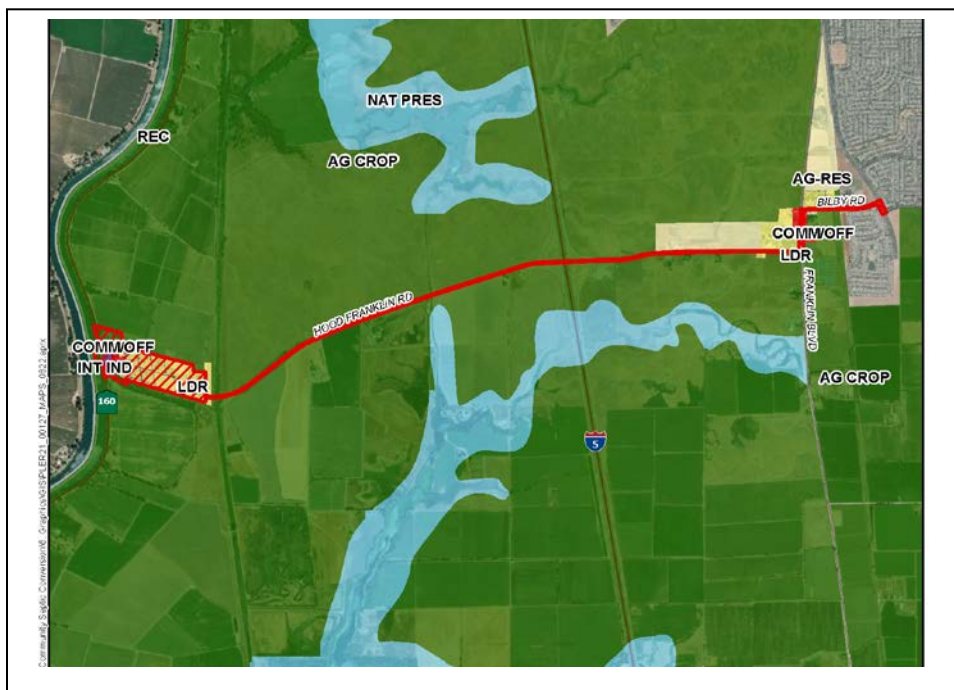

FINAL ENVIRONMENTAL IMPACT REPORT

VOLUME II – TECHNICAL APPENDICES

HOOD SEPTIC TO SEWER CONVERSION PROJECT



Control Number: PLER2021-00127
State Clearinghouse Number: 2022030717
December 2022

SACRAMENTO AREA SEWER DISTRICT
10060 GOETHE ROAD
SACRAMENTO, CALIFORNIA 95827



SACRAMENTO AREA SEWER DISTRICT BOARD OF DIRECTORS

Sacramento County, 1st District: Phil Serna

Sacramento County, 2nd District: Patrick Kennedy

Sacramento County, 3rd District: Rich Desmond

Sacramento County, 4th District: Sue Frost

Sacramento County, 5th District: Don Nottoli

City of Citrus Heights, Jeannie Bruins

City of Elk Grove, Patrick Hume

City of Folsom, Kerri Howell

City of Rancho Cordova, David Sander

City of Sacramento, Mai Vang

PREPARED BY

County of Sacramento
Department of Community Development
Planning and Environmental Review

For:

Sacramento Area Sewer District

**Planning and
Environmental Review**
David Defanti, Director
Community Development Department



County Executive
Ann Edwards

COUNTY OF SACRAMENTO
PLANNING AND ENVIRONMENTAL REVIEW
NOTICE OF PREPARATION

MARCH 25TH, 2022

TO: ALL INTERESTED PARTIES

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR HOOD COMMUNITY SEPTIC CONVERSION (PLER2021-00127)

Sacramento County will be the CEQA Lead Agency for preparation of an Environmental Impact Report (EIR) for a project known as Hood Community Septic Conversion. This Notice of Preparation has been sent to responsible and trustee agencies and involved federal agencies pursuant to Section 15082 of the CEQA Guidelines. Agencies should comment on the scope and content of the environmental information that is germane to the agencies' statutory responsibilities in connection with the proposed project. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice. The project description, location, and the probable environmental effects are contained in the attached materials and may also be viewed online at:

<https://planningdocuments.saccounty.net/ViewProjectDetails.aspx?ControlNum=PLER2021-00127>

Please send your Agency's response to this Notice to:

Joelle Inman, Environmental Coordinator
Office of Planning and Environmental Review
827 7th Street, Room 225, Sacramento, CA 95814
or via e-mail at: CEQA@saccounty.net.

Your response should include the name of a contact person in your agency.

Two scoping meetings will be conducted in association with this project; one will be tailored for the general public and one will be tailored for other agencies.

- The public meeting will take place at 6pm on April 5th, 2022; the zoom link is here: <https://saccounty-net.zoomgov.com/j/1611655899>
- The agency meeting will take place at 10am on April 5th, 2022; the zoom link is here: <https://saccounty-net.zoomgov.com/j/1602369424>

Specific questions about the project should be directed to Kimberly Asbury, Project Manager, at (916) 874-6141 or asburyk@saccounty.net for further information.

PROJECT TITLE: HOOD COMMUNITY SEPTIC CONVERSION

CONTROL NUMBER: PLER2021-00127

PROJECT PROPONENT: SACRAMENTO AREA SANITATION DISTRICT (SASD)

PROJECT DESCRIPTION AND LOCATION:

If the project were to receive grant funding, SASD would extend public sewer service to up to 141 parcels (52 are vacant, 76 are residential, and 13 are non-residential) in the community of Hood. SASD would conduct additional outreach to the 141 residences in the neighborhood. If the property owners are interested in connecting to public sewer they would sign an agreement requiring them to abandon their existing septic system in accordance with the County Environmental Management Department (EMD)'s guidelines. Abandonment would require the existing septic tank to be pumped, the tank bottom to be punctured, and the tank to be filled with sand, gravel, concrete, or other approved material to the surface elevation. The residence would then be connected to the public sewer and the residence would become a customer of SASD & Regional Sanitation. Scope of work for connection of private residences to the public sewer is limited to the septic tank and below-grade pipe installation and does not involve any work to homes or above-ground structures.

1.1 Construction Methods

Construction is to occur within existing County right-of-ways (ROW). The timeline for construction is estimated to last approximately twelve months. County ROW for all of the streets is approximately 40 feet, but the expected footprint of construction would be significantly less. Construction will occur during regular working hours and may require temporary lane closures while in progress. Construction methods may include open trench and/or directional drilling; however, it is not known at this time which method the contractor will choose. It will be left to the discretion of the contractor when and where to use either construction method.

1.1.1 Open Cut Trench

An open cut trench is the conventional method for installing shallow lengths of pipe. Typically, this type of construction involves utilizing an excavator, trenching machine, or manual digging to establish a trench in which the pipe will be laid. The trench base usually requires reinforcement such as sand or gravel and is checked for proper slope alignment. The pipe is then placed in the open trench and back fill material such as Class 2 aggregate base, or controlled density fill is used to cover the pipe.

1.1.2 Horizontal Directional Drilling

Horizontal directional drilling (HDD) is used for long lengths of pipe and consists of two general stages: pilot hole drilling and reaming and pull back. The pilot hole is created with a non-rotating drill string with an asymmetrical leading edge. The asymmetry allows for steering bias and the non-rotating drill string allows the steering bias to be held in a specific position while drilling. The drill string can, however, be rolled when a change of direction is needed. As the pilot hole is drilled, periodic readings are taken of the leading edge by a probe. These measurements are used to calculate the coordinates of any point along the pilot hole relative to the surface. Once the pilot hole is finished, enlarging the hole through the reaming process is typically necessary. Reaming for smaller diameter piping can be accomplished during pipe installation and consists of attaching reamers to the end of the drill string and then pulling the components back through the pilot hole. Prefabricated pipe is attached behind the reaming assembly or drill string and pulled through the widened hole.

Connection of residences to the public sewer would likely be made utilizing the HDD method. Vertical Area of Potential Effect (APE) for this work would be 1 to 5 feet in depth and the diameter of the pipe connecting to the sewer would likely be 4 inches in diameter. This work would occur from County ROW

and would extend into the front yard and/or side yard of the residential properties. None of the existing structures would be affected by construction, and are therefore not included in the APE.

ENTITLEMENTS:

The project consists of providing public sewer service to the community of Hood, in the unincorporated County, that currently relies on individual septic systems. To implement the project the following related actions must receive a Sacramento Local Agency Formation Commission (LAFCo) sphere of influence amendment and annexation to incorporate the Hood community into the SASD/Regional Sanitation service area. The Project would require a request to LAFCo to amend the service boundaries of SASD and Regional Sanitation to provide wastewater services to the Project, and would require LAFCo review, proceedings, and action. LAFCo has the sole authority to act to approve, modify and approve, or disapprove the proposal. The proposal is consistent with LAFCo goals (GC 56033.5) to provide adequate municipal sewer services to an identified disadvantaged unincorporated community, as defined by Section 79505.5 of the Water Code.

ENVIRONMENTAL/LAND USE SETTING:

The Project area is located within the community of Hood, which is located south of the City of Sacramento and west of the City of Elk Grove along the Sacramento River and therefore the western border of the County of Sacramento. The community is bounded by agricultural parcels to the north, east, and south and Sacramento River to the west. In addition, the project area extends along Hood Franklin Road from the community of Hood to the community of Franklin to allow for the extension of a 4" sewer force main to Hood.

PROBABLE ENVIRONMENTAL EFFECTS/EIR FOCUS:

The analysis in the EIR will describe existing conditions, describe the legal and regulatory framework relevant to the Project, describe standards of significance to be used in analysis, and describe analysis methodologies. A high-level review of the Project and of the environmental resources in the study area has resulted in the identification of potential categories of environmental effect. The descriptions below are not exhaustive, and other sections and discussions may be included if further research indicates that their inclusion is warranted. As the analyses progress and the extent of impacts to the categories is determined, appropriate CEQA alternatives will be included for analysis.

Air Quality Project-related emissions analyzed may include toxic air contaminants, ozone precursors, and particulates. The analysis will include discussions of emissions resulting from construction-related activities and emissions resulting from operational activities of the completed Project.

Biological Resources The Project will be analyzed to identify areas where proposed changes may affect biological resources. The analysis will discuss impacts to general wildlife populations and habitats, but will focus on special-status species and particularly sensitive habitats, including wetlands. The Project will also be analyzed to determine if it would conflict with the provisions of an adopted Habitat Conservation Plan (HCP) or other approved local, regional, State or federal plan for the conservation of habitat.

Greenhouse Gas Emissions Project-related greenhouse gas emissions will be quantified and analyzed for the cumulative impacts to climate change. The probable impacts to the Project as a result of climate change will also be examined.

Cultural Resources A cultural resources evaluation will be prepared to determine if there are any archeological or historic resources onsite and the EIR will evaluate potential impacts on any identified cultural resources.

Geology and Soils The Project has the potential to result in geological and soil impacts during construction. The EIR will analyze these potential impacts and identify all applicable mitigation measures.

Hazards and Hazardous Materials Hazardous materials sites, if any, will be identified in the vicinity of the proposed Development Area. Project compatibility with any existing hazardous materials sites will be examined. In addition, potential construction-related impacts of the Project regarding the potential spill of hazardous materials will also be examined.

Hydrology and Water Quality Areas of potential flooding will be identified and drainage patterns will be examined within the watersheds affected by the Project. The Project will be analyzed for impacts to the existing hydrologic environment, in particular how the Project would impact the hydrologic environment surrounding the two water crossings. Agencies involved with flood control issues will be consulted. These may include, but are not limited to the California State Department of Water Resources, the Central Valley Flood Protection Board (CVFPB), the Sacramento Area Flood Control Agency (SAFCA), Reclamation District 1000 (RD-1000) and the Sacramento County Department of Water Resources. The potential impacts of the Project on water quality will also be examined, which includes construction-related impacts (e.g., erosion of exposed soil).

Land Use The EIR will be examined to determine consistency with land use policies/ordinances/plans that have been adopted in order to avoid environmental effects. The Project's impact relative to the planned and existing land use environment will also be disclosed.

Population and Housing The proposed Project is not expected induce any direct unplanned population growth as the Project does not include any proposed residential land uses. Additionally, the proposed Project is not expected to displace any people or housing. However, the Project proposes to extend sewer lines beyond the existing SASD service area. In order to connect to the community of Hood, the project would necessitate the extension of sewer lines along Hood Franklin Road for approximately five (5) miles. The potential of the extension of sewer lines to induce growth will be analyzed in the EIR.

Noise The Project has the potential to expose the public to additional noise levels on a temporary basis. The EIR will estimate noise impacts associated with the construction of the proposed project.

Public Utilities The Project would extend sewer lines to the community of Hood. The EIR would analyze whether the extension of service would overextend existing sewer facilities. The proposed Project would not construct residential land uses that would increase demand on water or energy services.

Transportation Though the project would not result in an increase in population that would result in additional Vehicle Miles Traveled (VMT) during operation, the EIR would analyze the impacts of the Project on VMT in compliance with Senate Bill 743 due to the movement of construction equipment, materials, and workers to the project site as well as the potential increase in miles traveled by Hood residents due to detours along Hood Franklin Road. In addition, the EIR will analyze the potential impact to emergency access and circulation due to the potential closures of Hood Franklin Road during construction.

Tribal Cultural Resources A cultural resources evaluation will be prepared to determine if there are any tribal cultural resources onsite. In addition, AB 52 consultation will be initiated by the County. The EIR will evaluate potential impacts on any identified or potentially undiscovered tribal cultural resources.

Wildfire During operation, the Project would be entirely below ground and would not increase the likelihood of wildfire. The EIR would discuss the potential of the Project to increase the risk of accidental wildfire ignition during construction.

TOPIC EXCLUDED FROM FURTHER ANALYSIS IN THE EIR:

Aesthetics All proposed Project actions would occur below ground. Construction activities would result in temporary aesthetic impacts but, at termination of construction-activities, the Project area would be returned to pre-project aesthetic conditions. This topic will not be addressed in the EIR.

Agricultural and Forestry Resources The proposed Project would not convert any Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to developed uses, and would not encroach on any other protected resource lands such as those under Williamson Act contracts. Thus, the proposed Project would not result in a potentially significant impact on agricultural resources, and this topic will not be addressed in the EIR. Potential implications of future development would be addressed in the Growth Inducement Section of the EIR. The Project area does not contain zoning districts designated for forest or timberland, and the project site does not contain forest lands or timberland. Therefore, the proposed Project would not conflict with forestland zoning or result in the loss or conversion of forestland to non-forest uses and would result in no impacts to these resources. This topic will not be addressed in the EIR.

Airports The Project consists of below-ground utilities extension lines and is not within an Airport Land Use Plan. This topic will not be addressed in the EIR

Mineral Resources There are no active mines or known mineral resource zones occurring within the city limits or within the plan area. Therefore, the proposed Project would not result in the loss or availability of a known mineral resource or mineral resource recovery site and would result in no impacts to these resources. This topic will not be addressed in the EIR.

Public Services The Project does not propose the construction of residential land uses that would increase population in the area and therefore increase demand on existing libraries, schools, parks, and police and fire services. This topic will not be addressed in the EIR.

INTENDED USES OF THE EIR:

The Sanitation District Board will use the information contained in the EIR to evaluate the Project and render a decision to approve or deny the requested entitlements. Responsible and other agencies may also use the EIR for their own discretionary approvals associated with the Project.

Table NOP-1: Subsequent Permits, Approvals, Review, and Consultation Requirements

Agency	Approval
SASD	Final Environmental Impact Report Certification
SASD	Project Approval
Sacramento Metropolitan Air Quality Management District	Fugitive Dust Prevention and Control Plan
Regional Water Quality Control Board – Central Valley Region	NPDES Waste Discharge Permit Section 401 Certification

Plate-1: Project Location

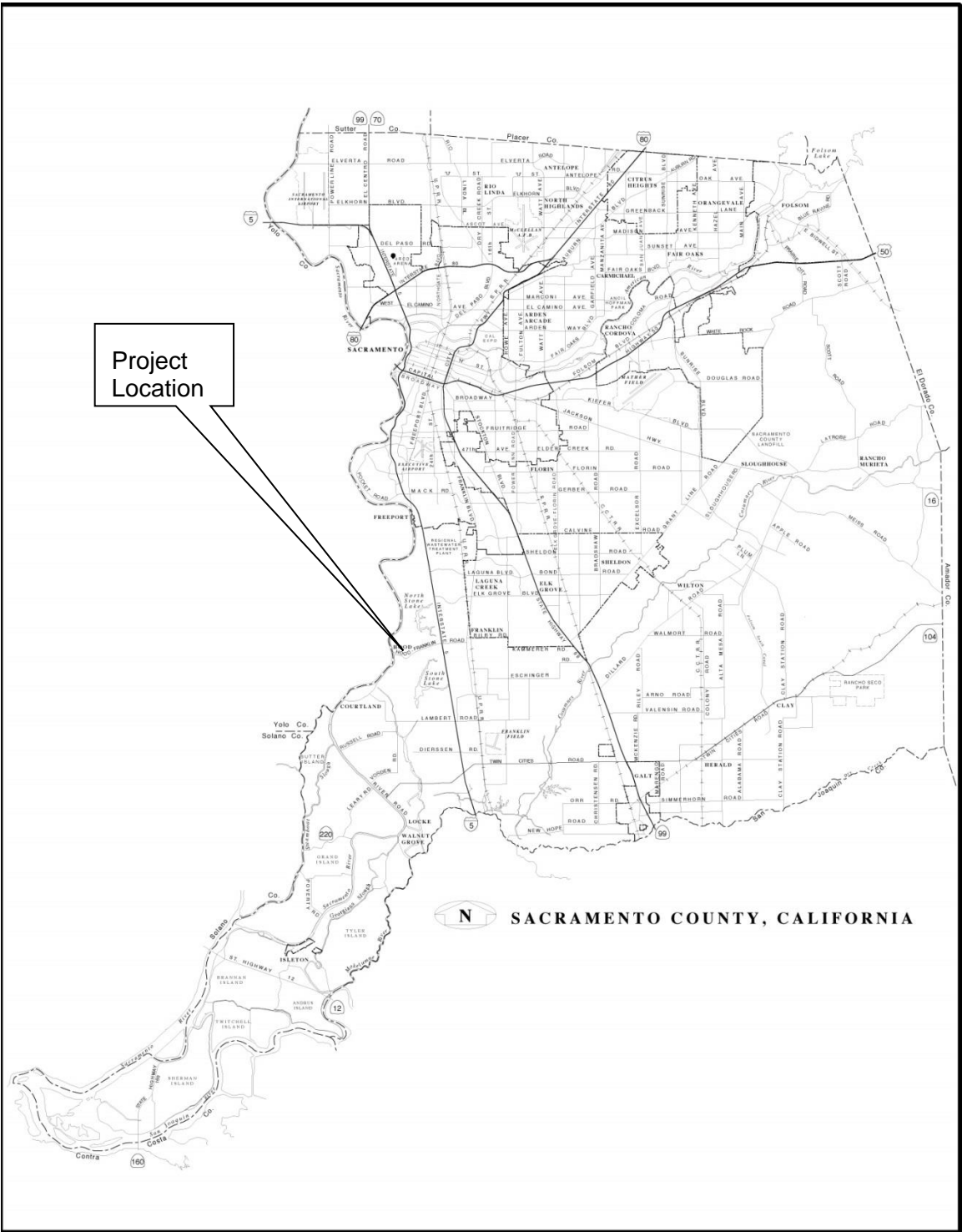
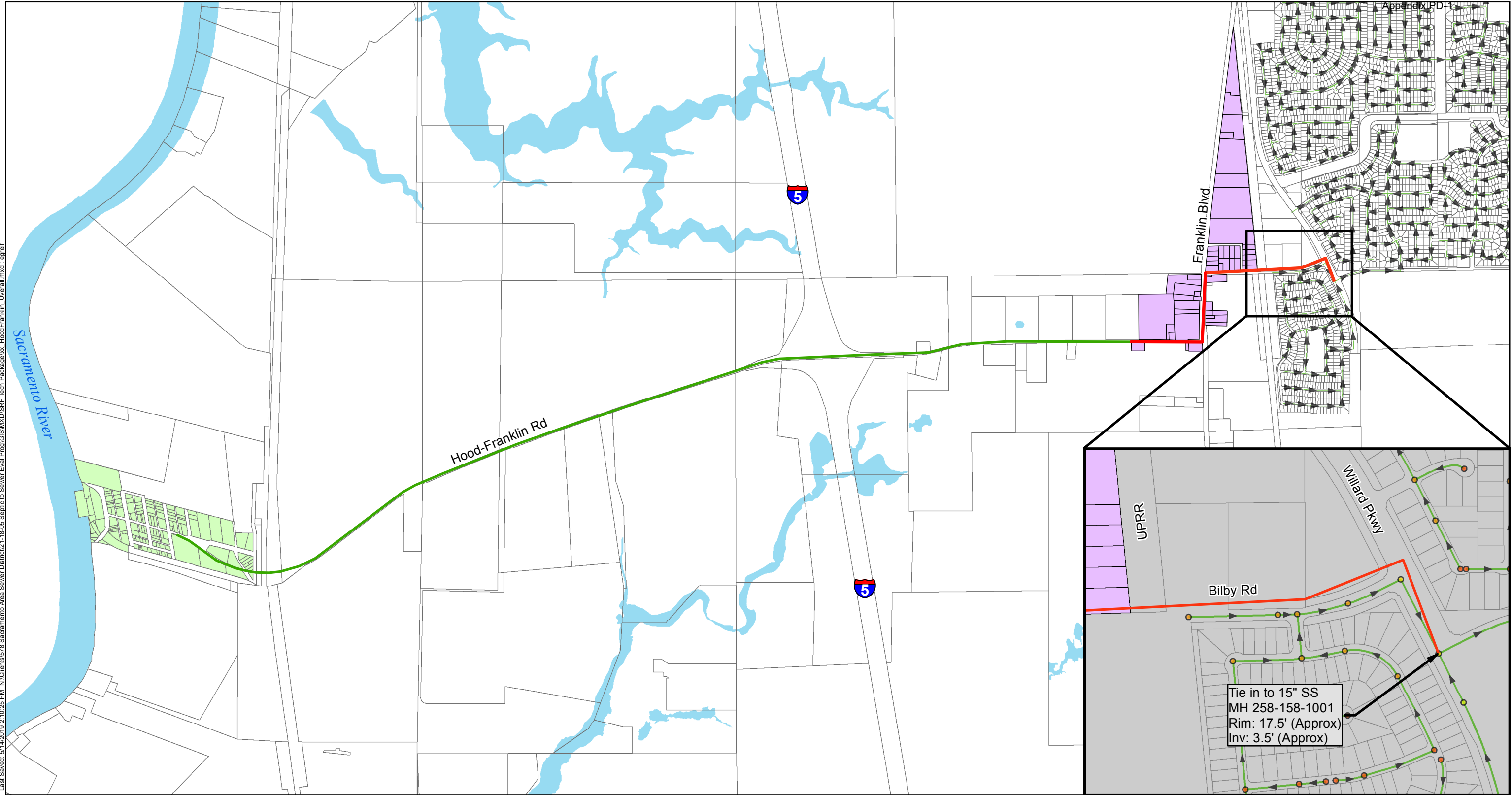
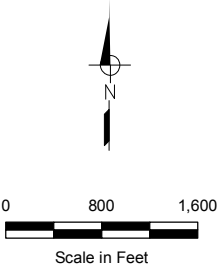


Plate-2: Project Site



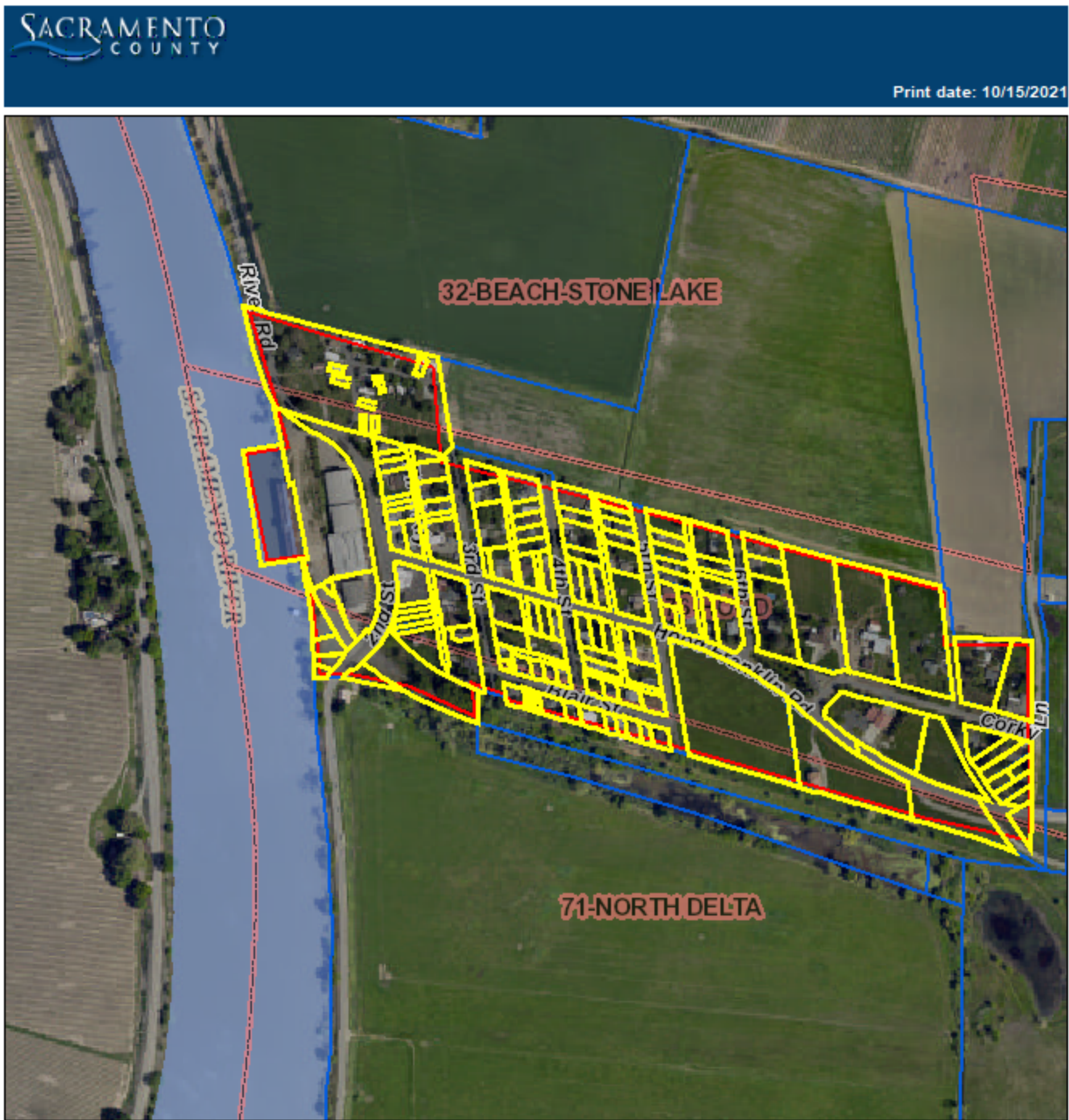
Symbology

- Hood Community
- Franklin Community
- Proposed SSFM (serves Hood only)
- Proposed SSFM (serves both communities)
- Existing Sewer



Hood and Franklin
Combined Force Main

Sacramento Area Sewer District
Septic to Sewer
Evaluation Project



- Parcel Boundaries, Level 16,17,18,19,20
- Water Sheds
- Streams
- Rivers
- Ponds and Lakes

1" = 594'

Independent verification of all data contained on this map product should be obtained by any user thereof. The County of Sacramento does not warrant the accuracy or completeness of this map product and therefore disclaims all liability for its fitness of use.

Central Valley Regional Water Quality Control Board

26 April 2022

Joelle Inman
Sacramento County
827 7th Street, Suite 225
Sacramento, CA 95814
inmanj@sacounty.net

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, HOOD COMMUNITY SEPTIC CONVERSION PROJECT, SCH#2022030717, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 25 March 2022 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Hood Community Septic Conversion Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by

the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:

http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:

https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_2018_05.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality/certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at:
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board’s Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage

under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: <https://www.waterboards.ca.gov/centralvalley/help/permit/>

If you have questions regarding these comments, please contact me at (916) 464-4709 or Greg.Hendricks@waterboards.ca.gov.



