FINAL ◦ MARCH 2022

Preliminary Wetland Delineation for the Hawthorns Area of Windy Hill Open Space Preserve, San Mateo County, California

PREPARED FOR

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Stillwater Sciences. 2022. Preliminary Wetland Delineation for the Hawthorns Area of Windy Hill Open Space Preserve, San Mateo County, California. Prepared by Stillwater Sciences, Berkeley, California, for Midpeninsula Regional Open Space Preserve, Los Altos, California.

Cover photo: Oak and annual grassland covered hills in the Hawthorns Property (February 2022).

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1 INTRODUCTION

1.1 Background

The Hawthorns Property (Property) is a detached 78.71-acre area of the Windy Hill Open Space Preserve (Windy Hill) that was gifted to Midpeninsula Regional Open Space District (Midpen) in 2011 (Midpen 2022). To establish baseline conditions and facilitate future permitting that may be needed for the Property, Midpen contracted Stillwater Sciences to identify and delineate potential jurisdictional Waters of the U.S., including wetlands.

1.2 Location

The 80.1-acre Survey Area is located on the eastern foothills of the Santa Cruz Mountains, approximately 2.5 miles southeast of Searsville Lake in Portola Valley, San Mateo County (Figure 1). The Survey Area includes the entire Property— including approximately 1,300 feet of Los Trancos Creek on its southeastern edge— and is bounded by Alpine Road to the northwest and private residences to the southwest. The Survey Area also includes 2.1 acres between the Property boundary and the edge of Alpine Road (Figure 2), which encompasses a 2,700-foot section of Alpine Trail, and portions of the left bank (as viewed while facing downstream) of Los Trancos Creek, both of which are under Midpen ownership, as ownership extends to the centerline of Los Trancos Creek. Elevations in the Survey Area range from approximately 500 to 700 feet above sea level (Google Earth Pro 2022). Two trails border the Property: Sweet Springs Trail to the southwest, and Alpine Trail, which runs along Alpine Road to the northwest.

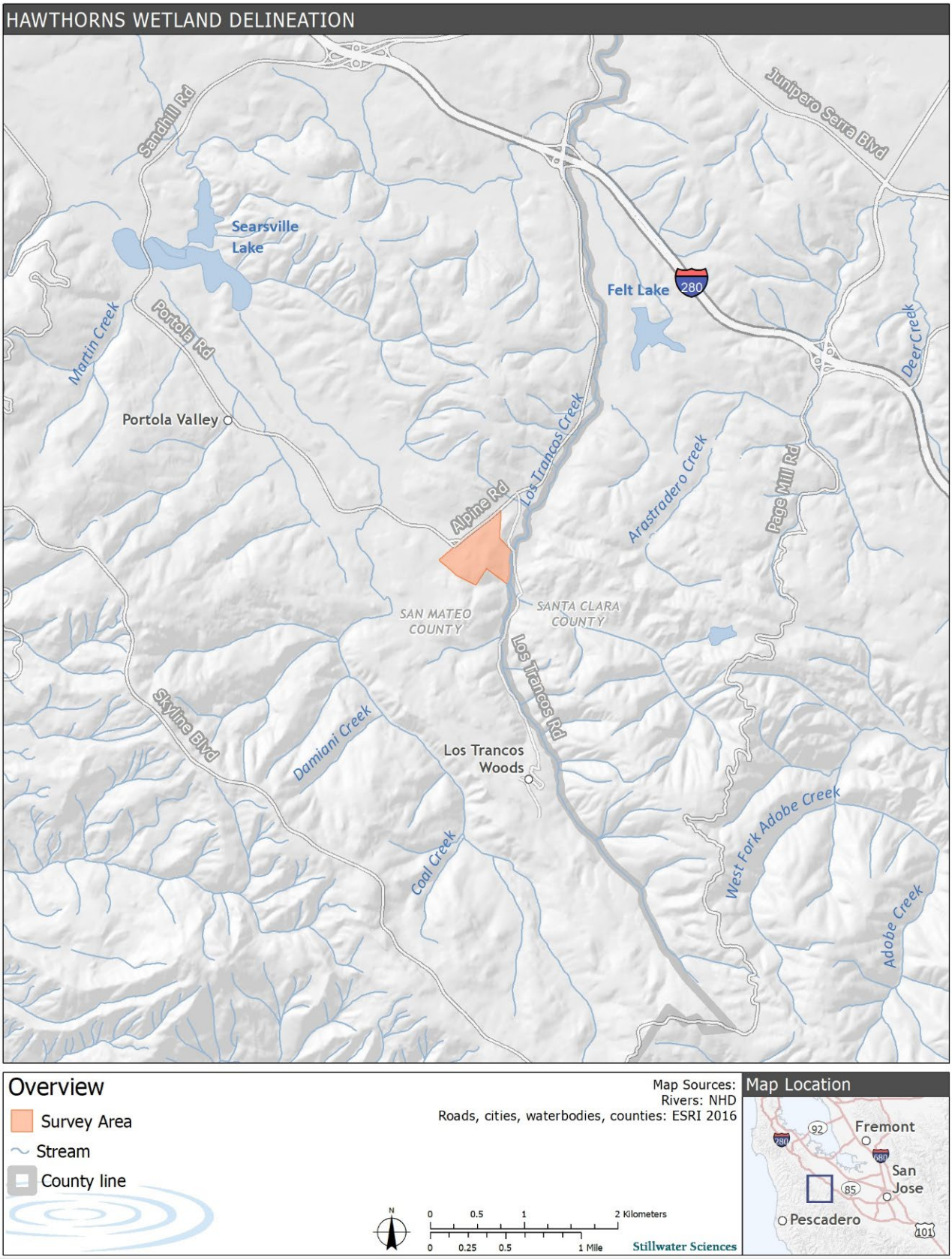

Figure 1. Hawthorns wetland delineation Survey Area overview.

Figure 2. Hawthorns wetland delineation Survey Area and Property boundary.

1.3 Purpose of the Wetland Delineation

The purpose of this wetland delineation is to assess the water and wetland resources in the Survey Area and delineate the boundaries of any Waters of the U.S., including wetlands, potentially subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act. The waters and wetland delineation in this report is considered preliminary until verified by the Regulatory Branch of the USACE, San Francisco District.

2 METHODS

2.1 Existing Conditions

Prior to the delineation of jurisdictional waters and wetlands, available data on hydrology, soil, precipitation, and vegetation were evaluated for the Survey Area. Information on potential water and wetland features in the Survey Area was obtained from the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) online application, Wetlands Mapper (USFWS 2021). Soil data for the Survey Area were downloaded from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) SSURGO database (USDA NRCS 2022a). The Hydric Soils List for the eastern part of San Mateo County and the western part of Santa Clara County (USDA NRCS 2022b) was referenced to determine if any mapped soil units located in the Survey Area were hydric soils. Precipitation records from the USDA NRCS were reviewed for nearby weather stations in Portola Valley (GHCND: US1CASM0009), Palo Alto (GHCND: USC00046646), and Moffett Federal Airfield (GHCND: USW00023244), California (USDA NRCS 2022c). Finally, the *2019 Botanical Resources Survey Report, Hawthorns Property* (Vollmar Natural Lands Consulting 2019) was reviewed.

2.2 Field Delineation

USACE has jurisdiction over Waters of the U.S., including wetlands, pursuant to Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. Section 404 of the CWA applies to all Waters of the U.S., including wetlands, which are defined in the U.S. Code of Federal Regulations (33 CFR 328.3). Additionally, per Section 10 of the Rivers and Harbors Act, the USACE has jurisdiction over all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide (i.e., traditionally navigable waters [TNWs]) as defined in the U.S. Code of Federal Regulations (33 CFR 328.3).

Delineations were conducted on February 1 and 2, 2022 by Stillwater Sciences wetland specialists and botanists (K. Rodriguez and C. Bilodeau) within the Survey Area[1] (Figure 2). All plant species were identified following the taxonomy of *Jepson eFlora* (Jepson Flora Project 2022). Vegetation cover types for the Survey Area are based on the San Mateo County Draft Enhanced Lifeform Map (Golden Gate National Parks Conservancy 2018).

[1] All fieldwork occurred on Midpen property or adjacent public property. No fieldwork occurred on private parcels, although observations of features on neighboring parcels were made from Midpen property.

2.2.1 Waters delineation

Delineations of Waters of the U.S. were conducted following the methods presented in *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (USACE 2008a) and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010). During the field delineation, the extent of non-wetland waters was delineated by the location of the Ordinary High Water Mark (OHWM). The OHWM is the signature of the active channel and is indicated by physical characteristics such as: topographic break in slope; a clear, natural line impressed on the bank; shelving; changes in sediment characteristics; changes in vegetation characteristics; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas (USACE 2005, 2008a). The extent of water features was delineated in the field by mapping the OHWM at representative cross-sections or transects within the feature. At each transect, the delineation team took photographs and measured the width of the channel at the OHWM. The OHWM was mapped with a sub-meter accuracy Global Positioning System (GPS) unit (Trimble Geo 7x). These data were subsequently post-processed and incorporated into a GIS shapefile. OHWM indicator point data taken in the field were extrapolated using 1-foot contours derived from LiDAR topography data (Santa Mateo County 2017). Waters were classified according to the *Classification of Wetlands and Deepwater Habitats of the United States* (FGDC 2013) based on the vegetation composition and structure at the sample points. Finally, all mapped water features were reviewed for connectivity to a TNW based on topography and maps of the associated watershed.

2.2.2 Wetland delineation

A delineation of jurisdictional wetlands within the Survey Area was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (USACE 2008b). The 1987 Manual and Arid West Supplement provide technical guidelines and methods for the three-parameter approach to determining the location and boundaries of potential USACE-jurisdictional wetlands. This approach requires that an area must support positive indicators of hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a potential jurisdictional wetland under Section 404 of the CWA. Connectivity of delineated wetlands to other waters and tributaries was evaluated in accordance with USACE RGL 07-01 (USACE 2007).

During the delineation, eight sample points in possible wetlands were assessed (Appendix C). If the sample point had met all three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) for a wetland, then a paired sample point would have been placed along the anticipated transition zone (the area in which a change from wetland to non-wetland conditions occurs) to delineate the wetland/upland boundary. If the sample point did not meet any of the three parameters, then the point was considered an upland location and a paired point was not sampled. At each sample point, a soil core was taken, and the following information was recorded using the USACE (2008b) data forms:

1. **Vegetation:** Dominant plant species for each stratum (i.e., tree, sapling/shrub, herb, woody vine) were identified by scientific name (genus and species) following the taxonomy of *Jepson eFlora* (Jepson Flora Project 2022). Absolute percent cover and dominance were determined using the 50/20 rule outlined in the Arid West Region Supplement, and the wetland indicator status (OBL [obligate], FACW [facultative-wet], FAC [facultative], FACU [facultative-upland], and UPL [upland]) defined for the Arid West Region in the *2020 National Wetland Plant List* (USACE 2020). Plant species not listed in the *National*

Wetland Plant List were considered upland (UPL) species. A dominance test was performed to determine if the sample point exhibited hydrophytic vegetation. If the dominance test was not conclusive and wetland hydrology and hydric soils were present, then the prevalence index was calculated.

2. **Hydrology:** Presence and depth of surface water, groundwater, and/or soil saturation were recorded. In addition, if primary (e.g., oxidized rhizospheres along living roots) and secondary indicators (e.g., drainage patterns, dry-season water table, saturation visible on aerial imagery) were observed, then they were also recorded at each sample point.
3. **Soils:** Moistened soil matrix descriptions were recorded for each sampling point using the following: depth of the sample, color (as defined in Munsell soil color charts [Munsell Color 2000]), and texture. When present, redox features were described by type (e.g., concentration, depletion, reduced matrix) and location (e.g., pore lining, root channel, or matrix). Hydric soil presence was evaluated using the Arid West Region Supplement primary indicators, such as depleted matrix (F3). In addition, mapped soil units (described in Section 3.2.2) were considered, and the Hydric Soils List (USDA NRCS 2022b) was consulted.

The locations of any sample points and wetland or waters borders were recorded using a sub-meter GPS unit (Trimble Geo 7x) in the field and subsequently post-processed, corrected, and incorporated into a GIS shapefile. Photographs were taken at any sample points to show representative site characteristics. If wetlands were identified, wetland boundaries would be extrapolated between sample points using the average elevation break and photographic interpretation.

3 RESULTS

3.1 Historical Conditions

The Hawthorns Property, so named because of a row of English hawthorn trees (*Crataegus monogyna*) that once grew at the site, was previously the site of a year-round family residence, summer retreat, and small-scale agricultural operation. For much of the 1800s, the primary uses of the area were agriculture, timber logging, and cattle grazing, for which Los Trancos Creek provided a reliable source of irrigation. The first known structure built on the Property was a large barn erected in 1875, followed by several houses built in 1885, 1886, and 1952, as well as several outbuildings scattered near the main structures (Knapp Architects 2013).

Though multiple structures and a few olive groves persist on the site, a large portion of the Property is undeveloped. The first available historical aerial photography in Google Earth is from 1953; this imagery depicts the section of the Los Trancos Creek riparian corridor adjacent to or within the Property boundary to have a similar extent to the current riparian corridor, albeit with less urban development in the surrounding area than exists today.

