



October 17, 2018

Holly Costa
North Branch Chief
U.S. Army Corps of Engineers
1455 Market Street, 16th Floor
San Francisco, CA 94103-1398

Subject: Request for Verification of a Jurisdictional Delineation of the West County Trail
Extension Study Site, City of Forestville, Sonoma County, California

Dear Holly:

On behalf of Sonoma County Regional Parks Department, LSA is requesting verification of the extent of U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 of the Clean Water Act on the West County Trail Extension Study Site.

STUDY SITE DESCRIPTION

The approximately 4.26-acre study site comprises of Sonoma County Assessor's Parcel Numbers 083-270-001 and 083-270-002. The study site is located adjacent to the southern side of Front Street (State Hwy 116) just west of Second Street and a block east of Mirabel Road in downtown Forestville, approximately 6 miles west-northwest of downtown Sebastopol (Figures 1 and 2; all figures attached at end of report).

The study site is located in the northwest quarter of Section 7, T7N, R9W, located on the Camp Meeker, California, 7.5-minute series USGS quadrangle, and centered at approximately 122.893° West and 38.472° North. The study site is vegetated with a mix of ruderal grassland, trees, and riparian forest. The northern portion of the study site is maintained parkland, and the southern portion of the site has an informal trail and dense blackberry riparian forest. No structures are present on the study site. The study site elevations range from approximately 150 to 165 feet above mean sea level. The western portion of the study site slopes moderately to the southeast toward a south draining swale which leads off site toward a tributary of Green Valley Creek.

Surrounding land uses are ruderal grassland and vineyard to the west and south, commercial to the east, and urban commercial to the north. The study site is accessed from the public park parking lot along the southern side of Front Street.

Vegetation

The northern half of the study site contains mostly mature valley oaks (*Quercus lobata*) surrounded by mowed ruderal grasses or thick wood chips. The southern half of the study site has similar trees and un-mowed grasses on the slope to the west and a Himalayan blackberry/willow/valley oak wooded riparian area along a shallow swale to the east. Grasses along the slope include wild oats (*Avena* sp.), Italian rye (*Festuca perennis*), soft chess (*Bromus hordeaceus*), and velvet grass (*Holcus lanatus*). Forbs include vetch (*Vicia villosa*) and bur clover (*Medicago polymorpha*). Riparian area species include Himalayan blackberry (*Rubus armeniacus*), poison oak (*Toxicodendron*

diversalobum), California rose (*Rosa californica*), white-root sedge (*Carex barbarae*), arroyo willow (*Salix lasiolepis*), California bay laurel (*Umbellularia californica*), and valley oak.

Soils

Study site soils are mapped as Goldridge fine sandy loam, 2 to 9 percent slopes (Web Soil Survey, <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, accessed May 24, 2018). The undisturbed surface soil horizons observed did match those described for the Goldridge soil. Road base gravels observed on portions of the site may be associated with former roadways or a former railroad grade. The Goldridge series description only lists any mottling below a depth of 28 inches.

Hydrology

The western portion of the study site generally drains southeastward to a south-draining swale in the eastern portion of the site. In March 2018, albeit immediately after a rainstorm, surface water was observed running southward along this swale. Ephemeral runoff was likely a dominant source, but a secondary source may be seasonal seepage surfacing through the porous soil along the swale.

A roadway along the eastern edge of the site drains southward in a constructed ditch which leads into a blackberry thicket. Surveyor mapping shows an underground storm drain leading from Front Street to an outlet in the blackberry thicket into a channel that drains south-southeastward off the study site.

Drainage from the site's swale and channel flows southwestward for approximately ¼ mile to an unnamed blue-line tributary that joins Green Valley Creek approximately 3/5 mile southwest of the study site. Green Valley Creek flows northward to the Russian River, a traditional navigable water of the United States, approximately 2-1/3 miles north-northwest of the study site.

REGULATORY BACKGROUND

Clean Water Act Jurisdiction

The Corps is responsible under Section 404 of the Clean Water Act (CWA) to regulate the discharge of fill material into waters of the United States. Waters of the United States and their lateral limits are defined in 33 CFR Part 328.3 (a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark (OHWM) or the limit of adjacent wetlands. Any permanent extension of the limits of an existing water of the United States, whether natural or manmade, results in a similar extension of Corps jurisdiction.

Waters of the United States fall into two categories: wetlands and non-wetland waters. Wetlands include marshes, meadows, seep areas, floodplains, basins, and other areas experiencing extended seasonal soil saturation and dominated by wetland plant cover. Non-wetland waters include water bodies and watercourses such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries.

Waters and wetlands that cannot trace a continuous hydrological connection to a navigable water of the United States are not tributary to waters of the United States. These are termed "isolated

wetlands.” Isolated wetlands are jurisdictional when their destruction or degradation can affect interstate or foreign commerce.

In general, a Corps permit must be obtained before placing fill in wetlands or other waters of the United States. The type of permit depends on the acreage involved and the purpose of the proposed fill.

METHODS

The field investigations of potentially jurisdictional wetlands occurring on the study site were conducted using the routine determination method given in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the revised procedures in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Arid West Supplement) (U.S. Army Corps of Engineers 2008). This methodology entails examination of specific sample points within potential wetlands for hydrophytic vegetation, hydric soils, and wetland hydrology. By the federal definition, all three parameters must be present for an area to be considered a wetland.

Hydrophytic plant species are listed by *The National Wetland Plant List: 2016 wetland ratings* (Phytoneuron 2016-30: 1-17, published April 28, 2016). The *National List* identifies five categories of plants according to their frequency of occurrence in wetlands. The categories are:

Obligate wetland plants (OBL)	Plants that occur almost always in wetlands
Facultative wetland plants (FACW)	Plants that usually occur in wetlands
Facultative plants (FAC)	Plants that are equally likely to occur in wetlands or non-wetlands
Facultative upland plants (FACU)	Plants that usually occur in uplands
Obligate upland plants (UPL)	Plants that occur almost always in non-wetlands

An area is generally considered to have hydrophytic vegetation when more than 50 percent of the dominant species in each stratum (tree, shrub, and herb) are in the obligate wetland, facultative wetland, or facultative categories.

