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Delineation of Potential Jurisdictional Waters

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
Pescadero, San Mateo County, California

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1.0 INTRODUCTION

This document presents the methods and results of the delineation of potential jurisdictional Waters of the United States and/or State of California within the CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects (project). The Study Area for the project is located within the Town of Pescadero, in San Mateo County (County), California (**Figure 1**). The project involves construction of a new County fire station, installation of 1.5 miles of new water supply pipeline to serve Pescadero High School and the new County fire station, and decommission of a portion of the existing County fire station. The new water supply pipeline will extend from the existing CSA-11 water line east of the intersection of Pescadero Creek Road and Stage Road to Pescadero High School, and the pipeline will run along the unpaved roadway shoulders, or within paved road. The new fire station will be constructed within an undeveloped portion of Pescadero High School, which is owned by La Honda-Pescadero Unified School District. The existing fire station, located at 1200 Pescadero Creek Road, will be partially decommissioned, while retaining a portion of the existing structures. The purpose of the delineation is to identify and map any potentially jurisdictional Waters within the Study Area, which is approximately 36.306 acres. The delineation was conducted by staff from Vollmar Natural Lands Consulting (VNLC).

All Waters delineated within the Study Area may be subject to federal jurisdiction by the U.S. Army Corps of Engineers (ACOE) through Section 404 of the Clean Water Act/Section 10 of the Rivers and Harbors Act and may also be subject to State jurisdiction by the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board (RWQCB) and/or the California Coastal Commission (CCC) through state regulations. The results of this delineation are preliminary and must be reviewed and verified in writing by the ACOE to be considered an official delineation.

The delineation identified a total of 2.123 acres of potential jurisdictional wetlands, which include 0.204 acre of emergent channel and 1.919 acres of riparian habitat.

2.0 PROJECT BACKGROUND INFORMATION

2.1 Extent and Location of Study Area

The Study Area consists of the San Mateo County Fire Station – Station 59 (APN 086-160-050), the proposed water pipe alignment along Pescadero Creek Road/Cloverdale Road, and Pescadero High School (APN 087-053-010). Project actions like ingress/egress, staging, and construction are anticipated to occur within the Study Area.

The Study Area is broken up into the western and eastern portions; the western portion consists of the existing Fire Station 59, while the eastern portion consists of the proposed water pipe alignment and Pescadero High School (where the new fire station is proposed to be built in the southwest corner). The Study Area is mapped within the Franklin Point, La Honda, Pigeon Point, and San Gregorio U.S. Geological Survey (USGS) 7½ minute topographic quadrangles and the Butano Landgrant, San Antonio or Pescadero Landgrant, and Sections 10 and 11 of Township 08 South, Range 05 West (**Figure 2**). The Study Area may be accessed via the Pacific Coast Highway by exiting at Pescadero Creek Road and continuing east for 1.25 miles until Fire Station 59 is reached, at 1200 Pescadero Creek Road. To reach Pescadero High School, continue west along Pescadero Creek Road for another 1.25 miles, turn right (southeast) on Cloverdale Road, and then turn left (east) on Butano Cutoff. Pescadero High School is located to the left (north) after 0.2 mile, at 360 Butano Cutoff, Pescadero.

The western Study Area (Fire Station 59) is primarily surrounded by open space, with Butano Creek and agricultural land use to the east. The eastern Study Area is surrounded by agricultural land use, civic buildings, and open space. The Study Area is described in greater detail below.

Legend

- Study Area (39.306 ac)
- Highway
- Midpen Preserve
- Other Public or Preserved Land
- Water Body
- Urbanized Area

Data Sources: Midpen, 2019, 2020 | CPAD, 2016
USGS, Various | GAP, 1998 | VNLC, 2019
GAP Analysis Project, 1998 | TIGER, 2012
GIS/Cartography by: Ivy Poisson, Dec. 2020
Map File: 484_Vicinity_484_A-P_2020-1230.mxd

FIGURE 1
Regional Vicinity Map

CSA-11 Water Service Extension and
Pescadero Fire Station (Station 59) Projects
San Mateo County, California

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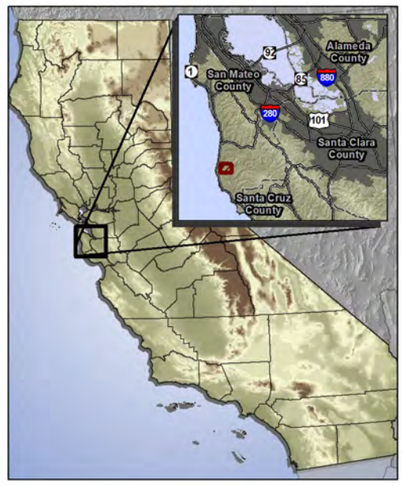
0 2 4 Km

0 1 2 4 Miles

FIGURE 2
USGS Topographic Map

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California

Project and Study Area (39.306 ac)



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(1 in. = approx. 1,000 feet at tabloid layout)

0 150 300 600 Meters

0 300 600 1,200 Feet

Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_USGS_B-P_2021-0517b.mxd

Vollmar NATURAL LANDS CONSULTING

2.2 General Setting of Study Area

The Study Area is located within the Pescadero Watershed, the largest watershed in San Mateo County. Land use within the surrounding area is predominantly rural, which is a blend of open space, agriculture (farmland and ancillary structures), and civic buildings (school and fire station). The elevation within the Study Area ranges from 26-92 feet (8-28 meters) above sea level (USGS 1997). There are two creeks that are within or adjacent to the Study Area: Butano Creek is located 150 feet east of the western Study Area (**Figure 3a**), while Pescadero Creek is located within the northeastern corner of the eastern Study Area (**Figure 3b – 3d**). Since there is no riparian or wetland habitat associated with Butano Creek within the western Study Area, both the western Study Area and Butano Creek will not be discussed further in this report.

The Study Area is located within the Coastal Zone, as defined by the CCC. Therefore, only one parameter is required for a feature to be considered a wetland (CCC 2011; County of San Mateo 2021). The Study Area and greater San Mateo County coast is within the "Western Mountains, Valleys, and Coast" climate zone, as defined by the ACOE.

The region's coastal climate is similar to California's Mediterranean climate, which is characterized by cool, wet winters and hot, dry summers, though the coastal climate features warmer winters, cooler summers, and greater moisture throughout the year. Mean annual precipitation and temperature at the study area are 29.7 inches and 55.9 degrees Fahrenheit, respectively (PRISM 2021). More than 98 percent of annual precipitation occurs during the "wet season," which extends from October to May. The 2020-2021 wet season (up to the end of April 2021) experienced much lower than average precipitation and slightly lower than average temperatures compared to historical wet seasons (October to April, due to the date of this report). Specifically, precipitation was 42.0 percent of normal (11.8 inches versus 28.0 inches), and mean temperatures were 96.2 percent of normal (51.6 degrees F versus 53.6 degrees F) (ibid). Each month of the 2020-2021 wet season received significantly lower than average rainfall. See **Table 1**.