3.2 Existing Conditions

3.2.1 Hydrology

Much of the Survey Area drains to the east into Los Trancos Creek, which flows north into San Francisquito Creek approximately 2 miles north of the Survey Area. The northwestern slope of the Survey Area drains west into municipal storm drains that eventually join Los Trancos Creek

half a mile downstream of the Survey Area. Neither Los Trancos Creek nor San Francisquito Creek are included on the list of TNWs maintained by the San Francisco District of USACE (USACE 2022). In addition, Los Trancos Creek is not likely to meet the criteria for TNWs, as defined in the U.S. Code of Federal Regulations (33 CFR Part 329.4) and described by the USACE and the Environmental Protection Agency (EPA) (USACE and EPA 2007). After joining with Los Trancos Creek, San Francisquito Creek flows into San Francisco Bay, which is a TNW (USACE 2022).

The USFWS NWI *Wetlands Mapper* (USFWS 2021) online application, Wetlands Mapper, shows the Riverine wetland type within the Survey Area (Figure 3).

Figure 3. National Wetlands Inventory map of the Survey Area and vicinity.

3.2.2 Soil units

There are six mapped soil units in the Survey Area (Table 1, Figure 4, and Appendix A).

Table 1. Soil units in the Survey Area.

Soil Map Unit	Map Unit Setting	Existing Drainage Class	Landform	Typical Horizons	Hydric Components or Inclusions	Hydric Criteria	Acreage in Survey Area
Botella loam, 0 to 15% slopes	Elevation: 50 to 2,100 feet; Mean annual precipitation: 12 to 25 inches; Mean annual air temperatures: 57 to 62 degrees Fahrenheit (°F); Frost-free period: 250 to 350 days	well drained	valley bottoms, alluvial fans	clay loam, silty clay loam, heavy sandy clay loam, light sandy clay	none	n/a	0.1
Fagan loam, 5 to 50% slopes	Elevation: 200 to 1,500 feet; Mean annual precipitation: 24 to 35 inches; Mean annual air temperatures: 61 to 63 °F; Frost-free period: 220 to 260 days	well drained	uplands	light clay loam, heavy clay loam, clay, sandy clay loam, soft sandstone	none	n/a	50.4
Flaskan sandy clay loam, 5 to 9% slopes	Elevation: 40 to 300 feet; Mean annual precipitation: 14 to 24 inches; Mean annual air temperatures: 60 to 62 °F; Frost-free period: 275 to 325 days	well drained	alluvial fans	sandy loam, sandy clay loam, gravelly sandy clay loam	none	n/a	3.3
Francisquito-Urban land complex, 5 to 15% slopes	Elevation: 400 to 500 feet; Mean annual precipitation: 25 to 35 inches; Mean annual air temperatures: 57 °F; Frost-free period: 270 to 330 days	well drained	stream terraces	loam, clay loam, clay	none	n/a	16.1

Soil Map Unit	Map Unit Setting	Existing Drainage Class	Landform	Typical Horizons	Hydric Components or Inclusions	Hydric Criteria	Acreage in Survey Area
Lobitos loam, 5 to 50% slopes	Elevation: 200 to 1,000 feet; Mean annual precipitation: 25 to 35 inches; Mean annual air temperatures: 56 °F; Frost-free period: 270 to 300 days	well drained	uplands	loam, heavy loam, shaly clay loam, shaly loam	none	n/a	9.9
Los Gatos loam, steep slopes	Elevation: 200 to 4,000 feet; Mean annual precipitation: 20 to 70 inches; Mean annual air temperatures: 52 to 56 °F; Frost-free period: 200 to 330 days	well drained	steep mountainsides	light clay loam, clay loam, gravelly clay loam	none	n/a	0.3

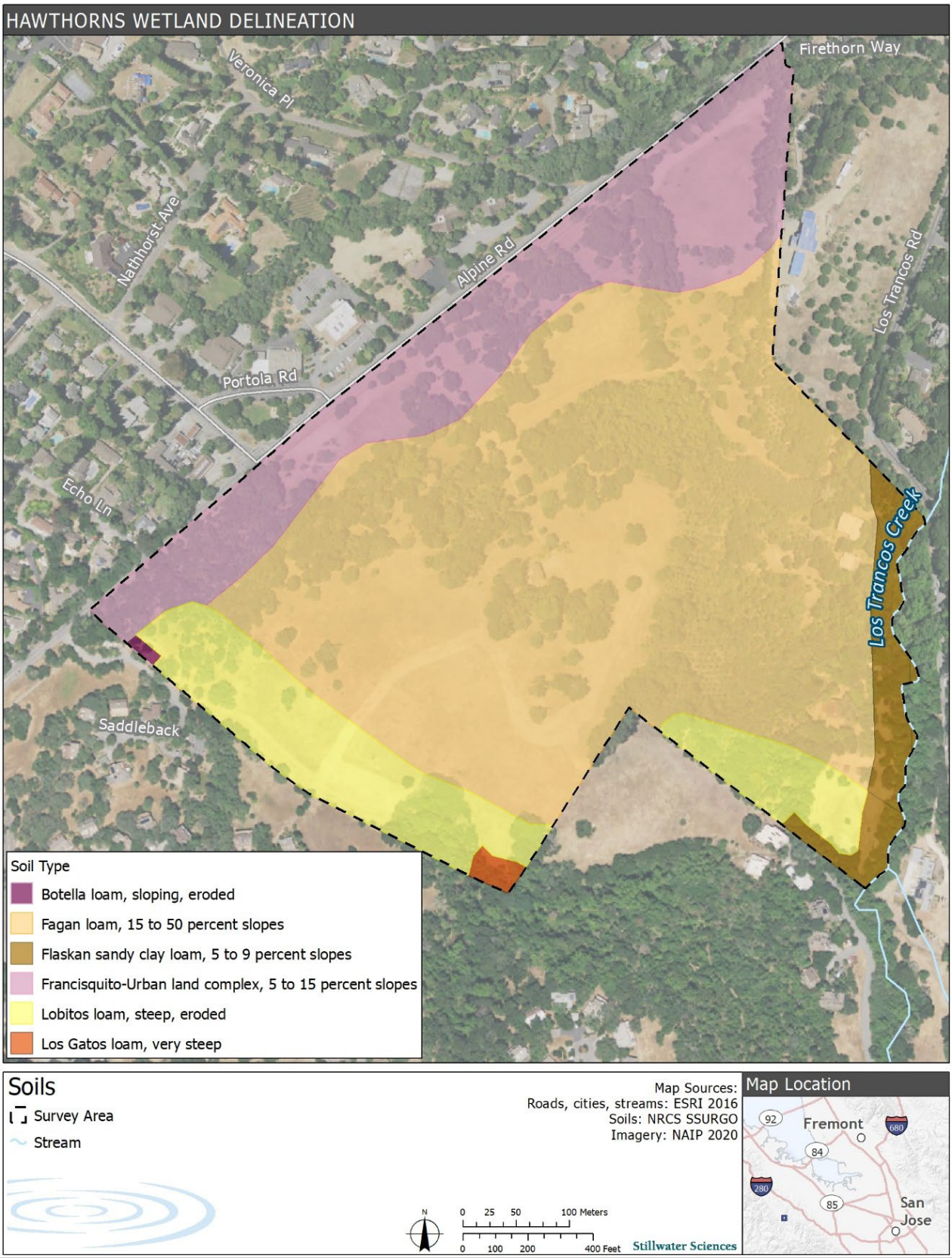

Figure 4. Soil units in the Survey Area.

3.2.3 Precipitation

The climate of Portola Valley is characterized by cool, wet winters and moderate, foggy summers (BAAQMD 2022). Appendix B includes the USDA NRCS Climate Analysis for Wetlands Table (WETS Table) for the National Weather Service Redwood City station, approximately 7.5 miles north of the Survey Area, for the period of record from 1945 to 2022 (USDA NRCS 2022c). The data record for this station contains the longest set of temperature and precipitation data available within ten miles of the Survey Area. The average temperature in Redwood City since 1945 was 59.3 °F; the average maximum monthly temperatures occur in August (81.8 °F), and the average minimums occur in January (39.6 °F). Average yearly rainfall in the area is approximately 18.3 inches. Based on daily minimum temperature values in the period of record, the average growing season is 365 days (50% probability, 28 °F); therefore, the wetland delineation was conducted within the growing season.

The total cumulative rainfall in Redwood City for the four-month period immediately preceding the field delineation (October 2021 through January 2022) was 13.61 inches, almost three inches more than the average cumulative rainfall for the same four-month period since 1945 (10.34 inches; USDA NRCS 2022c). In January, the month directly preceding the wetland delineation, Redwood City received 0.15 inches of rainfall (USDA NRCS 2022c) which is substantially lower than the January average since 1945 (3.82 inches). Despite a drier month leading up to the field survey, it was still possible to identify the OHWM and potential wetland areas based on field indicators, as described in Section 2.2.

3.2.4 Vegetation

The 80.1-acre Survey Area includes 77.9 acres of vegetated habitat dominated by a mix of herbaceous non-native annual grasses and native coast live oak (*Quercus agrifolia),* with small groves of planted European olive (*Olea europaea*) and a riparian corridor dominated by white alder (*Alnus rhombifolia*) (Table 2, Figure 5), as described in the following sections.

Table 2. Vegetation types in the Survey Area.

Type	Acres	Percent of Survey Area
Vegetation Types		
Deciduous Hardwood	3.9	4.9%
Evergreen Hardwood	42.6	53.2%
Herbaceous	28.8	36.0%
Orchard or Grove	2.6	3.3%
Pine and/or Cypress	<0.1	<0.1%
Total Vegetated	**77.9**	**97.3%**
Non-vegetation Types		
Developed	2.2	2.8%

[1] San Mateo County Draft Enhanced Lifeform Map, lifeform classes (Tukman Geospatial 2020).

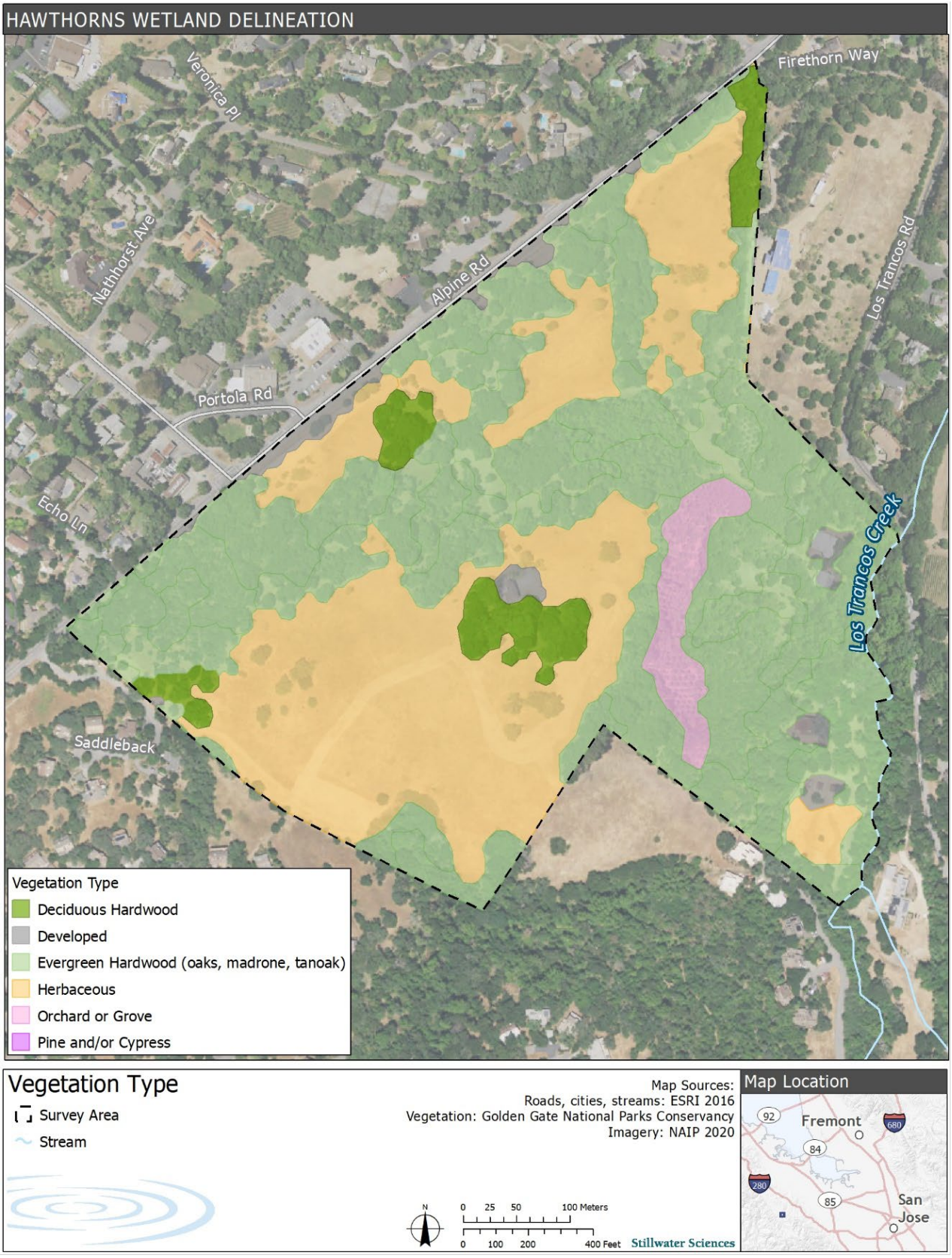

Figure 5. Vegetation types in the Survey Area.

