



Aquatic Resources Delineation Report for the Hood Septic Conversion Project (PLER2021-00127) Sacramento County, California

Sacramento County

July 2022

Prepared for:

Sacramento County
Office of Planning and Environmental Review
827 7th Street, Room 225
Sacramento, CA 95814

Contact Info:

Julie Newton, Senior Planner
Sacramento County Office of Planning and Environmental Review
827 7th Street, Room 225
Sacramento, CA 95814

Prepared by:

AECOM
2020 L Street, Suite 300
Sacramento, CA 95811

Contact Info:

Matthew Gerken, AECOM Project Manager
matthew.gerken@aecom.com
(916) 414-5892

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The procedures detailed in this report and the field methods used represent an official wetland delineation in accordance with the *1987 U.S. Army Corps of Engineers Wetland Delineation Manual* and applicable *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* as well as official waterway identification guidelines presented in 33 Code of Federal Regulations Chapter II and the Clean Water Act. The methodology presented in this report met the standards, criteria, guidelines, and regulations in place at the time the fieldwork was completed.

The results in this memo reflect conditions present at the time of the field investigation. Human-induced or natural changes at the site may occur after this date which may cause changes in the presence and extent of regulated wetlands and waterways.

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Acronyms and Abbreviations

ARDR	Aquatic Resources Delineation Report
BSA	biological study area
CDFW	California Department of Fish and Wildlife
CESA	California State Endangered Species Act
client	Sacramento County Office of Planning and Environmental Review
Hood	Community of Hood
I-5	Interstate 5
Investigations	Aquatic resources identification and delineation investigations
JD	Jurisdictional Determination
LSA	Lake and Streambed Alteration
NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
Project	Hood Septic Conversion Project
R1	unnamed Stone Lake channel
R2	Sacramento Drainage Canal that parallels the unnamed Stone Lake channel
R3	Sacramento Drainage Canal
ROWs	right-of-ways
SASD	Sacramento Area Sewer District
Stone Lake Channel	unnamed channel at Hood-Franklin Road
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey

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Introduction

AECOM has prepared this Aquatic Resources Delineation Report (ARDR) at the direction of the Sacramento County Office of Planning and Environmental Review (client) for the proposed Hood Septic Conversion Project (Project) located primarily within the unincorporated community of Hood, Sacramento County, California (Attachment 1). The project has been proposed in an effort to retire private septic system usage for multiple residential properties in the Community of Hood (Hood), and would install approximately 5.5 miles of low-pressure, small-diameter sewer pipelines that would provide sanitary sewer services for approximately 141 property parcels. The total number of parcels under consideration for project inclusion is subject to decrease pending final decisions from the Sacramento Area Sewer District (SASD) to exclude agricultural properties.

The majority of project construction is proposed to take place within the existing public roadway right-of-way. However, minor earthwork and construction activities will also take place at various private lots within the project area. The project area is defined as the direct work areas, the public road right-of-ways (ROWs), proposed staging areas, temporary parking, portions of the parcels where septic abandonment and/or connections to sewer laterals may occur, and equipment/materials storage areas. To facilitate connections to the new sewage system, two easement locations have been selected for the Delta Crossing Mobile Home Park and the 10780 3rd Street property parcels. The proposed project would require the crossing of two waterways: an unnamed channel at Hood-Franklin Road (designated by AECOM as “unnamed Stone Lake Channel” for identification purposes), and the Sacramento Drainage Canal, both waterways located east of the Community of Hood and west of Interstate 5 (I-5). The unnamed Stone Lake channel crossing at Hood-Franklin Road would require a 500-foot, perpendicular, horizontal directional drilling effort; and the Sacramento Drainage Canal Crossing at Hood-Franklin Road would involve a 200-foot perpendicular crossing via bore-and-jack installation. The expected maximum depth of excavation is 10 feet. AECOM has designated and investigated a biological study area (BSA) which includes the project area as defined above, and a 100-foot buffer which extends nearly uniformly beyond the limits of the project area in an effort to focus our assessment efforts where project activities have been proposed. This memo identifies all delineated aquatic resources within the BSA boundaries. Aquatic resource impacts may be evaluated using this delineation information.

Aquatic resources identification and delineation investigations (Investigations) were conducted on May 26, 2022 by AECOM staff scientist Charles Battaglia, and on July 7, 2022 by AECOM staff scientist Ranie Shreckengost within an approximately 215.7-acre Biological Study Area centered on the proposed Project. The Investigations were conducted in accordance with the protocols set forth in the U.S. Army Corps of Engineers (USACE) 1987 *Corps of Engineers Wetland Delineation Manual* (USACE 1987) and *Regional Supplements: Arid West Region* (USACE 2012), as well as current industry standards and methods for the classification of waterways.

The Investigations included an examination of current and historic satellite imagery, United States Geological Survey (USGS) topographic and hydrologic mapping, National Wetland Inventory (NWI) mapping (Attachment 2), and the United States Department of Agriculture (USDA) soil classification data. Land use within the BSA at the time of the investigations included agricultural, rural residential, and wildlife conservation (Stone Lakes National Wildlife Refuge). However, the project activities are primarily proposed in residential, urban, and developed parcels and ROWs within a highly disturbed and managed surrounding landscape. A review of the USGS National Hydrography Dataset (NHD) revealed the presence of three (3) known surface waters within the BSA (USGS 2021). A review of the NWI Wetlands Mapper indicated that several NWI wetlands have been documented within or immediately adjacent to the BSA and these areas were evaluated during the field assessments (USFWS 2022). Soil classifications were identified using the USDA Natural Resources Conservation Service (NRCS) web soil survey and consist of Clear Lake clay, hardpan substratum, drained, 0 to 1 percent slopes, Dierssen sandy clay loam, drained, 0 to 2 percent slopes, Dierssen clay loam, deep, drained, 0 to 2 percent slopes, Egbert clay, partially drained, 0 to 2 percent slopes, Galt clay, leveled, 0 to 1 percent slopes, Galt clay, 0 to 1 percent slopes, San Joaquin silt loam, leveled, 0 to 1 percent slopes, San Joaquin silt loam, 0 to 3 percent slopes, San Joaquin-Urban land complex, 0 to 2 percent slopes, Scribner clay loam, partially drained, 0 to 2 percent slopes, Tinnin loamy sand, 0 to 2 percent slopes, and Valpac loam, partially drained, 0 to 2 percent slopes soils (NRCS 2021).

Results

During the Investigation, a total of three jurisdictional waterways were identified within the extents of the BSA, these have been designated as R1, R2, and R3 by AECOM staff for the purposes of this assessment. An Aquatic Resources Location Map is provided as Attachment 3 to illustrate the results of the investigation and the relative locations and sizes of these resources. The proposed project area will intersect R1 and R3 and parallels R2 along Hood-Franklin Road. One waterway, (R1) has been labelled by AECOM investigators as “unnamed Stone Lake channel,” R3 has been named by USGS hydrologic mapping as the Sacramento Drainage Canal, and R2 is an unnamed irrigation channel which flows continuously along Hood-Franklin Road and ultimately unites with the unnamed Stone Lake channel (R1). All project waterways are hydrologically connected to North Stone Lake and Stone Lake; R1 and R3 support flow from north to south. All project waterways have been designated by the US Fish and Wildlife Service as Final Critical Habitat for the Delta Smelt (2022) and the National Marine Fisheries Service (NMFS) as Essential Fish Habitat - Pacific Coast Salmon FMP (2022).

One wetland determination data plot (Plot A) was collected at approximately 38.3662, -121.5074 to represent the conditions and vegetation observed within a low-lying swale / drainage area that parallels Hood-Franklin Road. The results of this field evaluation indicated that this area primarily serves to provide storm-water management and flood protection for Hood-Franklin Road during seasonal rain or flooding events. This area did support mixed facultative vegetation species, but ultimately did not pass the three parameter (hydrology, vegetation, and soils) evaluation standards which would designate it as a jurisdictional feature. The plot location exhibited significantly disturbed soils and supported many ruderal vegetation species commonly associated with roadside edges. A summary table representing all aquatic resources identified within the BSA and their sizes, locations, and classifications is provided as Attachment 4. All feature boundaries were surveyed using a handheld GPS unit and the Field Maps data collection application. Wetland Determination Data Forms and Aquatic Resource Field Data forms are provided as Attachment 5. Site photographs representing an overview of the habitats and resources within the BSA is has been provided as Attachment 6.

Conclusions

Findings highlighted in this memo are based on present state and federal guidance and industry standards. The jurisdictional status of wetlands and/or waterbodies may be confirmed by a USACE Jurisdictional Determination (JD).

