Aquatic Resources Delineation

Blacker Ditch Bank Stabilization Project

Yolo County, California

Prepared for:

Reclamation District 900

January 6, 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS AND ABBREVIATIONS

CARI	California Aquatic Resource Inventory
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
FR	Federal Register
LSA	Lake and Streambed Alteration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWPR	Navigable Waters Protection Rule
OHWM	Ordinary high water mark
ORM	USACE Operations and Maintenance Business Information Link Regulatory Module
RD900	Reclamation District 900
RWQCB	Regional Water Quality Control Board
Study Area	Blacker Ditch Bank Stabilization Project
TNW	Traditional Navigable Waters
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey

1.0 INTRODUCTION

On behalf of Reclamation District 900 (RD900), ECORP Consulting, Inc. conducted an aquatic resources delineation for the approximately 4.53-acre Blacker Ditch Bank Stabilization Project (Study Area) located in the city of West Sacramento, Yolo County, California. The Study Area is located along the southern bank of Blacker Ditch between Linden Road and Jefferson Boulevard, and along the north and south banks of the ditch between Linden Road and the RD900 Main Canal (Figure 1. *Property Location and Vicinity*). The Study Area corresponds to an unsectioned portion of the "Sacramento West, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1992). The approximate center of the Study Area is located at latitude 38.540506° and longitude -121.555818° (NAD83) within the Lower Sacramento Watershed (Hydrologic Unit Code #18020163; Natural Resources Conservation Service [NRCS], USGS, U.S. Environmental Protection Agency [USEPA] 2016). Driving directions to the Study Area are included as Attachment A.

This report describes aquatic resources identified within the Study Area that may be regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the federal Clean Water Act (CWA). The information presented in this report provides data required by the USACE Sacramento District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016a). The aquatic resource boundaries depicted in this report represent a calculated estimation of the jurisdictional area within the Study Area and are subject to modification following the USACE verification process.

The purpose of this report is to provide adequate information to USACE for the issuance of an Approved Jurisdictional Determination.