3.2.4.1 Deciduous hardwood

In the Survey Area, deciduous hardwood was dominated by valley oak (*Quercus lobata*). Tree associates included blue oak (*Quercus douglasii*), and California buckeye (*Aesculus californica*). The shrub layer had low cover and included native shrubs such as western poison oak (*Toxicodendron diversilobum*; VLNC 2019). A total of 3.9 acres (4.9%) of deciduous hardwood were documented in the Survey Area (Table 2; Figure 5).

3.2.4.2 Evergreen hardwood

Across the Survey Area, evergreen hardwood was dominated by coast live oak and Pacific madrone (*Arbutus menziesii*). The shrub layer had low cover and included native shrubs such as western poison oak, toyon (*Heteromeles arbutifolia*), and California blackberry (*Rubus ursinus*; VLNC 2019). A total of 42.6 acres (53.2%) of evergreen hardwood were documented in the Survey Area (Table 2; Figure 5).

3.2.4.3 Herbaceous

The herbaceous vegetation type was dominated by the non-native slender wild oat (*Avena barbata*). Additional non-native herbaceous species included ripgut brome (*Bromus diandrus*), rose clover (*Trifolium hirtum*), and filaree species (*Erodium* spp.). No trees or shrubs were present (VLNC 2019). A total of 28.8 acres (36.0%) of the non-native herbaceous vegetation type were documented in the Survey Area (Table 2; Figure 5).

3.2.4.4 Orchard or grove

Groves of olive trees still occupy the Survey Area, along with coast live oak and English hawthorn. The shrub layer in the groves was sparse but included some dense patches of French broom (*Genista monspessulana*; VLNC 2019). A total of 2.6 acres (3.3%) of olive groves were documented in the Survey Area (Table 2; Figure 5).

3.2.4.5 Pine and/or Cypress

The pine and/or cypress vegetation type contained deodar cedar (*Cedrus deodara*), Monterey pine (*Pinus radiata*), and Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*; VLNC 2019). A total of 0.01 acres (0.01%) of the pine and/or cypress vegetation type were documented in the Survey Area (Table 2; Figure 5).

3.3 Preliminary Jurisdictional Waters and Wetlands

The 80.1-acre Survey Area contained 0.30 acres of potential Waters of the U.S. (Table 3; Figures 6–9; Appendix C). The portion of Los Trancos Creek that falls outside of the Survey Area (i.e., from the creek centerline to the OHWM on the right bank, as viewed while facing downstream) was delineated and contains an additional 0.23 acres of potential Waters of the U.S. as depicted in Figure 6 and Appendix C but not included in Table 3. No additional wetlands (e.g., wetlands that meet the three parameters described in Section 2.2.2, but which do not meet the connectivity requirements of Waters of the U.S. under Section 404 of the Clean Water Act) were observed within the Survey Area.

Table 3. Preliminary jurisdictional Waters of the U.S., including wetlands, in the Survey Area.

Feature	Acres
Potential Waters of the U.S.[1] within Survey Area	
Riverine, Intermittent streambed	0.06
Riverine, Upper Perennial, unconsolidated bottom (cobble-gravel)	0.24
Total	**0.30**

[1] Subject to Section 404 of the CWA.

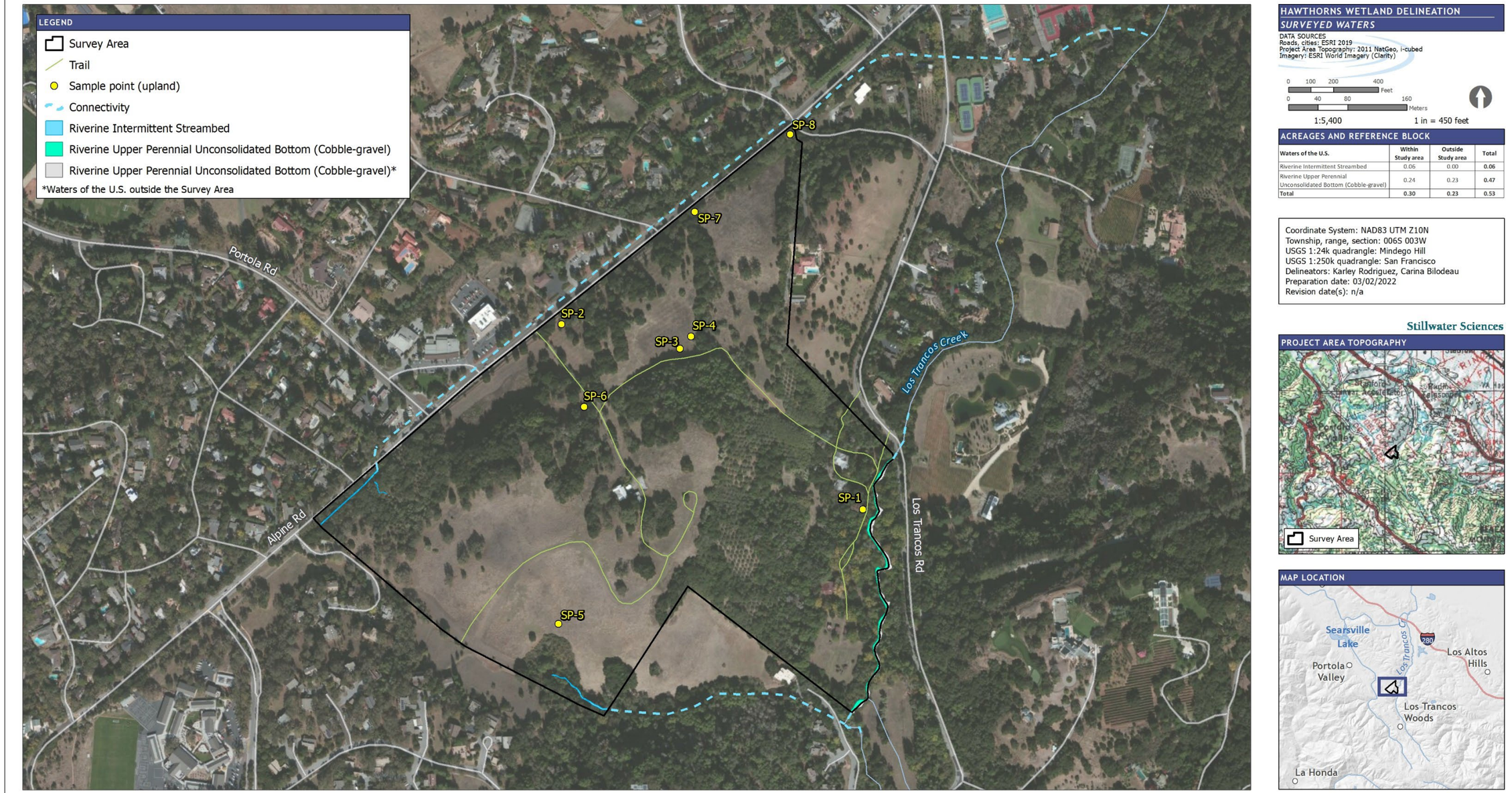

Figure 6. Overview of preliminary jurisdictional waters and wetlands sample points in the Survey Area.

Figure 7. Preliminary jurisdictional waters of Los Trancos Creek and wetlands sample points in the Survey Area.

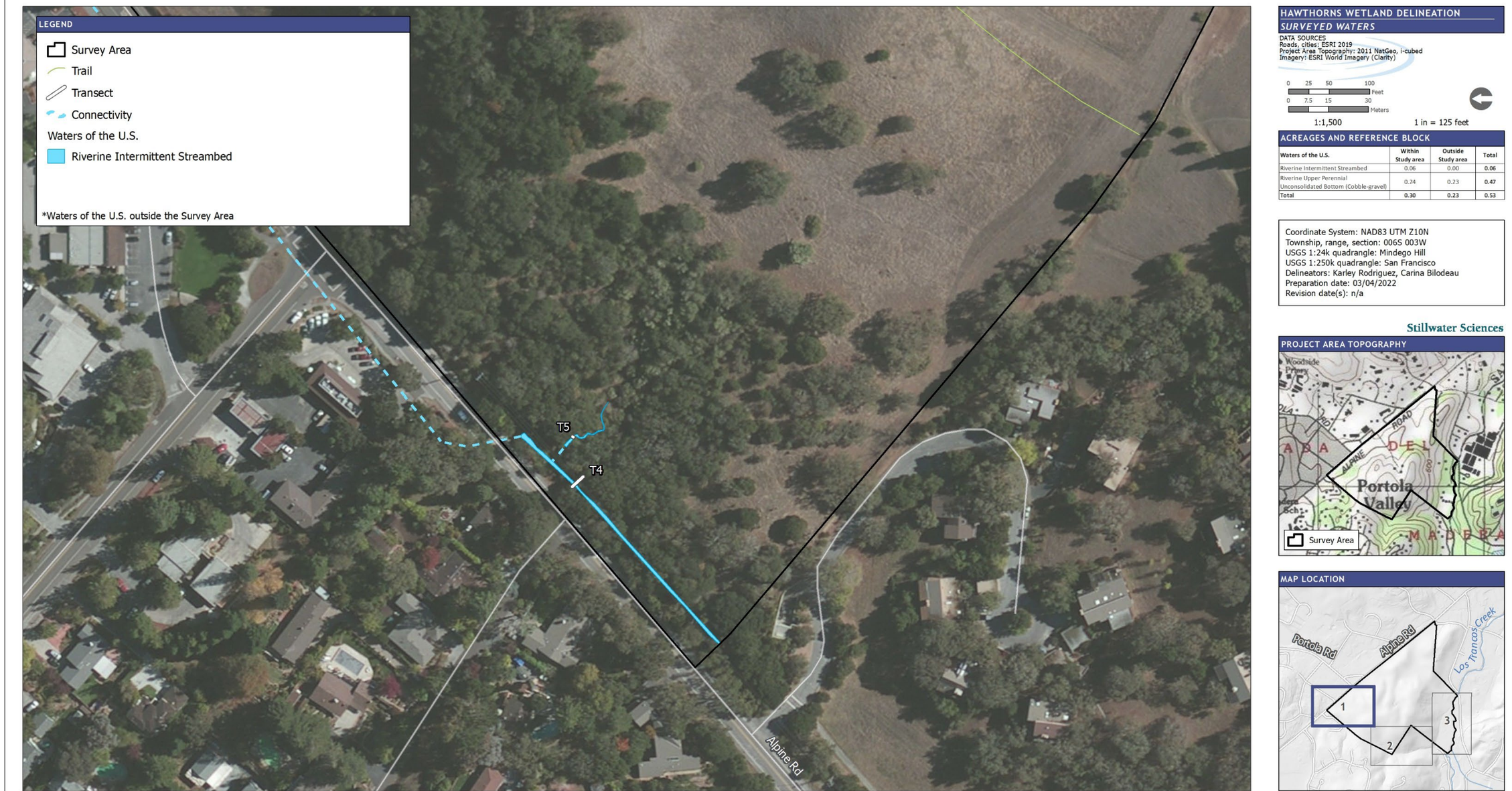

Figure 8. Preliminary jurisdictional waters and wetlands sample points in the Survey Area.

Figure 9. Preliminary jurisdictional waters and wetlands sample points in the Survey Area.

3.3.1 Waters of the U.S.

There were 0.30 acres of non-wetland Waters of the U.S. within the Survey Area that are potentially jurisdictional under Section 404 of the Clean Water Act (Table 3, Figure 6). Six transects were surveyed within the Survey Area to measure and characterize Waters of the U.S. Three transects were located on Los Trancos Creek (Figure 7), and three additional transects were taken for three drainages within the Survey Area (Figures 8 and 9). Field waters delineation data forms are included in Appendix C and representative photos of the OWHM are included in Appendix D.

The average width (horizontal distance between the right and left bank) of the OHWM for Los Trancos Creek within the Survey Area was approximately 13.3 feet (Figure 7). OHWM indicators (USACE 2005, 2008b) included change in average sediment texture, change in vegetation cover, and break in bank slope (Appendix C).

There were three other waters— all small drainages eventually reaching Los Trancos Creek either as direct tributaries or via municipal storm drains (Figures 8 and 9)— with average OHWM widths ranging from one to four feet. OHWM indicators (USACE 2005, 2008b) included break in bank slope for two of the drainages (Figures D-4 and D-6), change in vegetation cover for one of the drainages (Figure D-4), and a slight depression in the ground leading to a concrete drain for one of the drainages (Figure D-5).

Waters of the U.S. within the Survey Area were classified based on the wetland classification standard (FGDC 2013, adapted from Cowardin et al. 1979), and included Riverine Intermittent streambed and Riverine Upper Perennial unconsolidated bottom (cobble-gravel). The Riverine Intermittent streambed class describes a channel through which water flows only part of the year, contains variable substrate material and form, and which is not typically vegetated. The Riverine Upper Perennial unconsolidated bottom (cobble-gravel) class describes a channel with a high flow velocity, where water runs year-round, and whose substrate is less than 30 percent vegetated and consists of primarily cobbles and gravel with some finer sediments throughout.

3.3.2 Wetlands

No potential wetlands were documented above OHWM or elsewhere within the Survey Area (sample points 1–8; Appendix C).

