart ches): <u>N/</u> ches): <u>N/</u>	13) C1) along Living on (C4) n Plowed Soi ks) A A	rface, swale) and oma of 2 and 5% Roots (C3)	A is subject to periodic sedimentation due for prominent redox concentrations as begin Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3) FAC-Neutral Test (D5)

Hydrophytic vegetation is present and bent over in the direction of flow (B10). Hydric soil is absent due to a problematic situation (sedimentation). The site is in a landscape position that is likely to collect water (concave surface, swale). Site visit occurred during the dry season. Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: I-80/Hiddenbrooke Parkway Inter	change	City/Co	unty: Unincorp	orated/Solano	Sampli	ing Date: July	17, 2020
Applicant/Owner: City of Vallejo				State: California	Sampli	ing Point: SP2	
Investigator(s): R. Lee		Section	/Township/Rar	nge: S28/T4N/R3W			
Landform (hillslope, terrace, etc.): Swale		Local R	Relief (concave,	convex, none): Co	oncave	Slope (%):	3
Subregion (LRR): Mediterranean California (LRR	<u>RC)</u> Lat:	38.17086		Long: <u>-122.1991</u>	5	Datum:	NGS84
Soil Map Unit Name: Dibble-Los Osos clay loa	ms, 9–30% sl	opes		NW	I classificati	ion <u>R4SBA</u>	k - Riverine
Are climatic / hydrologic conditions on the site typ	oical for this ti	me of year?	YesN	No <u>X</u> (Ifr	no, explain ii	n Remarks.)	
Are Soil or Hydrology Vegetation	significan	tly disturbed?	P Are "N	Normal Circumstance	es" present?	Yes X	No
Vegetation		problematic?		eded, explain any an			
SUMMARY OF FINDINGS – Attach si	te map sh	owing san	npling point	t locations, tran	sects, im	nportant fea	tures, etc.
Hydrophytic Vegetation Present? Yes	<u>(</u> No						
			Is the Sampl	ed Area	Yes	X No	
	(No		within a Wet	land?			
Remarks:							
Point taken to investigate a swale between the I- hillslopes, roads (paved and unpaved), and a cul August 2019 through July 2020 was 11.75 inches	vert situated b	peneath the fr	ontage road. H	ydrology is naturally	problematic	because preci	
VEGETATION							
Tree Stratum (Plot size: NA)	Absolute	Dominant	Indicator	Dominance Te	st workshe	et:	
1	Cover %	Species?	Status	Number of Dominant		1	(A)
· · · · · · · · · · · · · · · · · · ·				That Are OBL, FACW	/, of FAC:	1	(A)
2				Total Number of Don		4	(D)
				Species Across All S	trata:	1	(B)
4Tatal Cauar				Percent of Dominant			
Total Cover <u>Sapling/Shrub Stratum</u> (Plot size: <u>NA</u>)	:			That Are OBL, FACV	V, or FAC:	<u>100%</u>	(A/B)
1				Prevalence Ind	lex worksh	eet:	
2				Total % C	Cover of:	Mul	tiply by:
3				OBL species		x 1 =	
4				FACW species		x 2 =	
5				FAC species		x 3 =	
Total Cover	:			FACU species		x 4 =	
Herb Stratum (Plot size: <u>5-foot radius</u>)				UPL Species		x 5 =	
1. Juncus xiphioides	75	Х	OBL	Column totals		(A)	<u>(</u> B)
2. <u>Dipsacus fullonum</u>	10		FAC				
3. <u>unknown Asteraceae</u>	10		UNK	Prevalence		B/A =	
4. Elymus triticoides	5		FAC	Hydrophytic Ve	egetation In	dicators:	
5. <u>Galium aparine</u>	5		FACU	X Dominance	Text is >50	%	
6. Epilobium brachycarpum	<1		FAC	Prevalence	Index is ≤3.	.0 ¹	
7. Lactuca serriola	<1		FACU			ons ¹ (Provide	
8. <u>Rumex crispus</u>	<1		FAC	data in	Remarks or	on a separate	sheet)
Total Cover	: 108			Problematic	Hydrophyti	c Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>NA</u>) 1.				¹ Indicators of hydr present.	ic soil and we	etland hydrology r	nust be
2.				Hydrophytic			
Total Cover	- <u></u>			Vegetation	Yes	X No	
% Bare Ground in Herb Stratum0	% Cover of Bi	otic Crust	0	Present?			
Remarks: More than 50% of the dominant plant species ac	ross all strata	are rated OB	L, FACW, or F	AC.			

SOIL

Depth	Matrix			Redox Feat	ures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	7.5YR 3/2	100					SiCL	Many coarse roots
4-12	10YR 3/2	35	7.5YR 4/6	5	С	М	С	Prominent redox
	7.5YR 3/1	60						
12-17	10YR 4/2	95	5YR 4/6	5	С	Μ	SC	Prominent redox
						·		
~	Concentration, D=Depl		· · · · ·		Coated Sand C	Grains ²		ning, RC=Root Channel, M=Matrix.
•	Indicators: (Applical	ble to all L			(95)			Problematic Hydric Soils ³ :
	stosol (A1) stic Epipedon (A2)			Sandy Redox Stripped Matri	. ,			/luck (A9) (LRR C) /luck (A10) (LRR B)
	ack Histic (A3)			Loamy Mucky	· · ·			ed Vertic (F18)
	drogen Sulfide (A4)			Loamy Gleyed	. ,			arent Material (TF2)
	atified Layers (A5) (LF	R C)		Depleted Matr				(Explain in Remarks)
	m Muck (A9) (LRR D)	,		Redox Dark S	()			
	pleted Below Dark Su			Depleted Dark	. ,			
	ick Dark Surface (A12)	、 ,		Redox Depres	()			
	ndy Mucky Mineral (S			Vernal Pools (· · /		³ Indicators of h	ydrophytic vegetation and wetland
	ndy Gleyed Matrix (S4	,		veniai Poois (19)			t be present, unless disturbed or
	ve Layer (If presen	t):						
Restrictiv								
Restrictiv Type:	None							

The soil has a layer that is at least 4 inches within the upper 12 inches of the soil and has a matrix value of 3 and chroma of 2 and 5% prominent redox concentrations.

HYDROLOGY

Wetland Hydrology Indicators	S:								
Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required)									
Surface Water (A1)		_		Salt Crust (B11)		Water Marks (B1) (Riverine)			
High Water Table (A2)				Biotic Crust (B12)		Sediment Deposits (B2) (Riverine)			
Saturation (A3)				Aquatic Invertebrates (B13)		Drift Deposits (B3) (Riverine)			
Water Marks (B1) (Nonrive	rine)			Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)			
Sediment Deposits (B2) (No	onriverine)			Oxidized Rhizospheres along Liv	ving Roots (C3)	Dry-Season Water Table (C2)			
Drift Deposits (B3) (Nonrive	erine)	_		Presence of Reduced Iron (C4)		Crayfish Burrows (C8)			
Surface Soil Cracks (B6)		_		Recent Iron Reduction in Plowed	d Soils (C6)	Saturation Visible on Aerial Imagery (C9)			
Inundation Visible on Aerial	Imagery (B7)	_		Thin Muck Surface (C7)		Shallow Aquitard (D3)			
Water-stained Leaves (B9)		_	х	Other (Explain in Remarks)		FAC-Neutral Test (D5)			
Field Observations:									
Surface Water Present? Y	′es	No	Х	Depth (inches): NA					
Water Table Present? Y	′es	No	Х	Depth (inches): NA					
Saturation Present? Y	′es	No	Х	Depth (inches): NA	Wetland Hydrol	ogy Present? Yes X No			
(includes capillary fringe)									
Describe Recorded Data (strean	n gauge, monit	oring	well, a	aerial photos, previous inspec	ctions), if available:				
Remarks:									
, , , , , , , , , , , , , , , , , , , ,					•	water (concave surface, swale). Site visit			

occurred during the dry season. Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: I-80/Hiddenbrooke Parkway Intercha	inge	City/Cou	unty: <u>Unincorpo</u>	rated/Solano	Sampling Date: July	17, 2020
Applicant/Owner: City of Vallejo			s	State: California	Sampling Point: SP3	3
Investigator(s): R. Lee		Section	Township/Range	e: S28/T4N/R3W		
Landform (hillslope, terrace, etc.): Swale		Local Re	elief (concave, c	onvex, none): <u>Conca</u>	ave Slope (%)): <u>1</u>
Subregion (LRR): Mediterranean California (LRR C)Lat:	38.17100		Long: <u>-122.19886</u>	Datum:	WGS84
Soil Map Unit Name: Dibble-Los Osos clay loams	, 9–30% slo	pes		NWI cla	assification <u>R4SBA</u>	x - Riverine
Are climatic / hydrologic conditions on the site typica	al for this tim	ne of year?				
Are Soil or Hydrology Vegetation	significantl	ly disturbed?	Are "No	rmal Circumstances" p	oresent? Yes 2	X No
Vegetation	_	roblematic?		ed, explain any answei		
SUMMARY OF FINDINGS – Attach site	map sho	wing sam	pling point l	ocations, transed	sts, important fea	atures, etc.
Hydrophytic Vegetation Present? Yes X	No					
Hydric Soil Present? Yes X	No		Is the Sampled within a Wetlan	nd?	res X No	
Wetland Hydrology Present? Yes X	No					
Remarks:						
Point taken to investigate a swale between the I-80 hillslopes, roads (paved and unpaved), and a culver 11.75 inches, which is approximately 50.4% of the 3	t. Hydrology	/ is naturally	problematic beca	ause precipitation from		
VEGETATION						
Tree Stratum (Plot size: NA)	Absolute Cover %	Dominant	Indicator	Dominance Test w	orksheet:	
	Cover %	Species?	Status	Number of Dominant Spec		(A)
				That Are OBL, FACW, or F	AC: <u>5</u>	(^)
3				Total Number of Dominant		
		·		Species Across All Strata:	3	(B)
4			h	Percent of Dominant Spec		
Sapling/Shrub Stratum (Plot size: <u>5-foot radius</u>)				That Are OBL, FACW, or F	FAC: <u>100%</u>	(A/B)
1. Rosa californica	15	х	FAC	Prevalence Index v	worksheet:	
2				Total % Cove		Iltiply by:
3.					x 1 =	
4					x 2 =	
5.				FAC species	x 3 =	
Total Cover:				FACU species		
Herb Stratum (Plot size: <u>5-foot radius</u>)					x 5 =	
1. Juncus xiphioides	75	Х	OBL	Column totals	(A)	(B)
2. Epilobium ciliatum	50	Х	FACW			
3. Dipsacus fullonum	5		FAC	Prevalence Inde	ex = B/A =	
4. Rumex crispus	5		FAC	Hydrophytic Vegeta	ation Indicators:	
5. Helminthotheca echioides	2		FAC	X Dominance Text	t is >50%	
6. Polypogon monspeliensis	1		FACW	Prevalence Inde	ex is ≤3.0 ¹	
7.					Adaptations ¹ (Provide	supporting
8					narks or on a separate	
Total Cover:	138			Problematic Hyc	drophytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size: <u>NA</u>) 1				¹ Indicators of hydric so present.	il and wetland hydrology	must be
2				Hydrophytic		
Total Cover:				Vegetation Present?	Yes X No	
% Bare Ground in Herb Stratum0 % C	Cover of Bio	tic Crust	0			
Remarks: More than 50% of the dominant plant species acros	s all strata a	are rated OBL	, FACW, or FAC	 >.		

SOIL

Depth	Matrix		R	edox Feat	ures			
inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	2.5Y 3/2	100					SiCL	
4-11	2.5Y 3/2	89	10YR 4/4	10	С	Μ	С	Distinct redox
			2.5/5PB	1	С	Μ		
11-17	2.5Y 4/1	50	10YR 4/4	50	С	М	С	Prominent redox
17-20	5Y 4/1	40	10YR 4/3	60	С	Μ	С	Prominent redox
			2.5/5PB	1	<u>C</u>	<u>PL</u>		
Гуре: С=С	Concentration, D=Dep	letion, RM=	Reduced Matrix, CS=C	overed or 0	Coated Sand G	Brains ²	Location: PL=Pore Li	ining, RC=Root Channel, M=Matrix.
ydric Soil	Indicators: (Applica	ble to all L	RRs, unless otherwise	e noted.)			Indicators for	Problematic Hydric Soils ³ :
His	stosol (A1)		Sar	ndy Redox	(S5)		1 cm l	Muck (A9) (LRR C)
His	stic Epipedon (A2)			ipped Matri	. ,			Muck (A10) (LRR B)
Bla	ack Histic (A3)		Loa	amy Mucky	Mineral (F1)			ced Vertic (F18)
	drogen Sulfide (A4)		Loa	amy Gleyec	Matrix (F2)			Parent Material (TF2)
Str	atified Layers (A5) (LI	RR C)	·	pleted Matr	ix (F3)		Other	(Explain in Remarks)
1 c	m Muck (A9) (LRR D)	X Red	dox Dark S	urface (F6)			
De	pleted Below Dark Su	rface (A11)	Der	pleted Dark	Surface (F7)			
Thi	ick Dark Surface (A12)	Ree	dox Depres	sions (F8)			
	ndy Mucky Mineral (S	1)	Vei	rnal Pools (F9)			hydrophytic vegetation and wetland
Sa		1)					hydrology mu problematic.	st be present, unless disturbed or
	ndy Gleyed Matrix (S4							
Sa	ndy Gleyed Matrix (S ² ve Layer (If preser	nt):						
Sa	ve Layer (If preser	nt):						

redox concentrations.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required: check all the	hat apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-stained Leaves (B9) X	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes No X	Depth (inches): NA	
Water Table Present? Yes No X	Depth (inches): NA	
Saturation Present? Yes X No	Depth (inches): 17 Wetland Hydr	rology Present? Yes X No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspections), if available:	
Remarks:		
Hydrophytic vegetation and hydric soil are present. The si	te is in a landscape position that is likely to colle	ct water (concave surface, swale). Site visit

occurred during the dry season. Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project Site: I-80/Hiddenbrooke Parkway Intercha	ange	City/Co	ounty: Unincorp	oorated/Napa	Sa	mpling Date:	July 22, 2020
Applicant/Owner: City of Vallejo				State: Califo	rnia Sa	mpling Point:	SP4
Investigator(s): R. Lee		Sectior	n/Township/Rar	nge: <u>S28/T4N</u>	/R3W		
Landform (hillslope, terrace, etc.): Ditch			Relief (concave,	convex, none	e): <u>Concave</u>	Slope	e (%): <u>0</u>
Subregion (LRR): Mediterranean California (LRR C)Lat:	38.16766		_Long: <u>-12</u>	2.20172	Datu	m: <u>WGS84</u>
Soil Map Unit Name: Dibble-Los Osos clay loams	, 9–30% slo	opes			NWI classif	ication <u>R4</u>	4SBAx - Riverine
Are climatic / hydrologic conditions on the site typica	al for this tir	ne of year?	Yes1	No X	(If no, expla	in in Remark	s.)
Are Soil or Hydrology Vegetation	significan	tly disturbed?	? Are "I	Normal Circum	nstances" prese	ent? Yes	X No
Vegetation		oroblematic?			any answers in		
SUMMARY OF FINDINGS – Attach site	map sno	owing san	npling point	t locations	, transects,	Importan	t features, etc.
Hydrophytic Vegetation Present? Yes X	No						
Hydric Soil Present? Yes X	No		Is the Sampl within a Wet	ed Area land?	Yes	X No	
Wetland Hydrology Present? Yes X	No						
Remarks:							
Point taken to investigate a ditch along the south sid landscape irrigation runoff from hillslopes, roads, an angular gravels down to approximately 15 inches ind 2019 through July 2020 was 11.75 inches, which is	d culverts a dicate the s	along McGar	y Road. Soil is i irbed. Hydrolog	naturally probl ly is naturally p	ematic becaus problematic bec	e broken glas	ss and many large
VEGETATION							
Tree Stratum (Plot size: <u>NA</u>)	Absolute Cover %	Dominant Species?	Indicator Status	Dominar	nce Test works	sheet:	
1.		000000	olaido		Dominant Species BL, FACW, or FAC:	1	(A)
2.				That Are OL	E, I AGW, OF I AC.	<u> </u>	(74)
					er of Dominant	4	(D)
				Species Acr	oss All Strata:	<u> </u>	(B)
4Total Cover:					Dominant Species BL, FACW, or FAC:	<u>100%</u>	6 (A/B)
Sapling/Shrub Stratum (Plot size: <u>NA</u>)				Describer			
1		·			ice Index worl		Madda baba
2		. <u> </u>			tal % Cover of:		Multiply by:
3				OBL spe			
4		. <u> </u>					
5		<u> </u>		FAC spe			
Total Cover:				FACU sp			
Herb Stratum (Plot size: <u>5-foot radius</u>)				UPL Spe		x 5 =	
1. <u>Helminthotheca echioides</u>	25	<u> </u>	FAC	Column t	otals	(A)	(B)
2. <u>Elymus ponticus</u>	10	. <u> </u>	NL				
3. <u>Ammi majus</u>	4	. <u> </u>	NL		alence Index	= B/A =	
4. Erigeron canadensis	3		FACU	Hydroph	ytic Vegetatio	n Indicators:	
5. <u>Brassica nigra</u>	2		NL	<u>X</u> Domi	nance Text is >	>50%	
6. Carduus pycnocephalus	2		NL	Preva	alence Index is	≤3.0 ¹	
7. Polypogon monspeliensis	2		FACW				ovide supporting
8. <u>Cirsium vulgare</u>	1		FACU	C	lata in Remark	s or on a sep	arate sheet)
Total Cover:	49			Probl	ematic Hydrop	hytic Vegetat	ion ¹ (Explain)
Woody Vine Stratum (Plot size: <u>NA</u>) 1				¹ Indicators present.	of hydric soil and	d wetland hydro	ology must be
2.				Hydroph	ytic		
Total Cover:				Vegetatio	on Yes	s X	Νο
% Bare Ground in Herb Stratum 2 % C	Cover of Bio	otic Crust	0	Present?			
Remarks:							
More than 50% of the dominant plant species acros	s all strata	are rated OB	L, FACW, or F	AC.			