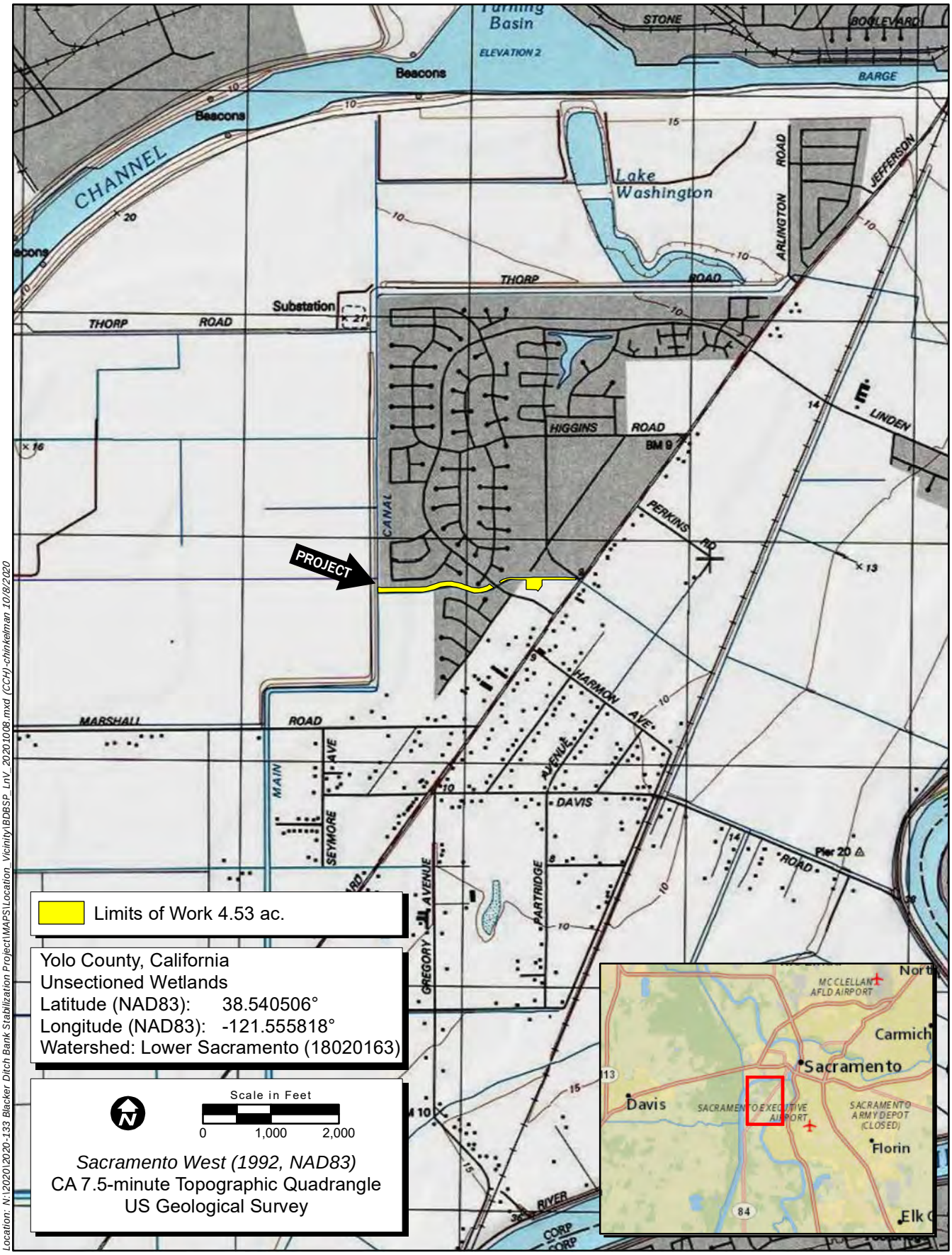
2.0 REGULATORY SETTING

2.1 Waters of the United States

This report describes aquatic resources, including wetlands that may be regulated by USACE under Section 404 of the federal CWA. The following sections define these regulations.

2.1.1 Wetlands

Wetlands are "*those areas that are inundated or saturated by surface or groundwater 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*" [51 Federal Register (FR) 41250, Nov. 13, 1986, as amended at 58 FR 45036, Aug. 25, 1993]. Wetlands can be perennial or intermittent.



Location: N:\2020\2020-133 Blacker Ditch Bank Stabilization Project\MAPS\Location_Vicinity\BDBSP_LnV_20201008.mxd (CCH)-chirkelman 10/8/2020

Map Date: 10/8/2020

Sources: © 2013 National Geographic Society

Figure 1. Study Area Location and Vicinity

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2.1.2 Other Waters

Other waters are nontidal, perennial, and intermittent watercourses and tributaries to such watercourses [51 FR 41250, Nov. 13, 1986, as amended at 58 FR 45036, August 25, 1993]. The limit of USACE jurisdiction for nontidal watercourses (without adjacent wetlands) is defined in 33 Code of Federal Regulations (CFR) 328.4(c)(1) as the "ordinary high water mark" (OHWM). The OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" approximation of the lateral limit of USACE jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

2.2 Clean Water Act

The USACE regulates discharge of dredged or fill material into Waters of the U.S. under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into Waters of the U.S., including, but not limited to the following: placement of fill necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 CFR § 328.2(f)]. In addition, Section 401 of the CWA (33 U.S. Code 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Substantial impacts to wetlands, over 0.5 acre of impact, may require an individual permit. Projects that only minimally affect wetlands, less than 0.5 acre of impact, may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.3 Jurisdictional Assessment

On April 21, 2020, the USEPA and the Department of the Army published the Navigable Waters Protection Rule (NWPR) to define "waters of the United States" in the FR (USACE and USEPA 2020). The agencies are streamlining the definition so that it includes four categories of jurisdictional waters, provides clear exclusions for many water features that traditionally have not been regulated, and defines terms in the regulatory text that have never been defined before. The NWPR regulates traditional navigable waters and the core tributary systems that provide perennial or intermittent flow into them.

The four categories of federally regulated waters are:

- the territorial seas and traditional navigable waters,
- perennial and intermittent tributaries to those waters,

- certain lakes, ponds, and impoundments, and
- wetlands adjacent to jurisdictional waters.

The final rule also details 12 categories of exclusions, features that are not "waters of the United States," such as features that only contain water in direct response to rainfall (e.g., ephemeral features); groundwater; many ditches; prior converted cropland; and waste treatment systems.

The final rule clarifies key elements related to the scope of federal CWA jurisdiction, including:

- Providing clarity and consistency by removing the proposed separate categories for jurisdictional ditches and impoundments.
- Refining the proposed definition of "typical year," which provides important regional and temporal flexibility and ensures jurisdiction is being accurately determined in times that are not too wet and not too dry.
- Defining "adjacent wetlands" as wetlands that are meaningfully connected to other jurisdictional waters, for example, by directly abutting or having regular surface water communication with jurisdictional waters.

The NWPR is the second step in a two-step process to review and revise the definition of "waters of the United States" consistent with the February 2017 Presidential Executive Order entitled "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States.'" This final rule became effective on June 22, 2020 and has replaced the Step One Rule published in October 2019.

2.4 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" [Water Code 13260(a)]. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" [Water Code 13050 (e)]. The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of Waste Discharge Requirements for these activities.