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Appendices

Appendix A

Soil Survey and Hydric Soil Information

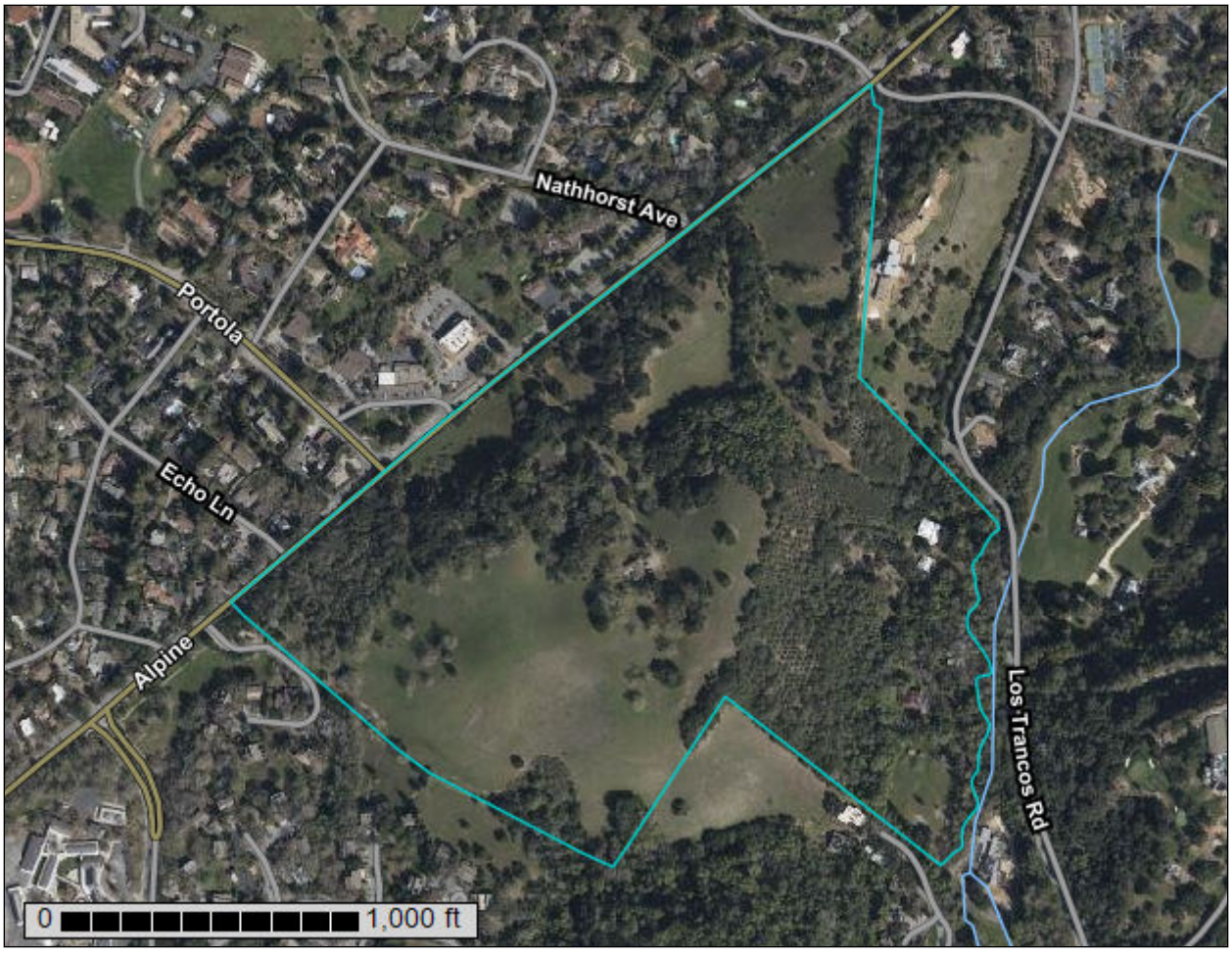
United States Department of Agriculture

NRCS

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 San Mateo Area, California; San Mateo County, Eastern Part, and San Francisco County, California; and Santa Clara Area, California, Western Part



March 4, 2022

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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Contents

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.

Custom Soil Resource Report
Soil Map (Hawthorns)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,000 to 1:24,000.

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 scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Mateo Area, California
Survey Area Data: Version 15, Sep 9, 2021

Soil Survey Area: San Mateo County, Eastern Part, and San Francisco County, California
Survey Area Data: Version 17, Sep 9, 2021

Soil Survey Area: Santa Clara Area, California, Western Part
Survey Area Data: Version 10, Sep 9, 2021

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

MAP LEGEND

MAP INFORMATION

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.

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

Date(s) aerial images were photographed: Mar 4, 2021—Mar 21, 2021

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 (Hawthorns)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
143scl	Flaskan sandy clay loam, 5 to 9 percent slopes	0.9	1.1%
BeC2	Botella loam, sloping, eroded	0.1	0.1%
LIE2	Lobitos loam, steep, eroded	9.9	12.3%
LzF	Los Gatos loam, very steep	0.3	0.4%
Subtotals for Soil Survey Area		**11.2**	**14.0%**
Totals for Area of Interest		**80.1**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
113	Fagan loam, 15 to 50 percent slopes	50.4	63.0%
114	Francisquito-Urban land complex, 5 to 15 percent slopes	16.1	20.1%
143scl	Flaskan sandy clay loam, 5 to 9 percent slopes	2.3	2.9%
Subtotals for Soil Survey Area		**68.8**	**85.9%**
Totals for Area of Interest		**80.1**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
143	Flaskan sandy clay loam, 5 to 9 percent slopes	0.1	0.1%
Subtotals for Soil Survey Area		**0.1**	**0.1%**
Totals for Area of Interest		**80.1**	**100.0%**

Map Unit Descriptions (Hawthorns)

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.

San Mateo Area, California

143scl—Flaskan sandy clay loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2pcm6
Elevation: 100 to 830 feet
Mean annual precipitation: 14 to 24 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

Flaskan, sandy clay loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Flaskan, Sandy Clay Loam

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics

Typical profile

Ap - 0 to 5 inches: sandy clay loam
A - 5 to 18 inches: sandy clay loam
AB - 18 to 30 inches: sandy clay loam
Bt1 - 30 to 45 inches: gravelly clay loam
Bt2 - 45 to 51 inches: gravelly sandy clay loam
C - 51 to 59 inches: very gravelly sandy clay loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R014XG917CA - Dry Loamy Fan
Hydric soil rating: No

Minor Components

Minlum

Percent of map unit: 5 percent
Landform: Terraces, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Pachic haploxerolls, loamy-skeletal

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Stevenscreek

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

BeC2—Botella loam, sloping, eroded

Map Unit Setting

National map unit symbol: h9v8
Elevation: 50 to 800 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 57 to 59 degrees F
Frost-free period: 250 to 350 days
Farmland classification: Not prime farmland

Map Unit Composition

Botella and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Botella

Setting

Landform: Benches, terraces, alluvial fans
Landform position (two-dimensional): Toeslope, backslope
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 20 inches: loam
H2 - 20 to 60 inches: silty clay loam

Properties and qualities
Slope: 7 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups
Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R014XG912CA - Loamy Terrace
Hydric soil rating: No

Minor Components

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

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

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

LIE2—Lobitos loam, steep, eroded

Map Unit Setting
National map unit symbol: h9z2
Elevation: 200 to 1,000 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 270 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Lobitos and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lobitos

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Shale

Typical profile

H1 - 0 to 18 inches: loam
H2 - 18 to 29 inches: channery clay loam
H3 - 29 to 34 inches: channery loam
H4 - 34 to 38 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 41 percent
Depth to restrictive feature: 34 to 38 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R015XY014CA - Loamy Mountains 20-40"ppt
Hydric soil rating: No

Minor Components

Gazos

Percent of map unit: 10 percent
Hydric soil rating: No

Pomponio

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

LzF—Los Gatos loam, very steep

Map Unit Setting

National map unit symbol: h9zh
Elevation: 400 to 2,380 feet
Mean annual precipitation: 30 to 70 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Los gatos and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Los Gatos

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Sedimentary rock

Typical profile

H1 - 0 to 15 inches: loam
H2 - 15 to 22 inches: gravelly clay loam
H3 - 22 to 26 inches: unweathered bedrock

Properties and qualities

Slope: 46 to 75 percent
Depth to restrictive feature: 22 to 26 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R004BO200CA - Windy Coastal Plains
Hydric soil rating: No

Minor Components

Hugo

Percent of map unit: 10 percent
Hydric soil rating: No

Josephine

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

San Mateo County, Eastern Part, and San Francisco County, California

113—Fagan loam, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: h9gv
Elevation: 200 to 1,990 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 55 to 59 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Fagan and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fagan

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 5 inches: loam
H2 - 5 to 26 inches: clay loam
H3 - 26 to 43 inches: clay
H4 - 43 to 47 inches: weathered bedrock

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: 40 to 60 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
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R015XY009CA - Hills 20-40"ppt
Hydric soil rating: No

Minor Components

Obispo
Percent of map unit: 4 percent
Hydric soil rating: No

Maymen
Percent of map unit: 4 percent
Hydric soil rating: No

Rock outcrop
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 3 percent
Hydric soil rating: No

114—Francisquito-Urban land complex, 5 to 15 percent slopes

Map Unit Setting
National map unit symbol: h9gw
Elevation: 400 to 500 feet
Mean annual precipitation: 25 to 35 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition
Francisquito and similar soils: 45 percent
Urban land: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Francisquito

Setting
Landform: Terraces
Landform position (two-dimensional): Toeslope, backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile
H1 - 0 to 16 inches: loam
H2 - 16 to 26 inches: clay loam
H3 - 26 to 50 inches: clay
H4 - 50 to 60 inches: clay loam

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
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
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R014XG912CA - Loamy Terrace
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Fagan

Percent of map unit: 3 percent
Hydric soil rating: No

Orthents, cut&fill

Percent of map unit: 3 percent
Hydric soil rating: No

Botella

Percent of map unit: 3 percent
Hydric soil rating: No

Los gatos

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 3 percent
Hydric soil rating: No

143scl—Flaskan sandy clay loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2pclt
Elevation: 100 to 830 feet
Mean annual precipitation: 14 to 24 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

Flaskan, sandy clay loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Flaskan, Sandy Clay Loam

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics

Typical profile

Ap - 0 to 5 inches: sandy clay loam
A - 5 to 18 inches: sandy clay loam
AB - 18 to 30 inches: sandy clay loam
Bt1 - 30 to 45 inches: gravelly clay loam
Bt2 - 45 to 51 inches: gravelly sandy clay loam
C - 51 to 59 inches: very gravelly sandy clay loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R014XG917CA - Dry Loamy Fan
Hydric soil rating: No

Minor Components

Stevenscreek
Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Pachic haploxerolls, loamy-skeletal
Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Minlum
Percent of map unit: 5 percent
Landform: Terraces, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Santa Clara Area, California, Western Part

143—Flaskan sandy clay loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 261r6
Elevation: 100 to 830 feet
Mean annual precipitation: 14 to 24 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

Flaskan, sandy clay loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Flaskan, Sandy Clay Loam

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics

Typical profile

Ap - 0 to 5 inches: sandy clay loam
A - 5 to 18 inches: sandy clay loam
AB - 18 to 30 inches: sandy clay loam
Bt1 - 30 to 45 inches: gravelly clay loam
Bt2 - 45 to 51 inches: gravelly sandy clay loam
C - 51 to 59 inches: very gravelly sandy clay loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R014XG917CA - Dry Loamy Fan
Hydric soil rating: No

Minor Components

Minlum

Percent of map unit: 5 percent
Landform: Terraces, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Pachic haploxerolls, loamy-skeletal

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Stevenscreek

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

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Soil Data Access (SDA) Hydric Soils List

An SDA-populated select list is used to pick a state and SSA which enables creation of a "Hydric Soils Report" based upon those selections. The data is not static; it hits Soil Data Access Live. To reset the table hit F5 on the keyboard. Once a survey is selected and table appears, if a new survey is selected it will append to the table at the bottom. For more information about the table,

California

selected stateId = CA

San Mateo County, Eastern Part, and San Francisco County, California

selected SSA areasymbol = CA689

State_Sym	Area_Symbol	Area_Name	mukey	Mapunit_SYM	Mapunit_Name	Comp_Name_phase	muacres	Comp_RV_Pct	majcompflag	Comp_Acres	Comp_Landform	microfeature	Hydric_Rating	hydric_criteria
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455978	117	Novato clay, 0 to 1 percent slopes	Novato	1665	85	Yes	1415.3	salt marshes	null	Yes	2, 3, 4
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455978	117	Novato clay, 0 to 1 percent slopes	Unnamed, drained	1665	5	No	83.3	salt marshes	null	Yes	2
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455978	117	Novato clay, 0 to 1 percent slopes	Unnamed, stratified organic surface	1665	5	No	83.3	salt marshes	null	Yes	2
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455979	118	Novato clay, 0 to 1 percent slopes ponded	Novato	3310	85	Yes	2813.5	salt marshes	null	Yes	2, 3
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455979	118	Novato clay, 0 to 1 percent slopes ponded	Reyes	3310	3	No	99.3	salt marshes	null	Yes	2
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455987	126	Reyes clay, 0 to 1 percent slopes	Reyes	2816	85	Yes	2393.6	tidal flats	null	Yes	2
CA	CA689	San Mateo County, Eastern Part,	455987	126	Reyes clay, 0 to 1 percent slopes	Unnamed, stratified organic	2816	5	No	140.8	tidal flats	null	Yes	2

		and San Francisco County, California												
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455987	126	Reyes clay, 0 to 1 percent slopes	Reyes, very poorly drained	2816	5	No	140.8	tidal flats	null	Yes	2
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455990	129	Sirdrak sand, 5 to 50 percent slopes	Beaches	2190	3	No	65.7	beaches	null	Yes	4
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455990	129	Sirdrak sand, 5 to 50 percent slopes	Unnamed	2190	1	No	21.9	tidal flats	null	Yes	2, 3, 4
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	2483801	131scl	Urban land-Elpaloalto complex, 0 to 2 percent slopes	Hangerone, DRAINED	385	2	No	7.7	basin floors	null	Yes	2
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455995	134	Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes	Novato	18094	2	No	361.9	salt marshes	null	Yes	2, 3
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	455995	134	Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes	Reyes	18094	1	No	180.9	salt marshes	null	Yes	2
CA	CA689	San Mateo County, Eastern Part, and San Francisco County, California	2483808	155scl	Novato clay, 0 to 1 percent slopes, tidally flooded	Novato, tidally flooded	203	95	Yes	192.9	marshes	null	Yes	2, 4

Report Metadata: Back to top

- **Area_Symbol:** A symbol that uniquely identifies a single occurrence of a particular type of area (e.g. Dane Co., Wisconsin is WI025).
- **Area_Name:** The name given to the specified geographic area.
- **mukey:** A non-connotative string of characters used to uniquely identify a record in the Mapunit table.