SOIL

(inches)	Color (moist)	%	Color (mo	oist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	2.5Y 3/1	100	·					CL	
6-16	2.5Y 3/2	49						SCL	Many gravels
	7.5YR 2.5/1	50	10YR 4	/6	1	С	М		Prominent redox
16-21	2.5Y 3/2	25	2.5Y 2.5	5/1	75	С	М	С	Faint redox
·									
Type: C=Con	centration, D=Depl	etion, RM=R	educed Matrix	, CS=Co	vered or C	Coated Sand	Grains	² Location: PL=Pol	re Lining, RC=Root Channel, M=Matrix.
lydric Soil In	dicators: (Applica	ble to all LR	Rs, unless of	herwise	noted.)			Indicators	for Problematic Hydric Soils ³ :
Histos	sol (A1)			San	dy Redox ((S5)		1	cm Muck (A9) (LRR C)
	Epipedon (A2)		<u> </u>		ped Matrix				cm Muck (A10) (LRR B)
	Histic (A3)			-		Mineral (F1)			educed Vertic (F18)
	gen Sulfide (A4)			-		Matrix (F2)			ed Parent Material (TF2)
	ied Layers (A5) (LF Muck (A9) (LRR D)				leted Matri	urface (F6)		<u>X</u> Of	ther (Explain in Remarks)
	ted Below Dark Su			-		Surface (F7)	\		
	Dark Surface (A12			- ·	ox Depres	. ,)		
	/ Mucky Mineral (S	, ,		-	nal Pools (I			³ Indicators	of hydrophytic vegetation and wetland
	Gleyed Matrix (S4	-		-		13)		hydrology	must be present, unless disturbed or
Canaj		')						problemat	tiC.
	Layer (If presen	it):							
Туре:	None	t):		_					
Type: Depth (ir		it):		-					oil Present? Yes <u>X</u> No
Type: Depth (ir Remarks: Hydrophytic v concave sur	None nches): <u>NA</u> vegetation and a face: ditch). Sma	primary inc						Hydric So area is in a lands	oil Present? Yes X No cape position that is likely to collect water ly 15 inches indicate the soil is fill/disturbed
Type: Depth (ii Remarks: Hydrophytic concave sur	None hches): <u>NA</u> vegetation and a face: ditch). Sma	primary ind						Hydric So area is in a lands	cape position that is likely to collect water
Type: Depth (in Remarks: Hydrophytic concave sur HYDROLO	None hches): <u>NA</u> vegetation and a face: ditch). Sma DGY drology Indicat	primary ind Ill pieces of ors:	f broken glas	s and m	nany large			Hydric So area is in a lands	cape position that is likely to collect water ly 15 inches indicate the soil is fill/disturbed
Type: Depth (in Remarks: Hydrophytic v concave sur HYDROLO Wetland Hy Primary Indi	None hches): <u>NA</u> vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum	primary ind Ill pieces of ors:	f broken glas	s and m	any large	e angular g		Hydric So area is in a lands	cape position that is likely to collect water ly 15 inches indicate the soil is fill/disturbed Secondary Indicators (2 or more required)
Type: Depth (in Remarks: Hydrophytic v concave sur HYDROLO Wetland Hy Primary Indi Surfac	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1)	primary ind Ill pieces of ors:	f broken glas	s and m	any large apply)	e angular gi B11)		Hydric So area is in a lands	cape position that is likely to collect water ly 15 inches indicate the soil is fill/disturbed <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine)
Type: Depth (ii Remarks: Hydrophytic concave sur HYDROLO Wetland Hy Primary Indi Surfac High \	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum be Water (A1) Water Table (A2)	primary ind Ill pieces of ors:	f broken glas	c all that	any large apply) alt Crust (l	e angular g B11) (B12)	ravels dov	Hydric So area is in a lands	cape position that is likely to collect water ly 15 inches indicate the soil is fill/disturbed <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Type: Depth (ii Remarks: Hydrophytic v concave sur HYDROLO Wetland Hy Primary Indi Surfac High V Satur	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3)	primary ind all pieces of ors: of one req	f broken glas	<u>as and m</u> <u>a all that</u> <u>S</u> A	any large apply) alt Crust (l diotic Crust quatic Inve	e angular g B11) (B12) ertebrates (B	13)	Hydric So area is in a lands	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Type: Depth (in Remarks: Hydrophytic v concave sur HYDROLO Wetland Hy Primary Indi Surfac High V Satura Water	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicat cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri	primary ind all pieces of ors: of one req iverine)	i broken glas uired: check 	as and m	any large apply) Salt Crust (I Siotic Crust Quatic Inve Iydrogen S	e angular g B11) (B12) ertebrates (B Sulfide Odor (13) C1)	Hydric Se e area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Type: Depth (ii Remarks: Hydrophytic y concave sur HYDROLO Wetland Hy Primary Indi Surfac High V Satura Satura Sedir	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri nent Deposits (B2)	primary ind all pieces of ors: of one req iverine) (Nonriverine	i broken glas uired: check 	as and m	any large apply) alt Crust (I duatic Inve lydrogen S Dxidized Rt	e angular g B11) (B12) ertebrates (B Sulfide Odor (nizospheres a	13) C1) along Living	Hydric Se e area is in a lands wn to approximate	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)
Type: Depth (ii Remarks: Hydrophytic v concave sur HYDROLO Wetland Hy Primary Indi Guide High V Satura Satura Sedir Drift D	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) (Nonri hent Deposits (B2) Deposits (B3) (Nonri Marks (B1) (Nonri hent Deposits (B3) (Nonri hent Deposits (B3	primary ind all pieces of ors: of one req iverine) (Nonriverine 'iverine)	i broken glas uired: check 	all that all that B A H C P	apply) alt Crust (I siotic Crust quatic Inve lydrogen S Dxidized Rf Presence of	e angular g B11) (B12) ertebrates (B Bulfide Odor (nizospheres a f Reduced Irc	13) C1) along Living on (C4)	Hydric So area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Type: Depth (ii Remarks: Hydrophytic v concave sur HYDROLO Wetland Hy Primary Indi Surfac High V Satura Satura Satura Drift D	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri hent Deposits (B2) Deposits (B3) (Nonri ce Soil Cracks (B6)	primary ind all pieces of ors: of one req iverine) (Nonriverine)	i broken glas	and in all that s all that s b c all that s all that all that	any large apply) alt Crust (l iotic Crust aquatic Inve lydrogen S Dxidized Rh Presence of Recent Iron	e angular g B11) (B12) ertebrates (B Sulfide Odor (nizospheres a f Reduced Irc Reduction in	13) C1) along Living on (C4)	Hydric So area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Type: Depth (ii Remarks: Hydrophytic v concave sur HYDROLO Wetland Hy Primary Indi Surfac High V Satura Satura Sedim Drift E X Surfac	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri- hent Deposits (B2) Deposits (B3) (Nonri- ce Soil Cracks (B6) ation Visible on Ae	primary ind all pieces of ors: of one req (verine) (Nonriverine) riverine)	(B7)	all that	any large apply) alt Crust (l diotic Crust lydrogen S Dxidized Rh Presence of Recent Iron hin Muck S	e angular g B11) (B12) ertebrates (B Sulfide Odor (nizospheres a f Reduced Irc Reduction in Surface (C7)	13) C1) along Living on (C4) n Plowed S	Hydric So area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Shallow Aquitard (D3)
Type: Depth (ii Remarks: Hydrophytic y concave sur HYDROLO Wetland Hy Primary Indi Surfac High y Satura Sedim Drift E X Surfac Unund Water	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) (Nonri- hent Deposits (B2) Deposits (B3) (Nonri- ce Soil Cracks (B6) ation Visible on Aer- -stained Leaves (B	primary ind all pieces of ors: of one req (verine) (Nonriverine) riverine)	(B7)	all that	any large apply) alt Crust (l diotic Crust lydrogen S Dxidized Rh Presence of Recent Iron hin Muck S	e angular g B11) (B12) ertebrates (B Sulfide Odor (nizospheres a f Reduced Irc Reduction in	13) C1) along Living on (C4) n Plowed S	Hydric So area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Type: Depth (ii Remarks: Hydrophytic y concave sur HYDROLO Wetland Hy Primary Indi Surfac High V Satura Sedir Sedir Drift D X Surfac Inund Water	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri hent Deposits (B2) Deposits (B3) (Nonri ce Soil Cracks (B6) ation Visible on Aer -stained Leaves (B vations:	primary ind all pieces of ors: of one req (verine) (Nonriverine) riverine) rial Imagery 9)	(B7)	Call that Call that B B A B A C C C C C C C C C C C C C	apply) alt Crust (I iotic Crust quatic Inve lydrogen S Dxidized Rh Presence of Recent Iron hin Muck S Dther (Expla	e angular g B11) (B12) ertebrates (B Sulfide Odor (nizospheres a f Reduced Irc Reduction in Surface (C7) ain in Remar	13) C1) along Living on (C4) n Plowed S ks)	Hydric So area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Shallow Aquitard (D3)
Type: Depth (ii Remarks: Hydrophytic y concave sur HYDROLO Wetland Hy Primary Indi Surfac Water Sedim Drift D X Surfac Inund Water Field Obser	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri hent Deposits (B2) Deposits (B3) (Nonri ce Soil Cracks (B6) ation Visible on Aer- stained Leaves (B vations: her Present?	primary ind all pieces of ors: of one req (verine) (Nonriverine) rial Imagery (9) Yes	(B7) No	x all that	anny large apply) alt Crust (l alt Crust (l alt Crust (l alt Crust (l alt Crust (l alt Crust alt Crust alt Crust alt Crust alt Crust alt Crust (l alt Crust (l alt Crust (l al	e angular gi B11) (B12) ertebrates (B Bulfide Odor (nizospheres a f Reduced Irc Reduction in Surface (C7) ain in Remarl ches): <u>N</u>	13) C1) along Living on (C4) n Plowed S ks)	Hydric So area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Shallow Aquitard (D3)
Type: Depth (ii Remarks: Hydrophytic y concave sur HYDROLO Wetland Hy Primary Indi Surfac Water Sedim Drift E X Surfac Inund Water Field Obser	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri- hent Deposits (B2) Deposits (B3) (Nonri- hent Deposits (B3) (Non	primary ind all pieces of ors: of one req (verine) (Nonriverine) rial Imagery 9) Yes Yes	(B7) No	all that S B A C P R Y X X	anny large apply) falt Crust (l biotic Crust lydrogen S Dxidized Rh Presence of Recent Iron thin Muck S Dther (Expla Depth (inc Depth (inc	e angular gi B11) (B12) ertebrates (B Sulfide Odor (nizospheres a f Reduced Irc Reduction in Surface (C7) ain in Remarl ches): <u>N/</u> ches): <u>N/</u>	13) (C1) along Living on (C4) n Plowed S ks) A A	Hydric So e area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitard (D3) FAC-Neutral Test (D5)
Type: Depth (ii Remarks: Hydrophytic y concave sur HYDROLO Wetland Hy Primary Indi Surfac High y Satura Sedim Drift D X Surfac High y Saturation P	None hches): NA vegetation and a face: ditch). Sma DGY drology Indicate cators (minimum ce Water (A1) Water Table (A2) ation (A3) Marks (B1) (Nonri- hent Deposits (B2) Deposits (B3) (Nonri- hent Deposits (B3) (Non	primary ind all pieces of ors: of one req (verine) (Nonriverine) rial Imagery (9) Yes	(B7) No	all that S B A C P R Y X X	anny large apply) alt Crust (l alt Crust (l alt Crust (l alt Crust (l alt Crust (l alt Crust alt Crust alt Crust alt Crust alt Crust alt Crust (l alt Crust (l alt Crust (l al	e angular gi B11) (B12) ertebrates (B Sulfide Odor (nizospheres a f Reduced Irc Reduction in Surface (C7) ain in Remarl ches): <u>N/</u> ches): <u>N/</u>	13) (C1) along Living on (C4) n Plowed S ks) A A	Hydric So e area is in a lands wn to approximate	Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Shallow Aquitard (D3)

Hydrophytic vegetation and hydric soil are present. The site is in a landscape position that is likely to collect water (concave surface, swale). Site visit occurred during the dry season. Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

Project Site: I-80/Hiddenbrooke Parkway In	terchange	City/Co	ounty: Unincorp	oorated/Napa	Sampling Date	: July 22, 2020
Applicant/Owner: <u>City of Vallejo</u>				State: California	Sampling Point	t: SP5
Investigator(s): R. Lee		Section	n/Township/Rar	nge: S28/T4N/R3W		
Landform (hillslope, terrace, etc.): Ditch		Local I	Relief (concave,	, convex, none): <u>Cor</u>	ncave Slop	be (%): <u>1</u>
Subregion (LRR): Mediterranean California (L	<u>RR C)</u> Lat:	38.16804		Long: <u>-122.20112</u>	Dat	um: WGS84
Soil Map Unit Name: Dibble-Los Osos clay	loams, 9–30% slo	opes		NWI	classification <u>n</u>	one
Are climatic / hydrologic conditions on the site	typical for this tir	ne of year?	YesI	No <u>X</u> (If no	, explain in Remar	ks.)
Are Soil or Hydrology Vegetation	significant	tly disturbed	? Are "I	Normal Circumstances	" present? Yes	X No
Are Soil or Hydrology Vegetation	X naturally p	problematic?	e (If nee	eded, explain any ans	wers in Remarks.)	
SUMMARY OF FINDINGS – Attach	site map sho	owing sar	npling poin	t locations, trans	ects, importa	nt features, etc.
Hydrophytic Vegetation Present? Yes	X No					
Hydric Soil Present? Yes			Is the Sampl	ed Area	Yes <u>X</u> N	0
Wetland Hydrology Present? Yes	X No		within a Wet	land?		
Remarks:						
Point taken to investigate a ditch along the so landscape irrigation runoff from hillslopes, roa 2019 through July 2020 was 11.75 inches, wh	ds, and culverts a	along McGar	ry Road. Hydrol	ogy is naturally probler	natic because pre	
VEGETATION						
Tree Stratum (Plot size: <u>NA</u>)	Absolute Cover %	Dominant Species?	Indicator Status	Dominance Test	worksheet:	
1		Opecies:		Number of Dominant S That Are OBL, FACW,		(A)
2				Total Number of Domin	ant	
3				Species Across All Stra		(B)
Total Co				Percent of Dominant S		
Sapling/Shrub Stratum (Plot size: <u>NA</u>)				That Are OBL, FACW,	or FAC: <u>100</u>	<u>%</u> (A/B)
1				Prevalence Inde	x worksheet:	
2.				Total % Co	ver of:	Multiply by:
3				OBL species	x 1 =	
4.						
5.					x 3 =	
Total Co	ver:			FACU species		
Herb Stratum (Plot size: <u>5-foot radius</u>)				UPL Species	x 5 =	
1. Lotus corniculatus	65	Х	FAC	Column totals	(A)	(B)
2. Polypogon monspeliensis	8		FACW	-		
3. Lythrum hyssopifolia	5		OBL	Prevalence In	dex = B/A =	
4. Helminthotheca echioides	2		FAC	Hydrophytic Veg	etation Indicators	s:
5. Cyperus eragrostis	1		FACW	X Dominance T	ext is >50%	
6. Epilobium brachycarpum	1		FAC	Prevalence In		
7. Epilobium ciliatum	1		FACW		al Adaptations ¹ (P	rovide supporting
8. Pseudognaphalium sp.	1				emarks or on a se	
Total Co	ver: 84			Problematic H	lydrophytic Vegeta	ation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>NA</u>)	<u> </u>			¹ Indicators of hydric	soil and wetland hyd	
1				present.		
2Total Co	ver:			Hydrophytic Vegetation	Voc V	No
8 8 8 8 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	% Cover of Bio	otic Crust	0	Present?	Yes X	No
Remarks: More than 50% of the dominant plant species	across all strata	are rated OE	BL, FACW, or F	AC.		

Depth	Matrix			Redox Feat			rm the absence	·
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	2.5Y 3/2	100					С	Lots of large gravel, cobble, fill, disturbed
8-20	2.5Y 4/2	85	2.5Y 5/6	10	С	М	С	Prominent redox
	10YR 3/2					М		
Type: C=C	oncentration, D=Dep	letion RM=F	Reduced Matrix C	S=Covered or (Coated Sand (² Location: PL=Por	e Lining, RC=Root Channel, M=Matrix.
	Indicators: (Applica							for Problematic Hydric Soils ³ :
-	tosol (A1)			Sandy Redox	(S5)			cm Muck (A9) (LRR C)
Hist	tic Epipedon (A2)			Stripped Matri	ix (S6)		20	cm Muck (A10) (LRR B)
Blac	ck Histic (A3)			Loamy Mucky	Mineral (F1)		Re	educed Vertic (F18)
Hyd	Irogen Sulfide (A4)			Loamy Gleyed	d Matrix (F2)		Re	ed Parent Material (TF2)
Stra	atified Layers (A5) (L	RR C)	X	Depleted Matr	rix (F3)		Ot	her (Explain in Remarks)
	m Muck (A9) (LRR D			Redox Dark S				
	bleted Below Dark Su			Depleted Dark				
	ck Dark Surface (A12			Redox Depres	. ,			
	ndy Mucky Mineral (S			Vernal Pools ((F9)			of hydrophytic vegetation and wetland must be present, unless disturbed or
San	ndy Gleyed Matrix (S	4)					problemat	
	e Layer (If preser None							
Type: Depth Remarks:	<u>None</u> (inches): <u>NA</u> depleted matrix wi		oma of 2 and is :	2 inches thick	c and within t	he upper		bil Present? Yes X No
Type: Depth Remarks:	<u>None</u> (inches): <u>NA</u> depleted matrix wi		oma of 2 and is :	2 inches thick	< and within t	he upper		
Type: Depth Remarks: Soil has a d	<u>None</u> (inches): <u>NA</u> depleted matrix wi	th 85% chr	oma of 2 and is :	2 inches thic	< and within t	he upper		
Type: Depth Remarks: Soil has a d HYDROI	<u>None</u> (inches): <u>NA</u> depleted matrix wi	th 85% chr			< and within t	the upper		
Type: Depth Remarks: Goil has a d HYDROI Wetland H Primary In	None (inches): NA depleted matrix wi LOGY lydrology Indicat	th 85% chr				the upper		of the soil.
Type: Depth Remarks: Soil has a d HYDROI HYDROI Wetland H Primary In Sur	None (inches): NA depleted matrix wi LOGY Hydrology Indicate dicators (minimum	th 85% chr		that apply)	(B11)	the upper		of the soil.
Type: Depth Remarks: Soil has a d HYDROI HYDROI Wetland H Primary In High	None (inches): NA depleted matrix wi LOGY Hydrology Indicat dicators (minimum face Water (A1)	th 85% chr	quired: check all	that apply) Salt Crust (Biotic Crus	(B11)			f the soil. Secondary Indicators (2 or more required Water Marks (B1) (Riverine)
Type: Depth Remarks: Goil has a d HYDROI Wetland H Primary In Suri Higi Satu Satu	None (inches): NA depleted matrix with LOGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr	th 85% chr tors: n of one rec	quired: check all	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S	(B11) t (B12) rertebrates (B1 Sulfide Odor (C	3) C1)	6 inches inches c	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Satu Satu Satu Satu	None (inches): NA depleted matrix wi LOGY Hydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr diment Deposits (B2)	th 85% chr tors: n of one rec riverine) (Nonriverin	quired: check all	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a	3) C1) long Living	6 inches inches c	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)
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Sur Hig Satu Sed Drift	None (inches): NA depleted matrix with LOGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr timent Deposits (B2) t Deposits (B3) (Non	th 85% chr tors: h of one rec riverine) (Nonriverin riverine)	quired: check all	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence c	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iro	3) C1) long Living n (C4)	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Suri Suri Satu Satu Satu Satu Satu Satu	None (inches): NA depleted matrix wi LOGY Hydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr timent Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6	th 85% chr tors: n of one rec 'iverine) (Nonriverin riverine)	quired: check all 	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iron n Reduction in	3) C1) long Living n (C4)	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Suri Higi Satu Satu Satu Satu Satu Satu Satu	None (inches): NA depleted matrix with LOGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr diment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6 mdation Visible on Ae	th 85% chr tors: n of one rec (Nonriverine) (Nonriverine)) erial Imagery	quired: check all (B7)	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Thin Muck	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iron n Reduction in Surface (C7)	3) C1) long Living n (C4) Plowed Soi	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Satu Uat Sed Drift Sed Uat Uat	None (inches): NA depleted matrix wi LOGY Hydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr timent Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6 ndation Visible on Ae ter-stained Leaves (E	th 85% chr tors: n of one rec (Nonriverine) (Nonriverine)) erial Imagery	quired: check all 	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Thin Muck	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iron n Reduction in	3) C1) long Living n (C4) Plowed Soi	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Burn Garn Surn Sed Sed Surn Surn Mat Sed Surn Surn Mat Sed Surn Surn Mat Sed	None (inches): NA depleted matrix with LOGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr diment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6 indation Visible on Ae ter-stained Leaves (B ervations:	th 85% chr tors: n of one rec (Nonriverin riverine)) vrial Imagery 39)	quired: check all	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Thin Muck Other (Exp	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iron n Reduction in Surface (C7) lain in Remark	3) C1) long Living n (C4) Plowed Soi s)	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Suri Suri Suri Surface W	None (inches): NA (inches): NA depleted matrix with LOGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr timent Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6 indation Visible on Ae ter-stained Leaves (E ervations: Vater Present?	th 85% chr tors: n of one rec (Nonriverine) (Nonriverine)) grial Imagery 39) Yes	(B7) X	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Thin Muck Other (Exp	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iron n Reduction in Surface (C7) Iain in Remark	3) C1) long Living n (C4) Plowed Soi (s)	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
Type: Depth Remarks: Soil has a d HYDROI Wetland H Primary In Suri Suri Suri Suri Suri Field Obs Surface W Water Tab	None (inches): NA depleted matrix with LOGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr diment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6 ndation Visible on Ae ter-stained Leaves (E ervations: Vater Present?	th 85% chr tors: n of one rec (Nonriverine) (Nonriverine)) prial Imagery 39) Yes Yes	(B7) X (B7) No X	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Other (Exp Depth (in Depth (in	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iron n Reduction in Surface (C7) lain in Remark aches): <u>NA</u>	3) C1) long Living n (C4) Plowed Soi s)	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3) FAC-Neutral Test (D5)
Type: Depth Remarks: Soil has a d HYDROL Wetland H Primary In Suri Suri Suri Suri Field Obs Surface W Water Tab Saturation	None (inches): NA depleted matrix with LOGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr diment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6 ndation Visible on Ae ter-stained Leaves (E ervations: Vater Present?	th 85% chr tors: n of one rec (Nonriverine) (Nonriverine)) grial Imagery 39) Yes	(B7) X No X No X	that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iror Thin Muck Other (Exp Depth (in Depth (in	(B11) t (B12) rertebrates (B1 Sulfide Odor (C hizospheres a of Reduced Iron n Reduction in Surface (C7) lain in Remark aches): <u>NA</u>	3) C1) long Living n (C4) Plowed Soi s)	6 inches inches o	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)