2.5 California Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code requires individuals or agencies to provide a Lake and Streambed Alteration (LSA) Agreement to the California Department of Fish and Wildlife (CDFW) for "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." CDFW reviews the proposed actions and, if necessary, proposed

measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the LSA Agreement.

3.0 METHODS

This aquatic resources delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) (USACE 2008). The boundaries of aquatic resources were delineated through standard field methods (e.g., paired sample set analyses). Field data were recorded on Wetland Determination Data Forms - Arid West Region (Attachment B). *Munsell Soil Color Charts* (Munsell Color 2009) and the Web Soil Survey (NRCS 2020a) were used to aid in identifying hydric soils in the field. *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012) was used for plant nomenclature and identification.

The field delineation and data collection were conducted on December 3, 2020 by ECORP biologist Keith Kwan. The biologist walked the entire approximately 4.53-acre Study Area to determine the location and extent of aquatic resources within the Study Area during the surveys. Paired locations were sampled to evaluate whether or not the vegetation, hydrology, and soils data supported an aquatic resource determination. At each paired location, one point was located such that it was within the estimated aquatic resource area, and the other point was situated outside the limits of the estimated aquatic resource area. Additional non-paired locations were sampled to document suspect areas that were determined not to be aquatic resources because they lacked hydrophytic vegetation, hydric soils, and/or wetland hydrology. Aquatic resources and sampling point locations within the Study Area were recorded in the field using a post-processing capable Global Positioning System unit with sub-meter accuracy (Juniper Systems, Inc. Geode GNS2 Multi-GNSS 10Hz Receiver with Apple iPad/iOS interface).

3.1 Routine Determinations for Wetlands

To be determined a wetland, the following three criteria must be met:

- A majority of dominant vegetation species are wetland-associated species.
- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season.
- Hydric soils are present.

3.1.1 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 permanent or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (Environmental Laboratory 1987). The definition of wetlands includes the phrase "*a prevalence of vegetation typically adapted for life in saturated soil conditions*." Prevalent vegetation is characterized by the dominant plant species comprising the plant community (Environmental Laboratory 1987). The dominance test is the basic hydrophytic vegetation indicator and was applied at each sampling point location. The "50/20 rule"

was used to select the dominant plant species from each stratum of the community. The rule states that for each stratum in the plant community, dominant species are the most abundant plant species (when ranked in descending order of coverage and cumulatively totaled) that immediately exceed 50 percent of the total coverage for the stratum, plus any additional species that individually comprise 20 percent or more of the total cover in the stratum (USACE 1992, 2008).

Dominant plant species observed at each sampling point were then classified according to their indicator status (probability of occurrence in wetlands, Table 1), *North American Digital Flora: National Wetland Plant List* (Lichvar et al. 2016). If the majority (more than 50 percent) of the dominant vegetation on a site are classified as obligate (OBL), facultative wetland (FACW), or facultative (FAC), the site was considered to be dominated by hydrophytic vegetation.

Table 1. Classification of Wetland-Associated Plant Species[1]

Plant Species Classification	Abbreviation	Probability of Occurring in Wetland
Obligate	OBL	Almost always occur in wetlands
Facultative Wetland	FACW	Usually occur in wetlands, but may occur in non-wetlands
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands, but may occur in wetlands
Upland	UPL	Almost never occur in wetlands
Plants That Are Not Listed (assumed upland species)	N/L	Does not occur in wetlands in any region

[1]Source: Lichvar et al. 2016

In instances where indicators of hydric soil and wetland hydrology were present, but the plant community failed the dominance test, the vegetation was re-evaluated using the Prevalence Index. The Prevalence Index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL=1, FACW=2, FAC=3, FACU=4, and UPL=5) and weighting is by abundance (percent cover). If the plant community failed the Prevalence Index, the presence/absence of plant morphological adaptations to prolonged inundation or saturation in the root zone was evaluated.

3.1.2 Soils

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS 2003). Indicators that a hydric soil is present include, but are not limited to, histosols, histic epipedon, hydrogen sulfide, depleted below dark surface, sandy redox, loamy gleyed matrix, depleted matrix, redox dark surface, redox depressions, and vernal pools.

At each sampling point, a soil pit was excavated to the depth needed to document an indicator to confirm the absence of indicators, or until refusal at each sampling point. The soil was then examined for hydric soil indicators. Soil colors were determined while the soil was moist using the *Munsell Soil Color Charts*

(Munsell Color 2009). Hydric soils are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. These processes and the features in the soil that develop can be identified by looking at the color and texture of the soils.

