DOCKETED	
Docket Number:	24-OPT-04
Project Title:	Potentia-Viridi Battery Energy Storage System
TN #:	264361
Document Title:	Signed 401 Application
Description:	N/A
Filer:	Ronelle Candia
Organization:	Dudek
Submitter Role:	Applicant Consultant
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Docketed Date:	6/19/2025

Application: Discharges of Dredged or Fill Material to Waters of the State

The State Water Resource Control Board (State Board) or Regional Water Quality Control Boards (collectively, Water Boards) have the authority to regulate the discharge of dredged or fill material under section 401 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act (Porter-Cologne). Dischargers that obtain a federal permit or license that authorizes impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as section 404 of the CWA and section 10 of the Safe Rivers and Harbors Act, must obtain certification from the Water Boards to ensure that the discharge does not violate state water quality standards or any other appropriate requirement of State law. When a discharge is proposed to waters outside of federal jurisdiction, the Water Boards regulate the discharge under Porter-Cologne through the issuance of Waste Discharge Requirements (WDRs). CWA section 401 Water Quality Certifications, WDRs, and waivers of WDRs are referred to as orders or permits.

The State Wetland Definition and Procedures for the Regulation of Discharges of Dredged or Fill Material to Waters of the State (Procedures) and the California Code of Regulations, title 23, section 3856 identify items that are required for a complete application in all cases. Additionally, the Procedures identify items that may be required for a complete application on a case-by-case or conditional basis. The State Water Board webpage links to the Procedures (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf).

Water Board staff will review an application within 30 days of receipt and provide a completeness determination to the applicant. A completeness determination may include a request for additional information for a complete application. Application fees must be paid before an application is determined complete. See Application Section Thirteen for options on how to make a payment.

For more information on how applications will be processed, refer to the Implementation Guidance for the Procedures (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredge_fill/revised_guidance.pdf).

This application form outlines a broad range of items that may be required; however, as noted above, not all items are required in all cases. Use of this form is not required. Applicants may submit information that was submitted for a different federal or state permit to reduce duplicative submittals. In such cases, applicants should use the text boxes in this form to indicate the name, relevant section, and page number where relevant information is located. Finally, the level of detail submitted with this application should be commensurate with the size and the scope of the proposed discharge.

Applicants are encouraged to contact the appropriate Water Board to discuss the applicability of this application form, items required for a complete application, and/or the appropriate level of detail needed to obtain authorizations.

Applications for projects that cross regional board boundaries should be submitted to the State Board. All other applications should be submitted to the appropriate regional water quality control board.

A staff directory for the Water Board's Water Quality Certification Program is located on the program webpage (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wqc_staffdir.pdf).

STOP: If you answer 'yes' to any of the following questions, do not complete this application. Instead, please contact the State Water Board's Division of Water Rights to obtain a copy of their water quality certification application:

- Does the project require a Federal Energy Regulatory Commission (FERC) license or amendment to a FERC license?
- Does this project involve an appropriation of water?
- Does this project involve a diversion of water for domestic, irrigation, power, municipal, industrial, or other beneficial use?

Section One: Contact Information

Review **Section Twelve** Legally Responsible Person (LRP) eligibility and signature requirements before completing this application.

Applicant (Organization and Legally Responsible Person) Information	
Organization Name:	Levy Alameda, LLC
LRP Name:	Patrick Leitch
Title:	Chief Operating Officer
Street Address:	155 Wellington Street West, Suite 2930
City:	Toronto
State:	Ontario
County:	N/A, Canada
Zip Code:	M5V 3H1
Telephone:	310-899-5340
Email:	PLeitch@Capstoneinfra.com

The LRP may assign a Duly Authorized Representative (DAR) to make decisions on their behalf and provide application information. If a DAR is assigned to this project, provide the assigned person's contact information below and assign the DAR in Section Twelve.

Duly Authorized Representative Information (Optional)	
Organization Name:	Integral Consulting Inc.
DAR Name:	Naomi Schowalter
Title:	Consultant
Street Address:	433 Visitacion Ave
City:	Brisbane
State:	California
County:	San Mateo
Zip Code:	94005
Telephone:	619-647-7344
Email:	nschowalter@integral-corp.com

Section Two: Project Information

Project Name or Title: Project Name should match all other agency permits and correspondence Potentia-Viridi Battery Energy Storage System Project (PV-BESS)	
Project Street Address: Provide the project's physical location, not the mailing address 17257 Patterson Pass Road	
City:	Tracy
State:	California
County:	Alameda
Zip Code:	95377
Latitude:	37.712130
Longitude:	-121.573369
Assessor's Parcel Number(s):	99B-7890-2-4, 99B-7890-2-6, and 99B-7885-12
Section, Township, Range:	Section 31, T2S, R4E

Directions to the Project Site:

From Sacramento, California: Drive south on Interstate 5 to Lathrop, then westward on Highway 205 to Highway 580 (south). Take the Patterson Pass exit westward approximately 2.5 miles to the project site.

Project Purpose and Overall Goal of Entire Activity:

The purpose of the project is to construct, operate, and eventually repower or decommission a 400-megawatt battery energy storage system. The project would draw electricity from the power grid to charge and store electrical energy and discharge back to the power grid when the stored energy is needed. The project would provide several benefits to the power grid, including reducing the need to operate natural gas power plants to balance intermittent renewable generation and serving as an additional capacity resource that would enhance grid reliability.

Project Description: Provide a full, technically accurate description of the entire project.

See Attachment A (Supplemental Information).

Project Size: Total size of the entire project area for all work/activities/construction that will be performed to meet the final goal: 70 acres

Is this a linear project (for example a powerline, pipeline, highway, etc.)? Yes ☐ No ☒

If yes, indicate length of project from end-to-end in feet: feet

Anticipated Project Start and End Dates:

Construction Start Date: Q1 2026

Construction End Date: Q2 2028

Estimated Construction Duration: 18 months

Will any ground disturbance take place during the wet season months?

Yes ☒ No ☐

Additional Information: Additional information may include documentation relevant to pre-application consultations which may help inform application processing.

In addition to responding to the questions above, provide a project map with a scale of at least 1:24000 (1" = 2000') and of sufficient detail to show:

- The boundaries of the lands owned or to be utilized by the applicant in carrying out the proposed activity, including grading limits, proposed land uses, and the location, dimensions and type of any structures erected (if known) or to be erected.
- All aquatic resources that may qualify as waters of the state, within the boundaries of a project, and all aquatic resources that may qualify as waters of the state outside of the boundary of the project that could be impacted by the project.

A map verified by the Corps may satisfy this requirement if it includes all potential waters of the state.

Note that a map in electronic format (e.g., GIS shapefiles) may be required.

Section Three: Agency Contact Information

Attach copies of any final and signed federal, state, and local licenses, permits, and agreements (or copies of the draft documents or submitted application, if not finalized) associated with construction, operation, maintenance, or other actions relevant to the project. If a draft or final document is not available, a list of all remaining agency regulatory approvals being sought should be included. (CCR § 3856 (e).)

Federal Permit(s) or Completed Federal Applications

U.S. Army Corps of Engineers

☐ Not Applicable
District: ☐ ☒Sacramento ☐
☐ Individual Permit
☐ Letter of Permission
☒ Which Nationwide Permit Number has been applied for, if any? 7 and 14
For Nationwide Permits, select one of the following: ☐ Non-Reporting, or ☒ Reporting
☒ Corps File No. SPK-2024-00486
☐ Regional General Permit / Number
☐ Other Permit Name:

Corps Contact Information	
Name:	Matthew Di Loreto
Telephone:	916-557-7882
Email:	matthew.j.diloreto@usace.army.mil

U.S. Fish and Wildlife Service

☐ Not Applicable
☒ Biological Assessment
☐ Biological Opinion
☐ Incidental Take Permit

U.S. Fish and Wildlife Contact Information	
Name:	Sacramento Fish and Wildlife Office
Telephone:	916-414-6600
Email:	

National Marine Fisheries Service

☒ Not Applicable
☐ Biological Assessment
☐ Biological Opinion

National Marine Fisheries Service Contact Information
Name:
Telephone:
Email:

State Permit(s) or Completed State Application(s)

List permits for activities related to waters whether applied for or approved, e.g., California Department of Fish and Wildlife (CDFW) Lake or Streambed Alteration Agreement (Fish and Game Code sections 1600-1608), CESA section 2081 Incidental Take Permit, Construction Stormwater Enrollment, Coastal Development Permit, etc.

State or Local Permit Number	File Date	Tracking Number
☒ CDFW Lake and Streambed Alteration Agreement (Fish and Game Code section 1600)	Click or tap to enter a date.	
☒ CDFW Incidental Take Permit (Fish and Game Code section 2081)	Click or tap to enter a date.	
☐ CDFW Consistency Determination (Fish and Game Code section 2080)	Click or tap to enter a date.	
☒ State Water Board Construction Stormwater General Permit Enrollment	Click or tap to enter a date.	Order WQ 2022-0057-DWQ
☐ California Coastal Commission (Development Permit)	Click or tap to enter a date.	
☐ California Coastal Commission (Consistency Determination)	Click or tap to enter a date.	
☐ Bay Conservation and Development Commission (Development Permit)	Click or tap to enter a date.	
☐ Bay Conservation and Development Commission (Consistency Determination)	Click or tap to enter a date.	
☐ Central Valley Flood Protection Board	Click or tap to enter a date.	
☒ Other: California Energy Commission (CEC) Opt-In Certification Program	Click or tap to enter a date.	24-OPT-04

State or Local Agency Contact Information: Provide additional contacts, as needed	
Agency Name:	CEC
Contact Name:	Ann Crisp
Telephone:	916-352-0543
Email:	STEPsiting@energy.ca.gov

Agency Name:	
Contact Name:	
Telephone:	
Email:	

Section Four: Special Status Species

If known, provide information about the presence of species identified as rare, threatened, or endangered under state or federal law. Attach all biological assessments, surveys, formal consultation determination letters, and mitigation proposals, as applicable.

Are you aware of any rare, threatened, or endangered species at this site? Yes ☐ No ☐

Species Habitat and/or Name	Biological Assessment Prepared?	Survey Conducted? (Yes/No)	Dates Survey Conducted
California red-legged frog	**Yes** ☒ ☐	☒ **No** ☐	8/2/2023
California tiger salamander	**Yes** ☒ ☐	☐ **No** ☒	Click or tap to enter survey date.
San Joaquin kit fox	**Yes** ☒ ☐	☒ **No** ☐	5/16/2023, 8/2/2023, 1/18/2024

Was the project planned in accordance with an approved Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP)? Yes ☐ No ☒

If yes, list the HCP or NCCP name:

Section Five: California Environmental Quality Act and/or National Environmental Policy Act Compliance

Unless an exemption applies, the Water Boards must comply with the California Environmental Quality Act (CEQA). Although not required for a complete application, final CEQA documentation must be provided to the Water Board with ample time to properly review before an Order may be issued. (CCR § 3856 (f).)

The Water Boards will determine whether a project qualifies for a CEQA exemption during review of the project information. Identify below if applicable the relevant categorical or statutory exemption number you believe applies.

If you do not know whether a CEQA exemption applies to the proposed project, submit the application with as much information as possible.

Document Type	Status (In Preparation, Complete, or Under Revision)	Date Completed or Expected Completion Date
Scoping Document		Click or tap to enter a date.
Initial Study		Click or tap to enter a date.
Negative Declaration		Click or tap to enter a date.
Notice of Preparation		Click or tap to enter a date.

Mitigated Negative Declaration		Click or tap to enter a date.
Environmental Document	In Preparation	Click or tap to enter a date.

Does the project meet a statutory or categorical CEQA exemption?
No ☒ **Yes, proposed statutory exemption number:** **Yes, proposed categorical exemption number:**

Section Six: Aquatic Resource Information

Attach any aquatic resource delineation reports and maps for all aquatic resources that may qualify as waters of the state, including those outside of federal jurisdiction. Water Board staff will verify the presence or absence of waters of the state outside of federal jurisdiction during the application review process. (CCR § 3856 (h)(7).) The Water Boards may require supplemental field data from the wet season to substantiate dry season delineations (Procedures section IV.A.2.a).

Aquatic Resource Delineation Report Information	
Was an aquatic resource delineation report prepared? Yes ☐ **No** ☒	
Report Title:	N/A, a standalone delineation report was not prepared. Dudek biologists Mikaela Bissell and Erin Colton Fisher delineated Patterson Run.
Delineation Date(s):	1/18/2024
Name of Person who Prepared the Report:	
Title of Person who Prepared the Report:	
Organization/Company who Prepared the Report:	
Was the report verified by the U.S. Army Corps of Engineers? Yes ☐ **No** ☒ **If yes, enter verification date and submit a copy of the verification with this application:** Click or tap to enter a verification date.	
Are there waters outside of federal jurisdiction? **Yes** ☐ **No** ☒	

Receiving waters and groundwater potentially impacted by any project are protected in accordance with the applicable water quality control plans (https://www.waterboards.ca.gov/plans_policies/#plans) (Basin Plans) for the regions and other plans and policies (http://www.waterboards.ca.gov/plans_policies). If known, list impacted hydrologic unit(s) in the impacted Regional Water Quality Control Board's Basin Plan. The Basin Plans include water quality standards, which consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal antidegradation policies.

The Lahontan Regional Water Quality Control Board prohibits discharge to lands within the Walker, Carson, Lake Tahoe, Little Truckee, and Truckee River Hydrologic Basins unless specific prohibition exemption criteria are met. For projects in this region, in addition to this application, complete the applicable prohibition criteria form for projects discharging to the Lake Tahoe Hydrologic Basin (https://www.waterboards.ca.gov/lahontan/water_issues/programs/clean_water_act_401/docs/att3.doc) or the Little Truckee or Truckee River (https://www.waterboards.ca.gov/lahontan/water_issues/programs/clean_water_act_401/docs/att4.doc) Hydrologic Basins.

Hydrologic Information
Was the project developed in accordance with a watershed plan? Yes ☐ **No** ☒ **If yes, what is the name of the watershed plan name? Attach the plan, or a link to the plan, if feasible:**
How many waterbodies would be impacted by the project activity? One (1) If the project impacts more than one waterbody, attach the information below for each impacted waterbody; an excel spreadsheet or table may be used for projects with multiple impact sites.
Does the impacted waterbody have a name? Yes ☒ **No** ☐ **Name of the impacted waterbody; if unnamed, name of the nearest downstream named waterbody:** Patterson Run
Basin plan hydrologic unit(s), and if included in a basin plan, the hydrologic area and hydrologic subarea, if known: North Diablo Range Hydrologic Unit (Hydrologic Unit Number 543.00)

Does the proposed project do any of the following?	
Discharge to an Area of Special Biological Significance (ASBS), Marine Protected Area (MPA), or Outstanding National Resource Water (ONRW)?	**Yes** ☐ **No** ☒
Discharge to a waterbody listed as impaired on the Clean Water Act 303(d) list?	**Yes** ☐ **No** ☒
Discharge to a waterbody with a total maximum daily load (TMDL)?	**Yes** ☐ **No** ☒

Section Seven: Impact Quantities and Classification

List temporary and permanent **fill/excavation** impacts to waters of the state according the aquatic resource type in the tables below. Round acres to at least the hundredth place (0.01); round cubic yards and linear feet to the nearest whole number.

Fill/Excavation Temporary Impacts

Lake/Reservoir

Acres	
Cubic Yards	
Linear Feet	

Stream Channel

Acres	0
Cubic Yards	0
Linear Feet	0

Ocean/Bay/Estuary

Acres	
Cubic Yards	
Linear Feet	

Vernal Pool

Acres	
Cubic Yards	
Linear Feet	

Riparian Zone

Acres	
Cubic Yards	
Linear Feet	

Wetland

Acres	
Cubic Yards	
Linear Feet	

Classification System Name (if known):
Classification(s):

Fill/Excavation Permanent Impacts

Lake/Reservoir

Acres	
Cubic Yards	
Linear Feet	

Stream Channel

Acres	~0.04
Cubic Yards	~34 cy excavation and 55 cy fill
Linear Feet	~38

Ocean/Bay/Estuary

Acres	
Cubic Yards	
Linear Feet	

Vernal Pool

Acres	
Cubic Yards	
Linear Feet	

Riparian Zone

Acres	
Cubic Yards	
Linear Feet	

Wetland

Acres	
Cubic Yards	
Linear Feet	

Classification System Name (if known):
Classification(s):

List temporary and permanent **dredge/extraction** impacts to waters of the state according the aquatic resource type in the tables below. Round acres to at least the hundredth place (0.01); round cubic yards and linear feet to the nearest whole number.

Dredge/Extraction Temporary Impacts

Lake/Reservoir

Acres	
Cubic Yards	
Linear Feet	

Stream Channel

Acres	0
Cubic Yards	0
Linear Feet	0

Ocean/Bay/Estuary

Acres	
Cubic Yards	
Linear Feet	

Vernal Pool

Acres	
Cubic Yards	
Linear Feet	

Riparian Zone

Acres	
Cubic Yards	
Linear Feet	

Wetland

Acres	
Cubic Yards	
Linear Feet	

Classification System Name (if known):
Classification(s):

Dredge/Extraction Permanent Impacts

Lake/Reservoir

Acres	
Cubic Yards	
Linear Feet	

Stream Channel

Acres	0
Cubic Yards	0
Linear Feet	0

Ocean/Bay/Estuary

Acres	
Cubic Yards	
Linear Feet	

Vernal Pool

Acres	
Cubic Yards	
Linear Feet	

Riparian Zone

Acres	
Cubic Yards	
Linear Feet	

Wetland

Acres	
Cubic Yards	
Linear Feet	

Classification System Name (if known):
Classification(s):

Additional Direct and Indirect Impact Information

Direct Impact Description: Describe the nature and extent of temporary and permanent impacts to waters of the state. Attach map(s) that clearly depict the anticipated area of direct impact.

Permanent impacts to Patterson Run will result from improvements to an existing stormwater outfall and the installation of a ford (i.e., low-water crossing). The stormwater outfall improvements will impact approximately 80 square feet and 8 linear feet of Patterson Run for the excavation of approximately 16 cubic yards of material and placement of approximately 3 cubic yards of native fill and 5 cubic yards of riprap below top of bank. The ford will impact approximately 1,600 square feet and 30 linear feet of Patterson Run for the excavation of approximately 18 cubic yards of material and placement of approximately 17 cubic yards of imported fill and 30 cubic yards of riprap below top of bank.

Indirect Impact Description: Indirect impacts could be those that are reasonably foreseeable outside of the direct impact area, or that occur later in time, that may have an adverse effect on water quality. Examples of indirect impacts could include fluctuating or disturbed water levels, climate change adaptation, and disturbed habitat connectivity corridors.

Describe potential impacts to water quality from the project discharge. For example, describe increased turbidity, settleable matter, or other pollutants that may affect beneficial uses associated with the proposed project area. Attach map(s) that clearly depict the anticipated area of indirect impact, as feasible.

Indirect impacts to waters of the State may include changes to erosion and sedimentation patterns around the outfall and ford locations due to increased surface roughness and altered channel dimensions; increased turbidity due to ground disturbance associated with the overall project; and increased risk of pollutants reaching Patterson Run due to the ford installation and vehicle/equipment use for project construction and operation. Indirect impacts associated with erosion and pollutants would be minimized with the implementation of various best management practices.

Cumulative Impacts: Provide a brief list/description, including estimated adverse impacts, of any projects implemented by the applicant within the last five years or planned for implementation by the applicant within the next five years that are in any way related to the proposed activity or that may impact the same receiving water body(ies) as the proposed activity. For purposes of this item, the water body extends to a named source or stream segment identified in the relevant Basin Plan. (CCR § 3856(h)(8).)

There are no known cumulative impacts.

Depending on the quantity of new or replaced impervious surface area resulting from the project, a post-construction stormwater control plan and/or an operations and maintenance plan may be required to mitigate potential post-construction stormwater impacts. The plan may include drainage maps, detailed designs for Low Impact Development or other post-construction stormwater treatment and control measures, and design calculations. Contact Water Board staff for specific criteria.

Does the proposed project create or replace impervious surface? Yes ☒ No ☐

If yes, provide the total impervious surface area created or replaced in square feet:	508,791 square feet

Section Eight: Avoidance and Minimization Measures

Applicants must describe actions that have been taken (or will be taken) to avoid and minimize impacts to waters of the state (Procedures section IV.B.a.). Unless an exemption applies, an applicant must submit an alternatives analysis to demonstrate that the propose project is the least environmentally damaging practicable alternative (LEDPA; Procedures section IV.A.1.h. and IV.B.). In cases where the Corps requires an alternatives analysis, the Water Boards will defer to the Corps' determination except in certain circumstances. For guidance on how to prepare an alternatives analysis or to determine if an exemption may apply, reference the Procedures Implementation Guidance (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredge_fill/revised_guidance.pdf).

Alternatives Analysis

Has an alternatives analysis been prepared? Yes ☒ No ☐

See Attachment A (Supplemental Information).

Does the U.S. Army Corps of Engineers require an alternatives analysis for this project?

Yes ☐ No ☒

If yes, submit alternatives analysis documentation consistent with that provided to the Corps.

If an alternatives analysis is not provided, indicate which Procedures section IV.A.1.g exemption applies and include any relevant supporting information, if needed (e.g., watershed plan, relevant permit number, etc.):

Check which Procedures section IV.A.1.h alternatives analysis tier applies to the project:

Water Board staff will evaluate the project information to verify the appropriate alternatives analysis tier:

Tier 1 ☒ **Tier 2 ☐** **Tier 3 ☐**

Avoidance and Minimization Measures

Describe the efforts to avoid and minimize direct impacts to waters of the state including actions/BMPs to be implemented during construction to avoid and minimize impacts including, but

not limited to, preservation of habitats, erosion control measures, project scheduling, flow diversions, etc.

A description may include actions or methods proposed for erosion control, including winterization strategies to stabilize bare soils and revegetation proposals. A map may be included to indicate the approximate location and area of soil, land, and vegetation disturbance, and proposed erosion and sediment control best management practices.

Reference the Procedures' state supplemental Dredge or Fill Guidelines, subpart H for potential actions to minimize adverse impacts to waters of the state.

Direct Impact Avoidance and Minimization:

See Attachment A (Supplemental Information).

Indirect Impact Avoidance and Minimization:

See Attachment A (Supplemental Information).

Water Quality Monitoring, Diversions and Dewatering

Does the proposed project include any dewatering, work in standing or flowing water, and/or constructing diversions of water?

Yes ☐ **No** ☒

If yes, a water quality monitoring plan to monitor compliance with water quality objectives of the applicable water quality control plan may be required.

Describe the water diversion and dewatering plan, or indicate where information is located within an attachment (Procedures section IV.A.2.c):
If there are proposed discharges of water to surface waters, include receiving water body name, estimated volume, flow rates and proposed management measures; if there are discharges to detention ponds or upland treatment facilities (such as temporary settling basins, filters bags, storage and/or treatment containers, etc.) then include their location and indicate if detention pond or treatment facility is on-site or off-site; if there are stream-channel diversions, include estimated flow rates, diversion system capacity, location, including upstream diversion points and downstream discharge point, and a diversion plan that provides measures to prevent erosion and turbidity, maintain fish passage, etc.

Section Nine: Ecological Restoration and Enhancement Projects (EREPs)

Is this application for a project that meets the definition of an Ecological Restoration and Enhancement Project (Procedures section V)?