Algal mats are present (B12). Hydrophytic vegetation and hydric soil are present. The site is in a landscape position that is likely collects water (concave surface, ditch). The ditch recieves seasonal runoff and landscape irrigation runoff from hillslopes, roads, and culverts. Site visit occurred during the dry season. Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

Project Site: I-80/Hiddenbrooke Parkway Intercha	ange	City/Co	unty: <u>Unincorp</u>	orated/Napa Sampling Date: July 22, 2020	
Applicant/Owner: <u>City of Vallejo</u>				State: California Sampling Point: SP6	
Investigator(s): R. Lee		Section	/Township/Ran	ge: <u>S28/T4N/R3W</u>	
Landform (hillslope, terrace, etc.): Hillslope		Local R	elief (concave,	convex, none): <u>Convex</u> Slope (%): <u>10</u>	
Subregion (LRR): Mediterranean California (LRR C) Lat:	38.16767		Long: <u>-122.20175</u> Datum: <u>WGS84</u>	
Soil Map Unit Name: Dibble-Los Osos clay loams				NWI classification none	
Are climatic / hydrologic conditions on the site typica	al for this ti	me of year?	Yes N	No X (If no, explain in Remarks.)	
Are Soil or Hydrology Vegetation	significan	tly disturbed?	Are "N	Iormal Circumstances" present? Yes X No	
Are Soil or Hydrology X Vegetation	naturally	problematic?	(If nee	eded, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site	map she	owing sam	npling point	locations, transects, important features, etc).
Hydrophytic Vegetation Present? Yes	No	х			
Hydric Soil Present? Yes			Is the Sample	ed Area Yes No X	
Wetland Hydrology Present? Yes		Х	within a Wetl	and?	
Remarks:					
	th side of N	AcGary Road	south of Hidder	nbrooke Parkway. Hydrology is naturally problematic becau	
				y 50.4% of the 30-year average for that same period.	30
VEGETATION					
Tree Stratum (Plot size: NA)	Absolute	Dominant	Indicator	Dominance Test worksheet:	
	Cover %	Species?	Status	Number of Dominant Species	
1		·		That Are OBL, FACW, or FAC: 1 (A)	
2		·		Total Number of Dominant	
3	<u> </u>	. <u> </u>		Species Across All Strata: <u>2</u> (B)	
4				Percent of Dominant Species	
Total Cover:				That Are OBL, FACW, or FAC: 50% (A/B))
<u>Sapling/Shrub Stratum</u> (Plot size: <u>NA</u>)					
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species $0 \times 1 = 0$	
4				FACW species $0 \times 2 = 0$	
5				FAC species $26 \times 3 = 78$	
Total Cover:				FACU species <u>4</u> x 4 = <u>16</u>	
Herb Stratum (Plot size: <u>5-foot radius</u>)	05	V	NII	UPL Species 56 x 5 = 280 Column totals 86 (A) 374 (I))
1. Bromus diandrus	25	<u> </u>	NL	Column totals <u>86</u> (A) <u>374</u> (I	В)
2. <u>Helminthotheca echioides</u> 3. Ammi majus	<u>25</u>		FAC NL	Prevalence Index = B/A = 4.4	
_	<u>15</u>			Hydrophytic Vegetation Indicators:	
4. <u>Carduus pycnocephalus</u>	<u>10</u>		<u>NL</u>		
5. <u>Avena sp.</u>	5			Dominance Text is >50%	
6. Erigeron canadensis	3		FACU	Prevalence Index is ≤3.0 ¹	
7. <u>Epilobium brachycarpum</u>	1		FAC	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
8. <u>Geranium dissectum</u>	<u>1</u>		<u>NL</u>	, ,	
Total Cover: <u>Woody Vine Stratum</u> (Plot size: <u>NA</u>)	85			Problematic Hydrophytic Vegetation ¹ (Explain)	
1				present.	
2				Hydrophytic Vogetation	
Total Cover:				Vegetation Yes <u>No X</u> Present?	
% Bare Ground in Herb Stratum 3 % 0	Cover of Bi	otic Crust	0		
Remarks: Indicators of hydrophytic vegetation are absent.					

SOIL

Depth	Matrix			Redox Feat	tures			
inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-7	10YR 3/2	100					CL	
7-12	10YR 3/2	98	10YR 4/6	2	С	М	CL	Small gravels
12-14	7.5YR 3/2	40	101111 1/0		<u> </u>		CL	
12-14	10YR 4/6	10			·			
	10YR 4/4	50			·			
14.20			2 EV 4/4	- <u> </u>	<u> </u>		С	Distinct roday
14-20	2.5Y 3/2	90	2.5Y 4/4	5	<u>c</u>	<u>M</u>	U	Distinct redox
			2.5Y 2.5/1	5	<u>C</u>	M		
							2	
	Concentration, D=De				Coated Sand (srains		ore Lining, RC=Root Channel, M=Matrix.
	Indicators: (Applic tosol (A1)	able to all LF		andy Redox	(\$5)			s for Problematic Hydric Soils ³ :
	tic Epipedon (A2)			stripped Matri				2 cm Muck (A10) (LRR B)
	ick Histic (A3)				Mineral (F1)			Reduced Vertic (F18)
	drogen Sulfide (A4)				d Matrix (F2)			Red Parent Material (TF2)
	atified Layers (A5) (I	LRR C)		epleted Mat	. ,			Other (Explain in Remarks)
	m Muck (A9) (LRR I			ledox Dark S				
De	pleted Below Dark S	Surface (A11)	C	epleted Dark	k Surface (F7)			
_	ck Dark Surface (A1			ledox Depres				
	ndy Mucky Mineral (,		'ernal Pools (³ Indicator	s of hydrophytic vegetation and wetland
	ndy Gleyed Matrix (S				(•••)		hydrolog	y must be present, unless disturbed or
		.,					problem	atic.
Restrictiv	/e Layer (If prese	ent):						
Restrictiv Type:		ent):						
Type: Depth		ent):					Hydric S	Soil Present? Yes <u>No X</u>
Type: Depth emarks: dicators	None (inches): <u>NA</u> of hydric soil are a	·					Hydric S	Soil Present? Yes <u>No X</u>
Type: Depth emarks: dicators	None (inches): <u>NA</u> of hydric soil are a	·					Hydric S	Soil Present? Yes <u>No X</u>
Type: Depth emarks: idicators	None (inches): <u>NA</u> of hydric soil are a	absent.					Hydric S	Soil Present? Yes <u>No X</u>
Type: Depth emarks: dicators	None (inches): NA of hydric soil are a	absent.	uired: check all tl	nat apply)			Hydric S	
Type: Depth emarks: dicators VPDRO	None (inches): <u>NA</u> of hydric soil are a LOGY Hydrology Indica	absent.	uired: check all t	nat apply) Salt Crust	(B11)		Hydric S	
Type: Depth emarks: dicators YDRO Vetland I Primary Ir Sur	None (inches): <u>NA</u> of hydric soil are a LOGY Hydrology Indica	absent.	uired: check all th		· · /		Hydric S	Secondary Indicators (2 or more required
Type: Depth emarks: dicators Vetland I Primary Ir Hig	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur rface Water (A1)	absent.	juired: check all th	Salt Crust	· · /	13)	Hydric S	Secondary Indicators (2 or more required Water Marks (B1) (Riverine)
Type: Depth emarks: dicators VDRO Vetland I Primary Ir Hig Sau	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur rface Water (A1) th Water Table (A2)	absent. Itors: m of one req	uired: check all t	Salt Crust Biotic Crus Aquatic Inv	t (B12)		Hydric S	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Type: Depth emarks: dicators IYDRO Vetland I Primary Ir Hig Sat Sat	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur fface Water (A1) hh Water Table (A2) turation (A3)	absent. Itors: m of one req		Salt Crust Biotic Crus Aquatic Inv Hydrogen S	t (B12) vertebrates (B ²	C1)		Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Type: Depth emarks: dicators (YDRO) Vetland I Primary Ir Sau Hig Sau Wa Sau	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur rface Water (A1) nh Water Table (A2) turation (A3) tter Marks (B1) (Non diment Deposits (B2)	absent. ntors: m of one req riverine)		Salt Crust Biotic Crus Aquatic Inv Hydrogen S Oxidized R	it (B12) vertebrates (B ² Sulfide Odor (f thizospheres a	C1) Ilong Living		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)
Type: Depth emarks: dicators IYDRO Vetland I Primary Ir Sun Hig Sat Wa Sec Drit	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur rface Water (A1) the Water Table (A2) turation (A3) ther Marks (B1) (Non diment Deposits (B2 ft Deposits (B3) (Non	absent. ntors: m of one req nriverine)) (Nonriverine) nriverine)		Salt Crust of Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence of	vertebrates (B ²) vertebrates (B ² Sulfide Odor (I thizospheres a of Reduced Iro	C1) Ilong Living In (C4)	Roots (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Type: Depth emarks: dicators Vetland I Primary Ir Sur Sur Sur Sur Sur Sur Sur Sur Sur Su	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur face Water (A1) h Water Table (A2) turation (A3) tter Marks (B1) (Non diment Deposits (B2) ft Deposits (B3) (Non fface Soil Cracks (B6)	absent. Itors: <u>m of one req</u> iriverine)) (Nonriverine) 6)	e)	Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iron	vertebrates (B Sulfide Odor (thizospheres a of Reduced Iro n Reduction in	C1) Ilong Living In (C4)	Roots (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3
Type: Depth emarks: dicators YDRO Yetland I 'rimary Ir Hig Suu Hig Suu Bir Suu Suu Suu Suu Suu Suu	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur frace Water (A1) th Water Table (A2) turation (A3) tter Marks (B1) (Non diment Deposits (B2 ft Deposits (B3) (Non frace Soil Cracks (B6 ndation Visible on A	absent. Itors: m of one req riverine)) (Nonriverine) f) erial Imagery	e)	Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iron Thin Muck	t (B12) vertebrates (B Sulfide Odor (hizospheres a of Reduced Iro n Reduction in Surface (C7)	C1) llong Living n (C4) Plowed So	Roots (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3) Shallow Aquitard (D3)
Type: Depth emarks: dicators YDRO Vetland I Primary Ir Hig Sau Hig Sau Drii Sau Sau U Sau Hig Sau U Sau Na Sau Na Na Na Na Na Na Na Na Na Na Na Na Na	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur frace Water (A1) h Water Table (A2) turation (A3) tter Marks (B1) (Non diment Deposits (B2 ft Deposits (B3) (Non frace Soil Cracks (B6 ndation Visible on A tter-stained Leaves (absent. Itors: m of one req riverine)) (Nonriverine) f) erial Imagery	e)	Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iron Thin Muck	vertebrates (B Sulfide Odor (thizospheres a of Reduced Iro n Reduction in	C1) llong Living n (C4) Plowed So	Roots (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3
Type: Depth emarks: dicators YDRO Vetland I Primary Ir Hig Sau Brimary Ir Sau Drii Sau Sau Sau Sau Sau Sau Sau Sau Sau Sau	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur face Water (A1) h Water Table (A2) turation (A3) tter Marks (B1) (Non diment Deposits (B2 ft Deposits (B3) (Non face Soil Cracks (B6 ndation Visible on A tter-stained Leaves (servations:	absent. ntors: m of one req (Nonriverine)) (Nonriverine) 5) erial Imagery (B9)	e)	Salt Crust d Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iron Thin Muck Other (Exp	t (B12) vertebrates (B Sulfide Odor (thizospheres a of Reduced Iro n Reduction in Surface (C7) Jain in Remark	C1) Ilong Living n (C4) Plowed So (S)	Roots (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3) Shallow Aquitard (D3)
Type: Depth emarks: dicators Vetland I Primary Ir Sur Sur Sur Surface V	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur face Water (A1) h Water Table (A2) turation (A3) tter Marks (B1) (Non diment Deposits (B2) ft Deposits (B3) (Non fface Soil Cracks (B6 ndation Visible on A tter-stained Leaves (servations: Vater Present?	absent. ttors: m of one req iriverine)) (Nonriverine) 6) erial Imagery (B9) Yes	e)	Salt Crust d Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iron Thin Muck Other (Exp Depth (in	it (B12) vertebrates (B7 Sulfide Odor (thizospheres a of Reduced Iro n Reduction in Surface (C7) dain in Remark	C1) Ilong Living n (C4) Plowed So (s)	Roots (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3) Shallow Aquitard (D3)
Type: Depth emarks: ndicators TYDRO Vetland I Primary Ir Sur Surface W Vater Tab	None (inches): NA of hydric soil are a LOGY Hydrology Indica ndicators (minimur face Water (A1) h Water Table (A2) turation (A3) tter Marks (B1) (Non diment Deposits (B2 ft Deposits (B3) (Non face Soil Cracks (B6 ndation Visible on A tter-stained Leaves (servations:	absent. ntors: m of one req (Nonriverine)) (Nonriverine) 5) erial Imagery (B9)	e)	Salt Crust d Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iron Thin Muck Other (Exp	t (B12) vertebrates (B Sulfide Odor (i thizospheres a of Reduced Iro n Reduction in Surface (C7) dain in Remark nches): <u>N/</u> nches): <u>N/</u>	C1) Ilong Living In (C4) Plowed So (s)	Roots (C3) ils (C6)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3) Shallow Aquitard (D3)

Remarks:

Indicators of wetland hydrology are absent.

Project Site: I-80/Hiddenbrooke Parkway Intercha	ange	City/Co	unty: Unincorp	orated/Solano	Samplir	ng Date: July	/ 28, 2020
Applicant/Owner: City of Vallejo				State: Californi	a Samplir	ng Point: <u>SP7</u>	7
Investigator(s): R. Lee, C. McClain		Section	/Township/Rang	ge: <u>S28/T4N/R3</u>	3W		
Landform (hillslope, terrace, etc.): Hillslope		Local R	elief (concave,	convex, none):	None	Slope (%): <u>25</u>
Subregion (LRR): Mediterranean California (LRR C	;) Lat:	38.17087		_Long: <u>-122.1</u>	9891	Datum:	WGS84
Soil Map Unit Name: Dibble-Los Osos clay loams	, 9–30% slo	pes			NWI classification	on <u>none</u>	
Are climatic / hydrologic conditions on the site typica	al for this tim	ne of year?	Yes N	lo <u>X</u>	(If no, explain in	Remarks.)	
Are Soil or Hydrology Vegetation	significant	ly disturbed?	Are "N	lormal Circumsta	ances" present?	Yes	X No
Vegetation	_	roblematic?			y answers in Rer		
SUMMARY OF FINDINGS – Attach site	map sho	wing sam	pling point	locations, t	ransects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present? Yes X	No						
Hydric Soil Present? Yes			Is the Sample within a Wetla	ed Area	Yes	No	Х
Wetland Hydrology Present? Yes	No	Х	within a wette				
Remarks:							
Point taken in hillslope next to a swale between the precipitation from August 2019 through July 2020 w from the offramp supports hydrophytic vegetation; h	as 11.75 inc	ches, which is	s approximately	50.4% of the 30	D-year average f	turally proble or that same	matic because period. Runoff
VEGETATION							
Tree Stratum (Plot size: <i>NA</i>)	Absolute	Dominant	Indicator	Dominance	e Test workshee	et:	
1.	Cover %	Species?	Status	Number of Dom			(•)
				That Are OBL, F	FACW, or FAC:	1	(A)
2				Total Number of	f Dominant		
3				Species Across	All Strata:	1	(B)
4.			\	Percent of Dom	inant Species		
Total Cover: Sapling/Shrub Stratum (Plot size: <u>NA</u>)	<u> </u>			That Are OBL, F		100%	(A/B)
			ŀ	Prevalence	Index workshe	ot.	
1					% Cover of:		ultiply by:
				OBL specie		x 1 =	
				•	s		
5 Total Cover:				FAC species	-		
				FACU speci			
Herb Stratum (Plot size: <u>5-foot radius</u>)	05	X	F 40	UPL Specie		x 5 =	
1. <u>Dipsacus fullonum</u>	<u>65</u>	X	FAC	Column tota	us	_(A)	(B)
2. <u>Helminthotheca echioides</u>	<u>15</u>		FAC				
3. <u>Festuca bromoides</u>	5		FACU		nce Index = E	B/A =	
4. <u>Brassica nigra</u>	2		NL	пуагорпуш	c vegetation ind	licators:	
5. Geranium dissectum	2		NL	<u>X</u> Domina	nce Text is >50%	6	
6. Lactuca serriola	1		FACU	Prevaler	nce Index is ≤3.0) ¹	
7.					logical Adaptatic a in Remarks or		
Total Cover:	90			Problem	natic Hydrophytic	Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size: <u>NA</u>) 1				¹ Indicators of present.	hydric soil and wet	land hydrology	must be
2.				Hydrophytic	C		
Total Cover:				Vegetation	Yes	X No	
	Cover of Bio	tic Crust	0	Present?			
Remarks:							
More than 50% of the dominant plant species acros	s all strata a	are rated OBI	_, FACW, or FA	C.			