3.1.3 Hydrology

Wetlands, by definition, are seasonally or perennially inundated or saturated at or near (within 12 inches of) the soil surface. Primary indicators of wetland hydrology include, but are not limited to: visual observation of saturated soils, visual observation of inundation, surface soil cracks, inundation visible on aerial imagery, water-stained leaves, oxidized rhizospheres along living roots, aquatic invertebrates, water marks (secondary indicator in riverine environments), drift lines (secondary indicator in riverine environments), and sediment deposits (secondary indicator in riverine environments). The occurrence of one primary indicator is sufficient to conclude that wetland hydrology is present. If no primary indicators are observed, two or more secondary indicators are required to conclude wetland hydrology is present. Secondary indicators include, but are not limited to drainage patterns, crayfish burrows, FAC-neutral test, and shallow aquitard.

4.0 RESULTS

4.1 Existing Site Conditions

The Study Area is situated at an elevation of approximately 10 feet above mean sea level in Yolo County, California. The Study Area is located in the Great Valley region of the California Floristic Province (Baldwin et al. 2012). This region is characterized by agricultural areas, grasslands, wetlands, and valley oaks (Baldwin et al. 2012). The average annual precipitation for the region is 18.52 inches (with the wettest period during November-March), and average daily temperatures range from 47.7 degrees Fahrenheit (˚F) in winter to 73.8˚F in summer for the Sacramento Executive Airport reporting station, approximately three miles southeast of the Study Area (National Oceanic and Atmospheric Administration 2020).

The Study Area is located in a developed setting with surrounding residential and commercial developments. The Study Area is characterized by a drainage ditch and adjacent developed or ruderal lands. There is a concrete culvert crossing at Linden Road. Linden Road and the culvert crossing are not a part of the Study Area. The Study Area includes the north and south banks west of Linden Road, and only the south bank east of Linden Road. The drainage ditch has a uniform width, approximately 25 feet, with shallow to steep banks, some of which have eroded. Vegetation within the ditch ranges from absent to dense patches of emergent species such as hardstem bulrush (*Schoenoplectus acutus*) and broadleaf cattail (*Typha latifolia*). The uplands adjacent to the ditch, including the proposed staging area, are comprised of ruderal and developed lands. The ruderal lands include weedy patches of non-native vegetation on constructed levees. Non-native weedy plants found in these ruderal areas include Bermuda grass (*Cynodon dactylon*) and wild oats (*Avena fatua*).

This aquatic resources delineation was conducted in the early winter, during the non-blooming season for most plant species. The delineation was not conducted at an optimal time of the year to observe wetland hydrology. However, the hydrology of Blacker Ditch is influenced by agricultural and stormwater runoff.

Many plant species had senesced by the time of the survey, but some were identifiable to species based on vegetative or fruit morphology. For the 2020-2021 water year beginning in October and prior to this survey, zero inches of precipitation were recorded at the California State University at Sacramento CA US reporting station (California Data Exchange Center 2020), located approximately 7 miles east of the Study Area.

4.1.1 California Aquatic Resource Inventory

The California Aquatic Resource Inventory (CARI; San Francisco Estuary Institute [SFEI] 2017) is a statewide map of surface waters and related habitats combining multiple national and regional datasets, including the National Wetlands Inventory and the National Hydrography Dataset. CARI includes aquatic resource features mapped using a variety of remote sensing and modeling techniques. As such, these aquatic features may or may not exist as represented. In addition, CARI data varies in detail, accuracy, and age, and is meant to be used as a tool to assist with an aquatic resource delineation but not as the only source of information (SFEI 2017).

According to CARI (SFEI 2017), Blacker Ditch has been categorized as a Fluvial Unnatural and Depressional feature (Figure 2. *California Aquatic Resources Inventory*).

4.1.2 Soils

According to the Web Soil Survey (NRCS 2020a), two soil units, or types, have been mapped within the Study Area (Figure 3. *Natural Resources Conservation Service Soil Types*):

- Oa – Omni silty clay loam, and
- Wa – Willows silty clay loam, 0 percent slopes, M>RA 17.

Both of these soil units contain listed hydric components (NRCS 2020b) (Table 3).