Yes ☐ **No** ☒

Applications for Ecological Restoration and Enhancement Projects require an assessment plan with the following information (Procedures section IV.A.2.e):

☐ Project objectives
☐ Description of performance standards used to evaluate attainment of objectives
☐ Protocols for condition assessment
☐ The timeframe and responsible party for performing condition assessment
☐ Assessment schedule
☐ A draft restoration plan for restoring temporarily impacted areas to pre-project conditions, if a draft restoration plan is not provided as part of a binding stream or wetland enhancement or restoration agreement

Section Ten: Restoration of Temporary Impacts

If temporary impacts are proposed, applicants are required to submit a draft restoration plan for a complete application. Temporary impact restoration includes activities that are undertaken to restore the temporarily impacted area to pre-project conditions. A draft restoration plan should outline design, implementation, assessment, and maintenance activities. When active restoration is proposed, components of a draft restoration plan should include project objectives, plans for grading impacted areas to pre-project contours, a planting palette with plant species native to the area, seed collection locations, an invasive species management plan. Maintenance and assessment components of a draft restoration plan often includes performance measures, performance standard descriptions, attainment objectives, and timing proposed to reach attainment objectives. When passive restoration is proposed, a draft restoration plan should include an explanation of how passive restoration will restore the area to pre-project conditions, assessment components, and an estimated date for expected restoration.

If the draft restoration plan is part of a larger document, identify the specific section and page number where the requested information may be found in the attached document in the text box provided. If restoration of temporary impacts will occur through natural ecological processes, provide that information in the text box below.

Restoration Plan
Is a restoration plan attached? Yes ☐ No ☒
Describe the restoration plan and/or indicate where information is located within an attachment:

Section Eleven: Compensatory Mitigation

Compensatory mitigation means the restoration, establishment, enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved (Procedures Appendix A, Subpart J § 230.92). **When compensatory mitigation is required, a draft compensatory mitigation plan is required for a complete application.**

Proposed Compensatory Mitigation

Complete this table for each aquatic resource type proposed as compensatory mitigation; if more than two aquatic resource types will be provided, attach additional tables to your application.

Proposed Compensatory Mitigation Type, Choose one of the following:

☐ **Mitigation Bank** ☐ **In-Lieu Fee Program** ☒ **Permittee Responsible**

Mitigation Aquatic Resource Type. Choose one of the following aquatic resource type(s):

☐ **Lake/Reservoir** ☐ **Ocean/Bay/Estuary** ☐ **Riparian Zone**

☒ **Stream Channel** ☐ **Vernal Pool** ☐ **Wetlands**

Mitigation Method and Quantity for the Selected Mitigation and Resource Type:

Unit	Establishment	Re-establishment	Rehabilitation	Enhancement	Preservation	Unknown
Acres					0.12	
Linear Feet						

Proposed Compensatory Mitigation

Complete this table for each aquatic resource type to be provided as compensatory mitigation; if more than two aquatic resource types will be provided attach additional tables to your application.		
Proposed Compensatory Mitigation Type. Choose one of the following:		
☐ **Mitigation Bank**	☐ **In-Lieu Fee Program**	☐ **Permittee Responsible**
Mitigation Aquatic Resource Type. Choose one of the following aquatic resource type(s):		
☐ **Lake/Reservoir**	☐ **Ocean/Bay/Estuary**	☐ **Riparian Zone**
☐ **Stream Channel**	☐ **Vernal Pool**	☐ **Wetlands**

Mitigation Method and Quantity for the Selected Mitigation and Resource Type:

Unit	Establishment	Re-establishment	Rehabilitation	Enhancement	Preservation	Unknown
Acres						
Linear Feet						

Draft Compensatory Mitigation Plan

Using a watershed approach, a draft compensatory mitigation plan should be provided and be consistent with the requirements listed in Procedures Appendix A, Subpart J, and contain the items listed in section IV.A.2.b of the Procedures.

For mitigation bank or in-lieu fee program proposals, only the first three items below are required (i, ii, and iii). For permittee responsible mitigation, items one through seven are required. Item eight (climate change assessment) is required on a case-by-case basis; you may contact Water Board staff to determine if a climate change assessment will be required for your proposed mitigation project.

Indicate the attached document name and page number where each draft compensatory mitigation plan item may be found: See Attachment A, Supplemental Information.

i. A watershed profile for the project evaluation area for both the project activity and the proposed compensatory mitigation location (section IV.A.2.b.i).

document name and page number

ii. An assessment of the overall condition of aquatic resources proposed to be impacted by the project and their likely stressors, using an assessment method approved by the Water Boards (section IV.A.2.b.ii).

document name and page number

iii. A description of how the project impacts and compensatory mitigation would not cause a net loss of the overall abundance, diversity, and condition of aquatic resources, based on the watershed profile. If the compensatory mitigation is located in the same watershed as the project, no net loss will be determined on a watershed basis. If the compensatory mitigation and project impacts are located in multiple watersheds, no net loss will be determined considering all affected watershed collectively. The level of detail in the plan shall be sufficient to accurately evaluate whether compensatory mitigation offsets the adverse impacts attributed to the project (section IV.A.2.b.iii).

document name and page number

iv. Preliminary information about ecological performance standards, monitoring, and long-term protection and management, as described in the state supplemental dredge or fill guidelines (section IV.A.2.b.iv).

document name and page number

v. A timetable for implementing the compensatory mitigation plan (section IV.A.2.b.v.) **document name and page number**
vi. If the compensatory mitigation plan includes buffers, design criteria and monitoring requirements for those buffers (section IV.A.2.b.vi). **document name and page number**
vii. If compensatory mitigation involves restoration or establishment as the form of mitigation, applicants shall notify, as applicable, state and federal land management agencies, airport land use commission, fore control districts, flood control districts, local mosquito-vector control district(s), and any other interested local entities prior to initial site selection. These entities should be notified as early as possible during the initial compensatory mitigation project design stage (section IV.A.2.b.vii). (Applicants are not required to submit documentation for this requirement.)
viii. If applicable, an assessment of reasonably foreseeable impacts to the compensatory mitigation associated with climate change, and any measures to avoid or minimize those potential impacts (section IV.A.2.b.viii). **document name and page number**

Compensatory Mitigation Contact Information
Name of Mitigation Bank or In-Lieu Fee Program:
Service Area:
Contact Name:
Contact Phone:
Contact Email:
Mitigation Location County:
Mitigation Site Latitude:
Mitigation Site Longitude:

Section Twelve: Legally Responsible Person Attestation and Optional Duly Authorized Representative Assignment

The attestation below must be signed by the Legally Responsible Person (LRP).

1) **LRP eligibility is as follows:**
   a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
      i. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function; or
      ii. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
   c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. This includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of the U.S. EPA).

Legally Responsible Person Attestation

I certify under penalty of law that this application and all attachments were prepared under my direction or supervision in accordance with a process designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Patrick Leitch

DocuSigned by:

X 63EEC8FAADC44AC...

Legally Responsible Person's Signature

2) **DAR assignment is as follows (optional):**
   a. The authorization shall specify that a person designated as a DAR has responsibility for the overall operation of the regulated facility or activity, such as a person that is a manager, operator, superintendent, or another position of equivalent responsibility, or is an individual who has overall responsibility for environmental matters for the company.

Optional Duly Authorized Representative (DAR) Assignment

I hereby authorize Naomi Schowalter to act on my behalf as the DAR in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.

Patrick Leitch

DocuSigned by:

X 63EEC8FAADC44AC...

Legally Responsible Person's Signature

Section Thirteen: Fee Information

Fee amounts are determined according to the Cal. Code Regs., tit. 23, § 2200(a)(2) fee schedule (https://govt.westlaw.com/calregs/Document/IEEE14760D45A11DEA95CA4428EC25FA0?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.DefaDef) and are subject to change.

Submit the Application Fee based on the activity type and according to the appropriate fee category. Application fees are required to determine an application complete. Additional Project and/or Annual Fees may be imposed upon application review.

An excel fee calculator (https://www.waterboards.ca.gov/resources/fees/water_quality/docs/dredgefillcalculator.xlsm) may be used to estimate fees for budgeting purposes only.

Fees may be paid online or by check. Information on how to make an online payment is available at the State Water Board's webpage (https://www.waterboards.ca.gov/make_a_payment/). If fees are paid online prior to application submission, attach payment receipt to this application. Make checks, money orders, and cashier checks payable to the State Water Resources Control Board. Mailed payments should be attached to the application and remitted to the appropriate Water Board. See the Staff Directory (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wqc_staffdir.pdf) for a list of State and Regional Water Board addresses.

Table for Internal Use Only	
Date Received	**Reg Measure ID**
WDID No.	**ECM Handle**
Check No.	**Check Amount**
Place ID	

Potentia-Viridi Battery Energy Storage System (BESS) Project

Attachment A. Section 401 Water Quality Certification (WQC) Application Supplemental Information

Prepared for

Levy Alameda, LLC
c/o Capstone Infrastructure Corporation
155 Wellington Street West, Suite 2930
Toronto, Ontario M5V 3H1, Canada

Prepared by

integral consulting inc.
433 Visitacion Avenue
Brisbane, CA 94005

June 2025

CONTENTS

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

AC	Alternating Current
AMM	Avoidance and Minimization Measure
APE	Area of Potential Effect
BESS	Battery Energy Storage System
BMP	Best Management Practice
BMS	Battery Management System
BRA	Biological Resources Assessment
CWA	Clean Water Act
DC	Direct Current
DESCP	drainage, erosion, and sediment control plan
DPS	Distinct Population Segment
EACCS	Eastern Alameda County Conservation Strategy
ESA	Endangered Species Act
HVAC	Heating, Ventilation, and Air Conditioning
kV	KiloVolt
LFP	lithium iron phosphate
LID	low impact development
MV	Megawatt
NEMA	National Electrical Manufacturers Association
OWHM	ordinary high water mark
PCS	Power Conversion System
PG&E	Pacific Gas and Electric
SWPPP	Storm Water Pollution Prevention Plan
USFWS	U.S. Fish and Wildlife Service

1 PROJECT DESCRIPTION (SECTION 2)

The Potentia-Viridi Battery Energy Storage System (BESS) Project (Project) proposes to construct, operate, and eventually repower or decommission a 400-megawatt (MW) BESS on approximately 85 acres in eastern Alameda County (Appendix A, Figure 1). The primary components of the Project include an up to 3,200-megawatt-hour (MWh) BESS facility, an operations and maintenance (O&M) building, a project substation, a 500 kilovolt (kV) overhead intertie transmission (gen-tie) line, and interconnection facilities within the Pacific Gas and Electric (PG&E) owned and operated Tesla Substation (Appendix A, Figures 2).

The Project would draw electricity from the power grid to charge and store electrical energy and discharge back to the power grid when the stored energy is needed. The Project would provide several benefits to the power grid, including reducing the need to operate natural gas power plants to balance intermittent renewable generation and serving as an additional capacity resource that would enhance grid reliability.

The Project would be remotely operated and monitored year-round and be available to receive or deliver energy 24 hours a day and 365 days a year. During the operational life of the Project, qualified technicians would routinely inspect the Project facilities and conduct necessary maintenance to ensure reliable and safe operational readiness.

The Project is in unincorporated Alameda County, California, within a portion of Assessor Parcel Number (APN) 99B-7890-2-4, located at 17257 Patterson Pass Road, southwest of Interstate 580 and Interstate 205. Development of the BESS facility would occur on about 70 acres of APN 99B-7890-002-04, which is currently comprised of fallowed annual grasslands suitable for grazing. The gen-tie line would extend southeast from the Project substation, crossing Patterson Pass Road and then proceeding east to the Point of Interconnection (POI) at the Tesla Substation. The Project's gen-tie line would be sited on APNs 99B-7890-2-4, 99B-7890-2-6, and 99B-7885-12. Land uses in the immediate vicinity of the Project include undeveloped rural agricultural lands, multiple high-voltage transmission lines and electrical substations, rural roads, and railroad lines. The nearest municipality to the Project site is the City of Tracy approximately 2.5 miles to the northeast. There are a few single-family residences near the Tesla Substation's southern and eastern boundaries. The nearest residence is about 1,500 feet southeast of the Project site and 560 feet south of the proposed gen-tie line; it is owned by the same landowner leasing the lands for the Project.

The Project location was selected due to it being large enough to support development of the Project, its close proximity to existing electrical infrastructure and the Tesla Substation, thereby minimizing length of the proposed gen-tie line to the POI, and because it is located immediately adjacent to existing roadways for construction and O&M access.

The BESS Facility would total 57.7 acres and include the following components:

- BESS Enclosures
- Power Conversion Systems (PCS)
- Medium voltage Collection System
- Project Substation, Control Building, and Telecommunications Facilities
- Access Roads
- Laydown Yards
- Stormwater Facilities and Outfall
- Site Security and Fencing, including fire detection system
- Operations and Maintenance Building

The transmission and interconnection facilities would total 1.9 acres. Construction of these facilities would require 6.7 acres of temporary disturbance for tension and pulling sites.

The Project includes two components that will require Clean Water Act (CWA) authorization: improvements to an existing stormwater culvert and outfall that discharges to a jurisdictional water of the United States (Patterson Run), and the construction of a permanent ford (i.e., low-water crossing) across the same feature. A delineation map is provided in Appendix A, Figure 3, and an OHWM [ordinary high water mark] Data Sheet is provided in Appendix B.

The following description of the proposed project components is provided to allow the RWQCB to have a comprehensive understanding of the Project; proposed discharges to jurisdictional waters are included in the descriptions of "Access Roads" and "Stormwater Facilities and Outfall." Project plans are provided in Appendix C, and site photos are provided in Appendix D.

Battery Energy Storage System

The energy storage facility would utilize a modular and containerized BESS. There are several battery cell technologies commercially available, with one of the most common at present being lithium iron phosphate (LFP) cells (often colloquially referred to as 'lithium-ion'). LFP technology is considered one of the safest, most efficient, and commercially financeable energy storage technologies available on the market. The initial Project concept has been developed assuming an LFP technology.

The BESS enclosures would be prefabricated off-site and arrive at the site ready to be installed and commissioned. Each modular BESS enclosure would include battery packs on racks, a battery management system (BMS), fire protection, and ancillary power electronics within a specialized steel-framed, non-occupiable container. The BESS enclosures would not exceed approximately 15 feet in height. The BESS enclosures may also have a heating, ventilation, and air conditioning (HVAC) system for optimal performance and safety. Power for the HVAC system, lighting, and other electrical systems would be provided through separate auxiliary power connection to the on-site project substation with connection lines installed above and/or below ground.

Power Conversion System

A PCS is a packaged and integrated system consisting of a bi-directional inverter, medium voltage transformers, protection equipment, direct current (DC) and alternating current (AC) circuit breakers, harmonic filters, equipment terminals, and a connection cabling system. A PCS functions to both convert between DC/AC and change the voltage level from the MV collection voltage to the voltage output of the BESS enclosures.

The PCS would convert electric energy from AC to DC when the energy is transferred from the grid to the battery, and from DC to AC when the energy is transferred from the battery to the grid. Each PCS would also include transformers that convert the AC side output of the inverter between low and medium AC voltage to increase the overall efficiency of the BESS. Inverters within the PCS units would be unattended systems designed to operate in all conditions. The inverters would be monitored and controlled remotely, and there would be on-site disconnects for use in case of an emergency or a situation requiring unscheduled maintenance.

PCS units would be installed on concrete foundations and connected to multiple BESS enclosures with wiring and cables installed underground. All outside electrical equipment would be housed in the appropriate National Electrical Manufacturers Association (NEMA) rated enclosures.

Medium Voltage Collection System

The medium voltage collection system would include multiple components that connect the PCS units to the project substation, including underground conductor circuits, switchboards, switchgear, and panels at 34.5kV voltage. The conductors for the MV collection system would be installed underground during construction using trenching.

Project Substation

The project substation would include three main power transformers (MPTs) – two active and a live spare. When the BESS facility is charging, power from the regional electric transmission

grid would be stepped down from 500kV to 34.5kV and sent from the project substation through the MV collection system and PCS units into the battery packs within the BESS enclosures. When the BESS facility is discharging, power from the battery packs within the BESS enclosures would be sent to the PCS units, stepped up to 34.5kV, and transported to the project substation through the MV collection system before being stepped up to 500kV at the MPTs and delivered back to the regional electric transmission grid. A prefabricated control building would be installed within the project substation area and contain an energy management system, metering and telecommunication equipment for communication with PG&E/CAISO facilities and to support remote Project operations monitoring. The project substation area would also include five static masts for lightning protection and a wireless communication tower mounted with an antenna up to 15 feet in diameter for external telecommunications.

Access Roads

The Project's roadway system would include two new facility access roads and driveways, a perimeter road, internal access roads, and a gen-tie access road. One of the new site access roads and driveways would be constructed from an existing private road near the northeastern portion of the site, and the other would be constructed from Patterson Pass Road near the southwestern portion of the site. A project substation access road would be constructed outside of the perimeter fence, connecting the northeast and southwest driveways, to facilitate substation access by third parties during operations. The gen-tie access road would provide access from Patterson Pass Road to the PG&E Tesla Substation, within the transmission corridor. All new access roads, driveways, internal and perimeter roads would be bladed, compacted, and surfaced with aggregate. All internal roadways and private driveways would be constructed to meet access requirements for construction, O&M, and emergency response requirements.

The gen-tie access road would require construction of a ford (i.e., low-water crossing) across Patterson Run, a water of the United States. This will require excavation and grading of the bed and banks followed by placement of approximately 17 cubic yards of imported fill and 30 cubic yards of riprap to accommodate the maintenance vehicle crossing.

Laydown Yards

The Project would include up to 4 laydown yards for equipment and material staging and storage during construction. These areas would also be used for worker parking during construction. The primary laydown yard would be located directly adjacent to the project substation area. The primary laydown yard would be bladed, compacted, and surfaced with aggregate, while additional laydown yards would be cleared of vegetation and surfaced with aggregate or other soil stabilizing materials. Portions of additional laydown yards may also be graded, if necessary. Landscape fabric may also be installed under the surface of all laydown

yards to prevent vegetation growth, if required to comply with fire prevention standards. The O&M building, and required parking spaces for O&M staff, would be constructed within the primary laydown following construction of the BESS facility components.

Stormwater Facilities

The proposed BESS facility site currently consists of annual grassland with rolling topography. Regulatory standards require that volumes and flow rates of stormwater discharge after construction not exceed pre-development conditions. Stormwater generated on-site would flow to stormwater detention basins located along the periphery of the BESS facility site. Stormwater treatment and storage sizing would be designed to hold the anticipated runoff from a 100-year, 24-hour storm event in compliance with applicable regulations. In the event stormwater basins reach capacity, stormwater would be discharged from the detention basins via storm drainpipes and sheet flow at rates no greater than pre-development conditions following natural drainage patterns.

A stormwater drainage outfall utilizing a new 15-inch corrugated metal pipe would be constructed from a detention basin located in the southwest portion of the site to the inlet of an existing culvert on the north side of Patterson Pass Road. This existing culvert carries storm water from the north side of Patterson Road to the south side where it discharges to Patterson Run. To accommodate additional stormwater runoff and to bring the existing culvert into compliance with current code, the existing outfall would be excavated followed by placement of approximately 3 cubic yards of native fill and 5 cubic yards of riprap to stabilize the existing slope and provide for energy dissipation.

Site Security

The BESS facility site would be enclosed with an 8-foot-tall chain link fence topped with 1 foot of three-strand barbed wire or razor wire. The fence would be installed on the outside of the perimeter road. An additional fence with the same specifications would be installed around the project substation area. The fences would be required to prevent unauthorized access and to comply with human health and safety regulations. Gates would be installed at various access points along the fence lines and equipped with lock boxes to allow for authorized personnel (e.g., transmission service provider, O&M staff, emergency response) to access appropriate portions of the BESS facility site.

Lighting would only be in areas where it is required for safety, security, or operations. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties, compliant with applicable codes and regulations. Security cameras would be placed on site and monitored 24/7.

Fire Protection System

Fire protection would include multiple fire detection systems on-site and within the individual BESS enclosures. An infrared camera system would be installed throughout the BESS facility to over 100% of electrical infrastructure and trigger an alarm in case of an onsite fire. Each BESS enclosure would have a fire rating in conformance with the California Fire Code 2022. In addition, each BESS enclosure would contain an onboard monitoring system to track the state of individual battery cells and relay information 24/7. In the event of an anomaly, the system is designed to shut down and mitigate the hazard.

The Project's fire protection design would comply with California Fire Code 2022, Section 1207 Electrical Energy Storage Systems, which adopts the National Fire Protection Association's Standard for the Installation of Stationary Energy Storage Systems (NFPA 855). BESS enclosures would be Underwriters Laboratories (UL) listed, tested, and certified to the most rigorous international safety standards. UL independently tests equipment for compliance with the latest fire safety code requirements, and the methods were developed to minimize fire risk and safety concerns about battery storage equipment raised by fire departments and building officials in the United States.

Faults, mechanical damage, or manufacturing defects in lithium-ion batteries can cause thermal runaway, which can lead to fires or other hazards. Should a thermal runaway event occur, the BESS enclosures are designed and constructed in such a way that fire would not propagate from one enclosure to a neighboring enclosure. The Project's BESS enclosures, as part of the testing and listing process, would be subjected to destructive testing including fire testing. The Project's BESS enclosures would include the following UL certifications:

- UL 1642 – Standard for Lithium Batteries (cell level certification).
- UL 1973 – Standard for Batteries for Use in Stationary Applications (module level certification).
- UL 9540 – Standard for Energy Storage Systems and Equipment (system level certification).
- UL 9540A – Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems.
- IEC 62619 – Standard for Battery Safety in Stationary Applications.

The Alameda County Fire District would review and comment on the facility fire protection and suppression plans.

Operations and Maintenance Building

Following construction of the BESS facility, an O&M building would be constructed within the primary laydown yard for the Project's anticipated three full-time operations staff. The O&M building would include parking, outside equipment and laydown areas, basic offices, meeting rooms, washroom facilities and climate-controlled storage for certain equipment and materials. A potable water storage tank would provide water for washroom and sanitary facilities, and sewage/wastewater would be collected in a separate tank. Potable water would be trucked to the water storage tank periodically during O&M, and sewage/wastewater would be pumped from the storage tank, transported offsite via truck, and disposed of at a sanitary dump station, as needed, during operations. The O&M building would be powered via a distribution line from the project substation.

2 AVOIDANCE AND MINIMIZATION MEASURES (SECTION 8)

This section fulfills the alternatives analysis requirement for Tier 1 projects under the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State." The Project would directly impact less than 0.1 acre and 100 linear feet of waters of the State. The following steps would be taken to avoid and minimize loss of, or significant adverse impacts to, beneficial uses of waters of the State.

- A Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented, requiring implementation of Best Management Practices (BMPs) to control stormwater run-on and runoff from construction work sites. BMPs may include, but may not be limited to, physical barriers to prevent erosion and sedimentation, construction of stormwater detention basins to control runoff and reduce potential sedimentation, limitations on work periods during storm events, and protection of stockpiled materials, which would substantially reduce or prevent erosion from occurring during construction.

- A drainage, erosion, and sediment control plan (DESCP) would be implemented to reduce the impact of run-off during construction, operation, maintenance, and decommissioning. Erosion control facilities to be shown on the final grading plan would control and contain erosion-induced silt deposits and provide for the safe discharge of silt free stormwater into existing and proposed storm drain facilities after rough grading has been completed. These erosion control facilities would be operable prior to October 1st of any year grading operations have resulted in areas unprotected from erosion. All erosion control measures would be maintained until disturbed areas are stabilized. Grading would be completed in conformance with the Alameda County Grading Ordinance unless otherwise approved and in compliance with the Project-specific geotechnical report. BMPs required by the Project-specific SWPPP and DESCP would be properly implemented and maintained to control water quality of stormwater runoff. Implementation of the Project-specific SWPPP and DESCP would minimize potential for sedimentation of downstream water bodies.

- Appropriate spill containment and cleanup kits would be maintained during operation of the Project. A spill prevention control and countermeasures plan would be developed for site construction, operations, and decommissioning. In addition, a hazardous materials business plan would be prepared, which would include all hazardous materials used or stored on site exceeding threshold volumes and appropriate procedures to be implemented in the event of an accidental spill.