Surface Water (A1)Salt Crust (B11)Water Marks (B1) (Riverine)High Water Table (A2)Biotic Crust (B12)Sediment Deposits (B2) (Riverine)Saturation (A3)Aquatic Invertebrates (B13)Drift Deposits (B3) (Riverine)Water Marks (B1) (Nonriverine)Hydrogen Sulfide Odor (C1)Drainage Patterns (B10)Sediment Deposits (B2) (Nonriverine)Oxidized Rhizospheres along Living Roots (C3)Dry-Season Water Table (C2)Drift Deposits (B3) (Nonriverine)Presence of Reduced Iron (C4)Crayfish Burrows (C8)	Depth <u>Matrix</u>		edox Features		T . (5
10-14 10YR 2/2 100 C ID-14 10YR 2/2 100 C ID-15 ID-15 ID-15 ID-15 ID-14 Stroped Mark (25) 1 cm Mack (40) (LRR 0) Indicators for Problematic Hydric Solis*: Indicators for Problematic Hydric Solis*: Intel Eppedin (A2) Stripped Mark (25) 2 cm Mack (A10) (LRR 0) Intel Eppedin (A2) Deprese Mark (26) 2 cm Mack (A10) (LRR 0) Intel Expendin (A2) Deprese Mark (26) 2 cm Mack (A10) (LRR 0) Intel Expendin (A2) Redx Dark Surface (F8) Other (Explain in Remarks) I cm Mack (A9) (LRR 0) Redx Dark Surface (F8) Problematic Sandy Olayd Matrix (G1) Depleted Dark Surface (F8) Problematic Sandy Olayd Matrix (G1) Versul Pools (F9) Problematic Surface Water (A1) Depleted Dark Surface (F1) Secondary Indicators (2 or more required: the ch all that apply) Ype: None Depth (Inches): NA Hydric Soil Present? Yes N		Color (moist)	% Туре	Loc ²		
Nyee: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains *Locator: PL=Pote Lning, RC=Root Channel, M=Matrix, Vyerif Soli Indicators (Applicable to all LRRs, unless otherwise noted.) Indicators (Applicable to all LRs, unless otherwise noted.) Indicators for Problematic Hydric Solis*: Histic Epipedion (A2) Stripped Matrix (S6) 2 cm Muck (A10) (LRR B) Back Hatic (A3) Loamy Mucky Mineral (F1) Reduced Veric (F16) Hydrogen Sutifie (A4) Loamy Mucky Mineral (F1) Reduced Veric (F16) Stripped Matrix (S3) Other (Explain in Remarks) 0 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) 0 Depleted Batrix (F3) Other (Explain in Remarks) 0 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) 0 Depleted Batrix (F3) Vernal Pools (F9) 1 andicators of hydrophytic vegetation and wetland hydrology insut be present? Sandy Clayer (M1 present): Type: None Hydric Soil Present? No_X Present Sinder (A1) Botic Crust (B12) Secondary Indicators (12 or more required: check all that apply) Secondary Indicators (12 or more required: theck all that apply) Surface Water (A1) Salt Crust (B11) Water Matrix (B1) Nonriverine) Salt Crust (B12) Sediment Deposits (B2) (Riverine) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>Abundant gravel</td>						Abundant gravel
ydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solls*: Histic Epideon (A2) Sirtiged Matrix (S3)	<u>10-14</u> <u>10YR 2/2</u> <u>100</u>				C	
ydric Soil Indicators (Applicable to all LRRs, unless otherwise noted.) Histic Epideon (A2) Surged Matrix (S0) Con Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Histic Epideon (A2) Stratified Layers (A5) (LRR C) Depideed Matrix (S0) Con Muck (A9) (LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Hydrogen Suffice (A1) Depideed Matrix (F2) Reduced Vertic (F18) Depideed Matrix (F3) Depideed Matrix (F4) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sufface Matrix (S4) Depideed Matrix (S4) Depide Ma			<u> </u>			
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price Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histics (A1) Sandy Redox (S5) I cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Suffice (A4) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Suffice (A4) Loamy Gived Matrix (S2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 m Muck (A9) (LRR D) Redox Dark Surface (F7) Trink Dark Surface (A11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophylic vegetation and wetland hydrology mutate the present; unless disturbed or problematic. Redox Depressions (F8) Sandy Gived Matrix (S4) No X Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophylic vegetation and wetland hydrology mutate the present; unless disturbed or problematic. YDPCILOGY Sattration (A1) Sattratic (A11) Water Marks (B1) (Riverine) Surface Water (A11) Satt Crust (B11) Water Marks (B1) (Riverine) Surface Water (A1) Satt Crust (B11) Deptit (C2) Surface Water (A1) Satt Crust (B11)<						
wite Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histics Epideon (A2) Sandy Redox (S5)						
Histosol (A1) Sandy Redox (S5) 1 cm Muck (A3) (LRR C) Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) (LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Veric (F16) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Red X Surface (F6) Sandy Mucky Mineral (S1) Redox Depressions (F8) ************************************				Grains		
Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) (LRR B) Bitak Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Belw Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Dark Surface (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (If present): Type: None Hydric Soil Present? Yes			-			•
Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Cleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Parent Material (TF2) Depleted Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Thick Dark Surface (A11) Depleted Dark Surface (F6) Depleted Dark Surface (A12) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present; Type: None None Parent Material (S1) Depth (inches): NA Matrix (S4) Hydric Soil Present? Yes_ No X Batch Hydrology Indicators: Frimary Indicators (Indicators: No X YDROLOGY Secondary Indicators (2 or more required: check all that apply) Secondary Indicators (2 or more required: Secondary Indicators (2 or more r						
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LR D) Redox Dark Surface (F6) Other (Explain in Remarks) Depleted Balow Dark Surface (A12) Redox Depressions (F8) 3 ¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Itestrictive Layer (If present): Type: No X Type: None Hydric Soil Present? Yes						
Strattlied Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Gleyed Matrix (S4) Problematic Depth (inches): NA Hydric Soil Present? Type: None Depth (inches): NA Depth (inches): NA Hydric Soil Present? Yes						
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. itestrictive Layer (If present): Type: No_X Depth (inches): NA Hydric Soil Present? Yes_ No_X amarks: Dapth (inches): NA Hydric Soil Present? Yes_ No_X amarks: Dapth (inches): Indicators: No_X YUROLOGY Sactorus (Minimum of one required: check all that apply) Secondary Indicators (2 or more required: Surface Water (A1) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) Surface Water (A3) Aquatic Invertebrates (B13) Drift Deposits (B2) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drianage Patterns (B10) Sufface Soil Cracks (B6) Recent Ion Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C Surface Soil Cracks (B6) Recent Ion Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C Surface Soil Cracks (B6) Recent Ion Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C Init Deposits (B3) (Moninverine) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. testrictive Layer (If present): Type: None Depth (inches): NA Hydric Soil Present? Yes No attribution Marks: oil does not meet any hydric soil indicator. YDROLOGY Vettand Hydrology Indicators: r/mark (A1) Surface Water (A1) Surface Water (A2) Biotic Crust (B12) Saturation (A3) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidade Rhizospheres along Living Roots (C3) Oth Deposits (B3) (Nonriverine) Sulfide Observations: water Surface Water (R4) Surface Water (R4) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B3) (Nonriverine) Presence of Reduced Iron Reduction in Plowed Soils (C6) Surface Water Stale Olzaves (B9)	1 cm Muck (A9) (LRR D)	Re	dox Dark Surface (F6)			
Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) problematic. Type: None Depth (inches): NA Hydric Soil Present? YesNoX emarks: oil does not meet any hydric soil indicator. Hydric Soil Present? YesNoX YDROLOGY Secondary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required: finance) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B2) (Nonriverine) Water Marks (B1) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B2) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C Surface Soil Cracks (B8) Other (Explain in Remarks) FAC-Neutral Test (D5) Water Table Present? Yes	Depleted Below Dark Surface (A11)	De	pleted Dark Surface (F7)		
Sandy Gleyed Matrix (S4) hydrology must be present, unless disturbed or problematic. Type: None poth (inches): NA Hydric Soil Present? Yes_ No_X emarks: oil does not meet any hydric soil indicator. Hydric Soil Present? Yes_ No_X YDROLOGY Yetland Hydrology Indicators: Secondary Indicators (2 or more required: check all that apply) Secondary Indicators (2 or more required: check all that apply) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) Suface Water (A3) Aquatic Invertebrates (B13) Drift Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B2) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C6) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water Table Present? Yes No_X Depth (inches): NA Water Table Present? Yes No_X Depth (inches): NA Water Table Present? Yes No_X <td>Thick Dark Surface (A12)</td> <td>Re</td> <td>dox Depressions (F8)</td> <td></td> <td></td> <td></td>	Thick Dark Surface (A12)	Re	dox Depressions (F8)			
standy Gleged Mattrx (S4) problematic. Problematic. Type: None Depth (inches): NA Hydric Soil Present? Yes_ No_X emarks: oil does not meet any hydric soil indicator. YDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required: Surface Water (A1) High Water Table (A2) Biotic Crust (B11) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B2) (Riverine) Water Marks (B1) (Invertine) Hydrogen Sulfide Odor (C1) Drift Deposits (B2) (Riverine) Water Marks (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water Table (Present? Yes No_X Depth (inches): NA Water Table Present? Yes No_X Depth (inches): NA Water Table Present? Yes </td <td>Sandy Mucky Mineral (S1)</td> <td>Ver</td> <td>rnal Pools (F9)</td> <td></td> <td></td> <td></td>	Sandy Mucky Mineral (S1)	Ver	rnal Pools (F9)			
Type: None Depth (inches): NA Hydric Soil Present? Yes No_X emarks: oil does not meet any hydric soil indicator. INDROLOGY Secondary Indicators (2 or more required: check all that apply) Secondary Indicators (2 or more required: check all that apply) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: No_X Depth (inches): NA Metland Hydrology Present? Yes	Sandy Gleyed Matrix (S4)					
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escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Depth (inches): NA emarks: oil does not meet any hydric soil indicato IYDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one requi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Water-stained Leaves (B9) Field Observations: Surface Water Present? Yes Saturation Present? Yes	ired: check all tha 	Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (E Hydrogen Sulfide Odor Oxidized Rhizospheres Presence of Reduced Ir Recent Iron Reduction i Thin Muck Surface (C7) Other (Explain in Rema Depth (inches): <u>N</u>	(C1) along Living I on (C4) n Plowed Soil rks) <u>A</u>	Roots (C3)	Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8 Shallow Aquitard (D3) FAC-Neutral Test (D5)

Wetland hydrology indicators absent.

Project Site: I-80/Hiddenbrooke Parkway Intercha	nge	City/Cou	unty: <u>Unincorp</u>	orated/Solano	Samplin	g Date: July 2	28, 2020
Applicant/Owner: City of Vallejo				State: California	Samplin	g Point: SP8	
Investigator(s): R. Lee, C. McClain		Section/	/Township/Rar	ge: S28/T4N/R3W			
Landform (hillslope, terrace, etc.): Swale		Local Re	elief (concave,	convex, none): <u>C</u>	oncave	Slope (%):	2
Subregion (LRR): Mediterranean California (LRR C)Lat:	38.17105		_Long: <u>-122.1987</u>	76	Datum: <u>V</u>	VGS84
Soil Map Unit Name: Dibble-Los Osos clay loams	, 9–30% sloj	pes		NV	/I classificatio	n <u>R4SBA</u> x	- Riverine
Are climatic / hydrologic conditions on the site typica	al for this tim	e of year?	YesN	No <u>X</u> (If i	no, explain in	Remarks.)	
Are Soil or Hydrology Vegetation	significantl	y disturbed?	Are "N	Normal Circumstance	es" present?	Yes X	No
Vegetation	_	roblematic?		eded, explain any an			
SUMMARY OF FINDINGS – Attach site	map sho	wing sam	pling point	locations, tran	isects, imp	ortant fea	tures, etc.
Hydrophytic Vegetation Present? Yes X	No						
Hydric Soil Present? Yes X			Is the Sampl	ed Area	Yes >	(No	
Wetland Hydrology Present? Yes X	No		within a Wet	iand ?			
Point taken in freshwater marsh dominated by wetla road. The swale recieves seasonal runoff from hillsle precipitation from August 2019 through July 2020 we	opes, roads	(paved and u	unpaved), and	a culvert. Hydrology	is naturally p	roblematic be	cause
VEGETATION							
Tree Stratum (Plot size: NA)	Absolute	Dominant	Indicator	Dominance Te	st worksheet	:	
	Cover %	Species?	Status	Number of Dominan		1	(A)
				That Are OBL, FACV	V, or FAC:	1	(A)
				Total Number of Dor			
				Species Across All S	Strata:	1	(B)
4	<u> </u>	. <u> </u>	<u> </u>	Percent of Dominant	t Species		
Total Cover: Sapling/Shrub Stratum (Plot size: <u>NA</u>)	·			That Are OBL, FAC		<u>100%</u>	(A/B)
1				Prevalence Inc	dex workshee	et:	
2				Total % 0	Cover of:	Mul	tiply by:
3				OBL species		_x 1 =	
4				FACW species		x 2 =	
5				FAC species		_x 3 =	
Total Cover:				FACU species		_x 4 =	
<u>Herb Stratum</u> (Plot size: <u>5-foot radius</u>)				UPL Species		x 5 =	
1. <u>Typha sp.</u>	95	Х	OBL	Column totals		_(A)	(B)
2. <u>Epilobium ciliatum</u>	10		FACW				
3. Juncus xiphioides	10		OBL	Prevalence			
4				Hydrophytic V	egetation Ind	icators:	
5				X Dominance	Text is >50%		
6				Prevalence	Index is ≤3.0 [°]	I	
7					ical Adaptatio		
8				data in	Remarks or c	n a separate	sheet)
Total Cover:	115			Problematic	Hydrophytic	Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>NA</u>) 1.				¹ Indicators of hyd present.	ric soil and wetle	and hydrology n	iust be
2				Hydrophytic			
Total Cover:				Vegetation Present?	Yes	X No	
% Bare Ground in Herb Stratum 0 % C	Cover of Biot	ic Crust	0				
Remarks: More than 50% of the dominant plant species acros	s all strata a	re rated OBL	_, FACW, or FA	AC.			