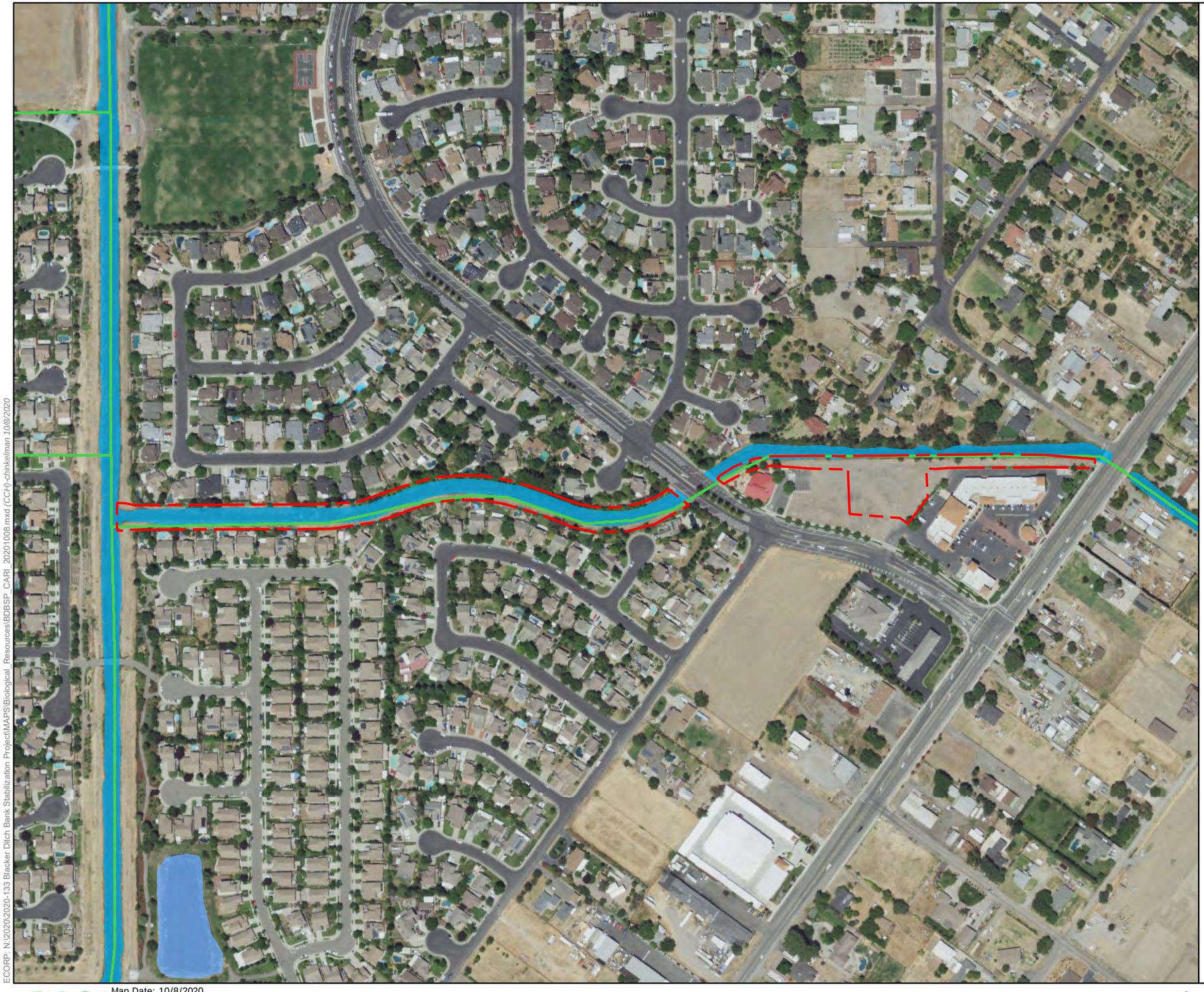
Table 3. Soil Units Occurring within the Study Area[1]

Soil Unit	Hydric Components[2]	Hydric Component Landform
Oa – Omni silty clay loam	Omni	Basin floors
Oa – Omni silty clay loam	Sacramento	Basin floors
Oa – Omni silty clay loam	Unnamed	Basin floors
Oa – Omni silty clay loam	Merritt	Alluvial fans
Wa – Willows silty clay loam, 0 percent slopes, MLRA 17	Willows	Basin floors
Wa – Willows silty clay loam, 0 percent slopes, MLRA 17	Sacramento	Alluvial fans
Wa – Willows silty clay loam, 0 percent slopes, MLRA 17	Clear Lake	Basin floors

[1]Source: NRCS 2020a
[2]Source: NRCS 2020b

4.2 Aquatic Resources

A total of 1.455 acres of aquatic resources have been mapped within the Study Area (Table 2). The wetland determination data forms are included in Attachment B, and a list of plant species observed within the Study Area is included as Attachment C. A discussion of the aquatic resources is presented below, and the aquatic resources delineation map is presented in Figure 4. *Aquatic Resources Delineation*.



Map Features

- Limits of Work 4.53 ac.

CARI Data Version 0.3 (December 2017)

CARI Streams

- Fluvial Unnatural

CARI Wetlands

- Depressional
- Depressional Natural

Photo Source: NAIP (2018)

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Map Date: 10/8/2020

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Scale in Feet
0 300

Figure 2. California Aquatic Resources Inventory

2020-133 Blacker Ditch Bank Stabilization Project

Map Features

- Limits of Work 4.53 ac.