TABLE 1. WETS Analysis Table for the May 2021 Survey

Precipitation Data from the Last 30 Years (1990-2020)[1]			Recent Field Conditions Compared to Precipitation Data from the Last 30 Years, and Analysis[1]					
Date	**30th Percentile (inches)**	**70th Percentile (inches)**	**Date**	**Recorded Rainfall (inches)**	**Rainfall Condition Compared to Previous 30 Years[2]**	**Numeric Condition Value[3]**	**Weighting Factor[4]**	**Product of Condition Value and Weighting Factor[5]**
Apr	1.69	3.78	Apr 2021	0.22	Dry	1	3	3
Mar	2.61	6.52	Mar 2021	2.33	Dry	1	2	2
Feb	2.9	9.77	Feb 2021	3.03	Normal	2	1	2
[1] All precipitation data is obtained from the Skyline Ridge Preserve, CA Weather Station (USDA-NRCS 2021). [2] Below 30th percentile = dry; between 30th and 70th percentile = normal; above 70th percentile = wet. [3] Relative rainfall conditions are then translated to a numeric condition value, as follows: dry = 1, normal = 2, wet = 3. [4] Greater weight is given to the most recent month as this would most likely influence what hydrologic or vegetative characteristics are observed. [5] The numeric condition value is then multiplied by the weighting factor, then the subtotals are added to get the total value. Total value equivalents: 6-9 = dry; 10-14 = normal; 15-18 = wet						**TOTAL[5]**	7 or DRY

3.0 REGULATORY BACKGROUND

3.1 Federal Regulatory Framework

The federal government, through Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA), has jurisdiction over all Waters of the United States. Waters of the United States are divided into four subsets – territorial seas and traditional navigable waters (TNWs); tributaries to TNWs; lakes, ponds, and impoundments of TNWs; and wetlands adjacent to territorial seas and TNWs. Section 404 of the CWA regulates the discharge of dredged or fill material into Waters of the United States. The CWA grants dual regulatory authority of Section 404 to the U.S. Environmental Protection Agency (EPA) and ACOE. The ACOE is responsible for issuing and enforcing permits for activities in jurisdictional Waters in conjunction with prior permitting authorities in navigable Waters under the RHA of 1899. The EPA is responsible for providing oversight of the permit program. In this capacity, the EPA has developed guidelines for permit review (Section 404 [b][1] Guidelines) and has the authority to veto permits by designating certain sites as non-fill areas (Section 404[c] of the CWA). The EPA also has enforcement authority under Section 404. The ACOE generally extends its jurisdiction to all areas meeting the criteria for Waters of the United States.

As defined in the 2020 Navigable Waters Protection Rule (published in the Federal Register, effective June 22, 2020), waters of the U.S. exclude features that lack hydrological surface connection to territorial seas and TNWs. Examples of water features excluded from federal jurisdiction include: groundwater, ephemeral features in a typical water year, diffuse stormwater runoff/sheet flow over upland areas, farm/roadside ditches[1], cropland[2], artificially irrigated areas[3], artificially created water conveyance structures located in uplands, groundwater systems in upland or in non-jurisdictional waters, and waste treatment systems.

Projects which propose activities that fall under the jurisdiction of Section 404 of the CWA and/or Section 10 of the RHA must obtain approval from the ACOE through the individual or nationwide permit (NWP) process. Individual permits entail a full public interest review that includes consultation with other federal and state agencies.

3.2 California State and Regional Regulatory Framework

California Department of Fish and Wildlife

The CDFW regulates river, stream, and lake habitats through Fish and Game Code section 1600 *et seq*. Fish and Game Code section 1602 requires an entity to notify the CDFW prior to commencing any activity that may do one or more of the following:

- Substantially divert or obstruct the natural flow of any river, stream, or lake;
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- Deposit debris, waste, or other materials that could pass into any river, stream, or lake.

A “river, stream, or lake" includes those that are episodic (i.e., they are dry for periods of time) as well as those that are perennial. The definition includes ephemeral streams, desert washes, and watercourses with a subsurface flow (CDFW 2016) and may also apply to work undertaken within the flood plain of a body of water, the boundary of which may be identified as a topographic feature or as riparian vegetation. In

[1] This exclusion would not apply if the farm/roadside ditch satisfies flow conditions of a perennial/intermittent tributary; i.e., the feature flows more than in direct response to precipitation events.
[2] This exclusion would not apply if the site was abandoned and reverts to wetland within 5 years.
[3] This exclusion would only apply if the artificially irrigated area would revert to upland conditions if irrigation ceased.

addition, the CDFW does not distinguish between a "pond" and a "lake," such that relatively small bodies of water, including both natural and artificial features, may be regulated under section 1600.

The CDFW requires a Lake and Streambed Alteration (LSA) Agreement when it determines that the activity, as described in a complete LSA Notification, may substantially adversely affect existing fish or wildlife resources (ibid). A LSA Agreement includes measures necessary to protect existing fish and wildlife resources. The CDFW may suggest ways to modify a project that would eliminate or reduce harmful impacts to fish and wildlife resources. Before issuing a LSA Agreement, CDFW must comply with the California Environmental Quality Act (CEQA).

Regional Water Quality Control Board

The Study Area is located within the San Francisco Bay (Region 2) Regional Water Board which has authority to regulate projects that could potentially impact wetlands and/or other Waters. According to the California State Water Resources Control Board (State Water Board, 2006), the authority derives from the following:

- Porter-Cologne Water Quality Control Act through Waste Discharge Requirements to protect Waters of the state;
- The CWA under Section 4013;
- The San Francisco Bay Basin Water Quality Control Plan (Basin Plan [2005]) (Sections 4.23 & 4.23.4) which is available at http://www.waterboards.ca.gov/sanfranciscobay/basinplan incorporates several State directives to protect wetlands including:

  - Governor's Executive Order W-59-93 (i.e., the "California Wetland's Policy" which requires "No Net Loss of Wetlands");
  - Senate Concurrent Resolution No. 28; and
  - California Water Code Section 13142.5 (applies to coastal marine wetlands).

In addition to the state directives to protect wetlands, for individual permits (but not NWPs), the Basin Plan also directs the State Water Board staff to use the EPA's CWA 404(b)(1) guidelines to determine circumstances under which the filling of wetlands may be permitted and requires that attempts be made to avoid, minimize, and only lastly to mitigate for adverse impacts (ibid).

California's jurisdiction to regulate its water resources is much broader than that of the federal government. The State Water Board's Executive Director issued a memorandum directing the Regional Water Boards to regulate such waters under the authority of the Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne extends to "Waters of the State," which is broadly defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." This definition includes isolated wetlands and any action that may impact isolated wetlands is subject to the Water Board's jurisdiction, which may include the issuance of Statewide General Waste Discharge Requirements (WDRs). For projects that will impact less than 0.2 acre of "isolated" wetlands, the State Water Board issued Order No. 2004-004-DWQ, WDRs for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction (General WDRs). These General WDRs streamline the permitting process for low impact projects in isolated wetlands (ibid).

Activities or discharges from a project that could affect California's surface, coastal, or ground waters, require a permit from the local RWQCB. Discharging pollutants (or proposing to) into surface water requires the applicant to file a complete National Pollutant Discharge Elimination System permit application form with the RWQCB. Other types of discharges, such as those affecting groundwater or from

diffused sources (e.g., erosion from soil disturbance or waste discharges to land) are handled by filing a Report of Waste Discharge with the RWQCB in order to obtain WDRs. For specified situations, some permits may be waived and some discharge activities can be handled through enrollment in an existing general permit (ibid). The State has adopted updated Dredge and Fill procedures, which became effective May 28, 2020. These changes modify the current State definition and jurisdictional determination of State wetlands.

California Coastal Commission and San Mateo County

The Study Area is located within the Coastal Zone, which grants the California Coastal Commission (CCC) authority over many activities affecting wetlands (San Mateo 2011 and CCC 2021). Their authority is derived from the California Coastal Act of 1976.