Hydric soils are defined by criteria set forth by the National Technical Committee for Hydric Soils (NTCHS). These criteria are given in the *Wetlands Delineation Manual* and are based on depth and duration of soil saturation. Hydric soils are commonly identified in the field by using indirect indicators of saturated soil, technically known as redoximorphic features. These features are caused by anaerobic, reduced soil conditions that are brought about by prolonged soil saturation. The most common redoximorphic features are distinguished by soil color, which is strongly influenced by the frequency and duration of soil saturation. Hydric soils tend to have dark (low chroma) colors which are often accompanied by reddish mottles (iron mottles), reddish stains on root channels (oxidized rhizospheres), or gray colors (gleying). The Arid West Supplement contains descriptions of numerous federally recognized hydric soil indicators.

Under natural conditions, development of hydrophytic vegetation and hydric soils are dependent on a third characteristic, wetland hydrology. This criterion is met if the area experiences inundation or soil saturation to the surface for a period equal to at least 5 percent of the growing season (about 14 days in the region of the study site) in a year of median rainfall. In most cases, this criterion can only be measured directly by monitoring of the site through an entire wet season. In practice, the hydrological status of a particular area is usually evaluated using indirect indicators. Some of the indicators that are commonly used to identify wetland hydrology include biotic crusts and oxidized rhizospheres around roots. The Arid West Supplement gives thorough descriptions of numerous federally recognized indicators of wetland hydrology.

Field Methods

LSA senior soil scientist Chip Bouril investigated the study site on June 7, 2018. The last significant rainfall prior to the site visit occurred the previous April.

Potential jurisdictional boundaries were mapped using a global positioning system (GPS) receiver with sub-meter accuracy. Boundaries were determined by following a combination of the limits of hydrophytic vegetation, the limits of observed redoximorphic mottling and wetland hydrology indicators, and topographic breaks. LSA established 11 wetland Sample Points on the study site. All data from the 11 Sample Points were recorded on standard wetland determination data forms (all forms are attached at the end of this report).

OBSERVATIONS

Potential jurisdictional features are shown on Figure 3.

Wetlands

A south-draining swale containing hydrophytic vegetation is located in the eastern portion of the study site. Surface water was observed in the swale area shortly after a rainfall event in March 2018. The northern portion of the study site and swale is a mowed “lawn” portion of the public park. The southern portion of the swale is a mature riparian tree canopy with a mostly impenetrable thicket of Himalayan blackberry understory. An informal mowed trail leads around the western edge of the riparian area, and the trail cuts through the riparian area near the southern end of the study area.

Sample Points 1, 2, 3, and 4 were placed in a transect across the southern end of the riparian swale, with Sample Point 2 located near the topographic center of the swale. Sample Point 1 has a predominant canopy of arroyo willow (FAC) and predominant understory of Himalayan blackberry (FAC) and California rose (FAC), meeting jurisdictional vegetation criteria. The soil contains abundant redoximorphic mottling. No surface evidence of standing water was observed, but the soil was damp during the June site investigation. Understory vegetation at Sample Point 2 included strongly hydrophytic hyssop loosestrife (*Lythrum hyssopifolia*, OBL) and pennyroyal (*Mentha pulegium*, OBL) under a canopy of valley oak. The soil contained strong redoximorphic mottling to the surface and surface matting from seasonally ponded water. Sample Point 3 supported a mix of mostly hydrophytic vegetation species, had abundant redoximorphic soil mottling, and had surface evidence of wetland hydrology. Sample Point 4, placed farther upslope from the swale, contained a mix of hydrophytic and non-hydrophytic vegetation, minimal mottling that did not meet hydric soil

criteria, and no surface evidence of wetland hydrology, thus failing to meet jurisdictional wetland criteria. Sample Points 1, 2, and 3 meet jurisdictional wetland criteria.

Sample Points 5 and 6 were placed along the edge of the swale farther to the north. Sample Point 5 had vegetation meeting hydrophytic vegetation criteria, soil with redoximorphic mottling, and evidence of wetland hydrology, while Sample Point 6 failed to meet any of the three jurisdictional criteria. These sample points therefore straddle the jurisdictional wetland boundary.

Sample Points 7 and 8 were placed in and adjacent to the swale near the southern end of the mowed lawn area. Sample Point 7, within the swale, contained strongly hydrophytic vegetation including hyssop loosestrife and pennyroyal, redoximorphic mottling, and surface evidence of wetland hydrology. Sample Point 8, slightly upslope to the west, did contain redoximorphic soil mottling, but had vegetation that failed to meet hydrophytic vegetation criteria and no evidence of wetland hydrology.

Sample Point 9 was placed in the northern portion of the swale which was covered in deep wood chips which have suppressed most of the understory vegetation. Some understory vegetation cover was present, though, and most of these species were hydrophytic. The soil underneath the wood chips contained abundant redoximorphic mottling up to the mineral soil surface. Thus, accounting for the disturbance of the artificially suppressed vegetation, Sample Point 9 meets jurisdictional wetland criteria.

The hydrophytic vegetation in the northern portion of the swale is limited to a relatively narrow area within the study site boundary, while the southern and riparian forest portion of the swale is much wider and extends to and slightly beyond the eastern edge of the study area. This eastern edge is difficult to access because of the blackberry thicket. This wetland feature is mapped as Seasonal Wetland A, with a potential jurisdictional area of 44,435 square feet (1.020 acres).

Sample Point 10 was placed north of Seasonal Wetland A in a separate patch of strongly hydrophytic vegetation and strong hydric soil indicators that was surrounded by non-hydrophytic vegetation as partially illustrated by Sample Point 11. This feature is separately mapped as Seasonal Wetland B, with a potential jurisdictional area of 380 square feet (0.008 acres).