Series Number - Series Name

- Oa - Omni silty clay loam
- W - Water
- Wa - Willows silty clay loam, 0 percent slopes, MLRA 17

Source: Esri, HERE, Garmin, USGS; NAIP (2018)

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Map Date: 10/8/2020

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Scale in Feet
0 300

Figure 3. Natural Resources Conservation Service Soils Types

2020-133 Blacker Ditch Bank Stabilization Project

Map Features

- Limits of Work 4.53 ac.
- Reference Coordinates
- Culvert

ARD Sample Points

- ARD Upland Point
- ARD Waters Point

Aquatic Resources Delineation[1*]

Other Waters

- Ditch - 1.455 acres

Photo Source: NAIP (2018)
Boundary Source: M-H-M Incorporated
Delineator(s): K. Kwan
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

[1] Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.
** The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.*

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Map Date: 12/21/2020

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Scale in Feet
0 250

Figure 4. Aquatic Resources Delineation

2020-133 Blacker Ditch Bank Stabilization Project

Representative site photographs are included as Attachment D. The USACE Operations and Maintenance Business Information Link Regulatory Module (ORM) aquatic resources table of potential Waters of the U.S. is included in Attachment E.

Table 2. Aquatic Resources

Type	Acreage[1]
Non-Wetland Waters	
Blacker Ditch	1.455
Total	1.455

[1]Acreages represent a calculated estimation and are subject to modification following the USACE verification process.

4.2.1 Non-Wetland Waters

Blacker Ditch

Blacker Ditch is a man-made drainage ditch maintained by RD900 to facilitate agricultural and stormwater runoff. During the dry season, water levels are maintained in the ditch by pumping in water from the Sacramento River and the Sacramento River Deep Water Ship Channel. Flows from Blacker Ditch flow into the RD900 Main Drainage Canal at the western portion of the Study Area. During the wet season, water levels are maintained at a level that provides storage capacity for storm runoff. The Main Drainage Canal serves as the primary irrigation/drainage conveyance system and flows south and west to the Main Drainage Canal pump station. Waters from the Main Drainage Canal are then pumped into the Sacramento River Deep Water Ship Channel (Willdan Associates 1994).

Blacker Ditch has a uniform width, approximately 15 to 20 feet, with shallow to steep banks, some of which have eroded. Vegetation within the ditch ranges from absent to dense patches of emergent species such as hardstem bulrush and broadleaf cattail. The uplands adjacent to the ditch, including the proposed staging area, are comprised of ruderal and developed lands.

5.0 JURISDICTIONAL ASSESSMENT

As per Regulatory Guidance Letter 16-01, an applicant may request a PJD "in order to move ahead expeditiously to obtain a Corps permit authorization where the requestor determin*es that it is in his or her best interest to do so … even where initial indications are that the aquatic resources on a parcel may not be jurisdictional*" (USACE 2016b).

According to the NWPR, waters that are excluded from the definition of Waters of the U.S. include ditches that are not traditional navigable waters, tributaries, or that are not constructed in adjacent wetlands (subject to certain limitations). Blacker Ditch may not be considered Waters of the U.S. according to the NWPR.

According to the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Wetland Definition), the following features used for agricultural purposes are

excluded from application procedures as described in Section IV (Procedures for Regulation of Discharge of Dredged or Fill Material to Waters of the State) (State Water Resources Control Board 2019): "a) ditches with ephemeral flow that are not a relocated water of the state or excavated in a water of the state; b) 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 (i) or (v) of the State Wetland Definition; c) ditches that do not flow, either directly or through another water, into another water of the state." Blacker Ditch may not be considered a water of the State, according to the State Wetland Definition.

Blacker Ditch supports aquatic habitat and patches of emergent and riparian vegetation that could provide habitat for wildlife species. Therefore, the CDFW may regulate vegetation clearing along the banks of the ditch under Section 1602 of the California Fish and Game Code.

6.0 CONCLUSION

A total of 1.455 acres of aquatic resources have been mapped within the Study Area. This acreage represents a calculated estimation of the extent of aquatic resources within the Study Area and is subject to modification following USACE review and/or the verification process. If considered Waters of the U.S. or Waters of the State, the placement of dredged or fill material into jurisdictional features would require a permit pursuant to Section 404 and/or Section 401 of the CWA.