In addition, wetlands in the Coastal Zone are subject to the one-parameter definition, as stated in the California Code of Regulations Title 14, Section 13577:

> "Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats."

Development activities in the Coastal Zone are subject to a Coastal Development Permit from either the CCC or the local government authority with a certified Local Coastal Plan. For this Study Area, San Mateo County would preside over permitting processes, under the guidance of County of San Mateo Local Coastal Program (LCP) Policies (San Mateo County 2013).

Development activities that are subject to the Coastal Development Permit include, but is not limited to:

> "… the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land […]; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan […]. As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line."

The San Mateo County LCP provides their own definition of wetlands and specific guidance regarding permitted uses within wetlands, buffer zone requirements for wetlands, and development activities within the buffer zone. The relevant definitions and policies relating to wetlands are reproduced below.

Policy 7.14: Definition of Wetland

Define wetland as an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Such wetlands can include mudflats (barren of vegetation), marshes, and swamps.

Such wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and man-made impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine areas below extreme low water of spring tides, nor vernally wet areas where the soils are not hydric. In San Mateo County, wetlands typically contain the following plants: cordgrass, pickleweed, jaumea, frankenia, marsh mint, tule, bullrush, narrow-leaf cattail, broadleaf cattail, pacific silverweed, salt rush, and bog rush. To qualify, a wetland must contain at least a 50% cover of some combination of these plants, unless it is a mudflat.

Policy 7.16: Permitted Use in Wetlands
Within wetlands, permit only the following uses: (1) nature education and research, (2) hunting, (3) fishing, (4) fish and wildlife management, (5) mosquito abatement through water management and biological controls; however, when determined to be ineffective, allow chemical controls which will not have a significant impact, (6) diking, dredging, and filling only as it serves to maintain existing dikes and an open channel at Pescadero Marsh, where such activity is necessary for the protection of pre-existing dwellings from flooding, or where such activity will enhance or restore the biological productivity of the marsh, (7) diking, dredging, and filling in any other wetland only if such activity serves to restore or enhance the biological productivity of the wetland, (8) dredging man-made reservoirs for agricultural water supply where wetlands may have formed, providing spoil disposal is planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation, and (9) incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

Policy 7.18: Establishment of Buffer Zones
Buffer zones shall extend a minimum of 100 feet landward from the outermost line of wetland vegetation. This setback may be reduced to no less than 50 feet only where: (1) no alternative development site or design is possible; and (2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional biologist to the satisfaction of the County and the State Department of Fish and Game. A larger setback shall be required as necessary to maintain the functional capacity of the wetland ecosystem

Policy 7.19: Permitted Uses in Buffer Zones.
Within the buffer zones, permit the following uses only: (1) uses allowed within wetlands policy (7.16) and (2) public trails, scenic overlooks, and agricultural uses that produce no impact on the adjacent wetlands.

4.0 METHODS

4.1 Preliminary Review and Field Preparation

Prior to conducting the field delineation, the project ecologist reviewed site aerial photography, topographic data, existing preliminary wetland and watershed mapping, and geology and soil survey maps of the Study Area and surrounding areas. This information was used to help characterize the Study Area, identify any potential Waters of the United States on a preliminary basis, and guide the field surveys. Background imagery and a project boundary map were loaded on to a professional GPS unit (Trimble GeoXH 6000) for use in navigation and mapping in the field.

4.2 Field Survey and Personnel

The delineation field survey was conducted on May 7, 2021, by Ivy Poisson (Ecologist, VNLC). During the survey, the ecologist traversed the entire Study Area, using detailed topographic and soils data as guides. The ecologist established delineation data points, recorded additional notes on plant community and site characteristics, and took representative photographs of habitats and features of interest. **Section 5** below presents summaries of the notes recorded during the field survey. A total of 5 delineation data points were established throughout the Study Area. At each data point, data were collected on soils, hydrology, and plant cover following the Routine Wetland Determination Method developed by the ACOE and described in the 1987 ACOE Wetlands Delineation Manual (Environmental Laboratory 1987) and the regional supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (ACOE 2010). The boundaries of all potential jurisdictional Waters identified in the Study Area were mapped using sub-meter precise GPS units.

The specific methods for collecting data on soils, hydrology, and plant cover at delineation data points are described below.

4.2.1 Soils

Soil profiles were taken at each data point using a tile spade shovel and/or a mattock (for difficult digging situations). Soils were examined for positive hydric soil indicators such as low matrix chromas, redox features, gleys, and iron and manganese concretions. The color and texture of the soil layers encountered were recorded on the delineation forms. A standardized soil texture chart used by the California Native Plant Society (CNPS) for assessing soils (adapted from Brewer and McCann 1982) was used to determine texture (e.g., clay versus clay loam, etc.). Soil color was identified using a Munsell soil color chart (Kollmorgen 2009). All soil samples were moistened before determining the color. Soil map units were cross-referenced with the California hydric soils list (SCS 1993) and the national hydric soils list (SCS 1991). Determination of whether or not the hydric soil criterion was met was based upon the criteria specified by the National Technical Committee for Hydric Soils (ibid) and the Western Mountains, Valleys, and Coast Supplement (ACOE 2010). In most cases, soils with a matrix chroma of 1, and mottled soils with a matrix chroma of 2 or less are considered to meet the hydric soil criteria. Soils that do not have low matrix chromas but are inundated or saturated within 12 inches of the surface are considered to be hydric when those conditions persist for at least 5 percent of the growing season (14 consecutive days). Topography and soil unit boundaries can be found on **Figures 3a-d**.

4.2.2 Hydrology

Indicators of wetland hydrology were noted, such as the presence of surface soil cracks, sediment deposits, sub-surface soil characteristics, and water-stained vegetation/thatch. To the extent possible, hydrological connectivity was investigated throughout the Study Area and surrounding habitats. This delineation was conducted in May, which experienced below average precipitation, and followed a winter and early spring that overall experienced below average precipitation (see **Section 2.2** and **Table 1** above). Based on plant

phenology, climate conditions appeared to be suitable for assessing wetland habitats, as perennial and annual seasonal wetland plant cover was conspicuous throughout the Study Area.

4.2.3 Vegetation

At each delineation data point, all herbaceous plant species within a five-foot radius were identified and a visual estimate of percent coverage for each species was recorded. The nearest trees and shrubs were accounted for at distances of 25 and 15 feet, respectively, as appropriate for the site. Plant species and strata cover estimations were calibrated using CNPS percent cover templates—see the following website: http://www.cnps.org/cnps/vegetation/pdf/percent_cover_diag-cnps.pdf.

