AQUATIC RESOURCES DELINEATION

Realized Dreams Ranch Subdivision Project

Solano County, CA | April 2025

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Executive Summary

Acorn Environmental conducted a delineation of potential waters of the United States and waters of the State on the 426-acre Realized Dreams Ranch property located in unincorporated Solano County, California (Study Area). The delineation was conducted on April 22, 2025 and delineation methods were conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual as amended by the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Aquatic features were identified and mapped within the Study Area using GPS technology and were subjected to the 3-parameter test, the Kennedy and Scalia tests, and State of California agency criteria. Aquatic resources within the Study Area do not appear to meet the definition of a water of the U.S. and therefore are likely not subject to USACE jurisdiction.

The following aquatic resources within the Study Area were determined to be potentially subject to State jurisdiction:

> **Agricultural Irrigation Ditches:** The agricultural irrigation ditches in the Study Area are likely considered waters of the State. However, these ditches are likely exempt from permitting requirements per the *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB, 2021)

Riparian zones were not observed within the Study Area. The remaining portions of the Study Area contain upland features. This delineation is subject to verification by the USACE and State agencies. Information contained herein is preliminary until the appropriate agency provides a written determination of the boundaries of its jurisdiction and verifies the delineation map.

Section 1 | Introduction

1.1 PURPOSE AND SCOPE OF REPORT

Acorn Environmental conducted a formal delineation of aquatic resources within an approximately 426-acre property (Study Area) in unincorporated Solano County, California. This report presents the results of the survey conducted in accordance with the USACE Wetlands Delineation Manual to determine which portions of the Study Area may qualify as potentially jurisdictional aquatic resources. USACE is ultimately responsible for determining the limits of their jurisdiction. This report also identifies those portions of the Study Area that may qualify as potentially jurisdictional waters of the State of California. The Regional Water Quality Control Board is ultimately responsible for determining the limits of their jurisdiction. The completed USACE Minimum Standards Checklist is included as **Attachment A**.

1.2 PROPOSED LOCATION AND DESCRIPTION

Figure 1 and **Figure 2** show the location of the Study Area, and **Figure 3** presents an aerial photograph of the Study Area and the immediate vicinity. The Study Area totals approximately 426 acres and is comprised of four parcels, Assessor's Parcel Numbers (APNs) 0110190100, 01101900090, 0111070200, and 0111070210. The Study Area is within Section 35, Township 8 North, Range 2 East of the Mount Diablo Baseline and Meridian, within the "Saxon" United States Geological Survey (USGS) 7.5-minute quadrangle (quad). Access to the Study Area is provided off Tremont Road, approximately four miles south of Interstate 80 and the City of Davis.

1.3 DIRECTIONS TO THE STUDY AREA

From the City of Davis, take U.S. Highway 80 east towards Sacramento. Take the Mace Boulevard exit located within the eastern extent of the City's limits. Travel south on Mace Boulevard for approximately 2.6 miles. Turn right (west) onto Tremont Road. The Study Area will be on the left (southern side) immediately following the Tremont Cemetery. A signed property access form is included as **Attachment B**.

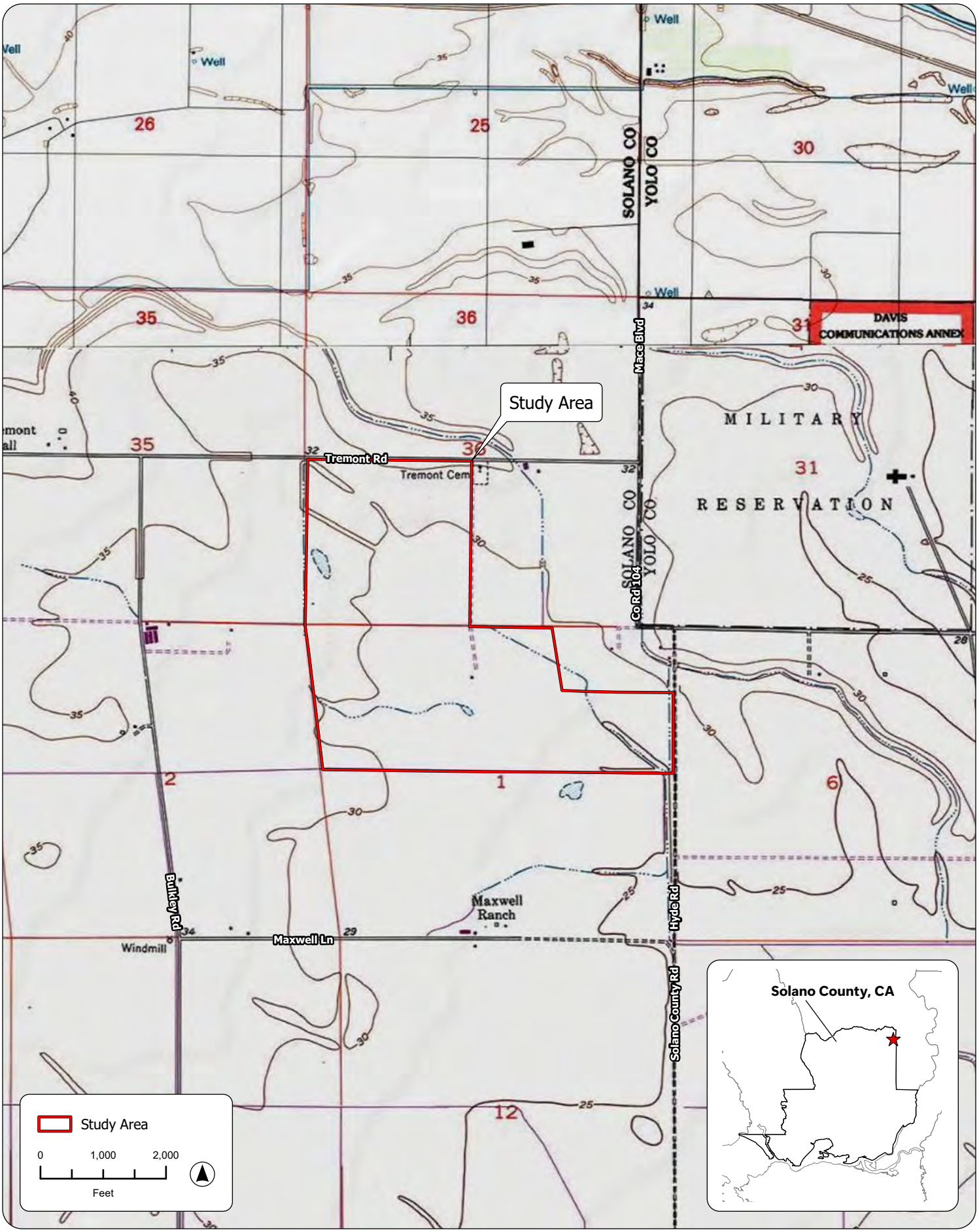
1.4 CONTACT INFORMATION

1.4.1 Applicant

Realized Dreams Ranch, LLC
Grant Guerrieri
Phone: (530) 219-2013
Email: gguerrieri@clarkpacific.com
28775 County Road 104, Davis, CA 95618

SOURCE: ESRI, 2025; Acorn Environmental, 4/23/2025

Figure 1
Regional Location



SOURCE: "Saxon, CA" USGS 7.5 Minute Topographic Quadrangle, T7N R2E & T8N R2E, Sections 1 & 36, Mt. Diablo Baseline & Meridian; Sonoma County GIS, 2025; ESRI, 2025; Acorn Environmental, 4/23/2025

Figure 2
Site and Vicinity

SOURCE: ESRI, 2025; Sonoma County GIS, 2025; Google Earth Aerial Photograph, 3/24/2025; Acorn Environmental, 4/23/2025

Figure 3
Aerial Overview

1.4.1 Agent / Environmental Consultant

Acorn Environmental
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1.5 REGULATORY SETTING

1.5.1 Federal Regulations

At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. In Section 404 of the CWA, waters of the U.S. are defined as: all waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters (33 CFR Part 328). With non-tidal waters, in the absence of adjacent wetlands, the extent of federal jurisdiction is defined by the ordinary high water mark - the line on the shore established by the fluctuations of water, and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Wetlands are defined as: "…*those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*," (Federal Register 1980, 1982).