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LIST OF ATTACHMENTS

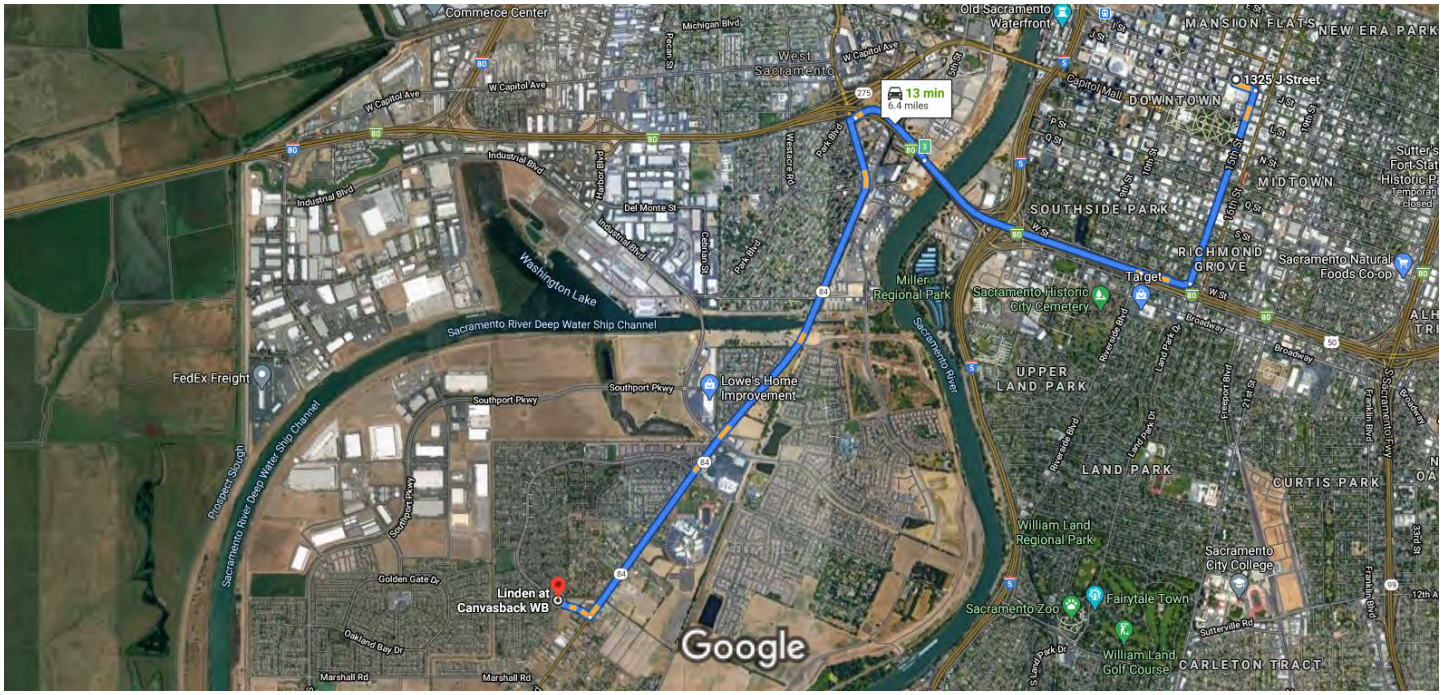
ATTACHMENT A

Driving Directions to Study Area

Google Maps

1325 J Street, Sacramento, CA to Linden at Canvasback WB, West Sacramento, CA 95691

Drive 6.4 miles, 13 min



Imagery ©2020 CNES / Airbus, Landsat / Copernicus, Maxar Technologies, Sanborn, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2020 Google 2000 ft

1325 J St

Sacramento, CA 95814

1. Head east on J St toward 14th St — 0.1 mi
2. Use the right 2 lanes to turn right onto 15th St — 1.0 mi
3. Slight right onto the I-80 W ramp — 0.3 mi
4. Merge onto I-80BUS W — 1.3 mi
5. Take exit 3 for Jefferson Blvd — 0.5 mi
6. Use the left 2 lanes to turn left onto Jefferson Blvd — 3.0 mi
7. Turn right onto Linden Rd — 0.2 mi

Linden at Canvasback WB

West Sacramento, CA 95691

These directions are for planning purposes only.
You may find that construction projects, traffic,

weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

ATTACHMENT B

Wetland Determination Data Forms - Arid West Region

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Blacker Ditch City/County: West Sacramento/Yolo Co. Sampling Date: 12/3/2020

Applicant/Owner: Reclamation District 900 State: CA Sampling Point: 1

Investigator(s): Keith Kwan Section, Township, Range: Sec. 17, T. 8 North, R. 4 East

Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): C Lat: 38.540481 Long: -121.556082 Datum: WGS84

Soil Map Unit Name: Wa-Willows silty clay loam, 0 pecent slopes, MLRA 17 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:

Blacker Ditch; this is a constructed unlined ditch, largely trapezoidal channel, with eroded banks. Emergent vegetation (Schoenoplectus acutus, Typha latifolia) is located at scattered locations, but the ditch is mostly unvegetated. The water depth at this location is approximately 2'.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. no vegetation present			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

no soil color analysis due to depth of water in the bed ditch channel

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): 24"+

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:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Blacker Ditch City/County: West Sacramento/Yolo Co. Sampling Date: 12/3/2020

Applicant/Owner: Reclamation District 900 State: CA Sampling Point: 2

Investigator(s): Keith Kwan Section, Township, Range: Sec. 17, T. 8 North, R. 4 East

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): C Lat: 38.540451 Long: -121.556072 Datum: WGS84

Soil Map Unit Name: Wa-Willows silty clay loam, 0 pecent slopes, MLRA 17 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:

upland slope to Blacker Ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Cynodon dactylon	80	yes	FACU
2. Sonchus asper	5	no	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/2	100					silty clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

soil at this location is probably imported fill, as the adjacent lands include residential development

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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:

ATTACHMENT C

Plant Species Observed Onsite

Attachment C. Plants Observed Onsite (September 30 and December 3, 2020)

Scientific Name	Common Name	Wetland Indicator Status
*Ailanthus altissima**	Tree-of-heaven	FACU
*Araucaria araucana**	Monkey puzzle	N/L
*Avena fatua**	Wild oat	N/L
*Brassica rapa**	Field mustard	FACU
*Bromus diandrus**	Ripgut brome	N/L
*Carduus pycnocephalus**	Italian thistle	N/L
*Catalpa bignonioides**	Southern catalpa	UPL
*Cichorium intybus**	Chicory	FACU
*Cirsium arvense**	Canada thistle	FACU
*Convolvulus arvensis**	Field bindweed	N/L
*Cortaderia jubata**	Pampas grass	FACU
*Cynodon dactlyon**	Bermuda grass	FACU
*Eucalyptus globulus**	Blue gum	N/L
*Festuca perennis**	Italian Ryegrass	FAC
*Hordeum murinum**	Foxtail barley	FACU
Juglans hindsii	Black walnut	FAC
*Lepidium latifolium**	Perennial pepperweed	FAC
*Ligustrum sinense**	Chinese privet	UPL
Liquidambar styraciflua	Sweetgum	FAC
*Malva parviflora**	Cheeseweed	N/L
*Morus alba**	White mulberry	FACU
*Olea europaea**	European olive	N/L
*Paspalum dilatatum**	Dallis grass	FAC
Phoenix dactylifera	Date palm	N/L
*Pistacia chinensis**	Chinese pistache	N/L
*Plantago lanceolata**	English plantain	FAC
*Platanus x acerifolia**	London planetree	N/L
Populus fremontii	Fremont's cottonwood	FAC
Prunus species*	Cultivated fruit tree	N/L
Quercus lobata	Valley oak	FACU
*Rubus armeniacus**	Himalayan blackberry	FAC
*Salix babylonica**	Weeping willow	FAC
Salix exigua	Sandbar willow	FACW
Salix gooddingii	Goodding's black willow	FACW
Schoenoplectus acutus var. *occidentalis*	Hard-stem bulrush	OBL
Sequoia sempervirens	Coast redwood	N/L
*Sonchus asper**	Prickly sowthistle	FAC
Typha latifolia	Broad-leaf cattail	OBL
*Vinca major**	Periwinkle	N/L
Vitis californica	California wild grape	FACU
Washingtonia robusta	Mexican fan	FACW

* - Non-native Species

Wetland Status Codes:

OBL - Obligate Wetland; Almost always occur in wetlands

FACW - Facultative Wetland; Usually occur in wetlands, but may occur in non-wetlands

FAC - Facultative; Occur in wetlands and non-wetlands

FACU - Facultative Upland; Usually occur in non-wetlands, but may occur in wetlands

UPL - Obligate Upland; Almost never occur in wetlands

N/L - Plants that are Not Listed; Does not occur in wetlands in any region

ATTACHMENT D

Representative Site Photographs

Photo 1. Blacker Ditch near Main Drainage Confluence, Facing NW, December 3, 2020

Photo 2. Linden Road Culvert, Facing NE, December 3, 2020

Photo 3. Near Montesorri School, Facing W, December 3, 2020

Photo 4. Staging Area, Facing E, December 3, 2020

ATTACHMENT E

USACE ORM Aquatic Resources Table

Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	NWPR_Determine_Code	Latitude	Longitude
R5	RIVERINE	Area	1.413633	ACRE	B5DITCH		38.540526	-121.555778
R5	RIVERINE	Area	0.04181	ACRE	B5DITCH		38.540914	-121.550835

ATTACHMENT F

Wetland Delineation Shape File
(to be included with USACE submittal only)