The proposed project area will intersect both the unnamed Stone Lake channel (R1), and the Sacramento Drainage Canal (R3), and parallels the unnamed channel feature designated as R2. Estimated acreage measurements within the project area for each of these features is included within the Aquatic Resources Summary Table (Attachment 4). These waterbodies are subject to the USACE, jurisdiction pursuant to Section 404 of the Clean Water Act (CWA). Furthermore, activities which propose to; divert or obstruct the natural flow of any river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; or deposit or dispose of material into any river, stream, or lake are subject to California Department of Fish and Wildlife (CDFW) Fish and Game Code section 1602 regulations, which require a Lake and Streambed Alteration (LSA) Agreement. Please note that "any river, stream, or lake" includes those that are seasonally dry, as well as those with perennial flow. Let it also be known that a Lake or Streambed Alteration Agreement does not provide California State Endangered Species Act (CESA) incidental take authorization for protected species. If your project may result in take of a state or federally listed species, a separate CESA permit, additional consultations, and U.S. Fish and Wildlife Service (USFWS) permissions and permits may be required.

The information provided regarding the wetland and waterway boundaries identified during this delineation is based on the staff investigator's best professional judgement and the site conditions at the time of the Investigation.

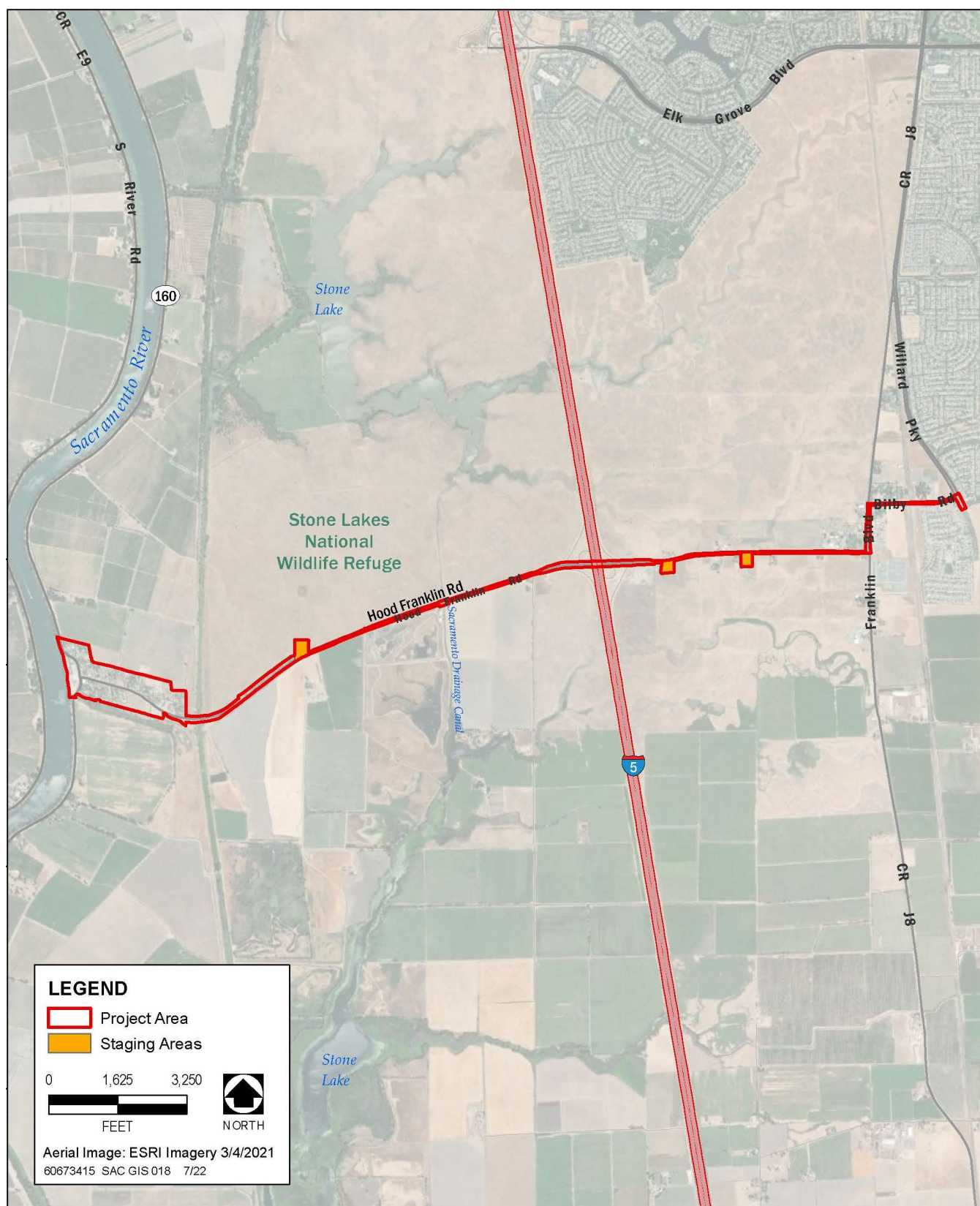
The following items are attached to provide supplemental information and aid in your review: Project Area Location Map (Attachment 1), Hydrology and NWI Wetland Map (Attachment 2), Aquatic Resources Location Map (Attachment 3), Aquatic Resources Summary Table (Attachment 4), Wetland Determination Data Forms and Aquatic Resources Field Data Forms (Attachment 5), and Site Photographs (Attachment 6).

References

- Natural Resources Conservation Service (NRCS), United States Department of Agriculture. 2021. Web Soil Survey. Soil Survey Staff. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed June 2022.
- U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetland delineation Manual. Technical Report Y-87-1.
- U.S. Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.
- U.S. Fish and Wildlife Service (USFWS). June 2022. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Available online at: <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>. Accessed June 2022.
- U.S. Geological Survey (USGS). 2021, USGS TNM Hydrography (NHD), at URL <https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer>. Accessed June 2022

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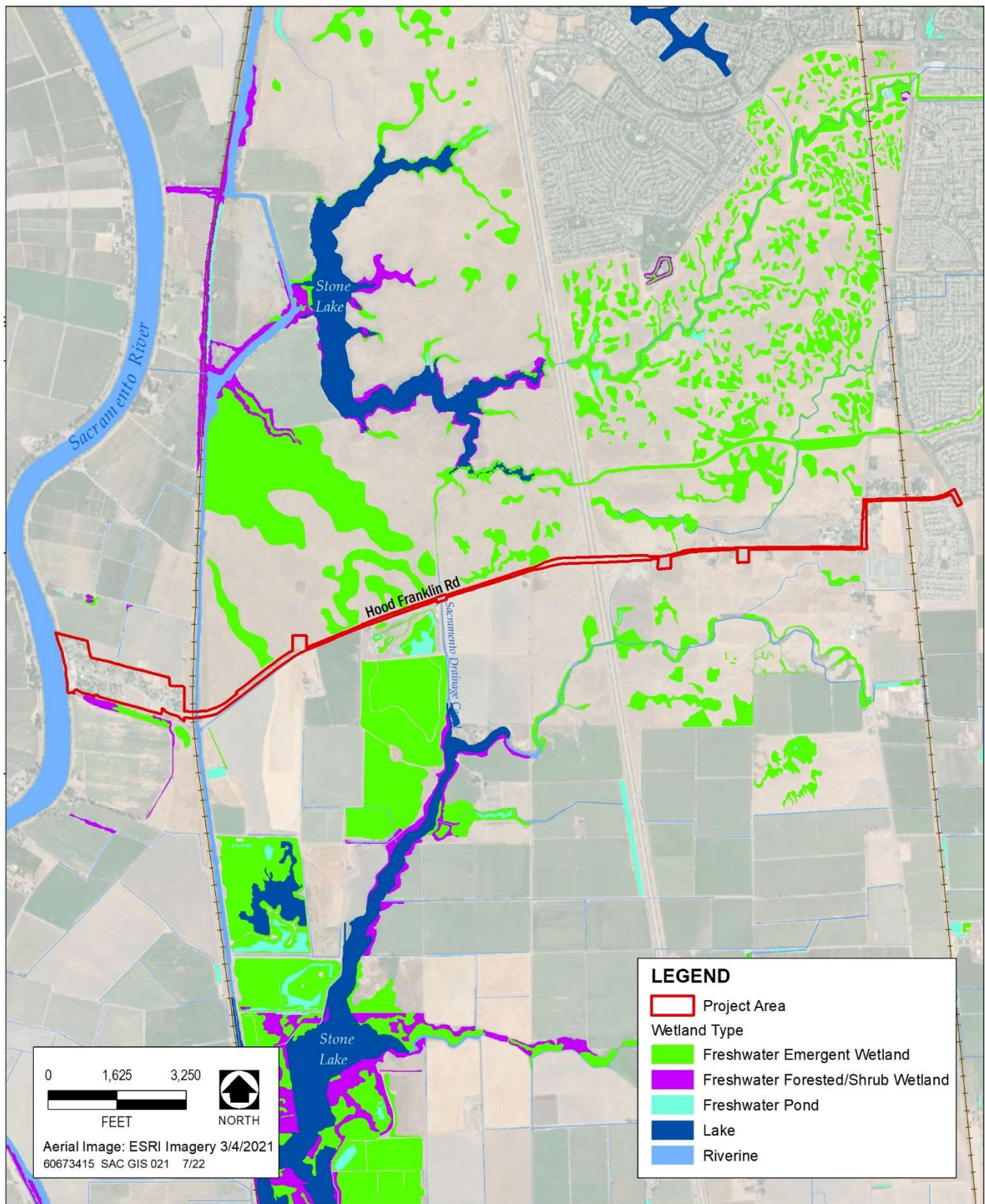
Attachment 1 Project Area Location Map



Source: Sacramento County 2022, USFWS 2022

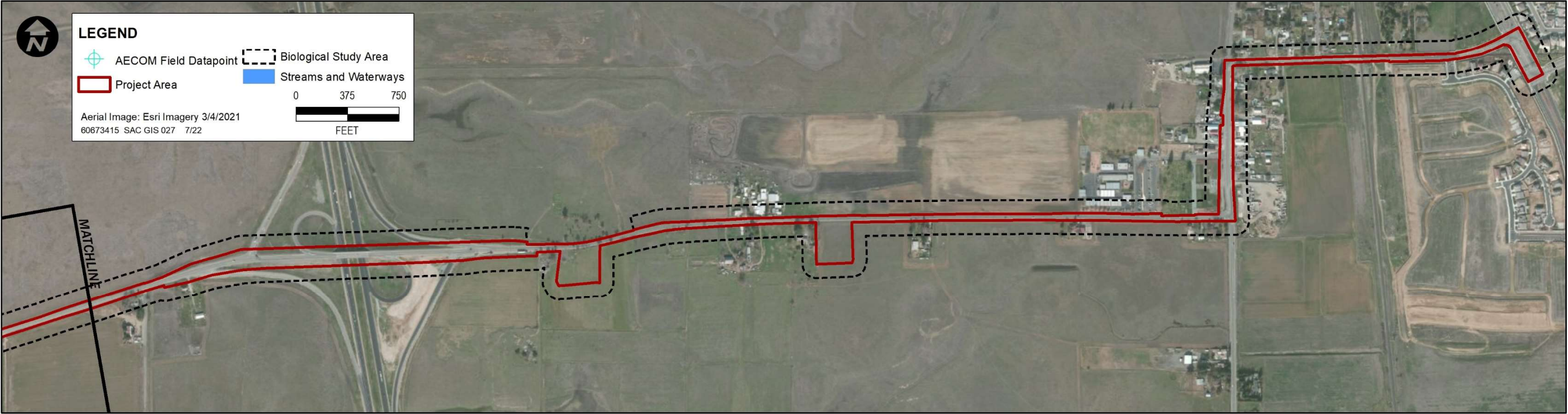
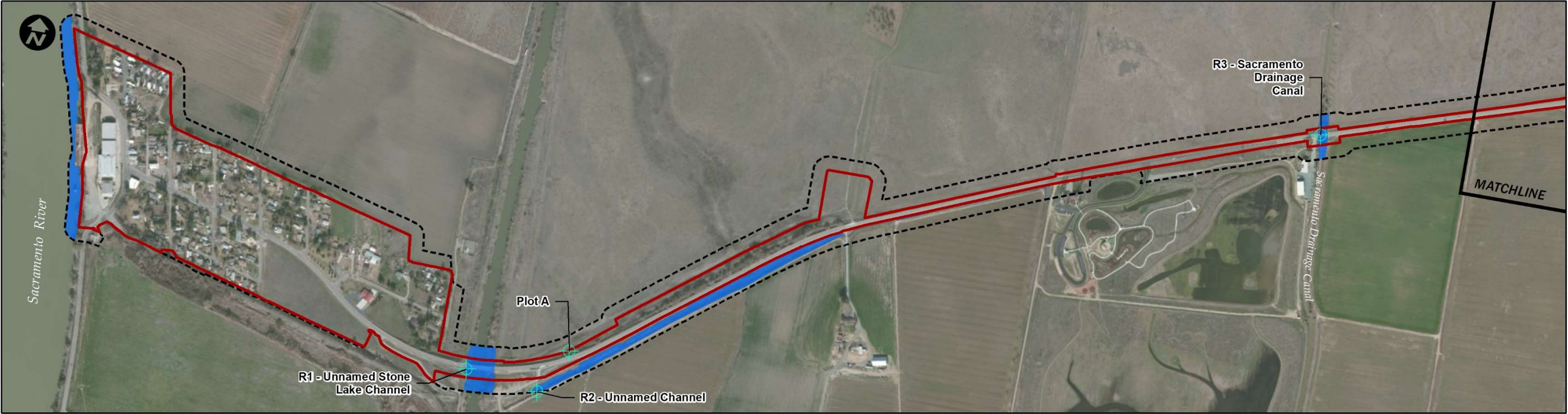
Project Location Map

Attachment 2 Hydrology and NWI Wetland Map



Hydrology and NWI Wetland Map

Attachment 3 Aquatic Resources Location Map



Aquatic Resources Location Map

Attachment 4 Aquatic Resources Summary Table

Aquatic Resources Summary Table

Streams and Waterbodies										
Resource Number (R#)	USGS Stream Name	AECOM Resource ID	Critical or Essential Habitat	Flow Classification	Acreage (within the Project Area)	Latitude ¹	Longitude ¹	TOB (ft.) ²		Primary Substrate
								Width	Depth	
R1	Unnamed Channel	Unnamed Stone Lake Channel	Essential Fish Habitat: Pacific Coast Salmon (NMFS)	Perennial	0.68	38.3655	-121.5097	220	30	Silt
R2	Unnamed Channel	Unnamed Channel	Delta Smelt Final Critical Habitat (USFWS)	Intermittent	0.00	38.3648	-121.5089	65	15	Silt
R3	Sacramento Drainage Canal	Sacramento Drainage Canal	Delta Smelt Final Critical Habitat (USFWS)	Intermittent	0.20	38.3729	-121.4894	60	12	Silt
Wetlands										
AECOM Data Plot ID	Classification ¹	Resource Type	Acreage ² (within the Project Area)	AECOM Wetland ID		Latitude ³		Longitude ³		
Plot A	N/A	Ephemeral Roadside Ditch (non-jurisdictional)	N/A	N/A		38.3662		-121.5074		

Streams and Waterbodies Notes:

- 1 NAD 1983
- 2 Waterway boundaries were surveyed using a mobile GPS unit and the Field Maps data collection application, measurements are approximate.

Wetland Notes:

- 1 Defined per Cowardin classification system for wetlands
- 2 Wetland boundaries were surveyed using a mobile GPS unit and the Field Maps data collection application
- 3 NAD 1983

Attachment 5 Wetland Determination Data Forms and Aquatic Resource Field Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hood Septic Conversion Project City/County: Hood / Sacramento Sampling Date: 7/8/2022
 Applicant/Owner: Sacramento County Office of Planning and Environmental Review State: CA Sampling Point: Plot A
 Investigator(s): Ranie Shreckengost Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1-5%
 Subregion (LRR): LRR-C Lat: 38.3662 Long: -121.5074 Datum: WGS84
 Soil Map Unit Name: Dierssen sandy clay loam, drained, 0 to 2 percent slopes NWI classification: N/A
 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Plot was sampled within a low-lying swale / drainage feature adjacent to a living willow tree. Area appears to be regularly disturbed and primarily supports roadside drainage and ruderal vegetation.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>25' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. <u>Salix sp.</u>	<u>10</u>	<u>Y</u>	<u>FAC*</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>10</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>65</u> x 4 = <u>260</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>110</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>3.6</u>
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>15' radius</u>) 1. <u>Malvella leprosa (Ortega) Krapov</u> <u>25</u> <u>Y</u> <u>FACU</u> 2. <u>Cynodon dactylon</u> <u>25</u> <u>Y</u> <u>FACU</u> 3. <u>Xanthium strumarium</u> <u>15</u> <u>N</u> <u>FAC</u> 4. <u>Helianthus annuus</u> <u>15</u> <u>N</u> <u>FACU</u> 5. <u>Phyla nodiflora**</u> <u>5</u> <u>N</u> <u>FACW</u> 6. <u>Apocynum cannabinum</u> <u>5</u> <u>N</u> <u>FAC</u> 7. <u>Foeniculum vulgare</u> <u>5</u> <u>N</u> <u>UPL</u> 8. <u>Rumex crispus</u> <u>5</u> <u>N</u> <u>FAC</u> <u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
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)				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				
Remarks: *Salix sp. was not identified to the species level and was therefore assumed to qualify as at least FAC due to the nature of Salix species to be hydrophytic. **Phyla nodiflora observed appeared to be stressed with yellowed leaves.				