Any person, firm, or agency planning to alter of work in navigable waterbodies, including the discharge of dredged or fill material, must first obtain authorization from the United States Army Corps of Engineers (USACE). Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) prohibits the obstruction or alteration of navigable waters of the US without a permit from USACE. Section 301 of the Federal Water Pollution Control Act, as amended ("Clean Water Act") prohibits the discharge of pollutants, including dredged or fill material, into waters of the U.S. without a Section 404 permit from USACE (33 USC 1344). Pertinent sections include:

- Section 401: Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain certification that the proposed activity will comply with State water quality standards. The applicable Regional Water Quality Control Board must certify that a USACE Section 404 Permit action meets state water quality objectives by issuing a Water Quality Certification. California Department of Fish and Wildlife provides comments on USACE permit actions under the Fish and Wildlife Coordination Act.
- Section 402: Under CWA Section 402, any construction project that disturbs at least one acre of land requires enrollment in the State's construction general permitting program under the National Pollutant Discharge Elimination System and implementation of a storm water pollution prevention plan.

The United States Environmental Protection Agency (USEPA) and USACE (2008) issued joint guidance regarding Clean Water Act jurisdiction following the decision in the consolidated cases of Rapanos v. United States and Carabell v. United States. USACE and USEPA will assert jurisdiction over traditional navigable waters, and non-navigable tributaries that have relatively permanent flow, and adjacent wetlands. The agencies will decide jurisdiction on a case-by-case basis for non-navigable tributaries that do not have relatively permanent flow, and adjacent wetlands, based upon significant nexus criteria (Kennedy Test, Scalia Test). The agencies generally will not assert jurisdiction over ditches, swales or other erosional features, or isolated wetlands.

Effective September 8, 2023, the USEPA and the USACE have issued a new final rule in the Code of Federal Regulations to conform the definition of 'waters of the United States' to the 2023 Supreme Court's May 25, 2023, decision in Sackett vs. EPA. Under the new final rule, tributaries and wetlands must have a continuous surface connection to navigable waterways to be considered jurisdictional under the Clean Water Act. Only those relatively permanent, standing, or continuously flowing bodies of water meet the current definition. In certain states where litigation regarding this definition is ongoing, the pre-2015 definition of waters of the U.S. is in effect. California is not one of these states and currently operates under the definition as promulgated under the new final rule.

1.5.2 State Regulations

Waters of the State are regulated primarily under the California Water Code and the California Code of Regulations Title 23: Water and Title 27: Environmental Protection. All water features in California, on public and private lands, in both natural and artificial channels, including isolated wetland features and impermanent drainages that are not claimed as waters of the US, are considered waters of the State. Waters of the State are protected under the Porter-Cologne Water Quality Control Act and are regulated by the State Water Resources Control Board (SWRCB) and its 9 Regional Water Quality Control Boards. Additional statewide regulations that protect wetlands and riparian areas are the Wetlands Conservation Policy (Executive Order W-59-93), also known as the State's "No Net Loss" Policy for Wetlands, and the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (State Water Board Resolution No. 2004-0030). All parties proposing to discharge materials that could affect waters of the State must file a report of waste discharge with the appropriate regional board. The regional board will then respond to the report by issuing waste discharge requirements (WDRs) in a public hearing, or by waiving WDRs (with or without conditions) for that proposed discharge. Both of the terms "discharge of waste" and "waters of the State" are broadly defined in the Porter-Cologne Act, such that discharges of waste include fill, any material resulting from human activity (including construction), or any other "discharge" that may directly or indirectly impact waters of the State.

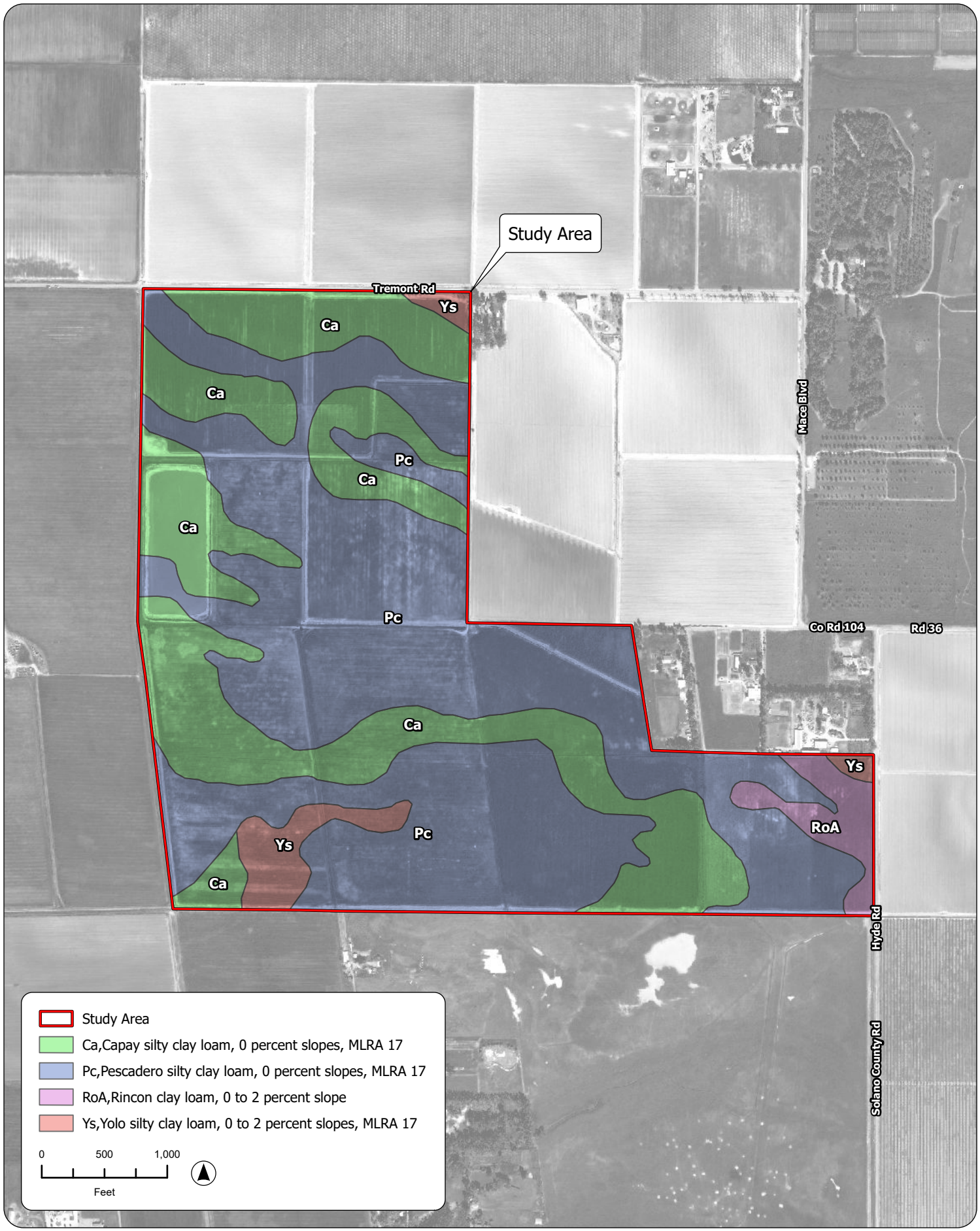
California Fish and Game Code (§1600-1607, 5650F) protects fishery resources by regulating "*...any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake*." The California Department of Fish and Wildlife (CDFW) requires notification prior to project commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of waters of the State. The limit of CDFW jurisdiction is currently interpreted to be the "stream zone", defined as "that portion of the stream channel that restricts lateral movement of water" and delineated at "*the top of the bank or the outer edge of any riparian vegetation, whichever is more landward*". CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the Streambed Alteration Agreement.