The indicator status of each species was then checked using the most recent ACOE National Wetland Plant List—Version 3.4 (Army Corps, 2018). Indicator status categories are as follows:

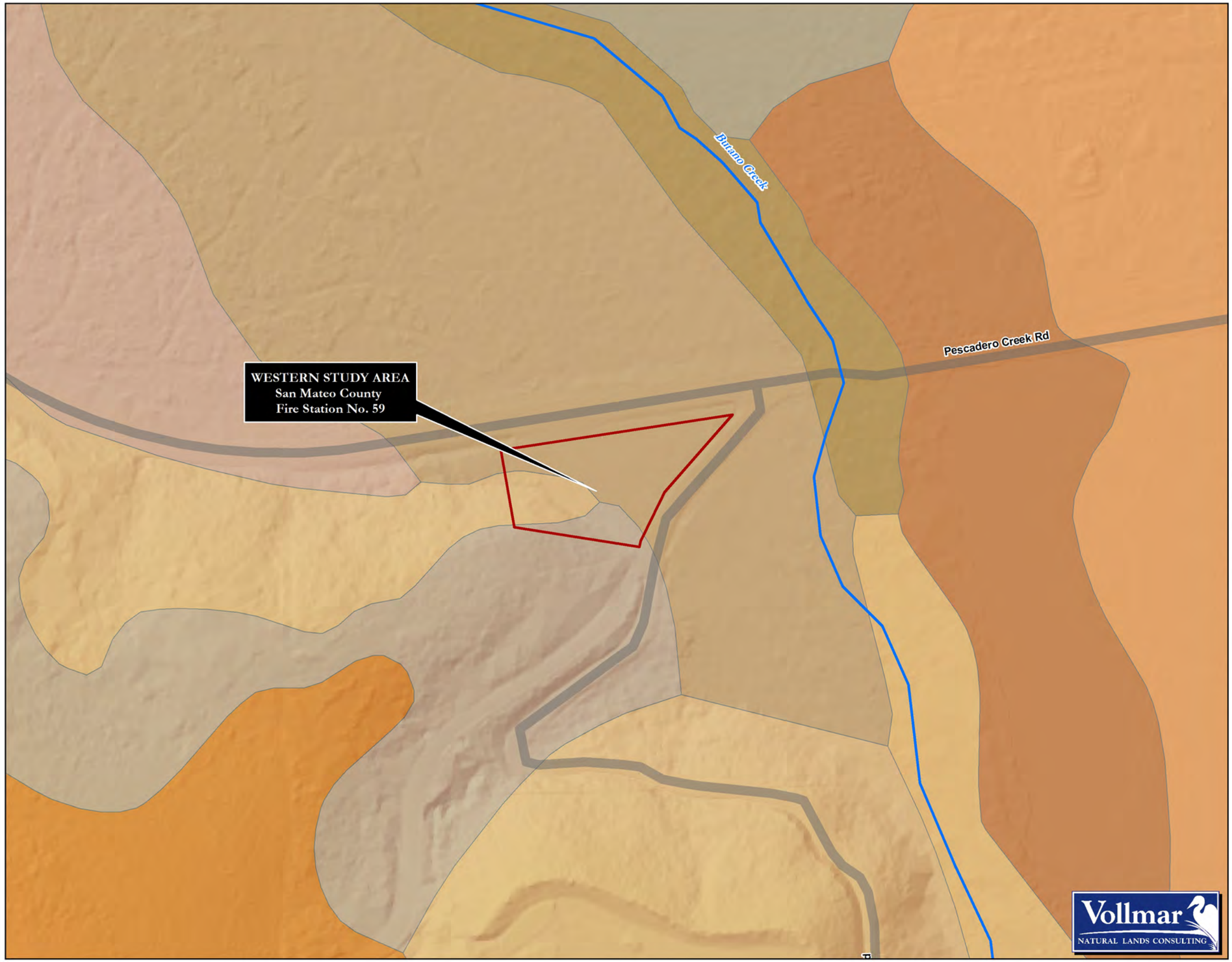
OBL = obligate wetland; >99% probability of occurring in a wetland
FACW = facultative wetland; 67%-99% probability of occurring in a wetland
FAC = facultative; 33%-67% probability of occurring in a wetland
FACU = facultative upland; 1%-33% probability of occurring in a wetland
UPL = obligate upland; <1% probability of occurring in a wetland
NL = not listed (plants not listed in Lichvar et al. [2018], including some known to occur occasionally or primarily in wetlands). Note: unlisted taxa are included as UPL on the delineation data forms included in **Appendix B**.

The wetland plant cover criterion is met when the vegetation passes the dominance test: greater than 50 percent of the dominant plants are designated as OBL, FACW, or FAC wetland indicators. The ACOE defines dominant plant species as those that, when included in descending order of their percent cover, together sum up to 50 percent of the relative cover in their stratum (tree, sapling/shrub/subshrub, herb, or woody vine). In addition, all species with at least 20 percent relative coverage of the total canopy within a stratum are always counted as dominants. All scientific and common plant names correspond to Baldwin et al. (2012) and/or the Calflora database (2021).

If the dominance test is not passed, vegetation can be considered hydrophytic if it meets the requirements of the prevalence index, morphological adaptations, or problematic wetland situations (ACOE 2008).

FIGURE 3a
Topography and Soil Units

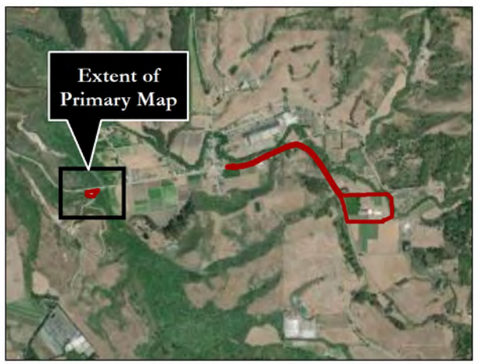
CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California



Project and Study Area (39.306 ac)

Road

Stream



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(1 in. = approx. 166 feet at tabloid layout)

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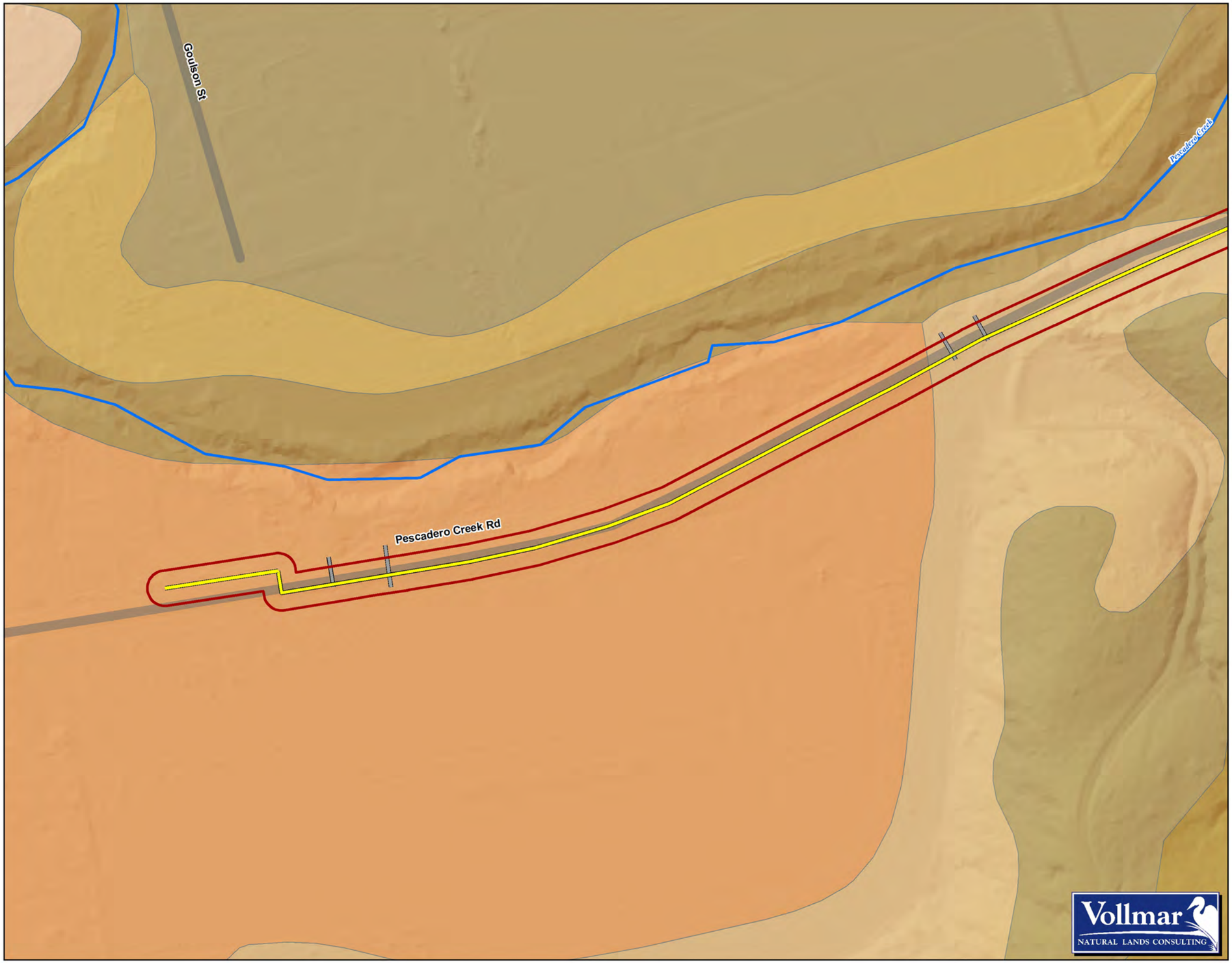
0 75 150 300 Feet