Greg Hendricks
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research,
Sacramento

DELTA PROTECTION COMMISSION

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West Sacramento, CA 95691
(916) 375-4800
www.delta.ca.gov

Don Nottoli, Chair
Sacramento County Board of
Supervisors

Chuck Winn, Vice Chair
San Joaquin County Board of
Supervisors

Oscar Villegas
Yolo County Board of
Supervisors

Diane Burgis
Contra Costa County Board of
Supervisors

John Vasquez
Solano County Board of
Supervisors

George Fuller
Cities of Contra Costa and
Solano Counties

Paul Steele
Cities of Sacramento and
Yolo Counties

Alan Nakanishi
Cities of San Joaquin County

Jim Paroli
Central Delta Reclamation
Districts

Tom Slater
North Delta Reclamation
Districts

Nick Mussi
South Delta Reclamation
Districts

Toks Omishakin
CA State Transportation
Agency

Karen Ross
CA Department of Food and
Agriculture

Wade Crowfoot
CA Natural Resources Agency

Brian Bugsch
CA State Lands Commission

Ex Officio Members

Honorable Susan Eggman
California State Senate

Honorable Carlos Villapudua
California State Assembly

April 20, 2022

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



Re: Notice of Preparation of a Draft Environmental Impact Report for the Hood
Community Septic Conversion (PLER2021-00127)

Dear Ms. Inman:

Thank you for providing the Delta Protection Commission (Commission) the opportunity to provide comments on the Notice of Preparation for the Draft Environmental Impact Report for the proposed Hood Community Septic Conversion project (Project).

The Commission is a state agency charged with ensuring orderly, balanced conservation and development of Delta land resources and improved flood protection. Proposed local government-approved projects within the primary zone of the Legal Delta must be consistent with the Commission's Land Use and Resource Management Plan (LURMP) (California Public Resources Code Sections 29700-29780). The Project lies within the primary zone.

The Commission supports projects that expand water, wastewater, and other utility services to rural areas of the Delta. The LURMP encourages "the provision of infrastructure for new water, recreational, and scientific research facilities" (Utilities & Infrastructure, Policy 7). In addition, Action 2a in the Hood Community Action Plan (September 2018) seeks to "collaborate with Sacramento County on potential solutions for water and wastewater infrastructure and flood protection needs." We believe the Project will help meet these needs and we support the County's work to improve infrastructure in the community of Hood.

Thank you for the opportunity to provide input. Please contact Kirsten Pringle, Senior Environmental Planner, at (530) 650-6327 for any questions regarding the comments provided.

Sincerely,

Erik Vink
Executive Director

cc: Don Nottoli, Sacramento County Board of Supervisors and Commission Chair

From: [McDermott, Bart](#)
To: [Asbury, Kimberly](#)
Subject: [Copy - Do Not Release]Fw: [EXTERNAL] Community of Hood Septic to Sewer Conversion Project scooping meeting
Date: Tuesday, April 5, 2022 4:26:06 PM
Attachments: [image001.jpg](#)
[Agency Meeting- Hood Septic to Sewer Conversion.msg](#)
[PLER2021-00127 NOP clean.pdf](#)

EXTERNAL EMAIL: If unknown sender, **do not** click links/attachments.

Hi Asbury.

Thank you for the notification. We also received a copy of the project NOP in the mail at the Refuge office. As long as the pipe route is within the county road right of way, I do not see any issue with needing any additional permitting from the USFWS for the National Wildlife Refuge. I would like to be kept apprised of any further project details.

Thank you,

Bart McDermott
 Refuge Manager
 Stone Lakes NWR
 Elk Grove, CA
 916-775-4426 Office
 916-869-6632 Cell
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From: Stone Lakes, FW1 <stonelakes@fws.gov>
Sent: Monday, April 4, 2022 5:13 PM
To: McDermott, Bart <bart_mcdermott@fws.gov>; Treiterer, Beatrix <beatrix_treiterer@fws.gov>
Subject: Fw: [EXTERNAL] Community of Hood Septic to Sewer Conversion Project scooping meeting

FYI - see below

From: Asbury, Kimberly <asburyk@saccounty.net>
Sent: Monday, April 4, 2022 11:03 AM
Subject: [EXTERNAL] Community of Hood Septic to Sewer Conversion Project scooping meeting

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Good Morning,

Last week, the County of Sacramento sent out an NOP regarding the Community of Hood Septic to Sewer Conversion Project by SASD. This is a follow-up email and reminder of the agency scooping

th

meeting tomorrow, April 5 and 10am. Please see the attached outlook meeting and the zoom information is also located below.

Thank you and hope to hear your comments!

Kimberly Asbury, Associate Planner

Planning and Environmental Review

827 7th Street, Room 225, Sacramento, CA 95814 | (916) 874-3178

www.per.saccounty.net



The Office of Planning & Environmental Review (PER) is open by appointment only. Please see our website at www.planning.saccounty.net for the most current information on how to obtain services and to schedule an appointment.

Meeting information:

Join ZoomGov Meeting

<https://saccounty-net.zoomgov.com/j/1602369424>

Meeting ID: 160 236 9424

One tap mobile

+16692545252,,1602369424# US (San Jose)

+16692161590,,1602369424# US (San Jose)

Dial by your location

+1 669 254 5252 US (San Jose)

+1 669 216 1590 US (San Jose)

+1 551 285 1373 US

+1 646 828 7666 US (New York)

Meeting ID: 160 236 9424

Find your local number: <https://saccounty-net.zoomgov.com/u/arnU9oTfW>

Join by SIP

1602369424@sip.zoomgov.com

Join by H.323

161.199.138.10 (US West)

161.199.136.10 (US East)

Meeting ID: 160 236 9424

Join by Skype for Business

<https://saccounty-net.zoomgov.com/skype/1602369424>

INITIAL STUDY CHECKLIST

I. Aesthetics

	Potentially Significant	Less Than Significant	No Impact
a. Have a substantial adverse effect on a scenic vista?			X
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X
c. In non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	X		
Discussion: All proposed project activities would occur below ground and within the County Road Right of Way (ROW). After construction, the site would be restored to pre-construction viewshed; thus, the project would have no impact on a scenic vista,			

scenic resources, visual character and/or new source of light and glare. The project has the potential for nighttime lighting if overnight construction is required. Refer to Chapter 3 for additional information.

II. Agricultural & Forestry Resources

	Potentially Significant	Less Than Significant	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			X
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X
Discussion: The proposed project would occur with the County ROW of Hood-Franklin Road and within the Community of Franklin. The project site does not include nor is it adjacent to forested land. The proposed project would connect to the existing zoned densities in the Community of Hood and does not include agricultural zoning or land use designations. Therefore, the proposed project would have no impact with regards to forestry and agricultural resources.			

III. Air Quality

	Potentially Significant	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?		X	
b) Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	X		
c) Expose sensitive receptors to substantial pollutant concentrations?		X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?		X	
Discussion: Construction would involve typical construction activities that would release air quality emissions. The Road Emissions Model is used to calculate emissions associated with the project. Refer to Chapter 8 for additional information.			

IV. Biological Resources

	Potentially Significant	Less Than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	X		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	X		
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	X		

Hood Septic to Sewer Conversion Project

	Potentially Significant	Less Than Significant	No Impact
Discussion: The proposed project would involve ground-disturbing activities and the impacts associated with construction activities are considered potentially significant. The project area contains habitat that could support special status plant and animal species. Additionally, the forcemain alignment would require crossing several waterways that are potentially jurisdictional. A Biological Resources Assessment and Aquatic Resources Delineation has been prepared to support the analysis of the impacts associated with the proposed project. The project site is located within the South Sacramento Habitat Conservation Plan (SSHCP) boundary but is not within the urban development area, and is not considered a covered activity under the SSHCP. In addition, the proposed project would occur adjacent to the Stone Lakes Wildfire Refuge. Refer to Chapter 6 for additional information.			

V. Cultural Resources

	Potentially Significant	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of an historic resource pursuant to in Section 15064.5?			X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	X		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	X		
Discussion: The project consists of ground disturbing activities that carry the potential for subsurface cultural remains/deposits and/or human remains to be found on the project site and the impacts are considered potentially significant. A Cultural Resources Assessment has been prepared to support the analysis of the impacts associated with the proposed project. Refer to Chapter 7 for additional information.			

VI. Energy

	Potentially Significant	Less Than Significant	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?		X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?		X	
Discussion: Construction of the project would involve typical construction activities that could require use of energy. Operation of the project would not require additional sources of energy. The project does not involve activities that would result in an obstruction with any plans associated with renewable energy or energy efficiency. Impacts are less than significant. Refer to the Air Quality and Climate change chapters for additional information regarding construction activities and associated equipment needs.			

VII. Geology, Soils, and Paleontological Resources

	Potentially Significant	Less Than Significant	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:		X	
i) Ruptures of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)		X	
ii) Strong seismic ground shaking?		X	
iii) Seismic-related ground failure, including liquefaction?		X	
iv) Landslides?		X	
b) Result in substantial soil erosion or the loss of topsoil?		X	
c) Be located in a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?		X	

Hood Septic to Sewer Conversion Project

	Potentially Significant	Less Than Significant	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	X		
Discussion: The project consists of ground disturbing activities that carry the potential for impacts to unknown paleontological resources and/or unique geological features or potential substantial adverse effects involving soil characteristics. Refer to Chapter 12 of the EIR for additional information.			

VIII. Greenhouse Gases

	Potentially Significant	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X		
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	X		
Discussion: The proposed project would involve typical construction activities that would result in the release of greenhouse gas emissions and the impacts are considered potentially significant. The project would not result in significant emissions related to operational characteristics. Refer to Chapter 9 for additional information and modeling considerations.			

Hood Septic to Sewer Conversion Project

IX. Hazards and Hazardous Materials

	Potentially Significant	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	X		
b) Create a significant hazard to the public or the environment though reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	X		

Hood Septic to Sewer Conversion Project

	Potentially Significant	Less Than Significant	No Impact
g) Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	X		
Discussion: Project site is not located within 0.25 miles of an existing school and therefore the project would have no impact to school services. In addition, the project site is not located in the vicinity of a public or private airport and is not within an airport land use area. Additionally, the project site would occur entirely within the existing County ROW and is not located on a list compiled pursuant to Government Code Section 65962.5. Therefore, the project would have no impact. Project implementation would require the construction of the sewer line and would require the transportation of petroleum using machinery, which could result in a spill of hazardous materials; thus, the impacts are considered potentially significant. The project area is within a Local Response Area where fire protection is provided by Metro Fire. In the event of a grass fire within or adjacent to the Plan Area, Metro Fire would respond. Refer to Chapter 14 of the EIR for additional information.			

X. Hydrology and Water Quality

	Potentially Significant	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	X		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?		X	

Hood Septic to Sewer Conversion Project

	Potentially Significant	Less Than Significant	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:		X	
i) result in substantial erosion or siltation on or off-site;	X		
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;		X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater systems or provide substantial additional sources of polluted runoff; or		X	
iv) impede or redirect flood flows?		X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X
Discussion: Project implementation would require the construction of the sewer line and would result in ground disturbing activities. In addition, the community of Hood, and therefore, the project site, is located with an AE flood zone on the FEMA flood maps. While the project is located near the Sacramento River and within the flood zone, the project is not located near a dam that would put the project site in a seiche zone nor is the project located near the coast that would put the project in a tsunami zone. Additionally, the project would not increase the demand for water, install new wells, or substantially alter the level of impervious surfaces of the site and thus would have no impact on groundwater recharge or the management of a groundwater basin. The proposed project would not result in any above ground structures and all disturbance associated			

Hood Septic to Sewer Conversion Project

	Potentially Significant	Less Than Significant	No Impact
with project construction would be returned to pre-construction condition after construction is complete. Refer to Chapter 13 for additional information.			

Hood Septic to Sewer Conversion Project

XI. Land Use and Planning

	Potentially Significant	Less Than Significant	No Impact
a) Physically divide an established community?			X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?	X		
Discussion: The proposed project would serve the existing community of Hood with sewer service at existing zone densities and would not result in a physical divide of the community of Hood or nearby incorporated or unincorporated communities. The project would occur outside of the existing Urban Services Boundary and growth inducement is considered potentially significant. Refer to Chapter 4 for additional information.			

XII. Mineral Resources

	Potentially Significant	Less Than Significant	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X

Hood Septic to Sewer Conversion Project

Discussion: All proposed project activities would occur below ground and within the County Road Right of Way (ROW). The project site is not located within an area with known mineral resources and the project would occur within the County ROW, which prohibits mineral recovery activities. Therefore, the proposed project would have no impact.

XIII. Noise

	Potentially Significant	Less Than Significant	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X		
b) Generation of excessive ground borne vibration of ground borne noise levels?		X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X
Discussion: The project site is not located in the vicinity of a public or private airport and is not within an airport land use area; therefore, the project would have no impact. The project site would require noise-generating construction during an approximately 16-month construction period, with the potential need for overnight construction. Therefore, the impacts are considered potentially significant. Refer to Chapter 10 for additional information.			

Hood Septic to Sewer Conversion Project

XIV. Population and Housing

	Potentially Significant	Less Than Significant	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	X		
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X
Discussion: The project would not require the demolition of any existing structures and would not result in the displacement of existing people. In general, the extension of sewer lines into rural areas could carry the potential for unplanned growth by providing capacity that could serve more than the existing community; thus, the impact is considered potentially significant. Refer to Chapter 4 for additional information.			

XV. Public Services

	Potentially Significant	Less Than Significant	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any the public services:			
a) Fire protection?		X	

Hood Septic to Sewer Conversion Project

b) Police protection?		X	
c) Schools?		X	
d) Parks?		X	
e) Other public facilities?		X	
Discussion: The proposed project does not include activities that would result in an increase in population that would subsequently increase the demand for fire protection, police protection, schools, parks and other public facilities. Therefore, the project would have no impact on these resources. The potential for growth inducement would be addressed under the Population and Housing chapter and the potential conflict with general plan policies would be addressed under the Land Use and Planning chapter. Refer to Chapter 5 for additional information.			

XVI. Recreation

	Potentially Significant	Less Than Significant	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated?			X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X
Discussion: The proposed project does not include activities that would result in an increase in population that would subsequently increase the demand for recreation facilities. Therefore, the project would have no impact. The potential for growth inducement would be addressed under the Population and Housing chapter and the potential conflict with general plan policies would be addressed under the Land Use and Planning chapter.			

XVII. Transportation

	Potentially Significant	Less Than Significant	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X
d) Result in inadequate emergency access?	X		
<p>Discussion: The proposed project does not include activities that would result in an increase in population that would subsequently conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. In addition, the project would not result in the development of land uses associated with an increase in vehicle miles traveled (VMT). Therefore, the project would have no impact. During construction, the proposed project might require the closure of one or more lanes along Hood-Franklin Road and along service streets within the community of Hood. However, the project would not alter the form of the roadway and therefore would not result in increased hazards due to a geometric design feature or incompatible uses. Lane closures carry the potential to impact emergency access. This potential impact will be discussed further in the Hazards chapter (Chapter 14).</p>			

XVIII. Tribal Cultural Resources

	Potentially Significant	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:			
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	X		
Discussion: Ground disturbing activities carry the potential to unearth previously unknown tribal cultural resources and the impacts are considered potentially significant. Refer to Chapter 11 for additional information.			

Hood Septic to Sewer Conversion Project

XIX. Utilities and Service Systems

	Potentially Significant	Less Than Significant	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	X		
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	X		
c) Result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition of the provider's existing commitments?	X		
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?		X	
Discussion: The proposed project would expand to include the community of Hood into the SASD service area and thus would potentially impact the capacity of existing facilities. The construction of the project would require the use of horizontal boring which requires water use, and limited hauling of potential construction waste offsite. Refer to Chapter 5 for additional information.			

Hood Septic to Sewer Conversion Project

XX. Wildfire

	Potentially Significant	Less Than Significant	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, would the Project:			
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?		X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?		X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?		X	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?		X	
Discussion: The proposed project would occur in a remote portion of the County and is not located in a state responsibility area. During construction, the proposed project might require the closure of one or more lanes along Hood-Franklin Road and along service streets within the community of Hood. Lane closures carry the potential to impact emergency access. Refer to Chapter 14 for additional information.			



To: Anne Tran
Policy and Planning

FROM: Daniel Oleshko
SASD Business Planning/Hydraulic Modeling

DATE: August 17, 2022

SUBJECT: ***Request 2312 – Hood Community Modeling***

This memo summarizes the hydraulic modeling evaluation for the Hood community under buildout conditions. Policy and Planning requested the Hydraulic Modeling group to identify a possible connection location to the existing SASD sewer system to ensure that the SASD system has sufficient capacity for this area to connect.

MODEL NETWORK INFORMATION

- The 2019 buildout model
- The SASD 10-year design storm was used for wet weather simulation
- Hood community
 - Total area: 50.22 acres
 - Total ESD: 352.6 ESDs
 - Single Family Residential
 - ESD density: 6 ESD/ac
 - Minimum of 1 ESD per parcel
 - Multi-Family, Mobile Home, and Mixed Use Residential
 - ESD density: 10 ESD/ac
 - Minimum of 1.5 ESD per parcel
 - Vacant and non-residential parcels
 - ESD density: 6 ESD/ac
 - Connection point to SASD system: manhole 258-158-1001
 - New development's flow criteria
 - Domestic flow factor of 310 gallons/ESD/day
 - Rainfall dependent infiltration and inflow (RDI/I) of 0.7 percent
 - Groundwater infiltration (GWI) factor of 500 gpd/ac
- The Franklin septic community is approved to connect to the SASD system but is not included in this modeling evaluation.

MODELING RESULTS

Table 1: Buildout flow values for the Community of Hood

Hood Community	10-yr Design Storm
Peak Flow	0.242 mgd
Daily Volume	0.124 Mgal

Table 2: Buildout flow values downstream of connection manhole 258-158-1001

Main Line 258-158-2002	10-yr Design Storm
Capacity	1.5 mgd
Peak Wet Weather Flow (without Hood Community)	1.463 mgd
Peak Wet Weather Flow (with Hood Community)	1.694 mgd

The evaluated Hood septic community is displayed red in figure 1.

The additional flow from the Hood community does not appear to have a significant impact on the buildout SASD system hydraulics. The modeling results show no throttle surcharge in the trunk system downstream of connection point (MH 258-158-1001) or backup surcharge at pump station S135 with or without the additional flow from the Hood community (figures 2 and 3).

Figure 1: Evaluated Hood septic community and the sewer trunk trace used for the profile view.

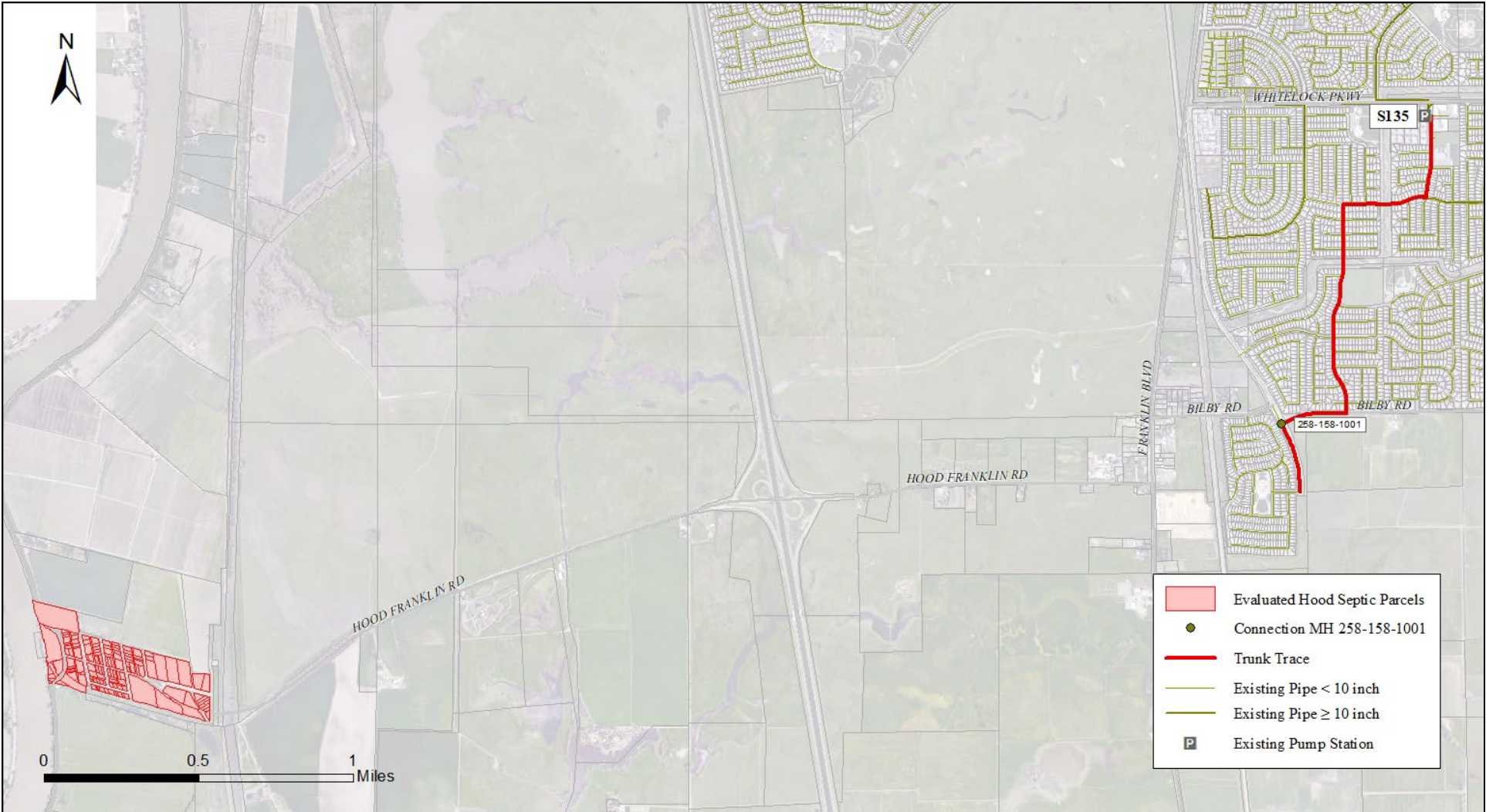


Figure 2: Profile view of the Trunk Trace under peak wet-weather flow (PWWF) buildout conditions without flow from the Hood community

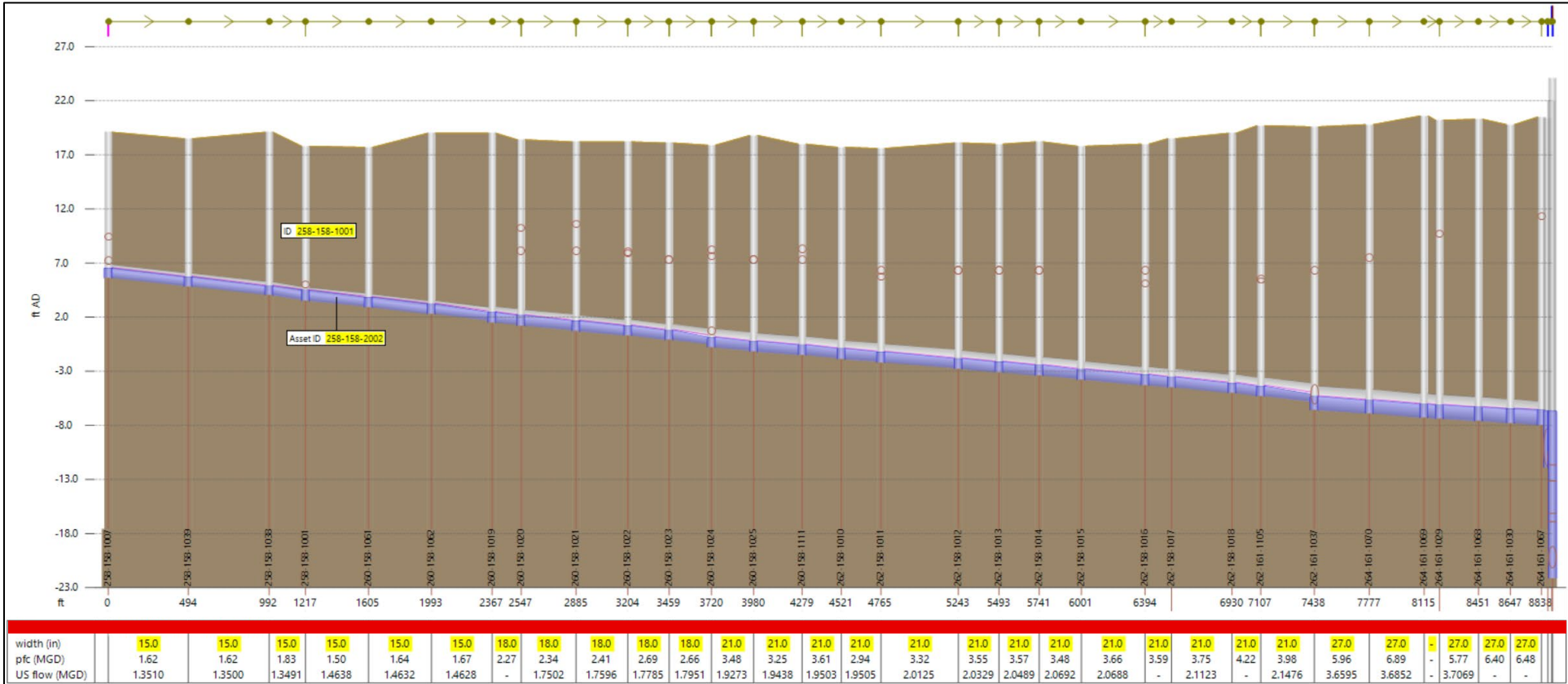
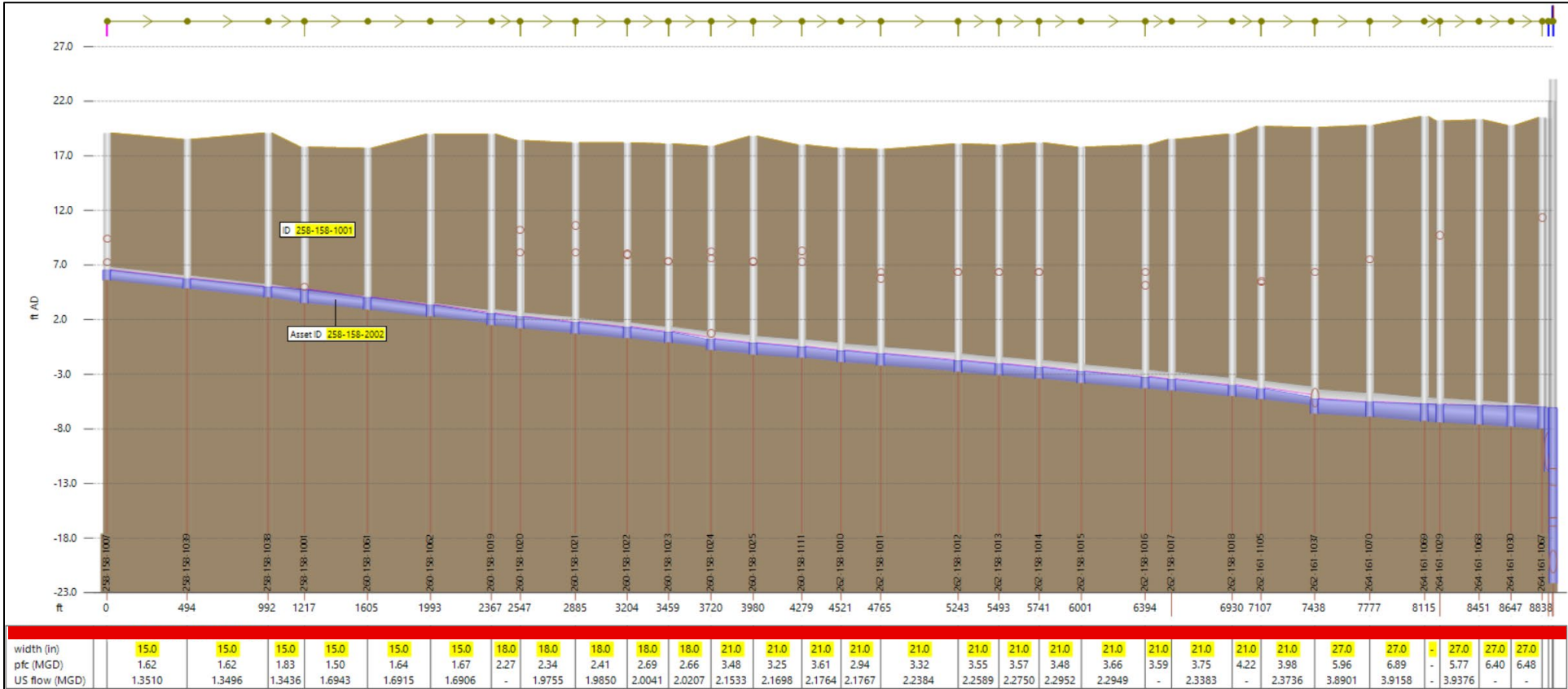


Figure 3: Profile view of the Trunk Trace under PWWF buildout conditions with the additional flow from the Hood communitiy





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

Sacramento County

July 2022

Prepared for:

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Printed on environmentally responsible paper. Made from 100% recycled post-consumer waste.