(inches)	Color (moist)	%	Color (m	noist)	%	Type ¹	Loc ²	Texture	Remarks
0-5	10YR 2/2	100						С	
5-14	10YR 3/1	85	7.5YR	4/6	15	С	М	С	
<u> </u>									
		<u> </u>							
<u> </u>									
Type: C=Co	oncentration, D=Dep	letion. RM=F	Reduced Mat	ix. CS=Co	overed or C	Coated Sand	Grains	² Location: PL=Po	re Lining, RC=Root Channel, M=Matrix.
	Indicators: (Applica								for Problematic Hydric Soils ³ :
Hist	osol (A1)			San	idy Redox ((S5)		1	cm Muck (A9) (LRR C)
Histi	ic Epipedon (A2)			Strip	pped Matrix	x (S6)		2	cm Muck (A10) (LRR B)
Blac	ck Histic (A3)					Mineral (F1)		R	educed Vertic (F18)
	lrogen Sulfide (A4)			_		Matrix (F2)			ed Parent Material (TF2)
	tified Layers (A5) (LI	-			leted Matri			0	ther (Explain in Remarks)
	n Muck (A9) (LRR D)		X		lox Dark Sı				
<u> </u>	leted Below Dark Su	. ,		Dep	leted Dark	Surface (F7)			
Thic	k Dark Surface (A12)		Red	lox Depres	sions (F8)			
San	dy Mucky Mineral (S	1)		Veri	nal Pools (I	F9)			s of hydrophytic vegetation and wetland v must be present, unless disturbed or
San	dy Gleyed Matrix (S4	1)						problema	
Restrictive	e Layer (If preser	nt)-							
Type:				_				Hydric S	oil Present? Yes X No
Type:	None			_				Hydric S	oil Present? Yes <u>X</u> No
Type: Depth Remarks:	None (inches): <u>NA</u>		thick, is ent		in the upp	Der 12 incch	es of the		
Type: Depth Remarks: Soil has a la	None (inches): <u>NA</u>	t 4 inches					es of the		oil Present? Yes X No
Type: Depth Remarks: Soil has a la more than 5	None (inches): NA ayer that is at leas 5% distinct redox of	t 4 inches					es of the		
Type: Depth Remarks: Soil has a la	None (inches): NA ayer that is at leas 5% distinct redox of	t 4 inches					les of the		
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H	None (inches): NA ayer that is at leas 5% distinct redox of LOGY	t 4 inches concentration	ons occurrii	ng as sof	t masses.		es of the		has a matrix valeu of 3 and chroma of 1 and
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Inc	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Hydrology Indicat dicators (minimum	t 4 inches concentration	ons occurrii	ng as sof	t masses.		es of the		has a matrix valeu of 3 and chroma of 1 and
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf	None (inches): NA ayer that is at leas 5% distinct redox of OGY lydrology Indicat dicators (minimum face Water (A1)	t 4 inches concentration	ons occurrii	ng as sof	t apply) Salt Crust (I	B11)	es of the		has a matrix valeu of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf High	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Hydrology Indicat dicators (minimum face Water (A1) h Water Table (A2)	t 4 inches concentration	ons occurrii	ck all tha	t apply) Salt Crust (I Biotic Crust	B11) : (B12)			has a matrix valeu of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf High	None (inches): NA ayer that is at leas 5% distinct redox of OGY lydrology Indicat dicators (minimum face Water (A1)	t 4 inches concentration	ons occurrii	ck all tha	t apply) Salt Crust (I Biotic Crust	B11)			has a matrix valeu of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf High Satu	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Hydrology Indicat dicators (minimum face Water (A1) h Water Table (A2)	ors:	ons occurrii	ck all tha	t apply) Salt Crust (I Biotic Crust	B11) : (B12)	13)		has a matrix valeu of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf High X Satu Wat	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Hydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3)	ors: of one rec	uired: che	ck all that ck all	t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve	B11) (B12) ertebrates (B	13) C1)	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf High X Satu Wat Sed	None (inches): NA ayer that is at leas 5% distinct redox of LOGY hydrology Indicat dicators (minimum face Water (A1) in Water Table (A2) uration (A3) ter Marks (B1) (Nonr	ors: of one rec iverine) (Nonriverin	uired: che	ck all that ck all that E E E E E E C	t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized RH	B11) (B12) ertebrates (B Sulfide Odor (13) C1) along Living	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Wetland H Primary Ind Suff 	None (inches): NA ayer that is at leas 5% distinct redox of OGY Aydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2)	ors: of one rec iverine) (Nonriverin riverine)	uired: che	ck all tha ck all tha E Ck all tha Ck	t apply) Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rf Presence of	B11) : (B12) ertebrates (B Sulfide Odor (hizospheres a	13) C1) along Living on (C4)	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Inc Surf X Satu Wat Sed Drift Surf	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Aydrology Indicat dicators (minimum face Water (A1) n Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Nonr	it 4 inches concentration ors: a of one rec iverine) (Nonriverin riverine)	e)	ck all that ck ck <tr< td=""><td>t apply) Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rt Presence of Recent Iron</td><td>B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc</td><td>13) C1) along Living on (C4)</td><td>mineral soil, and l</td><td>has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)</td></tr<>	t apply) Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rt Presence of Recent Iron	B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc	13) C1) along Living on (C4)	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf X Satu Wata Sedi Surf Surf Surf Surf	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Aydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6)	it 4 inches concentration ors: of one rec iverine) (Nonriverine) riverine)	e)	ck all that ck ck <tr< td=""><td>t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rł Presence of Recent Iron Fhin Muck S</td><td>B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc i Reduction ir</td><td>13) C1) along Living on (C4) n Plowed So</td><td>mineral soil, and l</td><td>has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)</td></tr<>	t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rł Presence of Recent Iron Fhin Muck S	B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc i Reduction ir	13) C1) along Living on (C4) n Plowed So	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Surf X Satu Wata Sedi Surf Surf Surf Surf	None (inches): NA ayer that is at leas 5% distinct redox of _OGY Aydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6) hdation Visible on Ae ter-stained Leaves (B	it 4 inches concentration ors: of one rec iverine) (Nonriverine) riverine)	e)	ck all that ck ck <tr< td=""><td>t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rł Presence of Recent Iron Fhin Muck S</td><td>B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc Reduced Irc Reduction ir Surface (C7)</td><td>13) C1) along Living on (C4) n Plowed So</td><td>mineral soil, and l</td><td>has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)</td></tr<>	t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rł Presence of Recent Iron Fhin Muck S	B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc Reduced Irc Reduction ir Surface (C7)	13) C1) along Living on (C4) n Plowed So	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Ind Suff X Satu Wat Sed Drift Suff Inun Wat	None (inches): NA ayer that is at leas 5% distinct redox of _OGY Aydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6) hdation Visible on Ae ter-stained Leaves (B	it 4 inches concentration ors: of one rec iverine) (Nonriverine) riverine)	e)	ck all that ck all that ck ck <td>t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rł Presence of Recent Iron Fhin Muck S</td> <td>B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc Reduction ir Surface (C7) ain in Remar</td> <td>13) C1) along Living on (C4) t Plowed So ks)</td> <td>mineral soil, and l</td> <td>has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drianage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)</td>	t masses. <u>t apply)</u> Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rł Presence of Recent Iron Fhin Muck S	B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc Reduction ir Surface (C7) ain in Remar	13) C1) along Living on (C4) t Plowed So ks)	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drianage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Inc Surf X Satu Wat Sed Drift Surf Field Obse Surface Wat	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Aydrology Indicat dicators (minimum face Water (A1) n Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6) ndation Visible on Ae ter-stained Leaves (E ervations:	it 4 inches concentration ors: of one rec iverine) (Nonriverin riverine) rial Imagery 19)	e) (B7)	ck all that ck all that ck ck <td>t apply) Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rh Presence of Recent Iron Fhin Muck S Dther (Expl</td> <td>B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc I Reduction ir Surface (C7) ain in Remar ches): <u>N</u></td> <td>13) C1) along Living on (C4) n Plowed So ks)</td> <td>mineral soil, and l</td> <td>has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drianage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)</td>	t apply) Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rh Presence of Recent Iron Fhin Muck S Dther (Expl	B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc I Reduction ir Surface (C7) ain in Remar ches): <u>N</u>	13) C1) along Living on (C4) n Plowed So ks)	mineral soil, and l	has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drianage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Type: Depth Remarks: Soil has a la more than 5 HYDROL Wetland H Primary Inc Surf X Satu Wat Sed Drift Surf Field Obse Surface Wat	None (inches): NA ayer that is at leas 5% distinct redox of LOGY Aydrology Indicat dicators (minimum face Water (A1) in Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Nonr face Soil Cracks (B6) indation Visible on Ae ter-stained Leaves (E ervations: 'ater Present? le Present?	it 4 inches sconcentration ors: of one rec iverine) (Nonriverine) rial Imagery (9) Yes Yes	e) (B7)	ck all that	t apply) Salt Crust (I Biotic Crust Aquatic Inve Hydrogen S Dxidized Rt Presence of Recent Iron Thin Muck S Dther (Expla Depth (ind	B11) (B12) ertebrates (B Sulfide Odor (hizospheres a f Reduced Irc Reduction ir Surface (C7) ain in Remar ches): <u>N</u> ches): <u>N</u>	13) C1) along Living on (C4) t Plowed So ks)	nineral soil, and l	has a matrix valeu of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drianage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)

Remarks:

A primary indicator of wetland hydrology (A3) is present despite naturally problematic hydrology because of below-average precipitation.

Project Site: I-80/Hiddenbrooke Parkway Interch	ange City/Co	unty: Unincorporated/S	olano Sampling D	ate: July 28, 2020
Applicant/Owner: City of Vallejo		State: 0	California Sampling P	oint: SP9
Investigator(s): R. Lee, C. McClain	Section	/Township/Range: <u>S21</u>	/T4N/R3W	
Landform (hillslope, terrace, etc.): Swale	Local R	elief (concave, convex,	none): <u>Concave</u>	Slope (%): <u>1</u>
Subregion (LRR): Mediterranean California (LRR C	<u>C)</u> Lat: <u>38.17194</u>	Long:	-122.19737	Datum: WGS84
Soil Map Unit Name: Dibble-Los Osos clay loams	s, 30–50% slopes		NWI classification	R4SBAx - Riverine
Are climatic / hydrologic conditions on the site typic	al for this time of year?	Yes <u>No</u>	X (If no, explain in Rer	marks.)
Are Soil or Hydrology Vegetation	significantly disturbed?	Are "Normal C	ircumstances" present?	Yes X No
Vegetation	naturally problematic?		lain any answers in Remark	
SUMMARY OF FINDINGS – Attach site	map showing sam	npling point locati	ons, transects, impor	tant features, etc.
Hydrophytic Vegetation Present? Yes X	No			
	No	Is the Sampled Area	Yes X	No
Wetland Hydrology Present? Yes X	No	within a Wetland?		
Remarks:				
Point taken to investigate a swale between the wes developed land cover via surface and subsurface fl July 2020 was 11.75 inches, which is approximatel	ow and culverts. Hydrolo	gy is naturally problema	tic because precipitation from	
VEGETATION				
Tree Stratum (Plot size: <u>NA</u>)	Absolute Dominant Cover % Species?	Indicator Don Status	ninance Test worksheet:	
1.	Cover // Species:	Numb	er of Dominant Species	(A)
		I hat /	Are OBL, FACW, or FAC: <u>1</u>	(^)
2			Number of Dominant	(P)
		Speci	es Across All Strata: 1	(B)
4 Total Cover:	<u> </u>		ent of Dominant Species	
Sapling/Shrub Stratum (Plot size: <u>NA</u>)		That .	Are OBL, FACW, or FAC: <u>1</u>	<u>00%</u> (A/B)
1		Pre	valence Index worksheet:	
2.			Total % Cover of:	Multiply by:
3.		OBL		1 =
4			W speciesx	
5.				3 =
Total Cover:				4 =
Herb Stratum (Plot size: <u>5-foot radius</u>)				5 =
1. Juncus xiphioides	95 X	OBL Colu	imn totals (A	(B)
2. Phalaris aquatica	3	FACU		,, , ,
3. Galium aparine	1	FACU	Prevalence Index = B/A =	:
4			rophytic Vegetation Indica	tors:
5		X	Dominance Text is >50%	
6			Prevalence Index is $\leq 3.0^{1}$	
			Morphological Adaptations ¹	(Provide supporting
7.			data in Remarks or on a	
Total Cover:			Problematic Hydrophytic Veg	getation ¹ (Explain)
Woody Vine Stratum (Plot size: <u>NA</u>) 1		¹ India pres	cators of hydric soil and wetland ent.	hydrology must be
2			rophytic	
Total Cover:			etation Yes <u>X</u> ent?	No
% Bare Ground in Herb Stratum 0 %	Cover of Biotic Crust			
Remarks: More than 50% of the dominant plant species acros	ss all strata are rated OB	L, FACW, or FAC.		

(inches) Color (moist)	%	Color (moi	st) %	6 Type ¹	Loc ²	Texture	Remarks
0-8 10YR 2/2	100					С	
8-14 10YR 3/1	90	7.5YR 4/	6 1	0 <u>C</u>	Μ	С	Prominent redox
Type: C=Concentration, D=D	epletion, RM=Re	educed Matrix,	CS=Covered	or Coated Sand	Grains	² Location: PL=Po	re Lining, RC=Root Channel, M=Matrix.
Hydric Soil Indicators: (Appl	cable to all LR	Rs, unless oth		-			for Problematic Hydric Soils ³ :
Histosol (A1)			Sandy Re				cm Muck (A9) (LRR C)
Histic Epipedon (A2) Black Histic (A3)			Stripped N	icky Mineral (F1)			cm Muck (A10) (LRR B) educed Vertic (F18)
Hydrogen Sulfide (A4			-	eyed Matrix (F2)			ed Parent Material (TF2)
Stratified Layers (A5)				Matrix (F3)			ther (Explain in Remarks)
1 cm Muck (A9) (LRR		X		rk Surface (F6)			
Depleted Below Dark			Depleted	Dark Surface (F7)		
Thick Dark Surface (A	.12)		Redox De	pressions (F8)			
Sandy Mucky Mineral	(S1)		Vernal Po	ols (F9)		³ Indicators	of hydrophytic vegetation and wetland
Sandy Gleyed Matrix	(S4)					hydrology problema	/ must be present, unless disturbed or
Restrictive Layer (If pres	ent):					problema	
Resultive Layer (ii pres	entj.						
• • • •							
Type: <u>None</u>						Hydric S	oil Present? Yes X No
Type: <u>None</u> Depth (inches): <u>NA</u>						Hydric S	oil Present? Yes <u>X</u> No
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le			•	••	hes of the	· · ·	
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo			•	••	hes of the	· · ·	
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo	x concentratio		•	••	hes of the	· · ·	
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indio	x concentratio	ons occurring	as soft mas	ses.	hes of the	· · ·	has a matrix value of 3 and chroma of 1 and
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indio	x concentratio	ons occurring	as soft mas	ses.	hes of the	· · ·	has a matrix value of 3 and chroma of 1 and
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indio Primary Indicators (minim	x concentratio	ons occurring	as soft mas all that app Salt Cr	y)	hes of the	· · ·	has a matrix value of 3 and chroma of 1 and
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1)	x concentratio	ons occurring	as soft mas	y) ust (B11)		· · ·	has a matrix value of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine)
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2	x concentratio	ons occurring	as soft mas	y) ust (B11) Crust (B12)	313)	· · ·	has a matrix value of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Type: None Depth (inches): NA Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3)	x concentratio	uired: check	as soft mas	y) ust (B11) Crust (B12) e Invertebrates (E	313) (C1)	mineral soil, and	has a matrix value of 3 and chroma of 1 and <u>Secondary Indicators (2 or more required)</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Type: <u>None</u> Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No	x concentratio	uired: check	all that appl 	y) ust (B11) Crust (B12) c Invertebrates (E en Sulfide Odor	313) (C1) along Living	mineral soil, and	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10)
Type: None Depth (inches): NA Remarks: Soil has a layer that is at le more than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimi Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No Sediment Deposits (B	x concentratio	uired: check	all that appl 	y) ust (B11) Crust (B12) c Invertebrates (E en Sulfide Odor ed Rhizospheres	813) (C1) along Living on (C4)	mineral soil, and l	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Type: None Depth (inches): NA Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimi Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N	x concentratio	uired: check	all that appl 	y) ust (B11) Crust (B12) Invertebrates (E en Sulfide Odor ed Rhizospheres ce of Reduced Ir	313) (C1) along Living on (C4) n Plowed S	mineral soil, and l	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Type: None Depth (inches): NA Remarks: Soil has a layer that is at lenore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No Sediment Deposits (B3) (N Surface Soil Cracks (I	x concentratio	uired: check	all that appl Salt Cr Biotic (Hydrog Oxidize Oxidize Receni Thin M	y) ust (B11) Crust (B12) E Invertebrates (E en Sulfide Odor ed Rhizospheres ce of Reduced Ir Iron Reduction i	313) (C1) along Living on (C4) n Plowed S	mineral soil, and l	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9
Type: None Depth (inches): NA Remarks: Soil has a layer that is at lenore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimi Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on Water-stained Leaves	x concentratio	uired: check	all that appl Salt Cr Biotic (Hydrog Oxidize Oxidize Receni Thin M	y) ust (B11) Crust (B12) chvertebrates (E en Sulfide Odor ed Rhizospheres ce of Reduced Ir Iron Reduction i uck Surface (C7)	313) (C1) along Living on (C4) n Plowed S	mineral soil, and l	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitard (D3)
Type: None Depth (inches): NA Remarks: Soil has a layer that is at lenore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimi Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on Water-stained Leaves Field Observations:	x concentratio	uired: check	all that app all that app Salt Cr Biotic (Aquation Hydrog Oxidiza Preser Recent Thin M Other (Ses. y) ust (B11) Crust (B12) chvertebrates (E en Sulfide Odor ed Rhizospheres ce of Reduced Ir Iron Reduction i uck Surface (C7) Explain in Reman	313) (C1) along Living on (C4) n Plowed S	mineral soil, and l	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitard (D3)
Type: None Depth (inches): NA Remarks: Soil has a layer that is at lenore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No Sediment Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on Water-stained Leaves Field Observations: Surface Water Present?	x concentratio	uired: check	all that appl Salt Cr Biotic (Aquation _	y) ust (B11) Drust (B12) Invertebrates (E en Sulfide Odor ed Rhizospheres ce of Reduced Ir Iron Reduction i uck Surface (C7) Explain in Remain (inches):N	313) (C1) along Living on (C4) n Plowed S rks)	mineral soil, and l	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9 Shallow Aquitard (D3)
Type: None Depth (inches): NA Remarks: Soil has a layer that is at le nore than 5% distinct redo HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimu Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) (No Sediment Deposits (B Drift Deposits (B3) (N Surface Soil Cracks (I Inundation Visible on	x concentratio	uired: check	all that appl all that appl Salt Cr Biotic (Aquatic Hydrog Oxidize Preser Recen Recen Cother (Cother (X Depth X Depth	y) ust (B11) Crust (B12) chvertebrates (E en Sulfide Odor d Rhizospheres ce of Reduced Ir Iron Reduction i uck Surface (C7) Explain in Remain (inches): <u>N</u> (inches): <u>N</u>	313) (C1) along Living on (C4) n Plowed S rks)	g Roots (C3)	has a matrix value of 3 and chroma of 1 and Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) X Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)

Remarks:

Hydrophytic vegetation and hydric soil are present. The site is in a landscape position that is likely to collect water (concave surface, swale). Site visit occurred during the dry season. Hydrophytic vegetation is bent over in the direction of flow (B10). Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

Project Site: I-80/Hiddenbrooke Parkway Interch	nange	City/Co	unty: Unincorp	oorated/Solano	Sampling	Date: July 2	28, 2020
Applicant/Owner: City of Vallejo				State: California	Sampling	Point: SP10)
Investigator(s): R. Lee, C. McClain		Section	/Township/Rar	nge: S21/T4N/R3W			
Landform (hillslope, terrace, etc.): Swale		Local R	elief (concave,	convex, none): <u>Co</u>	ncave	_Slope (%):	1
Subregion (LRR): Mediterranean California (LRR	C) Lat:	38.17197		Long: <u>-122.1972</u>	3	Datum: <u>\</u>	WGS84
Soil Map Unit Name: Rincon clay loams, 2-9% s	slopes			NW	l classification	R4SBA	x - Riverine
Are climatic / hydrologic conditions on the site type	cal for this tir	me of year?	Yes	No <u>X</u> (lf n	o, explain in R	emarks.)	
Are Soil or Hydrology Vegetation	significan	tly disturbed?	Are "I	Normal Circumstance	s" present?	Yes X	(No
Vegetation		problematic?		eded, explain any ans			
SUMMARY OF FINDINGS – Attach site	e map sh	owing san	npling point	t locations, trans	sects, impo	ortant fea	tures, etc.
Hydrophytic Vegetation Present? Yes X	No						
Hydric Soil Present? Yes X			Is the Sampl within a Wet		Yes X	No	
Wetland Hydrology Present? Yes X			within a wet				
Remarks:							
Point taken to investigate a swale between the we developed land cover via surface and subsurface to July 2020 was 11.75 inches, which is approximate	flow and culv	verts. Hydrolo	gy is naturally	problematic because			
VEGETATION							
Tree Stratum (Plot size: <u>10-foot radius</u>)	Absolute Cover %	Dominant Species?	Indicator Status	Dominance Tes	t worksheet:		
1. Salix lasiolepis	100	X	FACW	Number of Dominant That Are OBL, FACW		1	(A)
2				Total Number of Dom	inant		
3. 4.				Species Across All St		2	(B)
Total Cover:				Percent of Dominant That Are OBL, FACW		50%	(A/B)
Sapling/Shrub Stratum (Plot size: <u>NA</u>)				That Ale OBL, PACW	, UI FAC.	0070	(/(2))
1				Prevalence Ind	ex worksheet		
2.			·	Total % C			Itiply by:
3.			·	OBL species		x 1 =	
4			·	FACW species		x 2 =	200
5.				FAC species		x 3 =	0
Total Cover:			·	FACU species		x 4 =	84
Herb Stratum (Plot size: <u>5-foot radius</u>)				UPL Species		x 5 =	0
1. Festuca arundinacea	20	х	FACU	Column totals		(A)	284 (B)
2. Festuca bromoides	1		FACU				
3			. <u></u>	Prevalence I			2.4
4			. <u></u>	Hydrophytic Ve	getation indic	ators:	
5				Dominance	Text is >50%		
6				X Prevalence I	ndex is ≤3.0¹		
7 8.		<u> </u>			al Adaptations		
Total Cover:	21			Problematic	Hydrophytic V	egetation1 ((Explain)
<u>Woody Vine Stratum</u> (Plot size: <u>NA</u>) 1				¹ Indicators of hydri present.	c soil and wetlar	nd hydrology n	nust be
2				Hydrophytic			
Total Cover:				Vegetation Present?	Yes	X No	
% Bare Ground in Herb Stratum 70 %	Cover of Bi	otic Crust	0	Fiesent:			
Remarks: A prevalence index of 2.4 indicates that hydrophyt	ic vegetation	n is present.					
		•					