- **Mapunit_SYM:** The symbol used to uniquely identify the soil mapunit in the soil survey.
- **Mapunit_Name:** Correlated name of the mapunit (recommended name or field name for surveys in progress).
- **Comp_Name_phase:** Component name - Name assigned to a component based on its range of properties. Local Phase - Phase criterion to be used at a local level, in conjunction with "component name" to help identify a soil component.
- **muacres:** The number of acres of a particular mapunit.
- **Comp_RV_Pct:** The percentage of the component of the mapunit.
- **majcompflag:** Indicates whether or not a component is a major component in the mapunit.
- **Comp_Acres:** The number of acres of a particular component in a mapunit. ((muacres*comppct_r)/100)
- **Comp_Landform:** A word or group of words used to name a feature on the earth's surface, expressed in the plural form. Column Physical
- **Hydric_Rating:** A yes/no field that indicates whether or not a map unit component is classified as a "hydric soil". If rated as hydric, the specific criteria met are listed in the Component Hydric Criteria table.
- **Hydric_criteria:** Criterion code for the soil characteristic(s) and/or feature(s) that cause the map unit component to be classified as a "hydric soil." These codes are the paragraph numbers in the hydric soil criteria publication.

Criteria:

1. All Histels except Folistels and Histosols except Folists; or
2. Map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that:
    a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
    b. Show evidence that the soil meets the definition of a hydric soil;
3. Map unit components that are frequently ponded for long duration or very long duration during the growing season that:
    a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
    b. Show evidence that the soil meets the definition of a hydric soil; or
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
    a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
    b. Show evidence that the soils meet the definition of a hydric soil.

Appendix B

WETS Table

WETS Table

WETS Station: REDWOOD CITY, CA								
Requested years: 1945 - 2022								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	58.6	39.6	49.1	3.82	1.72	4.59	6	0.0
Feb	62.2	41.9	52.0	3.26	1.30	3.92	6	0.0
Mar	65.4	43.8	54.6	2.81	1.15	3.41	6	0.0
Apr	70.0	45.5	57.8	1.19	0.41	1.37	3	0.0
May	74.3	49.1	61.7	0.39	0.11	0.36	1	0.0
Jun	79.7	52.8	66.3	0.10	0.00	0.07	0	0.0
Jul	82.1	55.1	68.6	0.02	0.00	0.00	0	0.0
Aug	81.8	55.1	68.4	0.05	0.00	0.00	0	0.0
Sep	80.7	53.4	67.0	0.17	0.00	0.10	0	0.0
Oct	74.8	49.2	62.0	1.04	0.28	1.02	2	0.0
Nov	65.3	43.7	54.5	2.20	0.74	2.54	4	0.0
Dec	58.6	40.0	49.3	3.63	1.47	4.36	6	0.0
Annual:					14.49	22.50		
Average	71.1	47.4	59.3	-	-	-	-	-
Total	-	-	-	18.68			36	0.0

GROWING SEASON DATES			
Years with missing data:	24 deg = 7	28 deg = 12	32 deg = 9
Years with no occurrence:	24 deg = 70	28 deg = 47	32 deg = 4
Data years used:	24 deg = 71	28 deg = 66	32 deg = 69
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	No occurrence	No occurrence	1/31 to 12/13: 316 days
70 percent *	No occurrence	No occurrence	1/22 to 12/23: 335 days
* Percent chance of the growing season occurring between the Beginning and Ending dates.			

STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1906				0.98	1.52	0.83						M2.19	5.52
1907	M2.95	2.72	M7.86	MT	0.28	0.60			0.09	M0.92		4.32	19.74
1908	3.15	3.93	0.93	0.20	0.47				M0.01	M0.24	0.70	2.10	11.73
1909	11.63	5.97	2.75						M0.96	M1.05	M1.41	M4.81	28.58
1910	M3.47	M0.65	M2.43							M0.30	M0.35	M0.45	7.65
1911		M0.61		M0.83						0.10		M1.81	3.35
1912	M1.40	0.29			0.68	1.01			0.50	M0.05	0.49	0.71	5.13
1913	3.17	0.60	M1.07	0.29	0.57	0.00	0.24	0.00		0.00	M4.69	M4.42	15.05

1914	M10.76	4.56	0.63	0.64	M0.06	0.27			0.00	0.54	0.64	5.01	23.11
1915	4.51	M7.64	1.72	0.60	M2.10	0.00	0.00	0.00	0.00	0.00	0.38	M7.08	24.03
1916	13.66	1.59	0.87	0.00	0.03		0.00	M0.10	0.71	M1.18	0.57	M4.63	23.34
1917	M0.86	M4.86	M0.73										6.45
1918		M1.98	M3.63	M0.40									6.01
1919													
1920													
1921													
1922													
1923													
1924													
1925													
1926													
1927													
1928													
1929													
1930										0.57	1.42	0.25	2.24
1931	4.96	0.87	1.16	0.45	0.79	0.75	0.01		T	0.45	1.66	9.14	20.24
1932	2.76	3.23	0.17	0.45	0.20	T	0.00	0.00	0.00	0.00	0.27	2.77	9.85
1933	5.86	0.60	2.96	0.13	1.21	0.05	0.00	0.00	0.02	1.09	0.00	5.55	17.47
1934	1.07	3.83	T	0.30	0.28	0.67	0.00	T	0.16	0.69	2.91	2.67	12.58
1935	5.21	1.01	4.15	3.71	0.00	0.00	0.00	0.31	T	1.55	0.41	2.03	18.38
1936	3.82	8.19	0.98	1.48	0.12	0.15	0.01	0.00	0.00	0.42	0.02	4.91	20.10
1937	4.64	5.67	6.54	0.87	0.02	0.31	0.00	0.00		0.82	2.97	4.01	25.85
1938	3.25	7.73	6.26	1.55	0.00	0.00	0.00	0.00	0.06	1.11	1.30	1.29	22.55
1939	2.94	1.66	1.58	0.66	1.05	0.00	0.00	0.00	0.44	1.08	0.33	0.72	10.46
1940	12.28	8.99	M4.88	M0.36	0.32	0.00	0.00	0.00	M0.27	0.68	M0.41	M7.59	35.78
1941	M6.72	6.99	M3.39	4.04	M0.41	0.05	0.01	T	0.00	0.98	1.13	M7.10	30.82
1942	5.62	3.03	2.45	2.91	1.64	0.00	0.00	0.00	0.15	1.14	3.06	2.43	22.43
1943	7.65	1.78	3.15	1.32	T	0.02	0.00	0.00	T	0.55	0.65	1.86	16.98
1944	3.19	6.30	1.03	0.99	0.50	T	0.00	0.00	0.00	1.67	4.09	3.13	20.90
1945	0.65	4.80	3.46	0.30	0.39	T	T	T	T	2.21	2.33	6.04	20.18
1946	1.05	1.64	2.19	0.04	0.27	0.00	0.20	0.00	0.04	0.19	4.56	2.93	13.11
1947	0.99	1.59	2.91	0.19	0.15	0.43	0.00	T	T	2.84	0.76	1.33	11.19
1948	0.26	M1.61	3.14	3.35	0.41	0.00	0.02	0.00	0.00	0.25	M0.12	4.10	13.26
1949	1.20	3.39	4.91	T	0.72	0.01	0.09	0.21	0.03	0.07	1.54	2.09	14.26
1950	7.44	2.52	1.47	1.05	0.53	0.03	0.00	0.00	T	1.66	6.54	5.69	26.93
1951	2.92	2.21	1.18	0.89	0.64	0.02	0.00	T	T	1.03	2.58	9.34	20.81
1952	8.57	1.90	4.43	0.80	0.25	0.09	0.03	0.00	0.01	0.14	2.51	10.19	28.92
1953	3.12	0.04	1.76	2.11	0.48	0.16	0.00	0.03	T	0.	2.44	0.	10.

										24		36	74
1954	4.33	2.67	3.07	0.98	0.04	0.24	0.00	0.00	0.00	0.02	2.30	4.00	17.65
1955	4.58	1.71	0.11	1.55	0.60	0.00	T	0.00	0.00	T	1.45	14.16	24.16
1956	7.85	2.36	0.19	0.94	0.93	0.01	M0.00	0.00	0.22	1.10	0.00	0.35	13.95
1957	2.97	4.06	1.42	1.32	2.76	T	T	0.00	0.72	1.95	0.66	4.12	19.98
1958	4.61	8.82	6.52	6.37	0.30	0.20	0.00	0.00	0.10	0.01	0.12	1.06	28.11
1959	5.05	4.55	0.14	0.21	T	0.00	0.00	0.02	3.07	0.00	T	1.65	14.69
1960	4.51	4.57	0.89	0.65	0.63	0.00	T	0.00	T	0.05	3.15	0.99	15.44
1961	1.95	0.83	2.70	0.94	0.76	0.03	0.00	0.02	0.36	0.19	3.11	1.77	12.66
1962	1.84	7.58	3.29	0.25	T	0.00	0.00	0.01	0.01	6.39	0.33	2.82	22.52
1963	4.46	3.20	3.63	2.92	0.55	T	0.00	T	0.29	0.95	3.98	0.26	20.24
1964	3.60	0.27	1.67	0.13	0.56	0.75	T	0.08	0.00	1.30	3.59	6.63	18.58
1965	3.88	1.08	1.96	3.25	0.00	T	0.00	0.07	0.01	T	4.45	5.17	19.87
1966	2.18	1.81	0.24	0.66	0.13	0.09	0.30	0.04	0.10	T	4.04	3.56	13.15
1967	10.90	0.17	5.44	4.68	0.15	0.52	0.00	0.00	0.00	0.25	1.33	2.86	26.30
1968	5.44	1.42	3.43	0.78	0.07	0.00	0.00	0.11	0.00	0.37	1.95	4.75	18.32
1969	9.39	8.90	1.42	1.79	0.01	0.04	0.00	0.00	0.01	1.24	0.73	4.11	27.64
1970	8.77	2.04	1.43	0.40	0.04	0.06	0.00	0.00	0.00	0.74	6.69	7.42	27.59
1971	1.22	0.36	2.73	0.73	0.21	0.00	0.01	0.35	0.12	0.03	0.81	4.36	10.93
1972	1.15	1.21	0.09	0.86	0.00	0.08	0.00	0.00	0.47	4.19	6.29	1.80	16.14
1973	7.61	6.07	2.09	0.11	T	0.00	0.00	0.00	0.03	1.96	7.36	4.83	30.06
1974	3.46	1.05	4.64	2.11	T	0.13	0.22	0.00	0.00	1.20	0.69	2.59	16.09
1975	1.50	4.33	5.72	1.57	T	0.11	0.13	0.46	T	1.55	0.22	0.22	15.81
1976	0.27	1.92	0.84	0.79	0.00	0.03	0.02	0.90	0.52	0.38	1.11	1.23	8.01
1977	1.46	0.86	1.97	0.01	1.07	0.00	0.10	T	0.85	0.25	2.17	3.49	12.23
1978	9.05	4.95	5.01	2.83	0.02	0.00	0.00	0.00	0.36	T	1.73	0.52	24.47
1979	5.73	4.94	3.53	1.00	0.38	0.00	0.23	0.00	0.00	2.08	1.65	M1.03	20.57
1980	4.56	8.08	1.79	1.43	0.10	0.02	0.10	0.00	T	0.05	0.07	2.54	18.74
1981	7.21	2.50	4.39	0.19	0.06	0.00	0.00	0.00	0.26	2.20	7.23	5.20	29.24
1982	7.29	3.41	8.23	3.27	0.00	0.10	0.00	0.02	1.03	2.05	5.94	5.25	36.59
1983	8.07	7.36	9.20	3.58	0.37	0.00	0.00	0.00	0.37	0.69	7.09	6.09	42.82
1984	0.46	1.66	1.58	0.54	0.00	0.03	T	0.20	0.22	1.83	5.67	2.03	14.22
1985	0.66	1.97	4.15	0.08	0.45	0.15	0.05	0.01	0.18	0.99	M2.87	2.57	14.13
1986	2.98	10.06		0.67	0.45	0.00	0.03	0.00	0.63	T	0.04	1.33	16.19
1987	2.84	5.01	1.60	0.22	0.03	T	0.00	0.00	0.	1.	1.60	3.	16.