- The Project would include stormwater detention and low impact development (LID) features, constructed in compliance with the Stormwater Technical Guidance Manual, to minimize off-site stormwater runoff velocities and minimize off-site water quality

impacts. Preliminary LID calculations are conservatively based on 10% of the total impervious area. The Stormwater Technical Guidance Manual requires a 4% method, which is based on rainfall and soil infiltration rates. Post-construction runoff rate would be 5 cubic feet per second, resulting in no requirements for a separate stormwater runoff detention plan (per the Stormwater Technical Guidance Manual). The LID features would consist of bioretention basins consisting of permeable gravel with a perforated underdrain pipe, overlain by a permeable bioretention soil mix. A riser outlet structure would allow for overflow of excessive stormwater flows. Ten stormwater outlets would be constructed around the perimeter of the facility. These outlets would include riprap to further reduce (in addition to the bioretention basins) off-site stormwater flow velocities. Stormwater treatment and storage sizing would be designed to hold the anticipated runoff from a 24-hour, 25-year storm event and a 24-hour, 100-year storm event, in compliance with Stormwater Technical Guidance Manual regulations. In the event stormwater basins reach capacity, stormwater would be discharged from the detention basins via storm drainpipes and sheet flow at rates no greater than pre-development conditions following natural drainage patterns. Minimal off-site stormwater flow velocities would prevent off-site erosive scour of sediments, which in turn would prevent siltation of downstream water bodies, off-site flooding, and off-site exceedance of stormwater drainage facilities.

Additionally, the following measures have been adopted from the Eastern Alameda County Conservation Strategy (EACCS). Note that mitigation outlined in EACCS is expected to be required by U.S. Fish and Wildlife Service (USFWS) and is expected to include wetlands and/or waters to offset impacts to aquatic features.

General

- GEN - 01 Employees and contractors performing construction activities will receive environmental sensitivity training. Training will include review of environmental laws and Avoidance and Minimization Measures (AMMs) that must be followed by all personnel to reduce or avoid effects on covered species during construction activities.

- GEN - 02 Environmental tailboard trainings will take place on an as needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects to these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen will be responsible for ensuring that crewmembers comply with the guidelines.

- GEN - 03 Contracts with contractors, construction management firms, and subcontractors will obligate all contractors to comply with these requirements, AMMs.

- GEN - 04 The following will not be allowed at or near work sites for covered activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets (except for safety in remote locations).
- GEN - 05 Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- GEN - 06 Off-road vehicle travel will be minimized.
- GEN - 07 Vehicles will not exceed a speed limit of 15 mph on unpaved roads within natural land cover types, or during off-road travel.
- GEN - 08 Vehicles or equipment will not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.
- GEN - 09 Vehicles shall be washed only at approved areas. No washing of vehicles shall occur at job sites.
- GEN - 10 To discourage the introduction and establishment of invasive plant species, seed mixtures/straw used within natural vegetation will be either rice straw or weed free straw.
- GEN - 11 Pipes, culverts, and similar materials greater than four inches in diameter, will be stored so as to prevent covered wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved.
- GEN - 12 Erosion control measures will be implemented to reduce sedimentation in wetland habitat occupied by covered animal and plant species when activities are the source of potential erosion problems. Plastic monofilament netting (erosion control matting) or similar material containing netting shall not be used at the project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
- GEN - 13 Stockpiling of material will occur such that direct effects to covered species are avoided. Stockpiling of material in riparian areas will occur outside of the top of bank, and preferably outside of the outer riparian dripline and will not exceed 30 days.
- GEN - 14 Grading will be restricted to the minimum area necessary.
- GEN - 15 Prior to ground disturbing activities in sensitive habitats, project construction boundaries and access areas will be flagged and temporarily fenced during construction to reduce the potential for vehicles and equipment to stray into adjacent habitats.

- GEN - 16 Significant earth moving activities will not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1 inch of rain or more).
- GEN - 17 Trenches will be backfilled as soon as possible. Open trenches will be searched each day prior to construction to ensure no covered species are trapped. Earthen escape ramps will be installed at intervals prescribed by a qualified biologist.

Amphibians: CTS, CRLF

AMPH-2. Habitat: Riparian habitat and grasslands within 2 miles of aquatic habitat

- A qualified biologist will conduct preconstruction surveys before groundbreaking. If individuals are found, work will not begin until they are moved out of the construction zone to a USFWS/CDFW approved relocation site.
- A Service–approved biologist should be present for initial ground disturbing activities.
- If the work site is within the typical dispersal distance (contact USFWS/CDFW for latest research on this distance for species of interest) of potential breeding habitat, barrier fencing will be constructed around the worksite to prevent amphibians from entering the work area. Barrier fencing will be removed within 72 hours of completion of work.
- No monofilament plastic will be used for erosion control.
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.
- A qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or Service approved under an active biological opinion will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside fenced area.
- Work will be avoided within suitable habitat from October 15 (or the first measurable fall rain of 1" or greater) to May 1.

3 COMPENSATORY MITIGATION (SECTION 11)

The proposed compensatory mitigation site is described in the Biological Resources Assessment Report (BRA), prepared by Westervelt Ecological Services and dated January 2025 (Appendix E). The proposed mitigation lands include 213 acres of the Mulqueeney Ranch, which is located immediately west of the proposed BESS facility. The BRA describes the ecological values, which includes the proposed preservation of 2.80 acres of waters and wetlands, including:

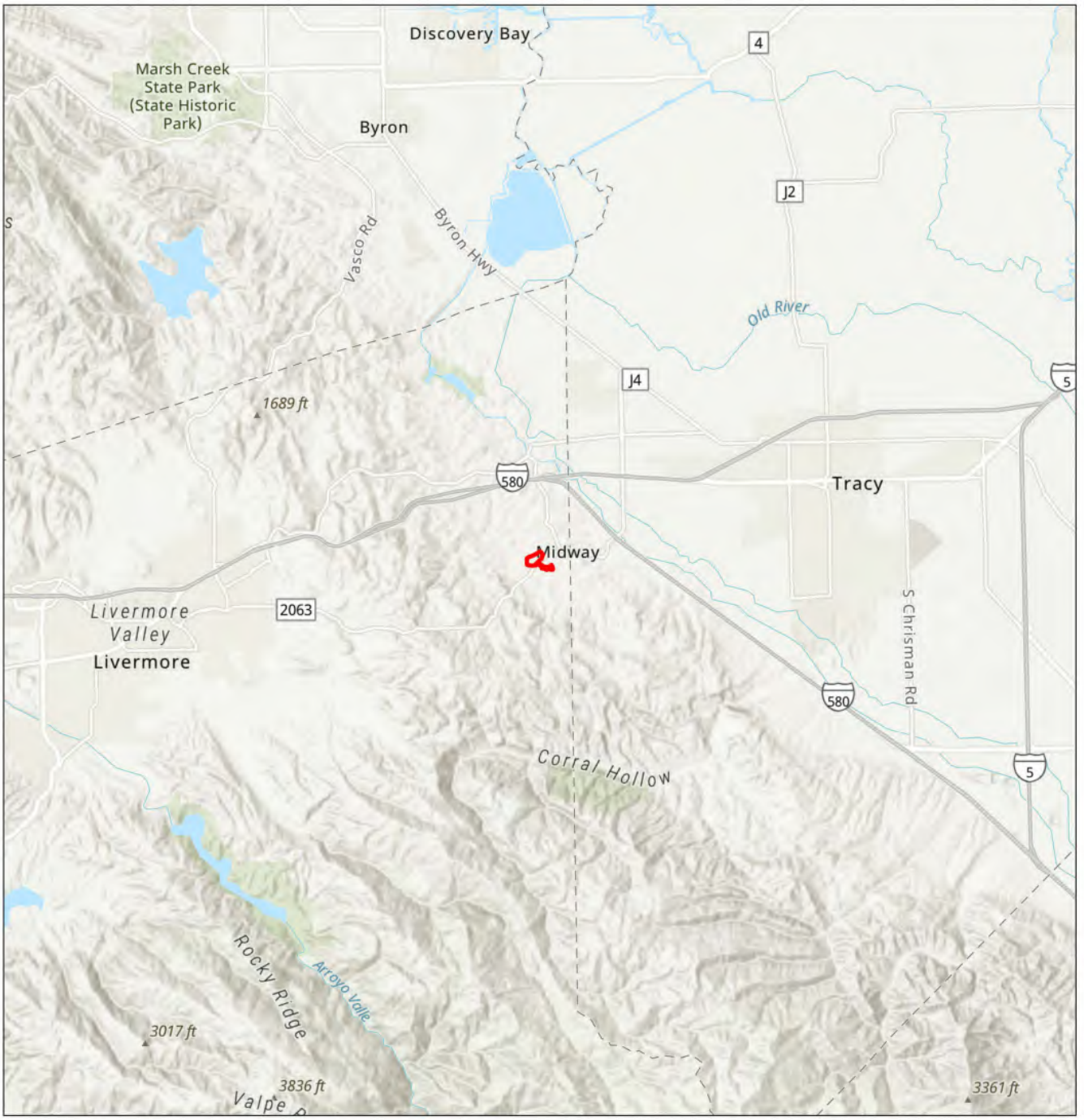
- Ephemeral Drainage: 0.74 acre
- Pond: 0.73 acre
- Swale: 0.97 acre
- Wetland: 0.36 acre

The BESS project proposes to impact a total of 0.04 acre of seasonal stream and proposes to provide mitigation values equivalent to 0.12 acre of waters as mitigation (i.e., a 3:1 mitigation ratio). These waters are a sub-set of those that are proposed to be preserved in perpetuity within the 213-acre Mulqueeney Ranch property.

The entirety of the 2.80 acres of waters and wetlands with the Mulqueeny Ranch mitigation area will be managed in perpetuity along with the rest of the mitigation area in order to preserve existing ecological functions and values. The applicant proposes to apply 0.12 acre to the proposed BESS project and to hold the remaining 2.68 acres of preserved waters and wetlands in reserve to mitigate for a future project. We understand that this proposed mitigation at the Mulqueeney Ranch is not an approved mitigation bank, and as such, request that these held mitigation values could be applied to a future project for a period of no longer than 5 years. If the project owners are not able to propose a new project within 5 years, the mitigation values would be relinquished, and the remaining 2.68 acres of waters and wetlands would continue to be managed a part of the 213-acre preserve in perpetuity.

Note that the USFWS and the CDFW are currently processing the permit applications for the BESS facility. Should the mitigation requirements of these agencies cause the protected waters and wetlands within the mitigation area to either increase or decrease in total acreage, we will inform the RWQCB of this change. In no case will the proposed mitigation for the RWQCB be reduced below 0.12 acre of preserved waters.

Appendix A – Figures



Project Location

0 1.5 3 Miles
(At original document size of 8.5x11)
1:250,000

N

Stantec

Project Location
Midway
Alameda County, CA

Prepared by KDLP on 2024-06-03
IR by SE on 2024-06-04

Client/Project
185706735

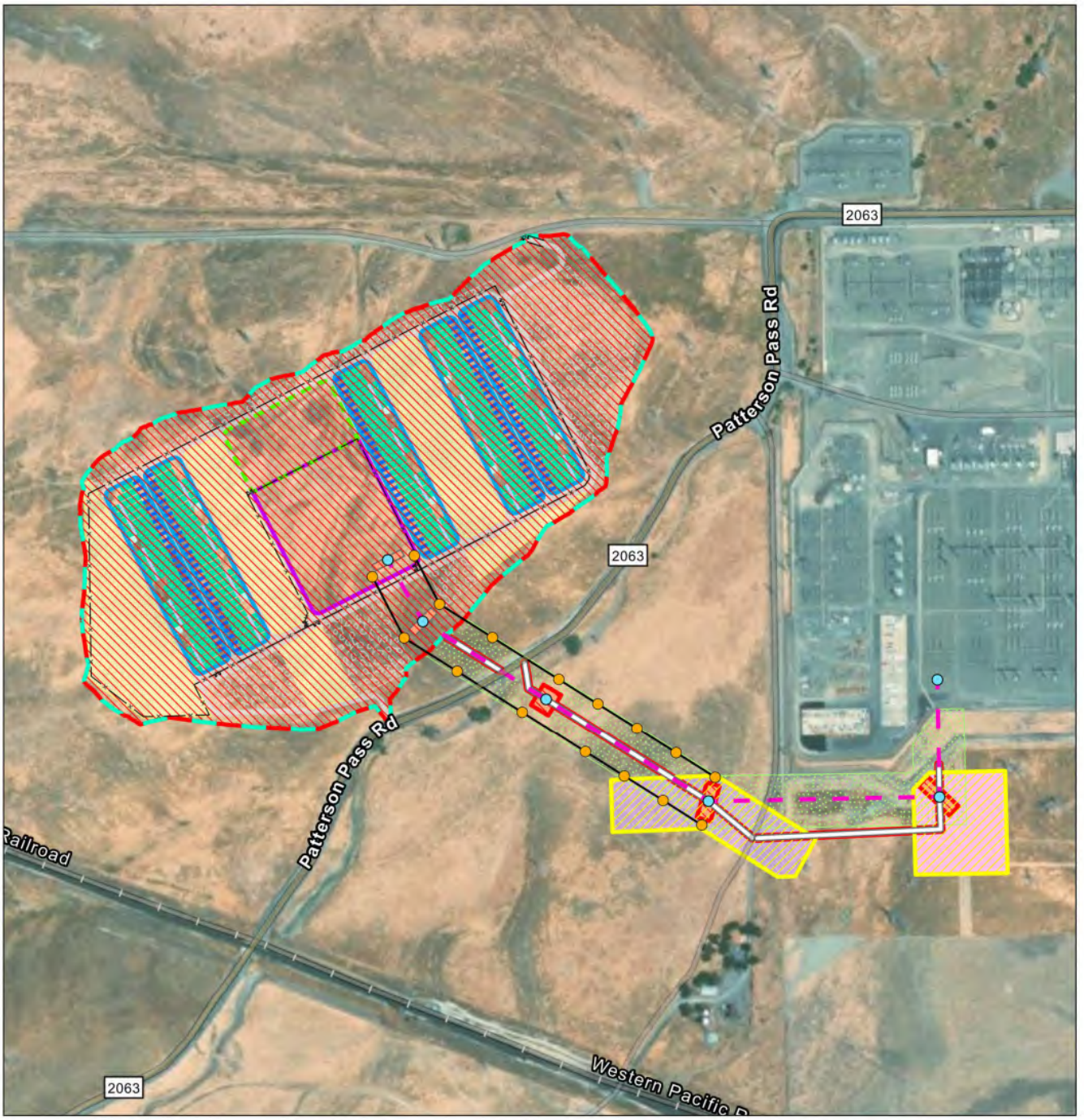
Potentia-Viridi Battery Energy Storage System
Biological Assessment

Figure No.
Figure 1

Title
Project Location

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Data Sources: California State Parks, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri, NASA, NGA, USGS, San Joaquin County GIS/Planning, California State Parks, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, Esri, USGS

V:\1857\Active\185706735\Pro\PV_BESS_BA\PV_BESS_BA.aprx Revised: 2024-06-03 By: kdelapena



Telecomm Pole
HV Structure
Telecomm Line
Gen-Tie
Gen-Tie Corridor
PG&E Temporary Work Area
Tension Pulling Area
Transmission Access Path
Laydown Yard
BESS Yards
BESS Enclosures

DC/DC Converters
PCS Units
Auxilary Transformers and Panels
Primary Laydown Yard
Project Substation Area
Fence Line
Stormwater Areas
Roads
Grading Limits
Temporary Distrubance
Permanent Disturbance

0 250 500 Feet
(At original document size of 8.5x11)
1:7,000

N

Stantec

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Data Sources: Esri Community Maps Contributors, San Joaquin County GIS/Planning, San Joaquin County Public Works, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, Esri, CGIAR, USGS, Maxar, San Joaquin County GIS/Planning, California State Parks, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS,

Project Location
Midway
Alameda County, CA

Prepared by KDLP on 2024-06-03
IR by SE on 2024-06-04

Client/Project
185706735
Potentia-Viridi Battery Energy Storage System
Biological Assessment

Figure No.
Figure 2

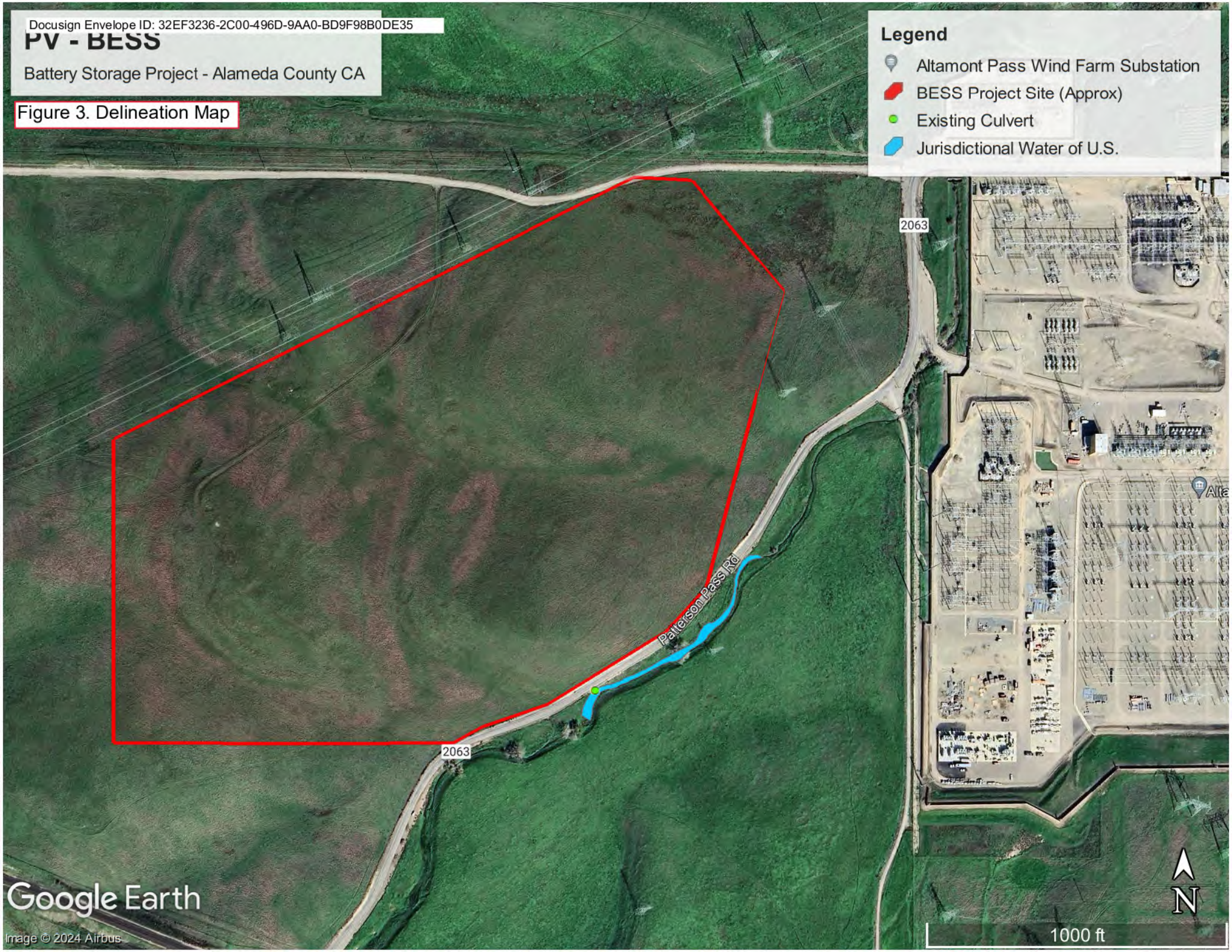
Title
Project Design Features

V:\185706735\Active\185706735\ProjPV_BESS_BA\PV_BESS_BA.aprx Revised: 2024-06-04 By: kdelapena

PV - BESS

Battery Storage Project - Alameda County CA

Figure 3. Delineation Map



Appendix B – OHWM Data Sheet

Potentia Viridi

OHWM DATA SHEET

Project: BESS Facility **Date:** 01/18/24 **Feature ID:** EPH-01

Investigator(s): MRB & ECF **Transect ID:** T-01

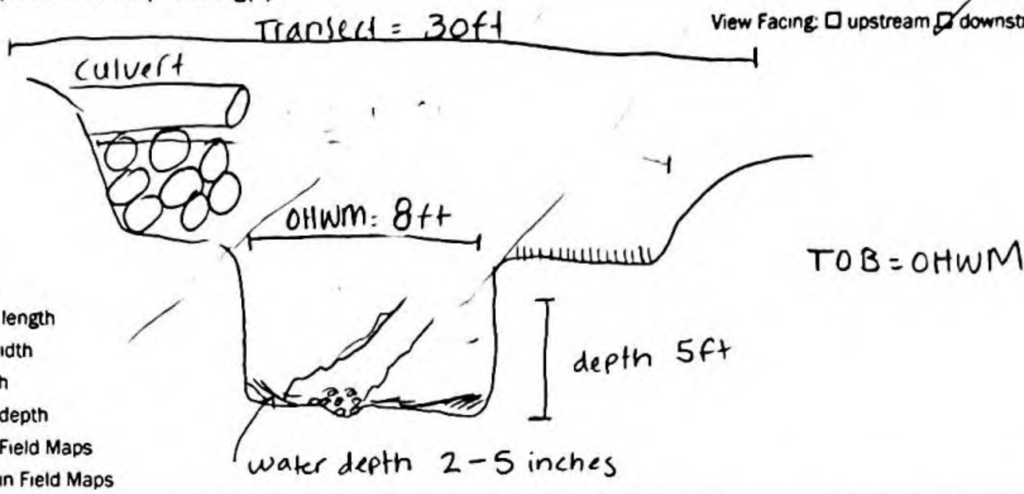
Site Location:
Alameda County, northwest portion of site

Stream Flow: ☒ Ephemeral ☐ Intermittent ☐ Perennial ☐ Controlled/Other

Transect (cross-section) drawing(s):

View Facing: S

View Facing: ☐ upstream ☒ downstream



- ☒ Transect length
- ☒ OHWM width
- ☒ TOB width
- ☒ Channel depth
- ☒ Photo in Field Maps
- ☒ Mapped in Field Maps

OHWM Indicators (at OHWM; primary indicators indicated with *)

- ☐ Natural line impressed on the bank
- ☒ Shelving
- ☐ Changes in the character of soil (texture)*
- ☐ Destruction of terrestrial vegetation
- ☐ Presence of litter and debris
- ☐ Wracking
- ☒ Vegetation matted down, bent, or absent
- ☐ Sediment sorting
- ☐ Leaf litter disturbed or washed away
- ☐ Scour
- ☐ Deposition
- ☐ Bed and banks
- ☐ Water staining
- ☒ Change in plant community and/or cover*

☐ Break in Slope at OHWM*: ☒ Sharp (>60°) ☐ Moderate (30-60°) ☐ Gentle (<30°)

Soil Texture

	Clay/Silt (%)	Sand (%)	Gravel (%)	Cobbles (%)	Boulders (%)
Above OHWM	30	30	10	5	25
Below OHWM	70	20	10	-	-

Vegetation Cover

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	15%	5%	80%
Below OHWM	0	0	5%	95%

Veg Stage: ☐ Early (herbs & seedlings) ☒ Mid (herbs, shrubs, saplings) ☐ Late (herbs, shrubs, mature trees)

Upland Species:	*Bank Species:*	*Emergent Species:*
Silybum marianum Centaurea solstitialis Centaurea calcitrapa Senescent grasses Brassica sp. Erodium cicutarium	Senescent grasses	None

OHWM DATA SHEET

Condition/Disturbances/Anthropogenic Influences (e.g., erosion, grazing, culverts, etc.):

culvert @ Roadside

Hydrology:

☒ Flowing water	Min. depth: 2 inches	
☐ Standing water	Max. depth: 5 inches	
☐ Saturated	Avg. depth:	
☐ Dry		