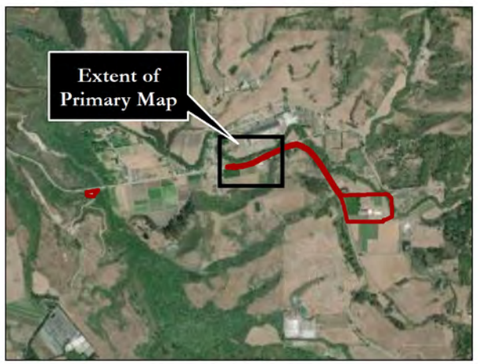
Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_Soils_B-P_2021-0517.mxd

FIGURE 3b
Topography and Soil Units

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California



- Project and Study Area (39.306 ac)
- Road
- Proposed Pipe Alignment
- Existing Water Conveyence Structures
- Stream



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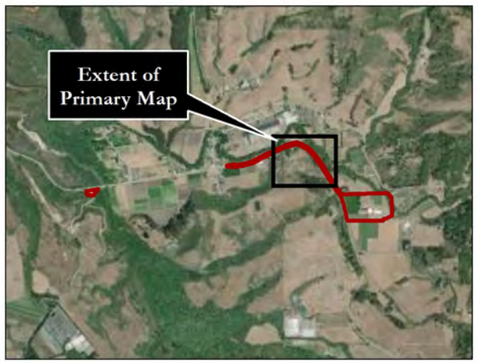
0 75 150 300 Feet

Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_Soils_B-P_2021-0517.mxd

FIGURE 3c
Topography and Soil Units

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects San Mateo County, California

- Project and Study Area (39.306 ac)
- Road
- Proposed Pipe Alignment
- Existing Water Conveyence Structures
- Stream
- Roadside Drainage Ditch



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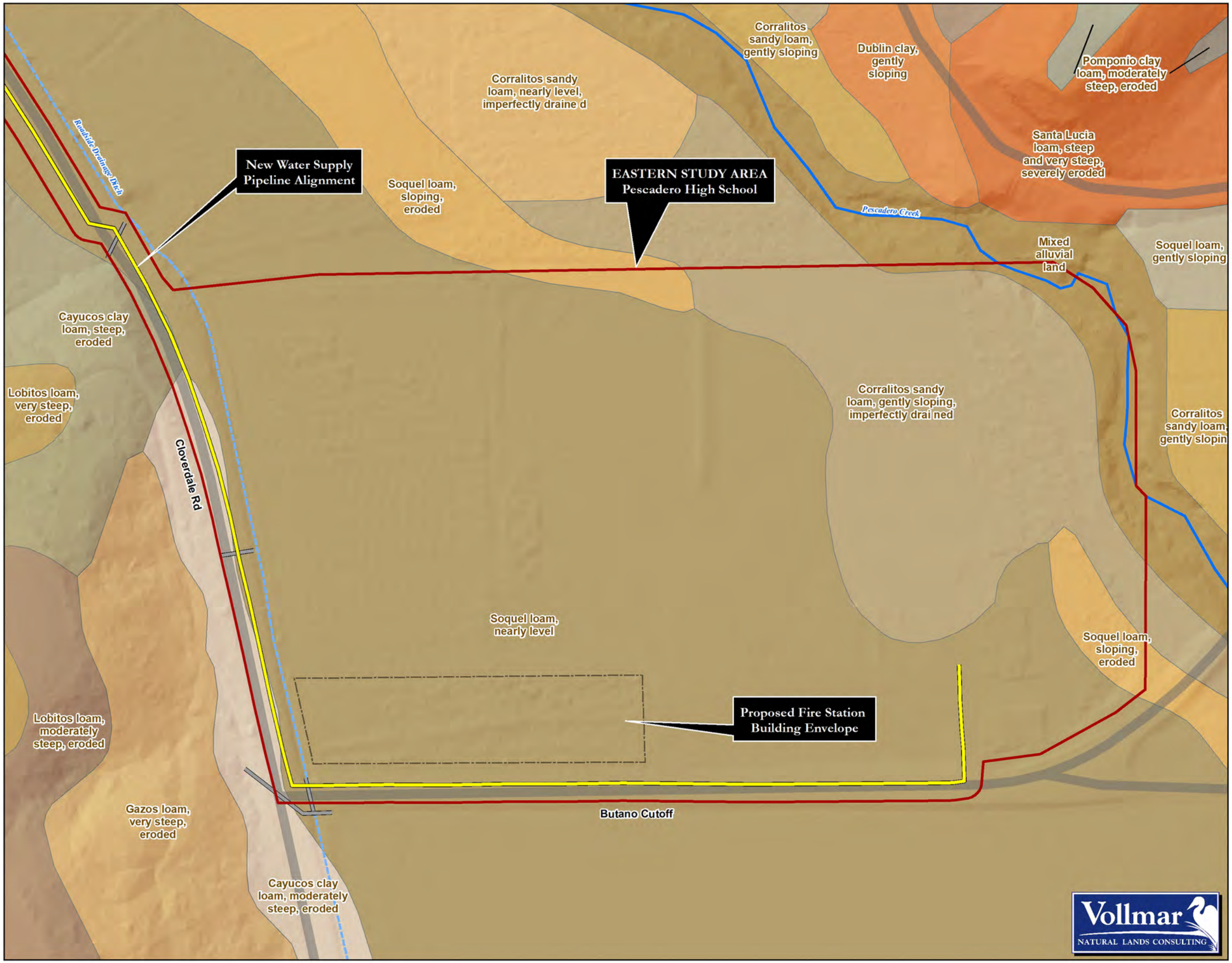
0 25 50 100 Meters