									00	05		93	28
1988	3.31	0.58	0.05	1.65	0.24	0.03	0.00	0.00	0.00	0.18	1.87	M3.09	11.00
1989	1.59	1.37	3.27	0.95	0.05	0.03	0.00	0.00	0.64	1.72	1.42	T	11.04
1990	2.48	2.68	0.76	0.18	1.61	0.00	0.01	0.00	0.11	0.20	0.09	2.04	10.16
1991	0.33	2.94	7.87	0.33	0.15	0.15	0.00	0.17	0.13	1.70	0.40	2.63	16.80
1992	1.85	6.34	3.05	0.20	0.00	0.20	0.00	0.05	T	1.58	0.09	6.26	19.62
1993	9.81	4.78	2.51	0.63	0.44	0.31	0.00	0.00	0.00	0.41	1.40	2.08	22.37
1994	1.97	4.90	0.40	0.99	1.52	0.00	0.00	0.00	0.08	0.62	5.30	2.30	18.08
1995	8.55	0.13	8.45	1.16	1.53	0.69	0.00	0.00	0.00	0.00	0.00	6.10	26.61
1996	6.51	6.26	3.11	1.01	1.06	0.00	0.00	0.00	0.00	0.60	2.29	6.46	27.30
1997	7.84	0.08	0.31	0.28	0.37	0.35	0.00	0.81	T	0.62	7.60	2.61	20.87
1998	7.48	12.42	2.43	2.05	2.23	T	0.00	0.00	0.06	0.70	3.26	0.89	31.52
1999		4.33	3.46	1.77	0.03	0.39	0.00	0.06	0.22	0.32	M1.53	0.34	12.45
2000			2.36	0.92		0.13	0.00			M2.57	0.77	0.21	6.96
2001	2.44	4.48	1.48	0.83	0.00	T	0.00		0.19	0.36	4.54	6.50	20.82
2002	M0.24	1.40		0.21	0.28	0.00	0.00	0.00	0.00		1.38	11.75	15.26
2003	1.58	1.36	M0.25	3.75	0.64	0.00	T	0.00	0.00	0.00	1.27	M6.44	15.29
2004	4.60	5.12	0.47		0.00	0.00	0.00	0.00	0.03	4.41	0.64	6.07	21.34
2005		4.47	4.35	1.90	0.75	0.27		0.00	0.02	M0.00			11.76
2006	2.25				0.47	0.00	0.00	0.00	0.00		0.49	1.98	5.19
2007	0.59	3.04	0.26	0.46	M0.03	0.00	0.00	0.00	0.29	1.16	0.01	2.42	8.26
2008	M4.43	2.42		0.00	0.00	M0.00	M0.00	M0.00	M0.00	M0.00	M0.00	M3.86	10.71
2009	M1.18	M4.78	2.06	M0.02	0.43	0.06	0.01	0.00	0.24	3.88	0.13	2.25	15.04
2010	6.33	2.88	2.31	2.83	0.66	0.00	0.00	0.00	0.00	M0.14	2.50	M1.75	19.40
2011	M0.70	4.36	5.43	0.18	0.34	M1.04	0.00	0.00	0.00	M0.97	M1.21	M0.04	14.27
2012	M2.82	1.00	6.17	3.12	0.02	0.17	0.00	0.00	0.00	M1.75	3.71	M6.40	25.16
2013	M0.30	0.50	0.71	0.51	0.01	0.03	0.00	0.00	M0.00	0.00	0.53	M0.04	2.63
2014	0.00	3.59	1.60	0.84	0.00	0.00	0.00	0.00	0.60	0.35	M1.00	10.73	18.71
2015	0.00	M0.01	0.05	M0.01	0.04	0.10	0.00	0.00	0.01	0.02	2.04	3.89	6.17
2016	5.20	0.97	6.82	M0.69	0.00	0.00	0.00	0.00	0.00	3.64	1.19	3.51	22.02
2017	10.42	7.52	3.05	M2.18	0.00	0.01	0.00	M0.00	0.01	0.21	M0.92	0.08	24.40
2018	4.44	0.26	4.17	1.41	0.00	0.00	0.00	0.00	0.00	0.00	M0.07	1.77	12.12
2019	5.00	7.45	3.87	0.26	1.87	0.00	0.00	0.00	0.03	0.00	M1.00	3.56	23.04
2020	1.17	0.00	2.12	1.30	M0.35	0.01	0.00	0.00	0.00	0.00	0.41	1.11	6.47
2021	M3.00	0.66	1.13	0.00	0.00	0.00	0.00	0.00	0.	5.	0.29	M7.	18.

					00	48	69	25
2022	M0.15	0.03	M0.00					0.18
Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.								
Data missing for all days in a month or year is blank.								
Creation date: 2022-03-03								

Appendix C

Routine Waters of the U.S. Data Forms

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hawthorns Wetland Delineation
Project Number: 703.13
Stream: Los Trancos Creek
Investigator(s): Karley Rodriguez, Carina Bilodeau

Date: 02/01/2022 **Time:** 8:30am
Town: Portola Valley **State:** CA
Photo begin file#: 3977 **Photo end file#:** 3980

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Portola Valley, along Los Trancos Creek Road within Hawthorn Area of Windy Hill Preserve

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
Homes, agriculture, horses

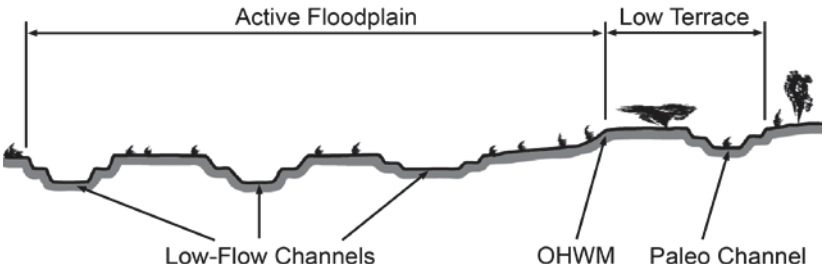
Brief site description:
Creek alongside two-lane road (Los Trancos Creek Rd).

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

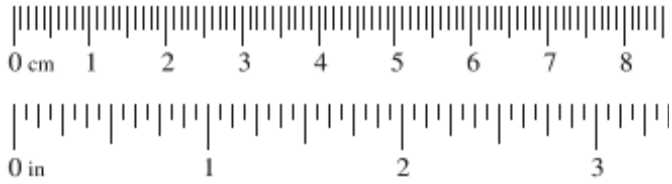


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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 characteristic of one of the hydrogeomorphic floodplain units.
   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.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

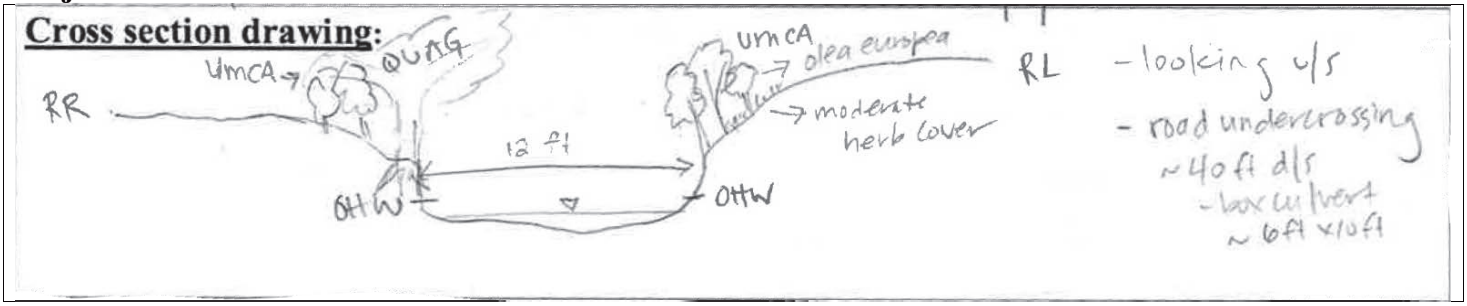
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 703.13 **Cross section ID:** T-1 **Date:** 02/01/2022 **Time:** 8:30am

Cross section drawing:



OHWM

GPS point: T1 RL OHW

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

photos:
3977: OHW on RL, boot
3978, 3981: looking downstream
3979: OHW on RB
3980: looking upstream
3982: overview

Floodplain unit:

- [ ] Low-Flow Channel
- [x] Active Floodplain + OHW
- [ ] Low Terrace

GPS point: T1 RL OHW

Characteristics of the floodplain unit:

Average sediment texture: gravel

Total veg cover: 95/0 % Tree: 95/0 % Shrub: 0 % Herb: 1 % *% cover: overhang/rooted where different*

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [x] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 703.13 **Cross section ID:** T1 **Date:** 2/1/2022 **Time:** 8:30am

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ■ Low Terrace

GPS point: T1 RL TOB

OHW - TOB

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 95 % Tree: 95 % Shrub: 0 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: change in slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

From OHW to TOB
on RR, TOB is 15 feet behind OHW
for reference, CDFW jurisdiction is extent of riparian canopy

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ■ Low Terrace

GPS point: riparian canopy (line)

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 85 % Tree: 85 % Shrub: 2 % Herb: 60 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: extent of riparian canopy
- ☐ Other: _____
- ☐ Other: _____

Comments:

From TOB to end of riparian vegetation cover

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hawthorns WD
Project Number: 703.13
Stream: Los Trancos Creek
Investigator(s): Karley Rodriguez, Carina Bilodeau

Date: 02/01/2022
Town: Portola Valley
Photo begin file#:

Time: 10:26a
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:
same as T-1

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
same as T-1

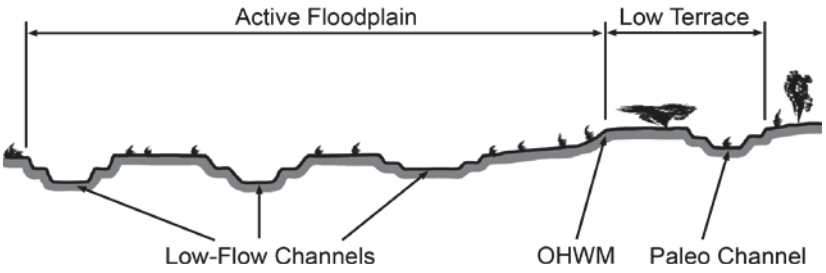
Brief site description:
same as T-1

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

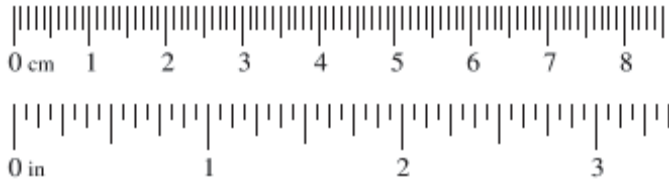


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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 characteristic of one of the hydrogeomorphic floodplain units.
   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.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

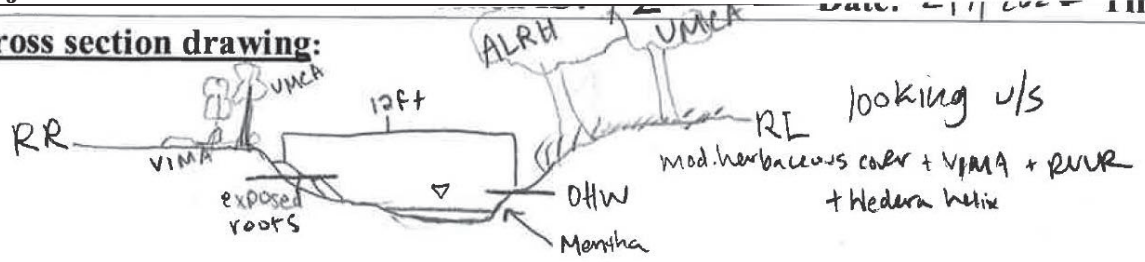
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 703.13 **Cross section ID:** T-2 **Date:** 02/01/2022 **Time:** 10:26am

Cross section drawing:



OHWM

GPS point: T2 RL OHW

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ■ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Photos:
3988: looking upstream
3989: OHW right bank
3990: OHW left bank looking downstream

Floodplain unit:

☐ Low-Flow Channel ■ Active Floodplain /OHWM ☐ Low Terrace

GPS point: T2 RL OHW

Characteristics of the floodplain unit:

Average sediment texture: gravel/cobble

Total veg cover: 75/0 % Tree: 85/0 % Shrub: 0 % Herb: 5 % *% cover: overhang/ rooted, where different*

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ■ Drift and/or debris
- ■ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ■ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

from OHW to TOB

Project ID: 703.13 **Cross section ID:** T2 **Date:** 02/01/2022 **Time:** 10:50am

Floodplain unit: ☐ Low-Flow Channel ■ Active Floodplain ☐ Low Terrace

GPS point: T2 RL TOB

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 85 % Tree: 70 % Shrub: 0 % Herb: 85 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: break in slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