Riparian:

☒ No

☐ Yes ☐ Continuous ☐ Intermittent

Checklist of resources used to evaluate OHWM:

☒ Aerial photography	☒ Vegetation maps	☐ Other:
☒ GPS unit	☒ Geologic/soil maps	
☐ Rainfall data	☐ Gage data	
☐ Topographic maps	☐ LiDAR	

Other drawings (aerial view):

None

Connectivity notes:

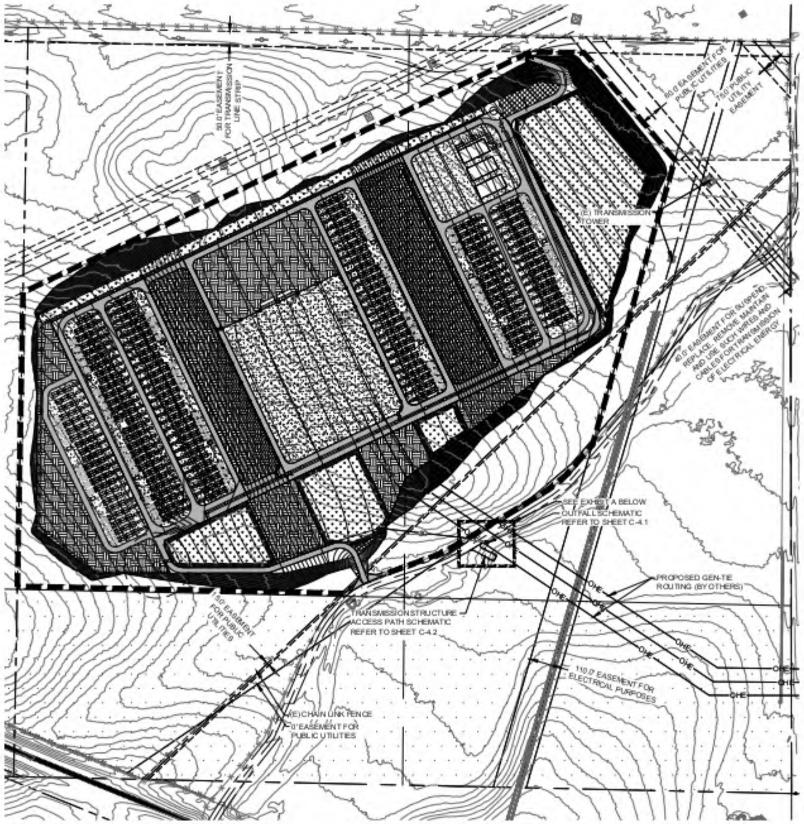
None

Other forms related to this feature: ☐ Yes ☒ No

☐ Terrace, fringe, or floodplain wetland (wetland datasheet)

☐ Low flow channel or other representative section (OHWM datasheet)

Appendix C – Civil Plans



SITE MAP
SCALE: 1"=200'

SCALE: 1 INCH = 200 FEET (200 100 0 200 400)

LEGEND

- CENTERLINE
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED LEASE LINE
- DRAINAGE MANAGEMENT AREA
- EXISTING CHAIN LINK FENCE
- PROPOSED FENCE
- STORM DRAIN PIPE
- RAILROAD
- EXISTING UTILITY POLE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- ORDINARY HIGH WATER MARK
- STORMWATER/LID AREA

SHEET INDEX

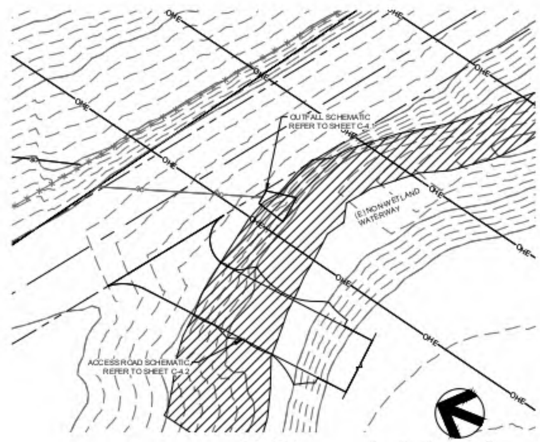


EXHIBIT A
SCALE: 1"=20'

SCALE: 1 INCH = 20 FEET (20 10 0 20 40)

UTILITY STATEMENT
LOCATION OF EXISTING UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM DRAWINGS AND FIELD LOCATES SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES. UTILITY LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EACH UTILITY.

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POTENTIA-VIRIDI
BATTERY ENERGY
STORAGE SYSTEM

LEVY ALAMEDA, LLC

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	5/5/25	REV 2
1	1/17/25	REV 1

PROJ. NO.	232059
DRAWN	LB
CHECKED	RB
DATE	6/7/24

SHEET TITLE:
401 PERMIT COVER

SHEET NO:
C-4.0

SHEET OF 7

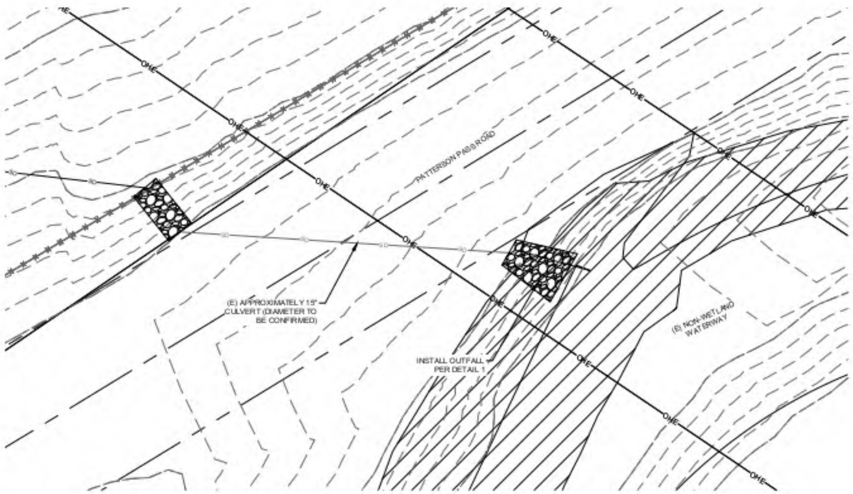
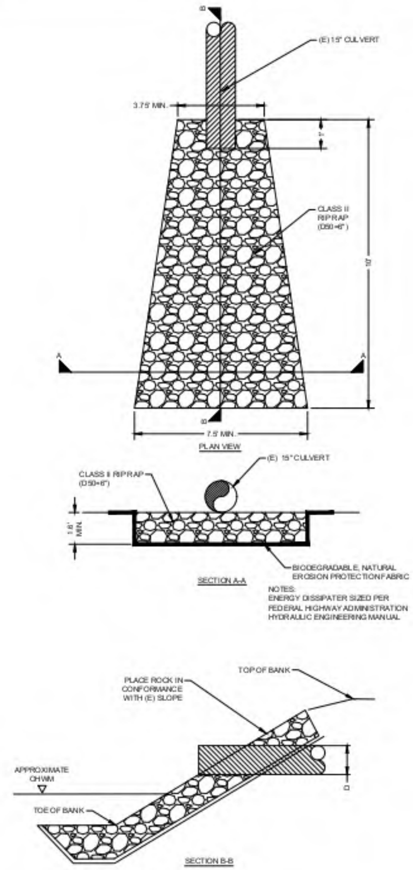
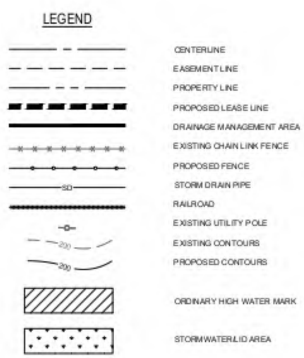
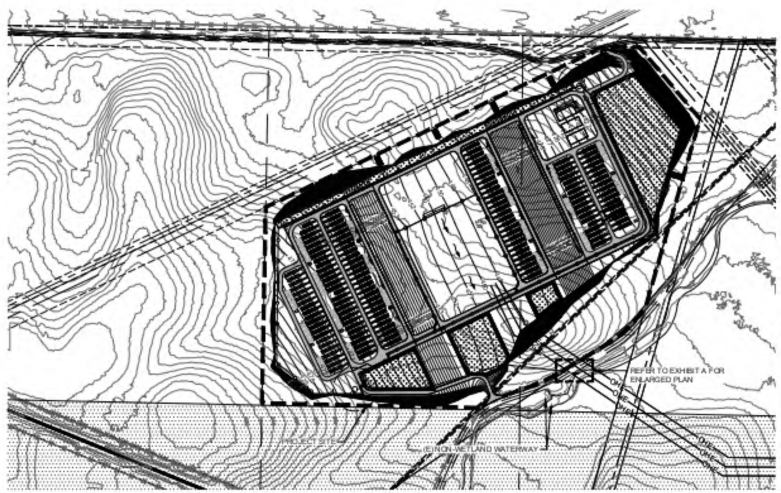


EXHIBIT A
SCALE: 1"=10'



1 OUTFALL DETAIL
SCALE: NTS





SITE MAP
SCALE: 1"=300'

OUTFALL TOTAL QUANTITIES					
DISTURBED AREA (SF)	EXCAVATED VOLUME (CY)	TOTAL CUT VOLUME (CY)	TOTAL NATIVE FILL VOLUME (CY)	RIP RAP VOLUME (CY)	NET EXPORT (CY)
80	16	8	3	5	5

OUTFALL OHWM QUANTITIES					
DISTURBED AREA (SF)	EXCAVATED VOLUME (CY)	CUT VOLUME (CY)	NATIVE FILL VOLUME (CY)	RIP RAP VOLUME (CY)	NET EXPORT (CY)
60	12	6	2	4	4

200 100 0 200 400
SCALE: 1 INCH = 200 FEET

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LEVY ALAMEDA, LLC

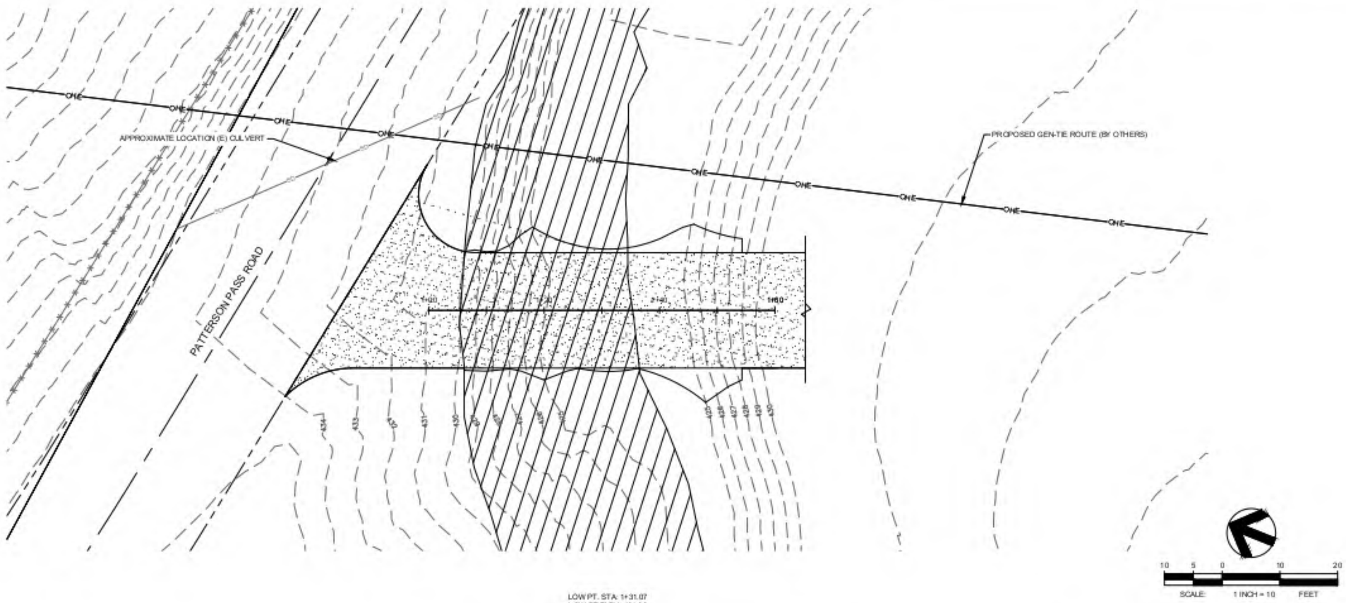
NOT FOR CONSTRUCTION

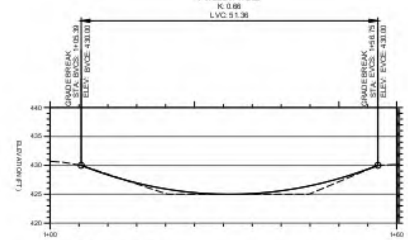
REV	DATE	DESCRIPTION
2	5/5/25	REV 2
1	1/17/25	REV 1

PROJ. NO. 232059
DRAWN LB
CHECKED RB
DATE 5/30/24

SHEET TITLE:
CONCEPTUAL CIVIL HYDROLOGY HYDRAULIC OUTFALL SCHEMATIC

SHEET NO:
C-4.1





PROFILE OF ALIGNMENT (1)

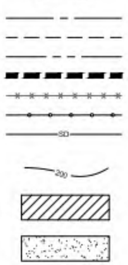
LOW-WATER CROSSING TOTAL QUANTITIES

DISTURBED AREA (SF)	EXCAVATED VOLUME (CY)	TOTAL CUT VOLUME (CY)	TOTAL IMPORTED FILL VOLUME (CY)	RIP RAP VOLUME (CY)
1,600	18	1	17	30

LOW-WATER CROSSING OHWM QUANTITIES

DISTURBED AREA (SF)	EXCAVATED VOLUME (CY)	CUT VOLUME (CY)	IMPORTED FILL VOLUME (CY)	RIP RAP VOLUME (CY)
650	7	1	6	12

LEGEND



CENTERLINE
EASEMENT LINE
PROPERTY LINE
PROPOSED LEASE LINE
EXISTING CHAIN LINK FENCE
PROPOSED FENCE
STORM DRAIN PIPE
EXISTING CONTOURS
PROPOSED CONTOURS
ORDINARY HIGH WATER MARK
PROPOSED CONSTRUCTION ACCESS

UTILITY STATEMENT
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LEVY ALAMEDA, LLC

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
2	5/5/25	REV 2
1	1/17/25	REV 1

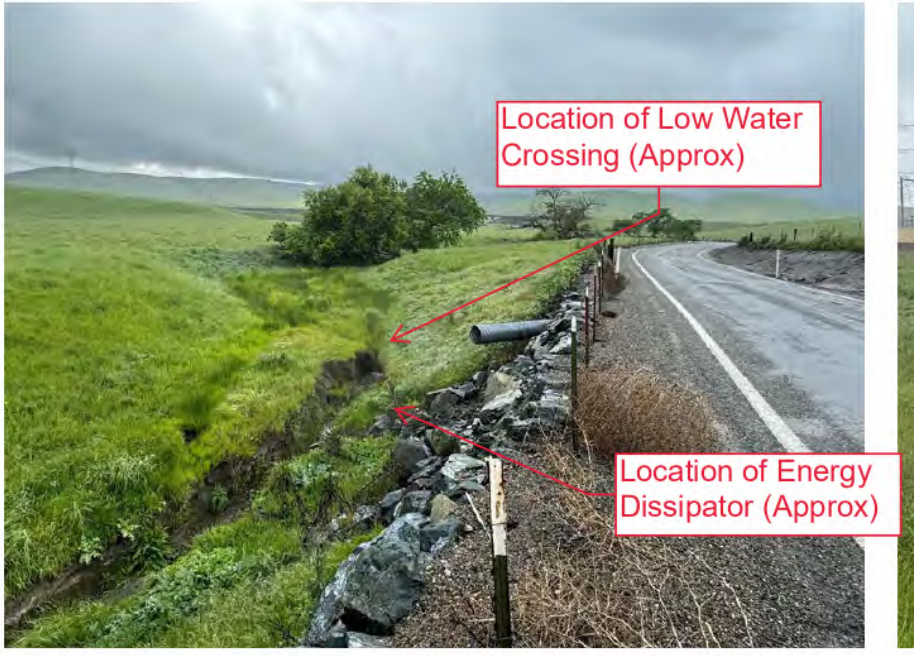
PROJ. NO. 232069
DRAWN LB
CHECKED RB
DATE 6/7/24

SHEET TITLE:
CONCEPTUAL ACCESS ROAD SCHEMATIC

SHEET NO:
C-4.2

SHEET OF 7

Appendix D – Site Photos



South Side of Patterson Pass road – facing SW

Note existing culvert under roadway. Crossing to be installed Immediately upstream of culvert.

South Side of Patterson Pass road – facing NE

Downstream of proposed outfall improvements. Note flowing feature in foreground and Altamont Pass Wind Farm Substation in the background

Appendix E – Mitigation Site Biological Resources Assessment Report

Westervelt
ECOLOGICAL SERVICES

BIOLOGICAL RESOURCES ASSESSMENT REPORT

Potentia Viridi Battery Energy Storage System Project Mitigation Site

Alameda County, California

Prepared by:
Westervelt Ecological Services
Western Region
3636 American River Drive, Suite 120
Sacramento, CA 95864
T: (916) 646-3644

wesmitigation.com

January 2025

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Table of Contents

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List of Appendices

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1. Introduction

1.1. Introduction

Levy Alameda, LLC, a wholly owned subsidiary of Obra Maestra Renewables, LLC is in the process of developing a battery storage facility (project) in Alameda County, California. Westervelt Ecological Services (WES) has teamed with Levy Alameda, LLC to help provide mitigation for their project. WES has identified an approximate 213 acre area (mitigation site) that would be suitable mitigation for the project. The final mitigation site acreage will be based on permitting requirements as identified in project permits. This Biological Resources Assessment detailed the species and habitat that are present in the mitigation site.

1.2. Study Area Location

The proposed mitigation site is located in Alameda County (Figure 1, all figures are located in Appendix A) and consists of a portion of the approximately 4,869-acre Mulqueeney Ranch (Ranch, Figure 2). The Ranch is located immediately southwest of the Altamont Pass Wind Farm substation along the north and south sides of Patterson Pass Road within the Altamont Hills, approximately 6 miles east of the City of Livermore, Alameda and San Joaquin counties, California. More specifically, the mitigation site occurs in Sections 31 and 36, Township 2 South, Ranges 3 and 4East, and Mount Diablo Base & Meridian on the Midway U.S. Geological Survey 7.5-minute topographical quadrangle map (Figure 3). Approximate center coordinates of the mitigation site in decimal degrees of the World Geodetic System 1984 (WGS84) are: Latitude: 37.715336°, Longitude: -121.590078°.

1.3. Study Objective

The primary objective of this study was to assess the biological resources and resource value of the mitigation site and to determine the presence, or presumed absence, of sensitive biological resources (i.e., special-status species and sensitive plant communities or habitats) occurring within the mitigation site.

Reconnaissance-level field surveys were conducted to:

- provide a description of the biological resources and natural communities present within the mitigation site;
- compile species lists descriptive of plant communities;
- locate special-status plant species or habitat suitable for such species; and
- determine wildlife use and current habitat values for wildlife, including special-status species.

1.4. Definitions

Several terms relating to the biological resources used in the report are described briefly below.

COMMUNITY- A community is an assemblage of populations of plants, animals, bacteria, and fungi that live in an environment and interact with one another, forming a distinctive living system with its own composition, structure, environmental relationships, development, and functions (Whittaker 1975).

HABITAT- Habitat is the place or type of site where a plant or animal naturally or normally lives and grows.

SENSITIVE NATURAL COMMUNITY - Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status plants or their habitat. A sensitive community has particularly high ecological value or functions and are considered important because their degradation or destruction could threaten populations of dependent plant and wildlife species and significantly reduce the regional distribution and viability of the community. As the number and extent of sensitive natural communities continue to diminish, the endangerment status of dependent special-status (i.e., rare, threatened, or endangered) species could become more precarious, and populations of currently stable species (i.e., non-special-status species) could become rare. Loss of sensitive natural communities can also eliminate or reduce important ecosystem functions, such as water filtration by wetlands and bank stabilization by riparian forests or wetlands.

SPECIAL-STATUS SPECIES - For the purposes of this assessment, special-status species were defined as being species that are legally protected or otherwise regulated or tracked by federal or state resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of these categories.

- Listed as threatened or endangered under the federal Endangered Species Act (ESA).
- Proposed or candidates for listing under the ESA.
- Listed as threatened or endangered under the California Endangered Species Act (CESA).
- Candidates for listing under the CESA.
- California species of special concern.
- California Fully Protected Species.
- Plants ranked as “rare, threatened, or endangered in California” (California Rare Plant Rank [CRPR] 1B and 2).
- Plants listed as rare under the Native Plant Protection Act.

WILDLIFE - For the purposes of this document wildlife includes mammals, birds, reptiles, amphibians, fish, and invertebrates.

WETLANDS - For the purposes of this document wetlands are defined as transitional areas between aquatic habitats and upland habitats and generally includes habitats such as marshes and swamps. Under the U.S. Army Corps of Engineers jurisdiction wetlands general must possess the following three mandatory criteria: 1) A prevalence or dominance of hydrophytes (water-loving plants); 2) Hydric soils (e.g., water-logged soils); and 3) Wetland hydrology (i.e., soils that are inundated or saturated to the surface for extended periods during the growing season).

The remainder of this report discusses the methods and results of the 2024 special-status species and sensitive habitat assessment at the mitigation site.

2. Methods

The assessment of the mitigation site for biological resources included both desktop background information gathering and analysis and a summary of previously conducted biological surveys and mapping as described below.

2.1. Desktop Analysis

The desktop analysis portion of this assessment included reviewing existing databases and other publicly available information on biological and related resources, as well as current and historical aerial photographs and topographic maps. The following information was reviewed as part of the desktop analysis:

- A species records search of California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2024) using a 5-mile radius centered on the mitigation site (Figure 4);
- Information available on rare plants on the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants Database (CNPS 2024) and the Jepson eFlora (Jepson Flora Project 2024);
- Soils information from the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2024);
- EcoAtlas (CWMW 2024);
- Biogeographic Information and Observation System (BIOS) (CDFW 2024);
- aerial imagery available on Google Earth (1985 through 2024); and
- topographic maps.

2.2. Field Surveys

Since 2019, Helm Biological Consulting (HBC 2019, 2021, 2022, 2023a and 2023b) and WES (2024) staff have visited the mitigation site and larger Ranch to survey for California tiger salamander (CTS, *Ambystoma californiese*) and California red-legged frog (CRLF, *Rana draytonii*), assessed the general site conditions, making notes on land cover, hydrology, soils, dominant vegetation, and observed wildlife.

Specific surveys methods are described below for each.

2.2.1. Community Mapping

All landcovers were mapped, including aquatic resources (Figure 5). However, a formal aquatic resources delineation study was not conducted.

2.2.2. Special-status Species

A list of special-status plant and wildlife species with potential to occur in the mitigation site (Table 2) was developed from the Desktop Analysis (see above). This list was used to focus the site investigation on the special-status species and associated plant communities/habitats with potential to be present at the mitigation site. Survey methods are described below for plants and wildlife.