Other Waters of the United States

An engineer-surveyed underground storm drain runs underneath a graveled roadway from Front Street south to an outlet inside the Seasonal Wetland A riparian forest and feeds a channel that is within the study site for a distance of approximately 135 linear feet before exiting the study site boundary. (This feature roughly parallels the eastern side of the study site to its southern tip.) The likely excavated channel has an un-vegetated bed, a steep cut bank, and shows evidence of scour and sediment transport. Most of the channel is inaccessible because of the blackberry thicket, but accessed portions have a 4-foot wide Ordinary High Water Mark. The channel bed was damp where observed. This feature is mapped as Channel 1, with a potentially jurisdictional length of 135 feet and potentially jurisdictional area of 540 square feet (0.012 acre) within the study site. Channel 1 is completely within the mapped area of Seasonal Wetland A.

Other Areas Investigated

The underground storm drain appears to have been constructed in uplands, conveys non-jurisdictional urban storm runoff, and is therefore determined to be non-jurisdictional.

An excavated ditch runs southward along the edge of the graveled road within the eastern portion of the northern study site and disappears into the blackberry thicket. This ditch contains sediment deposits eroded from the gravel road. This ditch is interpreted as being non-jurisdictional because it appears to have been constructed in uplands, appears to be ephemeral, and has no wetland characteristics. This ditch may supply some of the sediments observed in Channel 1.

CONCLUSION

LSA has determined that the potential Section 404 waters of the United States on the West County Trail Extension Study Site are two seasonal wetland polygons with a total area of 1.028 acres and an Other Waters of the United States channel with an area of 0.012 acre, for a total potential jurisdictional area of 1.040 acres. These potential jurisdictional features and study site boundaries are mapped on Figure 3, which is attached.

The findings and conclusions presented in this report, including the location and extent of wetlands and other waters subject to regulatory jurisdiction, represent the professional opinion of LSA. These findings and conclusions should be considered preliminary until verified by the Corps.

Please contact Dan Sidle at (510) 236-6810 or email at Dan.Sidle@lsa.net to schedule a verification visit.

Sincerely,

LSA Associates, Inc.



Chip Bouril
Senior Soil Scientist

Attachments: Figure 1: Regional Location
Figure 2: Project Vicinity
Figure 3: Potential Waters of the United States
Data Sheets 1 through 11

cc: Kenneth Tam, Park Planner II, Sonoma County Regional Parks Department
2300 County Center Drive, Suite 120A, Santa Rosa, CA, 95403
Dan Sidle, LSA

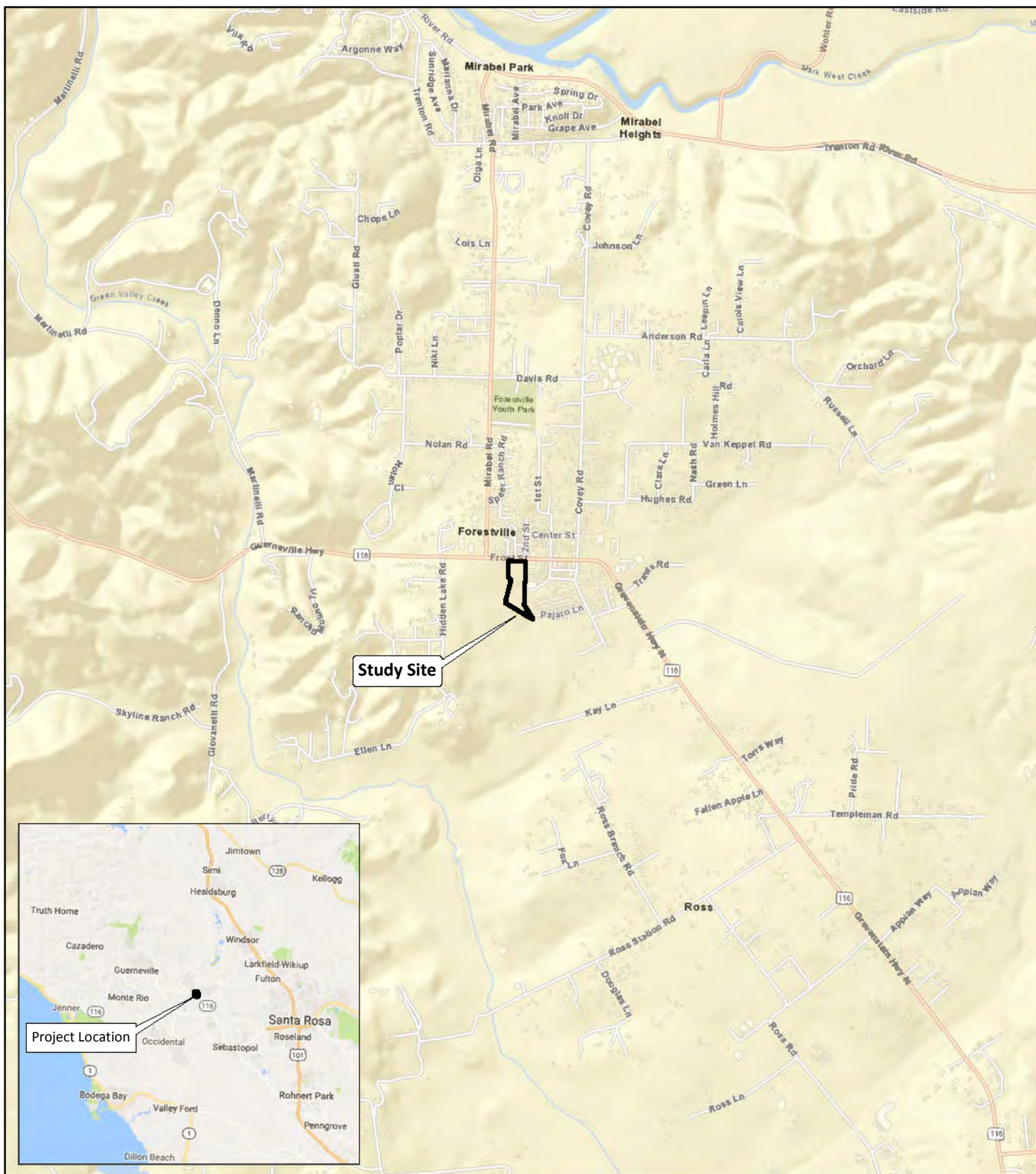
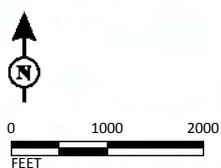