(inches) Color (moist)	% Color	(moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4 10YR 2/2		′R 4/6	15	C	PL	CL	Many fine and coarse roots
Type: C=Concentration, D=Depl				ated Sand (Grains		re Lining, RC=Root Channel, M=Matrix.
Iydric Soil Indicators: (Applica Histosol (A1)	ible to all LRRS, unle		se noted.) Indy Redox (S	5)			s for Problematic Hydric Soils ³ : cm Muck (A9) (LRR C)
Histic Epipedon (A2)			ripped Matrix (cm Muck (A10) (LRR B)
Black Histic (A3)			amy Mucky M				educed Vertic (F18)
Hydrogen Sulfide (A4)			amy Gleyed N				ed Parent Material (TF2)
Stratified Layers (A5) (LF	RR C)		pleted Matrix				ther (Explain in Remarks)
1 cm Muck (A9) (LRR D))	X Re	dox Dark Sur	face (F6)			
Depleted Below Dark Su	Irface (A11)	De	pleted Dark S	Surface (F7)			
Thick Dark Surface (A12	:)	Re	dox Depressi	ons (F8)			
Sandy Mucky Mineral (S	1)	Ve	rnal Pools (F9	9)		³ Indicators	s of hydrophytic vegetation and wetland
Sandy Gleyed Matrix (S4	4)					hydrology problema	/ must be present, unless disturbed or
Restrictive Layer (If presen	nt).					problema	
Type: None							
Type: <u>None</u> Depth (inches): NA						Hydric S	oil Present? Yes X No
Depth (inches): NA						Hydric S	oil Present? Yes X No
Depth (inches): <u>NA</u> Remarks:				r 12 incch	es of the		oil Present? Yes X No
Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at leas				r 12 incch	es of the		
Depth (inches): NA Remarks: Soil has a layer that is at leas nore than 5% distinct redox o	concentrations occu			r 12 incch	es of the		
Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at leas nore than 5% distinct redox of	concentrations occu	rring as po	ore linings.	r 12 incch	es of the		
Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at leas hore than 5% distinct redox of IYDROLOGY Wetland Hydrology Indicat	concentrations occu	rring as po	ore linings.		es of the		has a matrix value of 2 and chroma of 2 and
Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at leas nore than 5% distinct redox of IYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum	concentrations occu	rring as po	ore linings.	11)	es of the		has a matrix value of 2 and chroma of 2 and ch
Depth (inches): <u>NA</u> Remarks: Soil has a layer that is at leas nore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1)	concentrations occu	rring as po	ore linings. at apply) Salt Crust (B ²	11) B12)			has a matrix value of 2 and chroma of 2 and <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine)
Depth (inches): NA Remarks: Soil has a layer that is at leas nore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum Surface Water (A1) High Water Table (A2)	ors:	rring as po	at apply) Salt Crust (B [*]	11) B12) tebrates (B ⁷	3)		has a matrix value of 2 and chroma of 2 and <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Depth (inches): NA Remarks: Soil has a layer that is at leas nore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	ors: of one required: c iverine)	rring as po	at apply) Salt Crust (B ⁷ Biotic Crust (f Aquatic Invert	11) B12) tebrates (B'	3) C1)	mineral soil, and l	has a matrix value of 2 and chroma of 2 and <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Depth (inches): NA Remarks: Soil has a layer that is at leas nore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri	ors: of one required: c iverine) (Nonriverine)	neck all th	at apply) Salt Crust (B ⁷ Biotic Crust (I Aquatic Invert Hydrogen Sul	11) B12) tebrates (B ⁷ Ifide Odor ((zospheres a	3) C1) long Living	mineral soil, and l	has a matrix value of 2 and chroma of 2 and <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Depth (inches): NA Remarks: Soil has a layer that is at leas nore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2)	ors: of one required: c iverine) (Nonriverine) riverine)	neck all th	at apply) Salt Crust (B ⁴ Biotic Crust (I Aquatic Inver Hydrogen Sul Oxidized Rhiz	11) B12) Ifde Odor (i zospheres a Reduced Iro	3) C1) long Living n (C4)	nineral soil, and l	has a matrix value of 2 and chroma of 2 and <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
Depth (inches): NA Remarks: Soil has a layer that is at leas hore than 5% distinct redox of AYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonri	ors: of one required: c iverine) (Nonriverine) riverine)	neck all th	at apply) Salt Crust (B Biotic Crust (I Aquatic Inver Hydrogen Su Oxidized Rhiz Presence of F	11) B12) Ifide Odor (I zospheres a Reduced Iro Reduction in	3) C1) long Living n (C4)	nineral soil, and l	has a matrix value of 2 and chroma of 2 and <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Depth (inches): NA Remarks: Soil has a layer that is at leas nore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonri Surface Soil Cracks (B6)	iverine) (Nonriverine) riverine) (iterine) riverine)	neck all th	at apply) Salt Crust (B Biotic Crust (I Aquatic Inver Hydrogen Su Oxidized Rhiz Presence of F Recent Iron F	11) B12) Ifide Odor ((zospheres a Reduced Iro Reduction in urface (C7)	3) C1) long Living n (C4) Plowed So	nineral soil, and l	has a matrix value of 2 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Depth (inches): NA Remarks: Soil has a layer that is at leas hore than 5% distinct redox of IYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonri Surface Soil Cracks (B6) Inundation Visible on Ae	iverine) (Nonriverine) riverine) (iterine) riverine)	rring as po	at apply) Salt Crust (B ⁴ Biotic Crust (B ⁴ Biotic Crust (I Aquatic Inver Hydrogen Su Oxidized Rhiz Presence of F Recent Iron F Thin Muck Su	11) B12) Ifide Odor ((zospheres a Reduced Iro Reduction in urface (C7)	3) C1) long Living n (C4) Plowed So	nineral soil, and l	has a matrix value of 2 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (CS Shallow Aquitard (D3)
Depth (inches): NA Remarks: Soil has a layer that is at leas hore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonri Surface Soil Cracks (B6) Inundation Visible on Aei Water-stained Leaves (B	iverine) (Nonriverine) riverine) (iterine) riverine)	neck all th	at apply) Salt Crust (B ⁴ Biotic Crust (B ⁴ Biotic Crust (I Aquatic Inver Hydrogen Su Oxidized Rhiz Presence of F Recent Iron F Thin Muck Su	11) B12) Ifide Odor (f zospheres a Reduced Iro Reduction in urface (C7) n in Remark	3) C1) long Living n (C4) Plowed So (s)	nineral soil, and l	has a matrix value of 2 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3 Shallow Aquitard (D3)
Depth (inches): NA Remarks: Soil has a layer that is at leas hore than 5% distinct redox of AYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonri Surface Soil Cracks (B6) Inundation Visible on Ae Water-stained Leaves (B Field Observations: Surface Water Present?	concentrations occu ors: a of one required: c iverine) (Nonriverine) riverine) irial Imagery (B7) 39)	neck all th	at apply) Salt Crust (B Biotic Crust (B Aquatic Inver Hydrogen Sul Oxidized Rhiz Presence of F Recent Iron F Thin Muck Su Other (Explain	11) B12) Ifide Odor (f zospheres a Reduced Iro Reduction in Irface (C7) n in Remark	3) C1) long Living n (C4) Plowed So (s)	nineral soil, and l	has a matrix value of 2 and chroma of 2 an Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3) Shallow Aquitard (D3)
Depth (inches): NA Remarks: Soil has a layer that is at leas nore than 5% distinct redox of HYDROLOGY Wetland Hydrology Indicate Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonri Sediment Deposits (B2) Drift Deposits (B3) (Nonri Surface Soil Cracks (B6) Inundation Visible on Aei Water-stained Leaves (B	iverine) (Nonriverine) riverine) (il Imagery (B7) 39) Yes N	neck all th	at apply) Salt Crust (B' Biotic Crust (I Aquatic Inver Hydrogen Sul Oxidized Rhiz Presence of F Recent Iron F Thin Muck Su Other (Explain Depth (inch	11) B12) Ifide Odor (f zospheres a Reduced Iro Reduction in urface (C7) n in Remark nes): <u>N/</u>	3) C1) long Living n (C4) Plowed So ss)	nineral soil, and l	has a matrix value of 2 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C3) Shallow Aquitard (D3)

Remarks:

Hydrophytic vegetation and hydric soil are present. The site is in a landscape position that is likely to collect water (concave surface, swale). Site visit occurred during the dry season. Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

Project Site: I-8	0/Hiddenbrooke F	arkway Interch	ange	City/Co	unty: Unincorpo	orated/Solano	Sampling	g Date: July 2	28, 2020
Applicant/Owner:	City of Vallejo					State: California	Sampling	g Point: SP11	
Investigator(s):	R. Lee, C. McClai	in		Section	/Township/Rang	ge: S28/T4N/R3W			
Landform (hillslope	e, terrace, etc.):	Swale		Local R	elief (concave,	convex, none): <u>Co</u>	oncave	Slope (%):	5
Subregion (LRR):	Mediterranean C	alifornia (LRR C	<u>)</u> Lat:	38.17152		_Long: <u>-122.1979</u>	3	Datum: <u>N</u>	VGS84
Soil Map Unit Nam	ne: <u>Dibble-Los (</u>	Osos clay loams	s, 9–30% slo	opes		NW	I classification	n <u>R4SBA</u> x	- Riverine
Are climatic / hydro	ologic conditions	on the site typic	al for this tir	me of year?	Yes N	o <u>X</u> (lf r	no, explain in l	Remarks.)	
Are Vegetation	Soil or H	lydrology	significan	tly disturbed?	Are "N	ormal Circumstance	es" present?	Yes X	No
Are Vegetation			_	problematic?		ded, explain any an			
SUMMARY O	F FINDINGS -	 Attach site 	map sho	owing sam	pling point	locations, tran	sects, imp	ortant fea	tures, etc.
Hydrophytic Veget	tation Present?	Yes X	No						
Hydric Soil Presen			No		Is the Sample	ed Area	Yes X	(No	
Wetland Hydrolog		Yes X	No		within a Wetla	and?			
Remarks:	, 								
Point taken to inve developed land co July 2020 was 11.	over via surface ar 75 inches, which	nd subsurface fl	ow and culv	erts. Hydrolog	gy is naturally p	ntage road. Area rec roblematic because same period.			
VEGETATION	I								
Tree Stratum	(Plot size: <u>NA</u>)		Absolute Cover %	Dominant Species?	Indicator Status	Dominance Te	st worksheet		
1.				openeo.	Oldido	Number of Dominant That Are OBL, FACW		1	(A)
						That Ale OBL, I AGM	7, 011 AG.	<u>.</u>	(7.0
·						Total Number of Dom		1	(P)
						Species Across All St	trata:	<u> </u>	(B)
4.		Total Cover:			\	Percent of Dominant		1000/	
Sapling/Shrub Stra	atum (Plot sizo:					That Are OBL, FACW	V, or FAC:	100%	(A/B)
						Prevalence Ind	lov workshoe	4.	
0						Total % C			tiply by
									tiply by:
						FACW species			
5		Tatal Causer				FAC species		_x 3 =	
Listh Christian (D		Total Cover:				FACU species		_x 4 =	
<u>Herb Stratum</u> (P		<u>101US)</u>	50	V	FAC	UPL Species		_x 5 =	(D)
	eca echioides		50	<u> </u>	FAC	Column totals		_(A)	(B)
2. <u>Festuca myu</u>			15		FACU	David	Luluu D/	•	
3. Festuca pere			10		FAC	Prevalence Hydrophytic Ve			
4. Bromus hord			10		FAC		•		
5. Bromus card			5		NL	X Dominance	Text is >50%		
6. Torilis arven	sis		1		NL	Prevalence	Index is ≤3.0 ¹	1	
7. <u>Bromus dian</u> 8	drus		1		<u>NL</u>		cal Adaptatior Remarks or o		
		Total Cover:	92			Problematic	Hydrophytic	Vegetation ¹ (Explain)
Woody Vine Stratu	um (Plot size: <u>/</u>	,				¹ Indicators of hydr present.	ic soil and wetla	and hydrology n	าust be
2.						Hydrophytic			
-·		Total Cover:				Vegetation	Yes	X No	
% Bare Ground in	Herb Stratum		Cover of Bio	otic Crust	0	Present?			
Remarks:									
More than 50% of	the dominant pla	nt species acros	ss all strata	are rated OBI	_, FACW, or FA	C.			

<i></i>	Matrix			Redox Feat	luies			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 3/3	100					С	
4-10	10YR 3/2	80	7.5 YR 4/6	20	С	PL	C	
		<u> </u>						
		<u> </u>						
Type: C=C	Concentration, D=Depl	etion, RM=Re	duced Matrix, C	S=Covered or (Coated Sand (Grains	² Location: PL=Por	e Lining, RC=Root Channel, M=Matrix.
Hydric Soil	Indicators: (Applica	ble to all LRR	s, unless other	wise noted.)			Indicators	for Problematic Hydric Soils ³ :
His	stosol (A1)			Sandy Redox	(S5)		1 c	cm Muck (A9) (LRR C)
His	tic Epipedon (A2)			Stripped Matri	ix (S6)		2 c	m Muck (A10) (LRR B)
	ack Histic (A3)			Loamy Mucky	. ,			duced Vertic (F18)
	drogen Sulfide (A4)			Loamy Gleyed	. ,			d Parent Material (TF2)
	atified Layers (A5) (LF			Depleted Matr			Ot	her (Explain in Remarks)
	m Muck (A9) (LRR D)		X	Redox Dark S				
	pleted Below Dark Su			Depleted Dark				
	ick Dark Surface (A12			Redox Depres			21 11 1	
	ndy Mucky Mineral (S			Vernal Pools ((F9)			of hydrophytic vegetation and wetland must be present, unless disturbed or
Sar	ndy Gleyed Matrix (S4	ł)					problemati	c.
Restrictiv	ve Layer (If presen	it):						
T	N La la la							
Type:	None							
	i (inches): <u>NA</u>						Hydric Sc	il Present? Yes <u>X</u> No
Depth							Hydric Sc	il Present? Yes X No
Depth Remarks:	ı (inches): <u>NA</u>	t 4 inches th	ick, is entirely	within the up	per 12 incch	es of the		bil Present? Yes X No as a matrix value of 3 and chroma of 2 and
Depth Remarks: Soil has a	ı (inches): <u>NA</u>					es of the		
Depth Remarks: Soil has a more than	(inches): <u>NA</u> layer that is at leas 5% distinct redox o					es of the		
Depth Remarks: Soil has a more than	(inches): <u>NA</u> layer that is at leas 5% distinct redox o					es of the		
Depth Remarks: Soil has a more than HYDRO	(inches): <u>NA</u> layer that is at leas 5% distinct redox o	concentratior				es of the		
Depth Remarks: Soil has a more than HYDROI Wetland I	a (inches): <u>NA</u> layer that is at leas 5% distinct redox o	concentration	ns occurring as	s pore linings.		es of the		
Depth Remarks: Soil has a more than HYDRO Wetland I Primary In	layer that is at leas 5% distinct redox o LOGY Hydrology Indicat	concentration	ns occurring as	s pore linings.		es of the		as a matrix value of 3 and chroma of 2 and
Depth Remarks: Soil has a more than HYDRO Wetland I Primary In Sur	layer that is at leas 5% distinct redox of LOGY Hydrology Indicat	concentration	ns occurring as	s pore linings.	(B11)	es of the		as a matrix value of 3 and chroma of 2 and
Depth Remarks: Soil has a more than HYDROI Wetland I Primary In Sur Hig	a (inches): <u>NA</u> layer that is at leas 5% distinct redox of LOGY Hydrology Indicat ndicators (minimum rface Water (A1)	concentration	ns occurring as	s pore linings. I that apply) Salt Crust (Biotic Crust	(B11) t (B12)			as a matrix value of 3 and chroma of 2 and <u>Secondary Indicators (2 or more required</u> Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Depth Remarks: Soil has a more than HYDROI Wetland I Primary In Sur Hig Sat	layer that is at leas 5% distinct redox of LOGY Hydrology Indicat ndicators (minimum rface Water (A1) gh Water Table (A2) turation (A3)	ors:	ns occurring as	s pore linings. I that apply) Salt Crust (Biotic Crus Aquatic Inv	(B11) t (B12) rertebrates (B1	13)		as a matrix value of 3 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)
Depth Remarks: Soil has a more than HYDROI Wetland I Primary In Sur Hig Sat Wa	layer that is at leas 5% distinct redox of LOGY Hydrology Indicat ndicators (minimum rface Water (A1) gh Water Table (A2) turation (A3) ater Marks (B1) (Nonri	ors: of one requ	ired: check all	s pore linings. I that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S	(B11) t (B12) rertebrates (B1 Sulfide Odor ((13) C1)	mineral soil, and h	as a matrix value of 3 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Depth Remarks: Soil has a more than HYDROI Wetland I Primary In Bur Hig Sat Wa Sat	a (inches): <u>NA</u> layer that is at leas 5% distinct redox of LOGY Hydrology Indicat ndicators (minimum rface Water (A1) gh Water Table (A2) turation (A3) ater Marks (B1) (Nonr diment Deposits (B2)	ors: of one requ iverine) (Nonriverine)	ired: check all	s pore linings. I that apply) Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized R	(B11) t (B12) rertebrates (B1 Sulfide Odor ((hizospheres a	13) C1) Iong Living	mineral soil, and h	as a matrix value of 3 and chroma of 2 and 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)
Depth Remarks: Soil has a more than HYDROI Wetland I Primary In Sur Hig Sat Wa Sat Sec	layer that is at leas 5% distinct redox of LOGY Hydrology Indicat ndicators (minimum rface Water (A1) gh Water Table (A2) turation (A3) ater Marks (B1) (Nonri	concentration ors: of one requ iverine) (Nonriverine) riverine)	ired: check all	s pore linings. I that apply) Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized R Presence c	(B11) t (B12) rertebrates (B1 Sulfide Odor (0 hizospheres a of Reduced Iro	13) C1) Iong Living n (C4)	nineral soil, and h	as a matrix value of 3 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Depth Remarks: Soil has a more than HYDROI Wetland I Primary In Sur Hig Sur Sur Sur Sur Sur Sur	layer that is at leas 5% distinct redox of LOGY Hydrology Indicat ndicators (minimum rface Water (A1) gh Water Table (A2) turation (A3) ater Marks (B1) (Nonr diment Deposits (B2) ft Deposits (B3) (Nonr rface Soil Cracks (B6)	concentration ors: of one requ iverine) (Nonriverine) riverine)	ired: check all	s pore linings. I that apply) Salt Crust (Biotic Crus Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror	(B11) t (B12) rertebrates (B1 Sulfide Odor ((hizospheres a	13) C1) Iong Living n (C4)	nineral soil, and h	as a matrix value of 3 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Depth Remarks: Soil has a more than HYDROI Wetland I Primary In Hig Sur Hig Sur Sur Sur Sur	layer that is at leas 5% distinct redox of LOGY Hydrology Indicat ndicators (minimum rface Water (A1) gh Water Table (A2) turation (A3) ater Marks (B1) (Nonri diment Deposits (B2) ft Deposits (B3) (Nonri	concentration ors: of one requ iverine) (Nonriverine) riverine) rial Imagery (E	ired: check all	s pore linings. I that apply) Salt Crust (Biotic Crust Aquatic Inv Hydrogen S Oxidized R Presence c Recent Iror Thin Muck	(B11) t (B12) rertebrates (B1 Sulfide Odor ((hizospheres a of Reduced Iro n Reduction in	13) C1) Iong Living n (C4) Plowed So	nineral soil, and h	as a matrix value of 3 and chroma of 2 and Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)

Field Observations:							
Surface Water Present?	Yes	No	Х	Depth (inches): NA			
Water Table Present?	Yes	No	Х	Depth (inches): NA			
Saturation Present?	Yes	No	Х	Depth (inches): NA	Wetland Hydrology Present?	Yes <u>X</u>	N
(includes capillary fringe)							

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

Remarks:

Hydrophytic vegetation and hydric soil are present. The site is in a landscape position that is likely to collect water (concave surface, swale). Site visit occurred during the dry season. Hydrology is naturally problematic because precipitation from August 2019 through July 2020 was 11.75 inches, which is approximately 50.4% of the 30-year average for that same time period.