0 75 150 300 Feet

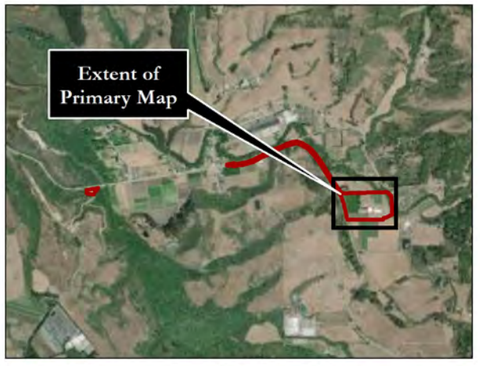
Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_Soils_B-P_2021-0517.mxd

FIGURE 3d
Topography and Soil Units

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California



- Project and Study Area (39.306 ac)
- Road
- Proposed Pipe Alignment
- Existing Water Conveyence Structures
- Stream
- Roadside Drainage Ditch



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(1 in. = approx. 166 feet at tabloid layout)

0 25 50 100 Meters

0 75 150 300 Feet

Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_Soils_B-P_2021-0517.mxd

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5.0 RESULTS

5.1 Overview

Within the 39.306-acre Study Area, the delineation identified a total of 2.123 acres of potentially jurisdictional wetlands. This includes 0.204 acre of emergent channel and 1.919 acre of riparian habitat. These features were determined to be outside of the building envelope for the fire station, and outside of the proposed pipeline alignment.

Table 2 below lists each of these habitat types, and all features are mapped on **Figure 4d**, which also provide acreage values for the individual features. General conditions, as well as vegetation, soil, and hydrology indicators of each wetland feature type are described below. **Appendix A** provides representative photographs of the habitats, and **Appendix B** presents the delineation data forms, of which there are 5, that were recorded throughout the Study Area.

TABLE 2. Acreage of Mapped Potential Jurisdictional Waters

Habitat Type	Cowardin Code	Agency Jurisdiction				Acreage
		Army Corps	CDFW	RWQCB	CCC	
Wetlands						
Riparian Habitat	R5	X	X	X	X	1.919
Emergent Channel	PEM1Ed	X		X	X	0.204
					TOTAL	**2.123**

5.2 Potential Jurisdictional Waters

5.2.1 Riparian Habitat

Feature RP01. This feature is 1.191 acre, and is habitat associated with Pescadero Creek located in the northeastern corner of the Pescadero High School property (see **Figure 4d**). Pescadero Creek is a perennial stream with a canopy of mature riparian vegetation and steep banks, approximately 10-20 feet from top of bank to the water level. The riparian habitat supported by Pescadero Creek features bed and bank topography and a semi-closed canopy with dense understory, consisting of a mix of both native and non-native plant species. Pescadero Creek flows in a northwesterly direction for 3.5 miles, then empties into the Pacific Ocean (a territorial sea). Delineation data points 01 and 02 are representative points for the riparian area, with point 01 representing upland conditions outside of the riparian habitat, and point 02 representing riparian habitat (**Figure 4d**).

The riparian corridor of Pescadero Creek is characterized by Arroyo willow (*Salix lasiolepis*, FACW) as a codominant species with Fremont's cottonwood (*Populus fremontii*). Species observed in the riparian understory include: cape ivy (*Delareia odorata*, FAC), poison hemlock (*Conium maculatum*, FAC), and giant horsetail (*Equisetum telmateia*, FACW). Some weedy upland species were intermixed, and include wild radish (*Raphanus sativus*, UPL), ripgut brome (*Bromus diandrus*, UPL), and black mustard (*Brassica nigra*, UPL). California blackberry (*Rubus ursinus*, FACU) is also commonly seen in the understory.

The paired delineation points were taken within the Corralitos soil series (**Figure 3d**). Both sample points had the same soil characteristics: a color of 10Y 3/2, no redoximorphic features, no restrictive layers, clay loam texture, and uniform soil profile. No hydric soil indicators were observed for either delineation point.

No indicators of wetland hydrology were observed at either delineation point. However, since the Study Area is located in a Coastal Zone (as mentioned previously), only one parameter is needed to be considered a wetland; the presence of hydrophytic vegetation at point 02 satisfies this condition.

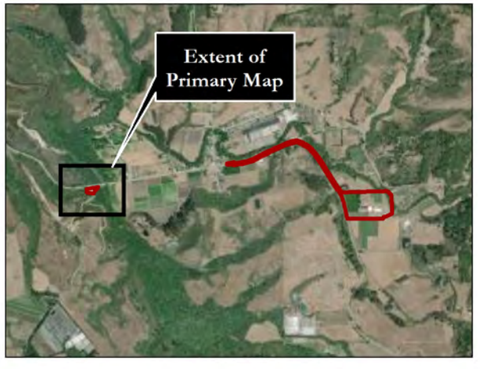
FIGURE 4a
Map of Potential Jurisdictional Waters

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California

Project and Study Area (39.306 ac)

Road

Stream



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(1 in. = approx. 166 feet at tabloid layout)

0 25 50 100 Meters

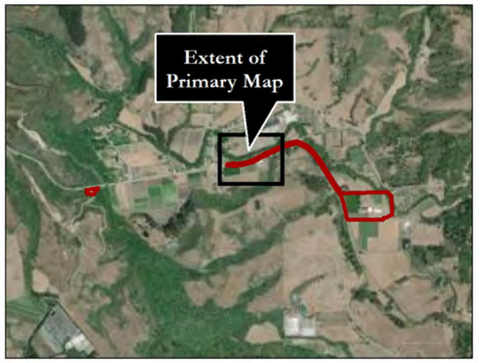
0 75 150 300 Feet

Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_WD_B-P_2021-0526.mxd

FIGURE 4b
Map of Potential Jurisdictional Waters

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California

- Project and Study Area (39.306 ac)
- Road
- Proposed Pipe Alignment
- Existing Water Conveyence Structures
- Stream



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(1 in. = approx. 166 feet at tabloid layout)

0 25 50 100 Meters

0 75 150 300 Feet

Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_WD_B-P_2021-0526.mxd

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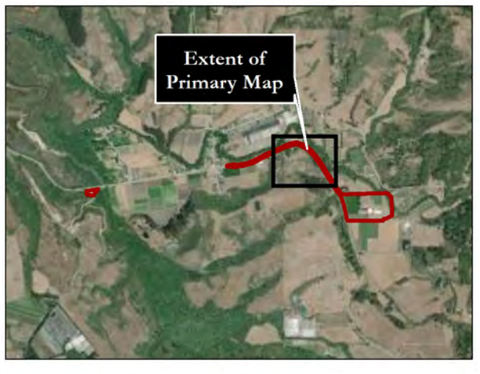
FIGURE 4c
Map of Potential Jurisdictional Waters

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California

- Project and Study Area (39.306 ac)
- Road
- Proposed Pipe Alignment
- Existing Water Conveyence Structures
- Stream
- Roadside Drainage Ditch



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S

1:2,000
(1 in. = approx. 166 feet at tabloid layout)

0 25 50 100 Meters

0 75 150 300 Feet

Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_WD_B-P_2021-0526.mxd

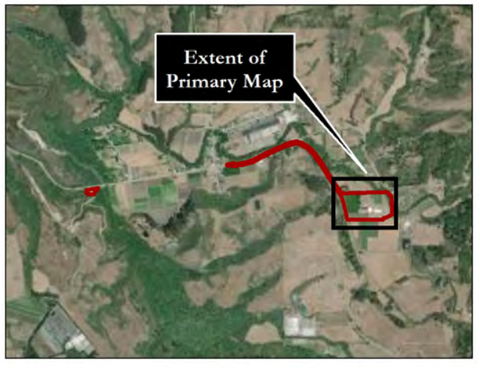
FIGURE 4d
Map of Potential Jurisdictional Waters