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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Attachments

Attachment 1. Project Area Location Map
 Attachment 2. Hydrology and NWI Wetland Map
 Attachment 3. Aquatic Resources Location Map
 Attachment 4. Aquatic Resources Summary Table
 Attachment 5. Wetland Determination Data Forms and Aquatic Resource Field Data Forms
 Attachment 6. Representative Site Photos

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.

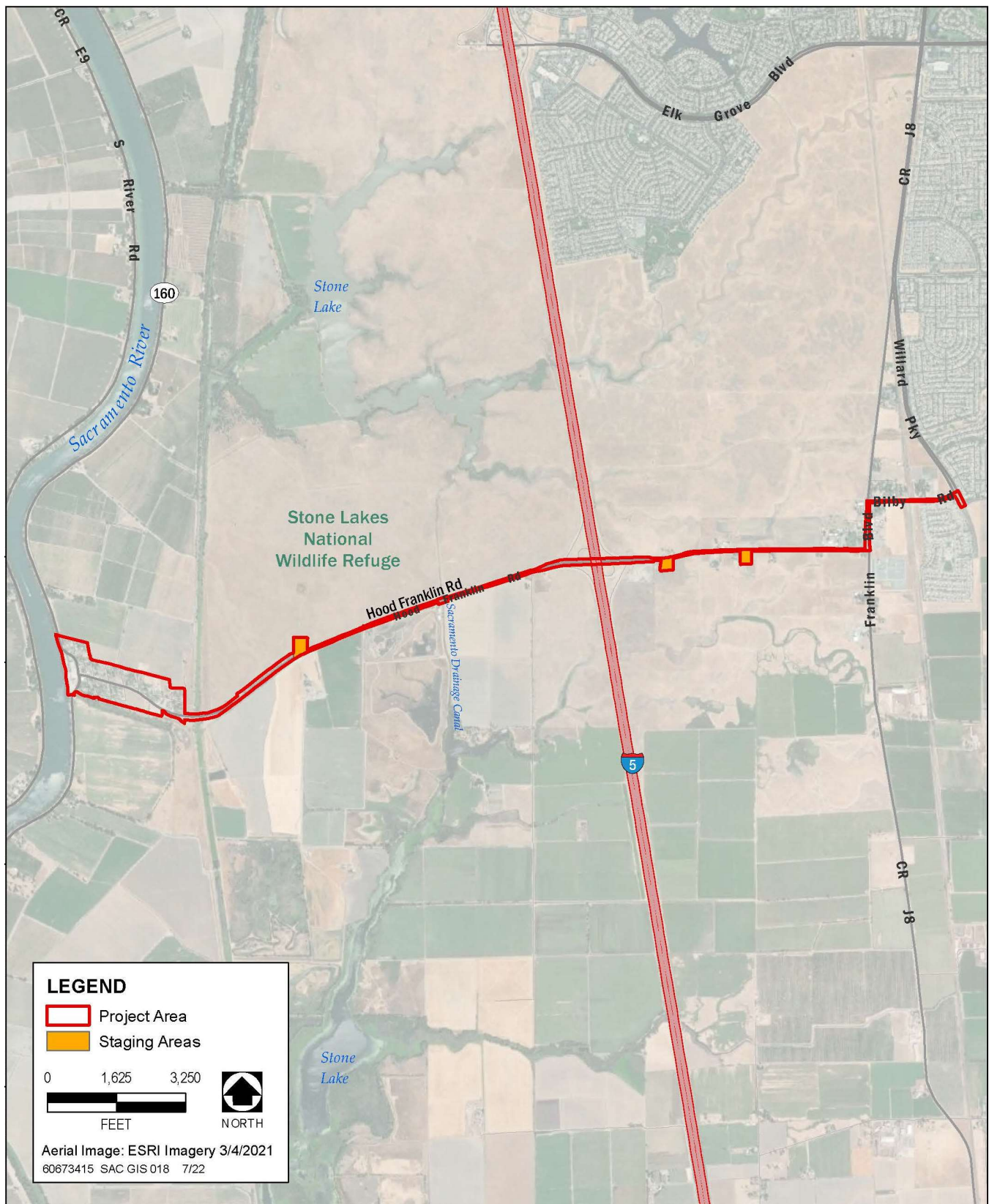
The following items are attached to provide supplemental information and aid in your review: Project Area Location Map (Attachment 1), Hydrology and NWI Wetland Map (Attachment 2), Aquatic Resources Location Map (Attachment 3), Aquatic Resources Summary Table (Attachment 4), Wetland Determination Data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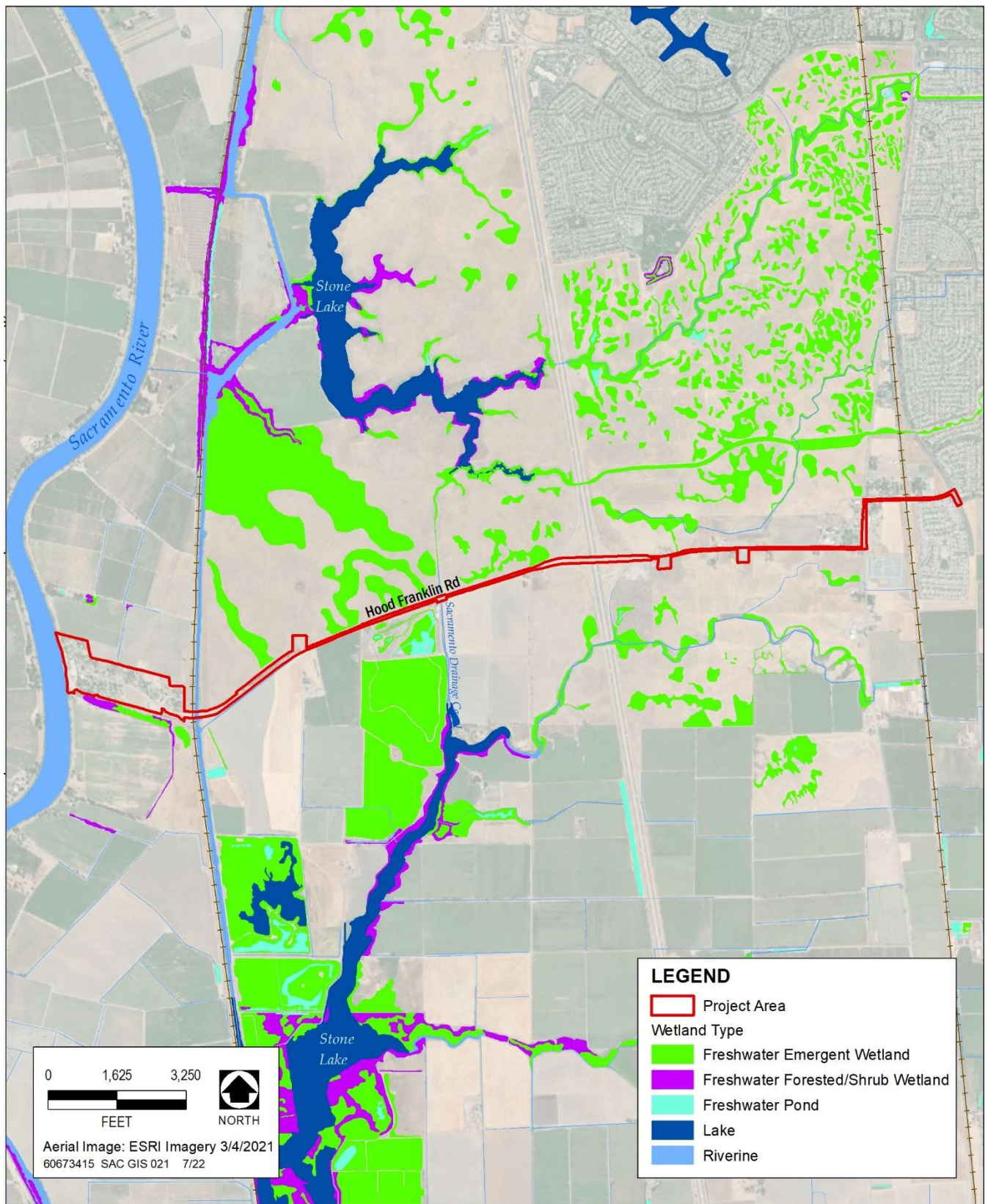
Attachment 1 Project Area Location Map



Source: Sacramento County 2022, USFWS 2022

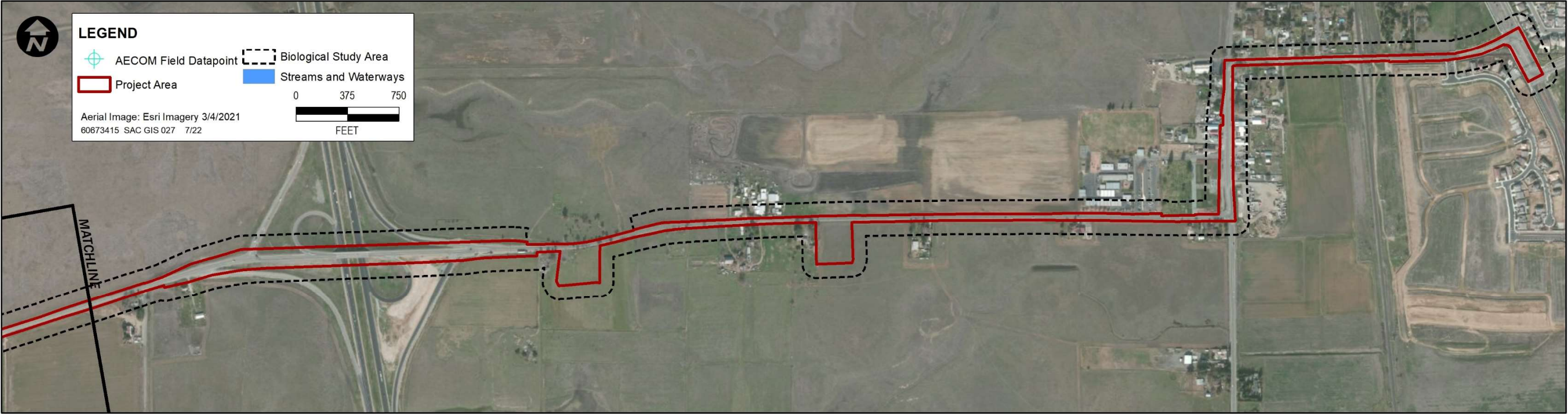
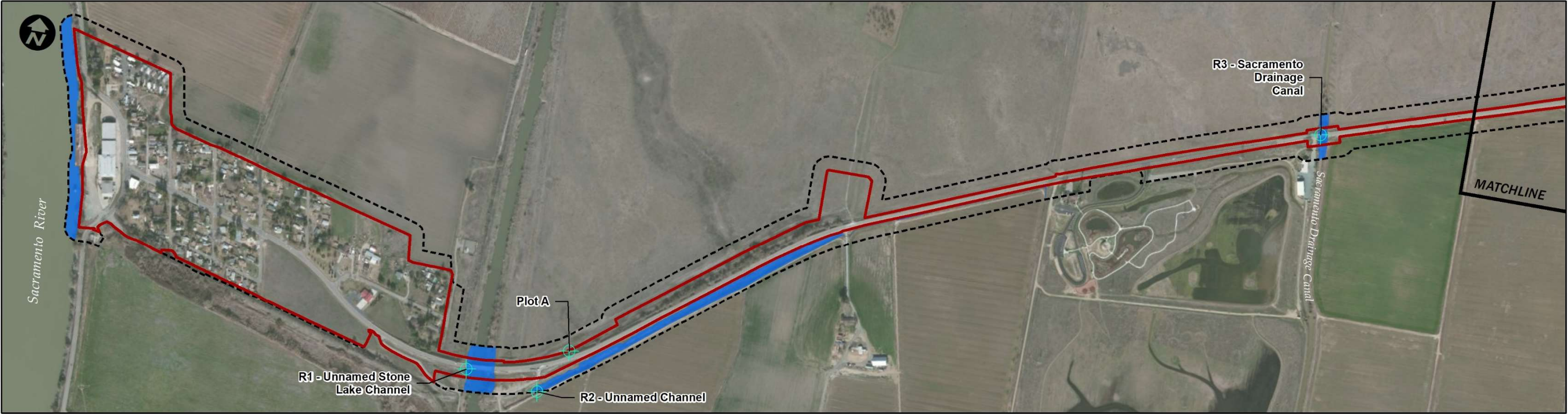
Project Location Map

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"/>
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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)

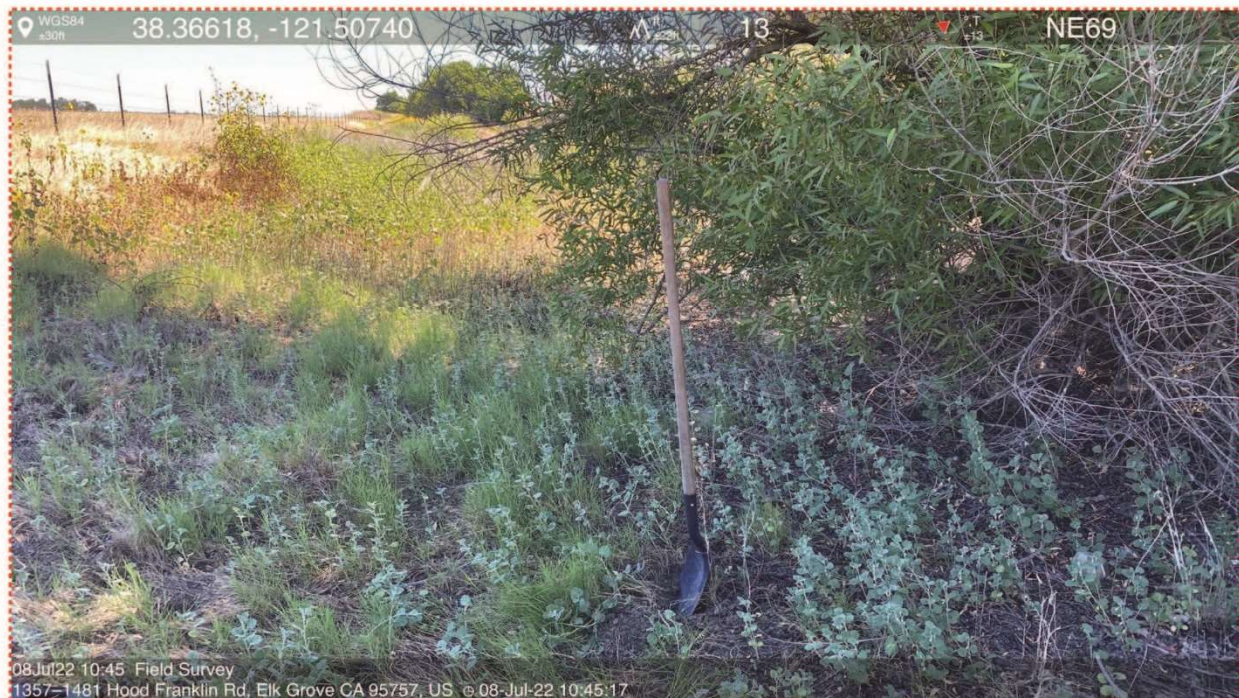
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input 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		
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**

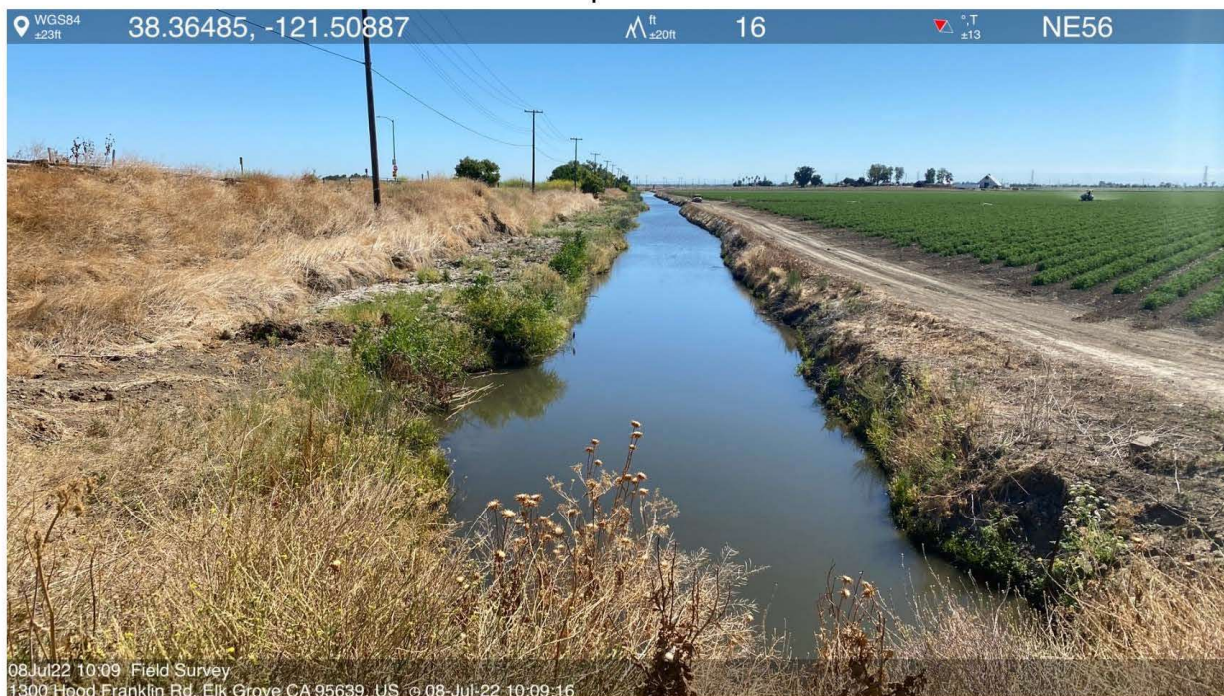
VISUAL WATERCOURSE ASSESSMENT FORM									
Project:	Hood Septic Conversion Project			Date:	20220708		AECOM Watercourse ID:	R2	
							Data Point:	R2	
Client:	Sacramento County Office of Planning and Environmental Review			County:	Sacramento				
Investigator(s):	Lead: Ranie Shreckengost			State:	California				
	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

Template Last Updated: 20220311

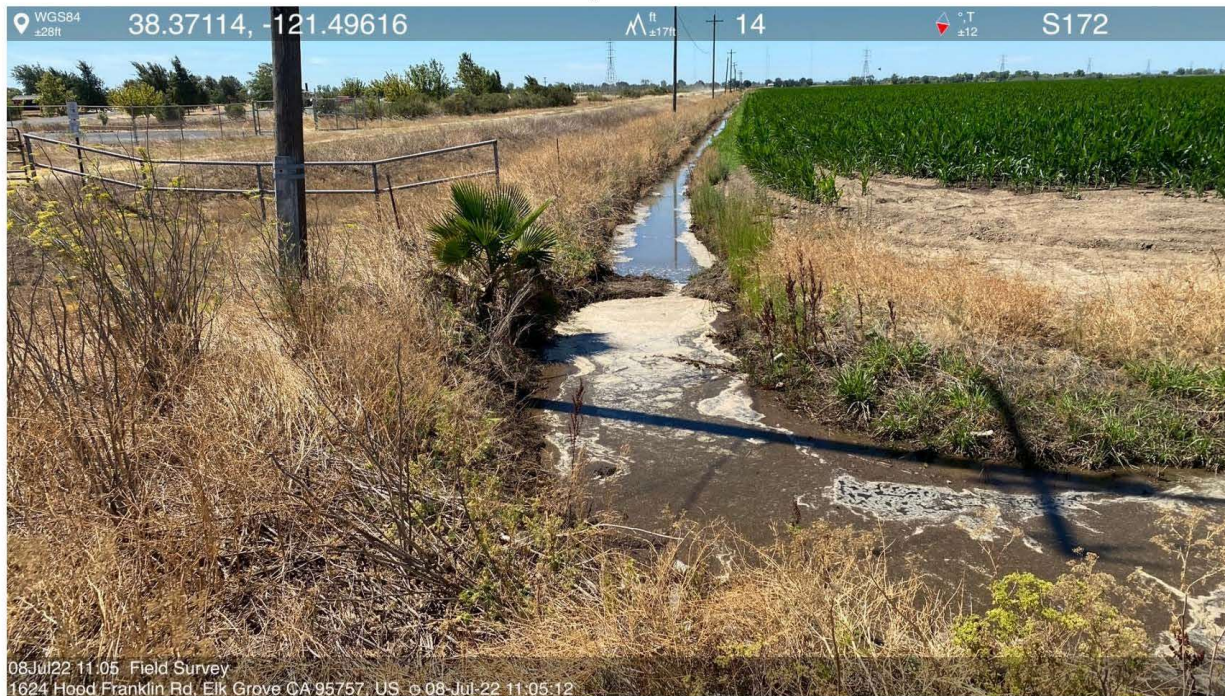
Watercourse Overview Photos: R2 – Unnamed Channel**Upstream****Downstream**

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

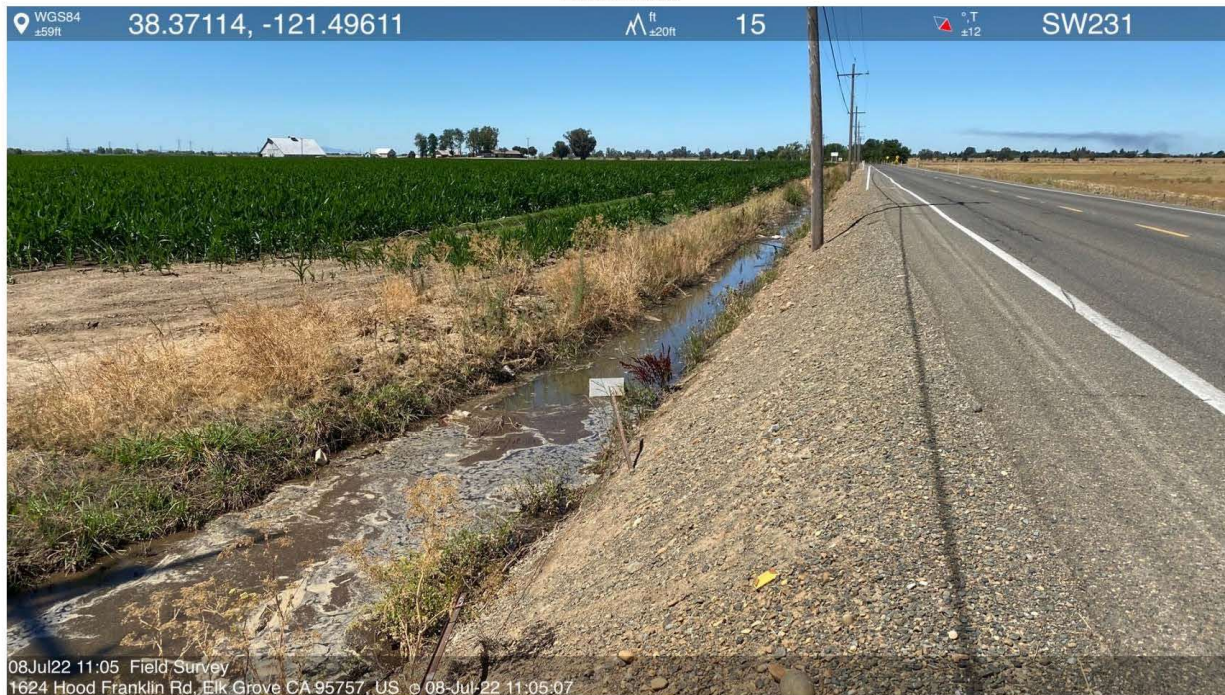
Template Last Updated: 20220311

Additional Watercourse Overview Photos: R2 – Unnamed Channel

Upstream



Downstream



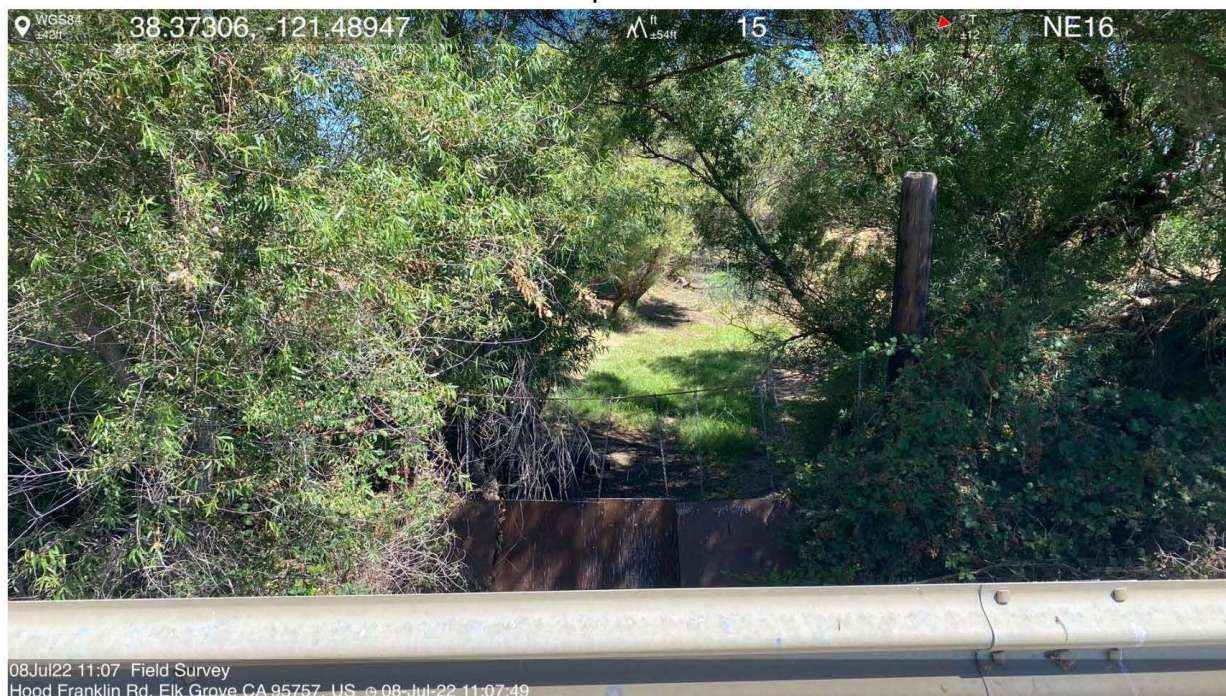
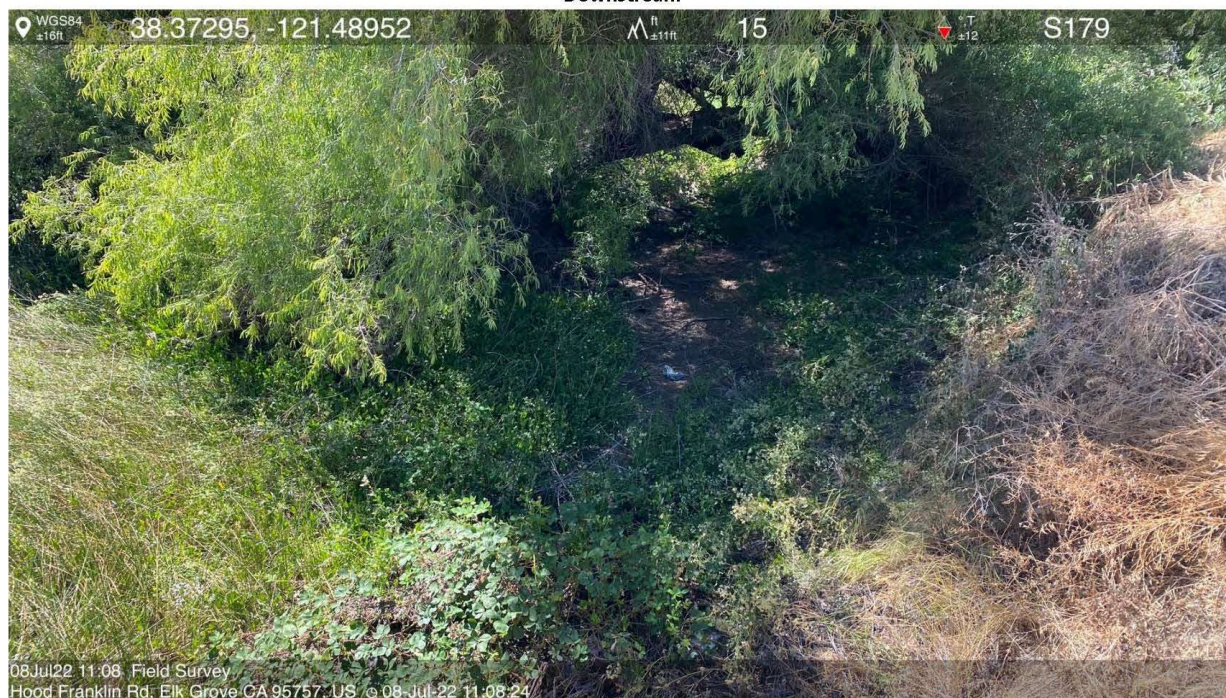
VISUAL WATERCOURSE ASSESSMENT FORM									
Project:	Hood Septic Conversion Project			Date:	20220708		AECOM Watercourse ID:	R3	
							Data Point:	R3	
Client:	Sacramento County Office of Planning and Environmental Review			County:	Sacramento				
Investigator(s):	Lead: Ranie Shreckengost			State:	California				
	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