Project Site: I-80/Hiddenbrooke Parkway Intercha	ange	City/Co	unty: Unincorp	orated/Solano Sampling Date: July 28, 2020
Applicant/Owner: <u>City of Vallejo</u>				State: California Sampling Point: SP12
Investigator(s): R. Lee, C. McClain		Section	/Township/Ran	ge: <u>S28/T4N/R3W</u>
Landform (hillslope, terrace, etc.): Swale		Local R	elief (concave,	convex, none): <u>Concave</u> Slope (%): <u>5</u>
Subregion (LRR): Mediterranean California (LRR C)Lat:	38.17010		Long: <u>-122.20094</u> Datum: <u>WGS84</u>
Soil Map Unit Name: Dibble-Los Osos clay loams	, 9–30% slo	pes		NWI classification R4SBAx - Riverine
Are climatic / hydrologic conditions on the site typica	al for this tin	ne of year?	YesN	o X (If no, explain in Remarks.)
Are Soil or Hydrology Vegetation	significant	ly disturbed?	Are "N	ormal Circumstances" present? Yes X No
Are Soil or Hydrology X Vegetation	naturally p _	oroblematic?	(If nee	ded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site	map sho	wing sam	npling point	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No	Х		
Hydric Soil Present? Yes		Х	Is the Sample	
Wetland Hydrology Present? Yes		Х	within a Wetl	and ?
Remarks:				
	bound I-80	offramp and	an unpayed fro	ntage road. Area receives seasonal runoff from uplands and
	w and culv	erts. Hydrolo	gy is naturally p	roblematic because precipitation from August 2019 through
VEGETATION				
Tree Stratum (Plot size: <u>NA</u>)	Absolute Cover %	Dominant Species?	Indicator Status	Dominance Test worksheet:
1				Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2.				
3				Total Number of Dominant Species Across All Strata: 1 (B)
4.				
Total Cover:	<u> </u>		h	Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)
Sapling/Shrub Stratum (Plot size: <u>NA</u>)				That Are OBL, FACW, or FAC: 0% (A/B)
			-	Prevalence Index worksheet:
				Total % Cover of: Multiply by:
2				OBL species $0 \times 1 = 0$
4				FACW species $0 \times 2 = 0$
5.				FAC species 29 x 3 = 87
Total Cover:				FACU species 1 $x 4 = 4$
Herb Stratum (Plot size: <u>5-foot radius</u>)				UPL Species 75 x 5 = 375
1. Bromus diandrus	70	Х	NL	Column totals 105 (A) 466 (B)
2. Helminthotheca echioides	15		FAC	、
3. Bromus hordeaceus	5		FAC	Prevalence Index = B/A = 4.4
4. Festuca perennis	5		FAC	Hydrophytic Vegetation Indicators:
5. Rumex pulcher	4		FAC	Dominance Text is >50%
6. Avena sp.	2		NL	Prevalence Index is ≤3.0 ¹
7. Brassica nigra	2		NL	Morphological Adaptations ¹ (Provide supporting
8. Geranium dissectum	1		NL	data in Remarks or on a separate sheet)
Total Cover:	104			Problematic Hydrophytic Vegetation ¹ (Explain)
<u>Woody Vine Stratum</u> (Plot size: <u>NA</u>)				¹ Indicators of hydric soil and wetland hydrology must be
1 2.	<u> </u>			present.
Z	·			Hydrophytic Vegetation Yes No X
	Cover of Bio	tic Crust	0	Present?
			<u> </u>	
Remarks: Indicators of hydrophytic vegetation are absent.				

dicators of hydric soil are absent. YDROLOGY Vetland Hydrology Indicators: rimary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Vater Marks (B1) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4)	nches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
tric Soil Indicators: (Applicable to all LRRs, unless otherwise neted.) Histic Spioleon (A2) Surgped Matrix (S9) Surgped Matrix (S1) Depleted Matrix (S2) Depleted Matrix (S2) Depleted Matrix (S2) Surgped Matrix (S4) Depleted Matrix (S1) Depleted Matrix (S1) Surgped Matrix (S4) Surgped	0-10	10YR 3/3	100					CL	
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tric Soil Indicators: (Applicable to all LRRs, unless otherwise neted.) Histic Spioleon (A2) Surgped Matrix (S9) Surgped Matrix (S1) Depleted Matrix (S2) Depleted Matrix (S2) Depleted Matrix (S2) Surgped Matrix (S4) Depleted Matrix (S1) Depleted Matrix (S1) Surgped Matrix (S4) Surgped		. <u> </u>							
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histic Epipedon (A2) Stripped Matrix (S6)									
Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Histosol (A2) Stripped Matrix (S6) 2 cm Muck (A10) (LRR B) Black Histis (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulidie (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) X Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or profolematic. Startic Layer (If present): Type: None Hydric Soil Present? Yes_ No_ X Type: None Hydric Soil Present? Yes_ No_ X No_ X Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Secondary Indicators (B2) (Riverine) Surface Water (A1) Aquatic Inverterbartes (B13) Drift Deposits (B3) (Riverine) Saturation (A3) Aquatic Inverterbartes (B13) Drift Deposits (B3) (Riverine) Saturation (A3) Aquatic Inverterbartes (C1) Drainage						ated Sand (Grains		
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Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Lysers (A5) (LRR C) Depleted Matrix (F2) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) X Redox Dark Surface (F6) Depleted Delow Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Startise (S1) (Morrise (S1) Vernal Pools (F9) Startise (S0) (Rotersent): Type: None Depth (inches): NA Hydric Soil Present? Yes No X Startise (S1) (Morrise) Satt Crust (B11) Sutration (A3) Aquatic Invertebrates (B13) Dift Deposits (B2) (Riverine) Saturation (A3) Aquatic Inver									
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Other (Explain in Remarks) 1 em Muck (A9) (LRR D) X Redox Dark Surface (F6) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) Trick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Sandy Gleyed Matrix (S4) Problematic estrictive Layer (If present): Type: Type: None Depth (inches): NA Hydric Soil Present? Yes									
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1 cm Muck (A9) (LRR D) X Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) strictive Layer (If present): Type: Type: None Depth (inches): NA Hydric Soil Present? Ype: No Marks: itcators of hydric soil are absent. Secondary Indicators: imary Indicators (Mark (A1) Salt Crust (B11) Mirace Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Surface Stol Cracks (B6) Recent tron Reduction in Plowed Soils (C3) Dry-Season Water Table (C2) Dift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surdrace Stol Cracks (B6) Recent trons Reduct			RR C)						
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Sandy Mucky Mineral (S1) Vernal Pools (F9) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. sastrictive Layer (If present): Type: None Type: None Hydric Soil Present? YesNoX Depth (inches): NA Hydric Soil Present? YesNoX marks: iicators of hydric soil are absent. Hydric Soil Present? YesNoX //DROLOGY Sati Crust (B11)	_				•	. ,			
Sandy Gleyed Matrix (S4) hydrology must be present, unless disturbed or problematic. setrictive Layer (If present): Type: None Depth (inches): NA Hydric Soil Present? Yes No X marks: iterations of hydric soil are absent. Hydric Soil Present? Yes No X fDROLOGY etland Hydrology Indicators: iterations of hydric soil are absent. fVDROLOGY satt Crust (B11) Water Marks (B1) (Riverine) Surface Water (A1) Satt Crust (B12) Secondary Indicators (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Statration (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (C Inductors Yes No X Depth (inches): NA Water-stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) etd Observations: No X <t< td=""><td>_</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>³ Indicator</td><td>s of hydrophytic vegetation and wetland</td></t<>	_				-			³ Indicator	s of hydrophytic vegetation and wetland
setrictive Layer (If present): Type: None Depth (inches):: NA marks: iicators of hydric soil are absent. YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Startation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) eld Observations: No Z Depth (inches): NA wetland Hydrology Present? Yes No X aturation Present? Yes No X	_				, , , , , , , , , , , , , , , , , , ,	,		hydrolog	y must be present, unless disturbed or
Depth (inches): NA Hydric Soil Present? Yes No_X marks: iticators of hydric soil are absent. marks: iticators of hydric soil are absent. YDROLOGY Secondary Indicators: Secondary Indicators (2 or more required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Surface Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) In undation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water Present? Yes No_X Depth (inches): NA ater Table Present? Yes No_X Depth (inches): NA wetland Hydrology Present? Yes No_X No_X	_							propiema	
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marks: dicators of hydric soil are absent. YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Suff Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Sufface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) eld Observations: Inface Water Present? Yes No aturation Present? Yes No X Depth (inches): NA Wetland Hydrology Present? Yes No X Depth (inches): No X			nt):					problema	auc.
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YDROLOGY Metland Hydrology Indicators: rimary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required)	Type: Depth	None	nt):						
Idetland Hydrology Indicators: Secondary Indicators: rimary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Plowed Soils (C6) Saturation Visible on Aerial Imagery (B7) Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Aquitard (D3) Water-stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) ield Observations: Mater Table Present? Yes No X urface Water Present? Yes No X Depth (inches): NA Metland Hydrology Present? Yes No X	Type: Depth emarks:	None (inches): <u>NA</u>							
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Water-stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) ield Observations: urface Water Present? Yes No_X Depth (inches): NA /ater Table Present? Yes No_X Depth (inches): NA Wetland Hydrology Present? Yes No_X aturation Present? Yes No_X Depth (inches): NA Wetland Hydrology Present? Yes No_X	Type: Depth emarks: dicators of YDROL Yetland H rimary Ind Satu Satu Sed Sed	None (inches): NA of hydric soil are al -OGY Hydrology Indicate dicators (minimum face Water (A1) n Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non	bsent. ors: a of one requir iverine) (Nonriverine) riverine)	red: check all	Salt Crust (B Biotic Crust (Aquatic Inver Hydrogen Su Oxidized Rhi Presence of	B12) tebrates (B1 llfide Odor ((zospheres a Reduced Iro	C1) Iong Living n (C4)	Roots (C3)	Soil Present? Yes No _ X Secondary Indicators (2 or more required water Marks (B1) (Riverine)
urface Water Present? YesNo_X Depth (inches): NA /ater Table Present? YesNo_X Depth (inches): NA aturation Present? YesNo_X Depth (inches): NA	Type: Depth emarks: dicators of YDROL /etland H rimary Ind Satu Satu Satu Sed Drift Suff	None (inches): NA of hydric soil are al DGGY Hydrology Indicate dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6)	ors: of one requir iverine) (Nonriverine) riverine)		Salt Crust (B Biotic Crust (Aquatic Inver Hydrogen Su Oxidized Rhi Presence of Recent Iron F	B12) tebrates (B1 lifide Odor ((zospheres a Reduced Iro Reduction in	C1) Iong Living n (C4)	Roots (C3)	Soil Present? Yes No _ X Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (Compared to the second compared to the se
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aturation Present? Yes No X Depth (inches): NA Wetland Hydrology Present? Yes No X	Type: Depth emarks: dicators c YDROL Yetland H rimary Ind Fetland H G Satu Sed Sed Drift Surf Surf Sed Surf Surf Sed Surf Surf Sed Surf Surf	None (inches): NA of hydric soil are al LOGY Hydrology Indicat dicators (minimum face Water (A1) h Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6) ndation Visible on Ae ter-stained Leaves (E	ors: of one requiniverine) (Nonriverine) riverine) rial Imagery (Bi		Salt Crust (B Biotic Crust (Aquatic Inver Hydrogen Su Oxidized Rhi Presence of Recent Iron F Thin Muck St	B12) tebrates (B1 lifide Odor ((zospheres a Reduced Iro Reduction in urface (C7)	C1) long Living n (C4) Plowed So	Roots (C3)	Soil Present? YesNoX Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
	Type: Depth marks: dicators of YDROL YDROL Yetland H rimary Ind High Satu Sed Sed Sed Sed Unift Sed Sed Nat Sed Wat Sed	None (inches): NA of hydric soil are al -OGY Aydrology Indicat dicators (minimum face Water (A1) n Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6) ndation Visible on Ae ter-stained Leaves (B ervations:	iverine) (Nonriverine) riverine) rial Imagery (B: 39)	7)	Salt Crust (B Biotic Crust (Aquatic Inver Hydrogen Su Oxidized Rhi Presence of Recent Iron I Thin Muck Si Other (Explai	B12) tebrates (B1 lifide Odor ((zospheres a Reduced Iro Reduction in urface (C7) in in Remark	C1) long Living n (C4) Plowed Sc s)	Roots (C3)	Soil Present? YesNoX Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
	Type: Depth marks: dicators of YDROL etland H rimary Ind Surf Surf Surf Surf Surf Surf Surf Surf	None (inches): NA of hydric soil are al -OGY Hydrology Indicate dicators (minimum face Water (A1) n Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6) ndation Visible on Ae ter-stained Leaves (E ervations: fater Present?	iverine) (Nonriverine) riverine) (ital Imagery (B: 39) Yes	7) No X	Salt Crust (B Biotic Crust (Aquatic Inver Hydrogen Su Oxidized Rhi Presence of Recent Iron F Thin Muck So Other (Explai	B12) tebrates (B1 lifide Odor (0 zospheres a Reduced Iro Reduction in urface (C7) in in Remark	C1) long Living n (C4) Plowed So ss)	Roots (C3)	Soil Present? YesNoX Secondary Indicators (2 or more required Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Shallow Aquitard (D3)
	Type: Depth emarks: dicators of YDROL /etland H rimary Ind Surf Big Satu Satu Sed Drift Surf Inun Wat ield Obse urface W /ater Tab	None (inches): NA of hydric soil are al LOGY Hydrology Indicat dicators (minimum face Water (A1) in Water Table (A2) uration (A3) ter Marks (B1) (Nonr liment Deposits (B2) t Deposits (B3) (Non face Soil Cracks (B6) indation Visible on Ae ter-stained Leaves (E ervations: 'ater Present? le Present?	iverine) (Nonriverine) riverine) rial Imagery (B: 39) Yes Yes	7) No X	Salt Crust (B Biotic Crust (Aquatic Inver Hydrogen Su Oxidized Rhi Presence of Recent Iron F Thin Muck So Other (Explai	B12) tebrates (B1 lifide Odor ((zospheres a Reduced Iro Reduction in urface (C7) in in Remark hes): <u>N</u> A	C1) long Living n (C4) Plowed So ss)	Roots (C3)	Soil Present? YesNoX Secondary Indicators (2 or more required Water Marks (B1) (Riverine)

Indicators of wetland hydrology are absent.

Project Site: I-80/Hiddenbrooke Parkway Intercha	ange	City/Co	unty: <u>Unincorp</u>	orated/Solano	Sampling Date	: July 28, 2020
Applicant/Owner: City of Vallejo				State: California	_Sampling Point	։: <u>SP13</u>
Investigator(s): R. Lee, C. McClain		Section	/Township/Ran	ge: S28/T4N/R3W		
Landform (hillslope, terrace, etc.): Swale		Local R	elief (concave,	convex, none): Conc	ave Slop	be (%): <u>1</u>
Subregion (LRR): Mediterranean California (LRR C)Lat:	38.16984		Long: <u>-122.20012</u>	Date	um: <u>WGS84</u>
Soil Map Unit Name: Dibble-Los Osos clay loams	, 9–30% slo	pes		NWI cl	lassification <u>n</u>	one
Are climatic / hydrologic conditions on the site typica	al for this tim	ne of year?				ks.)
Are Soil or Hydrology Vegetation	_	y disturbed?	Are "N	lormal Circumstances"	present? Yes	X No
Vegetation	_	roblematic?		ded, explain any answe		· • · · ·
SUMMARY OF FINDINGS – Attach site	map sho	wing sam	pling point	locations, transe	cts, importar	it features, etc.
Hydrophytic Vegetation Present? Yes X	No		la tha Camal			
Hydric Soil Present? Yes X	No		Is the Sample within a Wetl	and?	Yes X N	0
Wetland Hydrology Present? Yes X	No					
Remarks:						
Point taken to investigate a swale between the west land cover via surface and subsurface flow and culv was 11.75 inches, which is approximately 50.4% of	erts. Hydrol	ogy is natura	ally problematic	because precipitation f		
VEGETATION						
Tree Stratum (Plot size: <u>10-foot radius</u>)	Absolute	Dominant	Indicator	Dominance Test	vorksheet:	
1. Salix laevigata	Cover % 100	Species? X	Status FACW	Number of Dominant Spe		(A)
	100			That Are OBL, FACW, or	FAC: <u>2</u>	(A)
2				Total Number of Dominar		
		. <u> </u>		Species Across All Strata	a: <u>2</u>	(B)
4	400			Percent of Dominant Spe	cies	
Total Cover: Sapling/Shrub Stratum (Plot size: <u>NA</u>)	100			That Are OBL, FACW, or		<u>%</u> (A/B)
1				Prevalence Index	worksheet:	
2				Total % Cov	er of:	Multiply by:
3				OBL species	x 1 =	
4				FACW species	x 2 =	
5			<u> </u>	FAC species	x 3 =	
Total Cover:				FACU species		
<u>Herb Stratum</u> (Plot size: <u>5-foot radius</u>)				UPL Species	x 5 =	
1. Juncus balticus	70	Х	FACW	Column totals	(A)	(B)
2. <u>Galium aparine</u>	5		FACU			
3				Prevalence Ind	-	
4				Hydrophytic Vege	tation Indicators	5:
5				X Dominance Te	xt is >50%	
6				Prevalence Ind	ex is ≤3.0 ¹	
7						rovide supporting
8				data in Re	marks or on a se	parate sheet)
Total Cover:	75			Problematic Hy	drophytic Vegeta	ition ¹ (Explain)
Woody Vine Stratum (Plot size: <u>NA</u>) 1				¹ Indicators of hydric s present.	oil and wetland hyd	rology must be
2				Hydrophytic		
Total Cover:				Vegetation Present?	Yes X	No
% Bare Ground in Herb Stratum <u>25</u> % C	Cover of Biot	tic Crust	0			
Remarks:						
More than 50% of the dominant plant species acros	s all strata a	re rated OB	L, FACW, or FA	NC.		