CSA-11 Water Service Extension and Pescadero Fire Station (Station 59) Projects
San Mateo County, California

- Project and Study Area (39.306 ac)
- Road
- Proposed Pipe Alignment
- Existing Water Conveyence Structures
- Stream
- Roadside Drainage Ditch
- Riparian Canopy Dripline
- Sample Points

Potentially Jurisdictional Features

- Emergent Channel (0.204 ac / 860 linear ft)
- Riparian (1.919 ac)



N
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1:2,000
(1 in. = approx. 166 feet at tabloid layout)

0 25 50 100 Meters

0 75 150 300 Feet

Data Sources: LSA, 2017 | TIGER, 2012 | DWR, 2001
GGNRA, 2020 | ESRI/DigitalGlobe, 2019
GIS/Cartography by: Ivy Poisson, Jan. 2021
Map File: 484_WD_B-P_2021-0526.mxd

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Tributaries are categorically listed as waters of the United States according to the 2020 Navigable Waters Protection Rule. Feature RP01 is likely to fall under Army Corps jurisdiction since Pescadero Creek contributes surface water to the Pacific Ocean, a territorial sea. Pescadero Creek would be classified as a perennial/intermittent stream, or tributary. Feature RP01 is also potentially considered a Water of the State by CDFW, RWQCB, and CCC.

5.2.2 Emergent Channel

Feature EC01. This feature is part of the roadside drainage ditch that connects to Pescadero Creek approximately ¼ mile north of the high school (see **Figure 4c** and **4d**). Delineation data point 05 represents the emergent channel habitat and point 04 is the paired upland point.

This feature supports emergent wetland species, with cattails (*Typha latifolia*, OBL) being dominant throughout the channel. Common rush (*Juncus effusus*, FACW) and giant horsetail was also observed to be growing in the channel, higher up along the edge of the feature.

Points 04 and 05 were taken within the Soquel soil series (**Figure 3d**). Point 05, located within the emergent channel, featured yellower soils, colored at 2.5YR 3/1. In contrast, the soil at point 04 was 10YR 2/1. The soil sample collected at the wetland point (Point 05) also contained higher organic materials; the soil was textured as mucky clay loam. This is also the only sample point within the Study Area that had hydric soil indicators: histosol (A1), black histic (A3), and hydrogen sulfide (A4). Both soil samples featured no redoximorphic features, no restrictive layers, and had a uniform soil profile.

Wetland hydrology indicators observed at point 05 include High Water Table (A2), Saturation (A3), Hydrogen Sulfide Odor (C1) as primary indicators, with Geomorphic Position (D2) as secondary indicator.

Three out of three hydric indicators (vegetation, soils, and hydrology) were present for this feature, which satisfies the one-parameter wetland definition for features in Coastal Zones.

This feature is potentially a Water of the U.S. under Army Corps jurisdiction, since this conveys surface water to Pescadero Creek, which is also potentially a water of the U.S. as described above. While ditches are typically categorically excluded as waters of the U.S., the exception is if there the ditch has water flowing more than in direct response to a single precipitation event in a typical year, which is the case for feature EC01. Since there was saturation and high water table observed within this channel (during a drier than normal year), it is reasonable that there would be intermittent surface water flow in a typical year. This feature is also potentially a Water of the State under RWQCB and CCC jurisdiction.

5.2.3 Upland Agricultural Features

Upland agricultural features are located on a field that gently slopes down towards the west, in the direction of the roadside drainage ditch. At the time of the site visit, these features were located on a recently tilled/fallow field, on a rosemary field, and on a field that was planted with fava beans (*Vicia faba*). A review of historical aerial imagery shows that this area is routinely disturbed as part of the ongoing agricultural operations. Delineation data point 03 is a representative point for this feature type (particularly: soils and hydrology), and this point was taken within the building envelope for the fire station.

The vegetation at point 03 is representative of cultivated/disturbed conditions, located approximately halfway across the proposed building envelope for the fire station. Species observed include fava bean (UPL), growing with other species characteristic of disturbed habitats like scarlet pimpernel (*Lysimachia arvensis*, FAC) and mustard (*Brassica nigra*, UPL). This point does not support wetland vegetation.

Point 03 was taken within the Soquel soil series (**Figure 3d**). The soil was textured to be silty clay loam, had a color of 10Y 2/1, had no redoximorphic features, had no restrictive layers, and had a uniform soil profile. No hydric soil indicators were observed.

At the time of the site visit (both on December 7, 2020 and May 7, 2021), there were no indications of direct-surface water connection from the agricultural features to the emergent channel feature to the west; these features are separated by an at-grade, unpaved roadway. Overall, there were no hydric indicators (vegetation, soils, and hydrology) present for these agricultural features.

This is an upland feature that would likely not be subject to federal, state, or county jurisdiction.

5.3 Summary

All 2.123 acres of wetlands identified within the 36.306-acre Study Area are potentially jurisdictional Waters of the U.S.; this consists of 1.919 acre of riparian habitat and 0.204 acre of emergent channel (see **Section 5.1**, **Table 2**). Waters of the U.S. delineated within the Study Area would be regulated by the ACOE under Section 404 of the Clean Water Act. The riparian habitat would also be regulated under Section 10 of the Rivers and Harbors Act.

These features are also potentially under state jurisdiction, with the riparian habitat potentially regulated by CDFW, RWQCB, and CCC. The emergent channel is potentially regulated by RWQCB and CCC.

The results of this delineation are preliminary and must be reviewed and verified in writing by the ACOE to be considered an official delineation.

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APPENDIX A:

REPRESENTATIVE PHOTOGRAPHS OF THE STUDY AREA

(Recorded May 7, 2021)

Representative Photographs of the Study Area

Point 01, facing south-southeast. Point 02 is located to the left of shovel, within riparian canopy.

Point 03, facing southwest, located within fava bean field.

Representative Photographs of the Study Area

Point 04, facing west. Cloverdale Road is shown in the background, with emergent channel in the middle of the photo, and upland edge of channel in the foreground (comprised of California blackberry).

Point 05, facing west. Pure stand of cattails growing in emergent channel.

Representative Photographs of the Study Area

Giant horsetail growing among upland plant species, in an upland area outside of the Pescadero Creek riparian corridor. This photo was taken in an area that was not subject to recent soil/veg disturbance, and may represent mesic, but not wetland, conditions. Equisetum species are known to colonize disturbed areas and may be weedy, indicating that it may not be the best indicator for wetland, particularly if it's the only wetland species occurring.