2.2.2.1. Botanical Resources

Botanical surveys concentrated on nonnative invasive plants during the late summer and fall of 2023 (HBC 2023b). Specific special-status plant species surveys were not conducted. The entire mitigation site was surveyed by foot or by an all-terrain vehicle. All plants observed were identified to the taxonomic level necessary to determine rarity status using The Jepson Manual: Vascular Plants of California, 2nd Edition (Baldwin et al. 2012) and internet resources such as CNPS (2024) and Calflora (2022). Scientific nomenclature follows The Jepson Manual (Baldwin et al. 2012) and updates published online by the Jepson Flora Project, Jepson Online Interchange (University of California, Berkeley 2024). Common names followed Calflora (2022). Species not readily identifiable in the field were collected and later identified using The Jepson Manual (Baldwin et al. 2012). A list of all plant species encountered during the botanical field survey was compiled. Each plant was assigned a wetland indicator status using The National Wetland Plant List: 2016 Update of Wetland Ratings (NWPL) (Lichvar et al. 2016) as follows:

- OBL - Obligate wetland plants. Almost always occurs in wetlands;
- FACW - Facultative wetland plants. Usually occurs in wetlands, but may occur in non-wetlands;
- FAC - Facultative plants. Occurs in wetlands and non-wetlands;
- FACU - Facultative upland plants. Usually occurs in non-wetlands, but may occur in wetlands;
- UPL - Obligate upland plants. Almost never occurs in wetlands; and
- NL – Not listed.

In addition, every plant was categorized as native or nonnative (introduced) based on Calflora (2022). All nonnative plant species were further evaluated for any invasive status using California Invasive Plant Council (Cal-IPC 2022) ratings as follows:

- High - These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically;
- Moderate - These species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread; and
- Limited - These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

A list of all plant species encountered during the botanical field survey is included in Appendix B. A rare plant survey in the mitigation site will occur in Spring 2025.

2.2.2.2. Wildlife

All wildlife species observed were identified based on WES Staffs' knowledge and following field guides: Reid (2006) for mammals, Peterson (2020) for birds, Stebbins (2018) for reptiles and amphibians, and Gross et al. (2020) for insects. Common and scientific names of birds followed the Working Group on Avian Nomenclature of the International Ornithologists' Union's. Common and scientific names for reptiles and amphibians followed nomenclature of Nafis (2022) California Herps (www.californiaherps.com). Common and scientific names of mammals followed the American Society of Mammologists. All wildlife species, or sign (scat, prints, etc.), observed onsite were recorded in field notes.

A list of all wildlife species observed during the wildlife survey is included in Appendix C.

2.2.2.3. Special-Status Species Habitat Assessment

For species that were not identifiable at the time of the field survey, plant communities were assessed for potential to support the targeted species. The habitat assessed was based on habitat suitability comparisons with reported occupied habitats. The following definitions were utilized:

- None – Species distribution is restricted by substantive habitat requirements which do not occur onsite; therefore, no further survey or study is necessary to determine likely presence or presumed absence of this species;
- Not Probable/Likely – Species distribution is restricted by substantive habitat requirements which are negligible onsite; therefore, it is assumed that no further survey or study is necessary to determine likely presence or presumed absence of this species;
- Low – The species has a Low probability of occurrence within the mitigation site;
- Moderate – The species has a Moderate probability of occurrence within the mitigation site;
- High – The species has a High probability of occurrence within the mitigation site;
- Present – Species or species sign were observed onsite or historically has been documented within the mitigation site;
- Critical Habitat – The mitigation site is located within a USFWS-designated critical habitat unit; and
- Unknown – There is not presently sufficient information on substantive habitat requirements of the species or other data to determine its potential for occurrence within the mitigation site.

2.3. Wildlife, Habitat Connectivity, and Conservation Opportunities

The mitigation site was evaluated for its overall conservation value under existing conditions by reviewing several datasets including:

- CDFW's Biogeographic Information and Observation System (BIOS6 version 6.24.1120);
- CDFW's Areas of Conservation Emphasis (ACE); and
- California Essential Habitat Connectivity Project "Essential Connectivity Areas" and "Natural Landscape Block".

CDFW's ACE is an effort to gather spatial data on wildlife, vegetation, and habitats from across California and then combine this information into maps to inform conservation of biodiversity, habitat connectivity, and climate change resiliency (CDFW 2019).

The California Essential Habitat consists of a statewide network of relatively intact blocks of land connected by essential connectivity areas (Spencer et al. 2010). The purpose of the Natural Landscape Block is to focus attention on large areas important to maintaining ecological integrity at the broadest scale (Spencer et al. 2010).

3. Results

3.1. Environmental Setting

3.1.1. Overview

The mitigation site straddles the Western Pacific Railroad and consists of fairly steep rolling hills covered with grass and herbs with stock ponds occurring within the low-lying drainages and some grassy plains to the northeast.

3.1.2. Climate

The mitigation site has a Mediterranean climate characterized by warm dry summers and cool wet winters. Average high temperatures range from the mid-50s in winter to the mid-80s in summer, while average low temperatures range from the mid-30s to the upper 50s. Rainfall in the Ranch area averages about 15 inches per year, with most of it coming during the winter months. Temperatures typically remain mild year-round due to its location on the east side of California's Central Valley. Summers tend to be sunny and dry, with occasional breezes from the nearby mountains providing some relief from the heat. Winters are typically wet and cool, with air temperatures often dropping below freezing at night. However, snow is rare. (Best Places 2024)

3.1.3. Topography and Hydrology

Topography within the mitigation site varies from relatively flat plains around 500-foot elevations above mean sea level (amsl) near the eastern edge to fairly steep hilly terrain above 600 foot elevation amsl along the western edge. In general, the mitigation site is sloped to the northeast. The raised Western Pacific Railroad bed transverses the mitigation site from the northwest corner to the southeast corner. Several drainages occur in the mitigation site (Figure 5). Most of these drainage headwaters occur to the off site to the west and transverse the mitigation site in a eastern direction. At least one stock pond has been constructed within each of the major drainages. All aquatic features are shown in Figure 5[1].

The steep terrain allows for a lot of surface area and the clayey soil restricts (see Soils section below) the amount of ground water recharge creating a lot of storm runoff into the drainages during and shortly after rain events. As previously mentioned, most of the major drainages have stock ponds constructed to detain this storm runoff water for watering livestock. Additionally, the huge watersheds that occur, mostly offsite, allow some ground water recharge which eventually moves downslope and discharges from the various seeps/springs located at the hill toe slopes or within the drainages.

3.1.4. Geology and Soils

The geology within the mitigation site area (Figure 7) is composed of Upper Cretaceous aged marine sedimentary and metasedimentary rocks consisting of sandstone, shale, and conglomerate (KU) as well as Miocene aged marine sedimentary rocks consisting of moderately

[1] Please note a formal wetland delineation has not been completed on the mitigation site, these acreages have not been field verified.

to well consolidated sandstone, shale, siltstone, conglomerate, and breccia (M), and Quaternary aged nonmarine sedimentary rocks consisting of loosely considated sandstone, shale, and gravel deposits from the Pleistocene epoch (QPc) (Jennings et al. 1977).

Soils within the mitigation site are diverse but generally consist of clays to clay loams textures within eight soil series types and four mixed soil series complex types:

- Altamont clays;
- Diablo clays;
- Linne clays; and
- Pescadero clay loam (Figure 8 and Table 1).

Table 1. Natural Resource Conservation Service Soil Mapping Units occurring within the Mitigation Site

Map Unit Symbol	Soil Unit
Alameda County	
AmE2	Altamont clay, moderately deep, 30 to 45 percent slopes
ArD	Altamont rocky clay, moderately deep, 7 to 30 percent slopes
DbD	Diablo clay, 15 to 30 percent slopes, MLRA 15
DbE2	Diablo clay, 30 to 45 percent slopes, eroded
DbC	Diablo clay, 7 to 15 percent slopes
LaC	Linne clay loam, 3 to 15 percent slopes
LaD	Linne clay loam, 15 to 30 percent slopes, MLRA 15
Pd	Pescadero clay loam, 0 to 6 percent slopes, MLRA 14

3.1.5. Land Cover

The landcover on the mitigation site is dominated by annual grasslands, with seeps/springs, stock ponds, swales and other wetlands associated with the various drainages (Figure 5).

3.1.5.1. Annual Grassland

Annual grasslands within the mitigation site are characterized by the dominance of non-native but naturalized annual grassland species with a subcomponent of native and nonnative forbs. The annual grassland habitat dominates the mitigation site landscape occurring on the well-drained uplands.

Vegetation. Dominant grasses observed include wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), hare barley (*Hordeum murinum* ssp. *leporinum*), and soft brome (*Bromus hordeaceus*). Dominant forbs include common fiddleneck (*Amsinckia intermedia*), field bind weed (*Convolvulus arvensis*), dove weed (*Croton setiger*), and filaree (*Erodium* ssp.).

As the grassland habitats in the mitigation site approach drainages, stock ponds, and other aquatic features the vegetation composition changes to a greater percentage of hydrophytes ("water-loving" plants) including Italian ryegrass (*Festuca perennis*), Mediterranean barely (*Hordeum marinum* ssp. *gussoneanum*), and annual bluegrass (*Poa annua*) for the grasses and narrowleaf

plantain (*Plantago laceolota*), few-seeded bitter-cress (*Cardamine oligosperma*), clovers *(Trifolium* ssp.) and tall annual willow herb (*Epilobium branchycarpum*) representing the forbs.

In addition, annual grassland habitats near roads, neighboring parcels, or other areas of disturbance (e.g., stock pond berms) tend to have a higher percentage of weedy nonnatives including thistles such as yellow starthistle (*Centaurea solstistialis*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), and bull thistle (*Cirsium vulgare*).

Wildlife. Annual grasslands provide breeding habitat for a variety of grassland birds. Among those observed during field surveys include western meadowlark (*Sturnella neglecta*), lark sparrow (*Chondestes grammacus*), and savannah sparrow (*Passerculus sandwichensis*). Annual grasslands also provide foraging habitat for many bird species that breed in adjacent habitats.

Annual grasslands provide important habitat for many mammal species, particularly small rodents and their larger predators. Mammals or their signs (i.e., scat, tracks, dens) observed in the annual grasslands onsite include black-tailed hare (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), California deer mouse (*Peromyscus maniculatus*), California vole (*Microtis californicus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis marsupialis*), and coyote (*Canis latrans*).

Representative photographs of the habitats occurring onsite are provided in Appendix D.

3.1.5.2. Drainages

Drainages are characterized by seasonally flowing waterways that convey storm water. These drainages are general U-shaped in cross-section with earthen bed and banks. The drainages onsite are ephemeral in nature and flow only during and shortly after storm events. Most of the drainages are fairly narrow (1-4 wide) and shallow (1 to 4 deep) (Figure 5).

Vegetation. The vegetation composition of the drainages depends on slope and soil thickness. Steeper slopes sections of the drainage support many of the same species associated with the grasslands but favor those with root systems that can withstand the fast-flowing water for short periods. Those sections of the drainages that are flat and/or near the onsite stock ponds and seep habitats tend to support more hydrophytes especially grasses such as Italian ryegrass, Mediterranean barely, and annual bluegrass. Portions of these drainages have thin soils or eroded bedrock support a sparse assemblages of plant species varying from nonhydrophytes to hydrophytes depending on slope.

Wildlife. Due to their ephemeral nature. The drainages do not offer much habitat for wildlife except for their hydrologic contributions to stock ponds and wetland habitats (e.g., seep, swale, etc.) (See below).

3.1.5.3. Stock Ponds

Stock ponds are characterized by human-constructed ponds generally within drainageways to capture seasonal water for livestock. In the mitigation site and Ranch, several of these stock ponds have been constructed below seep/spring habitats (see Seep/Spring section below). Stock ponds associated with seep/spring habitats are perennial ponded with maximum depths of three to five

feet (Figure 5). The stock ponds without hydrologic inputs from seep/spring habitat are seasonally ponded and may not pond at all, or only for brief periods, during droughts.

Vegetation. Stock ponds associated with seep/spring habitats in the mitigation site generally have patches of emergent narrowleaf cattail (*Typha angustifolia*) with the submerged stonewort (*Chara* sp.) with occasional blooms of fishnet algae (*Hydrodictyon* sp.) and free-floating smaller duckweed (*Lemna minor*) and mosquito fern (*Azolla filiculoides*). The vegetation along the stock ponds edges are highly variable in cover, and to a lesser extent composition, depending on hydrology (drought and flood conditions) and livestock intensity. During drought conditions, the edges of the stock ponds are sparsely vegetated and during high livestock use, denuded of vegetation. Overall, the stock ponds within the mitigation site are dominated by hydrophytes including brass buttons (*Cotula coronopifolia*), tall flat sedge (*Cyperus eragrostis*), willow herbs (*Epilobium* ssp.), rushes *(Juncus* ssp.), purple sandspurry (*Spergularia rubra*), Italian ryegrass, Mediterranean barely, and annual bluegrass.

Wildlife. The stock ponds onsite offer excellent habitat for California tiger salamander (*Ambystoma californiense*) and California red-legged frogs (*Rana draytonii*). Although they are perennial in nature the lack predators such as fish and American bull frog (*Lithobates catesbeianus*) and support abundance food sources in the form of aquatic invertebrates.

While not all of these species have been observed within the mitigation site, the emerging insects provide forage for swallows (Tree swallow [*Tachycineta bicolor*], violet-green swallow [*Tachycineta thalassina*], northern rough-winged swallow [*Stelgidopteryx serripennis*], barn swallow [*Hirundo rustica*], cliff swallow [*Petrochelidon pyrrhonota*]) and flycatchers (western kingbird, ash-throated flycatcher [*Myiarchus cinerascens*], and black phoebe [*Sayornis nigricans*]) as well as bats. A variety of bird species forage at the edge of these ponds including shorebirds (e.g., killdeer [*Charadrius vociferus*] and greater yellowlegs [*Tringa melanoleuca*]) and various wading birds (great blue heron [*Ardea herodias*], great egret [*Ardea alba*]). Mallards (*Anas platyrhynchos*) and the occasional American wigeon (*Mareca americana*) forage through the algae for food items.

3.1.5.4. Seeps /Springs

Seep/Spring habitats are characterized by ground water that flows or seeps from the ground. In the mitigation site seeps/springs are associated with the drainageways where thinner soils prevail allowing subsurface storm water flows to daylight near bedrock sources.

Vegetation. Seeps/springs within the mitigation site are dominated by hydrophytes consisting of grasses and forbs including willow herbs, streamside monkey flower (*Erythranthe guttata*), Italian ryegrass, common spikerush (*Eleocharis macrostachya*), rabbits foot grass (*Polypogon monspeliensis*), and toad rush (*Juncus bufonius*) with occasional patches of saltgrass (*Distichilis spicata*) and curly dock (*Rumex crispus*).

Wildlife. Because of the small size and depth of water within this habitat, wildlife use is limited. Wildlife species observed in this habitat include greater yellow legs (*Tringa melanoleuca*), killdeer (*Charadrius vociferus),* black phoebe (*Sayornis nigricans*), Brewer's blackbird (*Euphagus cyanocephalus*), European starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*).

While not observed, other wildlife including racoon, Virginia opossum, grey fox (*Urocyon cinereoargenteus*) and coyote probably visit this habitat to forage or drink during the summer and fall.

3.1.5.5. Wetland

Wetland habitat is characterized by small depressional areas within the grassland habitat that have impervious subsurface soils (i.e., clays, hardpan [duripan] or bedrock) that seasonally inundate from stormwater flows from upslope ephemeral drainages. Three wetlands occur within the mitigation site. Two are located in the southeast corner and have been inadvertently created from the construction of the adjacent elevated Western Pacific Railroad bed that detains storm water flows. The third wetland is associated with the largest and more intermittent drainage located in the northwest corner. This wetland has resulted from stormwater restrictions from flowing through the undersized passage at bottom of the railroad berm.

Vegetation. The two southern located wetland habitats onsite were dominated by hyssop loosestrife (*Lythrum hyssopifolia*), Italian ryegrass, Mediterranean barely, common knotweed (*Polygonum aviculare*), and toad rush (*Juncus bufonius*) with some curly dock (*Rumex crispus*). The larger wetland located in the northwest corner is dominated by hydrophytic grasses and forbs similar to the seep/spring habitats discussed above.

Wildlife. Wildlife use within the largest wetland would be similar to that of the Seep/Spring habitat and offers temporary migration habitat for CRLF. Due to the ephemeral nature of the two smaller wetlands, only short-lived residence invertebrates and transitory migrating vertebrates utilize this habitat. Large numbers of crustaceans live in this habitat including seed shrimp (*Ostracods*), copepods *(Copepoda*), and water fleas (*Cladocerans*) and other aquatic invertebrates (e.g., water mites [*Hydroacarina*], flat worms [microturbularians], springtails [*Collembolla*]). These species are food for a variety of amphibians including Sierran tree frog larvae, western toad larvae, and young CRLF's who also use this habitat for dispersal.

3.1.5.6. Swale

Swale habitat is associated with the drainages onsite and are general continuations or sections of ephemeral drainages that lack a defined bed and bank due to erosional forces of flowing water. Swales are generally broad, shallow, slightly sloped water conveyance habitats.

Vegetation. Swales are generally vegetaion by dense cover of hydrophytic grasses consisting of Italian ryegrass, Mediterranean barely, and annual bluegrass. Forbs are subdominant and generally consisted of toad rush (*Juncus bufonius*) with some curly dock (*Rumex crispus*).

Wildlife. Wildlife use was similar to the ephemeral drainage habitats described above.

Representative photographs of habitats and species occurring within the mitigation site and Ranch occur in Appendix D.

3.2. Special-status Species

The results of the habitat assessment are summarized below in Table 2, which provides the status of the species, its range, general habitat requirements, and a brief discussion on its potential to occur within the mitigation site.

Table 2. Special-status Species with a Potential to Occur within the Mitigation Site

Common Name Scientific Name	Federal Status	State Status	CNPS	Range	General Habitat	Potential To Occur Onsite
Wildlife						
California tiger salamander *Ambystoma californiense*	FT	ST	-	Occurs from Yolo County to Kern County in the Central Valley, up to 2,000 feet elevation in the Sierra Nevada foothills	In winter, breeds in vernal pools and seasonal wetlands with a minimum 10-week inundation period. In summer, occupies grassland habitat, primarily in small mammal burrows.	**Present.** CTS larvae have been observed in numerous stock ponds in the mitigation site.
California red-legged frog *Rana draytonii*	FT	-	-	Occurs Sonoma and Butte counties in the north to Riverside to the south.	In habits ponds, marshes, and creeks with still water for breeding. Riparian and upland habitat with dense vegetation and open areas for cover, aestivation, food and basking.	**Present.** Adults, juveniles, and larvae have been documented in the mitigation site.
Foothill yellow legged frog Central Coast DPS *Rana boylii pop. 4*	FT	CE	-	Occurs in the East Bay and south of Sac Francisco Bay in the Coast Ranges to San Benito and Monterey Counties.	Inhabits moderate to high gradient streams in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby	**None.** Suitable habitat for this species (streams in woodlands, chaparral) is not present.
Western spadefoot *Spea hammondii*	FT	SSC	-	Species is found throughout the Central Valley and coastal lowlands from Shasta County in Northern California to Baja California in Mexico, at elevations ranging from sea level to 4,500 feet	In winter, breeds in vernal pools and seasonal wetlands with a minimum 3-week inundation period. In summer, aestivates in grassland habitat, in soil crevices, and rodent burrows	**Low.** Although suitable habitat is present, this species would have been detected during CTS and CRLF surveys if present.

Golden eagle *Aquila chrysaetos*	-	FP	-	Winter range spans most of California; breeding range excludes the Central Valley floor	Forages in a variety of open habitats, including grassland, pasture, and cropland; Nests primarily on cliffs, rock outcrops, and in large trees	**Present.** This species has been observed foraging just outside the western edge of the mitigation site. However, no nesting habitat is present in the mitigation site.
Swainson's hawk *Buteo swainsoni*	-	ST	-	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; the state's highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	**Moderate**. The mitigation site provides suitable foraging habitat however this species has not been observed.
Northern harrier *Circus hudsonius*	-	SSC	-	Found throughout California, breeding range covers northeastern plateau, northern coast, Central Valley, central coast, and portion of the southern coast and southern deserts. Non-breeding season found in most lowland areas of California.	Breeding and foraging includes treeless habitats with adequate prey, cover, and perches. Suitable habitat includes freshwater marshes, brackish and saltwater marshes, wet meadows, margins of lakes, rivers, and streams, grasslands, weed fields, croplands, and desert sinks.	**Present**. Although this species has been observed foraging in the mitigation site, nesting has not been verified.
White tailed kite *Elanus leucurus*	-	FP	-	Occurs from west coast and Gulf Coast south to Mexico, Central American and eastern South America	Found in grasslands, open woodlands, savannas, marshes and cultivated fields.	**Moderate**. The mitigation site provides suitable foraging habitat however this species has not been observed.
Tricolored blackbird *Agelaius tricolor*	-	ST	-	Year-round residents throughout the Central Valley and the central and southern coasts, with additional scattered locations throughout California. Breeding occurs in the foothills of the Sierra Nevada south to Kern County, the	Nests colonially in large, dense stands of freshwater marsh, riparian scrub, and other shrubs and herbs; forages in grasslands and agricultural fields.	**Moderate.** Suitable foraging habitat is present in the mitigation site. This species has been observed foraging in mitigation site .

				coastal slopes from Sonoma County to the Mexican border, and sporadically in the Modoc Plateau		
Loggerhead shrike *Lanius ludovicianus*	-	SSC	-	Occurs throughout California, except for the northwest, heavily forested higher mountains and higher areas of deserts.	Open habitats, including pastures, old orchards, cemeteries, golf courses, agricultural fields, riparian areas, and woodlands. In Central Valley, associated with grasslands, irrigated pasture, and grain and hay fields. Nests in trees and shrubs	**Present.** This species has been observed foraging on the mitigation site. Although nesting has not been verified.
Grasshopper sparrow *Ammodramus savannarum*	-	SSC	-	Occurs across North America and ranges from southern Canada to Ecuador.	Grassland, hayfields, prairies. Breeds in rather dry fields and prairies, especially those with fairly tall grass and weeds and a few scattered shrubs. Also nests in overgrown pastures and hayfields, and sometimes in fields of other crops	**Low.** Although the mitigation site has abundant annual grasslands that support potential breeding and foraging habitat for this species, it is associated more with fields (pastures and hayfields) and would have been observed during surveys if present.
Short eared owl *Asio flammeus*	-	SSC	-	Circumpolar from the Arctic to the North Temperate Zone, and is also found in Hawaii and much of South America. It is partially migratory, moving south in winter from the northern parts of its range.	Forages in grassland habitats and nests on the ground in prairie, tundra, savanna, meadow, and grassland habitats. Species will also nest and forage in shrubby habitats with grasses understory and in wheat fields.	**Low.** Although this species prefers tall grass or grasslike plants areas for nesting and foraging which occurs on site, it general prefers flat terrain which is more limited onsite. Additionally, this species would have been observed during the

						numerous surveys, if present.
Burrowing owl *Athene cunicularia*	-	Candidate	-	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast.	Open, dry annual or perennial grasslands, deserts, and scrublands characterized with low vegetation, usually on gently sloping terrain.	**Present**. This species has been observed being flushed from burrows within the mitigation site.
Longhorn fairy shrimp *Branchinecta longiantenna*	FE	-	-	Occurs in five locations from Contra Costa County in the north to San Luis Obispo County in the south.	Found in clear, freshwater vernal pools, claypan pools or freshwater depressions in sandstone. Generally, prefers alkaline pools.	**Not likely.** No vernal pools, alkaline pools, or rock outcrop pools are present within the mitigation site.
Vernal pool fairy shrimp *Branchinecta lynchi*	FE	-	-	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains	Inhabits small, clear-water sandstone depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**Low.** No vernal pools are present within the mitigation site. However, the seasonally inundated wetlands and the more ephemeral stock ponds within the mitigation site could provide suitable habitat.
Crotch's bumble bee *Bombus crotchii*	--	CE	G2 S2	Occurs throughout the Pacific Coast, Western Desert, and adjacent foothills throughout most of the state's southwestern region.	Inhabits grasslands and shrublands.	**Moderate.** Potential habitat for this species occurs onsite. However, this species has not been observed on the mitigation site.
Western bumble bee *Bombus occidentalis*	-	Candidate	-	Occurs in the Sierra Nevada and central coast of California north through British Columbia to Alaska and east to Idaho, Montana, western Nebraska, western North Dakota, western South Dakota, Wyoming, Utah, Colorado, northern Arizona, New Mexico and southwest Saskatchewan	Colonial ground nester in a wide variety of habitats generally in close proximity to nectar plants.	**Low.** Potential habitat for this species occurs onsite. However, the mitigation site is outside of the current known range and this species has not been observed on the mitigation site.

Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	-	-	Occurs in the Central Valley from Shasta County in the north through Madera County in the south.	Host plant is the elderberry shrub *(Sambucus spp.),* a shrub that grows in riparian areas and foothill oak woodlands.	**None.** The host plant is not present.
San Joaquin kit fox *Vulpes macrotis mutica*	FE	ST	-	Occurs in San Joaquin Valley extending from south Kern County north to Contra Costa, Alameda, and San Joaquin counties on the western side of the valley and to Stanislaus County on the eastern side.	Occurs in the desert and grasslands of the San Joaquin Valley, preferable areas with minimal shrubs and grasses.	**Moderate**. Current assessments by USFWS have assessed this part of the species range as having a "very low" condition and have determined there is no current population in this part of the range, though individuals may periodically disperse this far north. Nonetheless, suitable habitat is present and although the mitigation site is located at the northern distribution of the species range future occupation is possible.
Western mastiff bat *Eumops perotis californicus*	-	SSC	-	Uncommon resident in southeastern San Joaquin Valley and the Coastal Ranges specifically residing between Monterey County to Southern California and from the California coast east to the Colorado Desert.	Typically roosts in crevices in cliffs and rocky outcrops, in colonies of fewer than 100 individuals. May also roost in bridges, caves and buildings that allow sufficient height and clearance for dropping into flight. There is at least one record of this species roosting in an untrimmed palm tree. Forages in a variety of grassland, shrub, and wooded habitats, including riparian and	**Low.** No cliffs or rocky outcrops are present. However, this species may forage within the mitigation site.

					urban areas, although most commonly in open, arid lands.	
American badger *Taxidea taxus*	-	SSC	-	Uncommon solitary species that is widely distributed throughout the state except in the northern North Coast area from below sea level to over 12,000 ft	Prefers drier open shrub, forest, and herbaceous habitats with friable soils. Home range typically varies in size between 5 and 1,800 acres but can become much larger during breeding season as males locate receptive females. Natal dens are constructed in dry, sandy soil with sparse overstory	**High.** Suitable habitat is present and this species is known to occur on adjacent properties. However, this species has not been observed in the mitigation site.
Pallid bat *Antrozous pallidus*	-	SSC	-	Occurs throughout California except for the high Sierra Nevada from Shasta to Kern Counties to northern Mendocino County.	Deserts, grasslands, shrublands, woodlands, and forests; most common in open, dry habitats; typically roosts in rock crevices, also in tree hollows, bridges, and buildings, in colonies ranging from 1 to more than 200 individuals	**Low.** No cliffs or rocky outcrops are present. However, this species may forage in the mitigation site.
Townsend's big eared bat *Corynorhinus townsendii*	-	SSC	-	Occurs throughout the west and is distributed from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains, with isolated populations occurring in the central and eastern United States.	Habitat associations include coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Typically found in areas with caves and cave-like roosting habitat, with population centers occurring in areas dominated by exposed, cavity forming rock and/or historic mining districts	**Low.** No roosting habitat is present in the vicinity. However, this species may forage in the mitigation site.

Northern California legless lizard *Anniella pulchra*	-	SSC	-	Occurs from the southern edge of the San Joaquin River in Contra Costa County south to Ventura County.	Inhabits sparsely vegetated area of bean dunes, chaparral, pine oak woodland, desert scrub, sandy washes and stream terraces.	**None.** Suitable habitat for this species (sandy or loose soils) is not present.
California glossy snake *Arizona elegans occidentalis*	-	SSC	-	Occurs from the eastern part of San Francisco Bay Area south to northwestern Baja.	Scrub, rocky washes, grasslands and chaparral, prefers open areas with loose soil for burrowing.	**None.** Suitable habitat for this species (sandy or loose soils) is not present.
San Joaquin coachwhip *Masticophis flagellum ruddocki*	-	SSC	-	Endemic to California, ranging from Kern County north to portions of Alameda County.	Dry, treeless areas with little to no cover, including valley grassland and saltbush scrub. Mammal burrows used for overwintering.	**Moderate.** Habitat is generally suitable though the species has not been observed in the mitigation site.
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT	ST	-	Occurs in Alameda and Contra Costa counties.	Found in northern coastal scrub and chaparral habitat. May also occur in grasslands, open woodlands, rocky slopes near scrub and chaparral.	**Not likely.** This species is associated with chapparal habitats which do not occur onsite.
Northwestern pond turtle *Actinemys marmorata*	PT	SSC	-	North of San Francisco Bay area and north Central Valley	Found in ponds, streams, lakes, rivers, creeks, marshes and irrigation ditches with abundant vegetation.	**Low.** Not observed during previous surveys of ponds. No suitable nesting habitat (friable soils) occurs in the mitigation site.
Coast horned lizard *Phrynosoma blainvillii*	-	SSC	-	From Baja California west of the Sierra Nevada, north to Bay Area and Shasta	Open areas with sandy soils and low vegetation in valleys, foothills, and semiarid mountain.	**Not likely.** Sandy soils are not present onsite and native ant colonies were not detected during surveys.
Plants						
Caper fruited tropidocarpum *Tropidocarpum capparideum*	-	-	1B.1	Alameda, Contra Costa, Monterey, San Joaquin and San Luis Obispo Counties	Occurs at elevations of at 5 – 1,495 feet amsl and is associated with valley and foothill grasslands.	**Low.** Although potential habitat occurs onsite, the mitigation site occurs just outside of the species known range.

Large flowered fiddleneck *Amsinckia grandiflora*	-	-	1B.1	Alameda, Contra Costa, and San Joaquin counties	Occurs at elevations of 885 – 1,805 feet amsl; associated with cismonstane woodland and valley/foothill grasslands.	**Moderate.** Potential habitat occurs onsite.
Brittlescale *Atriplex depressa*	-	-	1B.2	Alameda, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Solano, Tulare and Yolo counties	Occurs at elevations of 5 – 1,050 feet amsl; associated with chenopod scrub, meadows, seeps, playas, valley and foothill grassland.	**Not likely.** Saline and alkaline habitats are generally lacking onsite.
Lesser saltscale *Atriplex minuscula*	-	-	1B.1	Alameda, Butte, Fresno, Kern, Kings, Madera, Merced, Stanislaus, Tulare counties	Occurs at elevations of 50 – 655 feet amsl; associated with chenopod scrub, playas, valley and foothill grassland.	**Not likely.** Saline and alkaline habitats are generally lacking onsite.
Big tarplant *Blepharizonia plumosa*	-	-	1B.1	Alameda, Contra Costa, San Joaquim, Solano, Stanislaus counties	Occurs at elevations of 100 – 1,655 feet amsl; associated with clay areas of valley and foothill grassland.	**Moderate.** Potential habitat occurs onsite.
Lemmon's jewelflower *Caulanthus lemmonii*	-	-	1B.2	Alameda, Fresno, Kern, Kings, Merced, Monterey, San Joaquin, San Luis Obispo, Santa Barbara, Stanislaus, Ventura counties	Occurs at elevations of 260 – 5,185 feet amsl; associated with pinyon and juniper woodland and valley and foothill grasslands.	**Not likely.** The mitigation site occurs just outside of the species most northern distribution of its range.
Congdon's tarplant *Centromadia parryi ssp. congdonii*	-	-	1B.1	Alameda, Contra Costa, Monterey, San Luis Obispo, San Mater, Santa Clara, Santa Cruz, Solano counties	Occurs at elevations of 0 – 775 feet amsl; associated with valley and foothill grassland (alkaline).	**Not likely.** Associated with moist areas within nearly level alkaline grasslands that are absent onsite.
Hospital Canyon larkspur *Delphinium californicum ssp. interius*	-	-	1B.2	Alameda, Contra Costa, Merced, Monterey, San Benito, San Joaquin, Santa Clara, Stanislaus counties	Occurs at elevations of 640 – 3,595 feet amsl; associated with chaparral, cismonstane woodland, and coastal scrub.	**Not likely.** Associated with woody habitats that are absent onsite.
Diamond petaled California poppy *Eschscholzia rhombipetala*	-	-	1B.1	Alameda, Colusa, Contra Costa, Kern, San Joaquin, San Luis Obispo, Stanislaus counties	Occurs at elevations of 0 – 3,200 feet amsl; associated with valley and foothill grassland (alkaline, clay).	**Low- Moderate.** Although alkaline soils are generally absent, clay soils within annual

						grasslands habitats are plentiful onsite.
San Joaquin spearscale *Extriplex joaquinana*	-	-	1B.2	Alameda, Colusa, Contra Costa, Fresno, Glenn, Merced, Napa, Sacramento, San Benito, San Joaquin, San Luis Obispo, Solano, Yolo counties	Occurs at elevations of 5 – 2,740 feet amsl; associated with chenopod scrub, meadows and seeps, playas, valley and foothill grassland.	**Not likely.** Alkaline soils are generally absent onsite.
Brewer's wester flax *Hesperolinon breweri*	-	-	1B.2	Alameda, Contra Costa, Napa, Solano counties	Occurs at elevations of 100 – 3,100 feet amsl; associated with chaparral, cismontane woodland and valley and foothill grasslands.	**Moderate.** Annual grasslands habitats are plentiful onsite.
California alkali grass *Puccinellia simplex*	-	-	1B.2	Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Kings, Lake, Los Angeles, Madera, Merced, Napa, San Bernadino, San Luis Obispo, Santa Clara, Santa Cruz, Solano, Stanislaus, Tulare, Yolo counties	Occurs at elevations of 5 – 3,050 feet amsl; associated with chenopod scrub, meadows and seeps, valley and foothill grasslands, vernal pools.	**Not likely.** Alkaline soils are generally absent onsite.
Chaparral harebell *Ravenella exigua*	-	-	1B.2	Alameda, Contra Costa, Fresno, Merced, San Benito, Santa Clara, Stanislaus counties	Occurs at elevations of 900 – 4,100 feet amsl; associated with chaparral habitat.	**Not Likely.** Chapparal habitat is absent in the mitigation site.
Showy golden madia *Madia radiata*	-	-	1B.1	Contra Costa, Fresno, Kern, Kings, Monterey, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Stanislaus counties	Occurs at elevations of 80 – 3,985 feet amsl; associated with cismontane woodland, valley and foothill grassland.	**Moderate.** Potential habitat is present in the mitigation site.
Shining navarretia *Navarretia nigelliformis ssp. radians*	-	-	1B.2	Butte, Contra Costa, Colusa, Fresno, Madera, Merced, Monterey, San Benito, San Joaquin, San Luis Obispo, and Tulare counties.	Occurs at elevations of 213 – 3,281 feet amsl; associated with cismontane woodland, valley and foothill grassland, vernal pools, swales, and clay flats.	**Low.** This species generally occurs in vernal pools or other similar seasonal wetlands which are generally absent in the mitigation site.

Long-styled sand spurrey *Spergularia macrotheca var. longistyla*	-	-	1B.2	Alameda, Contra Costa, Napa, Solano counties	Occurs at elevations of 0 – 835 feet amsl; associated with meadows, seeps, marshes and swamps.	**Moderate.** Suitable habitat (wetlands, including seeps) occurs in the mitigation site.

Definitions: *Federal Status* – FE = federally endangered, FT = federally threatened, FC = federal candidate; *State Status* – SE = state endangered, ST= state threatened, SSC= species of special concern, FP= fully protected. *CNPS Rare Plant Rank* - 1B = Rank 1B species: rare, threatened, or endangered in California and elsewhere, 1B.1 – seriously threatened in California, 1B.2 – Moderately threatened in California, 1B.3 – Not very threatened in California,

3.2.1. Special-Status Plants

Although no special-status plant species were observed onsite during surveys, there are six special-status plants known that have a moderate potential to occur in the mitigation site:

- Large flowered fiddleneck;
- Big tarplant;
- Diamond petaled California poppy;
- Brewer's wester flax;
- Showy golden madia; and
- Long-styled sand spurrey.

Though, all these species are considered rare, threatened, or endangered in California and elsewhere under CNPS 1.B ranking; none are listed as threatened or endangered under state or federal Endangered Species Acts. Because species focused special-status plants surveys have not yet been conducted; the presence, or presumed absence, of the above plant species and other special-status plants that are not known to occur within the vicinity of the mitigation site is largely unknown.

3.2.2. Special-status Wildlife

A total of five of the 28 special-status wildlife species listed in Table 2 were observed in the mitigation site (Figure 6) and include:

- California tiger salamander;
- California red-legged frog;
- Northern harrier;
- Loggerhead shrike; and
- Burrowing owl.

Two special status species, golden eagle and tricolored blackbird have been observed foraging just outside the boundary of the mitigation site (Figure 6).

An additional seven special-status wildlife species have at least moderate potential occur on the mitigation site and include:

- Swainson's hawk;
- White tailed kite;
- Crotch's bumble bee;
- San Joaquin kit fox;
- American badger; and
- San Joaquin coachwhip.

The presence or potential of the above-mentioned species are briefly discussed below.

3.2.2.1. California Tiger Salamander

California tiger salamander larvae were observed in SP-18, SP-19 and SP-21 in 2019 (Figure 6). CTS larvae were also observed in SP-16 in 2023 (Figure 6).

3.2.2.2. California Red-Legged Frog

Adult and immature CRLF have utilized various features throughout the mitigation site. CRLF were observed in SP-16 in 2014, SP-19 in 2024, SP-20 in 2023, and W-1[2] in 2023 and 2024

In addition, the mitigation site is within designated critical habitat for CRLF (Figure 9).

3.2.2.3. Golden Eagle

Golden eagles are viewed nearly every year during the winter and early spring season foraging on California ground squirrels and black tailed hares, and other wildlife prey (Figure 6). However, no suitable nesting habitat occurs within the mitigation site.

3.2.2.4. Tricolored Blackbird

Tricolored black birds are consistently observed year after year, foraging within the mitigation site. However, there is currently no nesting habitat within the mitigation site.

3.2.2.5. Northern Harrier

Although nesting has not been documented within the mitigation site, Northern harriers are consistently observed foraging over the stock ponds and annual grasslands within the mitigation site.

3.2.2.6. Loggerhead Shrike

Loggerhead shrikes have been documented foraging in the mitigation site. However, nesting of this species onsite has not been verified.

3.2.2.7. Burrowing Owl

Burrowing owls have been consistently observed within the mitigation site. Typically, individuals are observed after being flushed from burrows within the mitigation site. In particular, burrowing owls have been seen near SP-16 frequently during site visits (Figure 5). Individuals have been observed throughout the year; however, no nesting surveys have occurred.

3.2.2.8. Swainson's Hawk

Although Swainson's hawk has not been observed within the mitigation site, there is suitable foraging habitat present. Additionally, although nesting habitat for this species is absent in the mitigation site, numerous appropriate trees for nesting occur within the adjacent Ranch.

3.2.2.9. White Tailed Kite

Similar to Swainson's hawk, nesting habitat for white tailed kite is absent within the mitigation site; however, suitable foraging is abundant onsite and suitable nesting habitat (trees) occurs within the adjacent Ranch.

[2] This feature was not identified and surveyed until 2023.

3.2.2.10. Crotch's Bumble Bee

Suitable habitat is abundant onsite for Crotch's bumble bee. Although this species has not been observed onsite, species-specific surveys have not been conducted.

3.2.2.11. San Joaquin Kit Fox

Although this species has not been detected within the mitigation site, no species-specific surveys have been conducted for SJKF. Given that this species is generally nocturnal and highly secretive and it would not be surprising if this species was to be present onsite because suitable habitat is present.

3.2.2.12. American Badger

Although the American badger has not been observed onsite, there are huge populations of California ground squirrels, which are its preferred prey in this area of California. In addition, this species has a fairy large home range and could easily move on to the mitigation site, if it is currently not present.

3.2.2.13. San Joaquin Coachwhip

Although this species has not been observed within the mitigation site, species specific surveys have not been conducted to date. However, the potential for this species to occur is based on the presence of suitable habitat and nearby species presence.

3.2.3. Critical Habitat

Although the mitigation site supports a plethora of special-status species, the mitigation site occurs only within critical habitat for the California red-legged frog (Figure 9).

3.3. Wildlife, Habitat Connectivity, and Conservation Opportunities

The mitigation site and larger Mulqueeney Ranch provide habitat for many common wildlife species (i.e., non-special status), which include amphibians, reptiles, birds, and small to moderate-sized mammals. Generally, the mitigation site is situated in a transitional area between the Great Central Valley and the Coast Range, specifically the Diablo Range. This area is dominated by annual grasslands interspersed with ephemeral and intermittent drainages, some of which support riparian vegetation, seasonal wetlands, and ponds constructed to support cattle grazing. A list of all wildlife species observed on or adjacent to the mitigation site is included as Appendix C.

The mitigation site was evaluated for its overall conservation value under existing conditions by reviewing several datasets within CDFW's Biogeographic Information and Observation System (BIOS; BIOS6 version 6.24.1120). A discussion of the relevant conservation datasets in relation to the mitigation site is provided below.

The mitigation site is situated in area identified by the California Essential Habitat Connectivity Project as being part of a "Natural Landscape Block", which consists of a statewide network of relatively intact blocks of land connected by essential connectivity areas (Spencer et al. 2010). The purpose of the Natural Landscape Block is to focus attention on large areas important to maintaining ecological integrity at the broadest scale (Spencer et al. 2010). The northwestern

most half of the mitigation site also falls within Mountain House-Brushy Peak Essential Connectivity Area, which joins natural landscape blocks on either side of the Altamont Pass.

CDFW's ACE is an effort to gather spatial data on wildlife, vegetation, and habitats from across California and then combine this information into maps to inform conservation of biodiversity, habitat connectivity, and climate change resiliency (CDFW 2019). The mitigation site is situated in an area identified in the ACE Terrestrial Connectivity dataset as having "Conservation Planning Linkages – Rank 4" and is immediate west of an area ranked as having "Irreplaceable and Essential Corridors – Rank 5".

Other ACE data layers show the mitigation site occurring in an area identified as having a high value (Rank 5) for *Statewide Terrestrial Rare Species Richness* and moderately high value (Rank 4) for *Aquatic Amphibian Irreplaceability*.

Habitat in the area surrounding the mitigation site provide suitable habitat for various special status species. CTS breeding has been documented in ponds located on the nearby conserved Jess Ranch and Haera Conservation Bank (Figure 10). Additionally, in 2019 CTS were observed by WES staff in stock ponds located on the Ranch, within 1 mile of the mitigation site (Figure 6). Additional surveys on these ponds have not been completed since 2019. WES staff have observed CRLF in a seep just north of the mitigation site in 2019 and 2023. This seep is hydrologically connected to the mitigation by one of the ephemeral drainages. Tricolored blackbird and golden eagles have been seen foraging in various locations of the Ranch.

The proposed mitigation site is directly adjacent to the Shell N20 Mitigation Site, which is expected to be approved by USFWS and CDFW in early 2025. The Shell N20 Mitigation Site connects the Jess Ranch, a Contra Costa Water District conservation easement, and Haera Wildlife Conservation Bank. Permanent protection of the mitigation site would increase the amount of conserved habitat and preserving connectivity to the conserved habitat.

The conservation of the mitigation site would contribute to regional conservation efforts by helping maintain and improve wildlife connectivity in the Diablo Range, from north to south, and protect areas deemed of statewide importance for terrestrial and aquatic species.

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APPENDICES

APPENDIX A
Figures

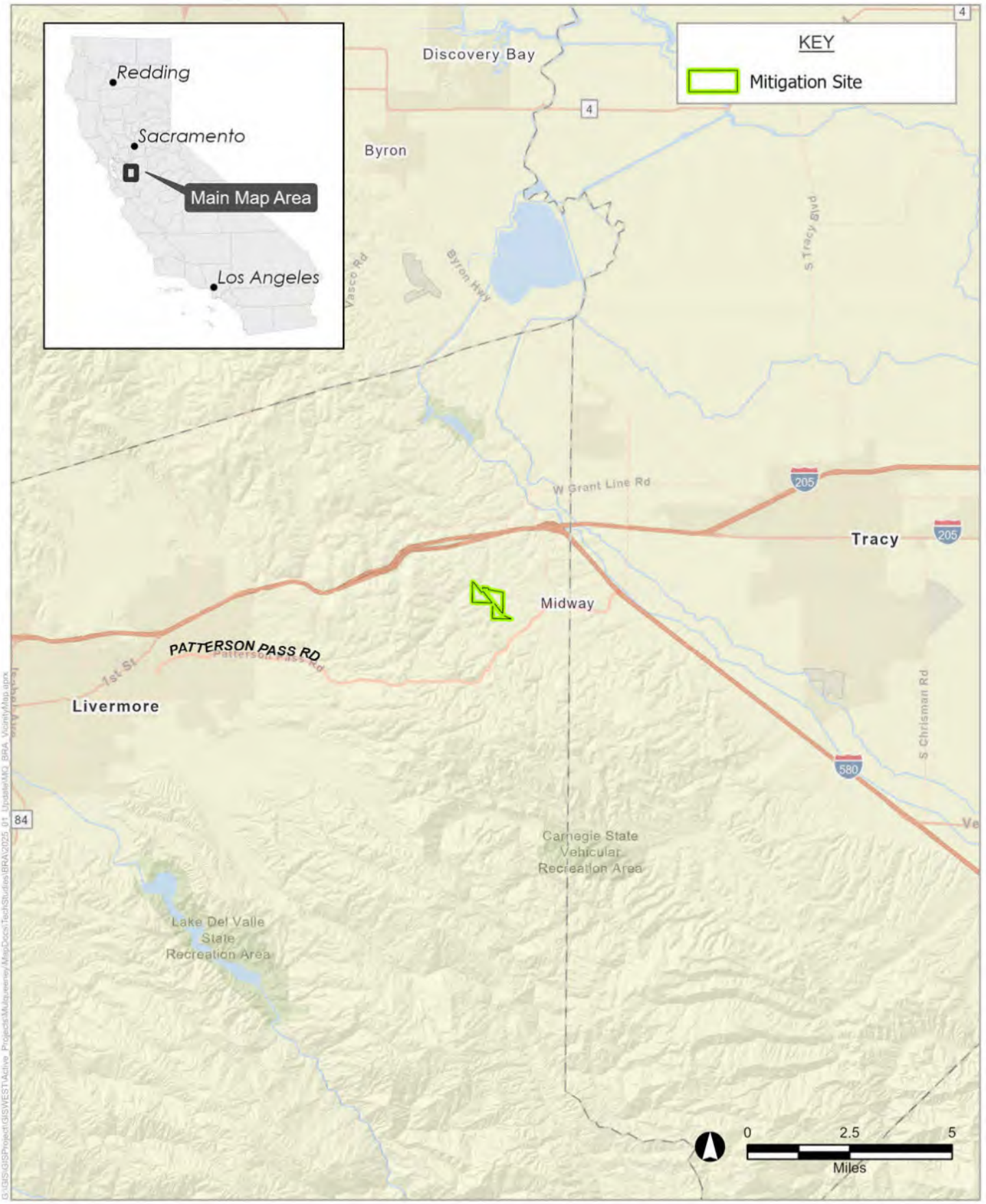

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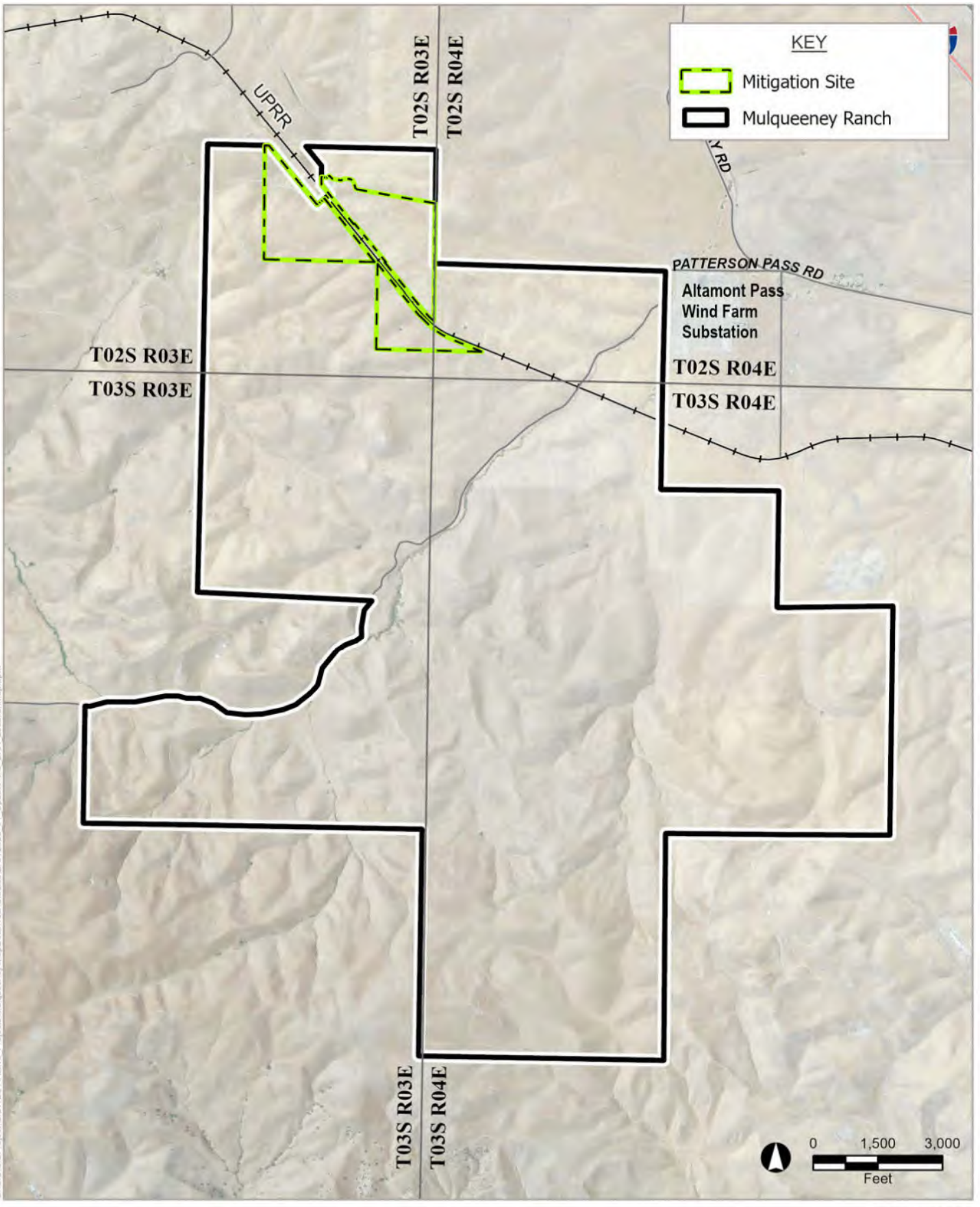
Figure 1
Vicinity Map
January 16, 2025