SOILSampling Point: Plot A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 5/2	80	7.5YR 5/8	5	C	M	SIL	
	2.5Y 6/6	10	5Y 2.5/1	5	C	M	SIL	Manganese masses

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: <u>Rock / Compacted Soils</u> Depth (inches): <u>6+</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:

Soils appeared to be heavily disturbed due to sediment deposition from rainy season run-off / roadway run-off.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

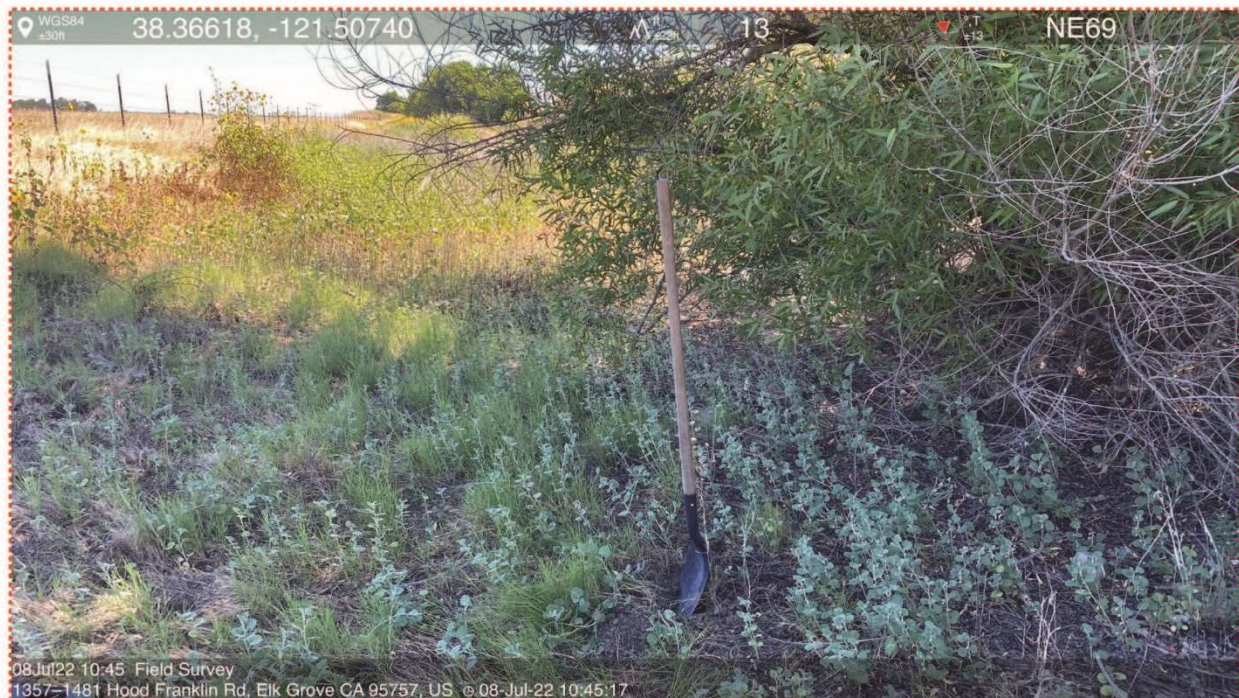
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Drainage ditch is lower than the adjacent annual grassland and approximately 5-15' lower than the adjacent roadway. Area is subject to seasonal flooding / roadway runoff, but appears to have been man/made or constructed for the purpose of flood protection and storm-water management for Hood-Franklin Road.

Representative Photographs: Plot A



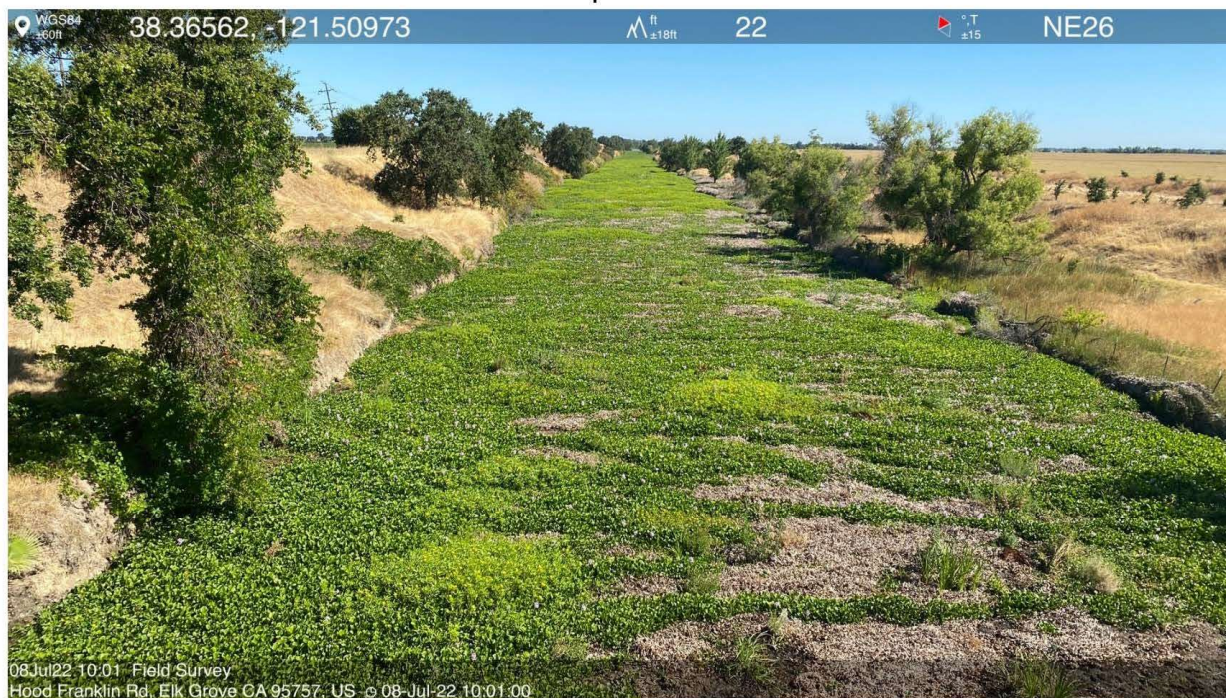
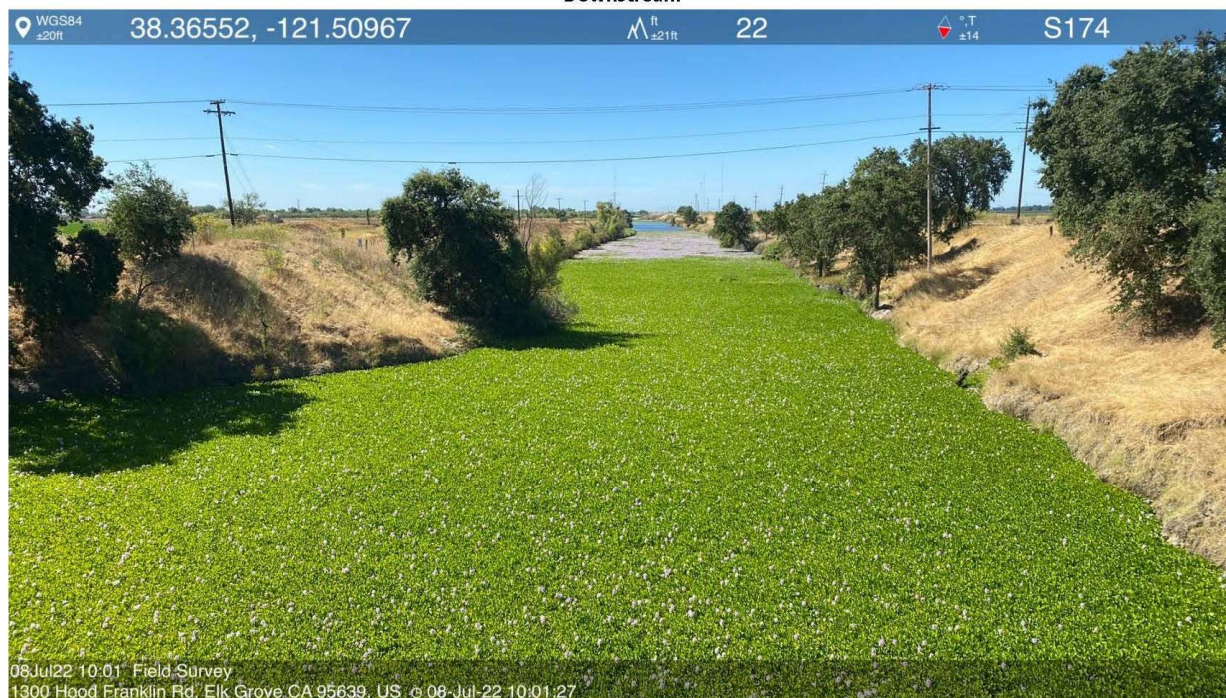
VISUAL WATERCOURSE ASSESSMENT FORM									
Project:	Hood Septic Conversion Project			Date:	20220708		AECOM Watercourse ID:	R1	
							Data Point:	R1	
Client:	Sacramento County Office of Planning and Environmental Review			County:	Sacramento				
Investigator(s):	Lead: Ranie Shreckengost			State:	California				
	Assistant:			Coordinates (XX.0000)	38.3655		-121.5099		
Watercourse Name:	Unnamed Channel			Flow Direction:	North to South				
Precip. Last 48 Hours: <input type="checkbox"/>	Quantity (in)		Date	Cowardin Classification:		Riverine			
Precip. Data Source:	N/A		N/A						
Associated Culvert / Bridge (s) <input checked="" type="checkbox"/>	Type: Steel / Concrete			NWI Designation:		R2UBHx			
Flow Regime:	Perennial <input checked="" type="checkbox"/>	Intermittent <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	Water Type: (Scientist Field Estimated)	TNW <input checked="" type="checkbox"/>	RPW <input type="checkbox"/>	NRPW <input type="checkbox"/>		
Notes:	This 43.57-acre Riverine habitat is classified as a R2UBHx (USFWS 2022 – NWI Wetlands Mapper). AECOM has defined this channel as the unnamed Stone Lake channel due to its connectivity to both North Stone Lake and Stone Lake.								
WATERCOURSE CHARACTERISTICS									
Watercourse Dimensions (Field Estimated)			Flow Rate		Bank Erosion (%)		Canopy Cover (%)		
Parameter	Width (ft)	Depth (ft)	High	<input type="checkbox"/>	Stable (<10%)	<input type="checkbox"/>	75-100	<input type="checkbox"/>	
Top of Bank	>180	>20	Moderate	<input type="checkbox"/>	Moderately Stable (<60%)	<input checked="" type="checkbox"/>	50-75	<input type="checkbox"/>	
OHWM	120	<15	Low	<input checked="" type="checkbox"/>	Moderately Unstable (>60%)	<input type="checkbox"/>	25-50	<input type="checkbox"/>	
OBW	50	Unknown	None	<input type="checkbox"/>	Unstable (>90%)	<input type="checkbox"/>	0-25	<input checked="" type="checkbox"/>	
Substrates (%)		Morphology (%)		Aquatic Fauna Present		Adjacent Land Use (%)			
Bedrock		Riffle		Fish	<input type="checkbox"/>	Forest			
Boulder (>10")						Field/Pasture	30		
Cobble (2.5"-10")		Run	20	Macroinvertebrates	<input type="checkbox"/>	Active Agricultural	40		
Gravel (0.1"-2.5")						Residential	10		
Sand (0.06-2mm)		Pool	80	Other (Please Note): Bull Frogs	<input checked="" type="checkbox"/>	Commercial / Industrial			
Silt (0.004-0.06mm)	70					ROW	10		
Organic	30					Other	10		
				None	<input type="checkbox"/>				
RIPARIAN VEGETATION ASSESSMENT:									
Vegetative Cover Within the Riparian Zone (%)				Dominant Riparian Vegetation Species (1-3)					
Tree	10			<i>Pontederia crassipes</i> within OHWM, intermittent <i>Salix</i> sp. and <i>Quercus</i> sp. individuals.					
Shrub	5								
Herb	80								
Sandy / Bare	5								

Additional Notes: Swallow nests observed under bridge.

Ranie Shreckengost

Personal Field Data Reference Form / Field Notes Fillable Form

Template Last Updated: 20220311

Watercourse Overview Photos: R1 – Unnamed (Stone Lake) Channel**Upstream****Downstream**

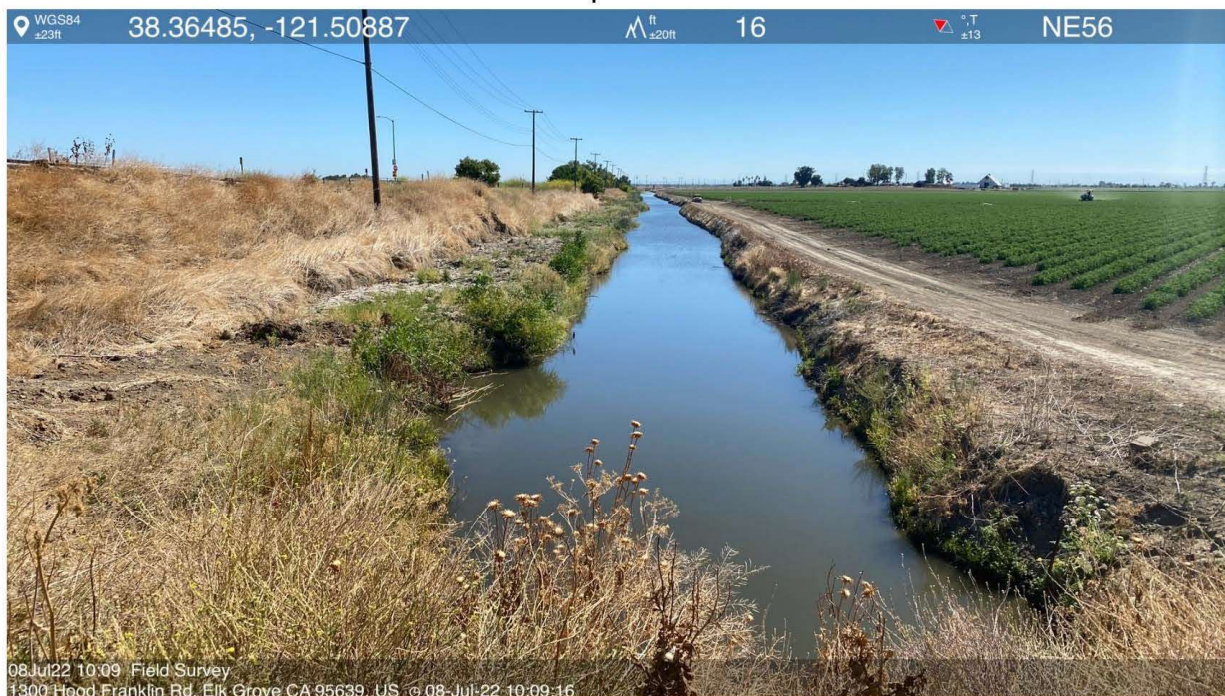
VISUAL WATERCOURSE ASSESSMENT FORM									
Project:	Hood Septic Conversion Project			Date:	20220708		AECOM Watercourse ID:	R2	
							Data Point:	R2	
Client:	Sacramento County Office of Planning and Environmental Review			County:	Sacramento				
Investigator(s):	Lead: Ranie Shreckengost			State:	California				
	Assistant:			Coordinates: (XX.0000)	38.3648		-121.5089		
Watercourse Name:	Unnamed Channel			Flow Direction:	West to East				
Precip. Last 48 Hours: <input type="checkbox"/>	Quantity (in)		Date	Cowardin Classification:			Riverine		
Precip. Data Source:	N/A		N/A						
Associated Culvert / Bridge (s) <input checked="" type="checkbox"/>	Type: Unknown - siphon / pumps observed			NWI Designation:			R4SBCx		
Flow Regime:	Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Ephemeral <input type="checkbox"/>	Water Type: (Scientist Field Estimated)	TNW <input type="checkbox"/>	RPW <input checked="" type="checkbox"/>	NRPW <input type="checkbox"/>		
Notes:	This 1.43-acre Riverine habitat is classified as a R4SBCx (USFWS 2022 – NWI Wetlands Mapper). AECOM has defined this channel as an unnamed channel, which acts as a tributary to R1, (the unnamed Stone Lake channel) due to its hydrologic connectivity to R1. This channel is heavily modified and is primarily used to support agricultural irrigation.								
WATERCOURSE CHARACTERISTICS									
Watercourse Dimensions (Field Estimated)			Flow Rate		Bank Erosion (%)		Canopy Cover (%)		
Parameter	Width (ft)	Depth (ft)	High	<input type="checkbox"/>	Stable (<10%)	<input type="checkbox"/>	75-100	<input type="checkbox"/>	
Top of Bank	>50	15	Moderate	<input checked="" type="checkbox"/>	Moderately Stable (<60%)	<input checked="" type="checkbox"/>	50-75	<input type="checkbox"/>	
OHWM	25	12	Low	<input type="checkbox"/>	Moderately Unstable (>60%)	<input type="checkbox"/>	25-50	<input type="checkbox"/>	
OBW	20	Unknown	None	<input type="checkbox"/>	Unstable (>90%)	<input type="checkbox"/>	0-25	<input checked="" type="checkbox"/>	
Substrates (%)		Morphology (%)		Aquatic Fauna Present		Adjacent Land Use (%)			
Bedrock		Riffle	10	Fish	<input type="checkbox"/>	Forest			
Boulder (>10")						Field/Pasture			
Cobble (2.5"-10")		Run	30	Macroinvertebrates	<input type="checkbox"/>	Active Agricultural	60		
Gravel (0.1"-2.5")						Residential	10		
Sand (0.06-2mm)		Pool	60	Other (Please Note): Bull Frogs Muskrat	<input checked="" type="checkbox"/>	Commercial / Industrial			
Silt (0.004-0.06mm)	50					ROW	20		
Organic	50					Other			
				None	<input type="checkbox"/>				
RIPARIAN VEGETATION ASSESSMENT:									
Vegetative Cover Within the Riparian Zone (%)				Dominant Riparian Vegetation Species (1-3)					
Tree				<i>Foeniculum vulgare</i> along banks.					
Shrub									
Herb	20								
Sandy / Bare	80								

Additional Notes: Banks are heavily maintained, limited vegetation present.

Ranie Shreckengost

Personal Field Data Reference Form / Field Notes Fillable Form

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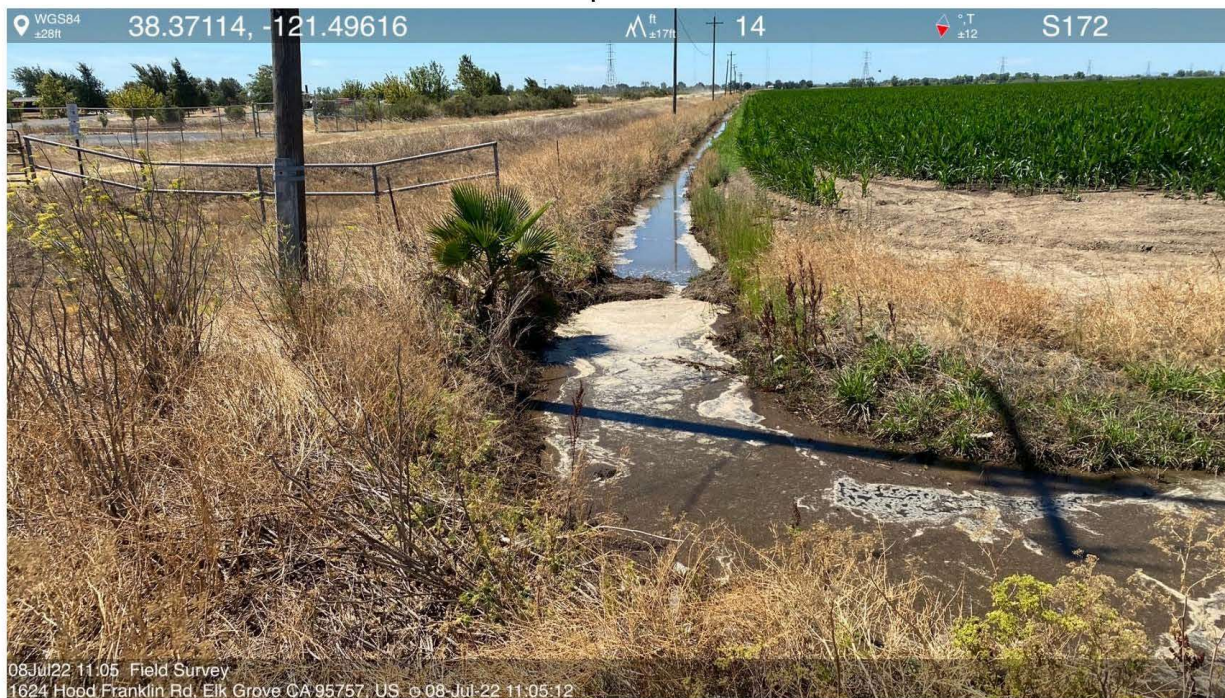
Watercourse Overview Photos: R2 – Unnamed Channel**Upstream****Downstream**

Ranie Shreckengost
Personal Field Data Reference Form / Field Notes Fillable Form

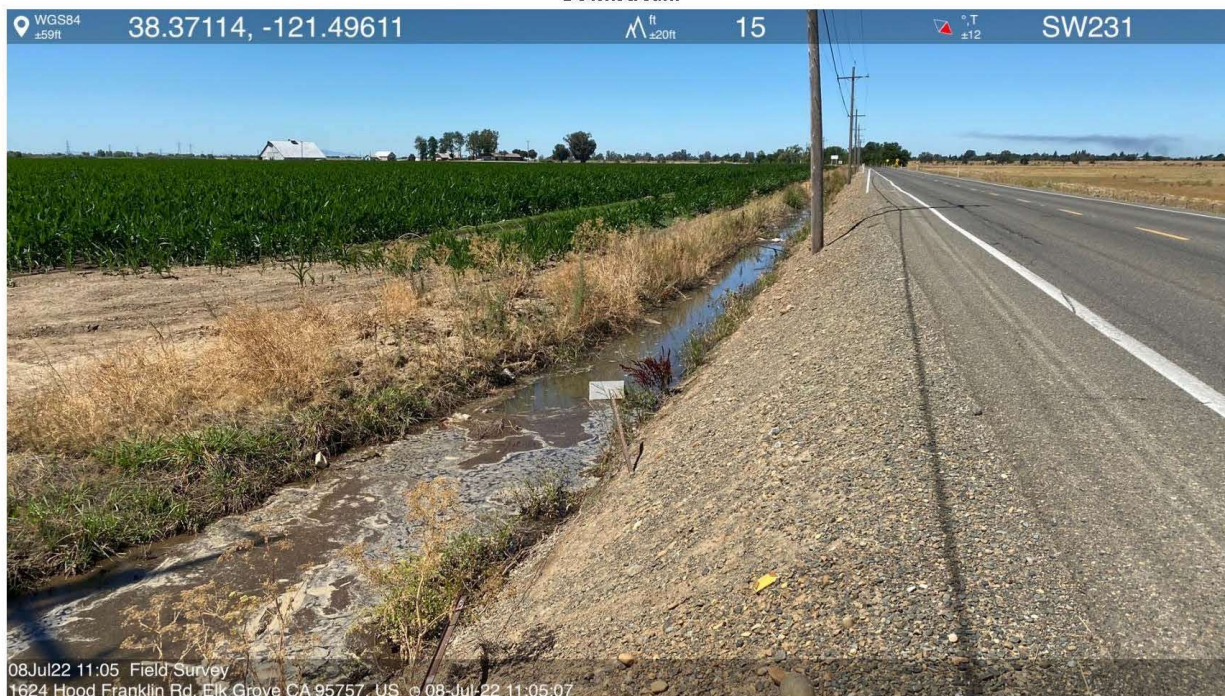
Template Last Updated: 20220311

Additional Watercourse Overview Photos: R2 – Unnamed Channel

Upstream



Downstream



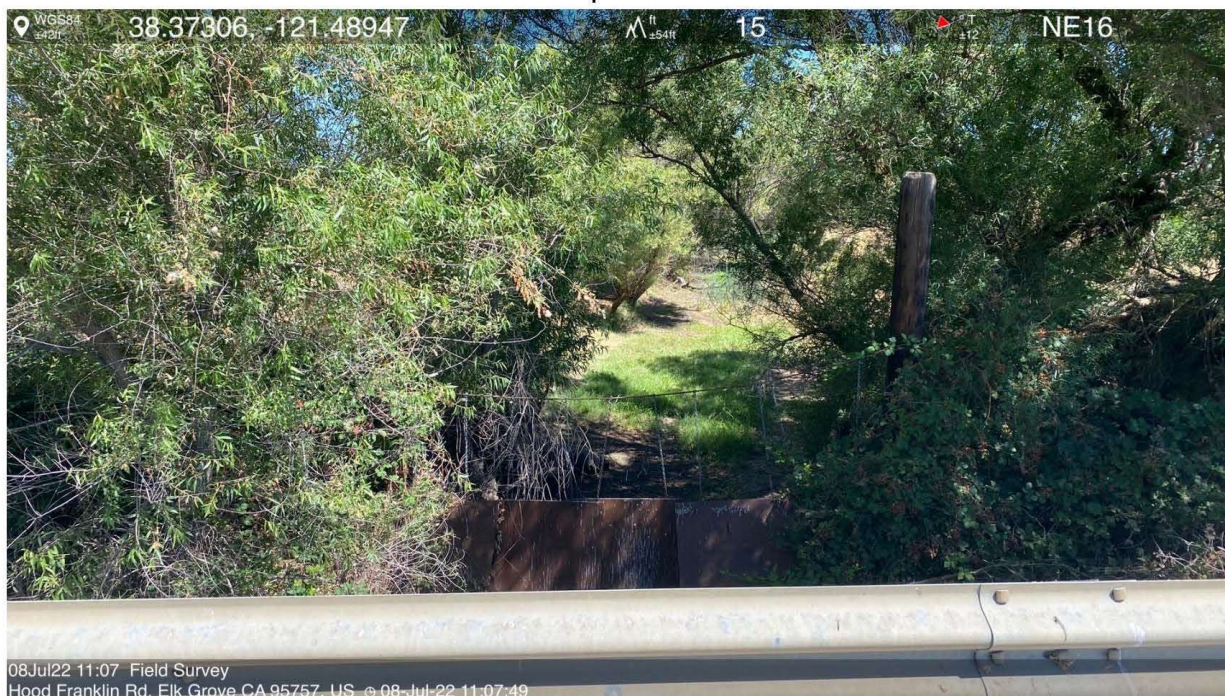
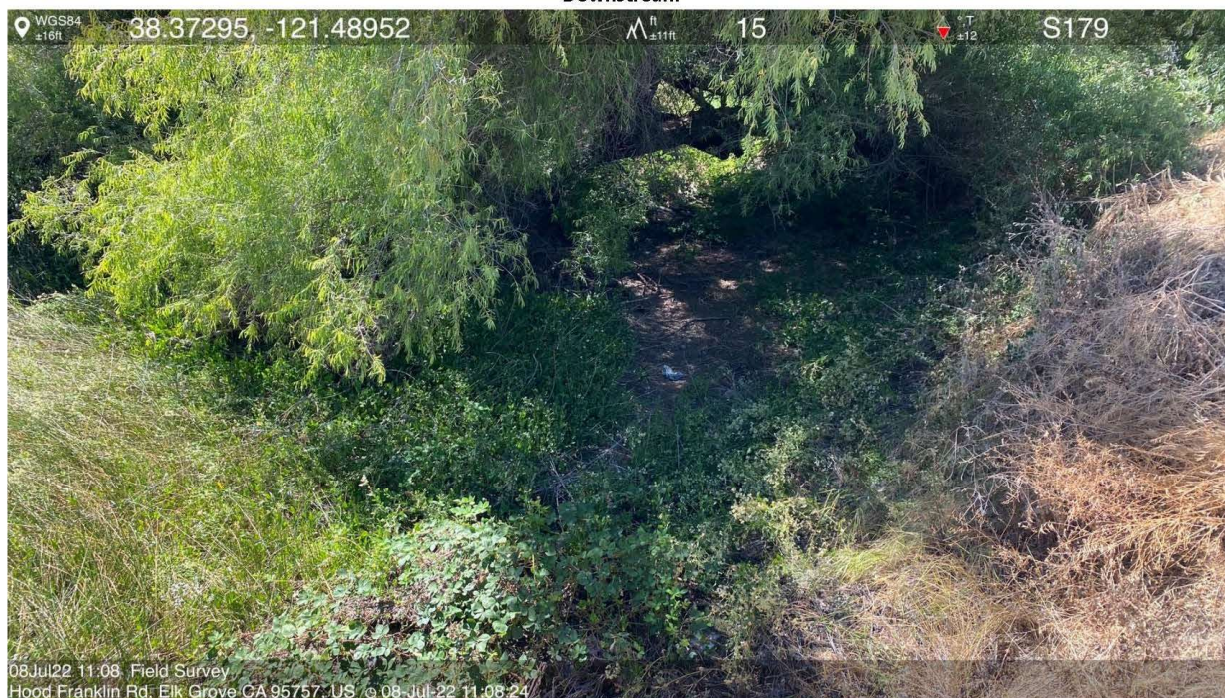
VISUAL WATERCOURSE ASSESSMENT FORM									
Project:	Hood Septic Conversion Project			Date:	20220708		AECOM Watercourse ID:	R3	
							Data Point:	R3	
Client:	Sacramento County Office of Planning and Environmental Review			County:	Sacramento				
Investigator(s):	Lead: Ranie Shreckengost			State:	California				
	Assistant:			Coordinates (XX.0000)	38.3730		-121.4895		
Watercourse Name:	Sacramento Drainage Canal			Flow Direction:	North to South				
Precip. Last 48 Hours: <input type="checkbox"/>	Quantity (in)		Date	Cowardin Classification:			Riverine		
Precip. Data Source:	N/A		N/A						
Associated Culvert / Bridge (s) <input checked="" type="checkbox"/>	Type: Concrete / Steel			NWI Designation:			R2UBFx		
Flow Regime:	Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Ephemeral <input type="checkbox"/>	Water Type: (Scientist Field Estimated)	TNW <input type="checkbox"/>	RPW <input type="checkbox"/>	NRPW <input checked="" type="checkbox"/>		
Notes:	This 2.04 acre Riverine habitat is classified as a R2UBFx. (USFWS 2022 – NWI Wetlands Mapper).								
WATERCOURSE CHARACTERISTICS									
Watercourse Dimensions (Field Estimated)			Flow Rate		Bank Erosion (%)		Canopy Cover (%)		
Parameter	Width (ft)	Depth (ft)	High	<input type="checkbox"/>	Stable (<10%)	<input type="checkbox"/>	75-100	<input checked="" type="checkbox"/>	
Top of Bank	60	12	Moderate	<input type="checkbox"/>	Moderately Stable (<60%)	<input checked="" type="checkbox"/>	50-75	<input type="checkbox"/>	
OHWM	30	5	Low	<input type="checkbox"/>	Moderately Unstable (>60%)	<input type="checkbox"/>	25-50	<input type="checkbox"/>	
OBW	No Flow Observed		None	<input checked="" type="checkbox"/>	Unstable (>90%)	<input type="checkbox"/>	0-25	<input type="checkbox"/>	
Substrates (%)		Morphology (%)		Aquatic Fauna Present		Adjacent Land Use (%)			
Bedrock		Riffle	No Flow Observed	Fish	<input type="checkbox"/>	Forest			
Boulder (>10")						Field/Pasture	50		
Cobble (2.5"-10")		Run	No Flow Observed	Macroinvertebrates	<input type="checkbox"/>	Active Agricultural	25		
Gravel (0.1"-2.5")	10					Residential			
Sand (0.06-2mm)	30	Pool	No Flow Observed	Other (Please Note):	<input checked="" type="checkbox"/>	Commercial / Industrial	10		
Silt (0.004-0.06mm)	50					ROW			
Organic	10					Other	25 (Wildlife Conservation Area)		
				None	<input type="checkbox"/>				
RIPARIAN VEGETATION ASSESSMENT:									
Vegetative Cover Within the Riparian Zone (%)				Dominant Riparian Vegetation Species (1-3)					
Tree	30			<i>Salix sp. and Rubus armeniacus</i>					
Shrub	30								
Herb	30								
Sandy / Bare	10								

Additional Notes:

Ranie Shreckengost

Personal Field Data Reference Form / Field Notes Fillable Form

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Watercourse Overview Photos: R2 – Unnamed Channel**Upstream****Downstream**