Template Last Updated: 20220311

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

Attachment 6 Representative Site Photos

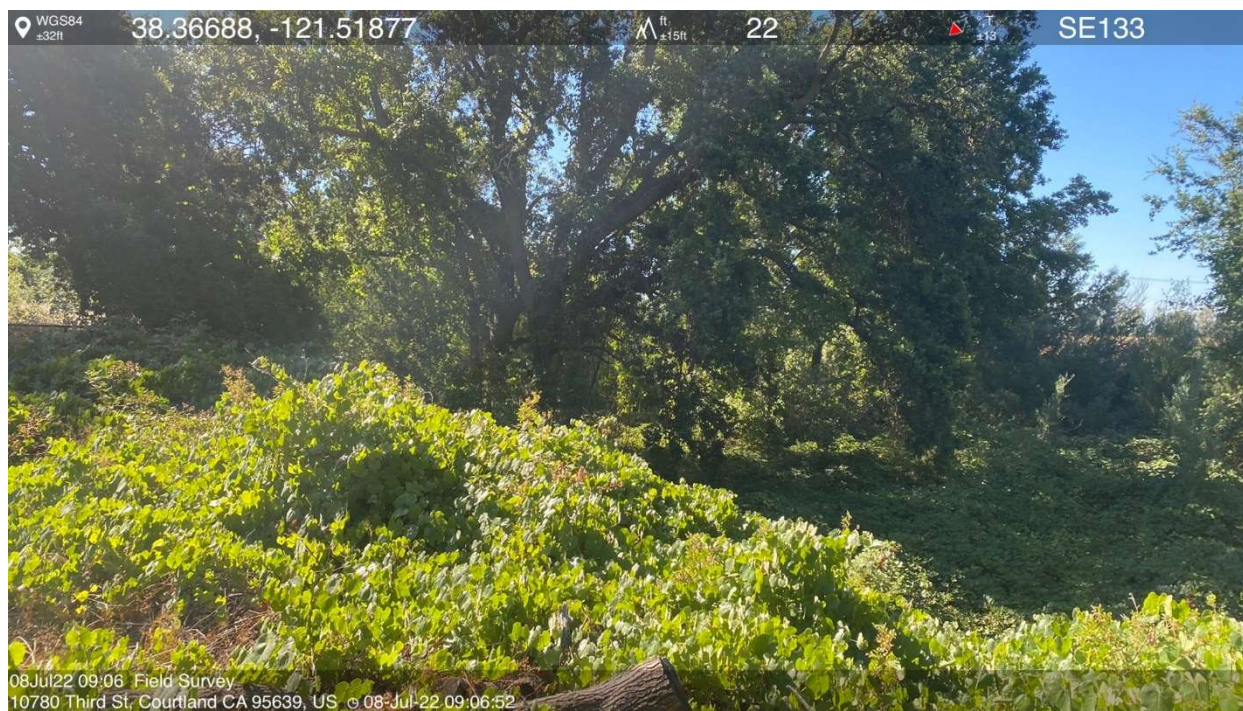


Photo 1. Valley Oak Riparian Habitat



Photo 2. Developed Lot

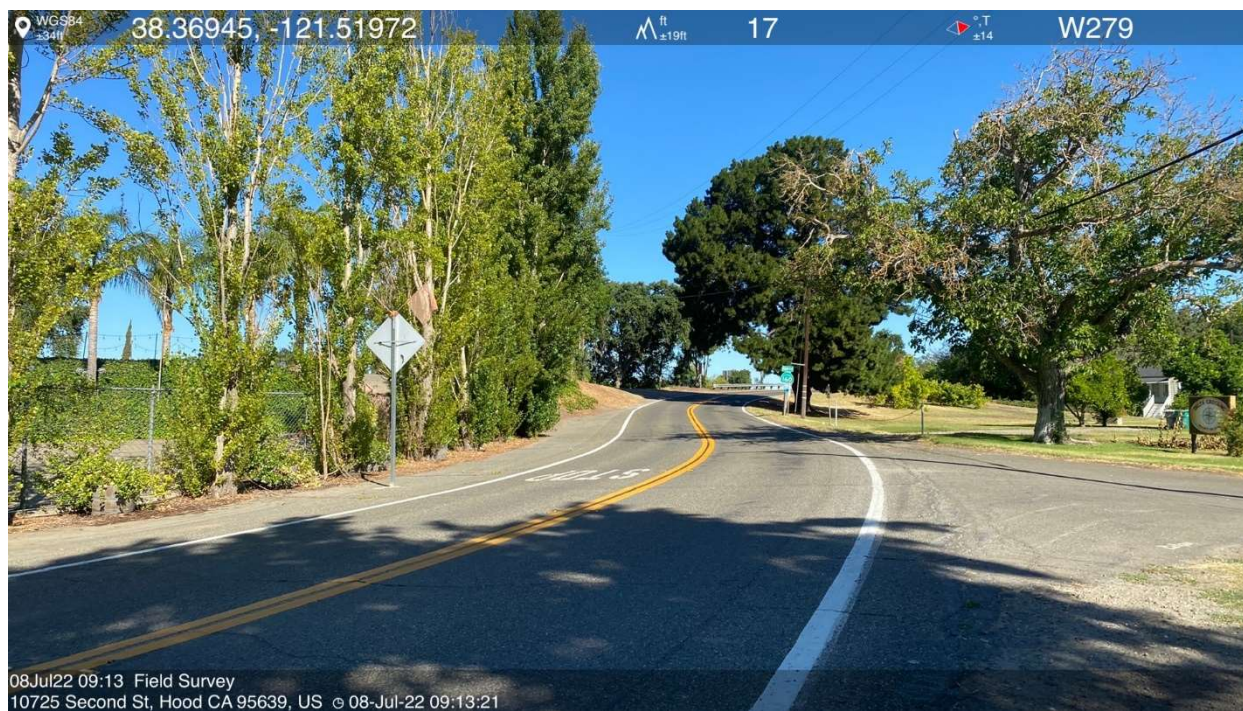


Photo 3. Highway 160



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

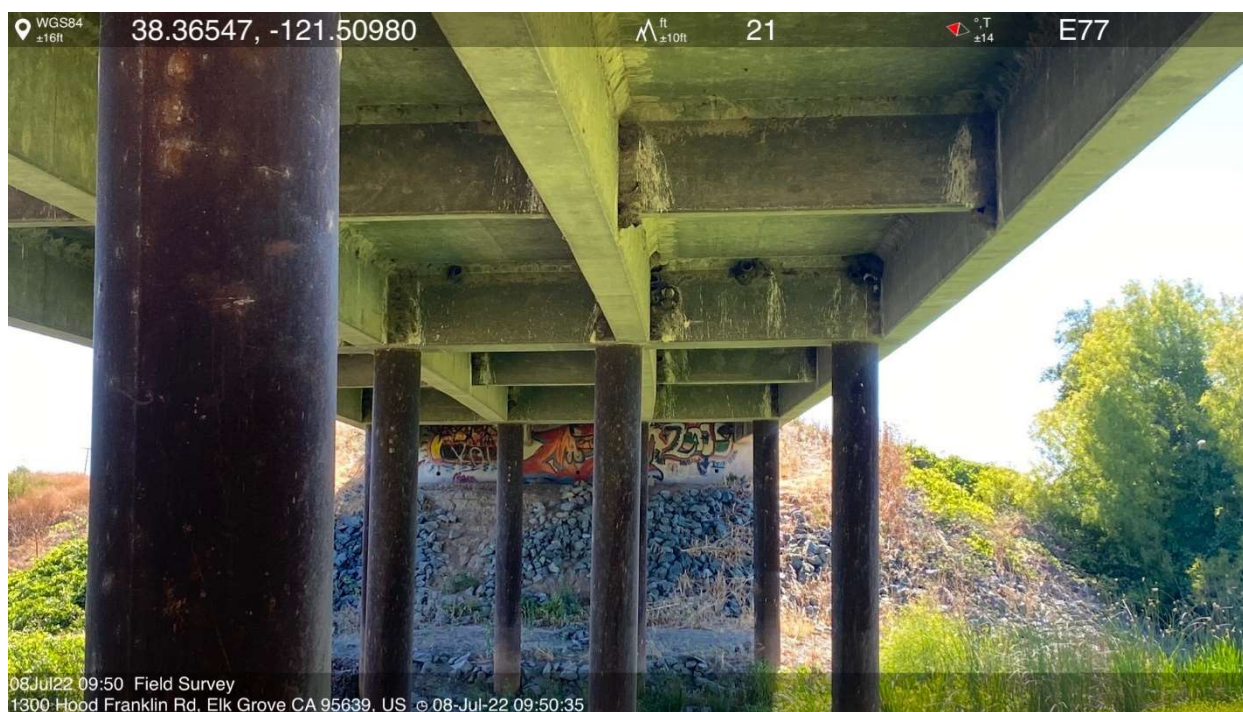


Photo 10. Unnamed Stone Lake Channel, Hood-Franklin Road Bridge (nesting swallows)



Photo 11. Annual Grassland



Photo 12. Roadside Ephemeral Drainage

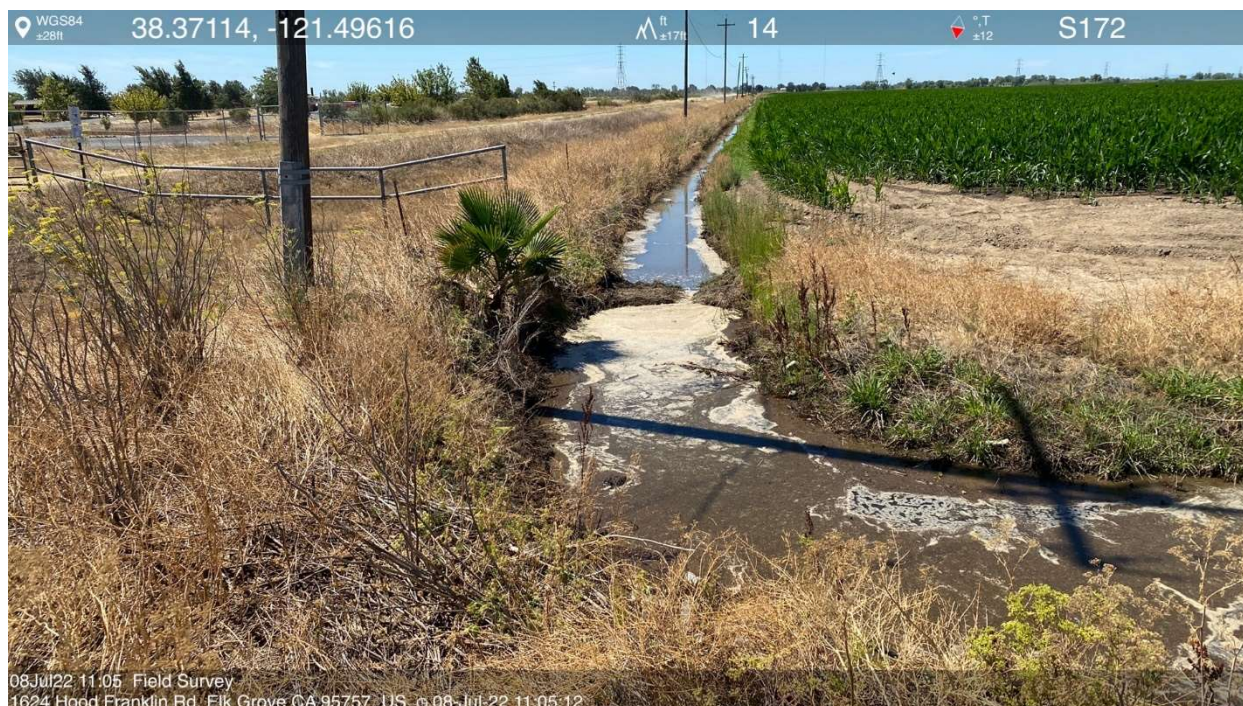


Photo 13. Irrigation channel that is hydrologically connected to the unnamed Stone Lake channel



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

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

Sacramento County

July 2022

Prepared for:

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Acronyms and Abbreviations

AMMs	Avoidance and minimization measures
amsl	Above mean sea level
BMPs	Best management practices
BSA	Biological study area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California State Endangered Species Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CVFPP	Central Valley Flood Protection Plan
CVRMP	Central Valley Riparian Mapping Project
CWA	Clean Water Act
CWSRF	Clean Water State Revolving Funds
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
ft	feet
GGs	giant garter snake
GPS	global positioning system
HDD	Horizontal directional drilling
Hood	Community of Hood
I-5	Interstate-5
LID	low impact development
MBTA	Federal Migratory Bird Treaty Act
MON	monarch butterfly
NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
SSHCP	South Sacramento Habitat Conservation Plan
Plan	Frac-Out Contingency Plan
project	Hood Septic Conversion Project
SASD	Sacramento Area Sewer District
SSCHP	South Sacramento Habitat Conservation Plan
unnamed (Stone Lake) Channel	unnamed channel at Hood-Franklin Road
SWHA	Swainson's hawk
SWRCB	State Water Resources Control Board
TCB	Tricolored blackbird
UPRR	Union Pacific Rail Road
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WPT	Western pond turtle

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Introduction and Project Description

On January 11, May 23, and July 7, 2022, AECOM staff members conducted biological site surveys for Sacramento County to evaluate sensitive biological resources that may be affected by the Hood Septic Conversion Project (project). 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 (ROW). 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 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.

Activities proposed along Hood-Franklin Road are expected to take place within the existing roadway right-of-way. Tree removal or trimming is not anticipated as part of this project. 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.

Two system alternatives are being considered to provide sewer services. The project area and property parcels remain the same for either alternative. Both alternatives are designed to direct sewage flow to a proposed tie-in connection at manhole 258-158-1001 on Willard Parkway, and both alternatives would require easements to support flow from the Delta Crossing Mobile Home Park and 10776 3rd Street parcels to a new sewer. Additionally, both alternatives require the installation of a new, 4-inch, low-pressure force main pipeline within or immediately adjacent to Hood-Franklin Road. Alternative 1 would utilize a gravity collection system with a central pump station. New, 8-inch sewer collector would be required on River Road, 3rd Street, 4th Street, 5th Street, 6th Street, Corky Lane, and Blair Street, and would carry flow to a pump station (to be) installed at the intersection of Hood-Franklin Road and 5th Street. Alternative 2 (the County-preferred alternative), would utilize a low-pressure system with individual grinder pumps located at each parcel. This would require 3-inch, low-pressure force main be installed along River Road, 3rd Street, 4th Street, 5th Street, 6th Street, Corky Lane, and Blair Street.

The preferred alternative at this time for the Hood community is small diameter force main to be installed via horizontal directional drilling (HDD) throughout the project area except at the unnamed (Stone Lake) channel crossing and the Union Pacific Rail Road (UPRR) crossing which are proposed to utilize bore and jack. I-5 would also be crossed via HDD. Because HDD is proposed, open cut trenching along Hood-Franklin Road from Hood to I-5 would be unnecessary. Instead, there would be staging areas proposed where access pits for the HDD setup locations and bore and jack setup could take place. These pits, along with the force main itself, would be located within the roadway and not within the steep shoulders.

This report describes the methods and results of AECOM’s desktop analysis and on-site biological resources surveys and provides recommendations to avoid or minimize impacts to sensitive biological resources during project construction. Although complete parcels have been evaluated, direct impacts for this project will be focused within public road ROWs, and only minimal earthwork will be necessary to connect newly installed lines to the residential properties. The findings detailed in this report are intended to support SASD’s application for Clean Water State Revolving Funds (CWSRF) and demonstrate compliance with applicable federal and state environmental laws and regulations regarding the protection of sensitive biological resources.

Project Location and Environmental Setting

The unincorporated Community of Hood is in southwestern Sacramento County, near the intersection of River Road and Hood-Franklin Road along the Sacramento River, west of the Stone Lakes National Wildlife Refuge (Exhibit 1). The project area boundary encompasses privately-owned residential and commercial properties, the Courtland Fire Department, Hood Community Park, and Sacramento County ROWs (Exhibit 2). There are a total of 141 parcels under consideration for septic-to-sewer conversion; however, many of the parcels are vacant or currently support only agricultural uses. Therefore, the total number of parcels to be included in the project area is subject to change. Three proposed staging areas, each less than 3.5 acres in size, have been selected at locations along Hood-Franklin Road (Exhibit 2).

The project is generally bounded by Willard Parkway to the west, and the Sacramento River to the east, agricultural pastures to the south, and the Stone Lakes National Wildlife Refuge to the north. Residential property parcels are situated north and south of Hood-Franklin Road. Commercial sites are concentrated in the Hood and Franklin communities. Businesses within the project area include the Hood Ranch Kitchen restaurant, an antique shop, Hood Market, a computer repair shop, Agape Aloha Spa, Solution Ink, Hay Tone's Hangout, Centenario Ranch, and Sun's Strawberry Market. The biological study area (BSA) includes the project area as defined above, and a 100-foot buffer which extends beyond the limits of the project area in a near-uniform fashion, except in those locations where project work is restricted and unauthorized.

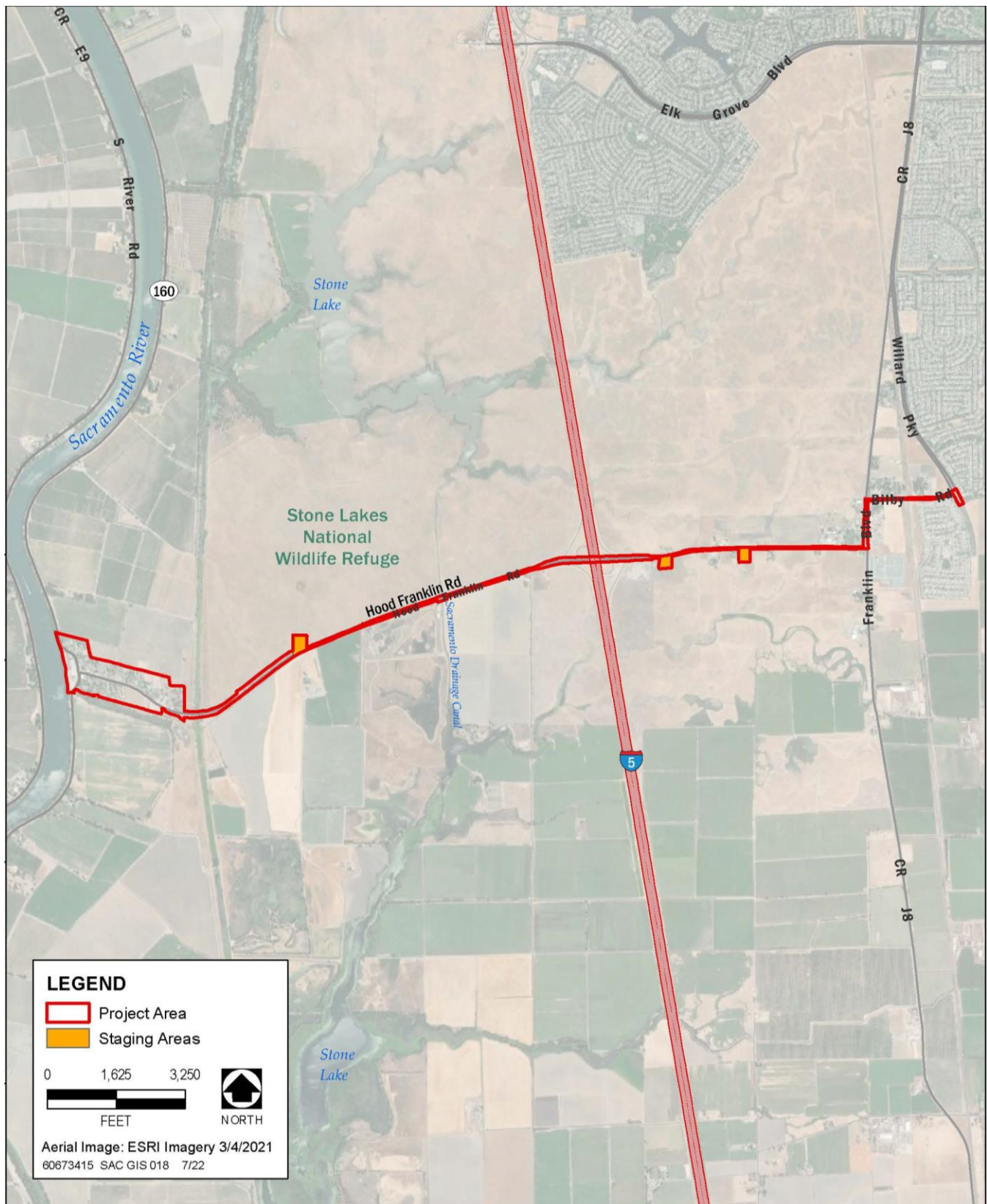
The project lies within the South Sacramento Habitat Conservation Plan (SSCHP) coverage area, but is not within the Urban Development Area identified by SSHCP (Exhibit 3). The SSHCP encompasses the Sacramento County Urban Services Boundary, the incorporated Cities of Rancho Cordova and Galt, and Galt's Sphere of Influence (County of Sacramento, et al. 2018). The purpose of the SSHCP ('Plan') is to ensure the long-term survival of the species covered in the Plan by preserving and establishing/re-establishing the habitats, natural communities, and ecosystem functions that they rely on, while allowing appropriate and compatible urban growth and developments. The Plan also requires measures that will avoid, minimize, and mitigate impacts to the species, thereby addressing the permitting requirements relevant to these species for activities conducted by or under the jurisdiction of the Plan Permittees. These activities (i.e., the SSHCP Covered Activities) include Wastewater (Sewer) Facilities, and work activities that support the provision of wastewater services such as construction, installation, operation, and maintenance of new wastewater facilities, as well as extension, removal, replacement, abandonment, operation, and maintenance of existing wastewater facilities. The SSHCP covers 28 species that have potential to occur in the SSCHP plan area that are currently listed as threatened or endangered under the federal Endangered Species Act (ESA) or California state ESA (CESA), or that have potential to become listed during the 50-year life of the SSHCP. The SSCHP allows Plan Permittees (i.e., County of Sacramento, City of Galt, City of Rancho Cordova, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority) to receive incidental take permits under the ESA and CESA for activities and projects they conduct and those under their jurisdiction.

Land Use and Topography

The project area is mostly flat, with elevations ranging from approximately 40 feet above mean sea level (amsl) near the top of the Sacramento River levee, to 0 feet amsl along Hood-Franklin Road. Surrounding land uses include agricultural, rural residential, and wildlife conservation (Stone Lakes National Wildlife Refuge). However, the project activities are primarily proposed in urban and developed parcels within a highly disturbed and managed surrounding landscape. Little native vegetation is present within the BSA.

Soils

Soils at the project area are composed of the following: 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 (NRCS 2022).



Source: Sacramento County 2022, USFWS 2022

Exhibit 1. Project Location Map

Methods

Prior to the biological resources field survey, AECOM biologists queried the California Native Plant Society Rare Plant Inventory (CNPS 2022) and California Natural Diversity Database (CDFW 2022) for records of special-status species occurring within a nine-quadrangle area containing and surrounding the project area, including Courtland, Thornton, Isleton, Rio Vista, Liberty Island, Florin, Bruceville, Clarksburg, and Saxon U.S. Geological Survey (USGS) 7.5 minute quadrangles (USGS 2018a–i). Biologists also reviewed publicly available data provided by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation project planning tool (USFWS 2022), the USGS National Hydrography Dataset (NHD), the USFWS Critical Habitat Mapper, and the South Sacramento Habitat Conservation Plan (SSHCP) (County of Sacramento, et al. 2018). A Hydrology and National Wetlands Inventory (NWI) wetland map has been provided as Exhibit 4.

AECOM biologist staff members conducted reconnaissance-level biological surveys on January 11, May 25, and July 7, 2022 within the BSA. The BSA includes the project area (as defined in the introduction above), and a nearly-uniform 100-foot buffer which extends beyond the limits of the project area except in those locations where construction access / activities will be completely avoided due to restricted property access. Surveys were conducted primarily from within the public roadway ROWs and sensitive resource locations and habitat boundaries have been digitized using a combination of aerial imagery, field measurements and observations, and mobile handheld global positioning system (GPS) units. The field survey efforts included mapping and verification of land cover types and vegetation, assessment of habitat conditions for potential to support special-status species, and field-assessing potential project impacts to sensitive biological resources, including trees that may be protected by local ordinances. Weather conditions were sunny and clear during all survey dates, with a high temperature of 58° Fahrenheit in January, a high temperature of 103° Fahrenheit in May, and 92° Fahrenheit in July. Vegetation communities within the BSA were characterized and evaluated for their potential to support special-status species. Botanical species observed within the BSA were identified to the taxonomic levels necessary determine regulatory status or protection. Wildlife observations were recorded. A detailed flora and fauna observation list is included in Appendix A.

Results

Land Cover Types

Vegetation classifications are based upon definitions established by the Central Valley Riparian Mapping Project (CVRMP) and the U.S. National Vegetation Classification Standard (NVCS). Extensive mapping of habitats was completed for the Central Valley Flood Protection Plan (CVFPP), including habitats within the study area, as part of the CVRMP. Habitat classifications in this memorandum contain aspects of the definitions established for the CVRMP, but also incorporate aspects of definitions established by the South Sacramento County Habitat Conservation Plan. The definitions discussed below are intended to provide information that can be used to inform both project planning and environmental analysis efforts.