From OHWM to TOB
River right = TOB is 3ft from OHW
CDFW jurisdiction = edge of rip canopy

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: riparian canopy (line)

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 70 % Tree: 80 % Shrub: 2 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: extent of riparian canopy
- ☐ Other: _____
- ☐ Other: _____

Comments:

From TOB to end of riparian vegetation cover

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hawthorns WD
Project Number: 703.13
Stream: Los Trancos Creek
Investigator(s): Karley Rodriguez, Carina Bilodeau

Date: 02/01/2022 **Time:** 11:23
Town: Portola Valley **State:** CA
Photo begin file#: **Photo end file#:**

Y ■ / N ■ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Hawthorns Area of Windy Hill Preserve

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
same as T1

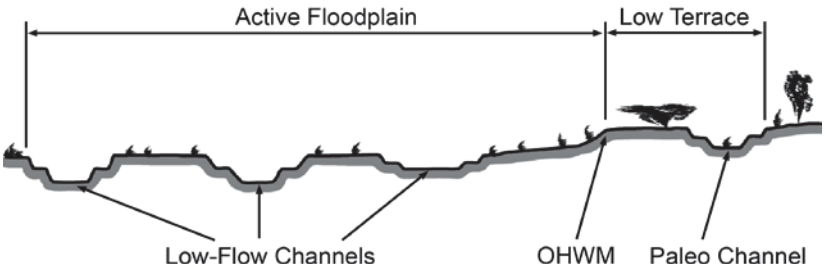
Brief site description:
same as T1

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

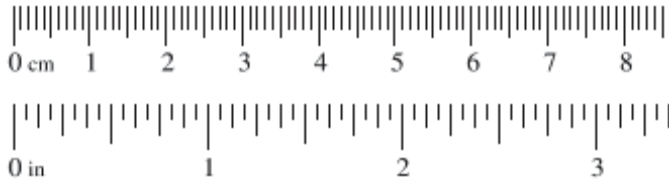


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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 characteristic of one of the hydrogeomorphic floodplain units.
   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.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

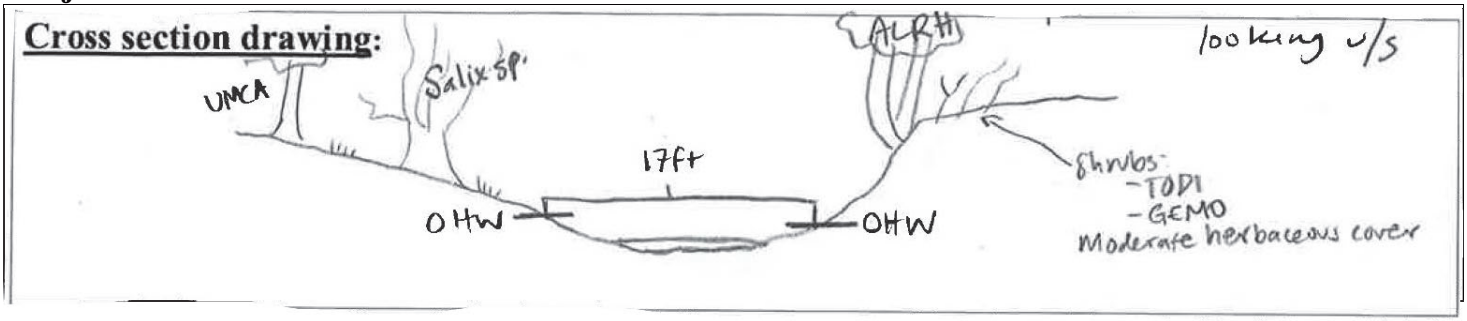
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 703.13 **Cross section ID:** T3 **Date:** 02/01/2022 **Time:** 11:23am

Cross section drawing:



OHWM

GPS point: T3 RL OHW

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Photos:
3992: looking downstream
3993: looking upstream
3994: river left ohwm
3995: rive right ohwm

Floodplain unit:

- [ ] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: T3 RL OHW

Characteristics of the floodplain unit:

Average sediment texture: gravel

Total veg cover: 95/1 % Tree: 95/5 % Shrub: 1 % Herb: 1 % *% cover: overhang/rooted where different*

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [x] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 703.13 **Cross section ID:** T3 **Date:** 02/01/2022 **Time:** 11:30am

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ■ Low Terrace

GPS point: T3 RL TOB

Characteristics of the floodplain unit:

Average sediment texture: loam with cobble embedded

Total veg cover: 60 % Tree: 60 % Shrub: 45 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: break in slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

TOB - 18ft from OHW on right bank
downstream of our GPS point, TOB is ~5ft from OHW

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ■ Low Terrace

GPS point: riparian canopy (line)

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 90 % Tree: 50 % Shrub: 5 % Herb: 90 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: extent of riparian canopy
- ☐ Other: _____
- ☐ Other: _____

Comments:

From TOB to end of riparian vegetation cover (same as TOB in some places)

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hawthorns WD
Project Number: 703.13
Stream: roadside drainage
Investigator(s): Karley Rodriguez, Carina Bilodeau

Date: 02/01/2022 **Time:** 3:24
Town: Portola Valley **State:** CA
Photo begin file#: 4010 **Photo end file#:** 4018

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
Road runoff, adjacent trail

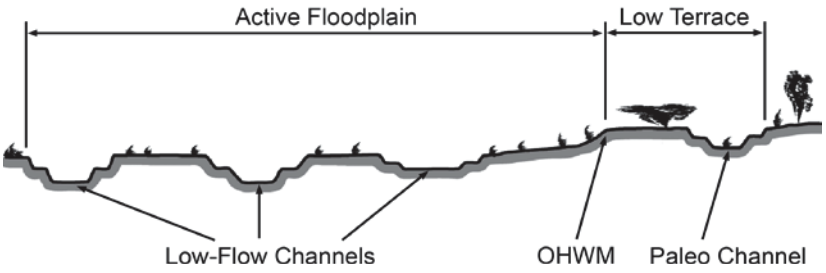
Brief site description:
vegetation-filled drainage, parallels Alpine Road, then drains into culvert, flows under Alpine Rd and eventually to Los Trancos Creek to the east.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

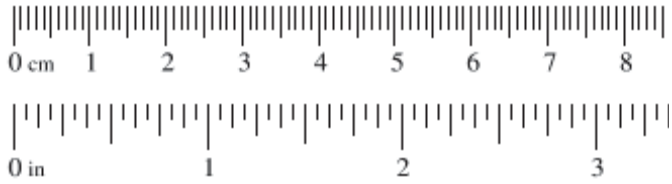


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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 characteristic of one of the hydrogeomorphic floodplain units.
   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.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

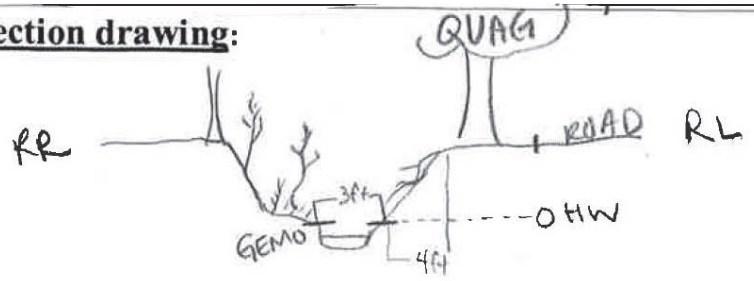
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 703.13 **Cross section ID:** T4 **Date:** 02/01/2022 **Time:** 3:30pm

Cross section drawing:



OHWM

GPS point: T4 RR OHW

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Photos
4017: looking upstream
4018: looking downstream

Floodplain unit:

☒ Low-Flow Channel /drainage ☐ Active Floodplain ☐ Low Terrace

GPS point: T4 RR OHW

Characteristics of the floodplain unit:

Average sediment texture: loam, gravelly

Total veg cover: 60/2 % Tree: 60/0 % Shrub: 40/0 % Herb: 2 % *% cover: overhang/rooted where different*

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 703.13 **Cross section ID:** T4 **Date:** 02/01/2022 **Time:** 3:45pm

Floodplain unit: ☐ Low-Flow Channel ■ Active Floodplain ☐ Low Terrace

GPS point: T4 RR TOB

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 65 % Tree: 50 % Shrub: 50 % Herb: 70 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

OHW to TOB
TOB is 4ft from OHW on RL

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: N/a

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hawthorns WD
Project Number: 703.13
Stream: ephemeral drainage
Investigator(s): Karley Rodriguez, Carina Bilodeau

Date: 02/02/2022 **Time:** 9am
Town: Portola Valley **State:** CA
Photo begin file#: **Photo end file#:**

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Hawthorns Area of Windy Hill Preserve

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
trails and roads, downstream drainage/culvert

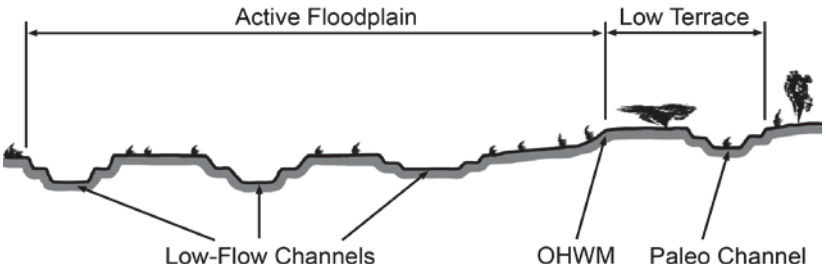
Brief site description:
small emphemeral drainage, flows into drainage parallel to Alpine Road and eventually to Los Trancos Creek to the east.

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

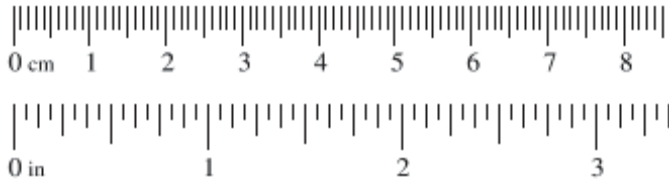


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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 characteristic of one of the hydrogeomorphic floodplain units.
   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.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

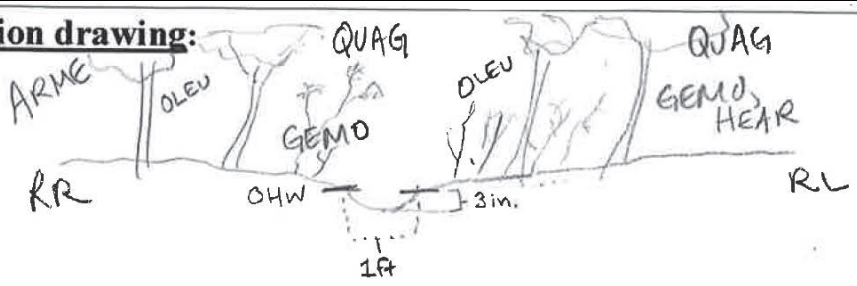
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 703/13 **Cross section ID:** T5 **Date:** 02/02/2022 **Time:** 9:00 am

Cross section drawing:



*No flow, ephemeral drainage
*looking u/s
*heavy shrub understory

OHWM

GPS point: drainage T5

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: ends at concrete drain
- ☒ Other: slight depression in ground

Comments:

Ephemeral drainage, 1ft wide on avg. 2ft wide at storm drain that eventually joins drainage along Alpine Rd
Photos:
4023 - from transect looking d/s
4024 - looking u/s
4025 - from top of drainage looking d/s

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: drainage T5

Characteristics of the floodplain unit:

Average sediment texture: loam
Total veg cover: 95 % Tree: 95/0 % Shrub: 70/2 % Herb: 5 % *% cover: overhang/rooted where different*
Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: N/a

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: N/a

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hawthorns WD
Project Number: 703.13
Stream: drainage
Investigator(s): Karley Rodgriguez, Carina Bilodeau

Date: 02/02/2022
Town: Portola Valley
Photo begin file#:

Time: 10:45a
State: CA
Photo end file#:

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

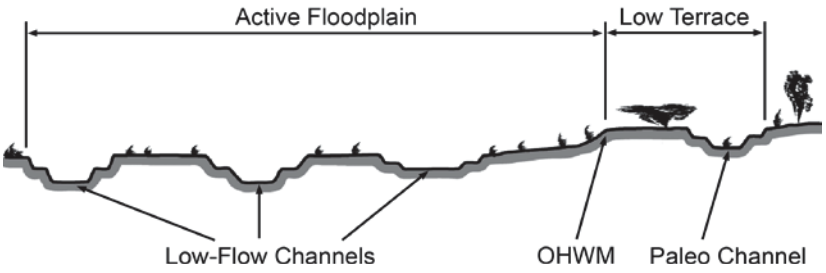
Brief site description:

Checklist of resources (if available):

- ■ Aerial photography
  Dates:
- ■ Topographic maps
- ☐ Geologic maps
- ■ Vegetation maps
- ■ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

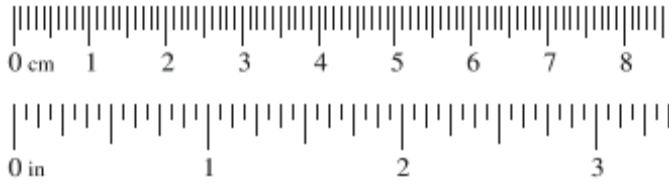


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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 characteristic of one of the hydrogeomorphic floodplain units.
   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.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ■ GPS
   - ☐ Digitized on computer
   - ☐ Other:

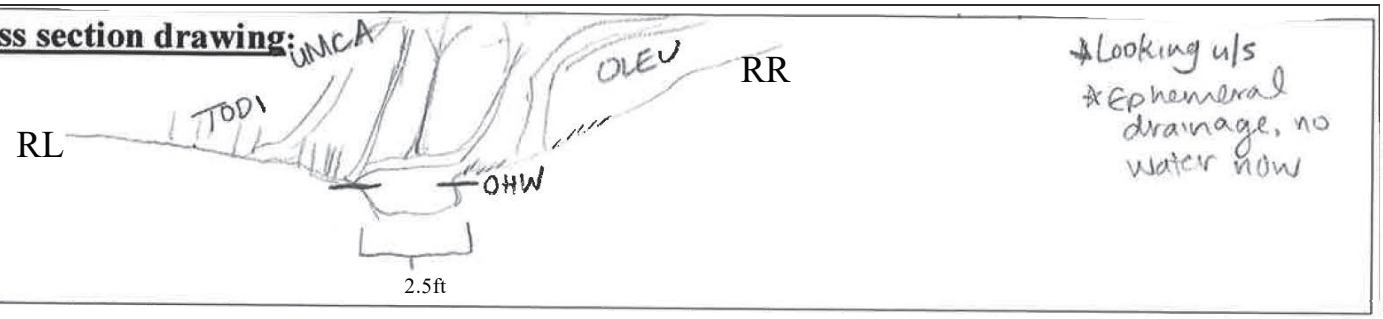
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 703.13 **Cross section ID:** T6 **Date:** 02/02/2022 **Time:** 10:45a

Cross section drawing:



OHWM

GPS point: T6 OHW

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Photos
4032-34: looking upstream
4035: looking downstream

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: T6 OHW

Characteristics of the floodplain unit:

Average sediment texture: gravelly loam

Total veg cover: 90 % Tree: 90/0 % Shrub: 50/2 % Herb: 0 % *% cover: overhang/rooted where different*

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 703.13 **Cross section ID:** T6 **Date:** 02/02/2022 **Time:** 11:00am

Floodplain unit: ☐ Low-Flow Channel ■ Active Floodplain ☐ Low Terrace

GPS point: n/a

Characteristics of the floodplain unit:

Average sediment texture: gravelly loam

Total veg cover: 90 % Tree: 90 % Shrub: 50 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: break in slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

RR - riparian veg at transect location ends at property boundary
RL - see aerial imagery - end of veg
top of bank - offset 1-3ft from OHW

Floodplain unit: ☐ Low-Flow Channel ■ Active Floodplain ☐ Low Terrace

GPS point: n/a

Characteristics of the floodplain unit:

Average sediment texture: loam

Total veg cover: 90 % Tree: 90 % Shrub: 15 % Herb: 15 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ■ Other: veg
- ☐ Other: _____
- ☐ Other: _____

Comments:

from TOB to end of riparian vegetation cover

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/01/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: Ca Sampling Point: SP-1

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

Landform (hillslope, terrace, etc.): base of hillslope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): California Lat: 37.37056503 Long: -122.2015678 Datum: NAD83

Soil Map Unit Name: Flaskan sandy clay loam, 5 to 9 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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

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

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

Remarks:

Vegetation was not hydrophytic, thus soil and hydrology were not tested

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 1x1m)			
1. none			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 1x1m)			
1. Umbellularia californica	<1	N	FAC
2.			
3.			
4.			
5.			
	<1	= Total Cover	
Herb Stratum (Plot size: 1x1m)			
1. Galium (aparine)	30	Y	(FACU)
2. Claytonia perfoliata	2	N	FAC
3. Anthriscus caucalis	10	N	NL
4.			
5.			
6.			
7.			
8.			
	42	= Total Cover	
Woody Vine Stratum (Plot size: 1x1)			
1. Vinca major	5	Y	FACU
2. Rubus ursinus	2	N	FAC
	7	= Total Cover	

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	50 (A)		155 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No x

Remarks:

Bare ground in herb stratum is litter.

Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** assumed

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): X

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

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

Wetland Hydrology Present? Yes _____ **No** assumed

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/01/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: CA Sampling Point: SP-2

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

Landform (hillslope, terrace, etc.): base of hillslope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): California Lat: 37.37285126 Long: -122.2061511 Datum: NAD83

Soil Map Unit Name: Francisquito-Urban land complex, 5 to 15 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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

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

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

Remarks:

sample point within overland road bed
photo: 3999

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 2x2m)	Absolute % Cover	Dominant Species?	Indicator Status
1. n/a			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2x2m)			
1. n/a			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 2x2m)			
1. Cardamine oligosperma	8	N	FAC
2. Claytonia perfoliata	3	N	FAC
3. (Festuca rubra) not in flower	35	N	(FAC)
4. (Bromus sp.) not in flower	2	N	(UPL/FACU)
5. Geranium (molle) not in flower	4	N	NL
6. (Trifolium dubium) not in flower	50	N	UPL
7.			
8.			
	102 = Total Cover		
Woody Vine Stratum (Plot size: 2x2m)			
1. N/A			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 0 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	2	x 4 =	8
UPL species	50	x 5 =	250
Column Totals:	102 (A)		408 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-2

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 %	Type[1]	Loc[2]	Texture	Remarks
12	7.5 YR 3/2	100					clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/01/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: CA Sampling Point: SP-3

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

Landform (hillslope, terrace, etc.): base of hill Local relief (concave, convex, none): concave Slope (%): 4

Subregion (LRR): California Lat: 37.37253874 Long: -122.2043412 Datum: NAD83

Soil Map Unit Name: Fagan loam, 15 to 50 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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

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

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

Remarks:

photos 4000-01

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 2x2m)	Absolute % Cover	Dominant Species?	Indicator Status
1. n/a			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2x2m)			
1. n/a			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 2x2m)			
1. (Bromus sp.)	75	Y	(UPL/FACU)
2. Lupinus sp.	15	N	NL
3. Avena sp.	15	N	(UPL)
4. (Festuca rubra) not in flower	30	N	(FAC)
5.			
6.			
7.			
8.			
	135 = Total Cover		
Woody Vine Stratum (Plot size: 2x2m)			
1. n/a			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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	30	x 3 =	90
FACU species	75	x 4 =	300
UPL species	15	x 5 =	75
Column Totals:	135 (A)		465 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-3

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 %	Type[1]	Loc[2]	Texture	Remarks
9	10YR 3/3	100	n/a				clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/01/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: CA Sampling Point: SP-4

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

Landform (hillslope, terrace, etc.): base of hillslope Local relief (concave, convex, none): flat Slope (%): 2

Subregion (LRR): California Lat: 37.37268891 Long: -122.2041729 Datum: NAD83

Soil Map Unit Name: Fagan loam, 15 to 50 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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

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

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

Remarks:

photos 4002-03

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 2x2m)	Absolute % Cover	Dominant Species?	Indicator Status
1. n/a			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2x2m)			
1. n/a			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 2x2m)			
1. (Festuca rubra) not in flower	95	Y	(FAC)
2. Trifolium hirtum	2	N	NL
3. Lupinus nanus	2	N	NL
4. (Bromus sp.)	3	N	(UPL/FACU)
5.			
6.			
7.			
8.			
	102 = Total Cover		
Woody Vine Stratum (Plot size: 2x2m)			
1. n/a			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	98 (A)		297 (B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-4

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 %	Type[1]	Loc[2]	Texture	Remarks
11	10YR 3/3	100	n/a				clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/02/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: CA Sampling Point: SP-5

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): flat Slope (%): 15

Subregion (LRR): California Lat: 37.36919962 Long: -122.2062334 Datum: NAD83

Soil Map Unit Name: Fagan loam, 15 to 50 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 2x2m)	Absolute % Cover	Dominant Species?	Indicator Status
1. n/a			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2x2m)			
1. n/a			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 2x2m)			
1. Juncus patens	80	Y	FACW
2. Carduus pycnocephalus	10	N	NL
3. Avena sp.	10	N	(UPL)
4. Geranium (molle)	2	N	(NL)
5.			
6.			
7.			
8.			
	102 = Total Cover		
Woody Vine Stratum (Plot size: 2x2m)			
1. n/a			
2.			
	= Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	12	x 5 =	0
Column Totals:	102 (A)		260 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

photos: 4026-4031

Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-5

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 %	Type[1]	Loc[2]	Texture	Remarks
6	10YR 3/4	90	n/a				clay loam	
6	7.5YR 3/2	10	n/a				clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: rock

Depth (inches): 6inches

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

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

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/02/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: CA Sampling Point: SP-6

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

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

Subregion (LRR): California Lat: 37.37184075 Long: -122.2058131 Datum: NAD83

Soil Map Unit Name: Fagan loam, 15 to 50 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 2x2m)	Absolute % Cover	Dominant Species?	Indicator Status
1. n/a			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2x2m)			
1. n/a			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 2x2m)			
1. Anthriscus caucalis	15	N	NL
2. Claytonia perfoliata	25	N	FAC
3. Geranium (molle)	2	N	(NL)
4. (Festuca rubra) not in flower	25	N	(FAC)
5. (Trifolium dubium)	10	N	(UPL)
6. Lupinus (nanus)	5	N	(NL)
7. Clarkia sp.	3	N	(NL)
8. (Bromus sp.)	2	N	(UPL/FACU)
	87 = Total Cover		
Woody Vine Stratum (Plot size: 2x2m)			
1. n/a			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	2	x 4 =	8
UPL species	35	x 5 =	175
Column Totals:	87 (A)		333 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-6

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 %	Type[1]	Loc[2]	Texture	Remarks
9	7.5YR 3/2	100	n/a				clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/02/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: CA Sampling Point: SP-7

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 4

Subregion (LRR): California Lat: 37.37420529 Long: -122.2040974 Datum: NAD83

Soil Map Unit Name: Francisquito-Urban land complex, 5 to 15 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology yes significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X?

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

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

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

Remarks:

drainage into culvert under trail to roadside storm drain, photos 4039-41

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 2x2m)	Absolute % Cover	Dominant Species?	Indicator Status
1. n/a			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 2x2m)			
1. n/a			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 2x2m)			
1. <5% cover = unvegetated			
2. Apiaceae sp. (not in flower)	1		n/a
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: 2x2m)			
1. n/a			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 99 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	2	x 4 =	8
UPL species	35	x 5 =	175
Column Totals:	87 (A)		333 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Bare ground: 30% of bare ground in herb stratum is bare, 70% is litter
Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-7

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 %	Type[1]	Loc[2]	Texture	Remarks
5	7.5YR 3/2	100	n/a				sandy clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: rock

Depth (inches): 5 in

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hawthorns 703.13 City/County: Portola Valley/San Mateo County Sampling Date: 02/02/2022

Applicant/Owner: Midpeninsula Regional Open Space District State: CA Sampling Point: SP-8

Investigator(s): Karley Rodriguez, Carina Bilodeau Section, Township, Range: Land Grant (Canada Del Corte de Madera)

Landform (hillslope, terrace, etc.): base of hillslope Local relief (concave, convex, none): concave Slope (%): 8

Subregion (LRR): California Lat: 37.37513873 Long: -122.2026302 Datum: NAD83

Soil Map Unit Name: Francisquito-Urban land complex, 5 to 15 percent slopes NWI classification: n/a

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

Are Vegetation no, Soil no, or Hydrology yes significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

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

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

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

Remarks:

drainage into culvert , adjacent to road; trail + dirt road
normal circumstances: veg recently cleared within ditch, photos 4042-45

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 2x5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus lobata	30	Y	FACU
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 2x5m)			
1. (Toxicodendron diversilobum)	65	Y	FACU
2.			
3.			
4.			
5.			
	65 = Total Cover		
Herb Stratum (Plot size: 2x5m)			
1. Marah fabacea	1	Y	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1 = Total Cover		
Woody Vine Stratum (Plot size: 2x5m)			
1. n/a			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Bare ground: 70% is litter
Parentheses around scientific names and indicator status indicates a degree of uncertainty regarding species identification associated with the timing of field work.

SOIL

Sampling Point: SP-8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								not sampled - poison oak

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** assumed

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

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

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

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

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

Remarks:

Appendix D

Representative Photographs of the OHWM

Figure D-10. Transect 1 on the left bank looking downstream. OHWM (yellow line) indicators included a change in average sediment texture, change in vegetation cover, and a break in bank slope. February 01, 2022.

Figure D-2. Transect 2 on the left bank looking upstream. OHWM (yellow line) indicators included a break in bank slope. February 01, 2022.

Figure D-3. Transect 3 on the left bank looking downstream. OHWM (yellow line) indicators included a change in average sediment texture and vegetation cover and a break in bank slope. February 01, 2022.

Figure D-4. Transect 4 on the right bank looking downstream. OHWM (yellow line) indicators included a change in vegetation cover and a break in bank slope. February 01, 2022.

Figure D-5. Transect 5 from mid-channel looking downstream. OHWM (yellow line) indicators included a small erosion channel in the ground and a concrete drain. February 02, 2022.

Figure D-6. Transect 6 on the right bank looking upstream. OHWM (yellow line) indicators included a break in bank slope. February 02, 2022.