Depth	Matrix		Redox Features							
(inches)	Color (moist)	%	Color (mois	st) %	Type ¹	Loc ²	Texture	Remarks		
0-4	10YR 3/3	100					SCL			
4-10	10YR 2/2	85	10YR 5/6	6 15	CS	<u>M</u>	SCL			
						·				
	oncentration, D=Depl		· · · · · ·			Grains ²		ig, RC=Root Channel, M=Matrix.		
	Indicators: (Applica tosol (A1)	ble to all LF	Rs, unless oth					oblematic Hydric Soils ³ :		
	c Epipedon (A2)		Sandy Redox (S5) Stripped Matrix (S6)					n Muck (A9) (LRR C) n Muck (A10) (LRR B)		
	ck Histic (A3)		Loamy Mucky Mineral (F1)					Vertic (F18)		
	drogen Sulfide (A4)				ed Matrix (F2)			ent Material (TF2)		
	atified Layers (A5) (LF	R C)	x			Other (Explain in Remarks)				
	m Muck (A9) (LRR D)	,	<u></u>	•	Surface (F6)					
	pleted Below Dark Su				ark Surface (F7)					
	ck Dark Surface (A12	. ,		Redox Depr	. ,					
	ndy Mucky Mineral (S	,		Vernal Pools	()		3 Indicators of hud	rophytic vegetation and wetland		
Jai	ndy Gleyed Matrix (S	,			5 (F9)			be present, unless disturbed or		
Sar		0								
	e Layer (If presen	t):								
	e Layer (If presen None	it):								

Soil contains a layer that has a depleted matrix with 60% or more chroma of 2 and has a minimum thickess of 2 inches entirely within the upper 6 inches of the soil.

HYDROLOGY

Wetland Hydrology Indica	tors:							
Primary Indicators (minimur	n of one required	: cheo	ck all t	hat apply)		Secondary Inc	dicators (2 or	more required)
Surface Water (A1)				Salt Crust (B11)	_	Water M	arks (B1) (Rive	rine)
High Water Table (A2)				Biotic Crust (B12)		Sedimen	nt Deposits (B2)) (Riverine)
Saturation (A3)		-		Aquatic Invertebrates (B13)	_	Drift Dep	oosits (B3) (Rive	erine)
Water Marks (B1) (Non	riverine)	-		Hydrogen Sulfide Odor (C1)	_	Drainage	e Patterns (B10	1)
Sediment Deposits (B2)	(Nonriverine)			Oxidized Rhizospheres along Liv	ving Roots (C3)	Dry-Seas	son Water Tabl	ie (C2)
Drift Deposits (B3) (Nor	nriverine)			Presence of Reduced Iron (C4)		Crayfish	Burrows (C8)	
Surface Soil Cracks (B6	6)			Recent Iron Reduction in Plowed	l Soils (C6)	Saturation Visible on Aerial Imagery		erial Imagery (C9)
Inundation Visible on A	erial Imagery (B7)			Thin Muck Surface (C7)		Shallow	Aquitard (D3)	
Water-stained Leaves (B9)		Х	Other (Explain in Remarks)	_	FAC-Net	utral Test (D5)	
Field Observations:								
Surface Water Present?	Yes	No	Х	Depth (inches): NA				
Water Table Present?	Yes	No	Х	Depth (inches): NA				
Saturation Present?	Yes	No	Х	Depth (inches): NA	Wetland Hydrolog	gy Present?	Yes <u>X</u>	No
(includes capillary fringe)								
Describe Recorded Data (str	eam gauge, mor	nitoring	well,	aerial photos, previous inspec	tions), if available:			
Remarks:								
, , , ,				te is in a landscape position the blematic because precipitation	•			,

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: I-80/Hiddenbrooke Parkway Interchange	Date: July 28, 2020 Time: 3:30 PM
Project Number: 3328-21	Town: Unincorporated State: CA
Stream: Unnamed ephemeral drainage	Photo begin file#: Photo end file#:
Investigator(s): R. Lee, C. McClain	20200728_152736 20200728_152743
Y / N X Do normal circumstances exist on the site?	Location Details: Ditch south of and parallel to McGary Rd, north of Hiddenbrooke Pkwy
$Y \square / N \boxtimes$ Is the site significantly disturbed?	Projection: Datum:WGS84
	Coordinates: 38.17092, -122.19694
Potential anthropogenic influences on the channel syst	em:
Remnants of a historic irrigation canal. Contributions of seasonal n	atural runoff from adjacent hillslopes and regular artificial
runoff from adjacent road and irrigated developed/landscaped land	l cover.
Brief site description:	
Mixed riparian woodland along the remnants of a historic irrigat maintained free of woody vegetation. Mapped in National Wetla	1 P
maintained free of woody vegetation. Mapped in National wetta	he inventory as Riverine (R4SDAx).
Checklist of resources (if available):	
X Aerial photography \Box Stream gag	re data
Dates: 3/1/70, 1993–2018 Gage num	
XTopographic mapsPeriod of r	
	y of recent effective discharges
	s of flood frequency analysis
	ecent shift-adjusted rating
	neights for 2-, 5-, 10-, and 25-year events and the
	ecent event exceeding a 5-year event
X Global positioning system (GPS)	econt event exceeding a 5 year event
X Other studies National Wetland Inventory (USFWS 2020))
Hydrogeomorphic F	,
Active Floodplain	Low Terrace
	and the second s
Low-Flow Channels	OHWM Paleo Channel
Procedure for identifying and characterizing the flood	plain units to assist in identifying the OHWM:
1. Walk the channel and floodplain within the study area	to get an impression of the geomorphology and
vegetation present at the site.	is get an impression of the geomorphology and
2. Select a representative cross section across the channel.	Draw the cross section and label the floodplain units
3. Determine a point on the cross section that is character	1
a) Record the floodplain unit and GPS position.	
b) Describe the sediment texture (using the Wentworth	class size) and the vegetation characteristics of the
floodplain unit.	, 6
c) Identify any indicators present at the location.	
4. Repeat for other points in different hydrogeomorphic fl	oodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record	
$\square Mapping on aerial photograph \qquad X$	GPS
Digitized on computer	Other:

Mapping on actual photograph		
Digitized on computer	Other:	

	***	entworth Size Cla	3303
Millimet	ers (mm)	Inches (in)	Wentworth size class
	10.08 —	— – 256 — –	Boulder
	2.56 —	64	Cobble A
	0.157	4	
	0.079 —	2.00	Granule
	0.039 —	— – 1.00 — –	Very coarse sand
	0.020 —	0.50	Coarse sand
1/2	0.0098 —	— —	Medium sand
1/4	0.005 —	— – 0.125 — –	Fine sand — — — — — – Very fine sand
1/8 —	0.0025 —	0.0625	-
1/16	0.0012 —	<u> </u>	Coarse silt
1/32	0.00061 —	— – 0.0156 — –	Medium silt — — — — — — — — — — — — — — — — — — —
1/64	0.00031 —	— – 0.0078 — –	Fine silt
1/128 —	0.00015	0.0039	Very fine silt
			Clay Phy

Wentworth Size Classes

Project ID: 3328-21 Cross section ID: OHWM-1 Date: 7/28/20 Time: 3:30 PM
Cross section drawing:
12 feet OHWM Low-Flow Channel
<u>OHWM</u>
GPS point: <u>38.170920°</u> , -122.196970° and <u>38.170896</u> °, -122.196936°
Indicators: Change in average sediment texture Change in vegetation species Change in vegetation cover Change in vegetation cover
Comments:
Bed of an ephemeral drainage. No water present; soil bed, no rock/fill.
Floodplain unit: X Low-Flow Channel Active Floodplain Low Terrace
GPS point: <u>38.170902°</u> , -122.196950°
Characteristics of the floodplain unit:
Average sediment texture: clay loam Total veg cover: 100% Tree: 100% Shrub: 0% Herb: 1%
Community successional stage:
Image: NA Image: Mid (herbaceous, shrubs, saplings) Image: Early (herbaceous & seedlings) Image: Xi Late (herbaceous, shrubs, mature trees)
Indicators: Mudcracks Soil development
Ripples Surface relief
Drift and/or debris Other: X Presence of bed and bank
Benches Other:
Comments:

No trees rooted within the low-flow channel; however, a canopy of coast live oak (*Quercus agrifolia*) and arroyo willow (*Salix lasiolepis*) provide cover. A small amount of *Juncus* sp. and some leaf litter is present.

Project ID: 3328-21	Cross section ID:	CHWM-1	Date: 7/28/20	Time: 3:30 PM
<u>Floodplain unit</u> :	Low-Flow Channel	🗌 Activ	e Floodplain	X Low Terrace
GPS point:				
Community successi	xture: Clay loam 100 % Tree: 100 % onal stage:	🗌 Mid (herbaceous, shrubs	
Early (nerba	aceous & seedlings)	X Late ((herbaceous, shrubs	, mature trees)
Indicators: Mudcracks Ripples Drift and/or X Presence of Benches		Surfa Surfa Other Other	levelopment ce relief : :	
Comments:				
	nated by coast live oak and an Beyond the riparian canopy is	•	* *	
Floodplain unit:	Low-Flow Channel	Activ	e Floodplain	Low Terrace
<u>1100uplain unit</u> .			e Pioodpiain	
GPS point: <u>NA</u>				
Community successi	xture:% Tree:%	Mid (Herb:% herbaceous, shrubs (herbaceous, shrubs	
Indicators: Mudcracks Ripples Drift and/or Presence of Benches	debris bed and bank	Surfa Other	levelopment ce relief :: ::	
Comments:				



Photo 1. Sample point SP1 taken to investigate a low-lying area between the westbound I-80 offramp and a frontage road. SP1 was determined to be a three parameter seasonal wetland (SW5). Photo direction = southeast.



Photo 2. Sample point SP2 taken to investigate a low-lying area between the westbound I-80 offramp and a frontage road. SP2 was determined to be a three parameter seasonal wetland (SW5). Photo direction = northeast.



Photo 3. Sample point SP3 taken to investigate a low-lying area between the westbound I-80 offramp and a frontage road. SP3 was determined to be a three parameter perennial emergent wetland (PEW12). Photo direction = northeast.



Photo 4. Sample point SP4 taken to investigate a low-lying area along the south side of McGary Road south of Hiddenbrooke Parkway. SP4 was determined to be a three parameter seasonal wetland (SW1). Photo direction = northeast.



Photo 5. Sample point SP5 taken to investigate a low-lying area along the south side of McGary Road south of Hiddenbrooke Parkway. SP5 was determined to be a three parameter seasonal wetland (SW2). Photo direction = east.



Photo 6. Sample point SP6 taken to investigate hillslope next to a ditch along the south side of McGary Road south of Hiddenbrooke Parkway. This location was determined to not be a three parameter wetland. Photo direction = southeast.



Photo 7. Sample point SP7 taken to investigate hillslope between the westbound 1-80 offramp and frontage road. This location was determined to not be a three parameter wetland because it lacks indicators of hydric soil and wetland hydrology. Photo direction = southwest.



Photo 8. Sample point SP8 taken to investigate a low-lying area between the westbound I-80 offramp and a frontage road. SP8 was determined to be a three parameter perennial emergent wetland (PEW12). Photo direction = northeast.



Photo 9. Sample point SP9 taken to investigate a low-lying area between westbound I-80 and a frontage road. SP9 was determined to be a three parameter seasonal wetland (SW8). Photo direction = northeast.



Photo 10. Sample point SP10 taken to investigate a low-lying area between westbound I-80 and a frontage road. SP10 was determined to be a three parameter forested wetland (FW4). Photo direction = northeast.



Photo 11. Sample point SP11 taken to investigate a low-lying area between the westbound I-80 offramp and a frontage road. SP11 was determined to be a three parameter seasonal wetland (SW8). Photo direction = southwest.



Photo 12. Sample point SP12 taken to investigate a low-lying area between the westbound I-80 offramp and a frontage road. SP12 was determined to not be a three parameter wetland. Photo direction = southeast.



Photo 13. Sample point SP13 taken to investigate a low-lying area between westbound I-80 and offramp. SP13 was determined to be a three parameter wetland. Photo direction = northeast.



Photo 14. Ordinary high water mark cross-section OHWM-1 taken to investigate an ephemeral drainage (ED2) along the south side of McGary Road east of Hiddenbrooke Parkway. Indicator = break in bank slope (red dashed line). Photo direction = southwest.



Photo 15. Ordinary high water mark cross-section OHWM-1 taken to investigate an ephemeral drainage (ED2) along the south side of McGary Road east of Hiddenbrooke Parkway. Indicator = exposed tree roots. Photo direction = northwest.



Photo 16. Riparian scrub (foreground) and mixed riparian woodland (background) along an ephemeral drainage (ED2) south of McGary Road east of Hiddenbrooke Parkway. Photo direction = northwest.



Photo 17. Concrete ditch south of McGary Road east of Hiddenbrooke Parkway. Photo direction = northwest.



Photo 18. Earthen ditch south of McGary Road east of Hiddenbrooke Parkway. Photo direction = northwest.

Waters Name	State	Cowardin Code	HGM Code	Meas Type	Amount	Units	Waters Type	Latitude	Longitude	Local_Waterway
FW1	CALIFORNIA	PFO	DEPRESS	Area	0.0445	ACRE	NRPWW	38.168387	-122.199962	American Canyon Creek
FW2	CALIFORNIA	PFO	DEPRESS	Area	0.0989	ACRE	NRPWW	38.169835	-122.200142	Green Valley Creek
FW3	CALIFORNIA	PFO	DEPRESS	Area	0.0429	ACRE	NRPWW	38.171571	-122.197712	Green Valley Creek
FW4	CALIFORNIA	PFO	DEPRESS	Area	0.0091	ACRE	NRPWW	38.171955	-122.197283	Green Valley Creek
PEW1	CALIFORNIA	PEM	DEPRESS	Area	0.0119	ACRE	NRPWW	38.167779	-122.201519	American Canyon Creek
PEW2	CALIFORNIA	PEM	DEPRESS	Area	0.0068	ACRE	NRPWW	38.167941	-122.201265	American Canyon Creek
PEW3	CALIFORNIA	PEM	DEPRESS	Area	0.0038	ACRE	NRPWW	38.168169	-122.200717	American Canyon Creek
PEW4	CALIFORNIA	PEM	DEPRESS	Area	0.0041	ACRE	NRPWW	38.168295	-122.200252	American Canyon Creek
PEW5	CALIFORNIA	PEM	DEPRESS	Area	0.0048	ACRE	NRPWW	38.168347	-122.200102	American Canyon Creek
PEW6	CALIFORNIA	PEM	DEPRESS	Area	0.0025	ACRE	NRPWW	38.168813	-122.201525	American Canyon Creek
PEW7	CALIFORNIA	PEM	DEPRESS	Area	0.0058	ACRE	NRPWW	38.169462	-122.200554	American Canyon Creek
PEW8	CALIFORNIA	PEM	DEPRESS	Area	0.0072	ACRE	NRPWW	38.169948	-122.199957	Green Valley Creek
PEW9	CALIFORNIA	PEM	DEPRESS	Area	0.0018	ACRE	NRPWW	38.170014	-122.199851	Green Valley Creek
PEW10	CALIFORNIA	PEM	DEPRESS	Area	0.0031	ACRE	NRPWW	38.170068	-122.199767	Green Valley Creek
PEW11	CALIFORNIA	PEM	DEPRESS	Area	0.0061	ACRE	NRPWW	38.170412	-122.198023	Green Valley Creek
PEW12	CALIFORNIA	PEM	DEPRESS	Area	0.0438	ACRE	NRPWW	38.171057	-122.198713	Green Valley Creek
PEW13	CALIFORNIA	PEM	DEPRESS	Area	0.0147	ACRE	NRPWW	38.171225	-122.198410	Green Valley Creek
PEW14	CALIFORNIA	PEM	DEPRESS	Area	0.0156	ACRE	NRPWW	38.171401	-122.198121	Green Valley Creek
PEW15	CALIFORNIA	PEM	DEPRESS	Area	0.0010	ACRE	NRPWW	38.171594	-122.197815	Green Valley Creek
SW1	CALIFORNIA	PEM	DEPRESS	Area	0.0118	ACRE	NRPWW	38.167718	-122.201603	American Canyon Creek
SW2	CALIFORNIA	PEM	DEPRESS	Area	0.0573	ACRE	NRPWW	38.168157	-122.200686	American Canyon Creek
SW3	CALIFORNIA	PEM	DEPRESS	Area	0.0058	ACRE	NRPWW	38.169397	-122.200675	American Canyon Creek
SW4	CALIFORNIA	PEM	DEPRESS	Area	0.0077	ACRE	NRPWW	38.169974	-122.199920	Green Valley Creek
SW5	CALIFORNIA	PEM	DEPRESS	Area	0.1892	ACRE	NRPWW	38.170434	-122.199997	Green Valley Creek
SW6	CALIFORNIA	PEM	DEPRESS	Area	0.0030	ACRE	NRPWW	38.169220	-122.198654	Green Valley Creek

E-2

Waters Name	State	Cowardin Code	HGM Code	Meas Type	Amount	Units	Waters Type	Latitude	Longitude	Local_Waterway
SW7	CALIFORNIA	PEM	DEPRESS	Area	0.0089	ACRE	NRPWW	38.170373	-122.198099	Green Valley Creek
SW8	CALIFORNIA	PEM	DEPRESS	Area	0.1311	ACRE	NRPWW	38.171455	-122.198061	Green Valley Creek
SW9	CALIFORNIA	PEM	DEPRESS	Area	0.0089	ACRE	NRPWW	38.171247	-122.196439	Green Valley Creek
C1	CALIFORNIA	R4	RIVERINE	Area	0.0017	ACRE	NRPW	38.167805	-122.201595	American Canyon Creek
C2	CALIFORNIA	R4	RIVERINE	Area	0.0020	ACRE	NRPW	38.167865	-122.201390	American Canyon Creek
C3	CALIFORNIA	R4	RIVERINE	Area	0.0035	ACRE	NRPW	38.169322	-122.200990	American Canyon Creek
C4	CALIFORNIA	R4	RIVERINE	Area	0.0054	ACRE	NRPW	38.169615	-122.200370	American Canyon Creek/Green Valley Creek
C5	CALIFORNIA	R4	RIVERINE	Area	0.0018	ACRE	NRPW	38.170212	-122.201068	Green Valley Creek
C6	CALIFORNIA	R4	RIVERINE	Area	0.0056	ACRE	NRPW	38.169997	-122.199553	Green Valley Creek
C7	CALIFORNIA	R4	RIVERINE	Area	0.0051	ACRE	NRPW	38.170362	-122.197825	Green Valley Creek
C8	CALIFORNIA	R4	RIVERINE	Area	0.0017	ACRE	NRPW	38.170501	-122.197392	Green Valley Creek
C9	CALIFORNIA	R4	RIVERINE	Area			NRPW	38.168382	-122.199987	Green Valley Creek
C10	CALIFORNIA	R4	RIVERINE	Area			NRPW	38.171783	-122.197473	Green Valley Creek
ED1	CALIFORNIA	R4SB	RIVERINE	Area	0.1382	ACRE	NRPW	38.169919	-122.197919	Green Valley Creek
ED2	CALIFORNIA	R4SB	RIVERINE	Area	0.1104	ACRE	NRPW	38.170917	-122.196906	Green Valley Creek

*Please note: all features listed in this table meet physical definitions of wetlands and waters, but are not considered waters of the U.S. under the Navigable Waters Protection Rule.