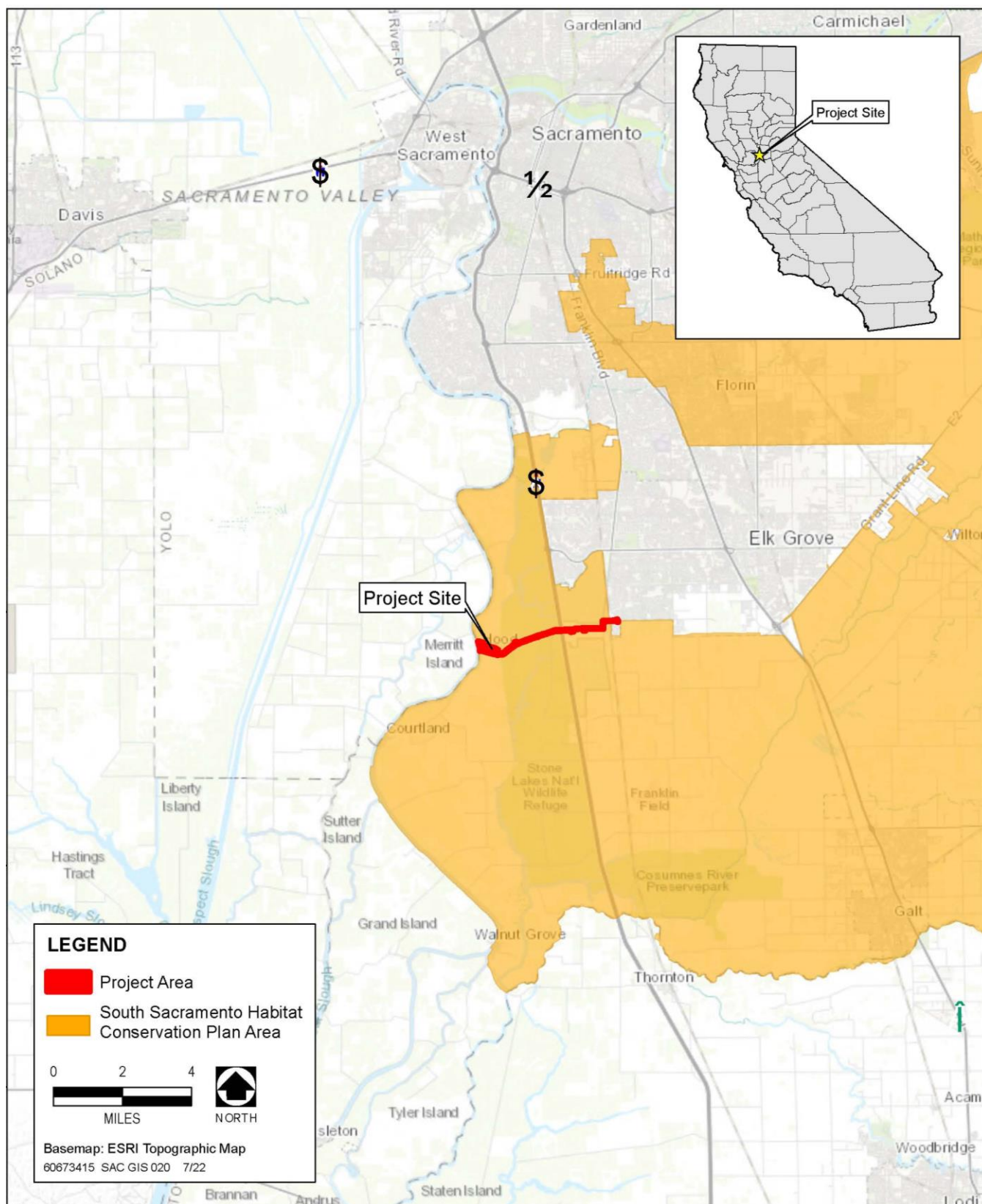
The BSA consists of 8 land cover types, five of which are characterized by upland vegetation, and three that are associated with aquatic features or habitats. All land cover types and mapped habitats are summarized in Table 1 and are visually represented by Exhibit 5. General descriptions of the land uses of and vegetation in each land cover type are included in the discussion below. Representative site photos are provided as Appendix B.



Source: Sacramento County 2022

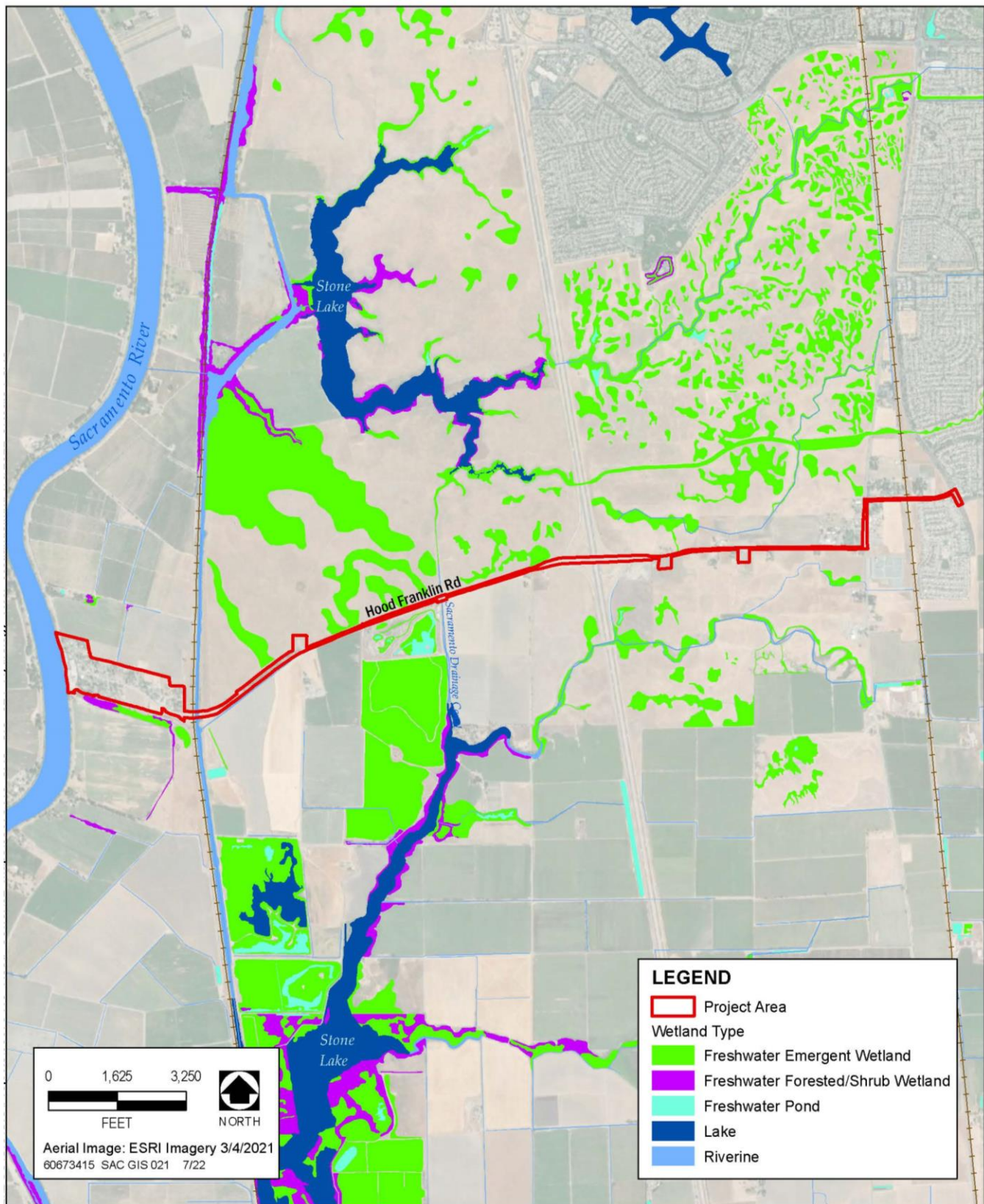
Exhibit 2. Project Area Map

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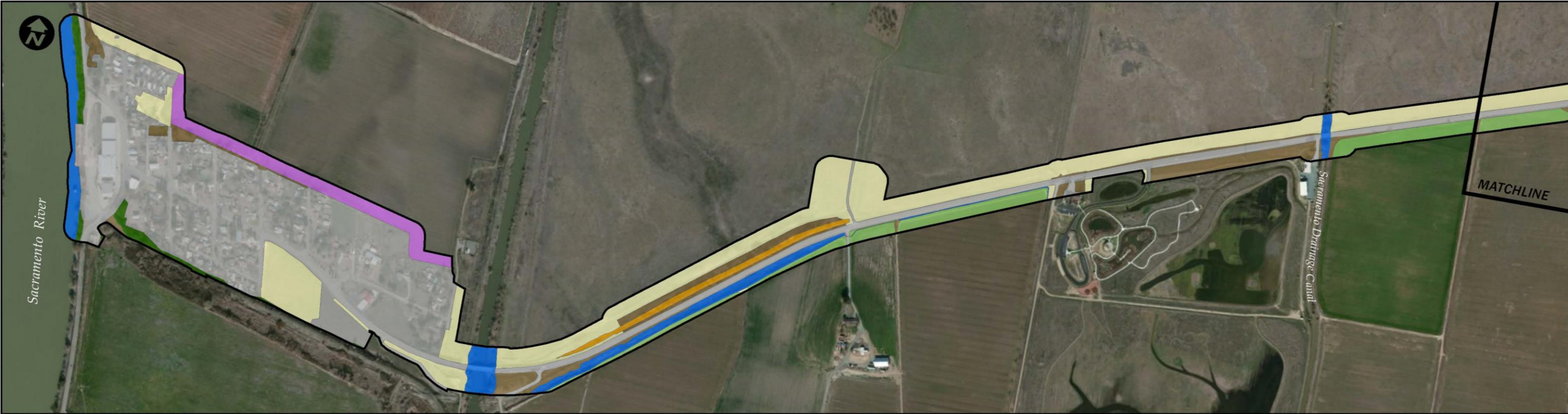
Source: Data compiled by AECOM 2022

Exhibit 3. South Sacramento Habitat Conservation Plan Area



Source: USGS 2022

Exhibit 4. NHD Hydrology and Wetland Map



Source: Data compiled by AECOM 2022

Exhibit 5. Land Cover and Habitat Mapping

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Table 1. Land Cover Types in the Biological Study Area

	Land Cover Type	Acres
Upland Vegetation	Developed / Urban	106.5
	Ruderal / Disturbed	12.9
	Annual Grassland	67.9
	Agricultural Cropland	10.6
	Orchard / Vineyard	5.3
Aquatic / Wetland	Valley Oak Riparian Forest	2.2
	Streams and Waterways	8.3
	Roadside Ditches	2.0
	Grand Total	215.7

Developed / Urban

This habitat type includes residential homes and turf lawns, paved roadways, landscaped or managed urban lots, concrete sidewalks, parking lots, the Hood Community Park, the Courtland Fire Department, commercial buildings, and equipment/storage lots. The project area is dominated by developed land cover. Roadways account for 29.8-acres of the BSA. Rural residences, characterized by 0.1-acre to 0.5-acre parcels, usually containing one main structure and outbuildings account for 79.4-acres of the total BSA. Vegetation is primarily non-native, with pockets of ornamental shrubs and trees present around many structures and along parcel boundaries.

A variety of non-native trees have been planted within the residential yards, commercial parking lots, and along roadways within the BSA. Tree species observed during the surveys in developed areas included Southern magnolia (*Magnolia grandiflora*), Italian cypress (*Cupressus sempervirens*), eucalyptus (*Eucalyptus* sp.), London plane (*Platanus x acerifolia*), privet (*Ligustrum* sp.), coast redwood (*Sequoia sempervirens*), sweetgum (*Liquidambar styracifolia*), tree of heaven (*Ailanthus altissima*), and Valley oak (*Quercus lobata*).

Wildlife observed in developed areas during the survey included one white-tailed kite (*Elanus leucurus*) perched in the top of a large London plane tree, and one red-shouldered hawk (*Buteo lineatus*) perched in a Coast redwood tree. Flocks of house sparrow (*Passer domesticus*), American crow (*Corvus brachyrhynchos*), and European starling (*Sturnus vulgaris*) were observed foraging in parking lots. Other species observed in developed areas included the California scrub jay (*Aphelocoma californica*), Nuttall's woodpecker (*Picoides nuttallii*), and Eurasian collared dove (*Streptopelia decaocto*) which were observed foraging and calling from urban trees and shrubs.

Ruderal / Disturbed

Ruderal / disturbed land cover is similar to disturbed / urban land coverage areas in that these areas are often dominated by introduced, non-native vegetation characteristic of historic or frequent anthropologic disturbance. Ruderal vegetation is common throughout locations that previously have been filled or graded, such as roadside edges, ROWs, dirt or gravel footpaths or access roads, vacant lots, and portions of rural residential properties.

Within the BSA, ruderal areas that supported vegetation were dominated by weedy forbs, including field mustard (*Hirschfeldia incana*), fennel (*Foeniculum vulgare*), cheeseweed (*Malva parviflora*), white horehound (*Marrubium vulgare*), woolly mullein (*Verbascum thapsis*), filaree (*Erodium* sp.), milk thistle (*Silybum marianum*), fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*), and Russian thistle (*Salsola tragus*), intermixed with other non-native annual grasses.

For this assessment, this land cover type also includes a section of scrub-shrub habitat along Hood-Franklin Road dominated by Himalayan blackberry (*Rubus armeniacus*) and Osage-orange (*Maclura pomifera*), which is a planted upland species. Scrub-shrub habitats are commonly characterized by low, multi-stemmed woody vegetation in young or stunted stages of growth. Such habitats commonly result after vegetation clearing for farming, or ROW maintenance activities. The species composition can be somewhat variable, depending on the location and length of time since disturbance, abandonment, or management. Scrub-shrub habitats may be associated with forests, grasslands, wetlands, and riparian areas, as well as in human-altered systems (ROWs and old fields). Scrub-shrub habitats can support a wide assortment of species from songbirds to hawks and owls, to waterfowl and other common game birds, and a variety of small terrestrial mammals which rely on the low-hanging branches and dense vegetation for cover and protection.

Wildlife species observed in ruderal habitats included the California scrub jay and American crow.

Annual Grassland

The annual grassland land cover type in the BSA can be best described as an *Avena* sp.- *Bromus* sp. Herbaceous Semi-Natural Alliance according to the Manual of California Vegetation (CNPS 2020a). This vegetation alliance typically is co-dominated by wild oats (*Avena barbata* and/or *Avena fatua*) and brome grasses (*Bromus diandrus*, *B. hordeaceus*) and is present throughout the Central Valley of California. Annual grassland vegetation is present within the BSA in large vacant lots, and in irrigated agricultural pasture fields including those primarily used for cattle grazing.

Wildlife species common for this habitat include small mammals such as the western harvest mouse (*Reithrodontomys megalotis*) and California vole (*Microtus californicus*), as well as common reptiles like the western fence lizard (*Sceloporus occidentalis*). Grassland habitats often provide important foraging habitat for raptors, including special-status species like white-tailed kite and Swainson's hawk (SWHA) (*Buteo swainsonii*).

Agricultural Cropland

This habitat type is characterized by regular vegetation and soil disturbances associated with planting, harvesting, and preparing an area for crops. Narrow bands of agricultural croplands occur in patches along the southern border of the BSA which abuts Hood-Franklin Road, these included corn crops and recently tilled lots which were barren during the July 2022 survey. These habitats are often irrigated during the dry summer months to support crop production. Drier croplands often provide suitable foraging habitat for raptors, as these habitats support a variety of small mammals and common reptiles similar to the aforementioned annual grassland habitats.

Orchard / Vineyard

A narrow bank of almond orchard is present in the westernmost portion of the BSA. This managed habitat provides marginal value for wildlife with relatively few opportunities for foraging, nesting and roosting. Many commercial orchards, are heavily managed with high levels of herbicide use and nearly barren understories that provide limited habitat and cover for terrestrial wildlife. Species such as California scrub jay and American crow are likely to occur in orchard.

Valley Oak Riparian Woodland

A narrow band of valley oak forest occurs at the westernmost portion of the project area, near the Sacramento River. Because it is within the riparian zone of the river, it has been also designated as "riparian woodland," hence the nomenclature "Valley Oak Riparian Woodland." This habitat is composed of forest-like stands with partially closed canopies, comprised mostly of winter-deciduous, broad-leaved tree species. Western sycamore (*Platanus racemosa*), Hinds black walnut (*Juglans hindsii*), interior live oak (*Quercus wislizeni*), boxelder (*Acer negundo*), and blue oak (*Quercus douglasii*) trees typically dominate the canopy. Shrubby understories in non-grazed areas typically consist of poison-oak (*Toxicodendron diversilobum*), blue elder (*Sambucus cerulea*), California wild grape (*Vitis californica*), toyon (*Heteromeles arbutifolia*), California coffeeberry (*Rhamnus californica*), and Himalayan blackberry (*Rubus armeniacus*). Various species of wild oat, brome, barley, ryegrass, and needlegrass often dominate the ground cover within this habitat type. Denser stands typically grow in valley soils along natural drainages, rivers, streams, or other water features, such as the stands observed within the BSA.

These woodlands provide food and cover for many species of wildlife. Oak species provide shady micro-habitats, and produce acorns, which are a critical food source for a variety of wildlife species. Their branches and canopies provide cover and protection from the elements, and adequate nesting and foraging habitat for multiple bird species. In Sacramento County, breeding raptor species are frequently recorded in these habitats. The red-shouldered hawk (*Buteo lineatus*), and the red-tailed hawk (*Buteo jamaicensis*) were observed within the BSA. Other common species observed within this woodland habitat during the field surveys were the European starling, California towhee, cottontail rabbit, scrub jay, Nuttall's woodpecker, ground squirrels, fox squirrels, and common voles, which were using the valley oak understories for food and shelter.

Streams and Waterways

The following waterways are present within the BSA:

- **Sacramento Drainage Canal**

The project area intersects the Sacramento Drainage Canal (identified by the USGS national hydrology map, Exhibit 4, at approximately 38.3729, -121.4894 (latitude / longitude coordinates). The Sacramento Drainage

Canal flows underneath Hood-Franklin Road a nearly perpendicular angle by way of an approximately 62-foot-wide concrete bridge structure. The canal supports flow from North Stone Lake southward, crosses the project area, and ultimately flows into Stone Lake approximately 1.5 miles downstream, south of the project area. AECOM biologists predict that during peak summer months the channel is likely dry, or supports very little flow. This is attributed to drought conditions and little to no rainfall during the summer season.

Vegetation within the channel at the project area intersection appears to be dominated by *Salix* sp. and Himalayan blackberry.

- **Unnamed (Stone Lake) Channel**

The project area intersects this large watercourse channel at approximately 38.3655, -121.5097 (latitude / longitude coordinates). This channel is unnamed according to the USGS national hydrology map, Exhibit 4, but has been designated by AECOM staff as “unnamed (Stone Lake) channel” for the purposes of this analysis due to its connectivity between both North Stone Lake and Stone Lake (south of the project area). This large waterway supports flow from north to south and ultimately flows into Stone Lake. This channel is significantly wider than the Sacramento Drainage Canal and flows underneath Hood-Franklin Road by way of an approximately 180-foot-wide concrete and steel bridge structure. This channel supports year-round flow, significant hydrology, and annual wetland vegetation within the established top-of-banks of the channel. Indicators of high-flow and seasonal flooding are observed in the form of high-water marks and woody debris racking which has been deposited at the bases of shrubs significantly above the observed water level.

Annual grasses and fennel dominate the channel banks along with intermittent *Salix* and *Quercus* individuals. Common water hyacinth (*Pontederia crassipes*) dominates the channel bed by more than 90%.

- **Roadside Drainage Ditches**

On April 21, 2020, the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) promulgated a definition of the term “ditch,” to mean “a constructed or excavated channel used to convey water.” Per the July 2020 USACE and EPA joint guidance memorandum, the term “ditch” specifically refers to irrigation and drainage ditches which convey irrigation or agricultural run-off, roadway or railway drainage, or stormwater drainage (USACE and EPA 2020). Therefore, roadside drainage ditches, which often support a variety of wetland vegetation are not subject to regulation under Section 404 of the Clean Water Act (CWA) so long as they are man-made, and are isolated (not demonstrating hydrologic connectivity) from otherwise jurisdictional wetlands or waters. It has been the agencies’ longstanding practice that most roadside ditches are generally are not considered Waters of the United States.

The vegetation community found within irrigation channels and roadside ditches in the study area is dominated by cattails (*Typha* spp. *angustifolia*, *domingensis*, *latifolia*), redtop (*Agrostis stolonifera*), sedges (*Cyperus* spp.), saltgrass (*Distichlis spicata*), and rushes (*Juncus* spp.) (CNPS 2020b). These ditches may also lack vegetation entirely or contain only ruderal species.

Roadside ditches which meet the agency definitions described above are present within the project area (Table 1, Exhibit 4). Those ditches identified did appear to receive hydrology primarily from agricultural irrigation and exhibited some wetland vegetation, including tall flatsedge (*Cyperus eragrostis*) and dallis grass (*Paspalum dilatatum*).

- **Seasonal Wetlands**

No vernal pool habitats or seasonal wetland habitats were identified within the BSA. However, scattered vernal pools and seasonal wetland habitats do occur within 250 feet of BSA boundary north and south of Hood-Franklin Road within the Stone Lakes National Wildlife Refuge and mesic habitat was observed during the field investigation (see site photographs, Appendix B). However, disked fire breaks have been tilled bordering Hood-Franklin Road within the edges of the Stone Lakes National Wildlife Refuge property parcels along their property fence line. These are intended to protect the refuge from any roadside debris which might ignite a wildfire, however these breaks also significantly disrupt the vegetation and soils. Hydrologic connectivity between the more natural and undisturbed vernal pool features within the refuge and the ephemeral roadside ditch identified bordering the northern edge of Hood-Franklin Road is similarly disrupted by the fire break.

Special-Status Species

For the purpose of this analysis, plants and animals are considered to be “special-status species,” if they are:

- Species that are listed under the ESA and/or California Endangered Species Act as rare, threatened, or endangered;
- Species considered to be “candidates” that have been proposed for federal or state listing as threatened or endangered;
- Wildlife designated by California Department of Fish and Wildlife (CDFW) as fully protected and/or species of special concern;
- Bird species that qualify for federal protection under the Migratory Bird Treaty Act of 1918;
- Species covered under the South Sacramento Habitat Conservation Plan; and/or
- Plants considered by CDFW to be “rare, threatened, or endangered in California” and have been assigned a California Rare Plant Rank (CRPR) of 1A, 1B, or 2B, defined as follows:
 - CRPR 1A—plant species presumed to be extinct in California.
 - CRPR 1B—plant species considered to be rare, threatened, or endangered in California and elsewhere.
 - CRPR 2B—plant species considered to be rare, threatened, or endangered in California but more common elsewhere.
- Each CRPR category may include an extension indicating the level of endangerment in California, as follows:
 - 0.1—Seriously endangered in California (more than 80 percent of occurrences are threatened and/or high degree and immediacy of threat).
 - 0.2—Fairly endangered in California (20–80 percent of occurrences are threatened).
 - 0.3—Not very endangered in California.

Table 2 and Table 3 below identify plant and wildlife species, that have been identified as having potential to occur within the biological study area. These tables were compiled based on the results of the desktop review and public database searches in the general project vicinity and the habitat types present within the project area, as described above. Exhibit 6 represents the California Natural Diversity Database (CNDDB) records of special-status species within a 3-mile radius of the project area. The following criteria were used for Table 2 and Table 3 (below) to assess the potential for species’ occurrence within the BSA:

- **May Occur:** The BSA is within the species’ range, suitable habitat for the species is present, and recorded occurrences of the species are also present in the general vicinity (i.e., within 3 miles).
- **Unlikely to Occur:** No occurrences of the species have been recorded within 3 miles of the BSA, and AND habitat for the species within the BSA is sub-optimal OR potentially suitable habitat is present within the BSA, but the project is located outside of the species’ known range.
- **Highly Unlikely to Occur:** The BSA is outside the species’ known range, AND/OR suitable habitat for the species is completely absent.

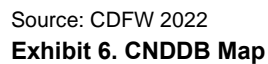


Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
<i>Amsinckia grandiflora</i>	Large-flowered Fiddleneck	FE	SE	1B.1	Grassy slopes, foothill woodlands, valley grasslands	885–1805	Mar–May	Highly unlikely to occur; Project area is significantly below this species' preferred habitat range.
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris' milk-vetch	-	-	1B.1	Vernally mesic meadows and seeps, subalkaline flats in valley and foothill grasslands, often prefers heavy clay or adobe soils	5–245	Apr–May	Highly unlikely to occur; Suitable clay / adobe soils are not present. Soils sampled within the BSA were silt loams.
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vetch	-	-	1B.2	Alkaline and saline soils in valley and foothill grasslands (adobe clay), playas, vernal pools	5–195	Mar–June	Highly unlikely to occur; Suitable clay/saline soils are not present. Soils sampled within the BSA were silt loams.
<i>Brasenia schreberi</i>	Watershield	-	-	2B.3	Aquatic herb, widespread throughout North America; prefers freshwater marshes and swamps, particularly those with slow-moving flow	0–7,220	Jun–Sep	May occur; Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. One CNDDDB occurrence within a 3-mile radius of the project area.
<i>Carex comosa</i>	Bristly sedge	-	-	2B.1	Coastal prairie, marshes and swamps (lake margins), seasonal wetlands in valley and foothill grasslands including ditches, waterbody margins, and seeps	0–2,050	May–Sep	May occur; Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. Five CNDDDB records within a 3-mile radius of the project area, one of which within 0.5 miles of the project area. Ephemeral roadside ditches present throughout BSA. Species not observed during site surveys by AECOM biologists during the January or July 2022 surveys.
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	-	-	1B.2	Often prefers alkaline soils; chaparral habitats, coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley and foothill grasslands	0–1,380	May–Nov	Unlikely to occur; Habitat within the BSA is limited. One CNDDDB occurrence within a 3-mile radius of the project area but is located west of the Sacramento River.
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	-	-	2B.1	Brackish, coastal, and freshwater marshes and swamps	0–655	Jul–Sep	Highly unlikely to occur; Species is most closely associated with coastal wetlands (CNPS 2022). Nearest CNDDDB record is more than 7 miles south of the project area.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	-	-	2B.2	Parasitic annual vine; prefers freshwater marshes and swamps, on host plants such as <i>Alternanthera</i> , <i>Dalea</i> , <i>Lythrum</i> , <i>Polygonum</i> , and <i>Xanthium</i>	50–920	Jul–Oct	May occur; Suitable habitat present within the BSA waterways. One CNDDDB record identified within a 3-mile radius of the project area. Plant observation reports documented in Sacramento County have not yet been verified (CNPS 2022).
<i>Downingia pusilla</i>	dwarf downingia	-	-	2B.2	Vernally mesic valley and foothill grasslands, vernal pools, riparian wetlands	5–1,460	Mar–May	Unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. One CNDDDB record within a 3-mile radius of the project area.
<i>Eryngium jepsonii</i>	Jepson's coyote-thistle	-	-	1B.2	Clay soils; vernal pools and wetland habitats in the Central Valley and foothill grasslands	10–985	Apr–Aug	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Atriplex joaquiniana</i>	San Joaquin spearscale	-	-	1B.2	Alkaline soils, clay soils; playas, meadows and seeps, chenopod scrub, valley and foothill grasslands	5–2,740	Apr–Oct	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	woolly rose-mallow	-	-	1B.2	Moist soils, freshwater; marshes and swamps, riverbanks including rip-rap levee slopes	0–395	Jun–Sep	May occur; Suitable habitat (moist banks and levees) is present along the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. Five CNDDDB records have been documented within 3 miles of the project area. Species was not observed during the July 2022 field survey.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
<i>Lasthenia chrysantha</i>	alkali-sink goldfields	-	-	1B.1	Alkaline soils; vernal pools	0–655	Feb–April	May occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. One CNDDDB record within a 3-mile radius of the project area located approximately 0.25 miles north of Hood-Franklin Road.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	-	-	1B.2	Usually grows along the edges of freshwater and brackish marshes and swamps	0–15	May–Jul (Aug–Sept)	Unlikely to occur; Species is most closely associated with coastal, brackish, and estuarine marshes (CNPS 2022), but has been observed approximately 20 miles south of the Natomas Basin in Walnut Grove.
<i>Legenere limosa</i> *	Legenere	-	-	1B.1	Vernal pools and seasonal wetlands	0–2,885	Apr–Jun	May occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. There are three records of this species within a 3-mile radius of the project area, one of which is from a roadside ditch along Hood-Franklin Road (CDFW 2022). Species was not observed during the January or July 2022 surveys.
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper grass	-	-	1B.2	Alkaline flats in valley and foothill grasslands	5–655	Mar–May	Unlikely to occur; No suitable alkaline flats present within the project area. Two CNDDDB records within a 3-mile radius of the project area. The nearest CNDDDB record is approximately 0.5 miles north of Hood-Franklin Road.
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	-	SR	1B.1	Riparian scrub habitats, brackish and freshwater marshes and swamps	0–35	Apr–Nov	May occur; Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. CNDDDB records are present along the boundary of the project area.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
<i>Limosella australis</i>	Delta mudwort	-	-	2B.1	Muddy watercourse banks and flats; brackish and freshwater marshes and swamps	0–10	May–Aug	Unlikely to occur; Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. However, nearest CNDDB record is more than 5 miles south of the project area.
<i>Navarretia lucocephala</i> ssp. <i>Bakeri</i>	Baker's navarretia	-	-	1B.1	Mesic habitats; Vernal pools, meadows and seeps, cismontane woodland, lower montane coniferous forest, valley and foothill grasslands	15–5,710	Apr–July	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Neostapfia colusana</i>	Colusa grass	FT	SE	1B.1	Vernal pools (adobe clay)	15–655	May–Aug	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Plagiobothrys hystriculus</i>	bearded popcornflower	-	-	1B.1	Vernal swales; Mesic valley and foothill grasslands, vernal pool margins	0–900	Apr–May	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Puccinellia simplex</i>	California alkali grass	-	-	1B.2	Alkaline flats, lake margins, and vernal mesic habitats within chenopod scrub, vernal pools, meadows and seeps, and valley and foothill grasslands	5–3,050	Mar–May	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
<i>Sagittaria sanfordii</i> *	Sanford's arrowhead	-	-	1B.2	Shallow freshwater marshes and swamps, and slow-moving waterbodies	0–2,135	May–Oct (Nov)	May occur; Suitable habitat present within the BSA in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. One CNDDDB record within 0.25-mile of the project area in the vicinity of the Sacramento Drainage Canal.
<i>Scutellaria galericulata</i>	marsh skullcap	-	-	2B.2	Mesic meadows and seeps, marshes and swamps, and lower montane coniferous forest	0–6,890	Jun–Sep	Unlikely to occur; Occurrences from the delta region need further verification (CNPS 2022). Habitat within the BSA is limited due to disturbance. No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. No CNDDDB occurrences within a 3-mile radius of the project area.
<i>Scutellaria lateriflora</i>	side-flowering skullcap	-	-	2B.2	Mesic meadows and seeps, marshes and swamps	0–1,640	Jul–Sep	Highly unlikely to occur; Suitable habitat is not present within the BSA. The unnamed (Stone Lake) channel was dominated by common water hyacinth, the Sacramento Drainage Canal is ephemeral and was dry during the July 2022 survey. Himalayan blackberry dominated the Sacramento Drainage Canal.
<i>Sidalcea keckii</i>	Keck's checkerbloom	FE	-	1B.1	Clay and serpentine soils; Cismontane woodlands, valley and foothill grasslands	245–2,135	Apr–May (June)	Highly unlikely to occur; Soils sampled within the BSA (in seasonal wetlands) were sandy loams. BSA is well below species preferred elevation range.
<i>Symphotrichum lentum</i>	Suisun Marsh aster	-	-	1B.2	Marshes and swamps (brackish and freshwater)	0–10	(Apr) May–Nov	Highly unlikely to occur; Suitable habitat is not present within the BSA. The unnamed (Stone Lake) channel was dominated by common water hyacinth, the Sacramento Drainage Canal is ephemeral and was dry during the July 2022 survey. Himalayan blackberry dominated the Sacramento Drainage Canal.