Attachment 6 Representative Site Photos

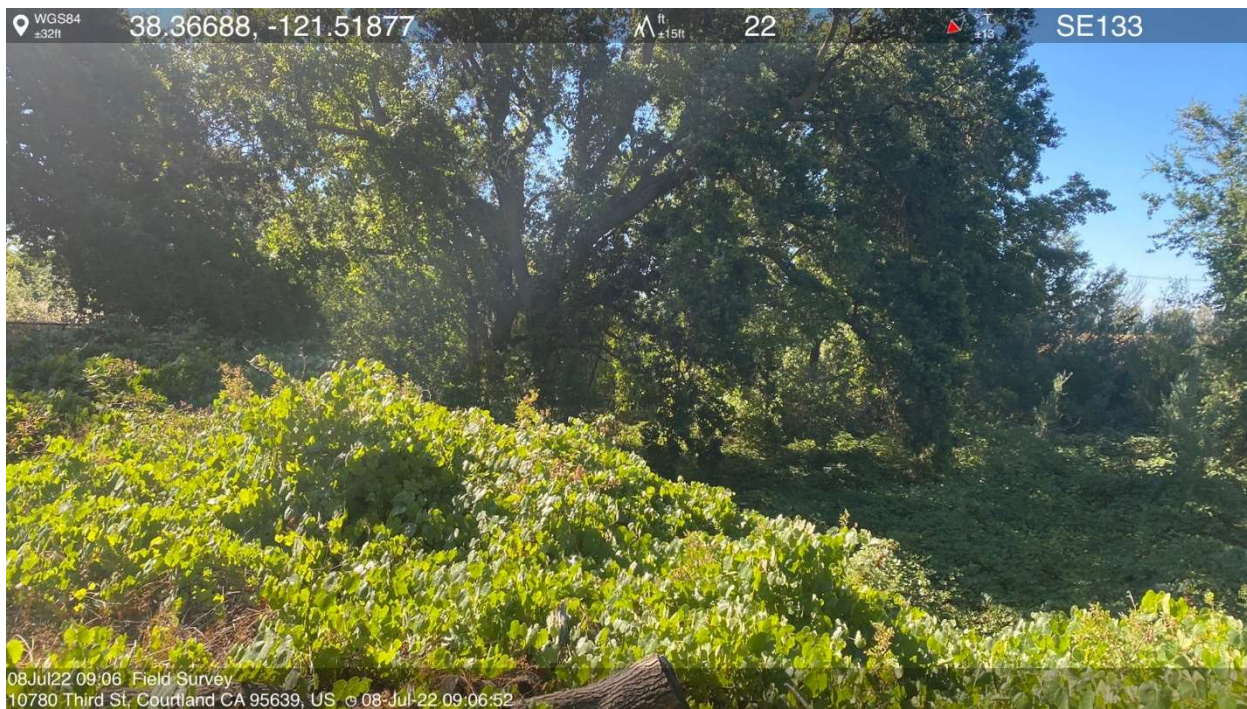


Photo 1. Valley Oak Riparian Habitat



Photo 2. Developed Lot



Photo 3. Highway 160



Photo 4. Ruderal and Pasture Habitat



Photo 5. Almond Orchard



Photo 6. Hood-Franklin Road



Photo 7. Disked lot – Annual Grassland



Photo 8. Residential



Photo 9. Unnamed Stone Lake Channel, Hood-Franklin Road

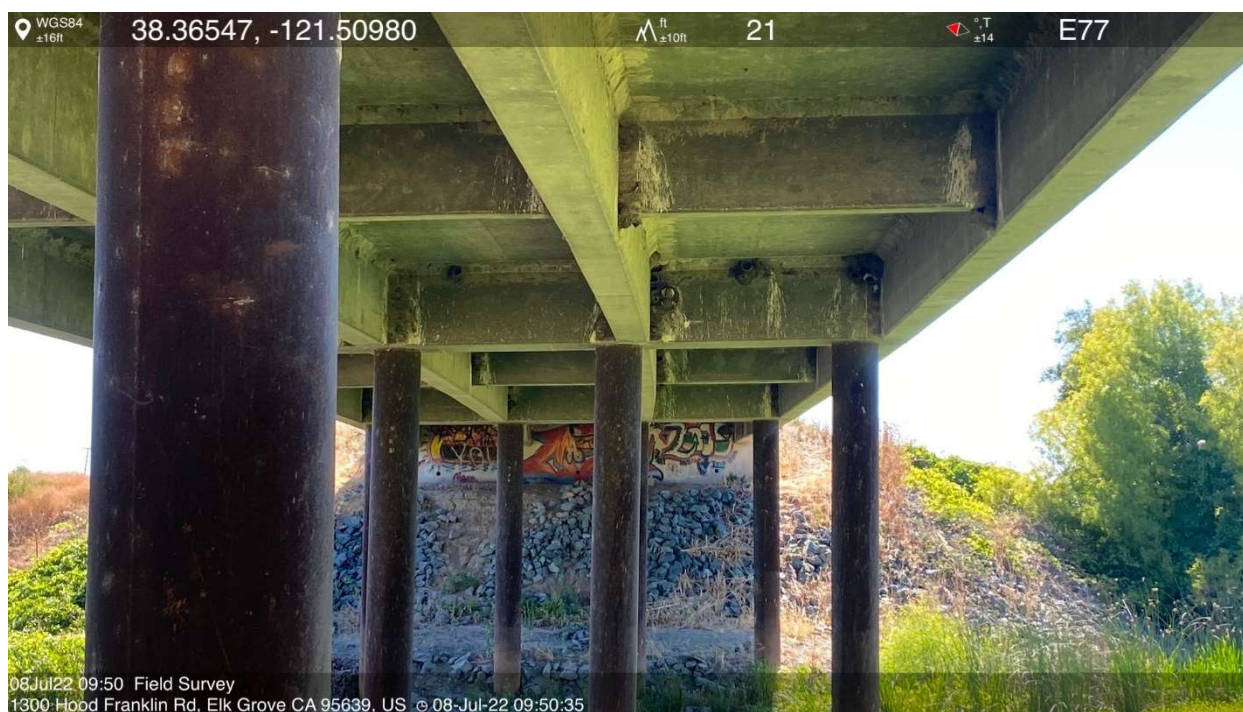


Photo 10. Unnamed Stone Lake Channel, Hood-Franklin Road Bridge (nesting swallows)



Photo 11. Annual Grassland



Photo 12. Roadside Ephemeral Drainage

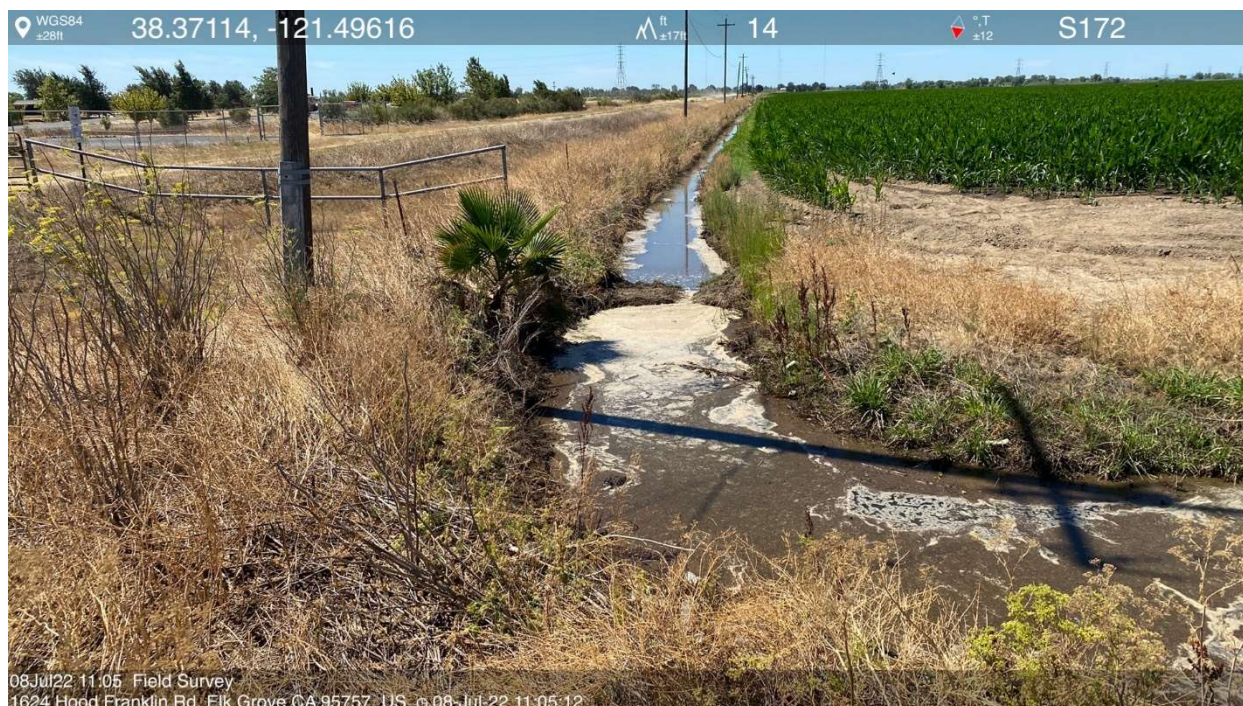


Photo 13. Irrigation channel that is hydrologically connected to the unnamed Stone Lake channel



Photo 14. Annual grassland and mesic vernal habitat beyond BSA extents

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