Section 2 | Environmental Setting

The Study Area is located within the California Floristic Province (Baldwin et al., 2012) within a region that experiences a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately cold winters (Sunset Western Garden Collection, 2025). Average monthly temperatures peak in July at 93 degrees Fahrenheit and reach a low in the month of December and January with an average temperature of 54 degrees Fahrenheit (U.S. Climate Data, 2025). Precipitation falls exclusively as rain, with January seeing the most precipitation at an average of 3.92 inches across the month.

Topography on the Study Area is relatively flat with elevations ranging from 40 to 55 feet above mean sea level. Land use on the Study Area is agricultural and consists of livestock forage production (hay) and livestock grazing. Land uses surrounding the Study Area are similarly agricultural in nature with rural residences. The Tremont Cemetery borders the northeastern border of the Study Area.

Soils on the Study Area include Capay silty clay loam (Ca), 0% slopes; Pescadero silty clay loam (Pc), 0% slopes, (62%); Rincon silty clay loam (RoA), 0 to 2% slopes; and Yolo silty clay loam, 0 to 2% slopes (**Figure 4**). The Study Area is primarily composed of Pescadero silty clay loam, which occurs through the middle of the Study Area, and Capay silty clay loam, which occurs along the western edge of the Study Area. Rincon silty clay loam occurs only in the southeastern corner while Yolo silty clay loam occurs in small portions of the northwest corner and southwestern corner.



SOURCE: NRCS Soils, 2025; ESRI, 2025; Sonoma County GIS, 2025; Google Earth Aerial Photograph, 3/24/2025; Acorn Environmental, 4/23/2025

Figure 4
Soil Types

Section 3 | Methods

The delineation was conducted in accordance with the manuals relevant to the region, including the following:

- 1987 Corps of Engineers Wetland Delineation Manual
- 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)
- 2008 A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.
- 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U.S. Army Engineer Research and Development Center Environmental Laboratory, Vicksburg, MS. 153 pp.

3.1 PRELIMINARY DATA GATHERING AND RESEARCH

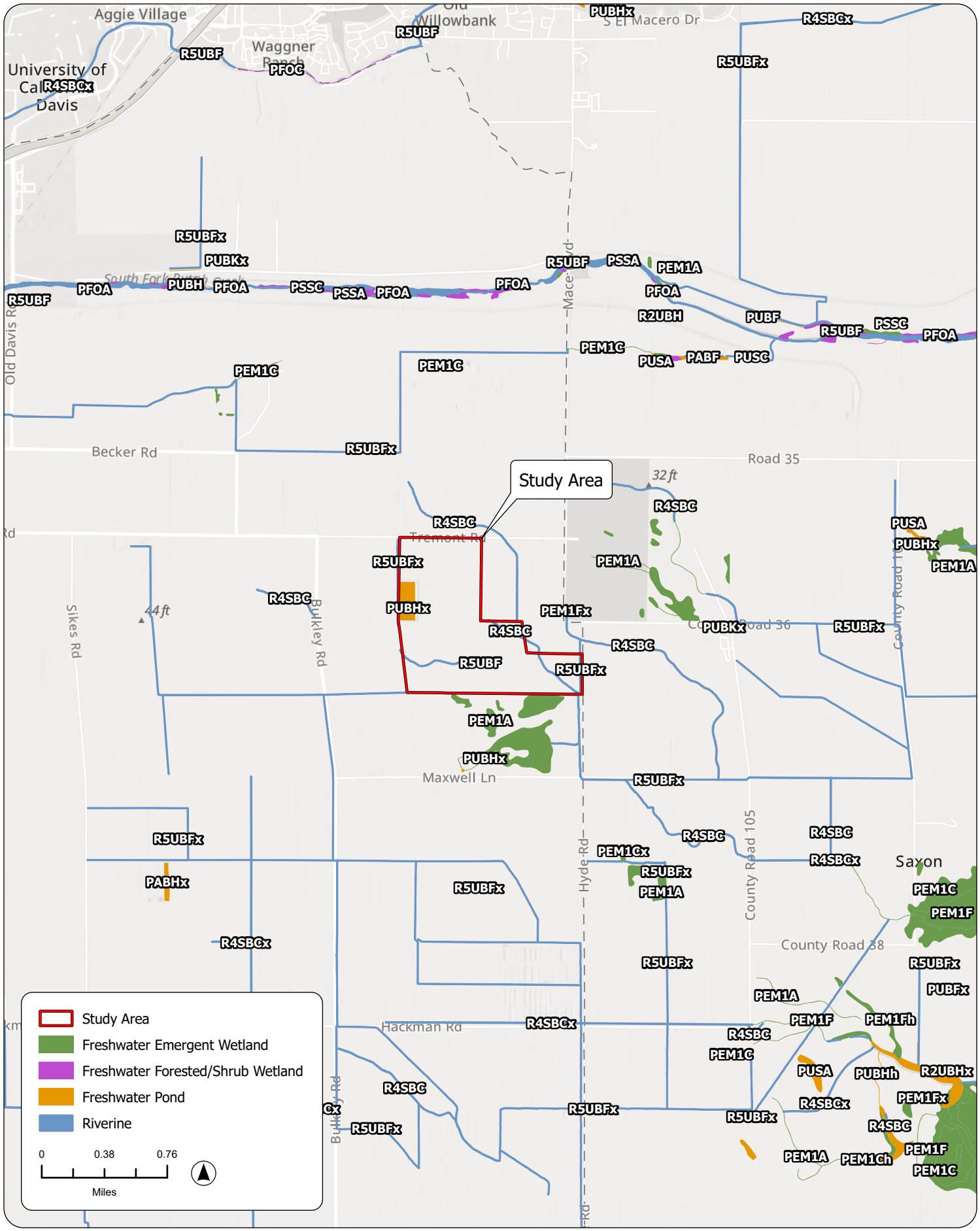
Prior to conducting the survey, the following information sources were reviewed:

- USGS 7.5-degree minute topographic quadrangle maps and aerial photography;
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey maps (**Figure 4**);
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate (Flood Hazard Boundary) Maps (FEMA, 2025);
- USFWS National Wetland Inventory Maps (**Figure 5**); and
- Previously prepared environmental reports for the Study Area.

3.2 DELINEATION PROCEDURES

The purpose of the field determination was to: 1) identify water features that are subject to federal jurisdiction within the Study Area; and 2) if present, determine the boundary of each water feature. The entire Study Area was assessed in such a manner as to view all areas to the degree necessary to determine the vegetation community types and the presence or absence of jurisdictional water features. Wetland field determination procedures followed the USACE Wetlands Delineation Manual technical guidelines for a Level 2 Routine Field Determination (Environmental Laboratory, 1987). Additionally, the appropriate USACE regional supplement was also consulted.

The diagnostic environmental characteristics of hydrophytic vegetation, hydric soils, and wetland hydrology (i.e., 3-parameter approach) were used as the standard for determining if specific areas qualified as wetlands (Environmental Laboratory, 1987). A subject area was determined to be a wetland if all 3 requisite characteristics were present; as a general rule, evidence of a minimum of one positive indicator for each parameter must be found in order to make a positive wetland determination. These parameters are discussed below.



SOURCE: U.S. Fish and Wildlife Service, 2024; ESRI, 2025; Acorn Environmental, 4/23/2025

Figure 5
National Wetland Inventory

3.2.1 Hydrophytic Vegetation

Hydrophytic vegetation is defined as "...*the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils sufficient in duration to exert a controlling influence on the plant species present*," (Environmental Laboratory, 1987).

Hydrophytic vegetation indicators included: prevalence of vegetation; majority of dominant plant species are obligate or facultative wetland plants (hydrophytes); morphological or physiological adaptations to saturated soil conditions; and species listed on the National List of Plant Species that Occur in Wetlands (USACE, 2025). This National List divides plant species into categories based upon their frequency of occurrence in wetlands. These categories are: OBL = obligate wetland plants that occur almost always in wetlands under natural conditions (estimated probability greater than 99%); FACW = facultative wetland plants that usually occur in wetlands, but occasionally occur in non-wetlands (estimated probability 67 – 99%); FAC = facultative wetland plants that are equally likely to occur in wetlands or non-wetlands (estimated probability 34 – 66 %); FACU – facultative upland plants that usually occur in non-wetlands, but occasionally are found in wetlands (estimated probability 1 – 33 %); UPL = obligate upland plants that almost always occur in non-wetlands (estimated probability greater than 99%); NI and UNK = insufficient information to determine status; NL = not listed; NA = no agreement by Regional Panel on status; NO = species does not occur in specified region; * (asterisk) indicates tentative assignment; + (positive) or – (negative) sign indicates higher or lower frequency in its category, respectively. During field investigations, the percentage of hydrophytic plant coverage was determined based on the ratio of wetland indicator species coverage present to the total plant coverage present. Generally, more than 50 percent of the dominant plant species cover must be FAC, FACW, or OBL to meet the hydrophytic vegetation criterion.

3.2.2 Hydric Soils

Hydric soils are defined as soils that are "...formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." (Environmental Laboratory, 1987). A minimum of one week of inundation or 14 consecutive days of saturation during the growing season is a typical requirement. The criteria for establishing the presence of hydric soils vary among different soil types and drainage classes. Hydric soil indicators include evidence of reducing or redoximorphic conditions (including sulfidic odor, organic streaking), gleyed, mottled, or low-chroma soils, iron and manganese concretions, and low dissolved oxygen concentration (aquic moisture regime); organic soils (histosols); or mineral soils saturated and rich in organics (histic epipedon) (NRCS, 2006). Richardson and Vepraskas (2001) present a thorough discussion of wetland soil science. In the absence of visible field indicators, hydric soil conditions may be determined according to two criteria: 1) all dominant plant species have an indicator status of OBL and/or FACW (at least one dominant plant species must be OBL); and 2) areas below the level of ordinary high water are frequently flooded for long duration or very long duration during the growing season and possess and aquic (reducing) moisture regime. Soils are also classified as hydric on non-hydric by NRCS (2006).

3.2.3 Hydrology

Wetland hydrology "...*encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season*" (Environmental Laboratory, 1987). Many factors influence site-specific hydrology, including the precipitation, stratigraphy, topography, soil permeability, and plant cover of the site. In general, inundation or saturation must occur for at least 5 percent of the growing season to qualify as wetland hydrology.

The degree of inundation or saturation at the subject site can vary widely from year to year depending on rainfall patterns within the watershed. Primary wetland hydrology indicators include visual observations of inundation or soil saturation, water marks and water-stained leaves, sediment deposits, drift lines, and drainage patterns in wetlands.

3.2.4 Data Collection Procedures

Sampling locations were established within potential wetland areas and within adjacent uplands, where present, to determine the boundary of wetlands. At each sampling point, the location was georeferenced using a GPS receiver and marked on an aerial photograph; a numbered pin flag or lathe was placed, where necessary, to assist other surveyors. Information on vegetation, soils, and hydrology was recorded on a USACE Routine Wetland Determination Data Form.

Dominant and subdominant plant species in each vegetative stratum (e.g., tree, shrub, forb) that occurred within approximately 5 to 10 feet of the sampling point were identified and recorded, and their wetland indicator status determined. All visible flora observed were recorded in a field notebook and identified to the lowest possible taxon; a hand lens was used where necessary. When a specimen could not be identified *in situ*, a photograph or voucher specimen (depending upon scientific permit requirements) was taken and identified later in the laboratory using a dissecting scope where necessary. Taxonomic determinations and nomenclature followed Baldwin et al. (2012) and University of California at Berkeley (2025).

Where necessary, a soil pit was dug with a spade to expose at least 16 inches of soil profile, and the sample evaluated for hydric soil indicators. Munsell Soil Color Charts (2000 edition, Gretagmacbeth, Inc.) were used to determine soil matrix and mottle color (hue, value, and chroma), and soil type and particle size was also noted. NRCS (2002, 2006) Soil Taxonomy handbook was referenced for soil classification where necessary. Based on the results of the 3-parameter test, the extent of each potential wetland was mapped in the field using a GPS receiver capable of submeter accuracy and/or demarcated on aerial photographs for later “heads-up” digitization. Wetlands and other aquatic habitats were classified using the USFWS “Classification System for Wetland and Deepwater Habitats”, or “Cowardin class” (Cowardin et al., 1979; USFWS 2014). A determination was made whether normal environmental conditions exist; atypical conditions followed a modified procedure described in the USACE Manual (Environmental Laboratory, 1987). Geographic analyses, including acreage calculations, were performed using geographical information system software (ArcGIS 10, ESRI, Inc.).

For identification of water features other than wetlands that are subject to federal or State jurisdiction, 2 principal field characteristics were evaluated: 1) the presence of a channel; and 2) the presence of an ordinary high water mark. The ordinary high water mark is defined in 33 CFR Part 329.11 as the line on the shore established by the fluctuations of water, and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Other characteristics were noted, where possible: description of hydrologic feature type, length, approximate discharge volume, gradient, range between low and high water mark, width of riparian vegetation, etc. For determination of whether these water bodies constituted waters of the US, USACE regulations (33 CRF 328) were consulted.

Section 4 | Results

4.1 FIELD SURVEY

Dr. G.O. Graening conducted the field assessment on April 22, 2025. Complete coverage, variable-intensity pedestrian surveys were performed of the Study Area, modified to account for differences in terrain, vegetation density, and visibility. Sampling points were established at key locations and analyzed for the presence or absence of wetland (or for channels, ordinary high water mark) indicators; these points are documented in the data sheets in **Attachment C**. The results of the analyses of Study Area vegetation, soils, and hydrology are presented in the following sections, followed by the recommended jurisdictional determination.

4.2 TERRESTRIAL VEGETATION COMMUNITIES

Terrestrial habitats observed within the Study Area are limited to agriculture. Based on historical aerial imagery, the Study Area has been in consistent agricultural production for years, with clear evidence of row crop production. At the time of the April 2025 survey, the majority of the Study Area was planted in commercial hay species. The northern portion of the Study Area was sown with alfalfa, and the balance of agricultural areas were in production of forage hay grasses, primarily perennial ryegrass (*Lolium perenne*) and hare barley (*Hordeum murinum*). Evidence of flood irrigation was observed. Areas not actively cultivated are limited to dedicated infrastructure for ongoing maintenance of agricultural activities on the Study Area such as internal dirt roadways. These areas are generally devoid of vegetation and are regularly managed. Where vegetation is present, it is generally sparse and limited to hardy, weedy species that are subject to ongoing removal. A total of 395.8 acres within the Study Area is in agricultural use. Classification and description of terrestrial plant communities follows the methodology accepted by CDFW (2019), which is based on Sawyer and Keeler-Wolf's (1995) Manual of California Vegetation. Habitats are shown on **Figure 6**. **Attachment D** contains a list of plant species observed within the Study Area, and site photographs are provided in **Attachment E**.

4.3 SOIL TYPES

The NRCS mapped soil units occurring within the Study Area are listed and described in **Table 1** below and are shown in **Figure 4**. None of the NRCS mapped soil units within the Study Area were found to be designated "hydric" by NRCS. NRCS provides this disclaimer: "Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for observations made during on-site investigations."

4.4 HYDROLOGY

Topography on and around the Study Area is relatively flat. Surface waters are largely comprised of networks of manmade ditches used for agricultural irrigation and flood control. The Study Area is within the Tremont Cemetery (180201630601) watershed (USEPA, 2025). According to the FEMA Flood Hazard Boundary Map of the region, the Study Area is wholly within the 100-year floodplains (Flood Zone A; FEMA, 2025).

SOURCE: ESRI, 2025; Sonoma County GIS, 2025; Google Earth Aerial Photograph, 3/24/2025; Acorn Environmental, 4/23/2025

Figure 6
Habitat Types

Table 1: Soils within the Study Area

Soil Type	Soil Characteristics	Hydric Soil?
Capay silty clay loam, 0 percent slopes, MLRA 17	▪ Prime Farmland if irrigated ▪ Moderately well drained ▪ High runoff class ▪ 80+ inches to groundwater	No
Pescadero silty clay loam, 0 percent slopes, MLRA 17	▪ Not Prime Farmland ▪ Somewhat poorly drained ▪ Very high runoff class ▪ 4-85 inches to groundwater	No
Rincon clay loam, 0 to 2 percent slope	▪ Prime Farmland if Irrigated ▪ Well drained ▪ Medium runoff class ▪ 80+ inches to groundwater	No
Yolo silty clay loam, 0 to 2 percent slopes, MLRA 17	▪ Prime Farmland if Irrigated ▪ Well drained ▪ Low runoff class ▪ 80+ inches to groundwater	No

Source: NRCS, 2025

4.5 NATIONAL WETLANDS INVENTORY / PREVIOUS DELINEATIONS

The USFWS National Wetland Inventory (NWI) digital map of the Study Area is included as **Figure 5** and was reviewed prior to the delineation field efforts and visited in the field to verify presence and accuracy of mapping. NWI features within the Study Area are described as “Riverine” habitat, with the exception of a feature classified as a freshwater pond (palustrine). NWI reports the location of these features as being interpreted using 1:65,000 scale, color infrared imagery from 1985. This database was not used to conclude that a wetland was present or absent in the Study Area but was used as an information source.

A preliminary review of aquatic resources on the Study Area was performed by Soar Environmental Consulting on August 6-7, 2024 (Soar Environmental Consulting, 2024). The draft results of this review were erroneously sent to USACE prior to a complete quality control review of the data and report body. This report was reviewed during the preparation of this Aquatic Resources Delineation with the understanding that errors are present within the draft Aquatic Resources Delineation that was prepared by Soar Environmental Consulting.

Section 5 | Delineation Results and Jurisdictional Recommendations

5.1 DELINEATED WATER RESOURCES

Hydrologic features were identified and mapped within the Study Area. This map has not been verified by USACE or SWRCB and thus represents an unofficial demarcation of the potential limits of jurisdiction. Various survey points were established for the delineation and data sheets completed.

5.1.1 Agricultural Irrigation Ditches

The definition of irrigation ditches that do not meet the criteria of "Waters of the U.S." is provided in 40 CFR §120.2(b)(3) which states "ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water." The agricultural irrigation ditches in the Study Area were dug from uplands and drain uplands (withdrawal for irrigation). These features do not carry a permanent flow. Therefore, these features do not meet the criteria for waters of the U.S.

5.1.2 Agricultural Water Storage Basin

The definition of an artificial lake is provided in 40 CFR §120.2(b)(5) which states "Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing" are also not "Waters of the United States". The agricultural water storage basin is a manmade feature that was created in uplands by placement of berms. The agricultural water storage basin was established pursuant to a water right that allowed the landowner to divert water from the County Irrigation District's ditches for the purposes of agricultural irrigation and stock watering. This feature was established in uplands and drains to uplands (withdrawal for irrigation). This feature is isolated and not connected to other surface waters. Manmade isolated features that do not have a hydrological connection to other surface waters do not meet the definition of a water of the U.S.

5.2 WATER RESOURCES POTENTIALLY SUBJECT TO USACE JURISDICTION

Identified hydrologic features were subjected to the 3-parameter test and guidance of current court decisions. Based upon these criteria, the following water features within the Study Area were determined to be potentially subject to USACE jurisdiction (**Figure 7**). As described in Section 5.1, the aquatic resources identified in the Study Area do not meet the definition of waters of the U.S. Therefore, there are no features considered potentially subject to USACE jurisdiction.

Aquatic Resources Classification			Aquatic Resource Size		
Aquatic Resource Name	**Cowardin**	**Location (Lat/Long)**	**(sq. ft.)**	**(acre)**	**(linear feet)**
Channels					
none	---	---	0	0.00	0
		Total Channels	**0**	**0.00**	**0**
Wetlands					
none	---	---	0	0.00	
		Total Wetlands	**0**	**0.00**	

Delineator: Dr. G.O. Graening, 4/23/2025

SOURCE: ESRI, 2025; Sonoma County GIS, 2025; Google Earth Aerial Photograph, 3/24/2025; Acorn Environmental, 4/24/2025

Figure 7
Aquatic Resources Delineation

5.2.1 Upland Features Not Expected to be Subject to Federal Regulation

Upland features such as agricultural production areas are not expected to be subject to federal regulation.

5.3 WATER RESOURCES POTENTIALLY SUBJECT TO STATE JURISDICTION

Identified hydrologic features were compared against the definition of waters of the State as currently enforced by SWRCB. The following presents a discussion on the jurisdictional status of identified aquatic resources and the need for permitting prior to impacts.

5.3.1 Agricultural Irrigation Ditches

Waters of the State are currently defined to include any surface water or groundwater, including saline waters and man-made features, within the boundaries of the State. The agricultural irrigation ditches in the Study Area, including the Solano Irrigation District water conveyance ditches, consist of manmade features that were created within uplands and drain to uplands for use as crop irrigation. Therefore, the agricultural irrigation ditches within the Study Area would be considered waters of the State. However, the State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State provides exemptions for certain ditches. Exemptions within Section IV.D(2c) applicable to the agricultural irrigation ditches include:

1. Agricultural ditches with ephemeral flow that are not a relocated water of the state or excavated in a water of the state.
2. Agricultural ditches with intermittent flow that are not a relocated water of the state or excavated in a water of the state, or that do not drain wetlands other than any wetlands described in sections (iv) or (v).
3. Agricultural ditches that do not flow, either directly or through another water, into another water of the state.

Based on this, the agricultural irrigation ditches, including the Solano Irrigation District water conveyance ditches, would likely be considered waters of the State that are exempt from Waste Discharge Requirement permitting.

5.3.2 Agricultural Water Storage Basin

The agricultural water storage basin is a manmade feature created in uplands by installation of a berm above grade to retain water. This feature was initially constructed as part of a water right that allowed for use of tail water from the Solano Irrigation District's ditches and has since been used for agricultural irrigation and stock watering, primarily of sheep and cattle. The State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State generally considers artificial wetlands to be waters of the state but does provide an exemption in Section II 3(d)v. when the use is for agricultural irrigation and stock watering. Therefore, the agricultural water storage basin does not meet the definition of a water of the state. Further, permitting exceptions listed in Section IV.D(2c) include an exemption for "artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, and settling basins." Thus, even though the agricultural water storage basin does not meet the definition of a water of the state, it also exempt from permitting requirements.

5.3.3 Riparian Stream Zones Regulated by CDFW

Riparian habitat was not observed within the Study Area.

5.3.4 Upland Features Not Expected to be Subject to State Regulation

Upland features such as agricultural production areas are not expected to be subject to State regulation.

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Section 7 | Qualifications of Surveyors/Authors

G.O. Graening, Ph.D., M.S.E.

G. O. Graening holds a Doctorate in Biological Sciences and a Master of Science in Biological Engineering, and is a certified arborist (International Society of Arboriculture). Dr. Graening has 30 years of experience in environmental assessment and research, including the performance of numerous wetland delineations and aquatic restoration projects. Dr. Graening also served as an adjunct professor of biology at California State University Sacramento for 10 years and was an active researcher in the area of conservation biology and groundwater ecology.

Kelli Raymond, B.S.

Ms. Raymond holds a B.S. in Animal Biology with a focus on Wildlife Ecology. She has approximately 10 years of experience collecting field data and preparing environmental assessments. Ms. Raymond has worked in several states across the U.S. performing biological resources surveys, including plant surveys, wetland delineations, and wildlife utilization monitoring. She also has experience live handling numerous wildlife species, including fish, migratory birds, and big game. Ms. Raymond is experienced in the preparation of Biological Assessments and Section 7 consultation with both the USFWS and NMFS under the federal Endangered Species Act.

Attachment A

USACE Minimum Standards Checklist

MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**

January 2016

The U.S Army Corps of Engineers, through its Regulatory Program, regulates certain activities in waters of the United States. Waters of the U.S. are defined under 33 CFR Part 328. In order for the Corps to determine the amount and extent of waters of the United States at a site, aquatic resources must first be delineated in accordance with established regulatory standards, guidance and protocol, such as the 1987 Corps of Engineers Wetlands Delineation Manual and appropriate regional supplements. Before making any permit decision, the Corps is responsible for conducting or verifying the delineation and determining which of the aquatic resources have the potential to fall under federal jurisdiction.

Due to limited staffing and resources, the Corps' Sacramento District recommends permit applicants employ the services of individuals experienced in delineating aquatic resources. Permit applicants are further encouraged early in the project planning stages to submit the delineation, along with a request for a preliminary or approved jurisdictional determination, and engage in a pre-application consultation with their local District office. Early consultation may help identify potential concerns and result in a quicker permit decision.

The District has established minimum standards for delineation reports to insure consistency and accuracy in the delineation of aquatic resources, which will minimize potential delays. The standards are based on years of experience conducting and verifying delineations, as well as the best practices of environmental consultants. Delineations submitted for verification must follow the standards, unless determined to not be practical on a case-by-case basis. Situations where adherence to the standards may not be practical include activities with small permanent or temporary impacts to aquatic resources (under 0.10 acre), applicants with limited financial resources, and emergencies. The District will notify the requestor for delineation submittals that do not contain sufficient information to accurately identify the limits of waters of the U.S.

Aquatic resources delineation reports submitted to the District must include the following:

☒ A cover letter requesting a jurisdictional determination. The letter must specify whether a preliminary or approved jurisdiction determination is requested.

☒ A signed statement from the property owner(s) allowing Corps personnel to enter the property and to collect samples during normal business hours. If the property is land-locked, the owner or proponent must obtain permission from the adjacent property owner(s) to provide access for Corps personnel.

☒ A statement that the delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and appropriate regional supplement(s). The regional supplement(s) used must be identified. For ordinary high water mark (OHWM) delineations, a statement indentifying the use of the OHWM field guide must be included.

☒ Directions to the survey area.

☒ Contact information for the applicant(s), property owner(s), and agent(s).

☒ A narrative describing all aquatic resources at the site and an explanation for the mapped boundaries, especially for resources containing complex transition zones. If the site contains resources that meet one or two wetland criteria or do not exhibit a clear OHWM, describe the rationale for not delineating these features. Examples include erosional features, upland swales, and other upland areas that appear “wet” on satellite or aerial imagery.

☒ The total acreage of the survey area.

☒ Date(s) field work was completed.

☒ A table listing all aquatic resources. The table will include the name of each aquatic resource, its Cowardin type, acreage, and location (latitude/longitude). For linear features, the table must show both acreage and linear feet.

☒ A description of existing field conditions. The field condition description may include current land use, flood/drought conditions, irrigation practices, modifications to the site, and any characteristics considered atypical.

☒ A discussion of the hydrology at the site, including all known surface or subsurface sources, drainage gradients, surface water connections to the nearest traditional navigable waterway or interstate water, and any potential influence for manmade water sources, such as irrigation. The discussion should also identify the nearest “blue-line” waterway or other feature found on the most recent USGS map.

☐ If remote sensing was used in the delineation, provide an explanation of how it was used and include the name, date and source of the tools used and copies of applicable maps/photographs.

☒ A discussion of plant communities and habitat types present at the site and a list of the scientific name, common name, and wetland indicator status of all plants.

☒ Soil descriptions, soil map(s), and a discussion of hydric soils or soils with hydric inclusions at the site.

☐ Any observed or documented interstate or foreign commerce associated with aquatic resources found on the site, specifically recreation or other use by interstate or foreign travelers, sale of fish or shellfish in interstate or foreign commerce, and use by industries operating in interstate or foreign commerce.

☒ A site location map on a 7.5-minute USGS quadrangle. The map must provide the name of the USGS quadrangle, Section, Township, Range, the UTM or latitude and longitude.

☒ A completed copy of the *Aquatic Resources Excel* spreadsheet must be submitted. The current version of the spreadsheet can be found at the following website: *www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/WetlandDelineations.aspx*

☒ A map of all delineated aquatic resources ("Aquatic Resouces Delineation Map") in accordance with the *Final Map and Drawing Standards for the South Pacific Division Regulatory Program* (Mapping Standards) and showing the following:

> ☒ All aquatic resources delineated must be clearly shown on the map. Because only the Corps determines the regulatory status of each aquatic resource, the map must not include any labeling about jurisdiction. If the requestor believes one or more aquatic resources are not jurisdictional, the rationale should be included in the delineation report and the resource(s) should be identified on the map.
> ☐ At least one set of paired data points, documented in data forms, for each aquatic resource or complex. The paired data points must be located close to the delineated boundary. Additional data points may be necessary, and should be shown on the map, depending on various factors including the size and shape of the aquatic resource, changes in vegetation communities, and slope.
> ☒ A reference block that identifies the site or project name, individual(s) who conducted the delineation, date of the map, and date(s) of any revisions.

☒ Completed data forms including all essential information to make a decision.

☒ A description of the methods used to survey the aquatic resource boundaries. For most delineations, the Sacramento District requires GPS equipment for the collection of data. At a minimum the GPS equipment must have the capability of sub-meter (<=1 meter) level accuracy. If other methods are used, the report must contain a rationale for this deviation.

☒ Digital data for the site, aquatic resource boundaries, and data point locations must be provided in a geographic information system (GIS) format, with ESRI Shape-files being the preferred format. Each GIS data file must be accompanied by a metadata file containing the appropriate geographic coordinate system, projection, and datum. If GIS data is unavailable or otherwise cannot be produced and the Corps determines a site visit is necessary, the aquatic resource boundaries must be physically marked with numbered flags or stakes before the Sacramento District can complete a delineation verification.

Often, additional information can expedite the verification of a delineation. Particularly helpful data includes site specific topographic maps, National Wetland Inventory (NWI), Light Detection and Ranging (LIDAR), satellite, aerial and ground photographs, floodplain maps, and related reports.

The Corps' Sacramento District developed a suggested format for aquatic resources delineation reports, which is attached to this document. This format is not required but rather is intended to assist requestors with the preparation of a delineation report in accordance with these minimum standards.

More information regarding aquatic resource delineations, including reference materials, the *Aquatic Resources Excel* spreadsheet, and the suggested format for the aquatic resources delineation report can be found on our website at: *www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/WetlandDelineations.aspx*.

Attachment B

Property Access Form

U.S. ARMY CORPS OF ENGINEERS

REQUEST FOR CORPS JURISDICTIONAL DETERMINATION

*__Authorities__: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332. __Principal Purpose__: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above. __Routine Uses__: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website. __Disclosure__: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

CORPS USE ONLY:
DATE RECEIVED:

PROJECT NO.:

1. PROPERTY LOCATION:

Street Address: 8330 Tremont Road

City/Township/Parish: Dixon

County: Solano State: California

Acreage of Parcel/Review Area for JD: 426

Section: 35 Township: 8N Range: 2E

Latitude: 38.494596 Longitude: -121.705238

(For linear projects, please include the center point of the proposed alignment.)

2.REQUESTOR CONTACT INFORMATION:

Typed or Printed Name: Kt Alonzo

Company Name: Acorn Environmental

Street Address: 5170 Golden Foothill Parkway

City: El Dorado State: CA ZIP: 95762

Phone Number: (530) 863-6191

E-mail: kalonzo@acorn-env.com

3. MAP: Please attach a survey/plat map and vicinity map identifying location and review area for the JD.

4. REASON FOR REQUEST (check as many as applicable):

- ☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
- ☒ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
- ☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
- ☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
- ☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
- ☐ A Corps JD is required in order to obtain my local/state authorization.
- ☐ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
- ☐ I believe that the site may be comprised entirely of dry land.
- ☐ Other:

5. TYPE OF DETERMINATION BEING REQUESTED:

- ☒ I am requesting an approved JD.
- ☐ I am requesting a preliminary JD.
- ☐ I am requesting a “no permit required” letter as I believe my proposed activity is not regulated.
- ☐ I am unclear as to which JD I would like to request and require additional information to inform my decision.

6. OWNERSHIP DETAILS:

- ☐ I currently own this property.
- ☐ I plan to purchase this property.
- ☒ I am an agent/consultant acting on behalf of the requestor.
- ☐ Other (please explain:)

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

Signature: Kaitlan Alonzo Digitally signed by Kaitlan Alonzo Date: 2025.04.24 16:23:37 -07'00' Date:

Attachment C

Data Sheets

SID Canal

Project: Realized Dreams Ranch subdivision | **Date:** 4/22/25 | **Time:**
Project Number: 2514 | **Town:** | **State:**
Stream: n/a SID canal | **Photo begin file#** | **Photo end file#**
Investigator(s): Dr. Geo Graening

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

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: SID canal near pond

Projection: **Datum:**
Coordinates: 38.49138, -121.7116

Notes: entire site has been graded; regular disturbance from active agriculture and weed control

Brief site description:
SID canal near ag reservoir; irregularly flowing; also used for flood control

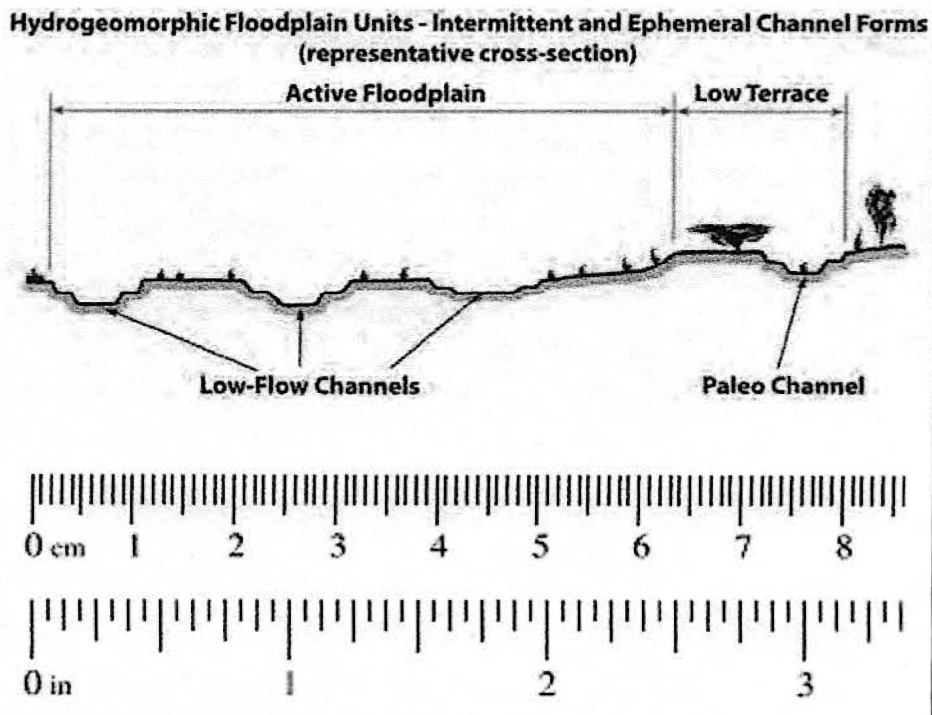
Checklist of resources (if available):

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

- ☐ Stream gage data n/a
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ 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

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
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



☑ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☐ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: fine silt

Total veg cover: 10 % Tree: 0 % Shrub: 0 % Herb: 10 %

Community successional stage:

☒ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Persicaria, Lemna, Typha

Other: ☐ canal is 6 to 8 feet deep and 8 feet wide

☐

☐

☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☒ Drift and/or debris

☐ Other: _____

☐ Other: _____

☐ **Continue walking the channel cross-section. Record observations below.** n/a

Characteristics of the low-flow channel:

Average sediment texture: _____

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

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐

☐

☐ channel only

☐

☑ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☒ Other ☑ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☐ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☒ N ☒ Other:
  - Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☐ N ☐ Other: _____
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: 100 % Tree: ____ % Shrub: ____ % Herb: 100 %

Community successional stage:

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

Dominant species present: upland grasses (Avena, Bromus, Hordeum)

Other:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph ☒ GPS
- ☑ Digitized on computer ☐ Other: _____

Agricultural Ditch

Project: Realized Dreams Ranch Subdivision
Project Number: 2514
Stream: n/a Ditch
Investigator(s): Dr. Geo Gmemmy

Date: 4/22/25
Time:
Town:
State:
Photo begin file#
Photo end file#

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

Y ☑ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates: 38.4848, -121.7092

Notes: entire site has been graded; irrigation ditches recently plowed; active agriculture

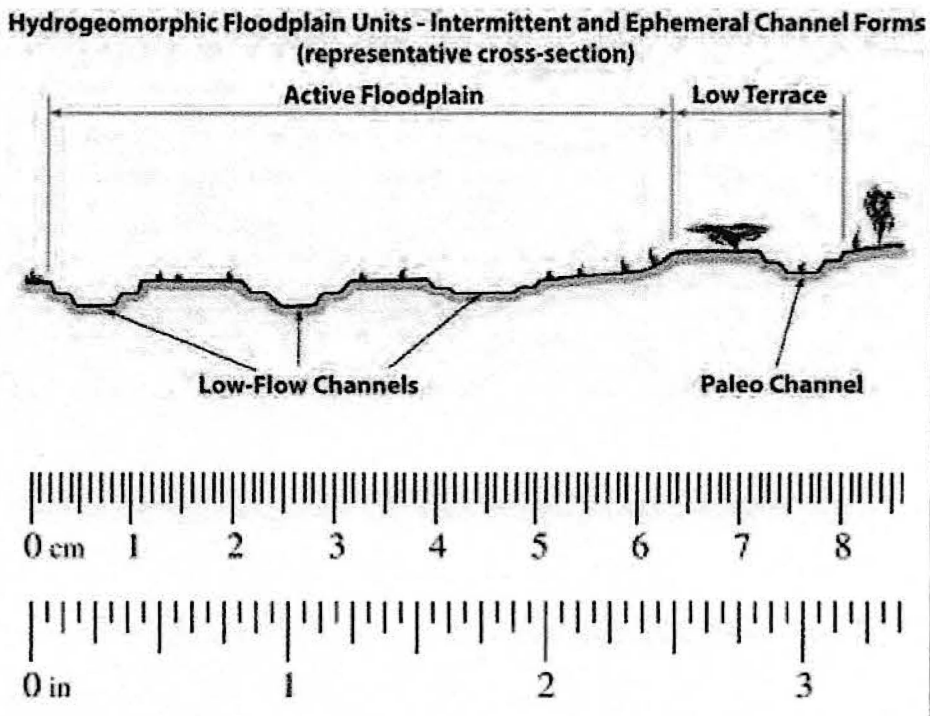
Brief site description:
typical agricultural ditch, created in uplands by plowing

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
  Scale:
- ☐ Geologic maps
- ☐ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☑ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data n/a
  Gage number:
  Period of record:
- ☐ Clinometer / level
- ☐ 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

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

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	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



☑ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☐ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: coarse sand

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

Community successional stage:

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

Dominant species present: none, as it was recently plowed

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☒ Other ☒ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☐ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel:

Average sediment texture: _____

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

Community successional stage:

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

Dominant species present: _____

Other: ☐ no additional channels ☐ ☐ ☐

☑ **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

- ☐ Change in average sediment texture
- ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- ☐ Change in overall vegetation maturity
- ☐ Change in dominant species present
- ☑ Other
  - ☒ Presence of bed and bank
  - ☐ Drift and/or debris
  - ☐ Other: _____
  - ☐ Other: _____

☐ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

- Y ☐ N ☐ Change in average sediment texture
- Y ☐ N ☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
- Y ☐ N ☐ Change in overall vegetation maturity
- Y ☐ N ☐ Change in dominant species present
- Y ☐ N ☐ Other:
  - Y ☒ N ☐ Presence of bed and bank
  - Y ☐ N ☐ Drift and/or debris
  - Y ☐ N ☐ Other: _____
  - Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☑ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: _____

Total veg cover: 100 % Tree: ____ % Shrub: ____ % Herb: 100 %

Community successional stage:

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

Dominant species present: alfalfa

Other: ☐ planted in alfalfa

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

- ☐ Mapping on aerial photograph
- ☑ GPS
- ☑ Digitized on computer
- ☐ Other: _____

Attachment D

List of Plants Observed

Plants observed by Soar Environmental Consulting (August 2024)
and Acorn Environmental (April 2025)

Scientific Name	Common Name
Quercus lobata	valley oak
Robinia pseudoacacia	black locust
Juglans californica	California walnut
Avena barbata	wild oat
Bromus hordeaceus	soft chess
Cynodon dactylon	Bermuda grass
Festuca perennis (Lolium perenne)	Italian ryegrass
Festuca pratensis	meadow fescue
Hordeum marinum	wall barley
Echinochloa crus-galli	barnyard grass
Polypogon monspeliensis	Rabbitsfoot grass
Lepidium appelianum	white top mustard
Echinodorus berteroi	Burhead
Amaranthus albus	white amaranth
Rubus armeniacus	Himalaya berry
Portulaca oleracea	purslane
Rumex crispus	curly dock
Lactuca serriola	prickly lettuce
Medicago ploymorpha	bur clover
Leymus condensatus	ryegrass
Typha latifolia	broadleaf cattail
Carduus pycnocephalus	Italian thistle
Convolvulus arvensis	bindweed
Cirsium vulgare	bull thistle
Centaurea solstitialis	yellow starthistle
Paspalum dilatatum	Dallis grass
Croton setigerus	doveweed
Cynara cardunculus	Artichoke thistle
Erigeron bonariensis	flax-leaf fleabane
Epilobium brachycarpum	willowherb
Lotus corniculatus	birdsfoot trefoil
Malva bullata	cheeseweed
Malva nicaensis	bull mallow
Malvella leprosa	Alkali mallow
Polygonum aviculare	knotweed
Plantago lanceolata	European plantain
Trifolium fragiferum	strawberry clover
Spergularia rubra	spurrey
Typha domingoensis	Cattail
Silybum marianum	milk thistle
Centromadia pungens	Common tar plant
Medicago sativa	alfalfa

Attachment E

Site Photographs

Representative photo of an agricultural irrigation ditch with unpaved farm road and berm of water storage basin on the right and flooded field agriculture on the left (alfalfa)

Agricultural water storage basin on the Study Area used for irrigation and stockwatering

Agricultural irrigation ditch that is part of the Solano Irrigation District's conveyance system

Site access off Tremont Road showing road ditch and feedcrop (alfalfa)

Site access off Tremont Road showing agricultural irrigation ditch and associated siphons and dams used to flood-irrigate the alfalfa

Berm of agricultural storage basin (on right) and hay crop (on left), with pipe culvert and irrigation ditch (center)

Concrete pipe culvert/lock and irrigation ditch (center), with hay crops on both sides.

Irrigation ditch parallel to Tremont Road that is filled by groundwater pumped from a well.

One of the Solano Irrigation District's canals in the center of the Study Area.

Site access off Tremont Road showing Solano Irrigation District's canal, with a sidewall that was recently scraped to remove vegetation.