Table 2. Special-Status Plant Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Elevation Range (ft amsl)	Bloom Period	Potential for Occurrence
		Federal	State	CRPR				
<i>Trifolium hydrophilum</i>	saline clover	-	-	1B.2	Mesic, alkaline soils; marshes and swamps, valley and foothill grasslands, vernal pools	0–985	Apr–Jun	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Tuctoria mucronata</i>	Crampton's tuctoria [Solano grass]	FE	SE	1B.1	Vernal pools, mesic valley and foothill grassland habitats	15–35	Apr–Aug	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.

¹ Regulatory Status Definitions:

Federal Status Categories

FE = Listed as endangered under the Federal Endangered Species Act

FT = Listed as threatened under Federal Endangered Species Act

California State Status Categories

SE = Listed as endangered under California Endangered Species Act

SR = Listed as Rare

ST = Listed as threatened under California Endangered Species Act

California Rare Plant Rank (CRPR) Categories:

1B = Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2B = Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

CRPR Threat Rank Extensions:

.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)

.2 Fairly endangered in California (20 to 80% of occurrences are threatened)

.3 Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

² AMSL = above mean sea level

*Covered Species under the South Sacramento Habitat Conservation Plan (SSHCP) AND the BSA is within SSHCP modeled habitat for the identified species (County of Sacramento, et al. 2018).

- = not applicable

ft = feet

CEQA = California Environmental Quality Act

ESA = federal Endangered Species Act

CESA = California state Endangered Species Act

Sources: CDFW 2020; CNPS 2022; County of Sacramento, et al. 2018

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Crustaceans							
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE	-	-	Large, turbid vernal pools in valley and foothill grassland habitat; prefers pools that are inundated until June.	Endemic to the grasslands of the northern two-thirds of the Central Valley	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Branchinecta lynchi</i> *	vernal pool fairy shrimp	FT	-	-	Occurs primarily in small, clear-water sandstone-depression vernal pools and grassland swales or basalt-flow depression vernal pools.	Endemic to California's Central Valley and coastal ranges from Shasta County in the north to Tulare County in the south. A population in Jackson County, Oregon was discovered in 1998.	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
<i>Lepidurus packardii</i> *	vernal pool tadpole shrimp	FE	-	-	Vernal pools in valley and foothill grassland; pools commonly found in grass-bottomed swales of unplowed grasslands. Has been identified in pools that are mud-bottomed and highly turbid. Has also been identified in seasonal pools in unplowed grasslands with historic alluvial soils underlain by hardpan or in sandstone depressions.	Occurs in California's Central Valley and the San Francisco Bay and southern Oregon; however, most individuals are found in the Sacramento Valley.	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Insects							
<i>Danaus plexippus</i>	monarch butterfly	FC	-	-	Adult monarch butterflies during breeding and migration (spring through fall) require a diversity of blooming nectar resources. Also need milkweed (for both oviposition and larval feeding) within nectaring habitat. In western North America, nectar and milkweed resources are often associated with riparian corridors.	Globally distributed; there are two North American populations, east and west of the Rocky Mountains. Migratory monarchs in the western population primarily overwinter in groves along the coast of California and Baja California.	May occur; Milkweed species are present along the Sacramento Drainage Canal, the unnamed (Stone Lake) channel, and the roadside edges along Hood-Franklin Road (AECOM field surveys January and July 2022).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
<i>Desmocerus californicus dimorphus</i> *	valley elderberry longhorn beetle	FT	-	-	Host plant is the elderberry shrub (<i>Sambucus nigra</i>). Prefers to lay eggs in elderberry stems 2–8 inches in diameter; some preference shown for “stressed” elderberries. Elderberry bushes in western North America are associated with riparian forests along rivers and streams but can also occur as isolated shrubs distant from rivers or streams.	Occurs throughout the Central Valley.	Highly unlikely to occur; No suitable habitat (elderberry shrubs) present in the project area. There are no CNDDDB records of the species within 3 miles of the project area.
<i>Elaphrus viridus</i>	Delta green ground beetle	FT	-	-	Inhabits vernal pool grassland habitats; adults are usually found along the margins of vernal pools and bare areas where they hide in mud cracks and low-growing vegetation. Most observations of the delta green ground beetle have been along the margins of playa pools formed on Pescadero clay soils. Dense / high invasive plant cover may disrupt the beetle's feeding regime.	Solano County, California; near Olcott Lake and along the west side of Cook Lane within the Jepson Prairie area. Monitoring efforts continue, however, past and present surveys do not provide adequate information to reveal trends in the distribution of the beetle.	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. Soils sampled within the BSA were disturbed silt loams.
Fish							
<i>Oncorhynchus mykiss irideus</i> pop. 11	Steelhead – Cental Valley DPS	FT	-	-	Aquatic; Sacramento/San Joaquin Rivers. Cool streams with suitable spawning habitat and conditions allowing migration, as well as marine habitats. Slow-flowing and standing waters.	Populations documented in the Sacramento and San Joaquin rivers, their tributaries, and associated slough channels.	May occur; Straying individuals may occur in Sacramento Drainage Canal and unnamed (Stone Lake) channel but no spawning would occur in these waterways. The channels may provide suitable habitat for juvenile rearing or foraging due to connectivity to the Sacramento River via tributaries, sloughs, floodplains, and irrigation channels. Project area is located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat - Pacific Coast Salmon FMP (2022).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
<i>Acipenser medirostris</i>	Green sturgeon – southern DPS	FT	-	-	Aquatic, anadromous fish; Can live in both fresh and saltwater. Spawning and juvenile rearing activity takes place in rivers followed by a migration to saltwater to feed, grow, and mature before returning to freshwater to spawn. They are a long-lived, slow-growing fish. Spends majority of life in nearshore oceanic waters, bay, and estuaries; spawns in fresh water rivers.	First described in San Francisco Bay in 1857. Can be found from Alaska to Mexico but most commonly encountered north of Point Conception, California.	May occur; Known to spawn in Sacramento River. Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrologic connectivity via tributaries, sloughs, floodplains, and irrigation channels.
<i>Pogonichthys macrolepidotus</i>	Sacramento Splittail	-	-	SSC	Aquatic; estuary, freshwater marsh, Sacramento/San Joaquin flowing waters. Slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes.	May occur; Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrologic connectivity via tributaries, sloughs, floodplains, and irrigation channels.
<i>Spirinchus thaleichthys</i>	Longfin Smelt	FC	ST	-	Aquatic; found in open waters of estuaries, mostly in the middle or bottom of a water column. Prefers salinities of 15–30 ppt, but can be found in completely freshwater to almost pure seawater	Found along the Pacific Coast, from Alaska to California.	May occur; Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrologic connectivity via tributaries, sloughs, floodplains, and irrigation channels. Species is more commonly found in coastal regions.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
<i>Hypomesus transpacificus</i>	Delta Smelt	FT	SE	-	Aquatic; inhabits estuarine areas in the Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	Endemic to California; only occurs in the San Francisco Estuary.	May occur; Unnamed (Stone Lake) channel may provide suitable habitat for foraging, and rearing/foraging due to proximity to the Sacramento River and hydrologic connectivity via tributaries, sloughs, floodplains, and irrigation channels. Project area is located within USFWS designated Final Critical Habitat (2022).
<i>Oncorhynchus tshawytscha</i>	Sacramento River Winter-Run Chinook Salmon ESU	FE	SE	-	Aquatic; Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	Found along the Pacific Coast and inland rivers and tributaries from Alaska to California.	May occur; Straying individuals may occur in Sacramento Drainage Canal and unnamed Stone Lake channel but no spawning would occur in these waterways. The channels may provide suitable habitat for juvenile rearing or foraging. Project area is located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat.
<i>Oncorhynchus tshawytscha</i>	Central Valley Spring-Run Chinook Salmon ESU	FT	ST	-	Aquatic; Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	Found along the Pacific Coast and inland rivers and tributaries from Alaska to California.	May occur; Unnamed (Stone Lake) channel may provide suitable habitat for migration, foraging, and rearing/foraging due to proximity to the Sacramento River and hydrologic connectivity via tributaries, sloughs, floodplains, and irrigation channels. Project area is located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat.).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Amphibians							
<i>Spea hammondi</i> *	Western spadefoot	-	-	SSC	Occurs primarily in grassland habitats, but can be found in valley–foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Throughout the Central Valley and adjacent foothills.	May occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools identified within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge.
<i>Rana draytonii</i>	California red-legged frog	FT	-	SSC	Requires dense, shrubby riparian vegetation associated with deep (>2.3 feet), still or slow-moving water in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development and must have access to aestivation habitat.	Currently known only from isolated localities in the Sierra Nevada, northern Coast, and northern Transverse Ranges. It is believed to be nearly extirpated from the southern Transverse and Peninsular ranges. This species is still common in the San Francisco Bay area, along the central coast, and portions of Baja Mexico.	Highly unlikely to occur; The project area is outside of the species' currently known range. Suitable habitat within the project area is limited to the slow-moving unnamed (Stone Lake) channel within the BSA. It is widely accepted that Valley populations have been nearly extirpated.
<i>Ambystoma californiense</i>	California tiger salamander	FT	ST	WL	Vernal pools and other seasonal wetlands, including stock ponds, with adequate inundation period and adjacent uplands, primarily grasslands, with burrows and other belowground refugia. Tiger salamanders have been documented travelling up to 1 mile between upland refugia and wetland habitats.	Endemic to California. Occurs from near Petaluma and Sonoma Counties, east through the Central Valley in Yolo and Sacramento Counties and south to Tulare County, and from the vicinity of San Francisco Bay south to Santa Barbara County.	Highly unlikely to occur; No vernal pools or seasonal wetlands identified within the BSA. However, vernal pools occur within a 0.5-mile radius of the project area in the Stone Lakes National Wildlife Refuge. The nearest extant population is approximately 10 miles east of the project area in vernal pool grasslands in eastern Sacramento County (CDFW 2022). Multiple roadways are a barrier to this species and inhibit movement to the project area.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
Reptiles							
<i>Emys marmorata</i> *	western pond turtle	-	-	SSC	Aquatic; ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Needs basking sites and suitable (i.e., sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	West of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Below 6,000 feet elevation.	May occur; Suitable habitat for the species is present in the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. There are two records of the species within 3 miles of the project area.
<i>Thamnophis gigas</i> *	giant garter snake	FT	ST	-	Occurs in marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways or agricultural wetlands. The habitat must have enough water during breeding season (early spring–mid fall), emergent wetland vegetation, and openings in wetland vegetation for basking, and high elevation uplands to provide cover and refuge during winter seasons.	Historical range was in the Sacramento and San Joaquin valleys but its current range is much reduced, and it apparently is extirpated south of Fresno County, except for western Kern County.	May occur; Suitable habitat for the species is present in the Sacramento Drainage Canal and the unnamed (Stone Lake) channel. There are multiple CNDDB observation records within a 3-mile radius of the project area, one of which is within 0.5-mile.
Birds							
<i>Accipiter cooperii</i> * (nesting)	Cooper’s hawk	-	-	WL	Variety of woodland habitats; nests mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Breeding resident throughout most of the wooded portion of the state.	May occur; Foraging habitat is present within agricultural fields and meadows. Suitable nesting habitat is present within the Valley Oak riparian habitat identified during the surveys.
<i>Agelaius tricolor</i> * (nesting colony)	tricolored blackbird	-	SE	SSC	Highly colonial. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Most numerous in the Central Valley and vicinity. Generally endemic to California.	May occur; There are five records of the species within 3 miles of the project area, four of which are nesting colonies in blackberry thickets (CDFW 2022).

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
<i>Ammodramus savannarum</i>	Grasshopper sparrow	-	-	SSC	Occurs in grasslands, prairies, hayfields, and open pastures with little to no scrub cover and often with some bare ground. Can tolerate some brushy habitat but avoid areas that are too overgrown. Winters primarily in grass-dominated fields. During the summer, preys on grasshoppers and other insects. Eats mostly seeds in winter, which they glean exclusively from the ground. Exposed bare ground is critical for effective foraging. Nests on the ground, often at the base of a clump of grass within extensive patches of tall grasses or sedges.	Known breeding range for western species along the coast of California and throughout the Central Valley.	May occur; Open pastures and fields provide suitable foraging habitat and tall sedges / grasses in the vicinity of the Sacramento Drainage Canal and the unnamed (Stone Lake) channel may provide suitable nesting habitat.
<i>Athene cunicularia</i> * (burrow sites and some wintering sites)	Burrowing owl	-	-	SSC	Open, dry, annual or perennial grasslands, deserts, and scrublands, characterized by low-growing vegetation. Dependent on burrowing mammals, most notably, the California ground squirrel, for underground nests.	Resident throughout California in suitable habitat.	Highly unlikely to occur; Habitat within the BSA is marginal due to proximity to Sacramento River and large waterways that experience seasonal flooding. No berms, hillocks, or mounds observed beyond BSA boundaries. Ground squirrels only observed within Valley Oak Riparian Habitat. No CNDDB records have been identified within 0.5-mile of the project area. No burrows were observed during field surveys.
<i>Buteo swainsoni</i> * (nesting)	Swainson's hawk	-	ST	-	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands, or alfalfa or grain fields supporting rodent populations.	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert.	May occur; Foraging habitat is present within agricultural fields and meadows. Suitable nesting habitat is present within the Valley Oak riparian habitat identified during the surveys. There are five CNDDB observations recorded within 0.5-mile of the project area.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
<i>Coccyzus americanus occidentalis</i> (nesting)	Western yellow-billed cuckoo	FT	SE	-	Found in riparian forest along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape. Prefers patches of riparian habitat greater than 81 hectares (0.81 square kilometer) in size and at least 328 feet (100 meters) in width; combined with a canopy height 16-99 feet (5–30 meters) and understory height 3-20 feet (1–6 meters) (Hughes 2020).	In California, breeding restricted to isolated sites in South Fork Kern River, lower Colorado River, and Sacramento River valleys, with current breeding populations in California estimated to be about 40–50 pairs.	Highly unlikely to occur; Riparian forest within the BSA is patchy and limited. Last CNDDB observation in Sacramento County was in 2010. Nearest CNDDB record is an 1896 record located approximately 2.5 miles north of Hood, CA in the vicinity of Clarksburg, CA.
<i>Elanus leucurus</i> * (nesting)	White-tailed kite	-	-	FP	Open grasslands, meadows, or marshes for foraging, close to dense-topped trees for nesting and perching. Nest trees may be growing in isolation, or at the edge of or within a forest.	Coastal and valley lowlands, and cismontane regions of California.	May occur; Foraging habitat is present within agricultural fields and meadows. Suitable nesting habitat is present within the Valley Oak riparian habitat identified during the surveys. One white-tailed kite was observed roosting in the project area during the January 2022 survey.
<i>Falco peregrinus anatum</i>	American peregrine falcon	FD	SD	FP	Found near wetlands, rivers, lakes, or tother water; nests on cliffs, banks, dunes, mounds, tall buildings and bridges. Riparian habitats and inland wetlands are important habitats yearlong, especially during the nonbreeding season.	Active nesting sites are known along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. In winter, found inland throughout the Central Valley.	May occur; No suitable nest sites or foraging habitat within the BSA, however flyovers may occur.
<i>Lanius ludovicianus</i> * (nesting)	loggerhead shrike	-	-	SSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover. Prefers habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Nests in trees or shrubs, often in thorny vegetation.	Lowlands and foothills throughout California.	May occur; Suitable habitat is present in the BSA including open areas with scattered trees, agricultural fences, posts, and rural residential shrubs. Western fence lizards (prey species) present.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
<i>Laterallus jamaicensis coturniculus</i> (year-round)	California black rail	-	ST	FP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	San Francisco Bay area, the Delta, coastal southern California at Morro Bay and a few other locations, the Salton Sea, and lower Colorado River area.	Highly unlikely to occur; No suitable perennial marsh or wet meadow habitat is present within the BSA, however, one CNDDB record is present within 0.5-mile of the project area.
<i>Melospiza melodia</i> (year-round)	song sparrow – “Modesto” population	-	-	SSC	Moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging. Seems to prefer emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets.	Restricted to California, where it is locally numerous in the Sacramento Valley, the Delta, and northern San Joaquin Valley.	Highly unlikely to occur; No suitable marsh or riparian willow habitat in the project area. No CNDDB records within 0.5-mile of the project area.
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed blackbird	-	-	SSC	Breeds in wetlands in prairies, mountain meadows, quaking aspen parklands, and shallow areas of marshes, ponds, and rivers. Nests in cattails, bulrushes, or reeds, often alongside nesting Red-winged Blackbird colonies. Forages in surrounding grasslands, croplands, or savanna. During winter, large flocks forage together in crop fields, ranchlands, and farmyards from Arizona, New Mexico, and Texas through much of Mexico.	Nationwide distribution; Migrates through the Central Valley	Highly unlikely to occur; No suitable marsh expanses or riparian willow habitat in the BSA. Last CNDDB observation in Sacramento County was in 1899.
Mammals							
<i>Taxidea taxus</i> *	American badger	-	-	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Throughout most of the state, except in the northern North Coast region	May occur; Habitat within the BSA is limited due to agricultural disturbance and urban activity, however, one CNDDB observation was recorded within 0.5-mile of the project area.

Table 3. Special-Status Wildlife Species with Potential to Occur within the Biological Study Area for the Hood Septic Conversion Project

Scientific Name	Common Name	Regulatory Status ¹			Habitat Requirements	Distribution	Potential for Occurrence
		Federal	State	CDFW			
<i>Sylvilagus bachmani</i> ssp. <i>riparius</i>	Riparian Brush Rabbit	FE	SE	-	Riparian forests with a dense understory shrub. If the forest canopy is closed, there is rarely adequate brush to support a population. There must be small clearings for the rabbits to bask in the sun and feed on a variety of herbaceous vegetation. They live in tunnels that run through vines and shrubs of low growing mats of California wild rose and Pacific blackberry. Associated species include wild grape, Douglas' coyote bush, and grasses.	Limited to San Joaquin County and northern Stanislaus County. Only two populations occurred at the time of listing, one at Caswell State Park and one at the Faith Ranch. Brushy riparian areas along the Old, Stanislaus, Tuolumne, and San Joaquin rivers, and brushy vegetation along Paradise Cut and Tom Paine Slough. Two rabbit carcasses were collected along the Middle River during March of 2017 .	Highly unlikely to occur; Valley oak riparian woodland documented within the BSA is limited. The project area is outside of the species' known range.
<i>Lasiurus blossevillii</i> *	Western red bat	-	-	SSC	Roosts almost exclusively in trees, where their coloring helps them blend in among the leaves and branches. They prefer riparian habitats near water, and roost in sycamore, cottonwood, velvet ash, and elder trees. Can also be found in fruit and nut orchards, particularly in California's Central Valley.	Across western North America, ranging from southern Canada, through the western United States, down to Central America.	May occur; Valley oak riparian woodland adjacent to the project area provides adequate roosting locations while the nearby Sacramento River provides adequate foraging habitat and a large, open, slow-moving water source.

¹ Regulatory Status Definitions:

Federal Status Categories

- FC = Listed as candidate under Federal Endangered Species Act
- FE = Listed as endangered under the Federal Endangered Species Act
- FT = Listed as threatened under Federal Endangered Species Act

California State Status Categories

- SCE = Listed as candidate endangered under California Endangered Species Act
- SE = Listed as endangered under California Endangered Species Act
- ST = Listed as threatened under California Endangered Species Act

California Department of Fish and Wildlife (CDFW) Categories

- FP = Fully Protected
- SSC = Species of Special Concern
- WL = Watch List

* Covered Species under the South Sacramento Habitat Conservation Plan (SSHCP) AND the BSA is within SSHCP modeled habitat for the identified species (County of Sacramento, et al. 2018).

- CDFW = California Department of Fish and Wildlife
- DPS = Distinct Population Segment
- ppt = parts per thousand

Sources: CDFW 2020; CDFW 2022; County of Sacramento, et al. 2018;-Western Monarch and Milkweed Occurrence Database 2022

Critical Habitats

The USFWS designates critical habitats for species listed as threatened or endangered under the ESA. These habitats include specific geographic areas that contain features essential for the conservation of a threatened or endangered species and may include an area that will be needed for a species' recovery. Critical habitat for the Delta smelt (*Hypomesus transpacificus*) is designated in the Sacramento-San Joaquin Delta (USFWS 2020; NOAA 2009) (Exhibit 6). The project area is also located within National Marine Fisheries Service (NMFS) designated Essential Fish Habitat (EFH). Under the Magnuson-Stevens Act, EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." This aquatic habitat has been deemed as critical for the Chinook Salmon and Steelhead species survival.

Special-Status Plant Species

Public database searches resulted in 29 special-status plant species which required evaluation for their potential to occur within the project area or immediate vicinity (Table 2). Based on the results of the biological surveys and database searches, no special status plant species occur within BSA. Most special-status plant species evaluated depended upon alkaline soils, vernal pools, or perennial wetland habitats. While vernal pools and a variety of wetland habitats are present beyond the boundaries of the BSA, no vernal pools or alkali wetlands occur within the BSA. Roadway development, local roadway maintenance activities such as mowing, ditch clearing and fire prevention disking, residential development, and agricultural disturbances in the immediate vicinity of the BSA have contributed to poor quality habitat within the BSA that is unlikely to support special status species, however, a pre-construction species-specific plant survey would be necessary to determine presence / absence of those species denoted as "may occur" in Table 2 above. A special-status plants query of those species eligible for protection under the South Sacramento Habitat Conservation Plan (SSHCP), determined that the BSA is located within modeled habitat for both Sanford's arrowhead and legene, both of which may occur in the vicinity of the waterway crossings, or the roadside ditches identified within the BSA.

Special-Status Fish and Wildlife Species

Public database searches resulted in 33 special-status wildlife species which required evaluation for their potential to occur within the project area or immediate vicinity (Table 3). Thirteen of these species are highly unlikely to occur in the BSA because either the project area is out of range of the species and/or habitat is absent due to roadway development and maintenance activities such as ditch clearing, fire prevention disking, residential development, and agricultural disturbances. Giant garter snake and western pond turtles could occur in the Sacramento Drainage Canal and the unnamed Stone Lake channel, as could seven special-status fish species (steelhead, green sturgeon, Sacramento splittail, longfin smelt, Delta smelt, Sacramento River winter-run Chinook salmon and Central Valley spring-run chinook salmon). The BSA provides only marginal foraging and nesting habitat for special-status bird species, and the only special status wildlife species observed during the surveys were Swainson's hawk and white-tailed kite flyovers and were located in the vicinity of the Valley Oak Riparian Habitat. Other special-status wildlife species that may occur within the BSA include Monarch butterfly, American badger, and western red bat. Based on a query of those special-status wildlife species that may be eligible for coverage under the SSHCP, the BSA is located within modeled habitat for 16 species, which are indicated by an asterik in Table 3 (above). Of those which were returned by the query, only 4 are terrestrial (western pond turtle, giant gartersnake, American badger, and western padefoot toad) and do have potential to cross the project area during construction activities. Many of the other species returned by the query are avian or bat species which may only occur as incidental landings or flyovers.

Source: USFWS 2020; NOAA 2009

Exhibit 7. Critical Habitat Map

Sensitive Habitats

Sensitive habitats are those that are of special concern to resource agencies or are afforded specific consideration through the State California Environmental Quality Act (CEQA) Guidelines, Section 1602 of the California Fish and Game Code, Section 404 of the CWA, and the State's Porter-Cologne Act. Sensitive habitats may be of special concern to these agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species.

State or Federally Protected Wetlands and Waters

From a regulatory perspective, surface waters and their drainage or groundwater, including saline waters, streams (ephemeral, intermittent, and perennial), and many wetland features are all considered "Waters of the State" (WOTS) and are regulated under the Porter-Cologne Act and Section 401 of the CWA. Man-made aquatic features, channels, ponds, and waterbodies that retain surface water are often considered WOTS. On the federal side, aquatic areas that also meet the regulatory definition of "Waters of the United States" are regulated further under Section 404 of the CWA. Project activities have been proposed within waterbodies / watercourses at two separate locations within the project area. Prior to the biological survey, AECOM biologists reviewed USGS quadrangle maps, the National Hydrography Dataset (USGS 2022), and current and historic Google Earth satellite imagery of the project area. Based on data review and the site reconnaissance surveys, jurisdictional wetland and water features do exist within the project area. Several man-made drainage ditches are present parallel to roadways within the project area, and the Sacramento Drainage Canal and the unnamed (Stone Lake) channel are considered waters of the United States, as well as waters of the state. A jurisdictional wetland and waterway delineation survey was conducted and the results have been detailed within a separate report.