FIGURE 1

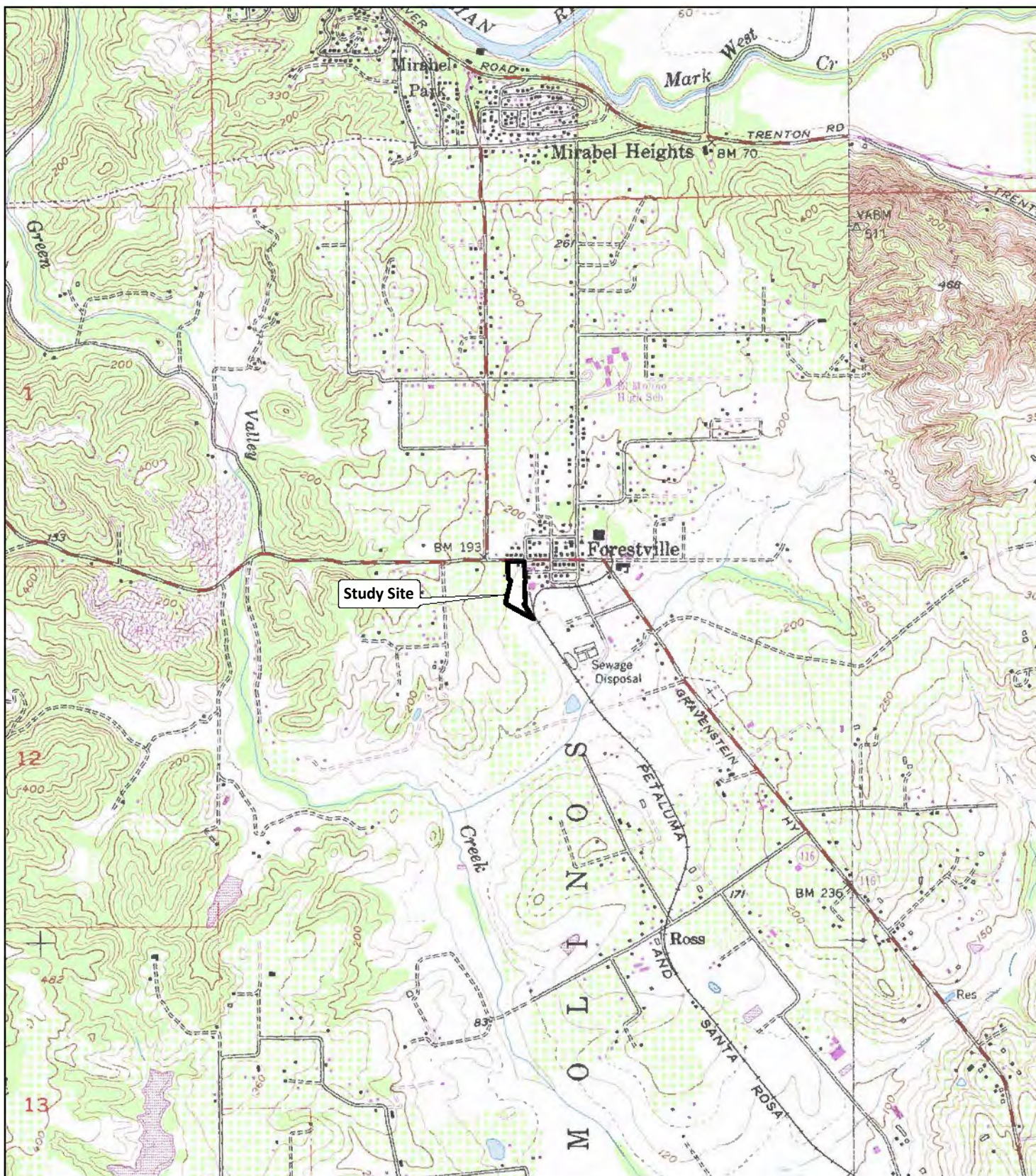
LSA



SOURCE: ESRI World Basemap, Google Streets.

I:\SOG1402\GIS\Maps\Delineation\Figure 1_Regional Location.mxd (8/9/2018)

West County Trail Extension Project
Forestville, Sonoma County, California
Regional Location