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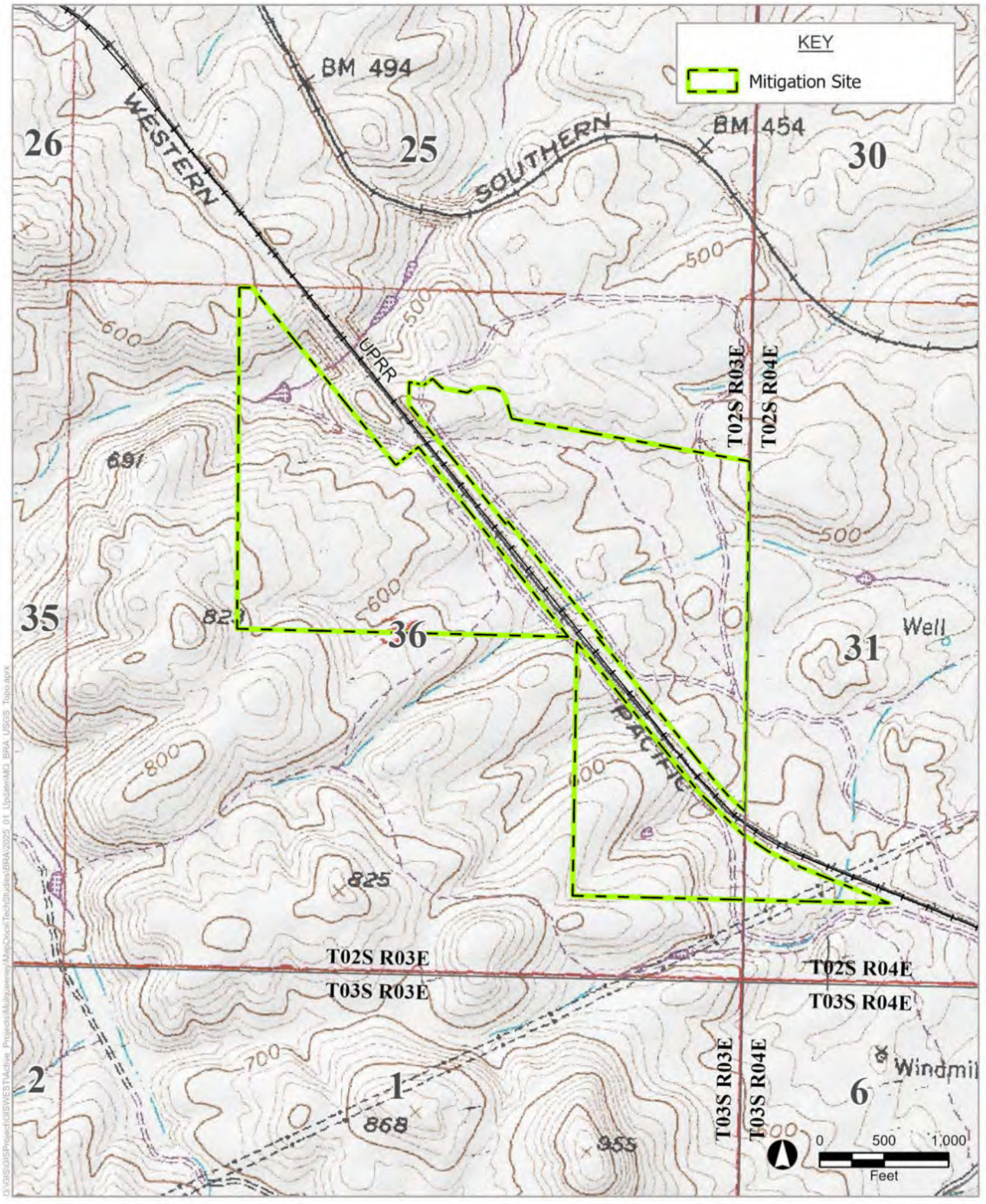
USGS 7.5' Quadrangle: MIDWAY, 1980

Figure 2
Project Location
January 15, 2025



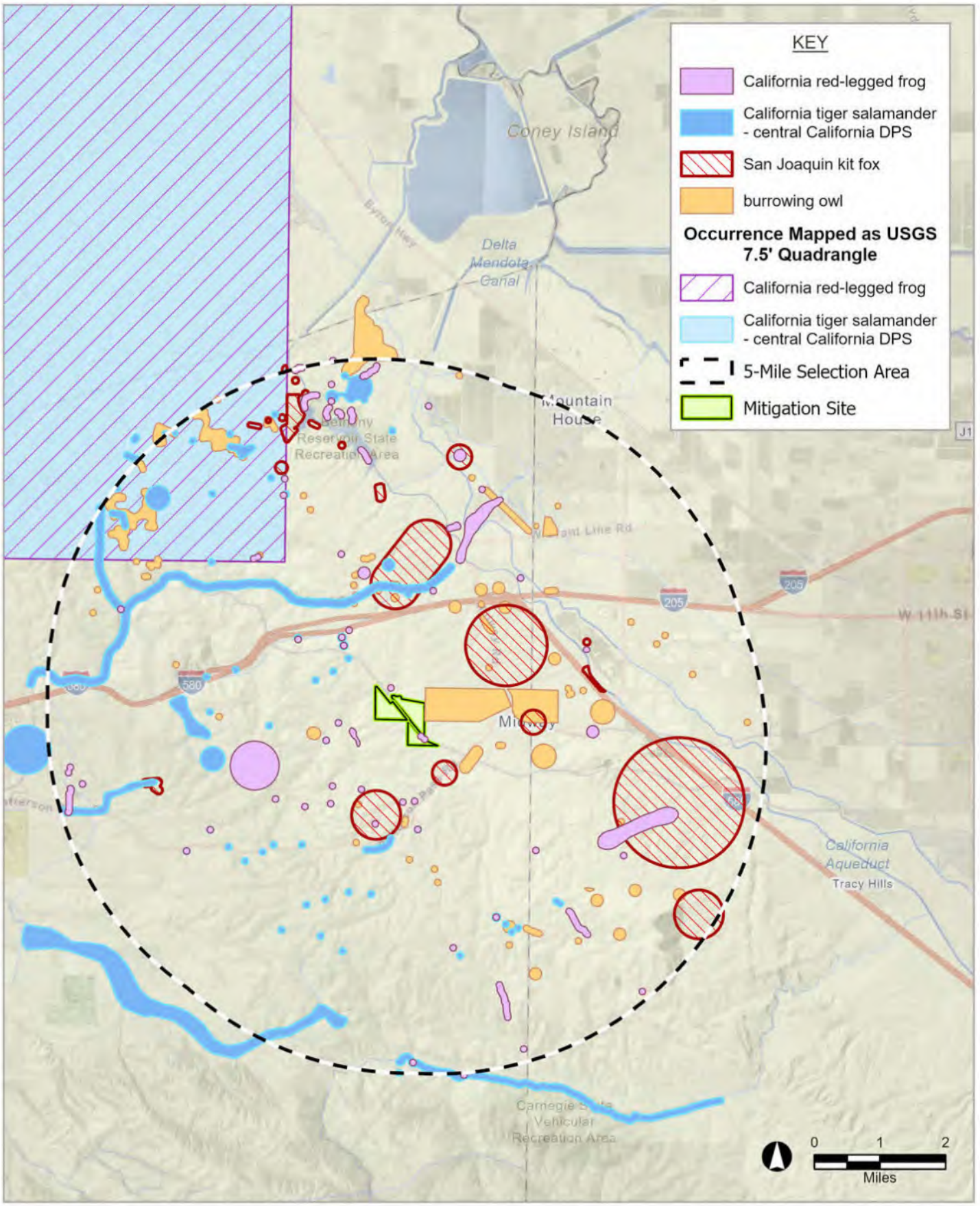
Westervelt ECOLOGICAL SERVICES

USGS 7.5' Quadrangle: MIDWAY, 1980

Figure 3

USGS Topographic Quadrangle

January 16, 2025



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Source: California Department of Fish and Wildlife, California Natural Diversity Database

Figure 4
CNDDB Occurrences
January 16, 2025

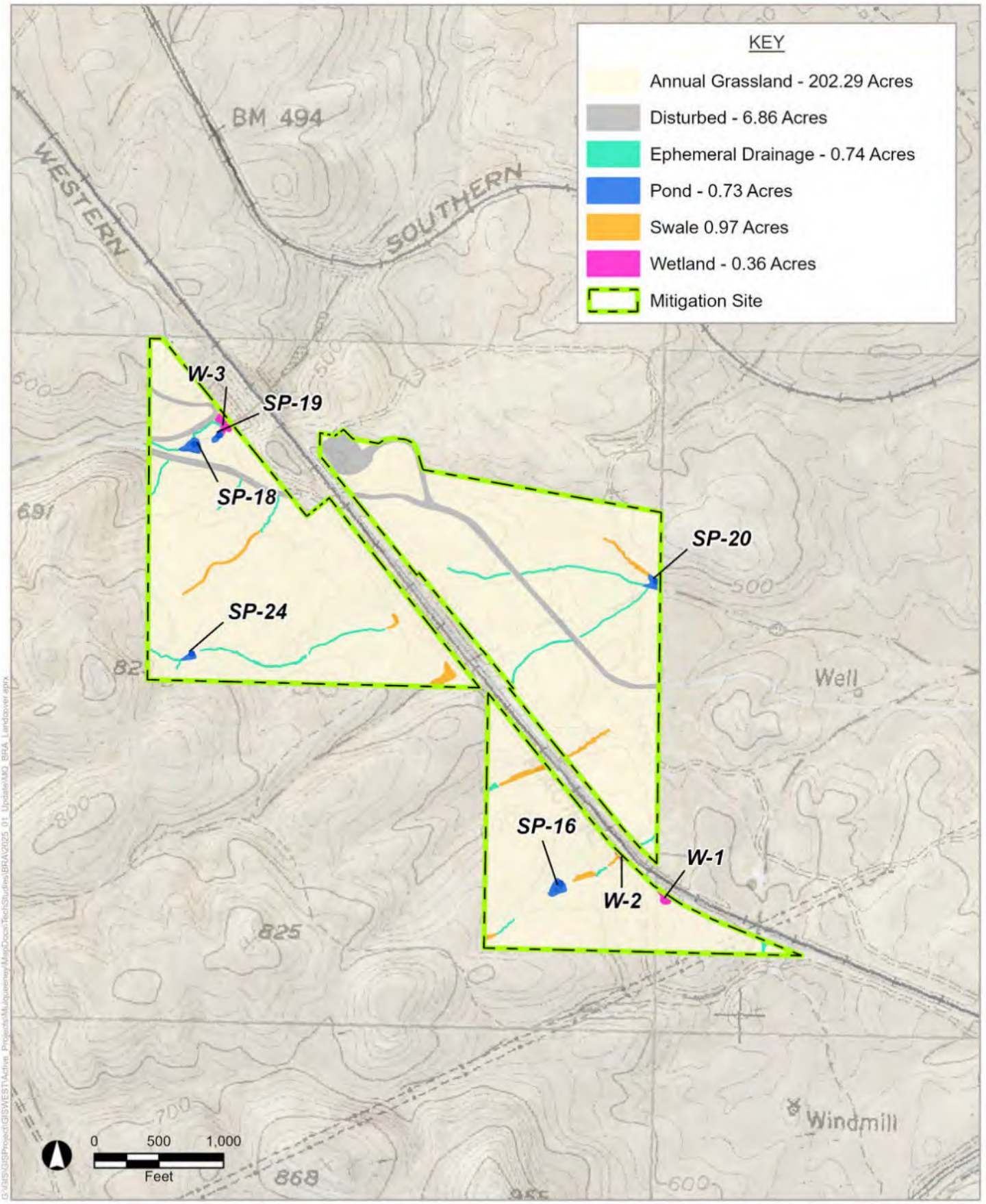

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Figure 5
Landcover
January 16, 2025

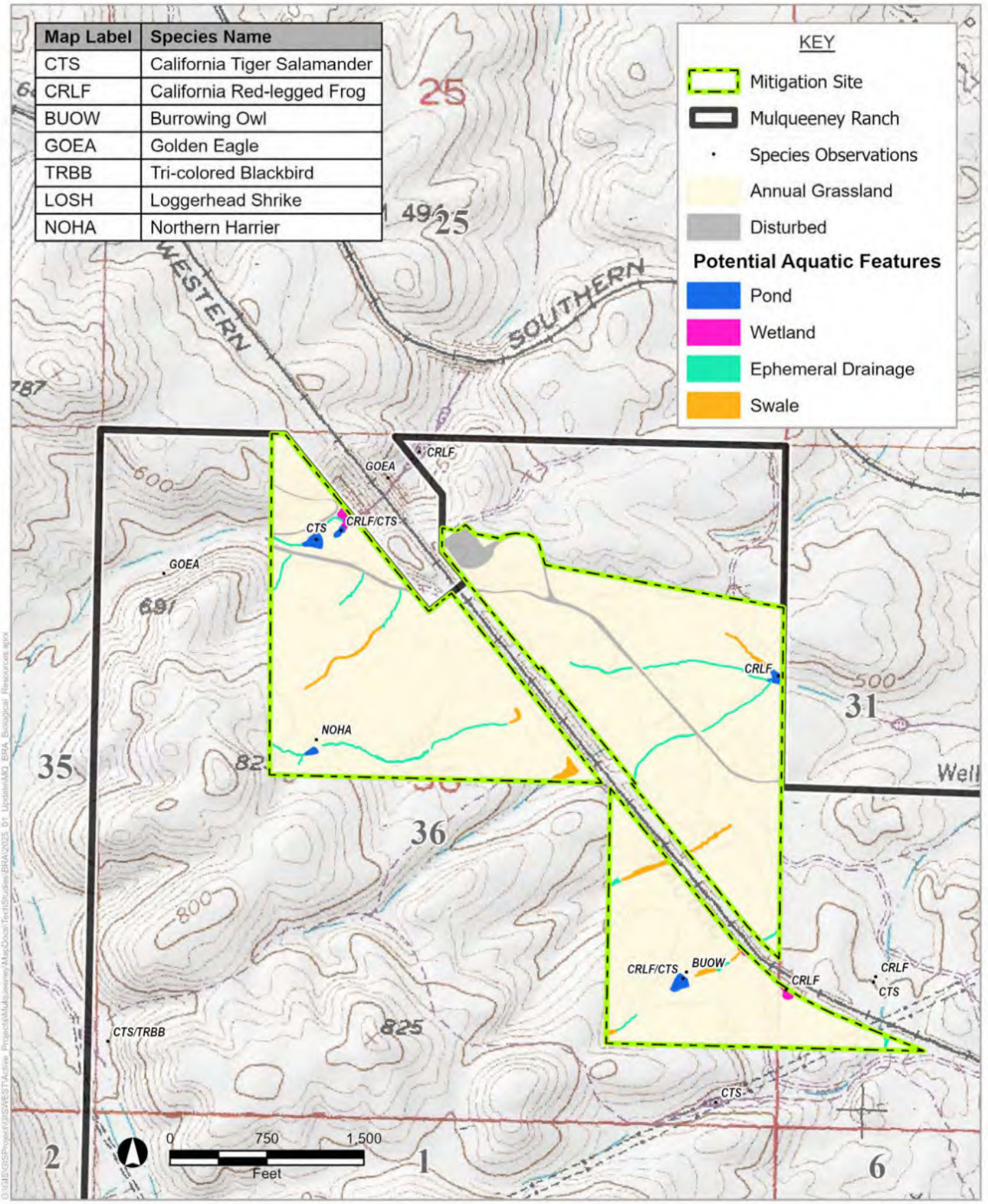

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Figure 6
Biological Resources
January 21, 2025

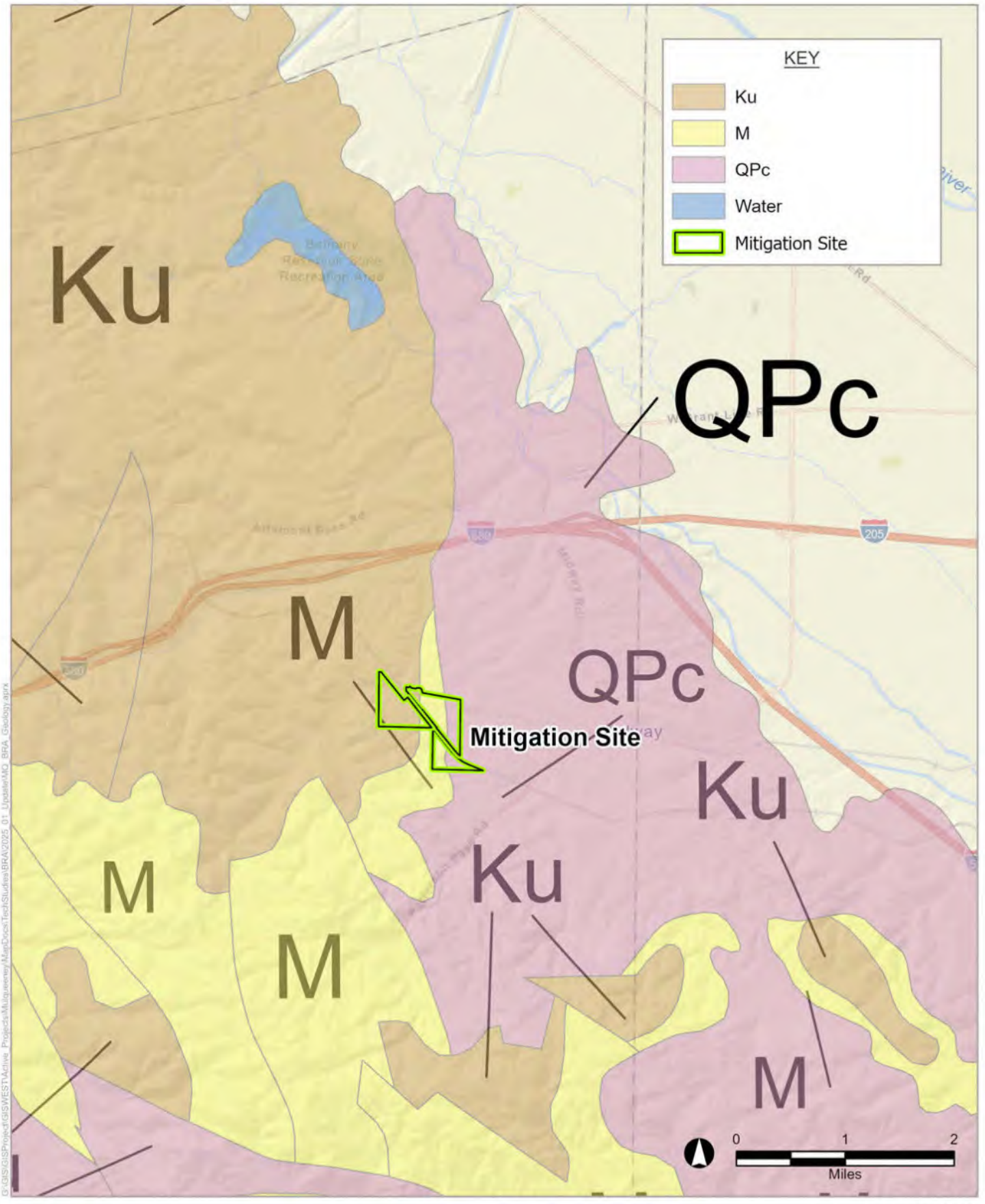

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Figure 7
Geology
January 16, 2025