Riparian Habitat

Riparian habitat is defined in the context of Section 1600 of the California Fish and Game Code. According to guidance provided in *A Field Guide to Lake and Streambed Alteration Agreements: Section 1600 Fish and Game Code*, the outer edge of riparian vegetation is a reasonable and identifiable boundary for the lateral extent of a stream, the protection of which results in preserving the fish and wildlife within a stream or drainage, and therefore may constitute the limits of CDFW jurisdiction along waterways. CDFW takes jurisdiction over riparian habitat pursuant to Section 1600 of the California Fish and Game Code.

The Sacramento Drainage Canal and the unnamed (Stone Lake) channel are not listed in the SSHCP as requiring minimum stream setbacks, since they are not within the Urban Development areas of the SSHCP (County of Sacramento, et al. 2018).

Sensitive Natural Communities

California natural communities are organized by CDFW and partner organizations, such as CNPS, based on vegetation-type classification and are ranked using the same system to assign global and state rarity ranks for plant and animal species in the CNDDDB (CDFW 2019). CDFW considers natural communities ranked S1–S3 to be sensitive natural communities, to be addressed in the environmental review processes. No sensitive natural vegetation communities have been identified within the project area (CDFW 2022).

Impacts

The preferred construction plan for this project is proposed to take place entirely within the existing roadway or adjacent roadway ROWs. No riparian habitat or seasonal wetlands will be directly affected by construction activities because none occur within the project area. The selected staging locations occur within upland land cover habitats (i.e., developed, ruderal, and annual grassland) and these areas will be restored to their original topography and conditions after construction. In order to ensure that no special-status plant species may be present within the project area, a focused, species-specific pre-construction survey should be conducted within the appropriate blooming periods to identify and protect sensitive individuals (PLANT 1-2).

Construction activities may affect water resources and aquatic species which depend on them. The Sacramento Drainage Canal and the unnamed Stone Lake channel may support special-status fish species such as: adult and juvenile salmonids, Delta smelt, longfin smelt, green sturgeon and Sacramento splittail (see Table 3 above). The

identified Waters of the US are proposed to be crossed via HDD or bore and jack to avoid direct impacts to water quality and sensitive aquatic resources. HDD and bore and jack procedures bring the risk of a frac-out (the inadvertent return of drilling lubricant) which could adversely affect water quality and special-status fish species. Avoidance and minimization measures (AMM) HDD-1 refers to the preparation of a Frac-out Contingency Plan to avoid and minimize potential impacts relating to a frac-out.

All of the identified waterways within the BSA also provide suitable aquatic habitat for western pond turtle and giant garter snake, and the BSA overlaps with SSHCP modeled habitat for both of these species. No habitat for the western spadefoot toad is present within the BSA, however, vernal pools within the Stone Lakes National Wildlife Refuge north and south of the project area, may provide suitable habitat, and the project is located within modeled habitat for this species as well. Permanent impacts to these modeled habitats are highly unlikely due to the proposed project work activities occurring primarily within existing roadways. However, individuals of these species could potentially move through the work area and across roadways during construction activities and may be killed or injured by construction equipment, become trapped by steep-walled holes, trenches, or silt fencing, or become entangled in erosion control materials. The implementation of SSHCP AMMs, general best management practices, and AECOM provided AMMS such as (BMP)-6, BMP-7, BMP-8, and BMP-11; Western pond turtle (WPT)-1–3, WPT 5–9, western spadefoot toad (WS) 1-3 and giant garter snake (GGS) 1–10 would minimize or avoid these potential impacts.

Aquatic habitats both within and beyond the boundaries of the BSA may be impacted by construction dust, sedimentation, or erosion. These impacts can be minimized using only existing access roads to accommodate delivery of project components, implementation of BMPs and erosion control measures, and by appropriately stabilizing and minimizing any temporary stockpiles of construction materials or other construction wastes within the laydown and work areas. In addition, runoff of contaminants (e.g., fuel, lubricants) from construction vehicles and equipment could adversely affect aquatic habitats should an accidental spill or incident occur. Changes in hydrology due to construction-related changes in topography, soil infiltration capacity (i.e., compaction) or other hydrologic characteristics could also adversely affect adjacent seasonal wetlands and vernal pools, or the waterways within the BSA and those special-status species which depend on them. The project area is located within SSHCP modeled habitat for vernal pool species (see table 3, above), and while no wetlands or vernal pools were identified within the BSA, in rare cases, ephemeral roadside ditches may contain these sensitive individuals. Because project work is proposed within the existing roadway, these habitats are highly unlikely to be disturbed, however, erosion control measures are necessary to ensure their protection. Wildlife and plant species are also vulnerable to the spread of non-native invasive weeds, compaction of soils, disturbance (from noise and lighting, ground vibration, foot traffic, and construction equipment), and an increased risk of roadkill. Implementation of BMPs 1 – 10 and low impact development (LID) 1-2 from the SSCHP (County of Sacramento, et al. 2018) would avoid / minimize these potential impacts.

No construction impacts are proposed to nests of migratory birds and raptors (e.g., Swainson's hawk, white-tailed kite, Cooper's hawk, tricolored blackbird, loggerhead shrike, burrowing owl) because no trees, shrubs or wetland habitat is proposed for removal, and the work activities are proposed to occur primarily within the roadway edge and in developed / residential parcels. However, if construction activities were to occur in the vicinity of nests located near but not within the work area such activities could disturb and disrupt nesting activities and potentially result in nest abandonment. Implementation of SSHCP AMMs RAPTOR 1–3; SWHA 1–4; TCB 1–3 described below would avoid / minimize potential impacts to special-status bird species and other nesting migratory birds, including those for which modeled habitat has been identified by the SSHCP within the BSA (see table 3, above).

No tree removal or trimming is anticipated as part of this project and therefore, no habitat for bats will be affected including those bat species for which the SSHCP has identified modeled habitat within the BSA (western red bat, Yuma myotis). The SSHCP also identified modeled habitat for the American badger within the BSA, however no dens were identified within the BSA during the surveys. Due to the nature of the project's proposed work area consisting of primarily existing roadway, no den habitat is likely to be impacted. However, individuals have been observed in the vicinity of the project area (CDFW 2022) and are therefore at risk for potential roadkill. BMP-10 addresses a construction area speed limit which will significantly reduce the possibility of this impact. Milkweed, the host plant for Monarch butterflies, was detected within the BSA during the surveys. To avoid impacts to this species a milkweed plant species a preconstruction survey will be performed prior to the start of construction and if necessary non-disturbance buffers will be established (MON-1).

State or Federally Protected Wetlands and Waters

The project area contains aquatic resources (Exhibit 8). These features may meet the USACE definition of a "Water of the United States" (Section 404 of the Clean Water Act) and therefore are subject to USACE jurisdiction under Section 404 of the CWA. A Section 404 permit is required for impacts to waters of the United States. An aquatic resources survey and wetland delineation has been conducted by AECOM wetland scientists to determine the exact locations and extents of potential wetlands and other waterways. The results of this investigation have been provided within a separate report (. This survey and the associated report are intended to provide the information needed to avoid / minimize potential direct or indirect impacts on wetlands or other waters of the United States during project planning and construction. The project will be required to comply with all applicable SSHCP AMMs to avoid and minimize impacts to water quality (i.e., LID-1, and LID-3) and to implement construction BMP to control erosion and dust (i.e., BMP-1, BMP-2, BMP-3, BMP-4, BMP-5, BMP-9, BMP-10, and BMP-11) (Sacramento County, et al. 2018). Additional coordination with federal, state, and local regulatory agencies will likely be required for those activities which will take place within the extents of wetlands or waterbodies. A USACE permit would be required for any activity which could result in temporary fill or dredging within the waterways but is not likely to be required if the HDD and bore and jack crossing methods avoid all activities that could result in fill or dredging. A CDFW Lake and Streambed Alteration Agreement is likely to be necessary for the proposed waterway crossings.

Recommended Avoidance and Minimization Measures

BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads).

BMP-2 (Erosion Control): Sacramento County or its contractor will install temporary control measures for sediment, stormwater, and pollutant runoff. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any activity that disturbs soils with support stakes installed in such a way as to provide wildlife with a means of egress out of the project area.

Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed and will be of appropriate design and materials that will not entrap wildlife (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.

BMP-3 (Equipment Storage and Fueling): Sacramento County will ensure that equipment storage and staging will occur in the development footprint only. Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.

If project activities result in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway.

BMP-4 (Erodible Materials): Erodible materials will not be deposited into waterways, and vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.

BMP-5 (Dust Control): Sacramento County will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.

BMP-6 (Construction Lighting): Sacramento County will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly riparian and wetland habitats and wildlife movement areas.

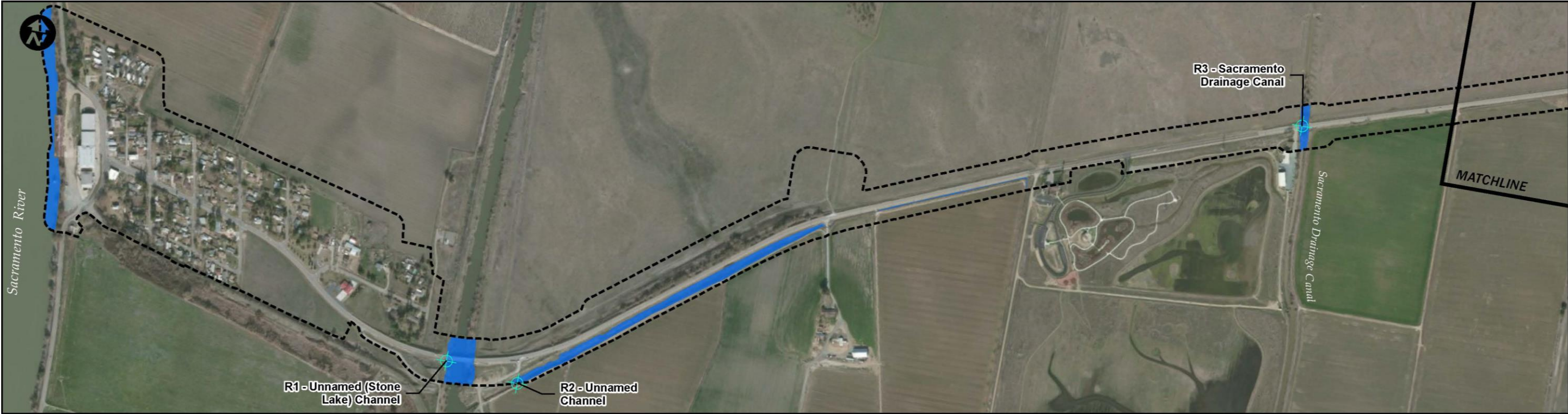


Exhibit 8. Aquatic Features

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BMP-7 (Training of Construction Staff): A mandatory Worker Environmental Awareness Program will be conducted by a qualified biologist for all construction workers, including contractors, prior to the commencement of construction activities. The training will include how to identify special-status species that might enter the construction site, relevant life history information and habitats, the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter control training (SPECIES-2), and appropriate protocols if a special-status species is encountered. Supporting materials containing training information will be prepared and distributed by the biologist. When necessary, training and supporting materials will also be provided in Spanish. Upon completion of training, construction personnel will sign a form stating that they attended the training and understand all of the Avoidance and Minimization Measures.

BMP-8 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.

BMP-9 (Revegetation): Any cut-and-fill slopes will be revegetated with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions.

BMP-10 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.

HDD-1 (Frac-out Contingency Plan). Sacramento County will prepare a Frac-Out Contingency Plan (Plan) with measures designed to minimize the potential for a frac-out associated with horizontal directional drilling. The Plan will also describe measures for timely detection of frac-outs, protect areas that are considered environmentally sensitive (streams, wetlands, other ecological resources, cultural resources), and ensure an organized, timely, and “minimum-impact” response in the event a frac-out and release of drilling mud occurs.

LID-1 (Stormwater Quality): If the size of project construction activity exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include natural site features (LID-3).

LID-2 (Natural Site Features): Sacramento County will incorporate preservation of a site’s natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain wildlife habitat values.

PLANT-1 (Rare Plant Surveys): An approved biologist will conduct surveys for Sanford’s arrowhead, Mason’s lileopsis and legenere limosa following CDFW protocol, *Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) or the most recent CDFW rare plant survey protocols.

PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by construction or is detected within 250 feet of the area proposed to be disturbed by a construction, Sacramento County will establish an appropriate non-disturbance buffer to protect the rare plant occurrence during construction.

MON-1 (Monarch Butterfly Milkweed Survey): A pre construction survey will be conducted to identify milkweed (*Asclepias* sp.) plants within the project area which may support the Monarch Butterfly or larvae. These individuals or areas of multiple individuals will be flagged for protection within the project area and an appropriate exclusion zone will be enforced to prevent accidental vegetation damage or removal.

WS-1 (Avoid Western Spadefoot Entrapment): All excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever

occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat will be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-3, below.

WS-2 (Erosion Control Materials in Western Spadefoot Habitat): Non-entangling erosion control material will be used to reduce the potential for entrapment of western spadefoot. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WS-3 (Western Spadefoot Encounter Protocol): If construction activities must be implemented during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist will notify the CDFW and USFWS immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to CDFW and USFWS. The biologist will report any take of listed species to the USFWS and CDFW immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.

WPT-1 (Western Pond Turtle Surveys): If ground-disturbing construction activities are proposed within 300 feet of delineated aquatic habitat, a qualified biologist will conduct a field investigation to assess the potential for western pond turtle presence. Locations of delineated western pond turtle habitat, and individual observations will be noted on plans and used to finalize project design.

WPT-2 (Western Pond Turtle Work Window): Maintenance and improvements to existing structures may occur throughout the year as long as western pond turtle habitat is identified and avoided, and movement of equipment is confined to existing roads. Otherwise, construction and ground-disturbing activities must be conducted outside of western pond turtle's active season. Construction and ground-disturbing activities will be initiated after May 1 and will commence prior to September 15. If it appears that construction activities may go beyond September 15, Sacramento County will consult CDFW for guidance on any additional measures needed to minimize impacts on western pond turtles.

WPT-3 (Western Pond Turtle Monitoring): If construction activities will occur within 300 feet of potential WPT aquatic habitat, a qualified biologist experienced with western pond turtle identification and behavior will monitor the project area, including the integrity of any exclusion fencing. The biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project area daily for western pond turtle prior to construction activities. The biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western pond turtle enters an active construction zone (i.e., outside the buffer zone).

WPT-5 (Avoid Western Pond Turtle Entrapment): If construction activities occur within 300 feet of potential WPT aquatic habitat, excavated steep-walled holes and trenches more than 6 inches deep in this area will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the qualified biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within 300 feet of Franklin Creek will be inspected for western pond turtle by the qualified prior to being moved.

WPT-6 (Erosion Control Materials in Western Pond Turtle Habitat): If erosion control (BMP-2) is implemented 300 feet of potential WPT aquatic habitat, non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar

material will be used to ensure that turtles are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit): Construction and maintenance vehicles will observe a 20-mile-per-hour speed limit within of 300 feet of all potential WPT aquatic habitat.

WPT-8 (Western Pond Turtle Encounter Protocol): If a western pond turtle is encountered during construction activities, the biologist will notify CDFW within 24 hours of detection. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project area on its own volition. If necessary, the qualified biologist will notify CDFW to determine the appropriate procedures related to relocation. Any worker who inadvertently injures, kills, or otherwise harasses a western pond turtle, or who finds one dead, injured, or entrapped must immediately report the incident to a qualified biologist.

WPT-9 (Western Pond Turtle Post-Construction Restoration): After completion of ground disturbing construction activities, Sacramento County will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis. Restoration work may include replanting emergent aquatic vegetation and placing appropriate artificial or natural basking areas in waterways and wetlands.

GGs-1 (Giant Gartersnake Surveys): An approved biologist will conduct a field investigation to delineate giant gartersnake aquatic habitat within the project area and adjacent areas within 300 feet of the project area. Sacramento County will use this information to finalize project design.

GGs-2 (Giant Gartersnake Work Window): Construction activities that do not fully avoid giant gartersnake modeled habitat will be conducted during the snake's active season. Construction and ground-disturbing activities will be initiated after May 1 and will end prior to September 15.

GGs-3 (Giant Gartersnake Monitoring): An approved biologist experienced with giant gartersnake identification and behavior will monitor the project area, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project area daily for giant gartersnake prior to construction activities. If a giant gartersnake is encountered, refer to GGS-7. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a giant gartersnake enters an active construction zone (i.e., outside the buffer zone).

GGs-5 (Avoid Giant Gartersnake Entrapment): If construction occurs in giant gartersnake modeled habitat all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps at an angle of no more than 30 degrees constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within giant gartersnake modeled habitat will be inspected for giant gartersnake by the approved biologist prior to being moved. If a giant gartersnake is encountered, refer to GGS-7.

GGs-6 (Erosion Control Materials in Giant Gartersnake Habitat): If erosion control (BMP-2) is implemented within giant gartersnake modeled habitat non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

GGs-7 (Giant Gartersnake Encounter Protocol): If a giant gartersnake is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project area on its own volition. If necessary, the approved biologist will notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat

description, and any corrective measures taken to protect the giant gartersnake within 1 business day to CDFW and USFWS. The biologist will report any take of listed species to CDFW and USFWS immediately. Any worker who inadvertently injures or kills a giant gartersnake or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist. Any giant gartersnake observed during construction activities will be allowed to move away from danger on its own or be moved by the approved biologist with CDFW and USFWS approval to handle the snake.

GG-8 (Giant Gartersnake Post-Construction Restoration): After completion of ground-disturbing activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with an appropriate native seed mix. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis.

GG-10 (Giant Gartersnake Pre-construction Surveys): If construction activities will occur within 200 feet of modeled giant gartersnake aquatic habitat, the approved biologist(s) shall conduct one pre-construction survey within 24 hours prior to beginning ground disturbing activities. The approved biologist(s) shall investigate all small mammal burrows within suitable upland habitat. The project area will be resurveyed whenever there is a lapse in construction activity of two weeks or more.

RAPTOR-1 (Raptor Pre-Construction Surveys): Pre-construction surveys will be required to determine if active raptor nests are present with a project area or within 500 feet of the project area if construction activities will occur during the raptor breeding season. A qualified biologist will conduct pre-construction surveys within 30 days and 3 days of ground disturbing activities within the proposed project area and within 500 feet of the proposed project area to determine presence of nesting raptor species. Pre-construction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-2 and RAPTOR-3 will be implemented.

RAPTOR-2 (Raptor Nest/Roost Buffer): If active nests are found within the project area or within 500 feet of any project-related construction activity, Sacramento County will establish a temporary nest disturbance buffer around the active nest until the young have fledged. A 500-foot exclusion zone shall be established around the nest in which no work will be allowed until the young have successfully fledged or nesting activity has ceased. The determination of fledging or cessation of nesting will be made by a qualified biologist with experience in nest searching and monitoring for raptors. In consultation with CDFW, the size of the exclusion zone may be modified depending on the species and the type of construction activity and associated disturbance anticipated near the nest. Active nests will be monitored periodically throughout the nesting season to identify any sign of disturbance and to document nest status.

RAPTOR-3 (Raptor Nest/Roost Buffer Monitoring): If project-related construction activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then Sacramento County will retain a qualified biologist experienced with raptor behavior to monitor the nest throughout the nesting season and to determine when the young have fledged. The biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, and Sacramento County, will consult with CDFW to determine the best course of action to avoid nest abandonment or take of individuals. The biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).

SWHA-1 (Swainson's Hawk Surveys): A qualified biologist will conduct Swainson's hawk surveys in the project area and within 0.25 miles from the project area boundaries. Surveys will be conducted in accordance with the guidance described in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project area or within 0.25 mile of a project area if existing or potential nest sites were found during initial surveys and construction activities will occur during the breeding season (March 1 through September 15). A qualified biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 will be implemented.

SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the project area or within 0.25 mile of any project-related construction activity, Sacramento County will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged. The size of the exclusion zone may be modified in consultation with CDFW depending on the type of construction activity and associated disturbance anticipated near the nest.

SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the project area or within 0.25 mile of any project-related activity, then qualified biologist experienced with Swainson's hawk behavior will be retained by Sacramento County to regularly monitor the nest and to determine when the young have fledged. The qualified biologist will be on site daily while construction-related activities are taking place within the buffer. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, and Sacramento County will consult with CDFW to determine the best course of action to avoid nest abandonment or take of individuals. The qualified biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

TCB-1 (Tricolored Blackbird Pre-Construction Surveys): If construction activities will occur within 500 feet of the seasonal marsh habitats in and surrounding the Franklin Creek channel during the breeding season (March 1 through September 15) a pre-construction survey will be conducted for tricolored blackbird nesting activity. A qualified biologist will conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, within the proposed project area and 500 feet of the proposed project area to determine the presence of nesting tricolored blackbird. Pre-construction surveys will be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-2 and TCB-3 will be implemented.

TCB-2 (Tricolored Blackbird Nest Buffer): If active nests are found within the project area or within 500 feet of any project-related construction activity, Sacramento County will establish a 500-foot temporary buffer around the active nest until the young have fledged.

TCB-3 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the project area or within 500 feet of any project-related construction activity, then a qualified biologist experienced with tricolored blackbird behavior will monitor the nest throughout the nesting season and to determine when the young have fledged. The biologist will be on site daily while construction-related activities are taking place near the disturbance buffer. If the biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with CDFW will be held to determine the best course of action to avoid nest abandonment or take of individuals. The biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).

References

- California Department of Fish and Wildlife (CDFW). 2019. *California Natural Community List*. Updated Friday, November 8, 2019. Available at: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities>. Accessed on: July 23, 2020.
- . 2020. *California Natural Diversity Database* (CNDDDB). Maps and Data, Rarefind 5 Commercial Version – Dated January 1, 2022 – Biogeographic Data Branch. Available: <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Accessed 20 January 2022.
- California Natural Diversity Database (CNDDDB). 2022. *California Natural Diversity Database* (CNDDDB). 2022. California Department of Fish and Wildlife. <https://wildlife.ca.gov/Data/CNDDDB>
- California Native Plant Society (CNPS). 2020a. *Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance– Wild Oats and Annual Brome Grasslands*. A Manual of California Vegetation, online edition. Available: <http://www.cnps.org/cnps/vegetation/>. Accessed July 23, 2020.
- . 2020b. *Typha (angustifolia, domingensis, latifolia) Herbaceous Alliance*. A Manual of California Vegetation, online edition. Available: <http://www.cnps.org/cnps/vegetation/>. Accessed July 23, 2020.
- , Rare Plant Program. 2022. *Inventory of Rare and Endangered Plants of California*. Online edition, v9-01 1.0. Available: <http://www.rareplants.cnps.org>. Accessed 20 January 2022.
- County of Sacramento, City of Rancho Cordova, City of Galt, Sacramento County Water Agency, Sacramento Regional County Sanitation District, and the Southeast Connector Joint Powers Authority. 2018. *Final South Sacramento Habitat Conservation Plan*. January 2018. Sacramento, CA.
- NRCS 2022. Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. 2021. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Retrieved June 2022.
- National Oceanic and Atmospheric Administration (NOAA). 2009. Endangered and Threatened Wildlife and Plants: Final Rulemaking to Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon. FR Vol. 74, No. 195, pp. 52300-52351. October 9, 2009.
- Swainson's Hawk Technical Advisory Committee. 2000 (May 31). *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*.
- U.S. Department of the Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA). 2020. *Joint Memorandum to the Field Between the U.S. Department of the Army, Corps of Engineers and the U.S. Environmental Protection Agency Concerning exempt Construction or Maintenance of Irrigation Ditches and Exempt Maintenance of Drainage Ditches under Section 404 of the Clean Water Act*. July 2020. Available at: https://www.epa.gov/sites/default/files/2020-07/documents/final_ditch_exemption_memo_july_2020_with_epa.pdf. Accessed June 30, 2022.
- U.S. Fish and Wildlife Service (USFWS). 2020 (July 10). *USFWS Threatened & Endangered Species Active Critical Habitat Report*. Critical Habitats Mapper data desktop/mobile view. Available: <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>. Accessed July 15, 2020.
- . 2022. *Information for Planning and Consultation* (IpaC). IpaC Resource List. Powered by ECOS – the Environmental Conservation Online System. San Francisco Bay-Delta Fish and Wildlife.
- U.S. Geological Survey (USGS). 2018a. Florin Quadrangle, California, 7.5-minute series.
- . 2018b. Sacramento East Quadrangle, California, 7.5-minute series.

- . 2018c. Carmichael Quadrangle, California, 7.5-minute series.
 - . 2018d. Elk Grove Quadrangle, California, 7.5-minute series.
 - . 2018e. Galt Quadrangle, California, 7.5-minute series.
 - . 2018f. Bruceville Quadrangle, California, 7.5-minute series.
 - . 2018g. Courtland Quadrangle, California, 7.5-minute series.
 - . 2018h. Clarksburg Quadrangle, California, 7.5-minute series.
 - . 2018i. Sacramento West Quadrangle, California, 7.5-minute series.
 - . 2022. The National Map NHD (MapServer). USGS TNM – National Hydrography Dataset. Data refreshed January, 2022. Available at <https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer>. Accessed 20 January 2022.
- Western Monarch and Milkweed Occurrence Database. 2022. Data accessed from the Western Monarch Milkweed Mapper, a project by the Xerces Society, U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, and Washington Department of Fish and Wildlife. Available: www.monarchmilkweedmapper.org. Accessed on 21 January 2022.