LSA

LEGEND

 Study Site



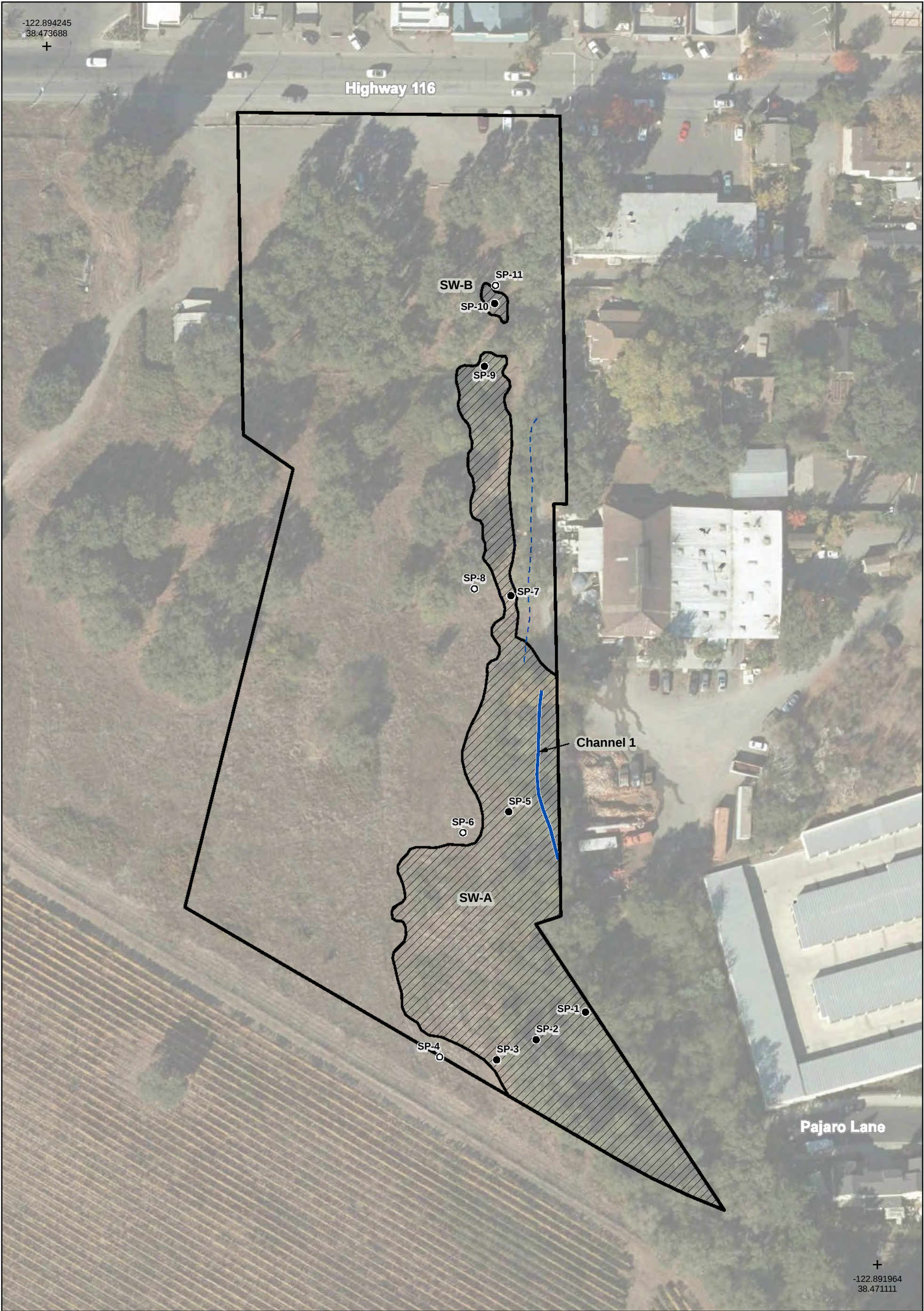
0 1000 2000
FEET

SOURCE: 7.5-minute Quads: Camp Meeker, Calif. (1971), Sebastopol, Calif. (1980)

I:\SOG1402\GIS\Maps\Delineation\Figure 2_Site Location.mxd (8/9/2018)

FIGURE 2

West County Trail Extension Project
Forestville, Sonoma County, California
Site Location



WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 1
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 24
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____		Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____		
Wetland Hydrology Present?	Yes <u>X</u>	No _____		
Remarks: <u>E</u> <u>COLV.</u> <u>COLV.</u> <u>SP-1</u> <u>SP-2</u> <u>SP-3</u> <u>W</u>				

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>SALIX LASIOLEPIS</u>	<u>80</u>	<u>X</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
2. <u>UMBELLULARIA CALIFORNICA</u>	<u>10</u>		<u>FAC</u>	
3. <u>QUERCUS LOBATA</u>	<u>40</u>	<u>X</u>	<u>FACU</u>	
4. _____				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 = _____
Total Cover: <u>130</u>				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
Total Cover: _____				
Herb Stratum (Plot size: <u>25' D</u>)				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.
1. <u>RUBUS ARIFOLIATUS</u>	<u>60</u>	<u>X</u>	<u>FAC</u>	
2. <u>HOLCUS LANATUS</u>	<u>5</u>		<u>FAC</u>	
3. <u>CAREX BORDIERAE</u>	<u>5</u>		<u>FAC</u>	
4. <u>ROSA CALIFORNICA</u>	<u>40</u>	<u>X</u>	<u>FAC</u>	
5. <u>TOXICODENDRON DIVERSIFOLIUM</u>	<u>2</u>		<u>UPL</u>	
6. _____				
7. _____				
Total Cover: <u>112</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks: _____

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR3/2						LS	
3-7	"		10YR3/3	42	C	W/PL	FSL?	
7-12	"		5YR3/4	10	C	PF/PL	LFS?	

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.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vertic (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Red Parent Material (TF2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Other (Explain in Remarks)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	
☐ Depleted Below Dark Surface (All)	☐ Depleted Dark Surface (F7)	
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)	
☐ Sandy Gleyed Matrix (S4)		

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 X

No _____

Remarks:

ADD. TO P8TH

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☒ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes X No _____

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

Remarks:

NO SFL INDICATORS. USE STRONG SOIL
REDOX AS INDICATOR OF HYDROLOGY.

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 2
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 4
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____

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

Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	

Remarks:

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)
1. <u>QUERCUS LOBATA</u>	<u>100</u>	<u>X</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____				
Herb Stratum (Plot size: _____)				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.
1. <u>LYTHRUM HYSSORIFOLIA</u>	<u>15</u>	<u>X</u>	<u>OBL</u>	
2. <u>JUNCUS PATERNS</u>	<u>5</u>	_____	<u>FACW</u>	
3. <u>MENTHA PULEGIUM</u>	<u>15</u>	<u>X</u>	<u>OBL</u>	
4. <u>JUNCUS BOFORSII</u>	<u>5</u>	_____	<u>FACW</u>	
5. <u>HOLCUS LANATUS</u>	<u>15</u>	<u>X</u>	<u>FAC</u>	
6. <u>ROMEX CRISPUS</u>	<u>5</u>	_____	<u>FAC</u>	
7. <u>CARLV DENSE</u>	<u>20</u>	<u>X</u>	<u>OBL</u>	
8. <u>UK GRASS POAANNUA?</u>	<u>10</u>	_____	_____	
Total Cover: <u>90</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>RUER</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:

Sampling Point: 2

HYDROLOGY

Secondary Indicators (2 or more required)

06/18/09 (C:\Documents and Settings\ChipB\Desktop\Wet1 Determination-AridWest DataForm Version 2.0.doc)

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 3
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 5
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks:			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
1. <u>QUERCUS LOBATA</u>	<u>100</u>	<u>X</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
Total Cover: _____				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.
Herb Stratum (Plot size: _____)				
1. <u>FESTUCA PERENNIS</u>	<u>40</u>	<u>X</u>	<u>FAC</u>	
2. <u>GALLIUM APARINE</u>	<u>20</u>	<u>X</u>	<u>FACU</u>	
3. <u>HOLCUS LANATUS</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
4. <u>VERBA SP.</u>	<u>4</u>		<u>UPL</u>	
5. <u>VICIA SATIVA</u>	<u>10</u>		<u>FACU</u>	
6. <u>GERANIUM DISSECTUM</u>	<u>10</u>		<u>UPL</u>	
7. _____				
8. _____				
Total Cover: _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (Plot size: _____)				
1. <u>RUBUS ARVENACUS</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

Sampling Point: 3

[illegible]

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vertic (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix F2)	☐ Red Parent Material (TF2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Other (Explain in Remarks)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	
☐ Depleted Below Dark Surface (All)	☐ Depleted Dark Surface (F7)	
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)	
☐ Sandy Gleyed Matrix (S4)		

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

No

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☒ Water-Stained Leaves (B9)	☒ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

No

2

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 4
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 5
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: <u>E</u> <u>SP-3</u> <u>SP-4</u> <u>W</u>			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				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)
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
Total Cover: _____				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				
1. <u>FESTUCA PERENNIS</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
2. <u>HOLCUS LANATUS</u>	<u>20</u>	<u>X</u>	<u>FAC</u>	
3. <u>AVEENIA SP.</u>	<u>30</u>	<u>X</u>	<u>UPL</u>	
4. <u>VICIA VILLOSA</u>	<u>10</u>		<u>UPL</u>	
5. <u>BROMUS DIANDRUS</u>	<u>10</u>		<u>UPL</u>	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.
6. <u>CARDUS PYNOCERPAEUS</u>	<u>1</u>		<u>UPL</u>	
7. <u>MEDICAGO POLYMORPHA</u>	<u>1</u>		<u>FACU</u>	
8. <u>RAPHANUS SATIVUS</u>	<u>5</u>		<u>UPL</u>	
Total Cover: _____				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1.				
2.				
3.				
4.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix		Redox Features		Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%			
0-4	10YR 3/2						
4-9	10YR 3/2		10YR 3/3	<1	PF/M	FSL	FOUNT
9-11	10YR 3/2		"	~5	PF/M	"	FOUNT

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.)

Indicators for Problematic Hydric Soils³:

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

- ☐ 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 (any one indicator is sufficient)

Secondary Indicators (2 or more required)

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

- ☐ 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? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes _____

No X

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

Remarks:

NO SFL INDICATORS

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 5
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 45
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks: <u>(a) SP-6</u> <u>X</u> <u>SP-5</u> <u>CHAL</u> <u>E</u>			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>QUERCUS LORATA</u>	<u>10</u>	<u>X</u>	<u>FBCU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>HOLEUS LANATUS</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	Prevalence Index = B/A = _____
2. <u>CYPERUS ERAGROSTIS</u>	<u>20</u>	<u>X</u>	<u>EXCW</u>	
3. <u>HYPERICUM PERFORATUM</u>	<u>4</u>	_____	<u>FACU</u>	
4. <u>LYTHRUM HYSSOPIFOLIA</u>	<u>1</u>	_____	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
Total Cover: <u>54</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>RUBUS ARWENACUS</u>	<u>30</u>	<u>X</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: _____				

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-3	10YR9/2		—			FSL	
3-8	10YR3/2		10YR4/4	?			
			10YR6/3	41			
			10YR3/4	5	C	PL	
8-12	10YR3/2		7.5YR3/3	5	C	PL, F	

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.)

Indicators for Problematic Hydric Soils³:

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

- ☐ 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 ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

SUPPRESSED VEG.

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (inches): _____
Water Table Present?	Yes ☐	No ☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ☐	No ☒	Depth (inches): _____

Wetland Hydrology Present?

Yes ☒ No ☐

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

Remarks:

MOSS ON BARE SFC.

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 6
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): ~5
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks:			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1.				
2.				
3.				
4.				
Total Cover: _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>61</u> x 3 = <u>183</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>4</u> x 5 = <u>20</u> Column Totals: <u>100</u> (A) <u>383</u> (B) Prevalence Index = B/A = <u>3.83</u>
Sapling/Shrub Stratum (Plot size: _____)				
1.				
2.				
3.				
4.				
5.				
Total Cover: _____				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.
Herb Stratum (Plot size: _____)				
1.	<u>60</u>	<u>X</u>	<u>FAC</u>	
2.	<u>10</u>		<u>FACU</u>	
3.	<u>2</u>		<u>UPL</u>	
4.	<u>25</u>	<u>X</u>	<u>FACU</u>	
5.	<u>2</u>		<u>UPL</u>	
6.				
7.				
8.				
Total Cover: _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Woody Vine Stratum (Plot size: _____)				
1.	<u>1</u>		<u>FAC</u>	
2.				
3.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Remarks:				

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-4	10YR4/2						
4-11	10YR4/2		10YR3/3	0-5	C	PL	mostly mineral spans

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.)

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vertic (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Red Parent Material (TF2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Other (Explain in Remarks)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	
☐ Depleted Below Dark Surface (A11)	☐ Depleted Dark Surface (F7)	
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)	
☐ Sandy Gleyed Matrix (S4)		

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 ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (CS)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes _____

No ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 7
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 7
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NW1 classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks: <u>(2)</u> <u>SP-8</u> <u>SP-7</u> <u>ROAD</u> <u>E</u>			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>QUERCUS LOBATA</u>	<u>100</u>	<u>X</u>	<u>FBCU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>LYTHRUM HYSSOPIFOLIA</u>	<u>15</u>	<u>X</u>	<u>OBL</u>	Prevalence Index = B/A = _____
2. <u>MENTHA PULEGIUM</u>	<u>25</u>	<u>X</u>	<u>OBL</u>	
3. <u>CYPERUS ERAGROSTIS</u>	<u>15</u>	<u>X</u>	<u>FACW</u>	
4. <u>FESTUCA PERENNIS</u>	<u>5</u>	_____	<u>FAC</u>	
5. <u>JUNCUS BUFONIS</u>	<u>5</u>	_____	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
Total Cover: <u>65</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>RUBUS ARMEANICUS NERBY</u>	_____	_____	_____	— Dominance Test is >50%
2. _____	_____	_____	_____	— Prevalence Index is ≤3.0 ¹
Total Cover: _____				— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				— Problematic Hydrophytic Vegetation ¹ (Explain)

Remarks: IN MOVED LOWLY

Sampling Point: 7

[illegible]

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

No

- _____ 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)

WATTED SURFACE, SUPPRESSED VEG

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 8
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks:

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>QUERCUS LOBATA</u>	<u>100</u>	<u>X</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2.				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
4.				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1.				Total % Cover of: _____ Multiply by:
2.				OBL species _____ x 1 = _____
3.				FACW species <u>5</u> x 2 = _____
4.				FAC species <u>60</u> x 3 = _____
5.				FACU species <u>125</u> x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>HOLCUS LANATUS</u>	<u>60</u>	<u>X</u>	<u>FAC</u>	Prevalence Index = B/A = <u>23</u>
2. <u>HYPOCHAERIS RADICATA</u>	<u>25</u>	<u>X</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:
3. <u>JUNCUS BUFONIUS</u>	<u>5</u>		<u>FACW</u>	— Dominance Test is >50%
4.				— Prevalence Index is ≤3.0 ¹
5.				— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
6.				— Problematic Hydrophytic Vegetation ¹ (Explain)
7.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8.				
Total Cover: _____				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:

Sampling Point: 8

[illegible]

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 1 cm Muck (A9) (LRR C)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ 2 cm Muck (A10) (LRR B)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1)	☐ Reduced Vertic (F18)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix F2)	☐ Red Parent Material (TF2)
☐ Stratified Layers (A5) (LRR C)	☐ Depleted Matrix (F3)	☐ Other (Explain in Remarks)
☐ 1 cm Muck (A9) (LRR D)	☐ Redox Dark Surface (F6)	
☐ Depleted Below Dark Surface (All)	☐ Depleted Dark Surface (F7)	
☐ Thick Dark Surface (A12)	☐ Redox Depressions (F8)	
☐ Sandy Mucky Mineral (S1)	☐ Vernal Pools (F9)	
☐ Sandy Gleyed Matrix (S4)		

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

No

Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C5)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Surface Water Present?	Yes	<u> </u>	No	<u> X </u>	Depth (inches):
Water Table Present?	Yes	<u> </u>	No	<u> X </u>	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	<u> </u>	No	<u> X </u>	Depth (inches):

Wetland Hydrology Present?

Yes

No

Remarks:

NO SPEC INDICATORS

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 9
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 8
 Subregion (LRR): LRR C Lat: _____ Long: EW 45 Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation X Soil X or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks: 			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
1. <u>QUERCUS LOBATA</u>	<u>100</u>	<u>X</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
Total Cover: _____				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
Total Cover: _____				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.
Herb Stratum (Plot size: <u>20' D</u>)				
1. <u>LYTHRUM HYSSOPIFOLIA</u>	<u>3</u>	<u>X</u>	<u>OBL</u>	
2. <u>CYPERUS ERGROSTIS</u>	<u>1</u>		<u>FACW</u>	
3. <u>RUMEX CRISPUS</u>	<u>1</u>		<u>FAC</u>	
4. <u>MEDICAGO POLYMORPHA</u>	<u>1</u>		<u>FACW</u>	
5. <u>HYPOCHAERIS RADICATA</u>	<u>1</u>		<u>FACU</u>	
6. <u>MENTHA PULEGIUM</u>	<u>2</u>	<u>X</u>	<u>OBL</u>	
7. _____				
8. _____				
Total Cover: <u>9%</u>				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (Plot size: _____)				
1. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: <u>3" SOIL COVER OF WOOD CHIPS HAS SUPPRESSED VEGETATION.</u>				

Sampling Point: 9

[illegible]

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) | ☐ 1 cm Muck (A9) (LRR C) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) | ☐ 2 cm Muck (A10) (LRR B) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) | ☐ Reduced Vertic (F18) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix F2) | ☐ Red Parent Material (TF2) |
| ☐ Stratified Layers (A5) (LRR C) | ☐ Depleted Matrix (F3) | ☐ Other (Explain in Remarks) |
| ☐ 1 cm Muck (A9) (LRR D) | ☐ Redox Dark Surface (F6) | |
| ☐ Depleted Below Dark Surface (All) | ☐ Depleted Dark Surface (F7) | |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) | |
| ☐ Sandy Mucky Mineral (S1) | ☐ Vernal Pools (F9) | |
| ☐ Sandy Gleyed Matrix (S4) | | |
- ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type:

Depth (inches):

Hydric Soil Present?

Yes

No

Remarks:

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

Secondary Indicators (2 or more required)

- | | | |
|---|---|--|
| Surface Water (A1) | Salt Crust (B11) | Water Marks (B1) (Riverine) |
| High Water Table (A2) | Biotic Crust (B12) | Sediment Deposits (B2) (Riverine) |
| Saturation (A3) | Aquatic Invertebrates (B13) | Drift Deposits (B3) (Riverine) |
| Water Marks (B1) (Nonriverine) | Hydrogen Sulfide Odor (C1) | Drainage Patterns (B10) |
| Sediment Deposits (B2) (Nonriverine) | Oxidized Rhizospheres along Living Roots (C3) | Dry-Season Water Table (C2) |
| Drift Deposits (B3) (Nonriverine) | Presence of Reduced Iron (C4) | Crayfish Burrows (C8) |
| Surface Soil Cracks (B6) | Recent Iron Reduction in Plowed Soils (C5) | Saturation Visible on Aerial Imagery (C9) |
| Inundation Visible on Aerial Imagery (B7) | Thin Muck Surface (C7) | Shallow Aquitard (D3) |
| Water-Stained Leaves (B9) | Other (Explain in Remarks) | FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes ☐ No ☒

Depth (inches):

Water Table Present? Yes No ☒

Depth (inches):

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

Depth (inches):

Wetland Hydrology Present?

Yes

No

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

Remarks:

PRECURSORS: REDOX TO MINERAL SOIL SFC

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 10
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 9
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2.				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
4.				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1.				Total % Cover of: _____ Multiply by:
2.				OBL species _____ x 1 = _____
3.				FACW species _____ x 2 = _____
4.				FAC species _____ x 3 = _____
5.				FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>LYTHRUM HYSSOPIFOLIA</u>	<u>15</u>	<u>X</u>	<u>OBL</u>	Prevalence Index = B/A = _____
2. <u>CYNODON DACTYLOX</u>	<u>15</u>	<u>X</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators:
3. <u>JUNCUS BIFIDUS</u>	<u>20</u>	<u>X</u>	<u>FACW</u>	— Dominance Test is >50%
4. <u>HYPOCHAERIS RADICATA</u>	<u>4</u>		<u>FACU</u>	— Prevalence Index is ≤3.0 ¹
5. <u>FESTUCA PERENNIS</u>	<u>2</u>		<u>FAC</u>	— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
6. <u>POA ANNUA</u>	<u>3</u>		<u>FAC</u>	— Problematic Hydrophytic Vegetation ¹ (Explain)
7.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8.				
Total Cover: <u>59</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks: WOOD CHIPS ABOVE SUPPRESSED VEGETATION COVER.

Sampling Point: 1

[illegible]

Indicators for Problematic Hydric Soils³:

_____ Histosol (A1)	_____ Sandy Redox (S5)	_____ 1 cm Muck (A9) (LRR C)
_____ Histic Epipedon (A2)	_____ Stripped Matrix (S6)	_____ 2 cm Muck (A10) (LRR B)
_____ Black Histic (A3)	_____ Loamy Mucky Mineral (F1)	_____ Reduced Vertic (F18)
_____ Hydrogen Sulfide (A4)	_____ Loamy Gleyed Matrix F2)	_____ Red Parent Material (TF2)
_____ Stratified Layers (A5) (LRR C)	_____ Depleted Matrix (F3)	_____ Other (Explain in Remarks)
_____ 1 cm Muck (A9) (LRR D)	_____ Redox Dark Surface (F6)	
_____ Depleted Below Dark Surface (All)	_____ Depleted Dark Surface (F7)	
_____ Thick Dark Surface (A12)	_____ Redox Depressions (F8)	
_____ Sandy Mucky Mineral (S1)	_____ Vernal Pools (F9)	
_____ Sandy Gleyed Matrix (S4)		

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

No

Remarks:

Secondary Indicators (2 or more required)

☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Plowed Soils (C5)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☒ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)

Surface Water Present?	Yes	_____	No	<u>X</u>	Depth (inches):
Water Table Present?	Yes	_____	No	<u>X</u>	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	_____	No	<u>X</u>	Depth (inches):

Wetland Hydrology Present? Yes ☒ No ☐

Remarks:

USE STRONGLY HYDROPHYTIC VEG + REDOX
MOTTLING TO MINERAL SOIL SURFACE AS
INDICATORS.

WETLAND DETERMINATION DATA FORM — Arid West Region

Project Site: West County Trail Expansion Project City/County: Forestville /Sonoma Sampling Date: 7 June 2018
 Applicant/Owner: Sonoma County Parks and Recreation State: CA Sampling Point: 66
 Investigator(s): C. Bouril Section, Township, Range: Section 7, T7N, R9W, Camp Meeker Quad
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 7
 Subregion (LRR): LRR C Lat: EW Long: NS Datum: _____
 Soil Map Unit Name: Goldridge fine sandy loam, 2-9 percent and 9-15 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____ Soil _____ or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks:			

VEGETATION

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>QUERCUS LOPATA</u>	<u>100</u>	<u>X</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2.				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4.				
Total Cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1.				Total % Cover of: _____ Multiply by:
2.				OBL species _____ x 1 = _____
3.				FACW species _____ x 2 = _____
4.				FAC species _____ x 3 = _____
5.				FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>CYNODON DACTYLON</u>	<u>100</u>	<u>X</u>	<u>FACU</u>	Prevalence Index = B/A = _____
2.				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.
3.				
4.				
5.				
6.				
7.				
8.				
Total Cover: _____				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1.				
2.				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

Sampling Point: 11

HYDROLOGY

06/18/09 (C:\Documents and Settings\ChipB\Desktop\Wetl Determination-AridWest DataForm Version 2.0.doc)