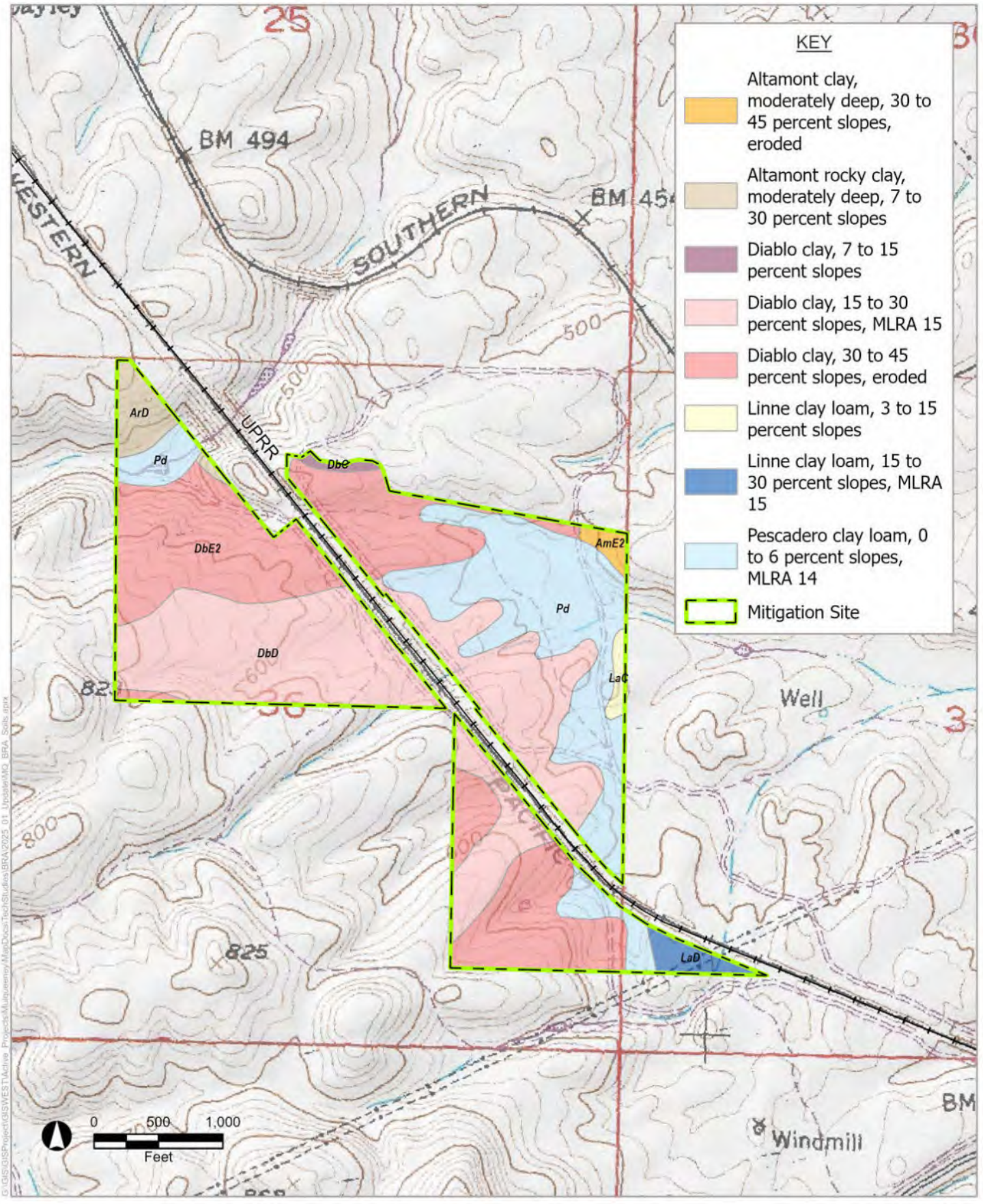

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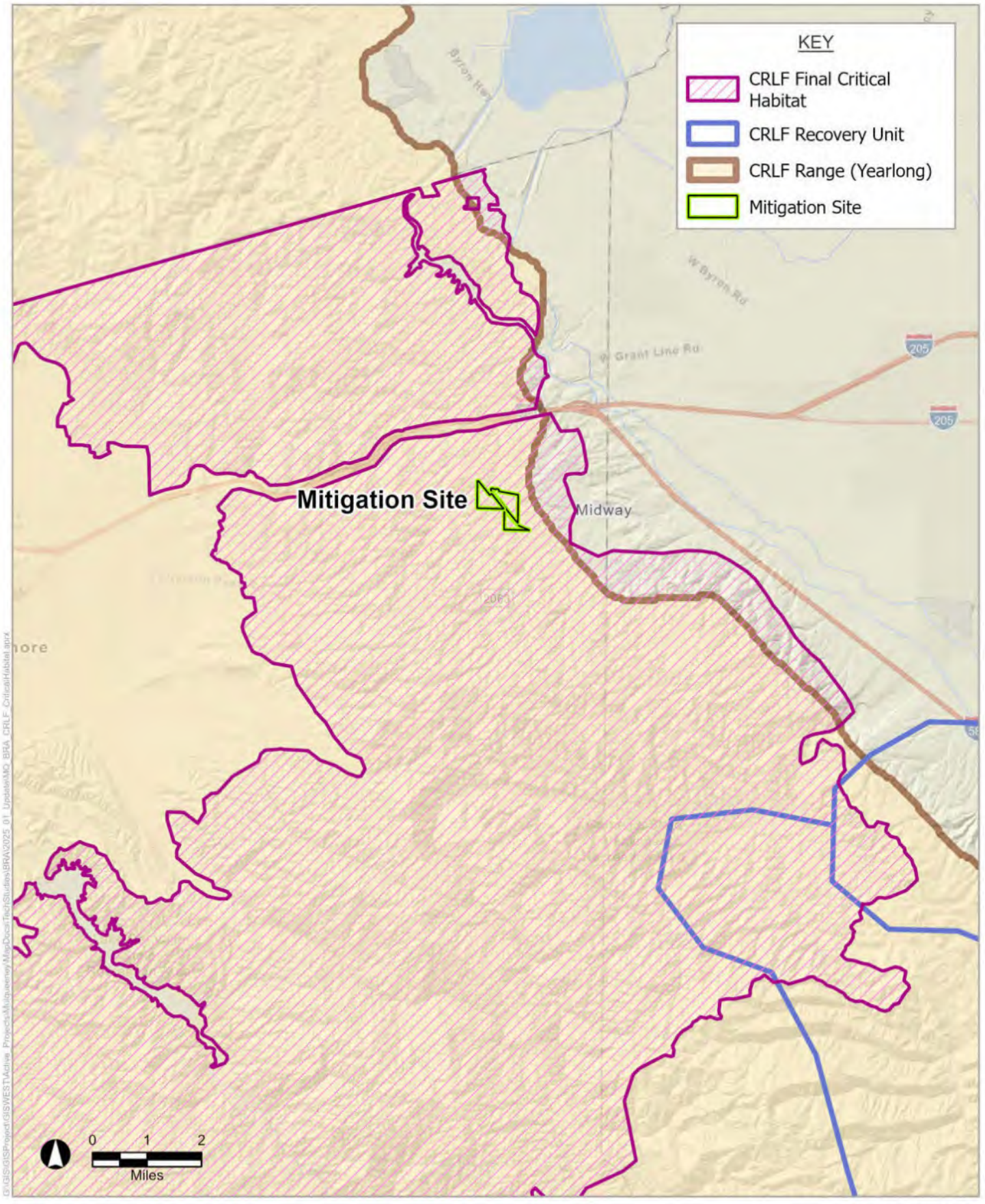
Figure 8
Soils
January 14, 2025



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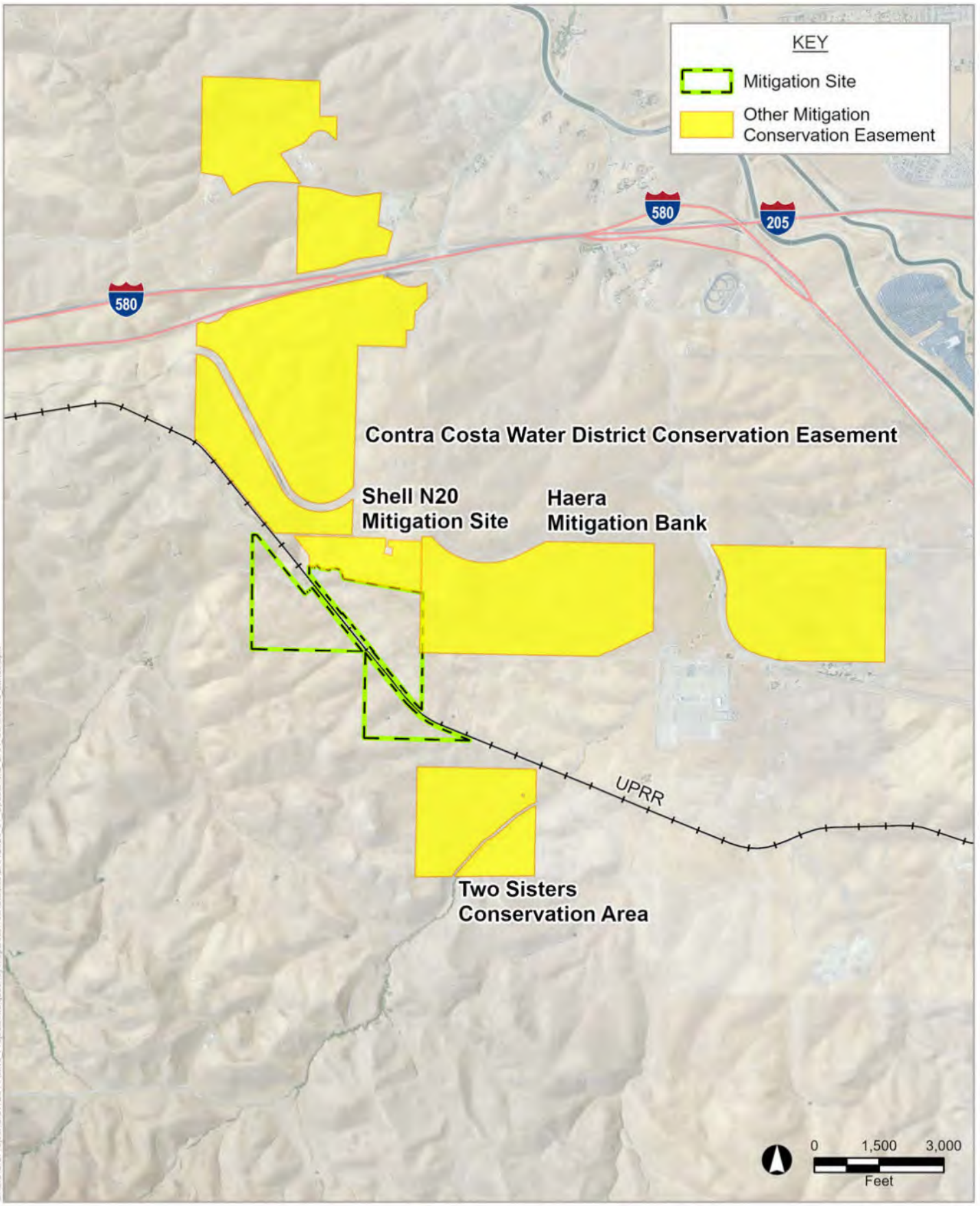
Source: U.S. Fish and Wildlife Service

Figure 9
CRLF Critical Habitat
January 14, 2025



Westervelt ECOLOGICAL SERVICES

USGS 7.5' Quadrangle: MIDWAY, 1980

Figure 10
Conservation Easements
January 14, 2025

APPENDIX B
Plant Species List

Table 1. Vascular Plant Species Observed at the Mitigation Site

Plant Species Names		Wetland Indicator Status	Cal-IPC Rating	Ha	
Scientific Name	Common Name			Annual Grassland	Stockpond
*Agrostis stolonifera**	Creeping bentgrass, Redtop	FACW	L		X
*Aira caryophyllea**	Silver hairgrass	FACU		X	
Alisma triviale (*A. plantago-aquatica*)	Northern water plantain	OBL			X
*Amaranthus albus**	Pigweed amaranth	FACU		X	
Amsinckia intermedia	Common fiddleneck	NL		X	
*Anthemis cotula**	Mayweed	FACU		X	
*Avena barbata**	Slender oats	NL	M	X	X
Azolla filiculoides	American water fern, mosquito fern	OBL			X
*Brassica nigra**	Black mustard	NL	M	X	
*Bromus diandrus**	Ripgut brome, Ripgut grass	NL	M	X	X
*Bromus hordeaceus**	Soft brome	FACU	L	X	X
Calandrinia menziesii	Red maids	FACU		X	
Callitriche marginata	California water starwort	OBL			X
*Capsella bursa-pastoris**	Shepard's purse	FACU		X	
Cardamine oligosperma	Few-seeded bitter-cress	FAC		X	
*Carduus pycnocephalus**	Italian thistle	NL	M	X	X
Castilleja densiflora?+	Dense flower owl's clover	NL		X	
Castilleja exserta+	Purple owl's clover	NL		X	
*Centaurea melitensis**	Tocalote	NL	M		
*Centaurea solstitialis**	Yellow star-thistle	NL	H	X	X
*Cerastium glomeratum**	Mouse-ear chick-weed	UPL		X	
Chara sp.	Stonewort	OBL			X
*Chenopodium album**	Goosefoot	FACU		X	
Chlorogalum angustifolium+	Narrow leaved soaproot	NL		X	
*Cichorium intybus**	Chicory	FACU		X	
*Cirsium vulgare**	Bull thistle	FACU	M	X	X
Clarkia purpurea+	Purple clarkia	NL		X	
*Convolvulus arvensis**	Field bindweed	NL		X	
*Cotula coronopifolia**	Brass buttons	OBL	L		X
Crassula aquatica	Aquatic pygmy weed	OBL			X
Croton setiger	Dove weed	NL		X	X
*Crypsis schoenoides**	Swampgrass, swamp timothy	FACW			X
*Cynodon dactylon**	Bermuda grass	FACU	M	X	X
Cyperus eragrostis	Tall flatsedge, Umbrella-sedge	FACW			X
Deschampsia danthonioides	Annual hairgrass, silverhair grass	FACW			X
Distichlis spicata	Salt grass	FAC		X	
Downingia pulchella	Flatface downingia	OBL			X
*Echinochloa crus-galli**	Watergrass	FACW			X
Eleocharis macrostachya	Common spike rush	OBL			X
*Elymus caput-medusae**	Medusa-head grass	NL	H	X	
Epilobium branchycarpum	Tall annual willow herb	FAC		X	X

Epilobium ciliatum	Slender willow herb	FACW			X
Erigeron canadensis	Canada horseweed	FACU		X	X
Eriogonum fasciculatum+	California buckwheat	NL		X	
*Erodium botrys**	Broad leaf filaree	FACU		X	
*Erodium cicutarium**	Red-stem filaree	NL	L	X	
*Erodium moschatum**	White stemmed filaree	NL		X	
Erythranthe guttata (*Mimulus guttatus*)	Streamside monkey flower	OBL			X
Eschscholzia californica	California poppy	NL		X	
*Festuca bromoides**	Six-weeks grass	FACU		X	
Festuca microstachya	Small fescue	NL		X	
*Festuca myuros**	Foxtail grass	FACU	M	X	
*Festuca perennis**	Italian ryegrass	FAC	M	X	X
*Geranium dissectum**	Cut leaved geranium	NL	L	X	
Grindelia camporum	Great valley gumweed	FACW			X
Heliotropium curassavicum	Heliotrope	FACU		X	
*Hirschfeldia incana**	Short podded mustard	NL	M	X	X
Hordeum marinum ssp. *gussoneanum**	Mediterranean barley	FAC	M	X	X
Hordeum murinum ssp. *leporinum**	Hare barley	FACU	M	X	
Hydrodictyon sp	Fishnet algae	OBL			X
Juncus balticus	Baltic rush	FACW			X
Juncus bufonius	Toad rush	FACW			X
Juncus xiphioides	Iris leaved rush	OBL			X
*Lactuca serriola**	Prickly wild lettuce	FACU		X	
Lemna minor	Smaller duckweed	OBL			X
Lupinus bicolor	Bicolored lupine	NL		X	
Lupinus pachylobus?+	Big pod lupine	NL		X	
Lupinus succulentus	Succulent lupine	NL		X	
Lysimachia arvensis+*	Scarlet pimpernel	FAC		X	X
*Lythrum hyssopifolia**	Hyssop loosestrife	OBL	L		X
*Malva parviflora**	Cheeseweed mallow	NL		X	
Malvella leprosa+	Alkali mallow	FACU		X	
Matricaria discoidea	Pineapple weed	FACU		X	
*Medicago polymorpha**	Bur clover	FACU	L	X	
*Melilotus indicus**	Sourclover	FACU			X
*Mollugo verticillata**	Green carpetweed	FACU		X	
Nasturtium officinale+	Watercress	OBL			X
*Paspalum dilatatum**	Dallis grass	FAC			X
Plagiobothrys nothofulvus	Rusty haired popcorn flower	FAC		X	
*Plantago lanceolata**	Narrow leaf plantain	FAC		X	X
*Poa annua**	Annual bluegrass	FAC		X	X
*Polygonum aviculare**	Common knotweed	FAC			X
*Polypogon monspeliensis**	Rabbitsfoot grass	FACW	L		X
*Pseudognaphalium luteoalbum**	Jersey cudweed	FAC			X
Ranunculus aquatilis	White water buttercup	OBL			X
*Ranunculus muricatus**	Spinyfruit buttercup	FACW			X
*Raphanus sativus**	Wild radish	NL	L	X	
*Rumex crispus**	Curly dock	FAC	L		X

Salix sp.	Willow	FACW			X
*Silybum marianum**	Milk thistle	NL	L	X	X
*Spergularia rubra**	Purple sandspurry	FAC			X
Stuckenia pectinata (Potomogeton pectinatus)	Sago pondweed	OBL			X
*Trifolium dubium**	Shamrock	UPL		X	
*Trifolium hirtum**	Rose clover	UPL	L	X	
Triphysaria eriantha+	Butter 'n' eggs	NL		X	
Triteleia hyacinthina+	White brodiaea	FAC		X	
*Typha angustifolia**	Narrowleaf cattail	OBL			X
Urtica dioica	Stinging nettle	FAC			X
Veronica anagallis-aquatica+*	Water speedwell	OBL			X
Veronica peregrina	Neckweed	FAC			X
Vicia sativa	Common vetch	FACU		X	
*Vicia villosa**	Hairy or winter vetch	NL		X	
Xanthium strumarium	Cocklebur	FAC			X

* = non native , + = observed on the Ranch but outside the Mitigation Site

APPENDIX C
Wildlife Species List

Table 4. List of Wildlife Observed within the Mitigation Site and Mulqueeney Ranch

Common Name	Scientific Name
Mammals	
Audubon's cottontail	*Sylvilagus audubonii*
Black-tailed jackrabbit	*Lepus californicus*
Botta's pocket gopher	*Thomomys bottae+*
California ground squirrel	*Otospermophilus beecheyi*
Coyote	*Canis latrans*
Gray fox*	*Urocyon cinereoargenteus+*
Raccoon	*Procyon lotor+*
Virginia opossum	*Didelphis virginiana+*
Birds	
American cliff swallow	*Petrochelidon pyrrhonota*
American crow	*Corvus brachyrhynchos*
American kestrel	*Falco sparverius*
American wigeon*	*Mareca americana*
Bald eagle*	*Haliaeetus leucocephalus*
Barn swallow	*Hirundo rustica*
Black phoebe	*Sayornis nigricans*
Brewer's blackbird	*Euphagus cyanocephalus*
Bufflehead	*Bucephala albeola*
Canada goose	*Branta canadensis*
Common starling	*Sturnus vulgaris*
Golden eagle	*Aquila chrysaetos*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Greater yellowlegs	*Tringa melanoleuca*
Horned lark	*Eremophila alpestris*
Killdeer	*Charadrius vociferus*
Loggerhead shrike	*Lanius ludovicianus*
Mallard	*Anas platyrhynchos*
Mourning dove	*Zenaida macroura*
Northern harrier	*Circus hudsonius*
Northern raven	*Corvus corax*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Savannah sparrow	*Passerculus sandwichensis*
Tricolored blackbird	*Agelaius tricolor*
Turkey vulture	*Cathartes aura*
Western burrowing owl	*Athene cunicularia hypugaea*
Western kingbird	*Tyrannus verticalis*
Western meadowlark	*Sturnella neglecta*
Reptiles	
Northern Pacific rattlesnake*	*Crotalus oreganus oreganus*

Northwestern fence lizard	*Sceloporus occidentalis occidentalis*
Amphibians	
California red-legged frog	*Rana draytonii*
California tiger salamander	*Ambystoma californiense*
California toad	*Anaxyrus boreas halophilus*
Sierran treefrog	*Pseudacris sierra*

+ = sign (tracks, burrows, etc.)

* = Observed outside of Mitigation Site

APPENDIX D

Representative Photographs

Photo 1 (S): Stock pond where BUOW are present in adjacent burrows located in the mitigation site.

Photo 2 (W): Stock pond within the mitigation site where CTS larvae and adult CRLF have been observed.

Photo 3 (N): Drainage in the mitigation area.

Photo 4: CRLF found in a stock pond in the mitigation site.

Photo 5: CRLF found in drainage in the mitigation site.

Photo Point 6: CTS larvae detected during aquatic surveys in the mitigation site.

Photo Point 7: CTS larvae detected during aquatic surveys in the mitigation site.

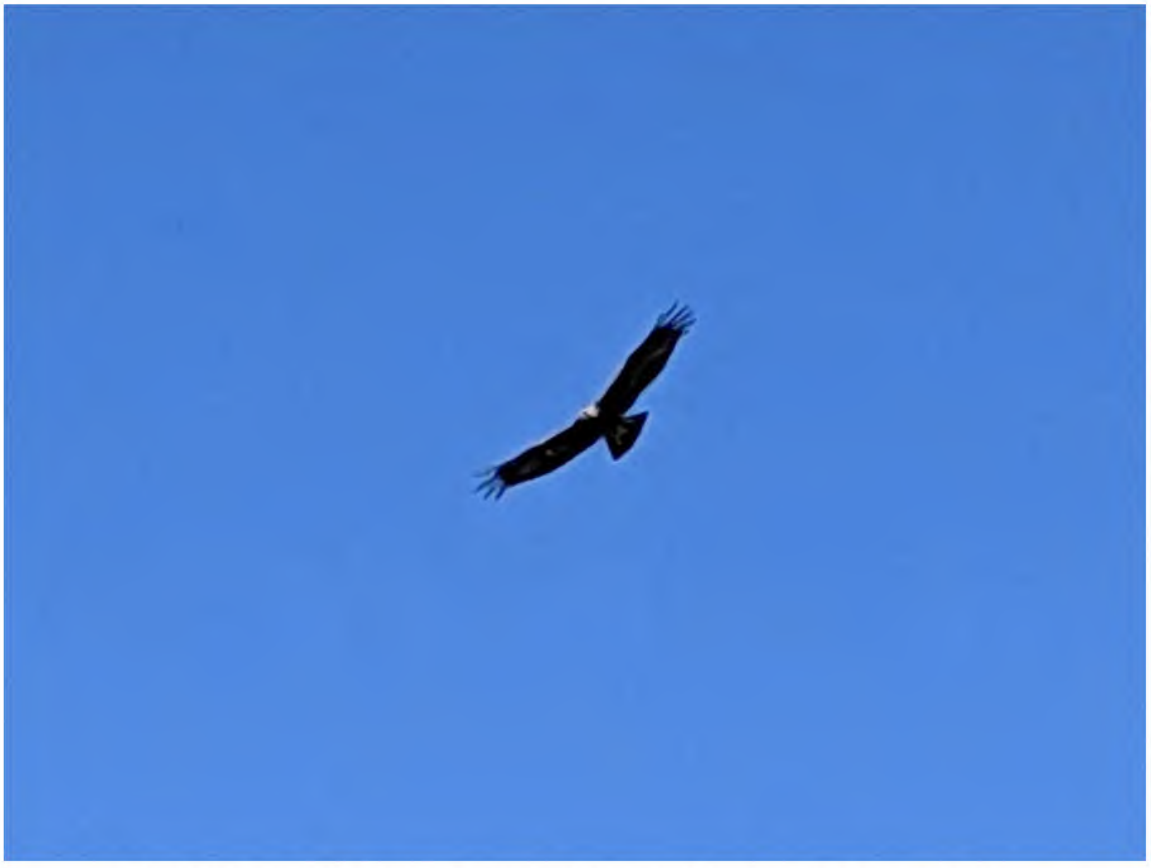


Photo Point 8: Bald Eagle (*Haliaeetus leucocephalus)* observed in the mitigation site.

Photo Point 9: Burrowing Owl (*Athene cunicularia)* observed in the mitigation site.

Westervelt
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