APPENDIX B:

WETLAND DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Pescadero Pipeline & Fire Station City/County: Pescadero, San Mateo Co Sampling Date: May 7, 2021
Applicant/Owner: Pescadero Unified School District, City of Pescadero State: CA Sampling Point: 01
Investigator(s): Ivy Poisson, VNLC Section, Township, Range: S11, T08S, R05W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0%
Subregion (LRR): A Lat: 4122572 Long: 556472 Datum: NAD 83
Soil Map Unit Name: Corralitos sandy loam, gently sloping, imperfectly drained NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Second consecutive year of drier than normal conditions. Point located outside of riparian area/top of bank; paired upland point for sampling point 02. Undisturbed area compared to adjacent fallow fields that have been mowed recently.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Conium maculatum*	40	Y	FAC
2. *Brassica nigra*	20	Y	UPL
3. *Silybum marianum*	10	N	UPL
4. *Raphanus sativus*	5	N	UPL
5. *Equisetum telmateia*	5	N	FACW
6. *Festuca perennis (Lolium perenne)*	5	N	FAC
7. *Bromus diandrus*	4	N	UPL
8. *Melilotus indicus*	1	N	FACU
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	45	x 3 =	135
FACU species	1	x 4 =	4
UPL species	39	x 5 =	195
Column Totals:	90 (A)		344 (B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:
Ruderal vegetation characteristic of disturbed areas. Vegetation appears to be the least disturbed near this survey plot, which is why this was selected as representative point.

SOIL

Sampling Point: 01

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18”	10YR 3/2	100					clay loam	friable soils

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): N/A

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

Remarks:
Uniform soil horizon throughout 18” soil profile. Expected of disturbed/developed site with potential imported fill.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	N/A
Water Table Present?	Yes	___	No	X	Depth (inches):	N/A
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	N/A

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
None

Remarks:
No wetland hydrology indicators observed

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Pescadero Pipeline & Fire Station City/County: Pescadero, San Mateo Co Sampling Date: May 7, 2021
Applicant/Owner: Pescadero Unified School District, City of Pescadero State: CA Sampling Point: 02
Investigator(s): Ivy Poisson, VNLC Section, Township, Range: S11, T08S, R05W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1-3%
Subregion (LRR): A Lat: 4122574 Long: 556477 Datum: NAD 83
Soil Map Unit Name: Corralitos sandy loam, gently sloping, imperfectly drained NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Is the Sampled Area within a Wetland? **Yes X No ___**

Remarks: Point located just within the edge of the riparian canopy drip line. Hydric soil and wetland hydrology indicators not observed; however, this satisfies the one-parameter wetland for coastal zones because of the presence of wetland vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 25 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	80	Y	FACW
2.			
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Delairea odorata*	30	Y	FAC
2. *Conium maculatum*	20	Y	FAC
3. *Bromus diandrus*	10	N	UPL
4. *Equisetum telmateia*	5	N	FACW
5. *Raphanus sativus*	5	N	UPL
6. *Rubus ursinus*	4	N	FACU
7. *Brassica nigra*	1	N	UPL
8.			
9.			
10.			
11.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	50	x 3 =	150
FACU species	4	x 4 =	16
UPL species	16	x 5 =	80
Column Totals:	75 (A)		256 (B)

Prevalence Index = B/A = 3.41

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

Remarks:
Survey plot is more representative of dry, outer edge of riparian habitat.

SOIL

Sampling Point: 02

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18”	10YR 3/2	100					clay loam	friable soils

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): N/A

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

Remarks:
Same soil type found at point 01. Uniform soil horizon throughout 18” soil profile. Expected of disturbed/developed site with potential imported fill.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
None

Remarks:
No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Pescadero Pipeline & Fire Station City/County: Pescadero, San Mateo Co Sampling Date: May 7, 2021
Applicant/Owner: Pescadero Unified School District, City of Pescadero State: CA Sampling Point: 03
Investigator(s): Ivy Poisson, VNLC Section, Township, Range: S11, T08S, R05W
Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none Slope (%): 1-3%
Subregion (LRR): A Lat: 4122502 Long: 556111 Datum: NAD 83
Soil Map Unit Name: Soquel loam, nearly level NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation X , Soil X , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Second consecutive year of drier than normal conditions. Located in cultivated field consisting of fava beans (*Vicia faba).* Elevation is slightly higher on the eastern end of the cultivated field; the field slopes down towards the roadside drainage ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Vicia faba*	16	Y	UPL
2. *Lysimachia arvensis*	2	N	FAC
3. *Brassica nigra*	2	N	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	18	x 5 =	90
Column Totals:	20 (A)		96 (B)

Prevalence Index = B/A = 4.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:
Located in cultivated field consisting of fava beans (*Vicia faba),* but with upland plant species growing among fava beans. Beans may be planted as cover crop/nitrogen fixer. Rosemary fields are located to the north. Vegetation is regularly disturbed for ag.

SOIL

Sampling Point: 03

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18”	10YR 2/1	100					silty clay loam	slightly blocky

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): N/A

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

Remarks:
Uniform soil horizon throughout 18” soil profile. Expected of disturbed/developed site that is regularly tilled for crops. Soil was moist (not saturated) below 2-4”. Dark soils may make detection of redox difficult; soil ped was left out for over 30 minutes and still no redox features were observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	N/A
Water Table Present?	Yes	___	No	X	Depth (inches):	N/A
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	N/A

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
None

Remarks:
No wetland hydrology indicators observed. Sample point located at slightly higher elevation compared to paired wetland point.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Pescadero Pipeline & Fire Station City/County: Pescadero, San Mateo Co Sampling Date: May 7, 2021
Applicant/Owner: Pescadero Unified School District, City of Pescadero State: CA Sampling Point: 04
Investigator(s): Ivy Poisson, VNLC Section, Township, Range: S11, T08S, R05W
Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): convex Slope (%): 5-7%
Subregion (LRR): A Lat: 4122498 Long: 556060 Datum: NAD 83
Soil Map Unit Name: Soquel loam, nearly level NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Second consecutive year of drier than normal conditions. Point taken at the edge of emergent channel feature.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Rubus ursinus*	50	Y	FACU
2. *Equisetum telmateia*	10	N	FACW
3. *Typha latifolia*	5	N	OBL
4. *Erodium cicutarium*	5	N	UPL
5. *Juncus effusus*	2	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	72	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 28

Dominance Test worksheet:

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	12	x 2 =	24
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	5	x 5 =	25
Column Totals:	72 (A)		254 (B)

Prevalence Index = B/A = 3.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:
Although this survey plot indicates mesic conditions (presence of FACW and OBL plants), the dominance of Rubus ursinus at the edge of the emergent ditch feature and indicates transition to upland.

SOIL

Sampling Point: 04

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-18”	10YR 2/1	100					silty clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): N/A

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

Remarks:
Less recently disturbed soils along the top of drain slope share same characteristics as soils found at points 03 and 04.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
None

Remarks:
No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Pescadero Pipeline & Fire Station City/County: Pescadero, San Mateo Co Sampling Date: May 7, 2021
Applicant/Owner: Pescadero Unified School District, City of Pescadero State: CA Sampling Point: 05
Investigator(s): Ivy Poisson, VNLC Section, Township, Range: S11, T08S, R05W
Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): concave Slope (%): 1-3%
Subregion (LRR): A Lat: 4122498 Long: 556058 Datum: NAD 83
Soil Map Unit Name: Soquel loam, nearly level NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: Second consecutive year of drier than normal conditions. Point taken within emergent channel in roadside ditch. Roadside ditch drains to Pescadero Creek, a TNW. Width of emergent channel is approx. 6-8 feet across.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Typha latifolia*	90	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Pure stand of cattails in emergent channel

SOIL

Sampling Point: 05

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-18”	2.5YR 3/1	100					mucky clay loam	

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

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

- X Histosol (A1)
- ___ Histic Epipedon (A2)
- X Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): N/A

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

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	N/A
Water Table Present?	Yes	X	No	___	Depth (inches):	18”
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	18”

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

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

None

Remarks:

Soil pit started backfilling with water. Steep/abrupt change in topography from upland point (05) to wetland point (06).