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Appendix A Plant and Animal Species Observed

Table A-1. Wildlife Species Observed in the Hood Septic Conversion Biological Study Area

Common Name	Scientific Name	Observation Notes
American Crow	<i>Corvus brachyrhynchos</i>	Flocks in large trees in the morning and foraging throughout site during the day
American Bull Frog	<i>Lithobates catesbeianus</i>	Auditory ID while standing under bridge at unnamed Stone Lake Channel (July 2022)
Barn Swallow	<i>Hirundo rustica</i>	Nesting under bridge at unnamed Stone Lake channel (July 2022)
Western Fence Lizard	<i>Sceloporus occidentalis</i>	Throughout BSA
Yellow-billed magpie	<i>Pica nutalli</i>	Valley oak riparian habitat
Muskrat	<i>Ondatra zibethicus</i>	Swimming with the channel parallel to Hood-Franklin Road that drains into the unnamed Stone Lake channel
Red-shouldered Hawk	<i>Buteo lineatus</i>	Roosting in sycamore tree next to Hood Ranch Kitchen parking lot in the morning
White-tailed Kite	<i>Elanus leucurus</i>	Roosting in crown of redwood tree in backyard of house in western portion of neighborhood in the morning (July 2022)
House Sparrow	<i>Passer domesticus</i>	Flocks in bushes and building eaves of antique store
European Starling	<i>Sturnus vulgaris</i>	Flocks in trees and along power lines in morning hours
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Auditory ID only
Northern Flicker	<i>Colaptes auratus</i>	Auditory ID only
California Towhee	<i>Melospiza crissalis</i>	Auditory ID only
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	Flocks foraging throughout site
fox squirrel	<i>Sciurus niger</i>	Several observed in residential yards throughout site
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Roosting in cottonwood tree in riparian habitat along Sacramento River levee
Bushtit	<i>Psaltiriparus minimus</i>	Flocks foraging throughout site
Anna's Hummingbird	<i>Calypte anna</i>	Auditory ID only
California Scrub Jay	<i>Aphelocoma californica</i>	Flocks foraging throughout site
American Robin	<i>Turdus migratorius</i>	Foraging along orchard edges
Nuttall's woodpecker	<i>Picoides nuttallii</i>	Foraging in oaks along northern project boundary
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	Large flock in trees along northeastern project area
Turkey Vulture	<i>Cathartes aura</i>	Flyover

ID = identification

Table A-2. Plant Species Observed in the Hood Septic Conversion Project Area

Vegetation Community	Plant List	
	Common Name	Scientific Name
Ruderal Edges of parking areas, ditches, and vacant lots	white horehound	<i>Marrubium vulgare</i>
	woolly mullein	<i>Verbascum Thapsus</i>
	California poppy	<i>Eschscholzia californica</i>
	johnsongrass	<i>Sorghum halepense</i>
	filaree	<i>Erodium</i> sp.
	milk thistle	<i>Silybum marianum</i>
	fennel	<i>Foeniculum vulgare</i>
	foxtail barley	<i>Hordeum murinum</i>
	black mustard	<i>Brassica nigra</i>
	scarlet pimpernel	<i>Lysimachia arvensis</i>
	cheeseweed	<i>Malva parviflora</i>
	artichoke thistle	<i>Cynara cardunculus</i>
	daffodil	<i>Narcissus pseudonarcissus</i>
Developed - Residential Single family residences; shops; restaurant; storage areas; fire station; streetscapes	coast redwood	<i>Sequoia sempervirens</i>
	mastic tree	<i>Pistacia atlantica</i>
	Lombardy poplar	<i>Populus nigra</i>
	palm	<i>Phoenix</i> sp.
	western sycamore	<i>Platanus racemose</i>
	valley oak	<i>Quercus lobata</i>
	sweetgum	<i>Liquidambar styraciflua</i>
	mulberry	<i>Morus alba</i>
	European white birch	<i>Betula pendula</i>
	orange tree	<i>Citrus x sinensis</i>
	lemon tree	<i>Citrus limon</i>
	southern magnolia	<i>Magnolia grandiflora</i>
	London plane	<i>Platanus x acerifolia</i>
	Italian stone pine	<i>Pinus pinea</i>
	Italian cypress	<i>Cupressus sempervirens</i>
	camphor	<i>Cinnamomum camphora</i>
	interior live oak	<i>Quercus wislizeni</i>
	eucalyptus	<i>Eucalyptus</i> sp.
	privet	<i>Ligustrum</i> sp.
	apple	<i>Malus</i> sp.
	tree of heaven	<i>Ailanthus altissima</i>
	pomegranate	<i>Punica granatum</i>
Valley Oak Riparian Woodland Southern BSA along waterway	valley oak	<i>Quercus lobata</i>
	Himalayan blackberry	<i>Rubus armeniacus</i>
	almond	<i>Prunus dulcis</i>
	red willow	<i>Salix laevigata</i>
	California wild rose	<i>Rosa californica</i>
	California grape	<i>Vitis californica</i>
	poison hemlock	<i>Conium maculatum</i>
Riparian Forest Along Sacramento River levee; very steep, narrow slopes, and very little understory vegetation	Fremont cottonwood	<i>Populus fremontii</i>
	valley oak	<i>Quercus lobata</i>
	black locust	<i>Robinia pseudoacacia</i>

Vegetation Community	Plant List	
	Common Name	Scientific Name
Aquatic Habitats and Roadside Drainages	Hemp dogbane	<i>Apocynum cannabinum</i>
	California damsonium	<i>Damasonium californicum</i>
	Spikerush	<i>Eleocharis macrostachya</i>
	Western Marsh Cudweed	<i>Gnaphalium palustre</i>
	Perennial pepper weed	<i>Lepidium latifolium</i>
	Water smartweed	<i>Persicaria amphibia</i>
	Curly dock	<i>Rumex crispus</i>
	Rough Cocklebur	<i>Xanthium strumarium</i>
	Mugwort	<i>Artemisia douglasiana</i>
	Tall cyperus	<i>Cyperus eragrostis</i>
	Water hyacinth	<i>Eichhornia crassipes</i>
	Common spikerush	<i>Eleocharis macrostachya</i>
	Fringed willowherb	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>
	Pacific rush	<i>Juncus effusus</i>
	Tule	<i>Schoenoplectus</i> sp.
	Broad-leaved cattail	<i>Typha latifolia</i>
	Cocklebur	<i>Xanthium strumarium</i>
Annual Grassland – Pasture, Uplands North and South of BSA, adjacent to wetland habitats	Russian thistle	<i>Salsola tragus</i>
	field mustard	<i>Hirschfeldia incana</i>
	black mustard	<i>Brassica nigra</i>
	Wild oat	<i>Avena fatua</i>
	Ripgut brome	<i>Bromus diandrus</i>
	Soft chess	<i>Bromus hordeaceus</i>
	Italian thistle	<i>Carduus pycnocephalus</i>
	Yellow starthistle	<i>Centaurea solstitialis</i>
	Turkey-mullein	<i>Croton setigerus</i>
	Bermuda grass	<i>Cynodon dactylon</i>
	Flax-leaved horseweed	<i>Erigeron bonariensis</i>
	Italian rye grass	<i>Festuca perennis</i>
	Mustard	<i>Hirschfeldia incana</i>
	Prickly lettuce	<i>Lactuca serriola</i>
	Osage-orange	<i>Maclura pomifera</i>
	Wild radish	<i>Raphanus sativus</i>
	Curly dock	<i>Rumex crispus</i>
	Italian thistle	<i>Carduus pycnocephalus</i>
	Fennel	<i>Foeniculum vulgare</i>
	Wall barley	<i>Hordeum murinum</i>

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Appendix B 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

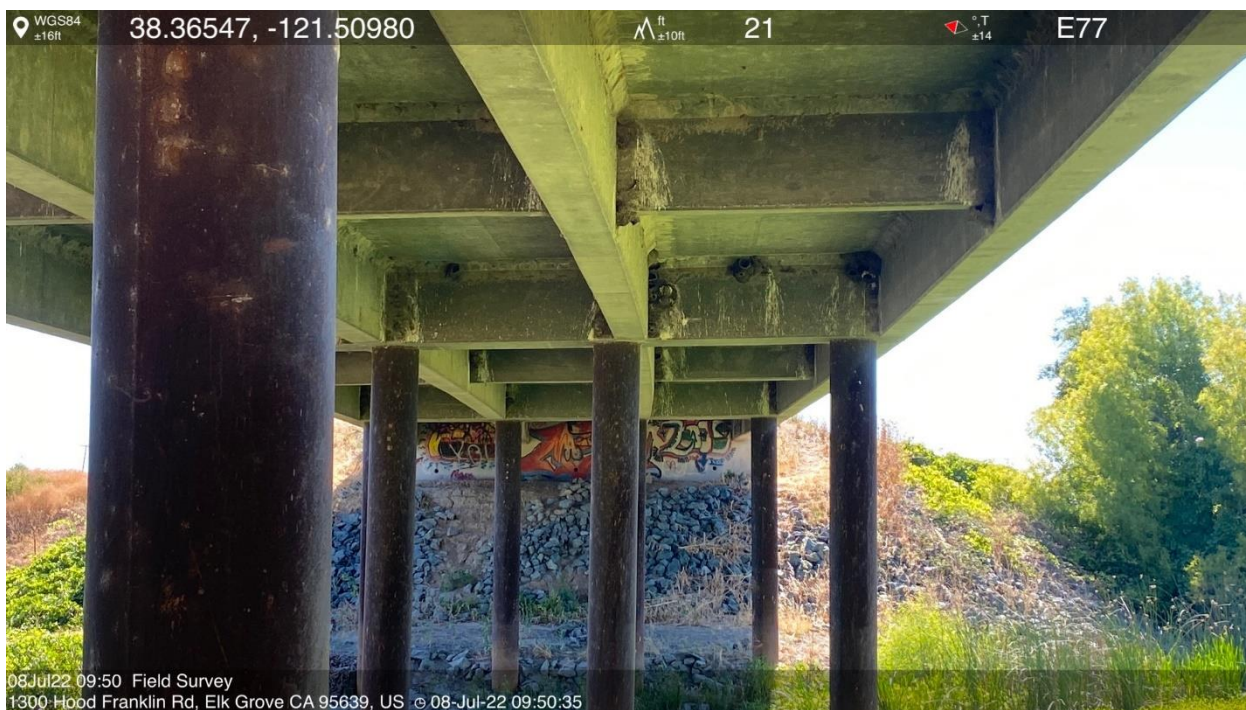


Photo 10. Unnamed Stone Lake Channel, Hood-Franklin Road Bridge (nesting swallows)



Photo 11. Annual Grassland



Photo 12. Roadside Ephemeral Drainage

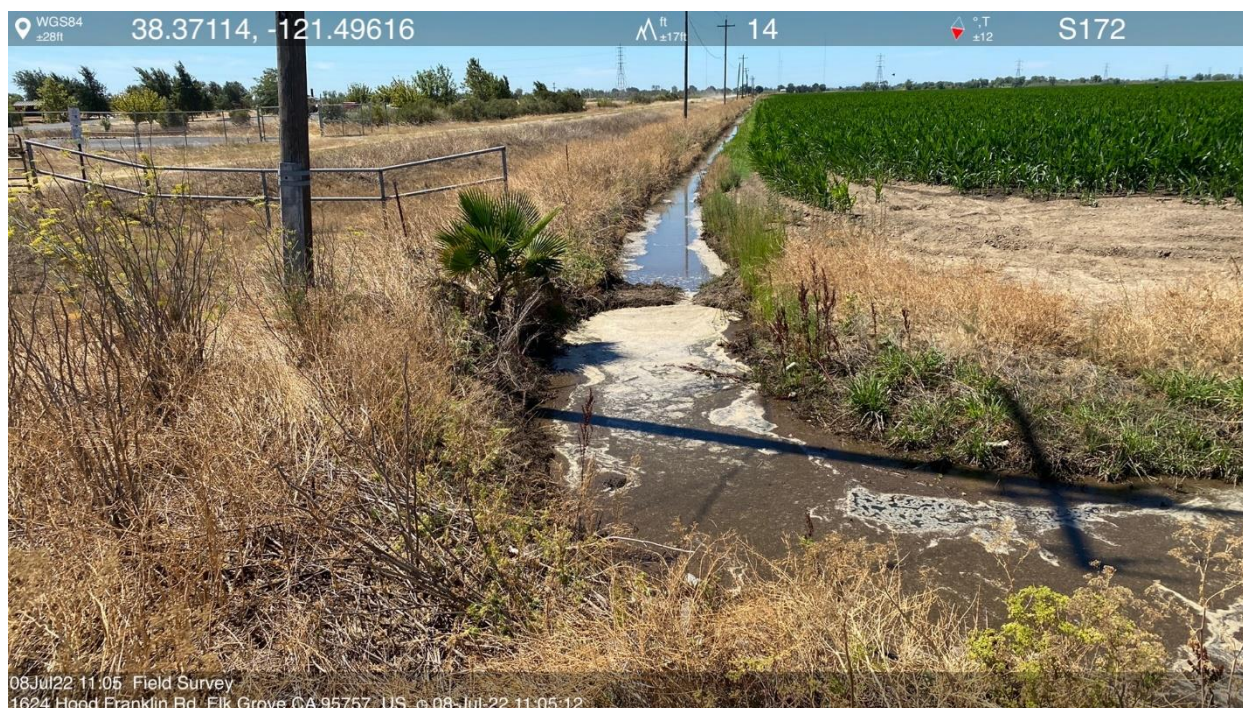


Photo 13. Irrigation channel that is hydrologically connected to the unnamed Stone Lake channel




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

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Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Hood Septic to Sewer Conversion Project																																																								
Project Phases (Pounds)		ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)																																									
Grubbing/Land Clearing		0.98	7.97	8.91	20.40	0.40	20.00	4.50	0.34	4.16	0.02	1,940.36	0.44	0.04	1,964.60																																									
Grading/Excavation		4.20	38.13	42.17	21.77	1.77	20.00	5.76	1.60	4.16	0.09	8,238.61	2.48	0.10	8,330.73																																									
Drainage/Utilities/Sub-Grade		4.79	43.37	44.45	21.93	1.93	20.00	5.96	1.80	4.16	0.10	9,059.36	2.03	0.12	9,146.48																																									
Paving		1.76	19.69	15.09	0.73	0.73	0.00	0.66	0.66	0.00	0.03	3,181.70	0.78	0.05	3,217.47																																									
Maximum (pounds/day)		4.79	43.37	44.45	21.93	1.93	20.00	5.96	1.80	4.16	0.10	9,059.36	2.48	0.12	9,146.48																																									
Total (tons/construction project)		0.65	6.02	6.26	3.26	0.27	2.99	0.87	0.25	0.62	0.01	1,256.20	0.33	0.02	1,269.42																																									
<div>Notes: Project Start Year -> 2023 Project Length (months) -> 16 Total Project Area (acres) -> 17 Maximum Area Disturbed/Day (acres) -> 2 Water Truck Used? -> Yes</div> <table><tr><td></td><td colspan="2">Total Material Imported/Exported Volume (yd³/day)</td><td colspan="4">Daily VMT (miles/day)</td></tr><tr><td>Phase</td><td>Soil</td><td>Asphalt</td><td>Soil Hauling</td><td>Asphalt Hauling</td><td>Worker Commute</td><td>Water Truck</td></tr><tr><td>Grubbing/Land Clearing</td><td>0</td><td>0</td><td>0</td><td>0</td><td>400</td><td>40</td></tr><tr><td>Grading/Excavation</td><td>0</td><td>0</td><td>0</td><td>0</td><td>400</td><td>40</td></tr><tr><td>Drainage/Utilities/Sub-Grade</td><td>15</td><td>0</td><td>30</td><td>0</td><td>400</td><td>40</td></tr><tr><td>Paving</td><td>0</td><td>0</td><td>0</td><td>0</td><td>400</td><td>40</td></tr></table>																Total Material Imported/Exported Volume (yd³/day)		Daily VMT (miles/day)				Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck	Grubbing/Land Clearing	0	0	0	0	400	40	Grading/Excavation	0	0	0	0	400	40	Drainage/Utilities/Sub-Grade	15	0	30	0	400	40	Paving	0	0	0	0	400	40
																Total Material Imported/Exported Volume (yd³/day)		Daily VMT (miles/day)																																						
															Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck																																			
															Grubbing/Land Clearing	0	0	0	0	400	40																																			
															Grading/Excavation	0	0	0	0	400	40																																			
															Drainage/Utilities/Sub-Grade	15	0	30	0	400	40																																			
															Paving	0	0	0	0	400	40																																			
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.																																																								
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.																																																								
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.																																																								
Total Emission Estimates by Phase for -> Hood Septic to Sewer Conversion Project																																																								
Project Phases		ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)																																									
(Tons for all except CO2e. Metric tonnes for CO2e)																																																								
Grubbing/Land Clearing		0.02	0.14	0.16	0.36	0.01	0.35	0.08	0.11	0.07	0.00	34.15	0.01	0.00	31.37																																									
Grading/Excavation		0.30	2.68	2.97	1.53	0.12	1.41	0.41	0.11	0.29	0.01	580.00	0.17	0.01	532.05																																									
Drainage/Utilities/Sub-Grade		0.30	2.67	2.74	1.35	0.12	1.23	0.37	0.11	0.26	0.01	558.06	0.13	0.01	511.13																																									
Paving		0.05	0.52	0.40	0.02	0.02	0.00	0.02	0.02	0.00	0.00	84.00	0.02	0.00	77.06																																									
Maximum (tons/phase)		0.30	2.68	2.97	1.53	0.12	1.41	0.41	0.11	0.29	0.01	580.00	0.17	0.01	532.05																																									
Total (tons/construction project)		0.65	6.02	6.26	3.26	0.27	2.99	0.87	0.25	0.62	0.01	1256.20	0.33	0.02	1,151.61																																									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.																																																								
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.																																																								
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.																																																								
The CO2e emissions are reported as metric tons per phase.																																																								

Road Construction Emissions Model Data Entry Worksheet		Version 9.0.0		
<p><small>Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.</small></p>		<p>To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.</p> <div style="text-align: center;">  </div>		
<p>Input Type</p>				
Project Name	Hood Septic to Sewer Conversion Project			
Construction Start Year	2023	Enter a Year between 2014 and 2040 (inclusive)		
Project Type	1	<p>1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway</p> <p>2) Road Widening : Project to add a new lane to an existing roadway</p> <p>3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane</p> <p>4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction</p>		
Project Construction Time	16.00	months		
Working Days per Month	22.00	days (assume 22 if unknown)		
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	1	<p>1) Sand Gravel : Use for quaternary deposits (Delta/West County)</p> <p>2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta)</p> <p>3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)</p>		
Project Length	5.45	miles		
Total Project Area	16.50	acres		
Maximum Area Disturbed/Day	2.00	acres		
Water Trucks Used?	1	<p>1. Yes</p> <p>2. No</p>		
<p>Material Hauling Quantity Input</p>				
Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	15.00
	Paving	20.00	0.00	0.00
	Asphalt	Grubbing/Land Clearing	20.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	0.00	0.00
<p>Mitigation Options</p>				
On-road Fleet Emissions Mitigation	No Mitigation			
Off-road Equipment Emissions Mitigation	No Mitigation			
<p>Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer</p> <p>Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).</p> <p>Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard</p>				

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.60		1/1/2023
Grading/Excavation		6.40		2/19/2023
Drainage/Utilities/Sub-Grade		5.60		9/2/2023
Paving		2.40		2/20/2024
Totals (Months)		16		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT				
User Input										
Miles/round trip: Grubbing/Land Clearing		30.00			0	0.00				
Miles/round trip: Grading/Excavation		30.00			0	0.00				
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00			1	30.00				
Miles/round trip: Paving		30.00			0	0.00				
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.52	0.12	0.05	0.02	1,720.06	0.00	0.27	1,800.68
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.03	0.24	0.01	0.00	0.00	113.76	0.00	0.02	119.09
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	7.01	0.00	0.00	7.34
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	7.01	0.00	0.00	7.34

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input						
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00	
Miles/round trip: Grading/Excavation		30.00		0	0.00	
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00	
Miles/round trip: Paving		30.00		0	0.00	

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.52	0.12	0.05	0.02	1,720.06	0.00	0.27	1,800.68
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions		User Override of Worker Commute Default Values									
User Input	Commute Default Values	Default Values		Calculated		Calculated					
		20		Daily Trips	Daily VMT						
Miles/ one-way trip		2									
One-way trips/day		10		20	400.00						
No. of employees: Grubbing/Land Clearing		10		20	400.00						
No. of employees: Grading/Excavation		10		20	400.00						
No. of employees: Drainage/Utilities/Sub-Grade		10		20	400.00						
No. of employees: Paving		10		20	400.00						
		10		20	400.00						
		10		20	400.00						
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Grading/Excavation (grams/mile)		0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Draining/Utilities/Sub-Grade (grams/mile)		0.01	0.89	0.07	0.05	0.02	0.00	314.42	0.00	0.01	316.39
Paving (grams/mile)		0.01	0.84	0.06	0.05	0.02	0.00	306.70	0.00	0.01	308.54
Grubbing/Land Clearing (grams/trip)		1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Grading/Excavation (grams/trip)		1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Draining/Utilities/Sub-Grade (grams/trip)		1.02	2.72	0.28	0.00	0.00	0.00	67.59	0.07	0.03	78.65
Paving (grams/trip)		0.98	2.66	0.27	0.00	0.00	0.00	65.99	0.07	0.03	76.61
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.06	0.93	0.08	0.04	0.02	0.00	283.14	0.01	0.01	285.42
Tons per const. Period - Grubbing/Land Clearing		0.00	0.02	0.00	0.00	0.00	0.00	4.98	0.00	0.00	5.02
Pounds per day - Grading/Excavation		0.06	0.93	0.08	0.04	0.02	0.00	283.14	0.01	0.01	285.42
Tons per const. Period - Grading/Excavation		0.00	0.07	0.01	0.00	0.00	0.00	19.93	0.00	0.00	20.09
Pounds per day - Drainage/Utilities/Sub-Grade		0.06	0.91	0.07	0.04	0.02	0.00	280.25	0.01	0.01	282.48
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.06	0.00	0.00	0.00	0.00	17.26	0.00	0.00	17.40
Pounds per day - Paving		0.06	0.86	0.07	0.04	0.02	0.00	273.37	0.01	0.01	275.46
Tons per const. Period - Paving		0.00	0.02	0.00	0.00	0.00	0.00	7.22	0.00	0.00	7.27
Total tons per construction project		0.01	0.16	0.01	0.01	0.00	0.00	49.40	0.00	0.00	49.79

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions											
User Input		User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated		
		Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT		
Grubbing/Land Clearing - Exhaust			1		5	5		8.00	40.00		
Grading/Excavation - Exhaust			1		5	5		8.00	40.00		
Drainage/Utilities/Subgrade			1		5	5		8.00	40.00		
Paving			1		5	5		8.00	40.00		
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)		0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)		0.04	0.43	3.52	0.12	0.05	0.02	1,720.06	0.00	0.27	1,800.68
Paving (grams/mile)		0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)		0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.04	0.36	0.01	0.00	0.00	152.27	0.00	0.02	159.41
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.01	0.00	0.00	0.00	2.68	0.00	0.00	2.81
Pounds per day - Grading/Excavation		0.00	0.04	0.36	0.01	0.00	0.00	152.27	0.00	0.02	159.41
Tons per const. Period - Grading/Excavation		0.00	0.00	0.03	0.00	0.00	0.00	10.72	0.00	0.00	11.22
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.04	0.36	0.01	0.00	0.00	151.68	0.00	0.02	158.79
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.02	0.00	0.00	0.00	9.34	0.00	0.00	9.78
Pounds per day - Paving		0.00	0.04	0.36	0.01	0.00	0.00	150.28	0.00	0.02	157.32
Tons per const. Period - Paving		0.00	0.00	0.01	0.00	0.00	0.00	3.97	0.00	0.00	4.15
Total tons per construction project		0.00	0.01	0.06	0.00	0.00	0.00	26.71	0.00	0.00	27.96

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust		User Override of Max Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10	PM10	PM2.5	PM2.5
						pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing				2.00		20.00	0.35	4.16	0.07
Fugitive Dust - Grading/Excavation				2.00		20.00	1.41	4.16	0.29
Fugitive Dust - Drainage/Utilities/Subgrade				2.00		20.00	1.23	4.16	0.26

Off-Road Equipment Emissions												
Grubbing/Land Clearing		Default Number of Vehicles	Mitigation Option Override of	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles		Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		1		Model Default Tier	Crawler Tractors	0.44	2.24	5.12	0.20	0.18	758.27	0.25
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		1		Model Default Tier	Excavators	0.19	3.26	1.55	0.08	0.07	500.11	0.16
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		5.00	11	Model Default Tier	Signal Boards	0.29	1.51	1.80	0.07	0.07	246.57	0.03
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment		If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	0.92	7.01	8.47	0.34	0.32	0.02	1,504.95	0.43
		Grubbing/Land Clearing		tons per phase	0.02	0.12	0.15	0.01	0.01	0.00	26.49	0.01

Grading/Excavation	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	
	Number of Vehicles	Override of												
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										Type
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1			Model Default Tier	Crawler Tractors	0.44	2.24	5.12	0.20	0.18	0.01	758.27	0.25	
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	3			Model Default Tier	Excavators	0.57	9.77	4.65	0.23	0.21	0.02	1,500.32	0.49	
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1			Model Default Tier	Graders	0.38	1.69	4.65	0.15	0.14	0.01	640.86	0.21	
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2			Model Default Tier	Rollers	0.31	3.70	3.22	0.18	0.16	0.01	508.22	0.16	
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1			Model Default Tier	Rubber Tired Loaders	0.27	1.51	2.65	0.09	0.08	0.01	605.56	0.20	
	2			Model Default Tier	Scrapers	1.57	12.27	16.57	0.65	0.60	0.03	2,940.26	0.95	
5.00	11			Model Default Tier	Signal Boards	0.29	1.51	1.80	0.07	0.07	0.00	246.57	0.03	
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2			Model Default Tier	Tractors/Loaders/Backhoes	0.30	4.46	3.07	0.15	0.14	0.01	603.15	0.20	
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
User-Defined Off-road Equipment														
Number of Vehicles		If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	
0.00		Equipment Tier				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		Grading/Excavation				pounds per day	4.13	37.17	41.73	1.71	1.58	0.08	7,803.20	2.47
		Grading/Excavation				tons per phase	0.29	2.62	2.94	0.12	0.11	0.01	549.35	0.17

Drainage/Utilities/Subgrade	Default	Mitigation Option	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
	Number of Vehicles	Override of										
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)										
	Program-estimate	Equipment Tier			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Model Default Tier		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Air Compressors	0.25	2.41	1.70	0.09	0.09	0.00	375.26	0.02
	1.00	Model Default Tier		Bore/Drill Rigs	0.21	2.03	2.00	0.07	0.06	0.01	915.98	0.30
	1.00	Model Default Tier		Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01
	1.00	Model Default Tier		Concrete/Industrial Saws	0.33	3.66	2.53	0.12	0.12	0.01	592.67	0.03
		Model Default Tier		Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	Model Default Tier		Generator Sets	0.30	3.67	2.67	0.12	0.12	0.01	623.04	0.03
	1	Model Default Tier		Graders	0.37	1.68	4.51	0.15	0.13	0.01	640.75	0.21
		Model Default Tier		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	Model Default Tier		Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
		Model Default Tier		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	Model Default Tier		Pumps	0.32	3.72	2.70	0.13	0.13	0.01	623.04	0.03
		Model Default Tier		Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	Model Default Tier		Rough Terrain Forklifts	0.10	2.29	1.38	0.04	0.04	0.00	333.78	0.11
		Model Default Tier		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	Model Default Tier		Scrapers	1.56	12.17	16.22	0.64	0.59	0.03	2,939.65	0.95
	11	Model Default Tier		Signal Boards	0.29	1.51	1.80	0.07	0.07	0.00	246.57	0.03
		Model Default Tier		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	Model Default Tier		Tractors/Loaders/Backhoes	0.30	4.47	3.02	0.15	0.13	0.01	603.27	0.20
	1.00	Model Default Tier		Trenchers	0.34	2.59	3.21	0.22	0.20	0.00	327.19	0.11
	1.00	Model Default Tier		Welders	0.25	1.67	1.41	0.05	0.05	0.00	207.48	0.02
User-Defined Off-road Equipment				If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab								
	Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day		4.73	42.39	43.77	1.87	1.77	0.09	8,513.67	2.03
	Drainage/Utilities/Sub-Grade		tons per phase		0.29	2.61	2.70	0.12	0.11	0.01	524.44	0.12

Paving	Default	Mitigation Option	Default	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
	Number of Vehicles	Override of										
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)										
	Program-estimate	Equipment Tier			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Model Default Tier		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	Model Default Tier		Pavers	0.18	2.89	1.74	0.08	0.07	0.00	455.16	0.15
	1	Model Default Tier		Paving Equipment	0.16	2.57	1.50	0.07	0.07	0.00	394.47	0.13
		Model Default Tier		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	Model Default Tier		Rollers	0.44	5.55	4.57	0.24	0.22	0.01	762.44	0.25
		Model Default Tier		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	11	Model Default Tier		Signal Boards	0.63	3.31	3.95	0.15	0.15	0.01	542.45	0.06
		Model Default Tier		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	Model Default Tier		Tractors/Loaders/Backhoes	0.29	4.47	2.90	0.13	0.12	0.01	603.53	0.20
		Model Default Tier		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier		Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment												
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving		pounds per day		1.70	18.80	14.66	0.68	0.64	0.03	2,758.05	0.77
	Paving		tons per phase		0.04	0.50	0.39	0.02	0.02	0.00	72.81	0.02
Total Emissions all Phases (tons per construction period) =>					0.64	5.85	6.17	0.26	0.24	0.01	1,173.09	0.33

Data Entry Worksheet

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	766.45
0.00	0.00
0.01	1,516.49
0.00	0.00
0.00	0.00
0.01	647.76
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	513.69
0.00	0.00
0.00	0.00
0.01	612.10
0.03	2,971.94
0.00	247.82
0.00	0.00
0.00	0.00
0.00	0.00
0.01	609.64
0.00	0.00
0.00	0.00
<hr/>	
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
<hr/>	
0.07	7,885.90
0.00	555.17

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.66
0.01	925.87
0.00	50.77
0.00	594.72
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.10
0.01	647.66
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.14
0.00	0.00
0.00	337.38
0.00	0.00
0.00	0.00
0.03	2,971.33
0.00	247.82
0.00	0.00
0.00	0.00
0.00	0.00
0.01	609.76
0.00	330.71
0.00	208.55
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.07	8,586.11
0.00	528.90

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.07
0.00	398.72
0.00	0.00
0.00	0.00
0.00	0.00
0.01	770.65
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	545.21
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	610.03
0.00	0.00
0.00	0.00
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	2,784.68
0.00	73.52
0.01	1,184.34

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET