INITIAL STUDY
San Francisco Bay Aggregate's Global Innovation Center
PITTSBURG, CALIFORNIA

Prepared by:

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for:

City of Pittsburg
65 Civic Avenue
Pittsburg, CA, 94565

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SECTION 1.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

1. Project Title:	San Francisco Bay Aggregate's Global Innovation Center
2. Lead Agency Name and Address:	City of Pittsburg Planning Division 65 Civic Avenue Pittsburg, CA 94565
3. Contact Person and Phone Number:	Maurice Brenyah-Addow Senior Planner (925) 252-4261
4. Project Location:	APN #073-020-019-3 (2.5 Acres) 895 E 3rd Street Pittsburg, CA 94565
5. Project Sponsor:	Blue Planet Systems, Inc. (San Francisco Bay Aggregates)
6. General Plan Designation:	Industrial
7. Zoning:	General Industrial (IG)

1.1 PROJECT BACKGROUND

San Francisco Bay Aggregates (SFBA) (Applicant), a wholly owned subsidiary of Blue Planet Systems Corporation (Blue Planet), is proposing to develop, own, and operate a carbon capture and mineralization facility located in Pittsburg, California using proprietary Blue Planet process technology.

Local vendors and emission generators would provide the sources of CO_2 which will be combined with locally sourced recycled concrete aggregate (RCA), to produce new "CO_2 sequestered" and "upcycled" rock aggregates (UCA). Upcycling is the process of transforming byproducts or waste materials into new materials or products of better quality or for better environmental value. It is anticipated the final aggregate products would exceed American Society for Testing and Materials (ASTM) C33 Standard Specification for Concrete Aggregates that defines the quality of aggregate for use in concrete.

These aggregate products would be sold to San Francisco Bay Area businesses, governments, and consumers for use in a wide range of low carbon and high performance concrete applications.

The Proposed Project will convert the existing SFBA pilot concrete aggregate production facility to a continuous production operation.

A Mitigated Negative Declaration (MND) was approved by the City in 2019 for the pilot Carbon Capture and Mineralization Project (2019 MND) that allowed a Temporary Conditional Use Permit for the Proof of Concept Project (City 2019). An Addendum to the 2019 MND for construction of the underground flue gas pipeline was completed in 2020.

1.2 PROJECT PURPOSE

The Proposed Project includes:

- Providing carbon dioxide (CO_2) sequestered and upcycled rock products for planned construction projects in the San Francisco Bay Area (Bay Area).
- Transition from a proof of conception operation to a continuous permanent operation.

The broader objectives of the Proposed Project are to substantiate the potential to address the following local environmental and economic priorities:

- Reduction in greenhouse gas (GHG) emissions, specifically CO_2, by the Proposed Project for the capture and permanent sequestration of CO_2 from a slipstream of the Los Medaños Energy Center (LMEC) flue gas[1] or other sources.
- Reduction of environmental impacts of quarrying virgin aggregate for construction by:
    - remediating and upcycling waste concrete aggregate from Bay Area construction projects, and
    - producing synthetic limestone aggregates.

[1] Flue gas- the mixture of gases resulting from combustion and other reactions in a furnace, passing off through the smoke flue, composed largely of nitrogen, carbon dioxide, carbon monoxide, water vapor, and often sulfur dioxide, and sometimes serving as a source from which carbon dioxide or other compounds are recovered https://www.merriam-webster.com/dictionary/flue%20gas

Finalize development and commercialization of Applicant's technology for capturing and using CO_2, allowing the City of Pittsburg and the greater Bay Area to be a world leader as a Research and Development (R&D) and production facility in sustainable construction materials and climate technology.

1.3 PROJECT LOCATION AND SITE CHARACTERISTICS

1.3.1 Location

SFBA intends to construct and operate the proposed Project on a 2.5-acre parcel located at 895 E 3rd Street, Pittsburg, California 94565 in Contra Costa County. The Assessor's Parcel Number for the Project site is 073-020-019-3. As shown on Figure 1, the parcel is bounded to the north by New York Slough, Suisun Bay, part of the Sacramento-San Joaquin River Delta; to the east by land owned by USS-POSCO Industries (UPI) and by a Pacific Gas and Electric(PG&E) substation; to the south by an easement that runs along E 3rd Street; and to the west by Koch Carbon Inc.

1.3.2 General Plan Designation/Zoning

The Pittsburg General Plan indicates the Project site has a land use designation of Industrial and is zoned IG (General Industrial) District. The IG designation is the City's heavy industry zoning district that allows for a range of manufacturing, industrial processing, and general services.

1.3.3 Surrounding Land Uses and Project Setting

Previous to the SFBA Project, this location was host to a 20-megawatt cogeneration power plant, owned and operated by GWF Power Systems Company, Inc. (GWF). The facility was decommissioned in 2012 and the site has since been an empty lot used for truck parking. The Project site has a perimeter chain link fence. As shown in Figure 2, two buildings and a trailer remain in place, with the potential to add an additional trailer. Site remedial actions, prior to the construction of the GWF plant, resulted in contaminated soil excavation, consolidation and capping under building floors, asphalt pavements, and landscaped areas that remain intact. A Phase 1 environmental site assessment carried out in August 2018 by Groundwater & Environmental Services, Inc. verified that the capping infrastructure remains in place, sealing any contaminated soil from exposure to the environment and workers. Surrounding land uses are industrial and include Kock Carbon to the west, Los Medaños Energy (Calpine) center to the northwest, Corteva Agriscience campus to the east.

The site does not abut a public right of way. Access to the site is via a private road at the end of the public portion of 3rd Street. Pedestrian access to the site is along the same route.

The site provides the following infrastructure that will facilitate operations of the Proposed Project:

- Close proximity to flue gas input, a small slipstream of which will be diverted from Calpine's Los Medaños Energy Center (LMEC), a neighbor to the Project site at its southwest corner.
- Access to material transport, for raw materials and products, by way of E 3rd Street via standard trucking routes through the City of Pittsburg.

Under the Temporary Use Permit, SFBA completed construction of a pipeline bringing flue gas from LMEC to SFBA including a pipeline crossing under E 3rd Street.

Figure 1 - Project Vicinity Map



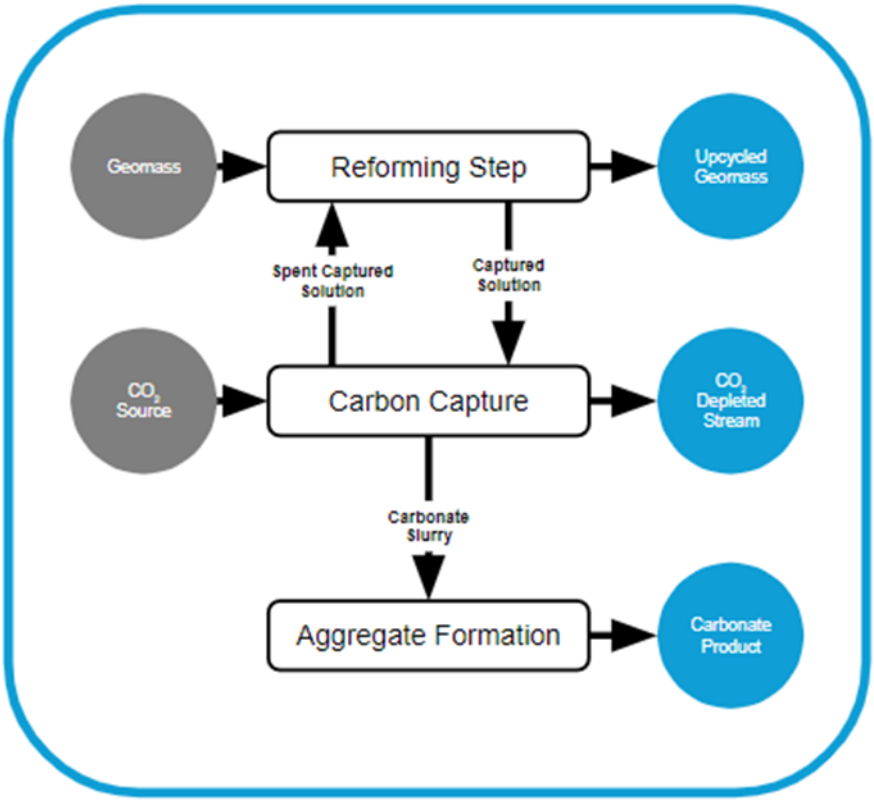
Figure 2 - Project Location Map



1.4 PROJECT DESCRIPTION

The primary function of the Proposed Project is to take flue gas from LMEC, receive shipments of compressed CO_2 and RCA/geomass feeds from local ready-mix concrete producers and recyclers to produce CO_2 sequestered and upcycled rocks for fresh concrete production, as shown in Figure 3 the Process Diagram.

Figure 3 - Process Diagram



The following two phases of construction will be implemented to achieve continuous operation at the Project site:

Phase 1: Complete site-wide automation and equipment upgrades to demonstrate continuous automated operations. This work is expected to continue through 2024.

Phase 2: Scale the current operation to utilize a larger (95ft) CO_2 absorption column, which in turn will include the installation of larger processing equipment and larger liquid holding tanks. The earliest this phase of construction would start would be 2025. A height variance from the City will be required to install and operate the larger CO_2 absorption column.

The Proposed Project would continue to link together three (3) component modules into a cycle for the overall Process. A module is a set of equipment from which an interim product is produced. Each module is made separately, and the completed modules are joined together to form the process of producing ingredients for fresh concrete production. The three modules presented on Figure 3 and described in Section 1.4 Operations are:

1. Reformation Module – extract calcium oxide (CaO)

2. Gas Absorption Carbonate Precipitations (GACP) Module – capture CO_2

3. Carbonate Agglomeration Module – formation of calcium carbonate ($CaCO_3$)

Project Construction

The duration of construction of the Proposed Project is estimated to be 12 to 18 months. It is estimated that a maximum of twenty (20) construction workers are required. Construction hours would be 7:00 am to 7:00 pm Monday through Friday. Construction activity entails installing equipment, new tanks, new conveyors, new absorption column, and connecting the separate modules together. All SFBA projects have been constructed under an existing agreement with the Construction Guild to use union labor for all significant construction activities. Equipment used during construction would include:

- Forklift (Daily)
- Loader (Daily)
- Crane (20 days)
- Dump truck (Daily)
- Transporter truck (Daily)

Staging areas and parking of worker vehicles would be contained to the 2.5-acre Project site. All delivered equipment will be staged in the central area of the facility during construction activities to keep the traffic flow path uninterrupted. An additional mobile office trailer would be installed for use during the operation of the Proposed Project. ADA parking and accessible portable restrooms would be set up during construction.

While most of the equipment would be skid mounted for mobilization to and from the Project site, the construction of a new utility trench would disturb the soil beneath the existing site cap. All soil disturbance activities will adhere to the SFBA 2022 Soil Management Plan. Per the Soil Management Plan, the Department of Toxic Substances Control (DTSC) must approve the Soil Management Plan before any activities that disturb the cap proceed , soil sampling shall occur throughout the job, and all contaminated soil will be isolated and disposed of in accordance with this plan.

A new concrete containment pad and berm will be constructed to contain equipment that could potentially leak or spill. This containment pad will be poured near the southwestern entrance to the facility.

There are no planned changes to the existing site drainages. Straw wattles surround each storm drain to filter out debris before the water enters the drainage system. Storm water drain valves remain closed until needed to release storm water when ponding is caused by heavy rains. Prior to a discharge, operations will perform visual inspections and lab testing to ensure the on-site containment areas are free

of chemicals or sheens. The containments will be inspected during discharge as well. Sediment barriers are utilized at the existing stormwater drain inlets and would follow standard protocol:

1. Sandbags shall be laid tightly together.
2. Trapped sediment would be removed after each storm event and any required repairs made promptly thereafter.
3. Down slope elevations must be greater than the ponding height to prevent runoff from bypassing the inlet. A sandbag dike on the down slope may be necessary to prevent bypassing the inlet as determined during operations.
4. Drain valves (locked closed) on permanent containment pads.

Operations

It is estimated that five (5) people per shift will be needed to operate the Facility. There would be three eight (8) hour shifts per day. In addition to shift workers, there will be ten (10) staff members on-site during day shift. Therefore, the total number of employees commuting to the facility per day will be twenty-five (25), with 15 working the day shift and 5 each on the other two (2) shifts. The Proposed Project would run the three (3) component modules continuously during the eight-hour shifts. Mobile equipment used on-site during the production process includes:

- Forklift (Daily) (three 8-hour shifts)
- Loader (Daily) (three 8-hour shifts)

Table 1 is a summary of the estimated maximum operational vehicle trips per weekday to and from the Facility. Weekends and evening shifts would be a total of ten trips for the five facility operators per weekend days. Excluding chemical deliveries in Table 1, most supply trips would be loaded trucks into and out of the Facility avoiding the movement of empty trucks. Most deliveries will be between 7am and 5pm on weekdays distributed evenly over the ten-hour period.

Table 1: Summary of Vehicle Trips Per Weekday

Trip Type	Number of Trips per Day
Weekday Workers	50
Geomass/Filter Cake and Supplementary Cementitious Material (SCM) In/Aggregate Out	32
$CaCO_3$ In/Aggregate Out	4
Chemicals, CO_2 cannisters	4
Total Trips per Weekday	90

This section describes the details of each module as presented in Figure 3.

Reformation Module

This module uses aqueous ammonium solutions from incoming geomass/waste concrete to extract calcium ions and alkalinity which in turn, reforms ammonium to aqueous ammonia. The exit stream of

wet solids consists of upcycled geomass products that are dewatered and washed to meet commercial requirements. The reformed ammonium solution, which now contains extracted calcium ions and aqueous ammonia, flows to the GACP Module.

Equipment in this module will be comprised of the following:

RCA/Geomass unloading hopper
RCA/Geomass feeder
Separation conveyor
Reformation pump
Lamella Filter
Filter press
Reformed solvent tanks

Gas Absorption Carbonate Precipitation (GACP) Module

In this module, CO_2 from the incoming gas stream reacts with the calcium and alkalinity to produce a calcium carbonate slurry, which is sent to the Agglomeration Module. The CO_2 depleted gas stream is scrubbed of ammonia prior to exiting the unit. The liquid/slurry leaving the GAPC Module is returned to the Reformation Module for future processing. Equipment in this module will consist of the following:

- Gas absorption column
- Process exhaust stack
- Slurry pump
- Slurry solution tanks
- Mixing tanks

Carbonate Formation & Processing Module

In this module, the aqueous ammonium carbonate solution from the CO_2 Capture Module is shaped and formed into solid aggregates that are 100% by weight calcium carbonate or uses the calcium carbonate slurry from the GAPC module to coat the surface and pores of a substrate material, producing coated calcium carbonate. Equipment in this module will be comprised of the following:

- Rotary dryer
- Aggregate belt conveyor
- Product bins
- Filter Press

Site Infrastructure

Existing utility service and/or service connections in place include gas, electric, potable and non-potable water hookups, and an existing stormwater outfall pipe that extends into New York Slough which is planned to only be used for stormwater drainage during heavy rain events. Operations will ensure the on-site containment areas are free of chemicals or sheens and straw wattles are around each storm drain to prevent stormwater contamination as described above in Section 1.3.2 under Site Infrastructure.

CO_2 Source

The process of obtaining CO_2 includes one or more of the following options:

- pipelines to LMEC's flue gas stacks transported across E 3rd Street to the Project site;
- a blower to move the outlet gas from a steam boiler vessel (solely used to capture flue gas) before it enters the process equipment for CO_2 removal; or

- trucked from an outside source.

Note: There is an existing 8" pipeline transporting LMEC's flue gas to SFBA.

Geomass

Geomass includes solid materials that contain calcium or other metal ions and alkalinity that can be extracted using process solvents. Potential geomass sources include waste concrete, steel slag, fly ash, cement kiln dust, filter cake from rock washing plants (including a local option) and other potential sources. These solid materials may be delivered in a moist condition which will help mitigate dust particulate pollution.

Water

Potential water sources include Contra Costa Canal aqueduct, City of Pittsburg Municipal Water, or Delta Diablo Water District. The facility would use a closed process water loop for washing; this process water does not come in direct contact with any other water in the facility. Wastewater generated from the washing of material products will be minimized utilizing recycling on-site (Reverse Osmosis[2]). It is estimated less than 5 million gallons of water supply will be used annually by the Proposed Project.

Gas & Electric

PG&E has gas and electric hookups to the site. The last "new construction" was in 2013 (for electric) and the site was last inspected by PG&E in 2014. The main electric connection is 400A/480V/3-phase with a meter currently in service. At full implementation of the Proposed Project, it is estimated the annual power usage will be less than 3.5GWH.

The existing gas infrastructure to the site consists of a 230-foot, 3-inch steel pipeline from the main with delivery of 15/80 PSI; it was cut and capped in 2012 and would need a meter installed to start service. There are currently no plans of returning this line to service. The Proposed Project does not require gas service.

Chemical Storage and Use/Safety Procedures

All chemicals delivered to the site in bulk quantities would be stored in fully contained bulk storage tanks and/or storage vessels having a capacity of less than 300 gallons (or otherwise restrained by vapor pressure requirements or types of materials stored). All chemical storage, handling, and feed facilities would be designed, constructed, and maintained in compliance with all applicable governmental codes and regulations. California law requires the Project Applicant, as the operator of the facility, to submit a Hazardous Material Business Plan (HMBP), that describes in detail the type and volume of chemicals to be used at the facility, to the Contra Costa Health Services Hazardous Materials Programs (CCHSHMP).

The HMBP includes a reporting and monitoring process for any spills that may occur. It also must include requirements for safety equipment, automatic shut-off valves, and other safety procedures that may be required, depending on the types and volumes of chemicals stored and used. The potential for facility upset conditions and accidents would be minimized with secondary containments sized to contain 150% of the largest volume tank in any given area, proper training of operators, and having an emergency response plan in place that outlines procedures to quickly react in the event of an accident or spill.

[2] Reverse osmosis is a water purification process that uses a semi-permeable membrane (synthetic lining) to filter out unwanted molecules and large particles such as contaminants and sediments. https://quenchwater.com/blog/what-is-reverse-osmosis-and-how-does-it-work/#:~:text=Reverse%20osmosis%20is%20a%20water,and%20dirt%20from%20drinking%20water.

Chemicals and other inputs used in the Process are listed in Table 2. All chemical storage would include secondary containment.

Table 2: Chemicals and Quantities Stored On-site

Chemical	Common Name, Physical State	Approximate Storage Volume	Process Using Chemical Addition
NH_3	Ammonia, 0.5 to 30 wt% aqueous solution	One (1) tank of less than 300 gal; less than 2,500 lb	CO_2 Capture Module
n/a	Waste concrete aggregate, solid	Two (2) piles or roughly 25 cubic yards; 17 ft. w x 17 ft. l x 5 ft. h piles	Reformer Module
C2H4O2	Acetic Acid Glacial, aqueous	One (1) tank of less than 300 gal; less than 3,000 lb	CO_2 Capture Module
CO_2	Carbon Dioxide, liquid & gas	20 ton tank @ 300 psi or 400 lb tanks @ 350 psi	CO_2 Capture Module

A Site-Specific Safety Plan to address safety issues specific to the facility would be updated and be consistent with the existing Safety Program and Policies in the SFBA Safety Plan. The plans would be developed as part of the Site-Specific Safety Plan for the Project and include:

Scope of Project,
Health & Safety Responsibilities,
General Safety Procedures,
Jobsite Safety Procedures, and
Safety Program & Policy Limitations.

The Proposed Project would include the development of an industrial fire safety plan consistent with applicable standards and fire codes. Fire systems that would be in place include fire extinguishers, fire sprinkler and smoke and fire alarm systems as required, as well as exit signs and emergency lighting. Any additional access lighting required for personnel and for security would consist of permanently mounted fixtures secured to structures, equipment, walls, and poles as required, and would be designed to provide nighttime lighting levels consistent with applicable standards.

Process Output

Figure 3 illustrates the primary function of the Project operations to use flue gas/pure CO_2 and RCA/geomass feeds to produce CO_2 sequestered and upcycled rocks for incorporation into fresh concrete. Several other byproducts, produced during the Process, are discussed below.

Treated Flue Gas

The treated flue gas, depleted of CO_2 during the Carbon Capture Module, would be scrubbed by a secondary set of gas scrubbing equipment. This scrubbing equipment would be located just upstream of the stack to recover any fugitive ammonia vapor. The remains of the treated flue gas would then be exhausted through the stack into the atmosphere.

Wastewater

A goal of the Proposed Project will be to recycle 100% of the wastewater generated. Until this is achieved, SFBA estimates the maximum wastewater generated during operations is 20 gallons per minute (gpm). Most of the wastewater generated from the washing of material products will be recycled on-site using reverse osmosis. Any process water discharge will be treated as required by regulation prior to being discharged.

Prior to discharge to the site specific sanitary sewer system, treatment would be performed to meet discharge requirements.

Stormwater

All stormwater discharges to New York Slough will remain consistent with current and historical permitted site practices, limited to runoff from the Project site conveyed through existing catchments and culverts. To prevent potential contamination, stormwater drains will remain isolated except during heavy rainfall events. The facility will not discharge any process water into the stormwater system drains. Prior to discharge into the New York Slough, all water will be properly inspected and verified via lab testing to be free of contamination. The lab results and discharges will be documented and kept on file at SFBA.

Solid Waste

A dumpster with at least ten (10) cubic yards of capacity will be utilized during the construction process to remove solid waste. The municipal waste service provided by Mt. Diablo Resource Recovery would empty this dumpster as needed during construction. All products from the Proposed Project are to be used as construction materials in building products; any other solid waste from operations would be contained in the dumpster in the trash enclosure and would be emptied as scheduled with Mt. Diablo Resource Recovery.

Gas Emissions

The use of aqueous ammonia solution in the process results in the potential for emissions from two sources. The first is from unreacted ammonia in CO_2 depleted flue gas in the CO_2 Capture Module, and the second is from fugitive ammonia vapors from the reformation process. The Proposed Project would use a combination of the following techniques to manage odorous ammonia emissions:

1. Installation of gas seals on equipment associated with ammonium ions or free aqueous ammonia.
2. Any process modules that use ammonia would have its equipment contained in an enclosure with extraction/emission to a single point to manage odor.
3. Gas tight piping would be used to interconnect the equipment that requires gas flow through.

Materials Storage

The Project site would receive inbound RCA/Geomass as a raw material input and would produce calcium carbonate aggregates, carbonate coated rocks and upcycled RCA as the primary products outbound to the concrete market clients. Supplementary cementitious material (SCM) is also outbound to market clients. At a maximum capacity, SFBA will capture approximately 1,000 tonnes of CO_2 per year. Approximately 2,280 tonnes of $CaCO_3$ would be produced and exported per year. 10,000 tonnes per year of geomass (wet weight based on filter cake delivered) will be imported/exported to meet the production requirements. Table 1 under Operations provides the daily material truck trips.

Input and product materials would be stored outdoors in managed piles— four piles for Geomass and one pile for outbound calcium carbonate products (five total piles). Each pile would be surrounded by filtration/absorption berms to prevent precipitation runoff from being carried off-site and through the site's stormwater drain. Some inbound material (filter cake in particular) would be received in a moist condition. Geomass storage and loading operations would use water to manage dust. Front-loaders would move material to and from the component modules or the truck loading and unloading areas. The site would allow space for up to one week's worth of input material and product material. However, in stable operation, the input material and product material would arrive and leave on a 1:1 rotation three to five days a week and require minimal storage. Figure 4 shows locations for material storage on-site run along the north perimeter of the property and include both its north and its northwest corners.

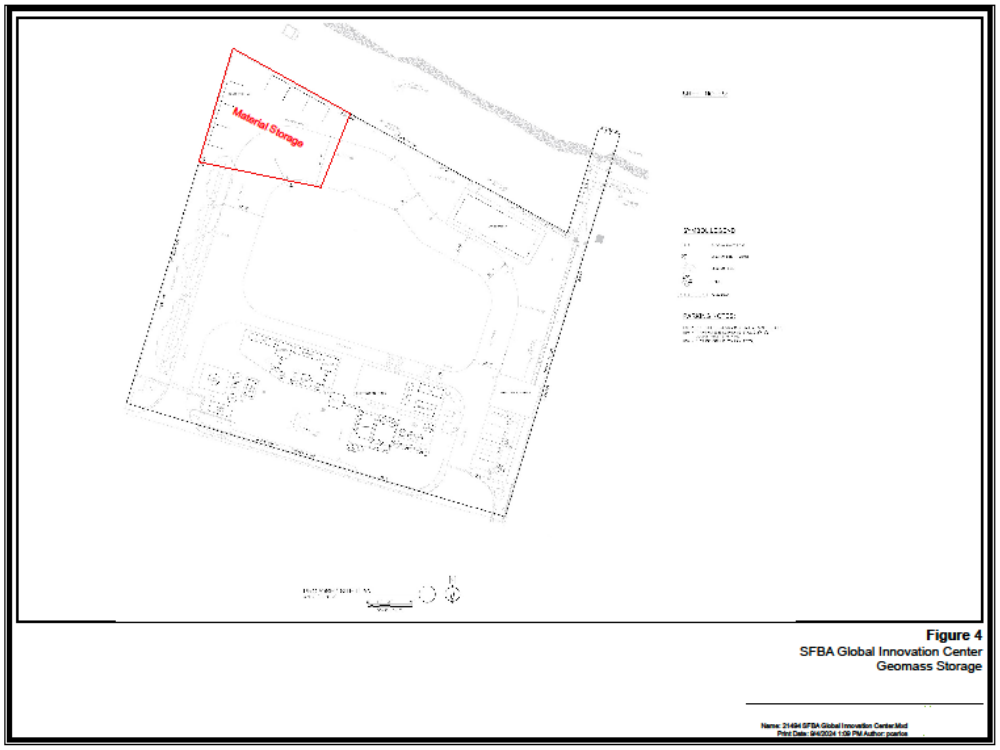
Best Management Practices

Several of the mitigation measures identified in the 2019 MND (Air-2 and Trans-1) have been integrated into operations and are Project Best Management Practices (BMP) to minimize dust and hauling spillage on roadways.

Control Spillage of Hard Substrate Materials from Hauling Trucks

All Trucks carrying RCA, carbonate coated aggregate, or remediated RCA aggregate shall be covered and have at least six inches of freeboard in the truck bed during transport to eliminate spillage of materials onto the roadway.

Figure 4 - Geomass Storage



Minimize Dust Generation

Wet dust suppression techniques, such as watering and/or applying chemical stabilizers, will be used during construction and operational material handling phases to suppress the fine dust particulates from leaving the ground surface and material stockpiles and becoming airborne through the action of mechanical disturbance or wind motion. During construction and full operations of the Proposed Project, surface wetting of the Project site shall occur every two to three hours for a total of three times a day.

1.5 REQUIRED PERMITS AND APPROVALS

As required by the California Environmental Quality Act (CEQA) Guidelines, this section provides, to the extent the information is known to the City, a list of permits and approvals to implement the Proposed Project and a list of agencies that will review this MND and be used in their decision-making process.

The final MDN must be approved by the City of Pittsburg Planning Commission as to its adequacy in complying with the requirements of CEQA before taking any action on the Proposed Project. The Planning Commission will consider the information contained in the MND in making a decision to approve or deny the Proposed Project. The analysis in this MND is intended to provide environmental review for the whole of the Proposed Project.

1.5.1 Lead Agency Approval

The following permits and approvals may be required prior to construction of the Proposed Project:

- Conditional Use Permit
- Design Review
- Height Variance
- Building Permit

1.5.2 Reviewing Agencies

State Agencies

- California Energy Commission
- Department of Toxic Substances

Regional Agencies

- Bay Area Air Quality Management District
- San Francisco Regional Water Quality Control Board
- Contra Costa Health Services Hazardous Materials Programs
- Contra Costa Water District

SECTION 2.0 – ENVIRONMENTAL DETERMINATION

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would potentially be affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklists on the following pages. For each of the potentially affected factors, mitigation measures are recommended that would reduce the impacts to less than significant levels.

☐ *Aesthetics*	☐ *Agriculture and Forestry Resources*	☐ *Air Quality*
☐ *Biological Resources*	☐ *Cultural Resources*	☐ *Energy*
☐ *Geology /Soils*	☐ *Greenhouse Gas Emissions*	☐ *Hazards & Hazardous Materials*
☐ *Hydrology /Water Quality*	☐ *Land Use / Planning*	☐ *Mineral Resources*
☐ *Noise*	☐ *Population / Housing*	☐ *Public Services*
☐ *Recreation*	☐ *Transportation*	☐ *Tribal Cultural Resources*
☐ *Utilities /Service Systems*	☐ *Wildfire*	☐ *Mandatory Findings of Significance*

2.2 DETERMINATION

On the basis of this initial evaluation:

1. I find that the project **could not** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared. ☐
2. I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared. ☐
3. I find the proposed project **may have a significant effect** on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. ☐
4. I find that the proposed project **may have a "potentially significant impact" or "potentially significant unless mitigated impact"** on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed. ☐
5. I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. ☐

MauriceBaddow	September 25, 2025
Signature	Date
Maurice Brenyah-Addow	Senior Planner
Name	Title

SECTION 3.0 – EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if substantial evidence exists that an effect may be significant. If one or more "Potentially Significant Impact" entries are marked when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significant.

SECTION 4.0 – CHECKLIST OF ENVIRONMENTAL ISSUES

4.1 AESTHETICS

1.	AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
(b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
(c)	Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
(d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

4.1.1 Environmental Setting

Visual Character

The Proposed Project is in an Industrial District. The existing visual character of the surrounding locale is primarily industrial, and the Project site is not located within or along a designated scenic corridor. Views in the vicinity of the Project site are largely constrained by adjacent structures, to the west by Koch Carbon Inc., by a PG&E substation and by land owned by UPI to the east, and to the south by an easement that runs along E 3rd Street.

Visual Resources

The Project site does not abut a public right of way; pedestrian access from the nearest public roadway does not exist. Access to the site is via a private road and locked gate at the end of the public portion of 3rd Street. The relatively flat topography of the Project site and distance between the water and E 3rd Street do not provide valuable public views of the water.

Scenic Corridors

Suisun Bay just to the north, is the only public viewing area near the Project site. It does not have an official designation as a scenic corridor. However, it is home to a variety of bird species, aquatic life, and tidal marshes that make it a scenic area.

4.1.2 Impact Analysis

a) Would the project have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. The proposed materials material stockpiles shown on Figure 4 would be visible to the public from the Suisun Bay looking south. The CO_2 absorption column is designed for a height of 95 ft. Pittsburg Municipal Code Section 18.54.120 allows for a maximum height of 50 to 75 feet in the IG zone depending on the location on the site. Therefore, the Proposed Project would be required to obtain a height variance for the new column. However, the Project site does not contain any scenic vistas nor would construction of the proposed facilities adversely affect views from Suisun Bay, due to the existing industrial character of the Project Site There are several facilities that currently have structures higher than 75 feet in the Project area. In addition, compliance with the City of Pittsburg Zoning Ordinance requires the City Planning Commission to review the design of the proposed structures to protect the aesthetic and visual character of the area. There would be a less than significant impact related to scenic views from Suisun Bay.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no scenic resources existing on the Project site. The closest California Department of Transportation designated state scenic highway is Highway 680 to Route 24 in Contra Costa County (Caltrans 2019). There are no Designated County Highways in Contra Costa County (Caltrans 2015). As a result, the Proposed Project would have no impact on scenic resources.

c) Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. The existing industrial character on E 3rd Street would not be altered by the Proposed Project during construction or operations because the facilities would continue to blend into the existing industrial environment. The Pittsburg General Plan indicates the Proposed Project area has a land use designation of Industrial and is zoned IG. The IG designation is the City's heavy industry zoning district that allows for a range of manufacturing, industrial processing, and general services. The Proposed Project will be designed to utilize a larger (95ft) CO_2 absorption column that will require a height variance from the City as discussed in Section 4.1.2 a) The new absorption column would be visible to boaters on Suisun Bay looking inland at the northern site boundary. However, there are multiple industrial structures within the same height range in the vicinity of the Proposed Project. The Proposed Project would not degrade the existing character or quality of the surroundings. The Proposed Project would not conflict with applicable zoning and other regulations governing scenic quality and therefore there would be less than significant impacts to aesthetic resources.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The operations would include three shifts per day. The evening shifts would likely require more lighting than what currently exists on-site. As described in

Section 1.4 Project Description, any additional access lighting required for personnel and for security would consist of permanently mounted fixtures secured to structures, equipment, walls, and poles as required, and would be designed to provide nighttime lighting levels consistent with Pittsburg Municipal Code (PMC) Chapter 18.82.030 (B). Outdoor lighting standards require light to be indirectly or diffused or be shielded or directed away from residential areas and requires City review of the building plans. As a result, the Proposed Project would have a less-than-significant impact on day or nighttime views of the area because the City would review per the requirements of PMC Title 18 to ensure that the performance standards are met.

4.2 AGRICULTURE & FORESTRY RESOURCES

2.	**AGRICULTURE & FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:**	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
(a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	☒
(b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
(c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
(d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
(e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or the conversion of forest land to non-forest use?	☐	☐	☐	☒

4.2.1 Environmental Setting

There is no farmland or forestland near the Proposed Project. According to the Department of Conservation (DOC) the land south, east, and west of the Proposed Project is Urban and Built-up Land (DOC 2022). To the north is Water Area (DOC 2022).

4.2.2 Impact Analysis

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?

No Impact. As noted in the Environmental Setting, there is no Farmland present in Pittsburg as indicated in the California Important Farmland Finder (DOC 2022). The City's General Plan does not identify agriculture or farmland within City limits (City 2024a). Therefore, the Project would have no impact associated with converting any type of farmland to other nonagricultural uses.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or the conversion of forest land to non-forest use?

b-e) **No Impact.** The existing zoning of the Project site is General Industrial. No farmland or forest land is present in the vicinity of the Proposed Project. There would be no impact associated with a zoning conflict or conversion of agricultural use, a Williamson Act contract, or forestland.

4.3 AIR QUALITY

3.	AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
(b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
(c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
(d)	Result in other emissions, such as those leading to odors adversely affecting a substantial number of people?	☐	☒	☐	☐

4.3.1 Environmental Setting

The Proposed Project is located in an area classified as "nonattainment" with regard to ozone– most of which is formed in the atmosphere by reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_x) rather than being emitted directly– and particulate matter (PM). There are separate standards for two size categories of PM: PM-10 and PM 2.5. The Bay Area is classified as nonattainment for both. The Air/Energy/GHG Analysis for the Proposed Project was completed in November 2024 by Tamura Environmental and is located in Appendix A.

4.3.2 Impact Analysis

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The Proposed Project would not conflict with or obstruct implementation of the Bay Area Air Quality Management District (BAAQMD). The Proposed Project was determined to be exempt from regulation in accordance with Section 2-1-115 of the BAAQMD Regulation Rule 1 Permit because the maximum rated production capacity was less than 15 cubic yards (CY) per hour as provided in the Letter of Exemption from the BAAQMD, Application Number 29864, September 6, 2019 (Appendix A). Therefore, the Proposed Project would not conflict with or obstruct implementation of these criterion. No impact would occur.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact with Mitigation Incorporated. The Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard. The following section calculates the potential air emissions associated with the construction and operations of the Proposed Project and compares the emissions to the BAAQMD standards.

Construction

Construction activities for the Proposed Project include installing equipment, new tanks, new conveyors, new absorption column, and connecting the separate modules together. The Project site is approximately 2.5 acres, or approximately 109 thousand square feet (KSF) which is smaller than the 452 KSF screening criteria identified in the BAAQMD CEQA Guidelines for General Heavy Industry and General Industry construction. Construction emissions are well below the BAAQMD significance thresholds as shown in Table 3 below.

Table 3: Construction Emissions Compared to BAAQMD Quantitative Thresholds of Significance for Non-attainment Pollutants

	Pollutant Emissions (pounds/day)			
Emissions Source	**ROG**	**NOx**	**PM10**	**PM2.5**
Average Daily Emissions (lb/day)	0.31	2.31	0.08	0.08
Annual Emissions (lb/day)	0.6	0.42	0.02	0.02
BAAQMD Average Daily Emissions Threshold	**54**	**54**	**82**	**54**
BAAQMD Maximum Annual Emissions Threshold	**10**	**10**	**15**	**10**
Exceeds Thresholds?	No	No	No	No

Source: Calculated from CalEEMod Version 2022.1.

Although the construction emissions are well below the thresholds, the Proposed Project would follow the BMPs outlined by the BAAQMD CEQA Guidelines and identified below in Table 4. Therefore, with implementation of BMPs and emissions less than BAAQMD thresholds, less than significant regional and local air quality impacts would occur from construction of the Proposed Project.

Table 4: BAAQMD Best Management Practices

BMP ID	Basic Best Management Practices
BMP-1	All exposed surfaces (e.g., parking spaces, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
BMP-2	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
BMP-3	All visible mud or dirt track out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day The use of dry power sweeping is prohibited.
BMP-4	All vehicle speeds on unpaved roads shall be limited to 15 mph.
BMP-5	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
BMP-6	All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
BMP-7	All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
BMP-8	Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with 6-to-12-inch layer of compacted layer of wood chips, mulch, or gravel.
BMP-9	Publicly visible signs shall be posted within the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Operations

The ongoing operation of the Proposed Project would result in a long-term increase in air quality emissions. This increase would be due to emissions from on-site area sources and energy usage emissions created from the ongoing use of the Proposed Project. The operations-related regional criteria air quality impacts created by the Proposed Project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Appendix A. The ROG, NOx, PM-10, and PM-2.5 emissions created from the Proposed Projects long-term operations have been calculated and are summarized below in Table 5 and located in Appendix A.

Table 5: Operational Emissions Compared to BAAQMD Quantitative Threshold of Significance for Non-attainment Pollutants.

	Pollutant Emissions (pounds/day)			
Emissions Source	**ROG**	**NOx**	**PM10**	**PM2.5**
Average Daily Emissions (lb/day)	3.21	3.51	0.15	0.15
Annual Emissions (lb/day)	0.59	0.64	0.03	0.03
BAAQMD Average Daily Emissions Threshold	**54**	**54**	**82**	**54**
BAAQMD Maximum Annual Emissions Threshold	**10**	**10**	**15**	**10**
Exceeds Thresholds?	No	No	No	No

Source: Calculated from CalEEMod Version 2022.1.

The data provided in Table 5 shows that none of the analyzed criteria pollutants would exceed the average daily emissions threshold, or the maximum annual emissions threshold during operation of the Proposed Project. Therefore, less than significant regional and local air quality impacts would occur from operation of the Proposed Project.

c) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant Impact. The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. As identified in impact b), construction and operational air quality impacts would be less than significant. Additionally, the closest sensitive receptors to the Project site are 2,500 feet away (Appendix A). Therefore, a less than significant impact would occur to sensitive receptors.

d) *Would the project result in other emissions, such as those leading to odors adversely affecting a substantial number of people?*

Less Than Significant Impact with Mitigation Incorporated. The Proposed Project has the potential to cause odor impacts due to the use of ammonia in scrubbing equipment as well as the storage of aqueous ammonia. The pilot plant has not shown any odor complaints associated with ammonia storage and the storage is not expected to impact a substantial number of people. If an odor complaint were to occur, BAAQMD Regulation 7 would be implemented. BAAQMD places general limitations on odorous substances and specific emission limitations on

certain odorous compounds. With the implementation of MM AQ-1, as well as compliance with BAAQMD Regulation 7, impacts with regard to odors adversely affecting a substantial number of people would be less than significant.

MM AQ-1 Control Ammonia Odor: Dilute ammonia solution to extent practical, acidify the solution so that ammonia is predominantly in the form of ammonium ion instead of dissolved ammonium gas, and cool the solution. Higher concentrations of ammonium hydroxide produce stronger odors. Diluting the solution decreases the concentration of ammonia, which in turn reduces the intensity of the smell. If odor is detected a water scrubber to the vent and other odor control techniques would be utilized such as odor-masking agents to reduce the perception of the ammonia smell.

4.4 BIOLOGICAL RESOURCES

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

4.4.1 Environmental Setting

A Biological Resources Assessment (BRA) was completed for the Proposed Project in May 2019 by Wood Biological Consulting. In November 2024, Chambers Group, Inc. prepared a Biological Resources Letter Report (BRLR) which included a literature review of the BRA and a desktop analysis and is located in Appendix B. The results of the literature review were analyzed to determine whether any new biological resources or constraints may be present on the Project site since the BRA for the Pilot Project was prepared in 2019.

As minimal changes will occur between the Pilot Project for which the BRA was prepared and the Proposed Project which will convert the existing SFBA facility to a continuous production operation, no additional field visits or biological surveys were conducted.

4.4.2 Impact Analysis

a) *Would the project have a substantial adverse effect, either directly or through habitat modification, on any species identified as candidate, sensitive or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Less Than Significant Impact with Mitigation Incorporated.

Sensitive Plant Species

According to the BRA, one special status plant species, Mason's lilaeopsis, was detected within the Biological Study Area (BSA). In addition, suitable or marginally suitable habitat is present on the shoreline for several other special status plant species, such as Suisun Marsh aster. Inadvertent impacts could result during movement or placement of equipment or people near the stormwater outfall. Mitigation Measure (MM) BIO-1 will be implemented to ensure a less than significant impact so sensitive plant species.

Special Status Wildlife

According to the BRA, a total of 86 special status animal species recorded in the search area were analyzed for their potential occurrence. The following special status animal species were identified as having potential for occurrence within the BSA, including six fish species: Chinook salmon, delta smelt, green sturgeon, longfin smelt, Sacramento splittail, and steelhead; northwestern pond turtle (Pacific Pond Turtle); bank swallow, burrowing owl, and a variety of migratory bird species.

Consistent with the BRA, while suitable or marginally suitable habitat for Chinook salmon, delta smelt, green sturgeon, longfin smelt, Sacramento splittail, and steelhead occurs in aquatic areas of the Project site, no activities associated with construction or operation of the Proposed Project are expected to have any adverse effect on these species, as no work in aquatic habitat is proposed. However, due to the sensitivity of the aquatic species and their habitat, MM BIO-2 will be implemented to ensure a less than significant impact to fish species given the sensitivity of the area. Additionally, MM BIO-3 will be implemented to reduce impacts to less than significant for the Pacific Pond Turtle. Although there have been no observations of the Pacific Pond Turtle on the Project site, the species is known to inhabit stream mouths and the shoreline

of the San Joaquin River in Contra Costa County. Therefore, if present, individuals could potentially be encountered as workers have access to areas within their habitat. With implementation of MM BIO-2, and BIO-3, impacts to special status wildlife will be reduced to less than significant.

The Proposed Project does not propose the removal of trees or other vegetation on the river banks, however, the Proposed Project would temporarily increase noise and human activity levels nearby; these activities could result in indirect impacts on birds by disrupting breeding or causing abandonment of occupied nests. If present at the time of construction, such indirect impacts on special-status and migratory birds would be considered significant pursuant to CEQA. Therefore, the Proposed Project would implement MM BIO-4 to ensure compliance with the Migratory Bird Treaty Act.

With the incorporation of the mitigation measures, potential impacts to special status species would be reduced to less than significant.

Impacts to Habitat

The BRA identified two special status natural communities and habitats including the eelgrass habitat and the essential fish habitat (EFH). The presence of eelgrass beds is not expected within the work area and would not be directly or indirectly impacted by the Proposed Project. The Project site is located within the designated essential fish habitat for the Pacific Groundfish Fishery including for all life stages of Pacific Groundfish, all life stages of Coastal Pelagic Species and Finfish, and for all life stages of Chinook salmon. The Proposed Project does not include any work within the aquatic environment. Any discharge of stormwater through the existing 6-inch outfall would be within permitted parameters for water quality (as discussed in Section 4.10 Hydrology and Water Quality), be in compliance with the Project's National Pollutant Discharge Elimination System (NPDES) permit, and would not result in adverse effects on EFH.

MM BIO-1: Special Status Plant Species

1) The location of special-status plants and suitable habitat shall be designated as environmentally sensitive areas and clearly marked in the field with high visibility construction fencing or staking prior to construction and operations.

2) The identification and protection of special-status plant populations and habitats shall be a part of a worker environmental awareness program (WEAP) for all workers on-site. A video tape of the initial training session can be used for orientation of new employees on-site. Documentation of participation shall be kept on-site for review by the City and/or resource agencies.

3) Alteration of the riprap at the stormwater outfall shall be avoided. Boats, barges, and any floating or submerged equipment should be prevented from contacting the shoreline to avoid crushing native vegetation.

4) A Project biologist with three years of professional biological experience in the San Francisco Bay Delta (resume on-site for City and/or resource agency review) shall inspect the shoreline for proper maintenance of the construction fencing or staking, and identify

activities that may pose a risk of impacting special-status plant populations and habitats during unannounced visits during construction.

5) The project biologist shall report any rare plant observations to the California Natural Diversity Database (CNDDB). Accidental impacts to rare plant populations shall be reported to the California Department of Fish and Wildlife (CDFW). Discovery of any additional special status plant species will be reported to the CDFW, and a suitable response agreed upon before restating work in that area.

6) If changes to the condition of the shoreline are determined to be necessary, then the project proponent will prepare a Mitigation and Monitoring Plan (MMP) subject to approval by regulatory agencies including launching boats from shoreline or working on the storm drain or cooling water discharge pipe.

MM BIO-2: Special-Status Fish Species

1) The identification and protection of special-status plant populations and habitats shall be a part of a WEAP for all workers on-site. A video tape of the initial training session can be used for the orientation of new employees on-site. Documentation of participation shall be kept on-site for review by the City and/or resource agencies.

2) No work will occur within the waters of New York Slough.

3) All discharges through the stormwater outfall will be the same as with current and past use of the site, i.e. conveyance and discharge of runoff from the Project site only, through existing catchments and culverts.

4) No alteration or reconfiguration of the shoreline at the stormwater outfall would occur. The existing rock slope protection and soil on the shoreline shall be left in place.

5) No change to the location or operation of the 6-inch outfall shall occur. The discharge will be operated according to discharge requirements outlined in an NPDES permit specific to the Proposed Project.

6) Any wildlife encountered during work shall be allowed to leave the area unharmed and shall not be flushed, hazed, or herded away from the Project site.

7) Any special-status species detected shall be reported to the CDFW and a survey form shall be submitted to the CNDDB.

MM BIO-3: Pacific Pond Turtle

1) If pond turtles are observed, they should be permitted to move out of the work area on their own. If pond turtles are stationary and remain in harm's way, they may be relocated; only a qualified biologist with a valid scientific collecting permit and prior authorization from the CDFW may relocate Pacific Pond Turtle.

2) The project biologist shall report any sighting, relocations or mortalities of Pacific Pond turtle to the CDFW.

MM BIO-4: Special Status and Migratory Birds

1) If construction activities are scheduled to occur during the breeding season (February 1st through August 31st) within 500 feet of the trees on-site, a preconstruction nesting bird survey should be conducted for the identified work area and a buffer zone (See #3 below). The survey should be performed by a qualified biologist no more than two weeks prior to the initiation of work. If no nesting or breeding activity is observed, work may proceed without restrictions. To the extent allowed by access, all active nests identified within 76 m (250 ft) for raptors and 33 m (100 ft) for passerines should be mapped.

2) For any active nests found near the construction limits (76 m for raptors and 33 m for passerines), the project biologist should make a determination as to whether or not construction activities are likely to disrupt reproductive behavior. If it is determined that construction is unlikely to disrupt breeding behavior, construction may proceed. If it is determined that construction may disrupt breeding, the no-construction buffer zone should be expanded; avoidance is the only mitigation available. The ultimate size of the no-construction buffer zone may be adjusted by the project biologist based on the species involved, topography, lines of site between the work area and the nest, physical barriers, and the ambient level of human activity. For raptors, the project biologist will contact CDFW and/or the U.S. Fish and Wildlife Service (USFWS) Division of Migratory Bird Management for guidance regarding site evaluations and buffer adjustments.

   If it is determined that construction activities are likely to disrupt raptor breeding, construction activities within the no-construction buffer zone may not proceed until the project biologist determines that the nest is no longer occupied.

3) If maintenance of a no-construction buffer zone is not practicable, active nests should be monitored during all construction activities within 76 m for raptors and 33 m for passerines, by a qualified biologist to document breeding and rearing behavior of the adult birds. If it is determined that construction activities might cause nest abandonment, work should cease until the project biologist determines that the nest is no longer occupied. For raptors, the CDFW and/or the USFWS Division of Migratory Bird Management shall be contacted for guidance.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation Incorporated.

Critical Habitat

USFWS Critical Habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated Critical Habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Designated Critical Habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Designated Critical Habitat delineates all suitable habitat, occupied or not, that is essential to the survival and recovery of the species. The BRA identified that the closest critical habitats to the Project

site include the delta smelt located approximately 3.10 miles northeast of the Project site, green sturgeon Southern DPS recorded within the Project 3-mile radius search area, and Chinook Salmon Sacramento River winter-run ESU recorded approximately 2.2 miles east of the Project site.

While the Proposed Project construction and operations would not result in the take of these species as no work in aquatic habitat is proposed, impact avoidance and minimizations measures are warranted. Therefore, MM BIO-2 described above will be implemented to ensure a less than significant impact to critical habitat would occur.

Jurisdictional Wetlands and Waterways

The Proposed Project falls within the jurisdiction of the U.S. Army Corps of Engineers (USACE), CDFW, and Regional Water Quality Control Boards (RWQCB). No discharge of fill material into waters of the U.S. or of the state would occur, nor would there be any alteration of the bed or bank of New York Slough, and no loss or impact to jurisdictional wetlands or riparian habitat, or loss of beneficial uses associated with them. Therefore, no action would occur that would be subject to federal, state, and local laws and policies that regulate wetlands or other waters, nor would there be impacts to these resources considered significant pursuant to CEQA. Small, fringing patches of freshwater emergent marsh are present near the stormwater outfall and the water; all Proposed Project activities will avoid this area but workers can enter this area. MM BIO-1 would prevent any impacts to the marsh; therefore, impacts would be less than significant with mitigation incorporated.

c) *Would the project have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Less Than Significant Impact with Mitigation Incorporated. As discussed in b) above, no discharge of fill material into waters of the U.S. or of the state would occur, nor would there be any alteration of the bed or bank of New York Slough, and no loss or impact to jurisdictional wetlands or riparian habitat, or loss of beneficial uses associated with them. Small, fringing patches of freshwater emergent marsh are present near the stormwater outfall and the water, but all Proposed Project activities would avoid this area; however, workers do have access to this area. MM BIO-1 would protect this area from inadvertent impacts. Therefore, a less than significant impact would occur through inadvertent disturbance caused by worker activities in the area.

d) *Would the project Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Less Than Significant Impact. Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Wildlife corridors can be local or regional in scale and may function in different ways, depending on species and time of year. Wildlife corridors represent areas where wildlife movement is concentrated due to natural or manufactured constraints. Local corridors provide access to resources such as food, water, and shelter. Animals can use these corridors, such as hillsides and tributary drainages to main drainages, to travel among different habitats (i.e., riparian and upland habitats). Regional

corridors provide these functions and also link two or more large areas of open space. Regional corridors also provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations.

The New York Slough and the shoreline of the Project site may be considered wildlife movement corridors. Although over-land movement is restricted by fencing, barren ground, and moderately intense human disturbance in the form of vehicles, pedestrians, lighting and noise, the shoreline is somewhat protected from these limitations. Vegetation on the riverbank provides cover for dispersing wildlife, forming a corridor between more extensive areas of undeveloped, natural habitats. Open water also facilitates the movement of numerous aquatic species, such as beavers, common muskrat, and northern river otter. The San Joaquin River serves as an important corridor for resident and anadromous fish. Nonetheless, the Proposed Project would avoid work in the established EFH as stated above and impacts to wildlife corridors would remain less than significant.

e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Impact. The Proposed Project would comply with all existing and applicable local, regional, State, and federal plans, policies, and guidelines regarding the protection and conservation of sensitive species and habitats, including but not limited to plans, policies, and guidelines of the PMC, the Pittsburg General Plan, the East Contra Costa County Habitat Conservation Plan (ECCCHC), and the California Department of Fish and Game, and the USFWS. Furthermore, there would not be removal of trees or habitat on-site as part of project construction or implementation. Therefore, no impact would occur resulting from conflict related to violation of local biological regulations or policies.

f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservancy Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

No Impact. The East Contra Costa County Habitat Conservancy is a joint exercise of powers of authority formed by the Cities of Brentwood, Clayton, Oakley, and Pittsburg and Contra Costa County. It implements the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCCHCP/NCCP). The ECCCHCP/NCCP provides a framework to protect natural resources in eastern Contra Costa County, while improving and streamlining the environmental permitting process for impacts on endangered species. The ECCCHCP/NCCP allows Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, the East Bay Regional Park District, the Cities of Brentwood, Clayton, Oakley, and Pittsburg (the joint exercise powers authority formed East Contra Costa County Habitat Conservancy) to control endangered species permitting for activities and projects in the region that they perform or approve (ECCCHC 2006). Impacts related to species and habitats in the area are measured in terms of compliance with the ECCCHCP/NCCP.

This area where the Proposed Project is located is under the regulatory jurisdiction of the ECCCHCP/NCCP, which determines adherence to State, regional, and national regulatory policies. The Proposed Project is identified as “urban land cover” by the HCP that allows construction, maintenance, and use of industrial facilities. Further development of the Project site would not result in the take of sensitive species or sensitive habitat lands. Therefore, no

impact would occur regarding inconsistency of the Proposed Project with policies in a drafted or adopted conservation plan.

4.5 CULTURAL RESOURCES

5.	CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
(b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
(c)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

4.5.1 Environmental Setting

Appendix C is the Project Cultural Resources Study Results Letter Report completed by the Chambers Group, Inc. The Report is a comprehensive cultural resources assessment for the Project site and surrounding half-mile radius (study area). The purpose of the assessment is to gather and analyze information needed to identify potential impacts to cultural resources within the Project site.

Chapter 10 of the General Plan outlines several policies relating to cultural, historical, and paleontological resources driven by Goal-10-7.

Goal-10-7: Encourage municipal and community awareness, appreciation, and support for Pittsburg's historic, cultural, and archeological resources.

Policies

10-P-7.1: Foster knowledge of our heritage by providing for the educational and cultural enrichment of this and future generations.

10-P-7.2: Redefine the New York Landing Historical District to designate and preserve historical structures not currently located within the district boundaries.

10-P-7.3: Protect archaeological/paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.

10-P-7.4: Review new development projects and work in conjunction with the California Historical Resources Information System to determine whether project areas contain known historic resources or archaeological resources, either prehistoric and/or historic-era, and whether the site has potential for such resources.

Actions

10-A-7.a: Identify mechanisms to incorporate Pittsburg's industrial heritage in historic and cultural preservation.

10-A-7.c: Halt construction immediately and conduct an archaeological investigation to collect all valuable remnants if archaeological resources are found during ground-breaking for new urban development.

10-A-7.g: Develop an identification and preservation system for cultural resources, including tribal cultural resources and those places or structures that qualify as "important" or "unique" to local community, ethnic, or social groups.

10-A-7.h: Require the preparation of a resource mitigation plan and monitoring program for new development by a qualified archaeologist in the event that archaeological resources are uncovered.

10-A-7.i: Require a records search for any proposed development project, to determine whether the site contains known archaeological, historic, cultural, or paleontological resources and/or to determine the potential for discovery of additional cultural or paleontological resources. If any resources are identified, identify methods to preserve the resource or to document and account for the resource. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.

10-A-7.j: Consistent with State, local, and tribal intergovernmental consultation requirements such as SB 18 and AB 52, consult as necessary with Native American tribes that may be interested in proposed new development and land use policy changes.

10-A-7.k: Require all new development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

- If human remains are discovered during any ground disturbing activity, work shall stop until the Development Services Director and the Contra Costa County Coroner have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendants (MLD) have been consulted; and work may only resume when measures to relocate or preserve the remains in place, based on the above consultation, have been taken and approved by the Development Services Director.

- If archaeological resources are encountered during construction or ground disturbing activity, work within 50 feet of the find shall be halted and a qualified archaeologist meeting the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service 2020) shall immediately be contacted to evaluate the find pursuant to Public Resources Code (PRC) Section 21083.2. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for determining California Register of Historical Resources eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the Project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to significant resources. If the

resource is of Native American origin, the NAHC shall be contacted to ensure that the MLD can assess the find. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Pittsburg for review and approval and submitted to the Northwest Information Center (NWIC) in Sonoma State after completion. Recommendations contained within prepared reports shall be implemented throughout the remainder of ground disturbance activities.

- In the event of the identification of cultural resources on a development Project site, a professionally qualified archaeologist and Tribal representative shall monitor ground-disturbing construction conducted during Project implementation. The monitors shall observe ground-disturbing construction to identify potential archaeological deposits and avoid or limit damage to such deposits. The monitors shall have the discretion to reduce the intensity of monitoring, or suspend such monitoring, if field conditions clearly indicate that no potential intact archaeological deposits could be encountered. Should an intact archaeological deposit be identified, the monitors shall be empowered to temporarily halt construction in the vicinity of the find. The archaeologist shall, in consultation with the Tribal representative and City, evaluate the eligibility of the deposit for inclusion in the California Register of Historical Resources. If the deposit is eligible, the Project shall attempt to feasibly avoid damage to the deposit (e.g., redesign or capping). If avoidance is not feasible, the archaeologist shall, in consultation with the Tribal representative and City, develop and implement a plan to recover the scientifically consequential data represented by the deposit in a manner respectful of tribal concerns. A report of the finds of any resource evaluation and/or data recovery efforts shall be submitted to the NWIC in Sonoma State as a condition for access to its archives.

4.5.2 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

No Impact. As discussed in Section 1.4 Project Description, the Project site was previously host to a 20-megawatt cogeneration power plant, owned and operated by GWF which commenced operations in August 1990 and was decommissioned in 2012. Two buildings remain in place that are not significant historical resources.

In addition to the NWIC record search, Chambers Group archaeologists completed research to determine if any additional historic properties, landmarks, bridges, or other potentially significant or listed properties are located within the Project footprint or one-half-mile study area. This background research included, but was not limited to, the NRHP, California State Historic Property Data Files, California State Historical Landmarks, California Points of Historical Interest (CPHI), Office of Historic Preservation Archaeological Determinations of Eligibility, historical aerial imagery accessed via Nationwide Environmental Title Research (NETR) Online, historical U.S. Geological Survey topographic maps, Built Environment Resource Directory (BERD), and Caltrans State and Local Bridge Survey (Appendix C).

As a result of archival research, no previously recorded resources or any other listed or potentially significant properties were identified within the Project site (Appendix C). Between 1953 and 1984 aerial photographs appear to indicate that the Project site was clear of

developed buildings or structures, and between 1984 and 1987 construction of the current site configuration had begun (Appendix C). Since there are no historical resources within the Project study area, that would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5, implementation of the Proposed Project would result in no impact on historic resources.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Less Than Significant Impact with Mitigation Incorporated. As discussed in Appendix C, based on the records search conducted by the NWIC, six cultural resources have previously been identified within a half-mile records search radius of the Project site. Of the six previously identified resources, none are mapped within the Project site. As discussed in Appendix C, no evidence of archaeological resources was found within the Project site. The general Pittsburg area is associated with the traditional use area of the Bay Miwok, and as such, has the potential to yield tribal cultural resources (TCRs) or prehistoric archaeological materials. Based on the results of the current study in accordance with the City of Pittsburg Policies and Actions detailed in Goal-10-7 (City 2024a), the subsurface context within the Project site is considered low sensitivity for buried resources. However, because there is a possibility that TCRs are present, ground disturbing activities could result in inadvertent discovery of TCRs. Therefore, implementation of MM CUL-1 would reduce impacts to archaeological resources to less than significant.

MM CUL-1 Retain a Qualified Archaeologist: The Applicant shall retain the services of a Qualified Archaeologist, meeting the Secretary of the Interior Standards to monitor the duration of ground disturbing construction activity. The Qualified Archaeologist or cultural resources specialist working under the direction of the Qualified Archaeologist shall provide training to inform all construction personnel prior to construction activities about the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the Project's initial on-site safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources.

In the event that archaeological resources (artifacts or features) are exposed during ground disturbing activities, construction activities within a 100-foot radius of the discovery shall be halted while the qualified archaeologist is contacts the Confederated Villages of Lisjan Nation and Amah Mutsun Tribal Band of Mission San Juan Bautista to provide the necessary assessment. If the resource is determined to be significant or unique through significance evaluation, and site avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. These might include an archaeological monitoring and mitigation plan, treatment and/or data recovery programs, which would be implemented by a qualified archaeologist. All related close-out reporting documenting the implementation of monitoring or similar programs shall be prepared in accordance with the Office of Historic Preservation's Archaeological Resource Management Reports (ARMR). If the discovery proves to be significant, it shall be curated with a qualified scientific or educational repository, as defined by the Guidelines for the Curation of Archaeological Collections.

The Proposed Project would have a less than significant impact associated with substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 with implementation of MM CUL-1.

c) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Less Than Significant Impact. As provided in Appendix C, in the event that human remains are discovered during ground-disturbing activities, then the Project would be subject to California Health and Safety Code 7050.5, CEQA Section 15064.5, and California PRC Section 5097.98. If human remains are found during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the County Coroner shall notify the NAHC, which shall notify a MLD. The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Although there is a low probability of inadvertent discovery of human remains, legal requirements are in place to ensure the discovery would have a less than significant impact.

4.6 ENERGY

6.	ENERGY Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
(b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

4.6.1 Environmental Setting

An Air Quality, Energy, GHG Analysis was prepared for the Proposed Project by Tamura Environmental on October 28, 2024, and is located in Appendix A.

4.6.2 Impact Analysis

a) *Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Less Than Significant Impact. Construction activities for the Proposed Project include installing equipment, new tanks, new conveyors, new absorption column, and connecting the separate modules together. Construction associated with the Proposed Project would result in a temporary increase in energy consumption due to the energy requirements associated with operating construction equipment. As mentioned in Section 1.4 Project Description, the hauling

plan for trucks includes completing round trips to and from the Project site with "full" loads to the extent possible to utilize the least amount of energy. Additionally, construction impacts would be temporary in nature and would not result in a wasteful, inefficient, or unnecessary consumption of energy resources. Operations would include a carbon capture facility and therefore would not result in a wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the Proposed Project would result in a less than significant impact to energy resources during Project construction and operation.

b) *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

No Impact. The Proposed Project would be consistent with the California Energy Commission's latest Integrated Energy Policy report (IEPR), which identifies the achievement of California's policies and targets for combatting climate change and the transition to zero-carbon, renewable sources of power while rapidly electrifying large segments of the economy. The Proposed Project is a carbon capture facility, and would result in a no impact to obstructing a state or local plan for renewable energy.

4.7 GEOLOGY AND SOILS

7.	GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
	ii) Strong seismic ground shaking?	☐	☐	☒	☐
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv) Landslides?	☐	☐	☐	☒
(b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
(c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐
(d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
(e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

7.	GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

4.7.1 Environmental Setting

Chapter 10 of the City's 2040 General Plan outlines a policy related to paleontological resources driven by Goal-10-7.

Goal-10-7: Encourage municipal and community awareness, appreciation, and support for Pittsburg's historic, cultural, and archeological resources.

10-P-7.3: Protect archaeological/paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.

Action associated with Goal 10-7:

10-A-7.i: Require a records search for any proposed development project, to determine whether the site contains known archaeological, historic, cultural, or paleontological resources and/or to determine the potential for discovery of additional cultural or paleontological resources. If any resources are identified, identify methods to preserve the resource or to document and account for the resource. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.

4.7.2 Impact Analysis

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than Significant Impact. As noted in the 2040 General Plan Draft EIR, there are no faults designated by Alquist-Priolo Earthquake Fault Zoning Map in the City (City 2023a). The nearest Alquist-Priolo designated fault is the Concord fault that is located approximately four miles west of the City. There are no known faults that traverse the Project site (DOC 2019). As a result, the potential to expose people or structures to adverse impacts associated with surface fault rupture is less than significant.

ii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less than Significant Impact. In California, the possibility always exists for ground shaking from an earthquake. As noted in a), the Alquist-Priolo designated fault closest to the site is

four miles east, and there are no known faults that traverse the Project site. The Proposed Project would follow the CCR Title 24, known as the California Building Standards Code (CBSC) that contains the regulations that govern the construction of buildings in California. The CBSC includes seismic provision that would be adhered to by the Proposed Project. Therefore, impacts associate with strong seismic ground shaking would be less than significant.

iii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Less Than Significant Impact. As noted by the USGS, Earthquakes of magnitude 5.5 or greater can trigger landslides or liquefaction. While shaking does most of the damage in a large earthquake, both liquefaction and landslides caused significant damage during the 1989 Loma Prieta quake. The Proposed Project is within a liquefaction zone but not landslides (DOC 2019 and City 2024a). The Proposed Project entails installing equipment, new tanks, new conveyors, new absorption column, and connecting the separate modules together. Buildings constructed that would house workers during operations are those that would contain loud equipment and they would only enter the buildings on an as-needed basis. The buildings where workers reside are on-site. Much of the operations are conducted outdoors. The facility has safety plans in place that dictate worker protocols in the event of seismic shaking. Construction would be in accordance with the CBSC as noted in ii), the City will review the Project design during the permitting process to ensure the design has been completed to accommodate liquefaction in the event of strong seismic shaking. Therefore, impacts associated with ground failure including liquefaction are less than significant.

iv) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

No Impact. As shown on Figure 11-3 Geologic Constraints in the City's 2040 General Plan, the landslide areas in the City are to the east of the Project site toward the hills (City 2024a). The topography of the Project site is relatively flat and not subject to landslides. Therefore, no impact is associated with landslides during construction or operations of the Proposed Project.

b) Would the project result in substantial soil erosion or the loss of topsoil?

No Impact. The Proposed Project includes minor ground disturbance on land that has been capped with concrete and asphalt. In the event that the concrete cap is penetrated for the installation of underground utilities, the underlaying soils will be treated as if contaminated and use soil handling protocols accepted by the California DTSC in the current Soil Management Plan discussed in Section 1.4 of the Project Description. Operations would not require soil disturbance. Therefore, no impacts would occur to topsoil or result in soil erosion because any contact with soil would be during construction, and protocols would require the prevention of erosion due to potential contamination.

c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant Impact. The Project site is relatively flat and adjacent to Suisun Bay to the north. According to the USDA Web Soil Survey, the Project area is dominantly covered with Clear Lake clay below the asphalt and concrete cap. Clear Lake clay is a clay alluvium derived from metamorphic and sedimentary rock. As with most clays, it is prone to subsidence and less prone to lateral spreading (NRCS 2024). Therefore, there is potential for liquefaction and subsidence with the soil underlying the Project site. However, the soils have been covered by asphalt or concrete for over 20 years and the cap has remained in place indicating there has not been an issue with liquefaction or subsidence in that time. As discussed in iii) above, strong seismic events could create liquefaction. The buildings where workers reside are on-site. Much of the operations are conducted outdoors. The facility has safety plans in place that dictate worker protocols in the event of seismic shaking. Construction would be in accordance with the CBSC as noted in ii), the City will review the Project design during the permitting process to ensure the design has been completed to accommodate liquefaction in the event of strong seismic shaking. Being close to the water, it is likely that groundwater level in the area is high enough to prevent subsidence on the site, as indicated by the intact concrete cap. Most of the construction on-site will be on the concrete cap and not in contact with soils, except if utilities are installed underground which would be in a short term event in a limited area and abide by the 2022 Soil Management Plan requiring excavation may be backfilled (if needed) in accordance with the grading plan. If imported fill soil is required from offsite, the source of the import soil will be an operating quarry or a borrow Site completed in accordance with the grading plan. Therefore, impacts associated with landslides and lateral spreading are not likely to occur due to the flat topography and clay soil on-site. Impacts associated with liquefaction and subsidence would be less than significant due to compliance with California Building Code that is enforced by the City during the permit process.

d) *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

Less than Significant Impact. As discussed in c) above, the Project site's underlying soil is clay, which is suspectable to expansiveness. The soil has been capped for over 20 years and does not show signs of significant soil expansion that would crack the concrete. Construction entails installing equipment, new tanks, new conveyors, new absorption column, and connecting the separate modules together on the existing cap. The only buildings constructed that would house workers during operations are those that would contain loud equipment, and they would only enter the buildings on an as-needed basis, as most of the work at the facility is outdoors. Impacts associated with expansive soils would be less than significant due to compliance with the California Building Code that is enforced by the City during the permit process.

e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?*

No Impact. The Proposed Project has an existing septic system and wastewater disposal. No changes will be made to these systems by the Proposed Project, therefore no impact would occur to septic tanks and wastewater disposal.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporated. As discussed in Cultural Resources b), in accordance with the City of Pittsburg Policies and Actions detailed in Goal-10-7 (City 2024a), the subsurface context within the Project site is considered low sensitivity for buried resources. In addition, ground disturbance would only occur if underground infrastructure is required by the Proposed Project. However, because there is a possibility resources are present, ground disturbing activities could result in inadvertent discovery of paleontological resources. Therefore, implementation of MM GEO-1 would reduce the impacts of inadvertent discovery of paleontological resources during ground disturbing activities to resources to less than significant.

MM GEO-1 Qualified Paleontologist: Qualified Paleontologist. Prior to issuance of a grading permit, the Applicant shall be required to obtain the services of a Qualified Project Paleontologist to remain on call for the duration of the proposed ground-disturbing construction activity. Upon approval or request by the City associated with the discovery of paleontological resources, a paleontological mitigation plan (PMP) outlining procedures for paleontological data recovery shall be prepared for the Project and submitted to the City for review and approval. The development and implementation of the PMP shall include consultations with the City's Engineering Geologist as well as a requirement that the curation of all specimens recovered under any scenario shall be through an appropriate repository agreed upon by the City. If the City accepts ownership of the paleontological discoveries, the curation location may be revised. The PMP shall include developing a multilevel ranking system, or Potential Fossil Yield Classification (PFYC), as a tool to demonstrate the potential yield of fossils within a given stratigraphic unit. The PMP shall outline the monitoring and salvage protocols to address paleontological resources encountered during Project-related ground-disturbing activities, as well as the appropriate recording, collection, and processing protocols to appropriately address any resources discovered. If paleontological resources are discovered, a report summarizing all monitoring efforts and observations will be required. Impacts to paleontological resources would be reduced to less than significant with implementation of MM GEO-1.

4.8 GREENHOUSE GAS EMISSIONS

8.	GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
(b)	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

4.8.1 Environmental Setting

An Air Quality, Energy, GHG Analysis was prepared for the Proposed Project by Tamura Environmental on October 28, 2024, and is located in Appendix A. The City of Pittsburg completed their Sustainability Plan in 2023 with the goal of creating a more sustainable, equitable, and healthy City and reducing Greenhouse Gas (GHG) emissions to support California's Climate goals (City 2023c).

4.8.2 Impact Analysis

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. The Proposed Project would create GHG emissions during construction. Project construction is anticipated to last from 12 to 18 months. Construction impacts would include vehicle equipment emissions associated with site-wide automation and equipment upgrades, and construction of the facility.

The BAAQMD has not developed a quantitative threshold of significance for construction-related GHG emissions. According to BAAQMD, emissions from construction are temporary and variable and represent a small portion of a project's lifetime GHG emissions. However, BAAQMD recommends that construction related GHG emissions be quantified and disclosed, and that projects incorporate all feasible BMPs outlined by the BAAQMD to minimize GHG emissions and emissions of other air quality pollutants (BAAQMD 2022). Modeling of GHG from construction was completed in CalEEMod version 2022.1.1.22, and the results estimated the Proposed Project to create 178 megatons (MT) carbon dioxide-equivalents (CO_2e) per year of construction emissions, and 628 $MTCO_2e$/year of operational emissions (Appendix A).

Construction related GHG impacts have been disclosed and BMPs for reducing GHG emissions reductions during construction would be implemented as feasible. Therefore, the Proposed Project would not generate GHG emissions directly or indirectly that may have a significant impact on the environment and impacts are less than significant.

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As provided in the Section 4.8.1, Environmental Setting, the City has a Sustainability Plan that provides a GHG reduction strategy. The Proposed Project supports the Plan's Cornerstone Goal by providing job opportunities for Pittsburg residents in the sustainability industry of CO_2 sequestering and production of upcycled rock products for construction projects (City 2023c). In addition, the Proposed Project would reduce waste generation by recycling concrete from local sources.

The BAAQMD adopted the Bay Area 2017 Clean Air Plan in April 2017 (2017 Plan). In addition to reducing emissions of air pollutants and GHG in the Bay Area over the near term, the 2017 Plan provides a pathway for long-term strategies to reduce Bay Area GHG emissions 40% below 1990 levels by 2030, and 80% below 1990 levels by 2050. The 2017 Plan offers a long-range

vision describing how the Bay area could look and function in a year 2050 post-carbon economy and describes a comprehensive control strategy that the BAAQMD will implement over the next three to five years to protect public health and climate, while setting the region on a pathway to achieve the 2050 vision (BAAQMD 2017).

The Proposed Project directly aligns with the 2017 Plan. A successful project would result in the reduction of mining of raw materials for construction and recycling of waste concrete that is otherwise disposed, as well as support the 2017 Plan for a post-carbon future. Furthermore, as discussed in Section 4.3, the Proposed Project does not conflict with BAAQMD CEQA Thresholds for emissions. Therefore, the Proposed Project would not conflict with applicable plans, policies, or regulation adopted for the purpose of reducing emissions of GHGs.

4.9 HAZARDS AND HAZARDOUS MATERIALS

9.	HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
(b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
(c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
(d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
(e)	For a project located within an airport land use plan or, where such a plan had not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
(f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

4.9.1 Environmental Setting

The CCHSHMP is responsible for monitoring industries that use or store hazardous materials and responding to hazardous materials incidents that occur as the Certified Unified Program Agency (CUPA) for Contra Costa County. The CCHSHMP established the HMBP program to prevent or

minimize damage to public health, safety, and the environment from a release or threatened release of hazardous materials. This is accomplished by enforcing the provisions of County's Health and Safety Code (HSC) Division 20, Chapter 6.95, requiring businesses that handle hazardous materials in reportable quantities to submit an annual HMBP, as well as prepare a site map, develop an emergency response plan, and implement a training program for employees.

The following are Project relevant Safety and Resiliency Policies and Actions in the City's 2040 General Plan:

11-P-5.1: Strictly regulate the production, use, storage, transport, and disposal of hazardous materials.

11-P-5.2: Require hazardous waste generated within the city to be disposed of in a safe manner, consistent with all applicable local, State, and Federal laws.

11-P-5.5: Require compliance with the City's Hazardous Waste Management Plan (HWMP) in addressing the generation, transport, and disposal of hazardous waste in the city, from large and small generators.

11-A-1.a: Implement and periodically review and update, as necessary, emergency response and planning documents, including the Emergency Operations Plan (EOP) and the local Hazard Mitigation Plan (HMP) to ensure appropriate procedures are maintained preparing for disasters, including educating the public about emergency preparedness and ensuring the plans address current information regarding disaster risks and severity.

Both ammonia 0.5 to 30% and glacial acetic acid are on the California Hazardous Substance list. All substances on the list are subject to the provisions of Labor Code Sections 6360 through 6399.7 as part of the Hazardous Substances Information and Training Act (DIR 1993). Section 6361 states: Hazardous substances in the workplace in some forms and concentrations pose potential acute and chronic health hazards to employees who are exposed to these substances. Therefore, information about handling and spill management are required for all employees involved in the processes that use these substances. Ammonia can cause burning eyes, nose, throat, and respiratory tract, and can cause blindness and lung damage, but is stable under normal conditions (Millipore 2024). Acetic acid can cause severe skin burns and eye damage and is also considered flammable, but stable in normal conditions (Spectrum 2021).

Per communications with DTSC regarding breaching the soil cap covering the Project site, there is a Land Use Covenant recorded in 2014 (Contra Costa County DOC-2014-0007101-00), restricting changes in land use and soil and cap disturbance activities without approval by DTSC. Should DTSC determine during the review of the Soil Management Plan and any Five-Year-Review that remedial measures are needed, DTSC will require GWF Power Systems under the Voluntary Cleanup Agreement to prepare a site characterization workplan, implement and report the DTSC-approved site characterization workplan, and prepare a removal action work plan and subsequent remedial design and construction work plans and remedial implementation.(DTSC 2025)

4.9.2 Impact Analysis

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. Access to and from SR 4 follows established truck routes (10th Street/Willow Pass to Harbor Street to E 3rd Street, or Pittsburg-Antioch Highway to Harbor to E. 3rd Street), would be used by employees and contractors to access the facility. There would be ten truck trips per week of supplies needed for the process; therefore, approximately 520 roundtrip truck trips containing hazardous materials would be transported per year for the operations of the Project. The supply deliveries would use roadways that have been approved by the City for use for the transport of hazardous materials to an industrialized area. Access to the site is via a private road at the end of the public portion of 3rd Street.

As discussed above, the chemicals used in the process are not reactive under normal conditions, therefore, proper handling by trained workers would not create a risk to the public or the environment. In addition, all areas where the substances are being used are outdoors, where it is properly ventilated and includes secondary containment. No hazardous materials would be produced as a byproduct of the process of making carbonate coated aggregate products.

As noted above, regulations are in place to prevent a significant hazard to the public and the environment through the routine transport, use, and disposal of hazardous materials associated with the Proposed Project. Impacts would be less than significant.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. As described in Section 1.4 Project Description, the potential for facility upset conditions and accidents would be minimized with secondary containments sized to contain 150% of the largest volume tank in any given area, proper training of operators, and having an emergency response plan in place that outlines procedures to quickly react in the event of an accident or spill. As discussed in a) above, there are regulations in place to inform workers about the substances that are being handled. In addition, the California Accidental Release Prevention (CalARP) program has been implemented to prevent accidental releases of substances that can cause serious harm to the public and the environment, and to minimize the damage if releases do occur. CalARP requires facilities (referred to as "stationary sources") which handle, manufacture, use, or store any regulated substances above threshold quantities to take actions to proactively prevent and prepare for accidental releases enforced through the CUPA at the local level. Facilities subject to CalARP requirements must submit a Risk Management Plan (RMP). Ammonia 20% or greater with a threshold quantity of 20,000 lbs is included on Table 2 *Federal Regulated Substances List and Thresholds for Accidental Release Prevention* (CFR 2024) which triggers the threshold this facility must adhere to for CalARP requirements. However, the existing conditions of the Pilot Project also require the use and storage of ammonia to be under the CalARP program. To date, no incidents have occurred associated with the release of hazardous substances at the Project facilities. Adhering to the programs, regulations, and policies at the State and local levels will result in a less than significant impact for reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

No Impact. No existing or proposed schools are located within one-quarter mile of the Project site. The closest school is Pittsburg High School which is approximately one mile to the south. The established truck routes (10th Street/Willow Pass to Harbor Street to E. 3rd Street) would not pass the High School. There would be no impact associated with hazardous materials within one-quarter mile of existing or proposed schools.

d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Less Than Significant Impact with Mitigation Incorporated. The Project site is located on a 2.5-acre parcel categorized as Voluntary Cleanup site, and DTSC was the Lead Agency (DTSC 2024). As provided on the EnviroStor website, *Site remedial investigations, prior to the construction of the co-generation power plant, were completed. The investigations determined that soil concentrations of chemicals of concern were higher than the site screening levels USEPA Preliminary Remedial Goals (PRGs). Based on the proposed future land use, the contaminated soil was excavated, consolidated, and capped under the building floors, asphalt pavements, and landscaped areas.* The Geotracker database did not include the site in their database (SWRCB 2024).

A Phase 1 environmental site assessment completed in August 2018 by Groundwater & Environmental Services, Inc. verified that the capping infrastructure remains in place, sealing any potentially remaining contaminated soil from exposure to the environment and workers. As discussed in Section 1.4 Project Description, most of the equipment would be skid mounted for mobilization to and from the Project site. Therefore, impacts associated with operation of the facility would be less than significant.

The construction of a new utility trench or future tasks identified that will require breach of the cap could expose workers to the contaminated soil beneath the existing site cap. Although soil disturbance activities will adhere to the current Soil Management Plan (SMP) where the DTSC will be notified of soil disturbance activities, and soil sampling would occur, every task requiring a breach of the cap may not match the requirements of the current SMP. Each task should have a detailed SMP specifically addressing the size, methods, and contingencies required for that task to reduce potential hazardous material exposure to workers and the environment. Implementation of MM HAZ-1 will reduce impacts associated a known hazardous waste site to less than significant.

MM HAZ-1 Task Specific Soil Management Plan: DTSC and the City will be notified and provided an updated SMP for each activity requiring a breach of the concrete cap of the underlying potentially contaminated soil. Each updated SMP will require the following contents:

1. Cap Breach Description
    a. Reason for breaching the cap
    b. Area of breach (dimensions)
    c. Methods for Breaching (equipment being used)
2. Health and Safety Plan

a. Worker Protection
b. Emergency procedures

3. Dust and Emissions Control
    a. Dust suppression
    b. Fugitive Emission Control: Plan to prevent emissions of volatile organic compounds (VOCs) or other hazardous vapors
4. Soil Handling, Stock Piling and Controls
    a. Excavation Procedure
    b. Temporary Stockpile Procedures
    c. Sediment Control: Use of fiber rolls or other controls to prevent contaminated soil from leaving the site.
5. Decontamination Procedure
    a. Equipment Decontamination
    b. Worker Decontamination
6. Transportation and Disposal Methods
7. Cap Repair and Site Restoration
8. Sampling and Analytical Plan
    a. Soil Sampling
    b. Analytical Methods
9. Contingency Plan
    a. Unexpected Conditions (weather change, unknown contamination discovered)
    b. Contingency measures in case of unexpected risks during work.
10. Reporting- to DTSC and the City
    a. Progress Reporting if the task requires more than one day to complete. Report will include any unexpected findings or deviations from plan.
    b. Post-Excavation Reporting

Any cap breaching required would be completed during the dry season. Development and compliance with the task specific SMP and notification to DTSC, the Proposed Project would ensure the potential risk of exposure to contaminated soil for previous uses of the site will be effectively managed and mitigated. The Proposed Project would have a less than significant impact associated with creating a significant hazard to the public or the environment from a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e) *For a project located within an airport land use plan or, where such a plan had not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

No Impact. The Project site is not within the vicinity of an approach/departure flight path of a public airport. The nearest airport is the county-owned Buchanan Field Airport located approximately 13 miles to the west of the Project area. Therefore, there would be no impact related to airport activities.

f) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact. In addition to the HWMP, the City has an EOP that contains emergency and recovery plans applicable to natural and human induced hazardous situations

and an updated Local HMP updated in 2022 that identifies potential alleviation actions to meet the community goals. HMP mitigation actions have been developed to reduce the effects of hazards with emphasis on new and existing buildings and infrastructure. The HMP includes goals to strengthen partnerships and collaboration with public agencies, residents, non-profit organizations, businesses, and industry to implement mitigations (City 2022b). The Proposed Project would be constructed on an existing industrial site that would include an up-to-date HMBP that describes in detail the type and volume of chemicals to be used at the facility, to the CCHSHMP/CUPA. No potential conflicts have been identified between the operation of the carbon mineralization and sequestration and other local emergency response and evacuation plans, including the Contra Costa County Emergency Operations Plan and Contra Costa County Hazardous Materials Area Plan. Therefore, construction and operation of the Proposed Project would not impair implementation or operation of the City's EOP, HMP, or other local emergency response or evacuation plans, resulting in a less than significant impact.

g) *Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

No Impact. The Project site is developed and industrial in nature and does not contain, nor is it adjacent to, any wildlands. The nearby undeveloped areas are adjacent to New York Slough making the area damp and low risk for fire ignition. The CalFire Hazard Severity Zones State Responsibility does not indicate any high severity fire areas in the City north of Highway 4 (CalFire 2024). No impact would occur.

4.10 HYDROLOGY AND WATER QUALITY

10.	HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
(b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
(c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flood on- or off-site;	☐	☐	☐	☒
	iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
	iv) Impede or redirect flood flows?	☐	☐	☐	☒
(d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
(e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

4.10.1 Environmental Setting

An existing 6-inch diameter outfall pipe, previously used for thermal wastewater during the GWF power plant operation, was verified in December 2018 to be in good working condition by inspection. The use of the existing pipe and outfall is contingent upon acceptance by the appropriate regulatory agencies (City 2019). The outfall pipe is located at the northeast corner of the Project site and extends out into New York Slough through an existing deep-water outfall. The pipe extends approximately 290 ft into the New York Slough.

4.10.2 Impact Analysis

a) Would the project violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality?

L**ess Than Significant Impact With Mitigation Incorporated.** The Project site is capped with concrete, therefore, groundwater would not be impacted during operations and if the cap is

breached for underground infrastructure construction, it would be for a very short time during the dry season and would not impact groundwater.

Runoff of sediment and contaminants during construction activities would be minimized through compliance with the State General Permit for Discharges of Stormwater Associated with Construction Activity (Water Quality Order 2009-0009-DWQ) and a project-specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would comply with current San Francisco Bay Regional Water Quality Control Board guidelines and would incorporate acceptable BMPs for control of on-site materials, dust, and sediment and stabilization and proper handling of materials in the Project area.

BMP resources discussed in PMC 13.28 will be implemented and the required operations SWPPP will be developed for the Proposed Project to reduce potential for polluted runoff during operations. As discussed in Section 1.4 Project Description, prior to opening the valves to release stormwater, all areas of the New York Slough would be inspected for sheen during a rain event. However there remains a possibility that during a rain event, contaminants could be discharged into New York Slough from months of build up during the 24-hour a day production in the dry season. As New York Slough is within Suisun Marsh, which is the largest contiguous brackish-water wetland in California providing habitat for migratory birds and sensitive plants, fish, and wildlife (Water Education Foundation 2024) impacts to water quality by the Proposed Project or cumulatively with other discharges in the area would be significant. Therefore, implementation of MM HYDRO-1 and 2 would prevent water quality and discharge requirements from being violated, resulting in a less than significant impact with mitigation incorporated.

MM HYDRO-1: Stormwater Runoff BMP Training for Employees

The following elements will be included in the training:

- Include an overview of stormwater regulations and conditions included in the site specific permits;
- Identify activities that potentially generate polluted runoff;
- Address proper material handling and storage and site cleanliness;
- Use of designated areas for equipment washing, vehicle/equipment maintenance, and material loading and unloading;
- Spill prevention and response;
- Discuss BMPs such as sweeping and other dry cleanup methods;
- Identify Storm Drain locations and protections;
- Responsibilities of employees in preventing polluted runoff; and
- Document date and attendees to each training event.

Covering the following areas in training for current and all new employees working with equipment will help ensure that workers are well-prepared to prevent polluted runoff and contribute to the overall environmental compliance and sustainability of the Project site.

MM HYDRO-2: Sample Stormwater. To determine the stormwater being discharged to New York Slough does not violate water quality standards, water samples will be taken just prior to when the valves will be opened during first flush (first 30 minutes of a significant rainfall event after a dry period). The laboratory analyzing samples should be certified and use EPA approved methods to test for the following:

- Total suspended solids
- Heavy Metals
- Nutrients (e.g. nitrogen, phosphorus)
- pH levels
- Chemical Oxygen Demand (COD)
- Oil and grease

The laboratory results should be compared with the discharge requirements of the City's NPDES permit. This sampling should be completed twice per year for two years to demonstrate that stormwater runoff meets discharge requirements. If there are no exceedances after the two years no additional sampling is required. If exceedances are reported sampling shall continue until there are 2 consecutive years of no exceedances. An annual report should be submitted to the RWQCB and the City by May 1. Report should include:

- Dates and conditions during sampling
- Sampling methods
- Laboratory results
- Summary of water quality standards exceedances

Operational changes to prevent future exceedances

b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

No Impact. The Proposed Project would be served by non-potable canal water from UPI, recycled water, and the municipal water supply. The Proposed Project would not require the installation of any new groundwater wells, nor would the Proposed Project impede the recharge of groundwater. The Project site is predominantly covered with an impervious concrete cap and would not increase impervious areas, nor decrease direct rainfall infiltration on the Project site. Any existing groundwater infiltration is not expected to change with implementation of the Proposed Project. As discussed in a) above, if the cap is breached for underground infrastructure construction it would be for a very short time during the dry season and would not impact groundwater. The Proposed Project would not substantially decrease groundwater or interfere with groundwater recharge, therefore, there would be no impact.

c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

i) *Result in substantial erosion or siltation on- or off-site;*

Less Than Significant Impact. The Proposed Project would not alter existing drainage patterns or result in erosion or siltation because the components of the facility would be built on the existing ground surface with no excavation and minimal surface grading. The

Proposed Project would continue implementing BMPs such as placing fiber rolls around all storm drains, as discussed in Section 1.4 Project Description, to prevent siltation in the storm drains. Due to the lack of ground disturbance from construction, the Proposed Project would have a less than significant impact on existing drainage patterns or changes to impervious surface areas.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

No Impact. The Proposed Project would not change the site's impervious area or provide opportunity for increased flooding on or off-site. The site is currently almost entirely impervious and would remain so after the installation of the Project components. During construction and operation, there would be no impacts associated with increasing the rate or amount of surface runoff that would result in flooding on-or off-site.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources or polluted runoff?

Less Than Significant Impact With Mitigation Incorporated. During construction and operations, the Proposed Project would not generate any new or increased sources of runoff from the site. However, as discussed in a) above, inspections would be made prior to opening the valve to the outfall pipe, but there is a possibility during a rain event, contaminants could be discharged into New York Slough from months of build up during the 24-hour a day production in the dry season. Implementation of MM HYDRO-1 and 2 would prevent polluted runoff from entering New York Slough by testing stormwater discharge and making operational changes that would eliminate such pollutants from entering the storm drains. Therefore, the impact of increased polluted runoff would be less than significant with mitigation.

iv) Impede or redirect flood flows?

No Impact. The Project site currently has an existing storm drain system on-site that would be used to collect and convey stormwater and drain the site. The site currently drains via on-site storm drainage inlets to underground storm drainage pipes that carry the drainage via gravity flow over to the Northeast corner of the Project site to an outfall structure that discharges into the New York Slough. A concrete headwall and wingwalls and a flap gate at the end of the 15-inch storm drainpipe exist at the outfall structure. During construction of the Proposed Project, the storm drain system would be restored to full functionality. The Project site would continue to collect and convey stormwater in the same manner as currently done. Therefore, during the construction and operations of the Project site, flood flows would not be impeded or redirected, resulting in no impact.

d) Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. The Project site is located outside of the 100-year flood plain as determined by FEMA's flood maps (FEMA 2015). Most of the Project site is identified as being in Zone X, Area of Minimal Flood Hazard. However, the southern areas adjacent to 3rd Street are in a 0.2 percent Annual Chance Flood Hazard zone or (500-year flood) which includes 3rd Street and the vacant lot across the street to the south.

The Project area is located outside a tsunami hazard area as identified on the My Hazard's interactive web site: Myhazards.caloes.ca.gov, maintained by the State of California's Office of Emergency Services. No other hazards were identified on the Project site. The Proposed Project would not be susceptible to a seiche wave in an inland water body.

Based on the findings presented above, no hazards were determined from the FEMA 100-year flood, tsunami, or seiche. The potential impact of pollutants being released on the site as a result of inundation from these hazards during construction and operation would be less than significant.

e) *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less Than Significant Impact With Mitigation Incorporated. As discussed in b) above, the Proposed Project would not impact groundwater because of the amount of impervious surface existing on-site that will remain in place during operations of the Proposed Project. Required breaches in the cap would only occur during the dry season. However, as discussed in a) above there is a possibility that continuous operations could result in exceedance in water quality standards during the use of the outfall pipe in a rain event. This impact would be reduced to less than significant with implementation of MM HYDRO-1 and 2 that would monitor the water quality during a first flush rain event and require operational changes to eliminate exceedances if they occur.

4.11 LAND USE AND PLANNING

11.	LAND USE/PLANNING Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Physically divide an established community?	☐	☐	☐	☒
(b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

4.11.1 Environmental Setting

The Proposed Project is in the Northeast River Subarea characterized by heavy industrial operations and open space (City 2024a). The following are Project relevant policies associated with the Northeast River Subarea:

2-P-6.1: Encourage the development of sustainable industries that reduce the use of natural resources, use renewable materials and energy sources, and have reduced emissions of wastes and pollutants in comparison to conventional industries along the New York Slough waterfront.

2-P-6.2: Support the modernization of all industrial uses in the area to reduce exposure of workers and the community to hazardous materials and air and water pollutants.

2-P-6.3: Support the reclamation and reuse of contaminated industrial sites.

4.11.2 Impact Analysis

a) Would the project physically divide an established community?

No Impact. The Project site is currently occupied by and is zoned for industrial uses. The site is surrounded by industrial uses to the east and west, and vacant land uses to the south, and the New York Slough of the Suisun Bay to the north. The Proposed Project is located in the northwestern portion of the Northeast River Planning Subarea. This Subarea is primarily characterized by established, large-scale heavy industrial operations and open space (City 2024a). Therefore, development of the site would not physically divide an established community. No impact would occur.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. According to the City of Pittsburg General Plan, the Project site has a land use designation of Industrial and is zoned as General Industrial (IG) District, which allows for heavy industrial uses. The Proposed Project is an industrial facility with storage/handling of hazardous materials and Section 18.54.010 IP, IL and IG District Land Use Regulations indicates the Proposed Project fits within the specified activities described in the IG zoning district, subject to the approval of a use permit and design review. The City must grant the required use permit before the use can be established as proposed in the submitted application. As provided in the Environmental Setting above, the Proposed Project complies with the policies in the 2040 General Plan associated with the Northeast River Subarea.

The Project site is under the jurisdiction of the ECCCHCP as discussed in Section 4.4 Biological Resources. However, the Project site contains industrial land uses and is designated by the ECCCHCP as having "urban" land cover. Furthermore, the Proposed Project would not acquire additional land, as all elements of the Proposed Project would reuse or assemble industrial facilities on a developed industrial site. The Proposed Project would be in compliance with all land use plans, policies, and regulations, and thus would have no impact with regard to these issues.

4.12 MINERAL RESOURCES

12.	MINERAL RESOURCES Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
(b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

4.12.1 Environmental Setting

4.12.2 Impact Analysis

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

a&b) **No Impact.** As presented on Figure 3.11-1 of the General Plan EIR (City 2023a), most of the City, including the Project site, is designated MRZ-1, which indicates no significant mineral deposits are present and there is little likelihood that they exist. In addition, the Project site is located on a currently developed industrial site. Therefore, no impacts would occur to known mineral resources or their availability by constructing or operating the Proposed Project.

4.13 NOISE

13.	NOISE Would the project result in:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
(b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
(c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

4.13.1 Environmental Setting

Section 9.44.010 (Prohibitions) of the PMC prohibits the operation of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist (or other appliance) between the hours of 10:00 p.m. to 7:00 a.m. Section 18.82.040 (Noise) identifies noise level performance standards and states that no construction event or activity occurring on any site adjoining a lot in a residential, planned development, or government and quasi-public districts shall generate loud noises in excess of 65 decibels measured at the [receiving noise-sensitive] property line, except between the hours of 8:00 a.m. and 5:00 p.m.

General Plan Implementation Measure 2-A-4.b: As part of the City's development review process, continue to ensure that employment-generating projects are designed to minimize conflicts with residential uses, sensitive receptors, and disadvantaged communities. Review of employment-generating projects should ensure that the following design concepts are addressed in projects that abut residential areas, sensitive receptors, or disadvantaged communities:

- Site design and noise-attenuating features to avoid exposure to excessive noise due to long hours of operation or inappropriate location of accessory structures.

General Plan Policy 13-P-1.9: Evaluate projects for stationary noise source impacts based on the standards in Table 13-2:

Noise Level Descriptor	Daytime (7AM TO 10PM)	Nighttime (10pm to 7am)
Hourly Leg, dBA	55	45

Notes: 1 Each of the noise levels specified above should be lowered by 5 dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered to be particularly annoying and are a primary source of noise complaints.

2 No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

3 Stationary noise sources which are typically of concern include, but are not limited to, the following:

HVAC Systems	Cooling Towers/Evaporative Condensers
Pump Stations	Lift Stations
Emergency Generators	Boilers
Steam Valves	Steam Turbines
Generators	Fans
Air Compressors	Heavy Equipment
Conveyor Systems	Transformers
Pile Drivers	Grinders
Drill Rigs	Gas or Diesel Motors
Welders	Cutting Equipment
Outdoor Speakers	Blowers

4 The types of uses which may typically produce the noise sources described above include but are not limited to: industrial facilities, pump stations, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and athletic fields.

General Plan Action 13-A-1.e: In making a determination of impact significance under the CEQA, a substantial increase will occur if ambient noise levels experience a substantial permanent increase. Generally, a 3 decibel (dB) increase in noise levels is barely perceptible, and a 5 dB increase in noise levels is clearly perceptible. Therefore, increases in noise levels shall be considered to be substantial when the following occurs:

- When existing noise levels are less than 60 dB, a 5 dB increase in noise will be considered substantial;
- When existing noise levels are between 60 dB and 65 dB, a 3 dB increase in noise will be considered substantial;
- When existing noise levels exceed 65 dB, a 1.5 dB increase in noise will be considered substantial.

Additional or alternative criteria can be used for determining a substantial increase in noise levels. For instance, if the overall increase in noise levels occurs where no noise-sensitive uses are located, then the City may use its discretion in determining if there is any impact at all. In such a case, the following alternative factors may be used for determining a substantial increase in noise levels:

- the resulting noise levels;
- the duration and frequency of the noise;

- the number of people affected;
- conforming or non-conforming land uses;
- the land use designation of the affected receptor sites;
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence; and
- prior CEQA determinations by other agencies specific to the project.

4.13.2 Impact Analysis

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The Proposed Project would be in an area of existing industrial land use, and no noise sensitive land uses adjoin the Project site. The nearest residence is at approximately 2,500 feet on E. Santa Fe Ave to the south and 3rd Street to the east. The loader would likely produce the most noise during construction at 85 DBA at 50 feet from source (FTA 2006). At 2,500 feet away, it should be significantly lower, and the loader would not be in operation 8 hours a day for 18 months, including the effects of local shielding from buildings, topography, walls, or other barriers, which may reduce sound levels further. Noise due to temporary construction activities is therefore not expected to exceed 65 decibels at the nearest noise sensitive land use. Excessive construction noise would not be generated outside of the hours of 8:00 am to 5:00 pm.

On October 1, 2024, a noise measurement was taken in the early afternoon. Four pieces of equipment (screw conveyors, hopper, shaker, and air compressor) were operating at once. The measurement was taken on E 3rd Street approximately 100-150 feet away from the equipment. The reading was 15 dB (Richmond, A., 2024 personal communication). Therefore, the operational equipment would not be audible another 2,400 feet to the nearest receptor. Therefore, impacts associated with increased noise levels in the vicinity of the Project more than standards established in the local general plan or noise ordinance, or applicable standards of other agencies, would be less than significant.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. The primary impact with regard to construction vibration is building damage. Construction vibration is generally assessed in terms of peak particle velocity (PPV). The potential vibration damage threshold for continuous/frequent/ intermittent sources ranges from 0.08 PPV for extremely fragile historic buildings to 0.5 PPV for modern industrial/commercial buildings. Human perception ranges from 0.01 PPV for barely perceptible, 0.1 for strongly perceptible to 0.4 for severe (Caltrans 2020). Table 6 provides vibration levels for Project relevant equipment at 25 feet from the equipment.

Table 6: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV AT 25 feet (in/sec)
Large bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: Caltrans 2020

Ground vibration level generated by heavy equipment during construction would not exceed 0.089 inches per second PPV at 25 feet shown in Table 6. Vibration generated during operations also would not exceed the vibration criteria, as the equipment would be located at the south end of the site near the entrance on a concrete cap that would absorb some vibration. The nearest sensitive receptors are more than 2,500 feet from the Project site. Therefore, impacts related to excessive ground borne vibration or ground borne noise levels would be less than significant.

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The nearest airport is the county-owned Buchanan Field Airport located approximately 13 miles to the west of the Project area. Thus, implementation of the Proposed Project would not result in airport noise impacts on people residing or working within the Project area. There would be no impact.

4.14 POPULATION AND HOUSING

14.	POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
(b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.14.1 Environmental Setting

As provided in the Land Use Alternatives and Capacity Report summarized in the 2040 General Plan, the City has identified several alternatives for possible modifications to land use and development intensity that can support increased development opportunities, a range of housing options, preservation of established residential neighborhoods and quality job growth City (City 2024a).

4.14.2 Impact Analysis

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Proposed Project does not propose the construction of new homes or require the expansion of existing infrastructure that may directly or indirectly result in population growth. It is anticipated that approximately 25 employees would be required to operate the facility during three shifts. The maximum of 20 construction crew members at any one-time during construction would be drawn from the local or regional labor pool through the existing labor agreement. As a result, the Proposed Project would have no impact on population growth.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. Construction and operations of the proposed upscaled concrete production facility would occur within an existing industrial site and would not result in the displacement of people. Therefore, the Proposed Project would have no impact on existing housing.

4.15 PUBLIC SERVICES

15.	PUBLIC SERVICES.	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i) Fire Protection?	☐	☐	☒	☐
	ii) Police Protection?	☐	☐	☒	☐
	iii) Schools?	☐	☐	☐	☒
	iv) Parks?	☐	☐	☐	☒
	v) Other public facilities?	☐	☐	☐	☒

4.15.1 Environmental Setting

The Contra Costa County Fire Protection District (CCCFPD) provides fire protection services to the City. The Pittsburg Police Department (PPD) is responsible for providing law enforcement services.

4.15.2 Impact Analysis

a) i) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

Less Than Significant Impact. Construction and operation of the Proposed Project facility would not substantially increase the need for fire protection services. In the unlikely event of a fire or hazardous material release at the Project facility, the CCCFPD would initially respond. Stations 84 and 85 are nearest to the Project site, are fully equipped, and staffed in accordance with current CCCFPD policies. Station 85, located at 2331 Loveridge Road, is 3.3 miles from the Proposed Project area. Fire Station 84 at 1903 Railroad Ave. in Pittsburg, is located 2.1 miles from the Proposed Project.

The Applicant would continue to be required to construct and operate to current building and fire life safety codes complying with the rules and regulations set forth by the CCCFPD as has been the case with the Pilot Project. As such, construction and operation of the proposed permanent facility would not create significant fire hazards that would substantially increase the need for fire protection services and would not require the construction of new or expanded facilities to meet any increased need. In addition, the Project site is not in a high fire zone area (CalFire 2024). Therefore, impacts on fire protection services as a result of the Proposed Project would be less than significant.

ii) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?

Less Than Significant Impact. The Project site is fenced and has a security gate preventing anyone from entering the facility. The Project is continuing what initiated with the Pilot Project five years ago but at a larger scale, and work will be 24 hours a day. Construction and operation of the Project facility would not substantially increase the need for police services. In the event of an emergency, the Pittsburg Police Department (PPD), operating from City Hall, at 65 Civic Ave is approximately 1.9 miles west of the Project site and would initially respond. In the event all PPD personnel were dispatched on calls, the County Sheriff would be dispatched as standard protocol.

There are no residential or recreational land uses proposed as part of the Project, so there would not be an increase the amount of people near the facility which could increase the need for police presence. Impacts on police protection services as a result of the Proposed Project would be less than significant.

iii) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?

No Impact. The City of Pittsburg is served by three School Districts: Pittsburg Unified School District (PUSD), Antioch Unified School District (AUSD), and Mt. Diablo Unified School District (MDUSD) (City 2023a). The Proposed Project would not include new housing or directly increase the Project area's residential population. The additional 20 construction workers for 12 to 18 months of construction and the 25 staff operating the facility would not increase the local population. Consequently, Proposed Project would not increase student enrollment levels at PUSD schools and therefore, no impacts would occur.

iv) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?

No Impact. The Proposed Project does not feature a housing element, nor would it directly increase population so as to increase demand on parks. The Proposed Project would include 25 operations personnel at the facility. The 20 construction workers would only be present for up to 18 months and would be drawn from the local workforce. The Proposed Project would not provide, alter, or affect demand for parks and recreational facilities. Therefore, no impacts to parks would occur.

vi) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

No Impact. The operation is currently running with six staff; the change in operations would increase the staff by 19 from existing conditions. Construction would require 20 workers for 12 to 18 months. Due to the small change in the size of the operations and the temporary nature of construction, no impact to other public facilities would occur as a result of implementation of the Proposed Project.

4.16 RECREATION

16.	RECREATION. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
(b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

4.16.1 Environmental Setting

As provided in the General Plan EIR Table 3.10-1 Assess Land by Acreage, there are approximately 575 acres of parks within the City limits, City sphere of influence, and the City's Planning area combined (City 2023a).

4.16.2 Impact Analysis

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The Proposed Project does not include any new residential development. The additional 20 construction workers for 12 to 18 months of construction and the 25 staff operating the facility would not increase the local population. As a result, the Proposed Project would not result in an increase in population or housing in the City of Pittsburg. Thus, the Proposed Project would not increase demand for or use of local recreational facilities. As a result, the Proposed Project would have no impact.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The Proposed Project does not include construction of recreational facilities, nor (as described above under "a") would it indirectly require the expansion of existing recreational facilities. As a result, potential physical effects on the environment from the construction of new or expansion of existing recreational facilities would not occur. Thus, no impact would occur.

4.17 TRANSPORTATION

17.	TRANSPORTATION. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?	☐	☐	☒	☐
(b)	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
(c)	Substantially increase hazards due to a geometric design feature (e. g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
(d)	Result in inadequate emergency access?	☐	☐	☐	☒

4.17.1 Environmental Setting

As provided in the 2040 General Plan Draft EIR, Surface Transportation Assistance Act (STAA) truck routes operate within Pittsburg. STAA routes have specific signage and are designed with specified street widths, curb return radii, and other features to accommodate STAA trucks, which have longer wheelbases than other trucks. The following streets are STAA truck routes within Pittsburg:

- SR 4 (Regional Truck Route)
- Willow Pass Road (City Truck Route)
- W 10th Street (City Truck Route)
- E Third Street (City Truck Route)
- N Parkside Drive (City Truck Route)
- Railroad Avenue (City Truck Route)
- W Leland Road (City Truck Route)
- E Leland Road (City Truck Route)
- Buchanan Road (City Truck Route)
- Harbor Street (City Truck Route)
- Pittsburg Antioch Highway (City Truck Route)

The 2040 General Plan includes the following relevant activity in the Street System and Traffic Standards Section:

7-A-1.j: Continue to designate, monitor, and maintain appropriate truck routes to support truck mobility to serve local and regional commerce and to discourage unnecessary through traffic on local streets and in residential areas.

The City completed the final draft of the Transportation Impact Analysis Guidelines in October 2024. There are three key screening criteria for land use projects that would not exceed Vehicle Miles Traveled (VMT) thresholds of significance. A project only needs to meet one of the three screening criteria to screen out of the requirement to complete a VMT analysis. (City 2024b)

4.17.2 Impact Analysis

a) Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?

Less Than Significant Impact. The Project construction would include a maximum of 20 workers for 40 total daily trips and would not require daily truck trips of materials. Operations would include five trucks delivering and picking up materials at the site using City designated STAA routes, which is not a significant increase over what was previously analyzed for the Pilot Project which analyzed during an 8-hour day of operation roughly three (3) round trip trucks per day (City 2019). The number of peak hour trips generated as a result of the Proposed Project (20 trucks and 15 workers on the day shift) does not create a significant increase in traffic volume in the City. As described in Section 1.4 Project Description, the Project site is located on a private section at the end of the public section of 3rd Street. There are no bicycle or pedestrian facilities near the entrance of the facility. The Proposed Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities resulting in a less than significant impact to transportation.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. As described in the City's Traffic Impact Analysis (TIA) Guidelines, defines small projects that generate fewer than 100 trips per day for non-residential project of 10,000 square feet or less not requiring a transportation analysis to assess impacts of a development project on existing and/or planned traffic circulation system (City 2024b). The 20 construction workers for up to 18 months for 40 total daily trips without additional daily truck trips would not increase traffic volumes in the City. The number of peak hour trips generated as a result of the Proposed Project operations includes 90 total trips (20 trucks and 15 workers on the day shift and 5 workers each on remaining two daily shifts) does not meet or exceed the threshold for requiring a VMT analysis because the Proposed Project is defined as a small project under Screening Criteria 1: Project Type in the City's TIA Guidelines (City 2024b). Therefore, a VMT analysis is not required as part of this impact analysis due to the limited increase in traffic caused by the Proposed Project. The Proposed Project would not conflict or be inconsistent with CEQA guidelines for determining traffic impacts, therefore, the impact would be less than significant.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The Project site is on a private road. There are not hazardous design features or dangerous intersections on the designated STAA truck routes. The Project does not introduce an incompatible use in the area as it is in an industrial area. As discussed in Section 1.4 Project Description, BMPs have been identified to control spillage of hard substrate materials from hauling trucks that could cause hazards for other motorists by requiring six inches of freeboard in the truck bed on all trucks and have a cover over the materials. Therefore, impacts associated with increased transportation hazards is less than significant.

d) Would the project result in inadequate emergency access?

No Impact. The property does not abut a public right of way; pedestrian access from the nearest public roadway does not exist. Access to the site is via a private road at the end of the public portion of 3rd Street. There is a wide gated entrance to the facility on the west side of Project site for large equipment, and a separate entrance or exit to the east of the facility. Emergency vehicles would be able to use either entrance. Construction would not include any roadway blockage. The Proposed Project would have no impacts associated with inadequate emergency access.

4.18 TRIBAL CULTURAL RESOURCES

18.	**TRIBAL CULTURAL RESOURCES.** **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
(a)	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
(b)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

4.18.1 Environmental Setting

On January 2, 2025, the City of Pittsburg, pursuant to Public Resources 21080.3.1 and AB 52, sent notification letters via email to 11 California Native American Tribes that are traditionally and culturally affiliated with the Project area. The letter was sent to representatives of the Amah Mutsun Tribal Band of Mission San Juan Bautista, Chicken Ranch Rancheria of Me-Wuk Indians, Guidiville Indian Rancheria, Muwekma Ohlone Indian Tribe of the SF Bay Area, Indian Canyon Mutsun Band of Costanoan, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, North Valley Yokuts Tribe, The Confederated Villages of Lisjan Nation, The Ohlone Indian Tribe, Tule River Indian Tribe, and Wilton Rancheria.

On January 7, 2025, the Amah Mutsun Tribal Band of Mission San Juan Bautista provided recommendations. The recommendations are included under the Impact Analysis below. On January 9, 2025, The Confederated Villages of Lisjan Nation requested consultation on the Proposed Project regarding several questions. On January 13, 2025, the City answered the specific questions and received a reply on the same day with recommendations regarding inadvertent discovery which

are provided in the Impact Analysis below. No additional responses were received and as such, consultation was concluded on February 3, 2025.

4.18.2 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

b) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

a&b) **Less Than Significant with Mitigation Incorporated.** Neither the cultural resources records search nor SLF search identified cultural resources listed on or eligible for listing on the CRHR or a local register within the Project site as provided in Appendix C. However, there is always potential to uncover buried archaeological and Tribal cultural resources during ground disturbing activities, which could potentially be considered Tribal cultural resources eligible for listing in the CRHR or a local register or be considered tribal cultural resources. Should project construction activities encounter and damage or destroy a Tribal cultural resource or resources, impacts would be potentially significant. Mitigation Measures CUL-1, TCR-2, and TCR-3 would ensure that Tribal cultural resources are preserved in the event they are uncovered during construction and would reduce impacts regarding disrupting Tribal cultural resources to less than significant.

MM TCR-1 **Inadvertent discovery of Tribal Cultural Resources:** If cultural resources of Native American origin are identified during grading or excavation of the Proposed Project, all ground disturbing activities within 100 feet shall cease until an archeologist has evaluated the nature and significance of the find as a historic property and a representative from the Confederated Villages of Lisjan Nation and Amah Mutsun Tribal Band of Mission San Juan Bautista are consulted by the government agency. If the entity in consultation with the consulting Tribe(s), determines that the resource is a Tribal Cultural Resource and thus significant under CEQA, the entity shall retain a qualified archeologist and a Tribal monitor, at the applicant's expense, to prepare a mitigation plan, which shall be implemented in consultation with the consulting Tribe. The mitigation plan shall include avoidance of the resource or, if avoidance of the resource is not feasible, the plan shall outline appropriate treatment of the resource in coordination with the consulting Tribe and, if applicable, a qualified archeologist. Examples of appropriate mitigation for Tribal Cultural Resources include, but are not limited to, protecting the cultural

character and integrity of the resources, protecting traditional use of the resources, protecting the confidentiality of the resources, or heritage recovery.

MM TRC-2 Inadvertent Discovery of Human Remains: If human remains are encountered during construction and ground disturbing activities, all work within 100 feet of the remains should be redirected and the County Coroner notified immediately. At the same time, an archeologist shall be contacted to assess the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Native American Most Likely Descendent (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and any associated funerary objects. There shall be no pictures taken or testing done on the Native American human remains. All bone, if not identifiable as human or animal, shall be treated as human remains and the appropriate protocols followed. The archaeologist shall recover scientifically valuable information, as appropriate and in accordance with the recommendations of the MLD and/or Tribal representative. Upon completion of the archeologist's assessment, a report should be prepared documenting methods and results, as well as recommendations regarding the treatment of the human remains and any associated archeological materials. The report should be submitted to the lead government agency, the NWIC and the consulting Tribe. Tribal representatives will rebury the Native American human remains and associated funerary objects with the appropriate dignity either; in accordance with the recommendations of the MLD if available or in the project vicinity at a location agreed upon between the Tribe and the consultant, where the reburial would be accessible to Tribal members in perpetuity and would not be subject to further disturbance. The discovery and reburial is to be kept confidential and secure to prevent any further disturbance.

4.19 UTILITIES AND SERVICE SYSTEMS

19.	UTILITIES/SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
(b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
(c)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐

19.	UTILITIES/SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
(e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid wastes?	☐	☐	☒	☐

4.19.1 Environmental Setting

Wastewater. The Delta Diablo Sanitation District ("Delta Diablo") provides water resource recovery services for the cities of Pittsburg and Antioch, and the unincorporated community of Bay Point, serving a total population of 218,000. Delta Diablo owns and operates the regional interceptors and collection system that transports wastewater to the Delta Diablo Wastewater Treatment Plant (WWTP), located north of the Pittsburg-Antioch Highway along the Pittsburg city limits, about 0.6 miles east of the Project site. Delta Diablo treats approximately 13 million gallons of wastewater per day and produces six million gallons of recycled water per day (DDSD 2024).

As discussed in Section 1.4 Project Description, the Proposed Project has a goal to recycle 100% of the wastewater generated. Until this is achieved, it is estimated the maximum wastewater generated during operations is 20 gpm. Most of the wastewater generated from the washing of material products will be recycled on-site using reverse osmosis. Any process water discharge will be treated as required by regulation prior to being discharged. Prior to discharge to the site sanitary sewer system, treatment would be performed to meet discharge requirements.

Stormwater. The stormwater infrastructure on the Project site exists from the previous landowners. Stormwater runoff is collected by several catch basins and storm drainpipes that convey water to a flap gate exit for the 18-inch diameter storm drain on New York Slough. The stormwater collection and conveyance system was originally designed to accommodate stormwater runoff associated with industrial land uses. All stormwater discharges to New York Slough will remain consistent with current and historical permitted site practices, limited to runoff from the Project site conveyed through existing catchments and culverts. To prevent potential contamination, stormwater drains will remain isolated except during heavy rainfall events. The facility will not discharge any process water into the stormwater system drains.

Water Supply. Potential water sources include the Contra Costa Canal aqueduct, City of Pittsburg Municipal Water, or Delta Diablo Water District. The source of non-potable canal water would be from the eastern neighbor UPI, via their water rights to the Contra Costa Canal aqueduct. The canal is managed by the Contra Costa Water District (CCWD) and is delivered to UPI through a two-mile pipeline system owned and maintained by UPI. UPI also owns and operates a filter plant at its facility in Pittsburg, located to the south and to the east of the Project site, through which it treats all canal water received from the CCWD. UPI controls an existing 6-inch pipe (previously constructed by GWF) running from its facility to the Project site.

The facility would use a closed process water loop for washing; this process water does not come in direct contact with any other water in the facility. Wastewater generated from the

washing of material products will be minimized utilizing recycling on-site. It is estimated that less than 5 million gallons of water supply will be used annually by the Proposed Project from UPI, City of Pittsburg Municipal Water, or Delta Diablo Water District.

Solid Waste. A dumpster with ten (10) cubic yards of capacity will be utilized during the construction process to remove solid waste. The municipal waste service provided by Mt. Diablo Resource Recovery would empty this dumpster as needed during construction. All products from the Proposed Project are to be used as construction materials in building products; any other solid waste from operations would be contained in the dumpster in the trash enclosure and would be continued to be emptied as scheduled with Mt. Diablo Resource Recovery, as is the existing condition with the Pilot Project (City 2019).

Electricity and Gas Service. PG&E has gas and electric hookups to the site. The main electric connection is 400A/480V/3-phase with a meter currently in service. At full implementation of the Proposed Project, it is estimated the annual power usage is less than 3.5GWH. The Proposed Project does not require gas service.

4.19.2 Impact Analysis

a) *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or expansion of which could cause significant environmental effects?*

Less Than Significant Impact. The Proposed Project would use existing utility service and/or service connections in place including electric, potable and non-potable water hookups, and an existing stormwater outfall pipe that extends into New York Slough. Gas service is not used on the Project site as discussed in Section 1.4 Project Description. This stormwater pipe is planned to only be used for stormwater drainage during heavy rain events. The Proposed Project would not produce any change in the anticipated volume of storm water drainage to be discharged because it is being constructed on existing impervious ground.

The Proposed Project would use existing power connections from the previous property owners. Telecommunication would require one connection. Recycled water would be used for washing materials and reused on-site as much as possible. Potable water would only be used by the employees on-site. The minimalist approach to use of facilities and natural resources during construction and operations would result in less than significant impacts to relocation or construction of water, wastewater treatment, stormwater drainage, electric power, or telecommunications facilities and would not require new or expanded facilities.

b) *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal dry and multiple dry years?*

Less Than Significant Impact. Potential water sources include the Contra Costa Canal aqueduct, City of Pittsburg Municipal Water, or Delta Diablo Water District. The facility would use a closed process water loop for washing; this process water does not come in direct contact with any other water in the facility. Wastewater generated from the washing of material products will be minimized utilizing recycling on-site (Reverse Osmosis). It is estimated less than 5 million gallons of water supply will be used annually by the Proposed Project. Since the water being used for cooling is through existing water rights, it has already been accounted in allocations

and would not require an additional water supply. Therefore, there is sufficient water supply regardless of the type of water year resulting in a less than significant impact.

c) *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less Than Significant Impact. Proposed Project aims to recycle 100% of the wastewater generated. Until this is achieved, the estimated maximum thermal wastewater generated during operations is 20 gpm which would be discharged to the site sanitary sewer system, where treatment would be performed to meet discharge requirements. Most of the wastewater generated will be recycled on-site using reverse osmosis. Any process water discharge will be treated as required by regulation prior to being discharged and would meet discharge requirements. Therefore, the Proposed Project would result in a less than significant impact in regard to wastewater treatment.

d) *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less Than Significant Impact. Construction debris would be removed during the construction process and would include separation of materials that can be recycled. Solid waste would primarily consist of packaging from shipment of the prefabricated equipment being put together to create the modules of the Process. The developed byproducts of the process would be reused as part of the process and not generate a new stream of solid waste. A dumpster with at least ten (10) cubic yards of capacity will be utilized during the construction process to remove solid waste. The municipal waste service provided by Mt. Diablo Resource Recovery would empty this dumpster as needed during construction. All products from the Proposed Project are to be used as construction materials in building products; any other solid waste from operations would be contained in the dumpster in the trash enclosure and would be emptied as scheduled with Mt. Diablo Resource Recovery. Therefore, the Proposed Project would not generate solid waste in excess or impair the attainment of solid waste reduction goals and impacts would be less than significant.

e) *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less Than Significant Impact. As discussed above in impact "d", minimal waste would be generated during construction and solid waste from operations includes minimal amounts from packaging removed from supplies or replacement equipment. Operations of the Proposed Project aim to minimize waste as much as possible through reuse. Therefore, impacts to reduction statutes and regulations related to solid waste would be less than significant.

4.20 WILDFIRE

20.	WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
(c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
(d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

4.20.1 Environmental Setting

Relevant Actions associated with Safety and Resiliency element of the 2040 General Plan:

11-A-1.a: Implement and periodically review and update, as necessary, emergency response and planning documents, including the EOP and the local HMP to ensure appropriate procedures are maintained preparing for disasters, including educating the public about emergency preparedness and ensuring the plans address current information regarding disaster risks and severity.

11-A-1.b: Identify and pursue strategies to increase the city's resilience to emergencies and disasters, including sea level rise, floods, seismic events, and wildfires, while protecting the city and particularly the waterfront's unique historic, maritime, cultural, and ecological assets and environment to the maximum feasible extent.

11-A-2.d: Conduct a climate vulnerability assessment and set preparedness goals and strategies to safeguard human health and community assets susceptible to the impacts of a changing climate (e.g., increased drought, wildfires, flooding, and extreme heat). Incorporate these into all relevant plans, including the EOP and HMP.

4.20.2 Impact Analysis

a) Would the project impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. As discussed in Section 4.9 Hazards and Hazardous Materials, the City of Pittsburg has an EOP that contains emergency and recovery plans applicable to natural and human-induced hazardous situations, and an HMP that identifies potential mitigation actions to meet the community goals, including prevention of wildfires, earthquakes, gas leaks,

chemical explosions, or arson (City 2023b). No potential conflicts have been identified between the operation of the Global Innovation Center and other local emergency response and evacuation plans, including the Contra Costa County Emergency Operations Plan and Contra Costa County Hazardous Materials Plan. Therefore, construction and operation of the Proposed Project would not impair implementation or operation of the City's EOP, HMP, or other local emergency response or evacuation plans, resulting in a less than significant impact.

b) *Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Less Than Significant Impact. The Project site was previously developed and is industrial with a concrete cap covering most of the ground surface. The area does not contain, nor is it adjacent to, any wildlands. The area is generally on level ground bounded to the north by New York Slough; to the east by land owned by UPI and by a PG&E substation; to the south by an easement that runs along E 3rd Street; and to the west by Koch Carbon Inc. The developed area surrounding the facility is also industrial. The CCCFPD Stations 84 and 85 are nearest to the Project site, are fully equipped, staffed in accordance with current CCCFPD policies, and are 2.1 and 3.3 miles from the facility. The area is not susceptible to the spread of uncontrolled wildfire; therefore, the Proposed Project would have a less than significant impact associated with exacerbating wildfire risks.

c) *Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Less Than Significant Impact. The Global Innovation Center would have process structures on top of an existing asphalt and concrete cap. The facility would be constructed on top of the impervious surface with equipment that is easily connected and unconnected. The facility would include storage of chemicals used in production. As provided in Section 1.4 Project Description, the Proposed Project would include the development of an industrial fire safety plan consistent with applicable standards and fire codes. Fire systems that would be in place include fire extinguishers, fire sprinkler and smoke and fire alarm systems as required, as well as exit signs and emergency lighting. There would be no associated infrastructure of the facility constructed or operated that would exacerbate fire risk, resulting in less than significant impacts.

d) *Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability or drainage changes?*

No Impact. As discussed in a) above, the facility is on flat ground adjacent to New York Slough in the Sacramento/San Joaquin Delta. The Project site is in an industrial zoned area of the City that is not susceptible to wildland fires nor contains slopes or drainages that would create post fire impacts. Therefore, the Proposed Project would not have an impact associated with exposing people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

21.	MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
(b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)	☐	☒	☐	☐
(c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

4.21.1 Environmental Setting

4.21.2 Impact Analysis

a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

Less Than Significant Impact with Mitigation Incorporated. As discussed in section 4.4.2, the Proposed Project has the potential to impact a number of sensitive plant species and special status wildlife species due to the proximity of the Project site to the New York Slough and other sensitive habitats, including the eelgrass habitat and the EFH. Mason's lilaeopsis, was detected in the BSA and therefore has the potential to be affected by the Proposed Project. MM BIO-1 includes clearly marking the species in the field, implementing the WEAP program, avoiding the alteration of riprap at the stormwater outfall, and calls for the site to be inspected by the Project biologist. With this mitigation measure implemented, a less than significant impact would occur to sensitive plant species.

The following special status animal species were identified as having potential for occurrence within the BSA: Chinook salmon, delta smelt, green sturgeon, longfin smelt, Sacramento splittail, and steelhead; northwestern pond turtle (Pacific Pond Turtle); bank swallow, burrowing owl, and a variety of migratory bird species. MM BIO 2-4 will be required to ensure a less than significant impact to special status wildlife and migratory birds. MM BIO-2 addresses

special-status fish species and includes implementing the WEAP program, ensuring no work occur within the waters of the New York Slough, maintaining the same use of site with stormwater discharge, no alteration of the shoreline at the stormwater outfall, no change in location or operation of the 6-inch outfall, ensuring toxic substances are not released into the aquatic environment, allowing wildlife to leave the construction site without hazing or harm, and reporting special status species to the CDFW and submitting a survey to the CNDDB.

As mentioned in section 4.4.2, the Pacific Pond Turtle has the potential to be impacted by the Proposed Project due to the overall sensitivity of the area. MM BIO-3 will be implemented to ensure a less than significant impact occurs to the Pacific Pond Turtle. The mitigation measure includes allowing the turtles, if observed, to leave the Project site on their own or to be relocated only by a qualified biologist, and the Project biologist shall report any sighting, relocation, or mortalities of Pacific Pond Turtle to the CDFW.

To avoid potential impacts to nesting birds and raptors and to comply with the regulations and guidelines of the MBTA and California Fish and Game Code, it is recommended that a qualified biologist conduct a pre-construction nesting bird survey if vegetation clearing, grubbing, or grading is proposed to occur between February 1st and August 31. Additionally, MM BIO-4 will be implemented to ensure a less than significant impact to special status and migratory birds. This mitigation includes complying with the guidelines of the MBTA, consulting the Project biologist for recommendations if construction is expected to impact active nests for raptors and passerines, and, monitoring active nests if a no-construction buffer zone is not practicable by a qualified biologist. With implementation of MM BIO-4, impacts to special status and migratory bird species would be less than significant.

As discussed in section 4.5.1, the Proposed Project would not result in a substantial adverse change in the significance of historical resources and would therefore not eliminate important examples of the major periods of California history. Six cultural resources have been previously identified within a half-mile records search radius of the Project site. Of the six previously identified, none are mapped within the Project site, however, based on the cultural sensitivity of the area, the Project is considered to have the potential to encounter and disturb unknown archaeological resources, tribal cultural resources, and human remains during ground-disturbing activities, which could result in effects to examples of major periods of California prehistory. However, the Project would implement mitigation measures to avoid such impacts through monitoring.

As such, with the inclusion of mitigation, the Project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)*

Less than Significant Impact with Mitigation Incorporated. The goal of the Proposed Project is to maximize the process of sequestering CO_2 into construction materials. The Proposed Project would provide regional, statewide, or larger positive effects that reduce GHG emissions. At the highest output of the process, the quantity of CO_2 captured would be the same quantity that is sequestered in the aggregate rock products (and eventually to concrete). The Proposed Project is intended to result in a carbon negative input to the environment. Implementation of MM AIR-1 would control the potential for release of ammonia odor.

Project operations minimize dust generation to reduce PM10 and PM2.5 levels from concentrations that could be cumulatively considerable in the local area by surface wetting of the site three times a day, as discussed in the Project Description in Section 1.4. Therefore, the Project's contribution to cumulatively considerable impacts would be less than significant because it is well below threshold limits for greenhouse gases, and the Proposed Project is targeting results that would generate a carbon negative outcome in the future.

The stormwater discharge could have a cumulative impact on the ambient water quality in Suisun Bay combined with other water discharges in the area. The cumulative impact on water quality could affect wildlife and vegetation that inhabit the area. However, MM HYDRO-1 and HYDRO 2 will safeguard against polluted discharges by preventing and testing water to be discharged protecting Suisun Bay and resulting in a less than significant impact when combined with current and future projects that discharge into the Bay.

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Less Than Significant Impact with Mitigation Incorporated. The goal of the Proposed Project is to take waste products (flue gas and recycled/crushed concrete aggregate [RCA]) to produce carbon sequestered building materials. The final product would exceed ASTM C33 Standard Specification for Concrete Aggregates that defines the quality of aggregate for use in concrete. The developed products would reduce the need to mine raw materials to produce concrete products, overall reducing energy consumption in construction. The Proposed Project would increase the reduction of the release of flue gas into the atmosphere by making the facility a 24 hours per day operation. The amount waste generated by the Proposed Project would be minimal due to the recycling of intermediate byproducts in the process. Impacts to the community from a potential odors generated from ammonia in concentrations of 1% or greater would be reduced to less than significant with implementation of MM AIR-1. Therefore, the Proposed Project would have a less than significant impact on human beings directly and indirectly.

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APPENDIX A – Air, Energy, and Greenhouse Gas Analysis

AIR/ENERGY/GHG ANALYSIS

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TAMURA ENVIRONMENTAL

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Appendix A Emissions Quantification

1 INTRODUCTION

As described in the main body of this Initial Study, San Francisco Bay Aggregates (SFBA) already controls a 2.5 acre parcel under a Temporary Conditional Use Permit and is proposing to construct and operate a project that will capture carbon dioxide (CO_2) from a portion of the exhaust (8" pipeline) from the adjacent 500 MW Los Medanos Energy Center (LMEC) to create calcium carbonate ($CaCO_3$) products and upcycled rock products. This report addresses the Air Quality, Energy, and Greenhouse Gas components of the CEQA Initial Study.

The process extracts calcium from "geomass"—a broad term which the applicant identifies as encompassing waste concrete/recycled concrete aggregate (RCA), steel slag, fly ash, cement kiln dust, cake from rock washing plants, and other potential sources of material that contain calcium or other metal ions and alkalinity—and uses the calcium solution to absorb CO_2 from the LMEC exhaust slipstream (or CO_2 that has been delivered to the site), converting it to $CaCO_3$. The $CaCO_3$ is then either shaped and formed into solid aggregates or used to coat a substrate material to make "upcycled" product (containing carbonate formed from the absorbed CO_2). The applicant has identified that maximum annual throughputs will be approximately 10,000 metric tonnes (MT)/year of geomass (wet weight, based on filter cake delivered), with capture of 1,000 MT/yr of CO_2 and conversion to 2,280 MT/yr of $CaCO_3$.

On-site equipment is grouped into three modules:

Reformation Module

- RCA/Geomass unloading hopper
- RCA/Geomass feeder
- Separation conveyor
- Reformation pump
- Lamella Filter
- Filter press
- Reformed solvent tanks
- Two to four 17' diameter, 5' high piles of geomass and one pile of outbound product

Gas Absorption Carbonate Precipitation (GACP) Module

- 95-foot Gas absorption column
- Process exhaust stack
- Slurry pump
- Slurry solution tanks
- Mixing tanks
- Storage tank for ammonia (< 300 gal), 0.5-30% wt. aqueous solution
- Storage tank for glacial acetic acid (< 300 gal)
- Storage tank(s) for CO_2 (liquid and gas) – 20-ton tank @ 300 psi or 400 lb tanks @ 350 psi

Carbonate Formation & Processing Module

- Rotary dryer
- Aggregate belt conveyor
- Product bins
- Filter Press

Other equipment identified as being onsite include a forklift, loader, and two small (< 300 gallon) chemical tanks (one for acetic acid and one for 5-30% aqueous ammonia).

Transportation of materials will be by truck only and the applicant has identified that to the extent possible, trucks used for transport of materials will be full in both directions; and that therefore the projected daily truck traffic volume would be 5 trucks per day (i.e., 3 for transporting geomass onsite and upcycled material offsite, one for bringing CO_2 on-site, and one for hauling $CaCO_3$ offsite). Replenishment of the aqueous ammonia tank and acetic acid tank would not be required for more than once per month.

Construction activities are identified as being in two phases. Phase 1 involves completing site-wide automation and equipment upgrades to demonstrate continuous automated operations (which has already begun under the current permit and is expected to continue through 2024) and Phase 2 involves scaling the existing operation to utilize a larger (95-foot) CO_2 absorption column than was used in the pilot project, as well as larger processing equipment and the larger chemical storage tanks mentioned above.

2 AIR QUALITY

2.1 Environmental Setting

With regard to National and California Ambient Air Quality Standards (AAQS), the Bay Area is classified as "nonattainment" with regard to ozone—most of which is formed in the atmosphere by reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_x) rather than being emitted directly—and particulate matter (PM). There are separate standards for two size categories of PM—i.e., PM smaller than 10 microns PM-10) and PM smaller than 2.5 microns (PM-2.5)—and the Bay Area is classified as nonattainment for both.

2.2 Environmental Effects

AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☒	☐	☐

Would the proposed project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The applicable air quality plans are the portions of California's State Implementation Plan (SIP) that apply to the region—which consist of Federally-approved regulations of the Bay Area Air Quality Management District (BAAQMD),[1] as required by the Federal Clean Air Act for attaining and maintaining compliance with National Ambient Air

[1] See "EPA-Approved Bay Area Air Quality Management District Regulations in the California SIP", https://www.epa.gov/air-quality-implementation-plans/ca-sip-baaqmd.

Quality Standards (NAAQS)—and BAAQMD's latest Clean Air Plan,[2] which is required by California regulations for purposes of attaining California Ambient Air Quality Standards (CAAQS). The project does not conflict with or obstruct implementation of these plans. SFBA submitted a BAAQMD Regulation 2 Rule 1 permit application to BAAQMD in April 2019[3] and the District confirmed that the aggregate storage piles and materials handling equipment were exempt from that regulation in accordance with Section 2-1-115 (because the maximum rated production capacity was less than 15 cubic yards per hour).[4]

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact with Mitigation. For construction activity impacts, the project area (2.5 acres ≈ 109 thousand square feet (KSF)) is smaller than the 452 KSF screening criteria identified in the BAAQMD CEQA Guidelines[5] for General Heavy Industry and General Light Industry construction and construction emissions quantified in Appendix A are well below BAAQMD significance thresholds as shown in Table 2-1 below.

Table 2-1. Construction Emissions Compared to BAAQMD Quantitative Thresholds of Significance for Non-attainment Pollutants.

	Project Emissions		Thresholds of Significance		
Pollutant	Average Daily Emissions (lb/day)	Annual Emissions (tpy)	Average Daily Emissions (lb/day)	Annual Emissions (tpy)	Project < Thresholds?
ROG	0.31	0.06	54	10	Yes
NO_x	2.31	0.42	54	10	Yes
PM-10 (exhaust)	0.08	0.02	82	15	Yes
PM-2.5 (exhaust)	0.08	0.01	54	10	Yes

For fugitive dust PM emissions, Table 3-1 of BAAQMD's CEQA Guidelines identifies that the impacts are therefore less than significant if the following mitigation is applied:

Mitigation:

All best management practices (see Table 2-2 on the following page) are included in the project design and implemented during construction.

[2] BAAQMD, "Spare the Air – Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area – Final 2017 Clean Air Plan", adopted April 19, 2017.
[3] Atmospheric Dynamics, "Regulation 2, Rule 1 Submittal – San Francisco Bay Aggregates", April 2019.
[4] BAAQMD, Letter of Exemption, Application Number 29864, September 6, 2019.
[5] BAAQMD, "California Environmental Quality Act Air Quality Guidelines", 2022.

Table 2-2. BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions.

BMP ID	Basic Best Management Practice
B-1	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
B-2	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
B-3	All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
B-4	All vehicle speeds on unpaved roads shall be limited to 15 mph.
B-5	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
B-6	All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
B-7	All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
B-8	Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
B-9	Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

For operational activity impacts, the project area is also lower than the BAAQMD screening criteria, but the BAAQMD CEQA Guidelines identify that those criteria do not apply to industrial sources subject to Air District rules and regulations. The geomass storage piles (and possibly the aggregate belt conveyor) may be subject to BAAQMD Regulation 6 Rule 1 (control of fugitive dust, including from stockpiles of bulk material greater than 5 feet high or with a footprint greater than 100 square feet), and therefore a operational emissions were calculated. As detailed in Appendix A, emissions were found to be below the District's operational emissions thresholds for non-attainment pollutants, which address both whether the emissions from the project itself are significant and whether the project's contribution to cumulative emissions are significant.

Table 2-3. Operational Emissions Compared to BAAQMD Quantitative Thresholds of Significance for Non-attainment Pollutants.

	Project Emissions		Thresholds of Significance		
Pollutant	Average Daily Emissions (lb/day)	Annual Emissions (tpy)	Average Daily Emissions (lb/day)	Annual Emissions (tpy)	Project < Thresholds?
ROG	3.21	0.59	54	10	Yes
NO_x	3.51	0.64	54	10	Yes
PM-10 (exhaust)	0.15	0.03	82	15	Yes
PM-2.5 (exhaust)	0.14	0.03	54	10	Yes

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. As identified in a previous analysis,[6] the nearest sensitive receptors are approximately 2,500 feet from the project site.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant with Mitigation. Ammonia is odorous, and the applicant is proposing to have ammonia scrubbing equipment downstream of their absorber column; however, the project also requires the storage of aqueous ammonia at concentrations of "0.5 to 30 wt.%". We are not aware of any odor complaints associated with ammonia storage for the pilot plant, and given the local land use, odors are not likely to adversely affect a "substantial number" of people. However, the equilibrium concentration of ammonia vapor above aqueous ammonia solutions depends upon the concentration and temperature (see Figure 2-1 below), and if the limitations in BAAQMD Regulation 7 are triggered by odor complaints (as detailed in Section 7-102), the concentrations vented from the tank would need to be controlled to 2,500-5,000 ppmv (≈ .04-0.07 psia) depending upon the vent configuration.[7] Mitigation could include (and is not limited to) using more diluted solution to the extent practical, acidifying the solution so that ammonia is predominantly in the form of ammonium ion (NH_4^+) instead of dissolved NH_3 gas, cooling the solution, and/or adding a water scrubber to the vent.

[6] Brezack & Associates, Appendix G Checklist for the Carbon Capture and Mineralization Pilot Project, signed by Hector Rojas for City of Pittsburg, July 8, 2019.
[7] Per Section 7-303 and the definitions of "Type A Emission Point" and "Type B Emission Point" in BAAQMD Regulation 1.

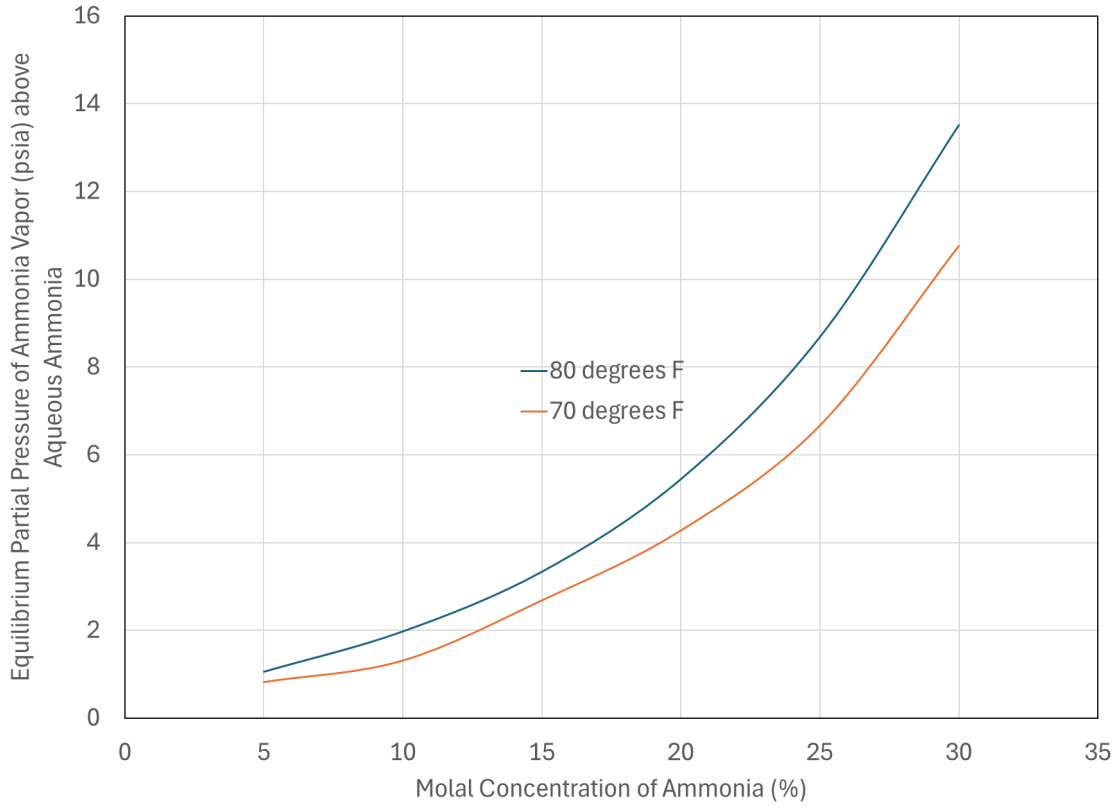


Figure 2-1. Equilibrium partial pressures of ammonia as a function of solution concentration and temperature. (Data source: Wilson, "The Total and Partial Vapor Pressures of Aqueous Ammonia Solutions", Engineering Experiment Station Bulletin No. 146, University of Illinois, Urbana, 1925.)

3 ENERGY

3.1 Environmental Setting

The California Energy Commission's latest Integrated Energy Policy Report (IEPR)[8] identifies that the achievement of California's policies and targets for combating climate change hinges on transitioning to zero-carbon, renewable sources of power while rapidly electrifying large segments of the economy.

3.2 Environmental Effects

ENERGY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Would the proposed project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. All industrial processes utilize energy to some extent, but there is nothing to indicate that there would be "wasteful, inefficient, or unnecessary" consumption of energy resources for this project, and the applicant is already financially incentivized to not have those types of consumption. The project description identifies that the hauling plan is for trucks to complete round trips to and from the Project site with "full" loads, to the extent possible.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The project is in the process of selling the 6.3 MMBtu/hr gas-fired steam boiler that was procured for the pilot project and is mentioned in the project description in the main body of

[8] California Energy Commission, 2023 Integrated Energy Policy Report, CEC-100-2023-001-CMF, February 2024.

the report. No other fuel-fired equipment will be used for process operation, and the gas infrastructure was cut and capped. All other stationary equipment is electric.

4 GREENHOUSE GASES

4.1 Environmental Setting

Based on extensive technical studies, the Intergovernmental Panel on Climate Change (IPCC) has concluded that "[h]uman influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years" and that the observed warming "is driven by emissions from human activities, with greenhouse gas warming partly masked by aerosol cooling".[9] Globally, GHG emissions have continued to rise over the last three decades.[10]

California has a statutory goal of reducing anthropogenic GHG emissions by at least 85% below 1990 levels and achieving carbon neutrality by 2045.[11]

4.2 Environmental Effects

GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Would the proposed project:

e) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?

Less Than Significant Impact. As identified in Appendix A, the CalEEMod® model estimates 178 MT CO_2e/yr of construction emissions and 628 MT CO_2e/yr of operational emissions (partly from the on-site loader and forklift and worker and truck traffic – i.e., 5 truck roundtrips/day and

[9] IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3−32, doi:10.1017/9781009157896.001.

[10] See, for example, EPA, Global Greenhouse Gas Overview, Global Greenhouse Gas Overview | US EPA, last accessed October 25, 2024.

[11] The State of California's Draft Priority Climate Action Plan, Submitted to the U.S. Environmental Protection Agency, March 1, 2024.

5 worker trips/day, with a default one-way trip distance of 20 miles), but that level activity corresponds to the project is capturing 1,000 MT CO_2e/yr. Insufficient information is available to quantify indirect GHG emissions associated with electricity usage of the various electric equipment, but the Project Level Climate Impact Thresholds of Significance in the BAAQMD CEQA Guidelines do not specify a quantitative significance threshold for either direct or indirect GHG; they instead require that projects not include natural gas appliance/plumbing or any wasteful, inefficient, or unnecessary energy use.

f) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impacts. This CO_2 sequestration project does not conflict with applicable plans to reduce the emissions of GHGs.

APPENDIX A. EMISSIONS QUANTIFICATION

Construction and operational emissions were calculated using the latest version of CalEEMod software, and the output from that is shown on the following pages. Operational emissions include those associated with truck traffic exhaust (at the maximum annual capacity of 10,000 metric tonnes/year of geomass throughput) and the forklift and loader (assuming worst-case 8-hour shifts) Emissions from the acetic acid storage tank were estimated using EPA AP-42 equations for storage tanks, implemented using Tamura Environmental's proprietary software (see output on following pages), and shown to be negligible (around 1 pound ROG per year).

Emissions from the ammonia storage tank were not quantified, partly because that ammonia is not a criteria pollutant and there are no corresponding significance thresholds (although ammonia can be a PM precursor, BAAQMD has evaluated the impacts that ammonia emissions within the Bay Area may have on secondary PM formation, and concluded that ammonia is not a significant contributor to secondary PM formation.[12]) Fugitive dust from storage piles and materials handling equipment (e.g. the geomass unloading hopper and feeder, separation conveyor, and aggregate belt conveyor) were not estimated, primarily because BAAQMD does not quantify significance thresholds for fugitive PM and instead relies on best management practices and the requirements of BAAQMD Regulation 6 Rule 1.

[12] EPA, "Revisions to California State Implementation Plan; Bay Area Air Quality Management District; Stationary Sources Permits", proposed rule, 80 FR 52235 et seq., August 28, 2015, p. 52242.

Tamura Fixed-Roof Tank Emissions Spreadsheet (Standalone) v3.0.0c
Main Data Entry Screen - General Tank and Contents/Throughput Info

Model Operating Mode: AP-42 (11/19 version)
T_V, T_LA based on H_S, D

Identification/Location

User Identification:	Acetic acid tank
City:	Pittsburg
State:	California
Meteorological Data used :	San Francisco C.O., California
Company:	SFBA
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Use Monthly or Annual Average Meteorology? Monthly

Tank Dimensions

Shell Height H_S (ft):	2.70
Diameter D (ft):	5.40
Maximum Liquid Height H_LX (ft):	2.70
Avg. Liquid Height H_L (ft):	1.35
Volume V (gallons):	291.27
Minimum Liquid Height H_LN (ft):	1.00
Insulated/Underground:	Uninsulated

Paint Characteristics

Shell Color/Shade:	White
Shell Condition:	New (Good)
Roof Color/Shade:	White
Roof Condition:	New (Good)

Roof Characteristics

Type:	Cone
Height (ft):	0.17
Slope (ft/ft) (Cone Roof):	0.0625

Breather Vent Settings

	(psig)	(oz/sq in)
Vacuum Setting:	-0.03	-0.48
Pressure Setting:	0.03	0.50

Throughput/Contents

Enter Monthly or Annual Throughput/Contents Data? Monthly

Month-Specific Data Entry

	Contents	Monthly Throughput (gal)	Default Calculated (Uninsulated) Bulk Liquid Temp. (°F)	Input Actual Bulk Temp Data?
				No
Jan	Acetic acid	300	51.4	83.1
Feb	Acetic acid	300	54.8	83.1
Mar	Acetic acid	300	55.6	83.1
Apr	Acetic acid	300	56.9	83.1
May	Acetic acid	300	57.7	83.1
Jun	Acetic acid	300	59.5	83.1
Jul	Acetic acid	300	60.2	83.1
Aug	Acetic acid	300	61.2	83.1
Sep	Acetic acid	300	63.2	83.1
Oct	Acetic acid	300	62.6	83.1
Nov	Acetic acid	300	57.6	83.1
Dec	Acetic acid	300	52.0	83.1

Net Throughput (gal): 3,600

Turnovers/Yr = Q/(πD^2/4*(H_LX-H_LN)*(42/5.614 gal/cf)): 12.36

THIS SPREADSHEET LICENSED FOR USE FOR TAMURA ENVIRONMENTAL, INC. ONLY

Tamura Fixed-Roof Tank Emissions Spreadsheet (Standalone) v3.0.0c
Emissions Report - Detail Format
Liquid Contents of Tank and Meteorology

Acetic acid tank - Vertical Fixed Roof Tank
Pittsburg, California

Model Operating Mode: AP-42 (11/19 version)
T_V, T_LA based on H_S, D

Month:		January	February	March	April	May	June	July	August	September	October	November	December
		Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid	Acetic acid
		Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids	Organic Liquids
	Basis for Vapor Pressure Calculations	Option 2	Option 2	Option 2	Option 2	Option 2	Option 2	Option 2	Option 2	Option 2	Option 2	Option 2	Option 2
	RVP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	ASTM Slope	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	A	7.55700	7.55700	7.55700	7.55700	7.55700	7.55700	7.55700	7.55700	7.55700	7.55700	7.55700	7.55700
	B	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000	1642.5000
	C	233.39	233.39	233.39	233.39	233.39	233.39	233.39	233.39	233.39	233.39	233.39	233.39
Monthly Throughput (gal/mo):		300	300	300	300	300	300	300	300	300	300	300	300
Avg. Daily Min. Ambient Temperature T_{MIN} (°F)	San Francisco C.O., California	45.8	48.7	49.0	49.8	50.5	52.6	53.5	54.6	55.9	55.2	51.6	47.0
Avg. Daily Max. Ambient Temperature T_{MAX} (°F)	San Francisco C.O., California	56.3	60.0	60.8	62.1	62.7	64.1	64.6	65.6	68.7	68.7	62.7	56.4
Avg. Daily Min. Ambient Temperature T_{AN} (°R)	$=T_{MIN}$ + 459.67	505.47	508.37	508.67	509.47	510.17	512.27	513.17	514.27	515.57	514.87	511.27	506.67
Avg. Daily Max. Ambient Temperature T_{AX} (°R)	$=T_{MAX}$ + 459.67	515.97	519.67	520.47	521.77	522.37	523.77	524.27	525.27	528.37	528.37	522.37	516.07
Average Daily Ambient Temperature T_{AA} (°R)	$=(T_{AX} + T_{AN})/2$	510.72	514.02	514.57	515.62	516.27	518.02	518.72	519.77	521.97	521.62	516.82	511.37
Daily Ambient Temperature Range ΔT_A (°R)	$= T_{AX} - T_{AN}$	10.50	11.30	11.80	12.30	12.20	11.50	11.10	11.00	12.80	13.50	11.10	9.40
Solar Absorptance of Shell (α_S)		0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Solar Absorptance of Roof (α_R)		0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Overall Solar Absorptance (α)	$= (\alpha_R + \alpha_S)/2$	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Avg. Daily Solar Insolation on a Horiz. Surface I (Btu/ft^2·day)	San Francisco C.O., California	684.9859	945.7819	1345.8593	1800.8245	2126.9781	2272.6050	2329.3963	2064.7932	1705.9608	1230.0558	790.9541	625.3392
Daily Vapor Temperature Range ΔT_V (°R)	AP-42 (11/19) eqn. (1-26)	9.8349	11.2344	12.8479	14.6326	15.5757	15.5163	15.4000	14.5019	14.7036	13.7337	10.6051	8.8423
Monthly Bulk Liquid Temperature T_B (°R)	= T_AA + 0.003α_S*I	511.07	514.50	515.26	516.54	517.35	519.18	519.91	520.82	522.84	522.25	517.22	511.69
Daily Average Liquid Surface Temperature T_{LA} (°R)	AP-42 (11/19) Eqn. (1-27)	511.47	515.06	516.05	517.60	518.61	520.52	521.29	522.05	523.85	522.98	517.69	512.06
Avg. Daily Liquid Surface Temp (°F)	$= T_{LA}$ - 459.67	51.80	55.39	56.38	57.93	58.94	60.85	61.62	62.38	64.18	63.31	58.02	52.39
Daily Minimum Liquid Surface Temp (°F)	$= T_{LA}$ - 459.67 - 0.25ΔT_V	49.35	52.58	53.17	54.28	55.05	56.98	57.77	58.75	60.50	59.87	55.37	50.18
Daily Maximum Liquid Surface Temp (°F)	$= T_{LA}$ - 459.67 + 0.25ΔT_V	54.26	58.20	59.60	61.59	62.84	64.73	65.47	66.00	67.86	66.74	60.67	54.60
Vapor press. at the Daily Min. Liquid Surface Temp. P_{VN} (psia)	(Depends on Option # for each month)	0.1216	0.1363	0.1391	0.1446	0.1485	0.1588	0.1631	0.1687	0.1790	0.1753	0.1502	0.1252
Vapor press. at the Daily Max. Liquid Surface Temp. P_{VX} (psia)	(Depends on Option # for each month)	0.1445	0.1656	0.1736	0.1857	0.1937	0.2063	0.2114	0.2152	0.2287	0.2205	0.1801	0.1462
Daily vapor pressure range ΔP_V (psi)	$= P_{VX} - P_{VN}$	0.0230	0.0293	0.0345	0.0411	0.0451	0.0476	0.0483	0.0465	0.0496	0.0452	0.0299	0.0210
Petroleum stock vapor pressure constant A	AP-42 Figures 7.1-15 and 7.1-16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Petroleum stock vapor pressure constant B (°R)	AP-42 Figures 7.1-15 and 7.1-16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
True vapor pressure at $T = T_{LA}$, P_{VA} (psia)	(Depends on Option # for each month)	0.1326	0.1503	0.1556	0.1641	0.1698	0.1812	0.1859	0.1907	0.2026	0.1967	0.1646	0.1354
Average atmospheric pressure P_A (psia)	San Francisco C.O., California	14.7465	14.7465	14.7465	14.7465	14.7465	14.7465	14.7465	14.7465	14.7465	14.7465	14.7465	14.7465
Vapor Space Expansion Factor K_E	$= \Delta T_V/T_{LA} + (\Delta P_V - \Delta P_B)/(P_A - P_{VA})$	0.0166	0.0196	0.0231	0.0269	0.0289	0.0289	0.0287	0.0268	0.0273	0.0252	0.0184	0.0145
Vapor Molecular Weight M_V (lb/lb-mole)		60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500
Vapor Temperature T_V (°R)	AP-42 (11/19) Eqn. (1-32)	511.88	515.62	516.85	518.67	519.87	521.87	522.67	523.27	524.86	523.70	518.16	512.43

Tamura Fixed-Roof Tank Emissions Spreadsheet (Standalone) v3.0.0c
Emissions Report - Detail Format
Detail Calculations (AP-42)

Acetic acid tank - Vertical Fixed Roof Tank
Pittsburg, California

Model Operating Mode: AP-42 (11/19 version)
T_V, T_LA based on H_S, D

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses $L_S = (\#\ days) V_V W_V K_E K_S$ (lb):	0.0238	0.0286	0.0384	0.0455	0.0522	0.0535	0.0562	0.0538	0.0561	0.0521	0.0311	0.0212
Vapor Space Vol. V_V=(πD^2/4)H_VO (cu ft):	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062
Vapor Density W_V = M_V P_VA/(R T_V)	0.0014	0.0016	0.0017	0.0018	0.0018	0.0019	0.0020	0.0020	0.0022	0.0021	0.0018	0.0015
Vapor Space Exp. Factor K_E (from prev. pg.):	0.0166	0.0196	0.0231	0.0269	0.0289	0.0289	0.0287	0.0268	0.0273	0.0252	0.0184	0.0145
Vented Vap. Sat. Factor $K_S = 1/(1+0.053 P_{VA} H_{VO})$:	0.9902	0.9889	0.9885	0.9879	0.9875	0.9867	0.9863	0.9860	0.9851	0.9855	0.9879	0.9900
Tank Vapor Space Volume:												
Vapor Space Vol. V_V=(πD^2/4)H_VO (cu ft):	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062	32.2062
Tank Diameter D (ft):	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000
Vapor Space Outage H_VO=H_S-H_L+HRO (ft):	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063
Tank Shell Height H_S (ft):	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000
Average Liquid Height H_L (ft):	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500	1.3500
Roof Outage H_RO = (1/3)H_R (ft):	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563
Roof Outage (Cone Roof) (ft):												
Roof Outage H_RO = (1/3)H_R (ft):	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563	0.0563
Roof Height H_R (ft):	0.1688	0.1688	0.1688	0.1688	0.1688	0.1688	0.1688	0.1688	0.1688	0.1688	0.1688	0.1688
Roof Slope S_R (ft/ft):	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625
Shell Radius R_S (ft):	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000
Vented Vapor Saturation Factor												
Vented Vap. Sat. Factor $K_S = 1/(1+0.053 P_{VA} H_{VO})$:	0.9902	0.9889	0.9885	0.9879	0.9875	0.9867	0.9863	0.9860	0.9851	0.9855	0.9879	0.9900
Vapor Pressure at Daily Average Liquid Surface Temperature, P_{VA} (psia):	0.1326	0.1503	0.1556	0.1641	0.1698	0.1812	0.1859	0.1907	0.2026	0.1967	0.1646	0.1354
Vapor Space Outage H_VO=H_S-H_L+HRO (ft):	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063	1.4063
Wking Losses L_W (lb) per AP-42 (11/19) eq (1-35)	0.0580	0.0653	0.0674	0.0708	0.0731	0.0777	0.0796	0.0816	0.0864	0.0841	0.0711	0.0592
Vapor Molecular Weight M_V (lb/lb-mole)	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500	60.0500
Vapor Pressure at Daily Average Liquid Surface Temperature, P_{VA} (psia):	0.1326	0.1503	0.1556	0.1641	0.1698	0.1812	0.1859	0.1907	0.2026	0.1967	0.1646	0.1354
Net Working Loss Throughput $V_{Q,gal}$ (gal):	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00
Effective Annual Turnovers N:	12.3595	12.3595	12.3595	12.3595	12.3595	12.3595	12.3595	12.3595	12.3595	12.3595	12.3595	12.3595
Turnover Factor K_N=MIN((180+N)/6N,1):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Minimum Liquid Height H_{LN} (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Height H_{LX} (ft):	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000	2.7000
Tank Diameter D (ft):	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000	5.4000
Working Loss Product Factor K_P:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Vent Setting Correction Factor K_B (P_I=0 psig):	0.9979	0.9979	0.9979	0.9979	0.9979	0.9979	0.9979	0.9979	0.9979	0.9979	0.9979	0.9979
Total Losses $L_T = L_S + L_W$ (lb):	0.0819	0.0938	0.1058	0.1163	0.1253	0.1312	0.1358	0.1354	0.1425	0.1362	0.1022	0.0804

Tamura Fixed-Roof Tank Emissions Spreadsheet (Standalone) v3.0.0c
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report

Acetic acid tank - Vertical Fixed Roof Tank
Pittsburg, California

Model Operating Mode: AP-42 (11/19 version)
T_V, T_LA based on H_S, D

	Losses (lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Total emissions	0.87	0.51	1.39
Unidentified Components	0.87	0.51	1.39

APPENDIX B – Biological Resource Letter Report

November 7, 2024

Maurice Brenyah-Addow, Senior Planner
City of Pittsburg
65 Civic Avenue
Pittsburg, CA 94565

Subject: San Franscisco Bay Aggregates Global Innovations Center, Biological Resources Letter Report

Introduction

San Francisco Bay Aggregates (SFBA; Applicant), a wholly owned subsidiary of Blue Planet Systems Corporation (Blue Planet), is proposing to develop, own, and operate a carbon capture and mineralization facility located in Pittsburg, California using proprietary Blue Planet process technology (Project; Proposed Project). The purpose of Biological Resources Letter Report (report) is to identify additional biological resources that might be present on the Project site and that could constrain Proposed Project actions since the Biological Resource Assessment (BRA) for the Pilot Project was prepared in 2019 (Wood Biological 2019). Potential biological constraints consist of federal- and state-listed endangered, threatened, and rare species and their habitats; other special status species regulated under state or local laws or ordinances; wetlands and other aquatic habitats; and other special status natural communities. This report also identifies additional impact avoidance measures for potential impacts that may result from Project implementation. All references to the BRA in this report refer to the 2019 BRA conducted by Wood Biological that is included as Attachment 1.

Project Background

SFBA, a wholly owned subsidiary of Blue Planet, is proposing to develop, own, and operate a carbon capture and mineralization facility located in Pittsburg, California using proprietary Blue Planet process technology.

Local vendors and emission generators would provide the sources of CO2 which will be combined with locally sourced recycled concrete aggregate (RCA), to produce new “CO2 sequestered” and “upcycled” rock aggregates (UCA). Upcycling is the process of transforming by-products or waste materials into new materials or products of better quality or for better environmental value. It is anticipated the final aggregate products would exceed American Society for Testing and Materials (ASTM) C33 Standard Specification for Concrete Aggregates that defines the quality of aggregate for use in concrete.

These aggregate products would be sold to San Francisco Bay Area businesses, governments, and consumers for use in a wide range of low carbon and high-performance concrete applications.

The Proposed Project will convert the existing SFBA facility to a continuous production operation. There would be three 8-hour shifts per day for a 24-hour day operation.

Project Location and Setting

SFBA intends to construct and operate the Proposed Project on a 2.5-acre parcel located at 895 East 3rd Street, Pittsburg, California 94565 in Contra Costa County. The Assessor’s Parcel Number (APN) for the Project site is 073-020-019-3. As shown in Attachment 2, Figure 1, the parcel is bounded to the north by New York Slough, Suisun Bay, part of the Sacramento-San Joaquin River Delta; to the east by land owned by USS-POSCO Industries (UPI) and by a Pacific Gas and Electric Company (PG&E) substation; to the south by an easement that runs along East 3rd Street; and to the west by Koch Carbon Inc.

Previous to the SFBA Project (Pilot Project), this location was host to a 20-megawatt cogeneration power plant, owned and operated by GWF Power Systems Company, Inc. (GWF). The facility was decommissioned in 2012, and the site has since been an empty lot used for truck parking. The Project site has a perimeter chain link fence. As shown in Attachment 2, Figure 2, two buildings and a trailer remain in place, with the potential to add an additional trailer. Site remedial actions, prior to the construction of the GWF plant, resulted in contaminated soil excavation, consolidation and capping under building floors, asphalt pavements and landscaped areas that remain intact. A Phase 1

environmental site assessment (ESA) carried out in August 2018 by Groundwater & Environmental Services, Inc. verified that the capping infrastructure remains in place sealing any contaminated soil from exposure to the environment and workers.

The property does not abut a public right of way (ROW). Access to the site is via a private road at the end of the public portion of 3rd Street. Pedestrian access to the site is along the same route.

The site provides the following infrastructure that will facilitate operations of the Proposed Project:

- Close proximity to flue gas input, a small slipstream of which will be diverted from Calpine's Los Medanos Energy Center (LMEC), a neighbor to the Project site at its southwest corner.
- Access to material transport, for raw materials and products, by way of East 3rd Street via standard trucking routes through the City of Pittsburg.

Under the Temporary Use Permit, SFBA completed construction of a pipeline bringing flue gas from LMEC to SFBA including a pipeline crossing under East 3rd Street.

Methods

Literature Review and Desktop Analysis

Prior to commencing the desktop analysis, Chambers Group reviewed the BRA (Wood Biological 2019). The California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; CDFW 2024) and the California Native Plant Society's Electronic Inventory (CNPSEI; CNPS 2024) were reviewed for the latest records of reported occurrences of federal- or state-listed endangered or threatened species, California Species of Concern (SSC), or otherwise special status species or habitats that may occur within or in the immediate vicinity of the Project site. To maintain consistency with the BRA, the CNDDB and CNPSEI search areas included the nine 7.5-minute United States Geological Survey (USGS) quadrangles including and surrounding the Project site (*Antioch North, Antioch South, Birds Landing, Brentwood, Clayton, Denverton, Honker Bay, Jersey Island, and Rio Vista*) with a focus on records within 3 miles of the Project site.

A Trust Resources Report was generated through the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) planning tool for special status species and critical habitat that may occur within or in the vicinity of the Project site (USFWS 2024a). The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service's (NMFS) National ESA Critical Habitat Mapper (NOAA 2024a), and the Essential Fish Habitat Mapper (NOAA 2024b) were queried for critical habitat and Essential Fish Habitat (EFH) that may occur within or in the vicinity of the Project site, respectively. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey was also reviewed to confirm that soils occurring within the Project site remain consistent with what was reported in the BRA (USDA 2024).

In addition, the USFWS National Wetlands Inventory (NWI; USFWS 2024b), the USGS National Hydrography Dataset (NHD; USGS 2024), Google Earth (Google Earth 2024), and historical aerial photographs of the Project were reviewed for hydrological features within the Project site that may fall under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Section 401 of the CWA, and CDFW jurisdiction pursuant to Section 1602 of the Fish and Game Code. Database search results are included as Attachment 3.

The results of the literature review were analyzed to determine whether any new biological resources or constraints may be present on the Project site since the BRA for the Pilot Project was prepared in 2019.

As minimal changes will occur between the Pilot Project for which the BRA was prepared and the Proposed Project which will convert the existing SFBA facility to a continuous production operation, no additional field visits or biological surveys were conducted. The results of the literature review and subsequent desktop analysis are presented in the sections that follow.

Results

Existing Conditions

Vegetation Communities and Habitat Types

As no additional field visits or biological surveys were conducted for the Proposed Project, vegetation communities and habitat types are largely assumed to be consistent with those presented in Section 3.2 of the BRA and include Developed, Ruderal, Landscape, Littoral Zone, and Aquatic areas. These vegetation communities and habitat types are described in detail in Section 3.2 of the BRA and are mapped in Figure 3 of the BRA (Attachment 1).

According to the BRA, aside from the small shoreline area, the Project site is developed with areas of non-native vegetation. A review of Google Earth aerial imagery (Google Earth 2024) shows that the vegetation communities and habitat types remain consistent with Figure 3 of the BRA aside from a new structure that was added to the northwestern corner of the Projects site. The addition of this structure has changed approximately 0.06 acre of ruderal habitat to developed areas.

As a non-native plant association, ruderal habitat has no global or state rarity ranking. Unless found to support special status plant or animal species, or otherwise regulated features such as drainages or water bodies, impacts to ruderal habitat would not be regarded as significant pursuant to statutes and guidelines of CEQA.

Soils

The USDA NRCS soil survey (USDA 2024) was reviewed to confirm that soils occurring within the Project site remain consistent with what was reported in the BRA. Soils within the Project site are mapped as Clear Lake clay, 0 to 15 percent slopes, MLRA 15, which is consistent with previous findings (Attachment 2, Figure 3). According to the BRA the Clear Lake series consists of poorly drained soils that, in an undisturbed condition, support annual grasses and forbs and scattered live oaks. These soils are generally deep, with groundwater at about 80 inches. Clear Lake soils are classified as Xeric Endoaquerts. However, no native soils or land surfaces are present on the Project site due to its developed condition.

Hydrology

As discussed in the BRA and confirmed with review of recent aerial imagery and NWI and NHD data (Attachment 2, Figures 4 and 5), the New York Slough reach of the San Joaquin River constitutes a prominent hydrologic feature of the Project site. The river is tidally influenced, with tidal fluctuations averaging 5.2 feet at the Project site. No other hydrological features are present within or adjacent to the Project site.

Wildlife Corridors

As discussed in the BRA, the aquatic habitat of New York Slough and the shoreline of the Project site may be considered wildlife movement corridors. Although over-land movement is restricted by fencing, barren ground, and moderately intense human disturbance in the form of vehicles, pedestrians, lighting, and noise, the shoreline is somewhat protected from these limitations. Vegetation on the riverbank provides cover for dispersing wildlife, forming a corridor between more extensive areas of undeveloped, natural habitats. Open water also facilitates the movement of numerous aquatic species such as mountain beaver (*Aplodontia rufa*), common muskrat (*Ondatra zibethicus*), and northern river otter (*Lontra canadensis*). The San Joaquin River serves as an important corridor for resident and anadromous fish. However, the Proposed Project is not expected to interfere substantially with the local or regional movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. As such, impacts would not be considered significant pursuant to CEQA guidelines.

Special Status Natural Communities and Habitats

Special Status Natural Communities

Special status natural communities recorded from the Project region remain the same as recorded in 2019. These natural communities include Alkali Meadow, Alkali Seep, Cismontane Alkali Marsh, Coastal and Valley Freshwater Marsh, Coastal Brackish Marsh, Northern Claypan Vernal Pool, Serpentine Bunchgrass Grassland, Stabilized Interior Dunes, and Valley Needlegrass Grassland (CNDDB 2024). None of these special status natural communities are present within the Project footprint and none would be impacted by the Proposed Project.

Small, fringing patches of freshwater emergent marsh were present along the shoreline in the Littoral Zone within the Project site in 2019 and are assumed to still be present. This vegetation was noted to occur in a narrow band between 2 to 6 feet in width. These narrow patches of freshwater emergent marsh vegetation occur along much of the Pittsburg shoreline but are poorly developed and relatively impermanent as the substrate erodes away or the shoreline is armored. The freshwater emergent marsh vegetation does not conform to any described special status natural community but does constitute jurisdictional wetlands. This vegetation is classified as "palustrine emergent persistent seasonally flooded/saturated freshwater wetlands" (P-EM1-E0) following Cowardin, et al. (1979). Impacts to wetlands resulting from Project implementation would be deemed significant pursuant to the statutes and guidelines of CEQA; however, the Proposed Project construction and operations would not result in impacts to this vegetation as no work in the Littoral Zone is proposed.

Eelgrass Habitat

In the subtidal zone, impacts to eelgrass (*Zostera marina*) habitat are regulated under the CWA, Magnuson-Stevens Fishery Conservation and Management Act (MSA), the California Coastal Act (CCA), and the California Code of Regulations (CCR) Title 14. According to these laws and regulations, any activities which may potentially impact eelgrass habitat must mitigate those impacts. This requires mitigation for harmful impacts to existing eelgrass beds as well as potential eelgrass habitat. Consistent with 2019 findings, eelgrass beds are not expected to occur at the Project site. According to the BRA it has been determined that eelgrass has been fully replaced by the native species widgeon grass (*Ruppia maritima*) east of the Carquinez Bridge (Merkel & Associates 2004). Furthermore, the Proposed Project would not result in any changes to the aquatic environment of New York Slough that would affect eelgrass.

Essential Fish Habitat

The Project site was reviewed for EFH using the NOAA's Essential Fish Habitat Mapper. As found in the in the BRA, the Project site is located within EFH for all life stages of Pacific Groundfish; however, the current review shows that the Project site is also located in EFH for all life stages of Coastal Pelagic Species and Finfish, and within Pacific Salmon EFH for all life stages of Chinook salmon (*Oncorhynchus tshawytscha*).

Groundfish species managed under the Pacific Coast Groundfish Management Plan (PFMC 2023) include over 80 species of sharks and skates, roundfish, rockfish, and flatfish. Coastal Pelagic Species and Finfish species managed under the Coastal Pelagic Species Fishery Management Plan (PFMC 2019) include four finfish species; Pacific sardine, Pacific (chub) mackerel, northern anchovy (central and northern subpopulations) and jack mackerel; one invertebrate, market squid; and all krill species. Chinook salmon is managed under the Pacific Coast Fishery Management Plan (PFMC 2024).

Several groundfish, finfish, pelagic species, and Chinook salmon covered under these fishery management plans (FMPs) have distributions in Suisun Bay and have the potential to occur in the Project site as juveniles and/or adults; however, because the Proposed Project does not include any work within the aquatic environment, and discharges through the outfall would be within permitted parameters, there is no potential for adverse effects on EFH.

Critical Habitat

The Project site was reviewed for any changes to critical habitat within or in the vicinity of the Project site since the preparation of the BRA. A Trust Resources Report was generated through the USFWS's IPaC planning tool to identify critical habitat that may occur within or in the vicinity of the Project site. As found in the BRA, the Project site is located

within designated USFWS final critical habitat for the federally threatened and state endangered delta smelt (*Hypomesus transpacificus*; Attachment 2, Figure 6).

The NMFS National ESA Critical Habitat Mapper was also referenced to identify any critical habitat that is under the jurisdiction of the NMFS. The Project site is located within NMFS final critical habitat for the federal- and state-endangered Chinook salmon (Sacramento River winter-run ESU), and for the federally threatened green sturgeon (Southern DPS; *Acipenser medirostris* pop. 1) (Attachment 2, Figure 6). These species and their critical habitats are discussed in detail in Section 4.3 of the BRA (Attachment 1).

Because the Proposed Project does not include any work within the aquatic environment, and discharges through the outfall would be within permitted parameters, there is no potential for adverse effects on USFWS or NMFS critical habitat. While none of these species were observed during the 2019 biological reconnaissance survey, they should be assumed present in the Project site and impact avoidance and minimization should be implemented as outlined in section 5.3 of the BRA (Attachment 1).

The BRA stated that the Project site occurred in critical habitat for Chinook salmon Central Valley Spring-Run ESU. However, recent database search results show that the closest critical habitat for Spring-Run ESU is approximately 2.2 miles east of the Project site near the Dow Wetlands Preserve.

Waters of the U.S. / Waters of the State

The USFWS NWI, the USGS NHD, Google Earth, and historical aerial photographs of the Project site we reviewed for hydrological features within the Project site that may fall under the regulatory jurisdiction of the USACE pursuant to Section 404 of the CWA, RWQCB pursuant to Section 401 of the CWA, and CDFW pursuant to Section 1602 of the Fish and Game Code.

Both the USACE and U.S. Environmental Protection Agency (USEPA) assert jurisdiction over tributaries of traditional navigable waters that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection and wetlands adjacent to waters of the U.S. (USEPA 2024).

According to the BRA, a delineation of potentially jurisdictional waters of the U.S./Waters of the State was not performed. However, the limits of the federal and state jurisdictional waters were estimated based on physical indicators of the High Tide Line (HTL). Physical indicators of the HTL as described in the Code of Federal Regulations (33 CFR 328.3) may include a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm or other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The extent of USACE jurisdiction in tidal waters normally corresponds to the Mean High Water, which was observed in the field to correspond with the upper limit of wetland vegetation.

Consistent with the Pilot Project, the Proposed Project would not involve the placement of fill below the HTL of the San Joaquin River, a traditional navigable Waters of the U.S. and a Waters of the State, nor would it cause any changes that affected navigability. Therefore, the Proposed Project would not be regulated pursuant to the CWA under the jurisdiction of the USACE and RWQCB. Impacts below the top of bank are regulated as Waters of the State by the CDFW and RWQCB. Similarly, the Project does not require authorization from these agencies with regard to Waters of the State.

While no impacts to jurisdictional waters by the Proposed Project are anticipated, impact avoidance measures and best management practices are recommended to be included as part of the Proposed Project.

Special Status Species

The following information is a list of abbreviations used to help determine the potential for occurrence of special status biological resources at the Project site. In the sections that follow, the Biological Study Area (BSA) includes the Project site and an approximately 100-foot buffer around the Project site as defined in the BRA (Attachment 1).

CNPS California Rare Plant Rank (CRPR)

1A	=	Plants presumed extirpated in California and either rare or extinct elsewhere.
1B	=	Plants rare, threatened, or endangered in California and elsewhere.
2A	=	Plants presumed extirpated in California but common elsewhere.
2B	=	Plants rare, threatened, or endangered in California but common elsewhere.
3	=	Plants about which more information is needed, a review list.
4	=	Plants uncommon and of limited distribution in California, a watch list.

CRPR Extensions

0.1	=	Seriously threatened in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2	=	Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat).
0.3	=	Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Federal

FE	=	Federally Listed; Endangered
FT	=	Federally Listed; Threatened
FPT	=	Federally Proposed; Threatened
FPE	=	Federally Proposed; Endangered
FC	=	Federal Candidate
BCC	=	USFWS Birds of Conservation Concern

State

ST	=	State listed; Threatened
SE	=	State listed; Endangered
FP	=	State Fully Protected
SC	=	State Candidate for Listing
SCE	=	State Candidate; Endangered
SCT	=	State Candidate; Threatened
SSC	=	State Species of Special Concern
WL	=	State Watch List
SA	=	State Special Animal

To maintain consistency with the BRA the following criteria were used to evaluate plant and wildlife species potential for occurrence at the Project site:

Table 1: Criteria for Evaluating Special Status Species Potential for Occurrence (PFO)

*PFO	CITERIA
None:	Applied to plant or animal species for which suitable habitat is lacking, which are not known to occur locally, or which are thought to be locally extirpated.
Absent:	Applied to plant or animal species for which suitable habitat is present, but which would have been detectable at the time surveys were conducted.
Not Expected:	Applied to plant and animal species for which suitable habitat or key habitat elements may be present but which are considered to be of poor quality or are spatially isolated from either known occurrences or areas of suitable habitat. When the existing habitats within the BSA do

	not coincide with a species' life history or ecological requirements, its occurrence is not expected.
Possible:	Applied to plant and animal species for which suitable habitat or key habitat elements are present within the BSA. The occurrence of these species is either considered likely, or, at the least, its presence cannot be ruled out.
Present:	Applied to plant and animal species that were either observed directly or, in the case of animal species, whose presence can be presumed based on detection of diagnostic sign (i.e., tracks, scat, burrows, carcasses, castings, prey remains, *etc*.).

*Potentials for Occurrence naming and criteria are consistent with the BRA prepared by Wood Biological.

Special Status Plant Species 2019

According to the BRA, a total of 81 special status plant species were recorded in the nine 7.5-minute USGS quadrangles including and surrounding the BSA (search area) were analyzed for their potential for occurrence in 2019. However, only 78 plant species were included in the table of Potentially Occurring Special Status Plant Species included as Attachment B of the BRA (Attachment 1). After a review of the BRA, it is believed that the additional three plant species were likely analyzed but may have been accidentally omitted from the table of Potentially Occurring Special Status Plant Species. These three plant species include chaparral ragwort (*Senecio aphanactis*), Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*), and woolly-headed lessingia (*Lessingia hololeuca*). These three species lack suitable habitat requirements within the Project site, and thus, do not occur on the Project.

Of the 81 special status plant species analyzed in 2019, a total of 8 plant species had records within a 3-mile radius of the BSA. All eight of these plant species had also been recorded within 1 mile of the BSA as shown in Figure 4 of the BRA and included Antioch dunes evening primrose (*Oenothera deltoides* ssp. *howellii*), big tarplant (*Blepharizonia plumosa*), Bolander's water hemlock (*Cicuta maculata* var. *bolanderi*), Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*), Delta mudwort (*Limosella australis*), Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), and Suisun Marsh aster (*Symphyotrichum lentum*).

Mason's lilaeopsis, a CRPR List 1B.1 species, was found present in the BSA at the mouth of the stormwater outfall (see Figure 5 of the BRA). This species is described in detail in Section 4.2 of the BRA (Attachment 1). Marginal habitat is still presumed to exist for Suisun Marsh aster within the littoral zone of the 2019 BSA. This species is a CRPR List 1B.2 species, which was observed within 30 feet of the stormwater outfall during a 2018 survey of the adjacent property to the west but does not occur on the Project site. The species appeared to persist in unarmored sections of shoreline with natural substrates. This species is described in detail in Section 4.2 of the BRA (Attachment 1). No federal listed, proposed, or candidate plant species were considered to have potential to occur in the BSA in 2019.

A total of 70 special status plant species in the 2019 database queries were considered to have no potential for occurrence at the Project site due to a lack of suitable habitat, lack of suitable soils, and distance of the BSA from known occurrences. Another five special status plant species were considered absent from the Project site because they would have been detectable during the 2019 biological reconnaissance survey. Another five plant species were not expected to occur on site because the habitat is of very poor quality and highly altered, or because the Project site is spatially isolated from either known occurrences or areas of suitable habitat. Special status plant species with at least marginally suitable habitat are described in detail in Section 4.2 of the BRA (Attachment 1). No impact avoidance, minimization or mitigation measures were deemed warranted for these species in 2019, and no further surveys or analysis related to special status plant species were recommended.

Attachment B of the BRA is a list of all special status plant species evaluated in 2019 (Attachment 1).

Special Status Plant Species 2024

CNDDB, CNPSEI, and IPaC searches were conducted as part of the current literature review and desktop analysis to identify whether any additional biological resources or constraints may be present on the Project site since the BRA for the Pilot Project was prepared in 2019. Database queries for special status plant species within the search area yielded records for 90 special status plant species. Of these 90 special status plant species, 13 were new species that had not been previously analyzed for potential for occurrence in the BRA. None of the 13 species are federal- or state-listed, propose, or candidate species. These species include:

- Abrams' lupine (*Lupinus albifrons* var. *abramsii*) – CRPR List 4.2
- bay buckwheat (*Eriogonum umbellatum* var. *bahiiforme*) – CRPR List 4.2
- broadleaf pondweed (*Stuckenia striata*) – CRPR List 2B.3
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) – CRPR List 1B.1
- large-flowered leptosiphon (*Leptosiphon grandifloras*) – CRPR List 4.2
- long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*) – CRPR List 1B.2
- Michael's rein orchid (*Piperia michaelii*) – CRPR List 4.2
- redwood lily (*Lilium rubescens*) – CRPR List 4.2
- serpentine leptosiphon (*Leptosiphon ambiguous*) – CRPR List 4.2
- small spikerush (*Eleocharis parvula*) – CRPR List 4.3
- small-flowered monkeyflower (*Erythranthe inconspicua*) – CRPR List 4.3
- sylvan microseris (*Microseris sylvatica*) – CRPR List 4.2
- three-ranked hump moss (*Meesia triquetra*) – CRPR List 4.2

Of the 13 plant species not previously analyzed, 10 lack suitable habitat requirements within the Project site and thus do not occur on the Project.

Marginally suitable habitat is present on the Project site for three plant species not previously analyzed including broadleaf pondweed, Coulter's goldfields, and small spikerush. However, two of these species, Coulter's goldfields, and small spikerush, have not been recorded from within a 5-mile radius of the Project site (CNDDB 2024), and therefore, are not expected to occur on the Project site. One species, broadleaf pondweed, has one CNDDB occurrence within 1 mile near the west end of Brown's Island across New York slough from the Project site, and one CNDDB occurrence within 2 miles at the Dow Wetlands Preserve to the east. Marginally suitable habitat is present for broadleaf pondweed in the littoral zone of the Project site. However, implementation of the Proposed Project would not have any direct or indirect effects on the species as currently designed. Impact avoidance measures are not warranted for this species.

Four of the 81 special status plant species that were analyzed in the BRA, were not listed in any of the 2024 database queries for the Project. These species include adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Northern California black walnut (*Juglans hindsii*), and saline clover (*Trifolium hydrophilum*). Individual CNDDB and CNPSEI searches were conducted for these species, and no current records exist for these species within the search area. In addition, the special status for Northern California black walnut was changed from CRPR List 1B.1 to "Considered but Rejected" (CBR) on July 10, 2019, due to being too common to warrant a CRPR List 1B.1 rating.

Special Status Animal Species 2019

According to the BRA, a total of 86 special status animal species recorded in the search area were analyzed for their potential for occurrence.

Of the 86 special status animal species analyzed in 2019, a total of 17 animal species had records within a 3-mile radius of the BSA. Based on the existing habitats on the Project site and the site's geographic location, the occurrence of 72 of the species were ruled out entirely based on absence of suitable habitat, the site's location outside of the species known range, or absence of regional species occurrences. Although marginally suitable habitat is present within the BSA for

another eight of these species, they were not expected to occur on site due to the site's level of disturbance, habitat alteration, or geographic location relative to known occurrences.

Although not detected during the 2019 biological reconnaissance survey, it was determined that six of the species could occur within the BSA including burrowing owl (*Athene cunicularia*) and northwestern pond turtle (*Actinemys marmorata*), and four fish species: delta smelt, longfin smelt (*Spirinchus thaleichthys*; San Francisco bay delta DPS), Sacramento splittail (*Pogonichthys macrolepidotus*), and steelhead (*Oncorhynchus mykiss irideus*; Central Valley DPS). An additional two fish species that were not in the 2019 database search results, but that have critical habitat within or near the BSA and could occur within the BSA include Chinook salmon and green sturgeon. Also noted as potentially occurring within the BSA were bank swallow (*Riparia riparia*), and a variety of migratory bird species. Two marine mammals, harbor seal (*Phoca vitulina*) and California sea lion (*Zalophus californianus*), are known to move through the Project vicinity. Several of these species are discussed in detail in Section 4.3 of the BRA (Attachment 1). Attachment C of the BRA is a list of all special status animal species evaluated in 2019 (Attachment 1).

Special Status Animal Species 2024

CNDDB and IPaC searches were conducted as part of the current literature review and desktop analysis to identify whether any additional biological resources or constraints may be present on the Project site since the BRA for the Pilot Project was prepared in 2019. Database queries for special status animal species within the search area yielded records for 97 special status animal species. Of these 97 special status animal species, 22 were new species that had not been previously analyzed for potential for occurrence in the BRA. These species include:

- Allen's hummingbird (*Selasphorus sasin*) – BCC
- American bumble bee (*Bombus pensylvanicus*) – SA
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) – **SE,** BCC
- Bullock's oriole (*Icterus bullockii*) – BCC
- California gull (*Larus californicus*) – BCC
- California thrasher (*Toxostoma redivivum*) – BCC
- common yellowthroat (*Geothlypis trichas sinuosa*) – SSC, BCC
- foothill yellow-legged frog - central coast DPS (*Rana boylii* pop. 4) – **FT**, **SE**
- green sturgeon - southern DPS – **FT**, SSC
- monarch butterfly (*Danaus plexippus*) – **FC**
- northern harrier (*Circus hudsonius*) – SSC (while nesting), BCC
- olive-sided flycatcher (*Contopus cooperi*) – SSC (while nesting), BCC
- San Joaquin Valley giant flower-loving fly (*Rhaphiomidas trochilus*) – SA
- Santa Barbara (Channel Island) song sparrow (*Melospiza melodia graminea*) – SSC, BCC
- western grebe (*Aechmophorus occidentalis*) – BCC
- western gull (*Larus occidentalis*) – BCC
- western ridged mussel (*Gonidea angulata*) – SA
- western screech-owl (*Megascops kennicottii cardonensis*) – BCC
- western snowy plover (*Charadrius nivosus nivosus*) – **FT**, SSC (while nesting)
- western spadefoot (*Spea hammondii*) – **FPT**, SSC
- wrentit (*Chamaea fasciata*) – BCC
- yellow-banded andrenid bee (*Perdita hirticeps luteocincta*) – SA

Of the 22 additional species analyzed, 14 species have CNDDB occurrence within the search area. Of these 14 species, 11 lack suitable habitat requirements within the Project site and have no CNDDB records within 3 miles of the Project,

and thus, do not occur on the Project. Marginally suitable habitat occurs for northern harrier in the Littoral Zone; however, habitat is of poor quality and forage and nesting requirements are not present for this species. Therefore, northern harrier is not expected to occur on the Project.

Suitable habitat exists for western ridged mussel within aquatic areas of the Project site; however, there is only one CNDDB record of the species within the search area, and the record is from the 1800s and is mapped in a non-specific area. As such, this species is not expected to occur on the Project.

Green sturgeon was analyzed in the BRA as a high-profile species, but the species was not recorded in the CNDDB or IPaC results for the search area. As such, green sturgeon has been included here for completeness. Suitable habitat is present for green sturgeon (southern DPS) in aquatic areas of the Project site (New York Slough). Construction and operation of the Proposed project would not result in take of the species (the Proposed Project does not include any work within the aquatic environment), or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. While the discharge of thermal wastewater is not anticipated, any discharge of thermal wastewater through the existing 6-inch outfall would be consistent with previously permitted use and will not result in changes to aquatic habitat.

The remaining eight species USFWS BCC bird species and have no CNDDB occurrence records. BCC species are migratory and non-migratory bird species that are of high conservation priority, excluding those already listed as federally threatened or endangered.

Twelve of the 86 special status animal species that were analyzed in the BRA, were not listed in any of the 2024 database queries for the Project. These species include Bell's sage sparrow (*Artemisiospiza belli belli*), San Bruno elfin butterfly (*Callophrys mossii bayensis*), Costa's hummingbird (*Calypte costae*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), black oystercatcher (*Haematopus bachmani*), least bittern (*Ixobrychus exilis*), short-billed dowitcher (*Limnodromus griseus*), marbled godwit (*Limosa fedoa*), Lewis' woodpecker (*Melanerpes lewis*), long-billed curlew (*Numenius americanus*), yellow-billed magpie (*Pica nuttallii*), and lesser yellowlegs (*Tringa flavipes*).

The following animal species have had changes to their federal- and/or state- listing status since the preparation of the BRA:

Species	2019 Status	2024 Status
burrowing owl (*Athene cunicularia*)	None	SC
Crotch's bumble bee (*Bombus crotchii*)	None	SC
longfin smelt (*Spirinchus thaleichthys*)	FC, ST	FPE, ST
northwestern pond turtle (*Actinemys marmorata*)	None	FPT
Townsend's big-eared bat (*Corynorhinus townsendii*)	SCT	None
tricolored blackbird (*Agelaius tricolor*)	SCE	ST
western bumble bee (*Bombus occidentalis*)	None	SC

A map of all special status plant and animal species recorded within 3 miles of the Project site (CNDDB 2024) is included in Attachment 2, Figure 7).

Conclusions and Recommendations

As discussed in the BRA, although the Project site is developed and highly altered by agriculture which predated the current industrial use, the shoreline and aquatic habitat within the BSA is considered to have relatively high wildlife habitat values. As with the Pilot Project, the implementation of the Proposed Project would not result in direct or indirect impacts to jurisdictional wetlands or other waters of the U.S. and of the state, essential fish habitat, critical habitat, or special status plant or animal species. Therefore, no impacts to sensitive plant or wildlife species are anticipated.

One special status plant, Mason's lilaeopsis, is known to occur within the BSA, but would not be directly or indirectly impacted by the Proposed Project. For those biological resources that are located within the BSA or may be assumed to occupy the New York Slough, the following avoidance measures are recommended to be included as part of the Proposed Project.

Special Status Natural Communities and Habitats

Eelgrass Habitat

Consistent with the BRA, the presence of eelgrass beds is not expected within the work area and would not be directly or indirectly impacted by Project implementation. No impact avoidance, minimization or mitigation measures are warranted.

Essential Fish Habitat

Consistent with the BRA, the Project site is located within designated EFH for the Pacific Groundfish Fishery including for all life stages of Pacific Groundfish, all life stages of Coastal Pelagic Species and Finfish, and for all life stages of Chinook salmon. The Proposed Project does not include any work within the aquatic environment. While the discharge of thermal wastewater is not anticipated, any thermal wastewater discharge through the existing 6-inch thermal wastewater outfall would be within permitted parameters for temperature and would not result in adverse effects on EFH. No impact avoidance, minimization or mitigation measures are warranted.

Critical Habitat

Consistent with the BRA, the Project site is located within designated critical habitat for delta smelt. Four CNDDB occurrences of delta smelt have been recorded within the Project search area; however, there are no CNDDB occurrences of delta smelt within 3 miles of the Project site. The closest CNDDB occurrence of delta smelt is approximately 3.10 miles northeast of the Project site near the Lower Sherman Island Wildlife Area. As suitable aquatic habitat is present for delta smelt within the BSA and given that the Project site is located within designated critical habitat, the presence of delta smelt must be assumed.

Consistent with the BRA, the Project site is located within designated critical habitat for green sturgeon Southern DPS. Four CNDDB occurrences of green sturgeon have been recorded within the Project search area and one CNDDB occurrence overlaps the Project site. As suitable aquatic habitat is present for delta smelt within the BSA and given that the project site is located within designated critical habitat, the presence of delta smelt must be assumed.

The BRA identified the that the Project site occurred within critical habitat for Chinook salmon Central Valley Spring-Run ESU and did not occur within Chinook salmon Sacramento River winter-run ESU; however, the recent review of critical habitat within the Project site shows the opposite to be true. The Project site falls within critical habitat for Chinook salmon Sacramento River winter-run ESU and does not fall within critical habitat for Chinook salmon Central Valley Spring-Run ESU. The closest critical habitat for Spring-Run ESU is approximately 2.2 miles east of the Project site near the Dow Wetlands Preserve. In any case, no CNDDB occurrences of Chinook salmon have been recorded in the Project search area, but the presence of suitable aquatic habitat within the BSA and given that the Project site is located within designated critical habitat, the presence of Chinook must be assumed.

While the Proposed Project construction and operations would not result in take of these species as no work in aquatic habitat is proposed, impact avoidance and minimization measures are warranted and should continue to follow measures 1 through 8 in Section 5.3 “Implications for the Proposed Project: Special-Status Fish Species” of the BRA (Attachment 1).

Waters of the U.S. / Waters of the State

Consistent with the BRA, Project implementation would not result in potentially significant impacts to features falling under the jurisdiction of the USACE, CDFW and RWQCB. No discharge of fill material into waters of the U.S. or of the state would occur, nor would there be any alteration of the bed or bank of New York Slough, and no loss or impact to jurisdictional wetlands or riparian habitat, or loss of beneficial uses associated with them. Therefore, no action would occur that would be subject to federal, state, and local laws and policies that regulate wetlands and other waters, nor would there be impacts to these resources considered significant pursuant to CEQA. Small, fringing patches of freshwater emergent marsh are present near the stormwater outfall and the water, but all Proposed Project activities will avoid this area.

Special Status Plant Species

According to the BRA, one special status plant species, Mason’s lilaeopsis, was detected within the BSA. In addition, suitable or marginally suitable habitat is present on the shoreline for several other special status plant species, such as Suisun Marsh aster. Accidental impacts could result during movement or placement of equipment or people near the stormwater outfall. By continuing to follow impact avoidance and minimization measures 1 through 6 in Section 5.2 of the BRA (Attachment 1), potential impacts form the Proposed Project would be reduced to a less-than-significant level pursuant to CEQA.

Special Status Wildlife Species

In the BRA, the following special status animal species were identified as having potential for occurrence within the BSA including six fish species: Chinook salmon, delta smelt, green sturgeon, longfin smelt, Sacramento splittail, and steelhead; northwestern pond turtle; bank swallow, burrowing owl, and a variety of migratory bird species.

Consistent with the BRA, while suitable or marginally suitable habitat for Chinook salmon, delta smelt, green sturgeon, longfin smelt, Sacramento splittail, and steelhead occurs in aquatic areas of the Project site, no activities associated with construction or operation of the Proposed Project are expected to have any adverse effect on these species, as no work in aquatic habitat is proposed. However, because of the sensitivity of the aquatic species and their habitat, impact avoidance measures 1 through 8 in Section 5.3 “Implications for the Proposed Project: Special-Status Fish Species” of the BRA (Attachment 1), should continue to be followed. Continuation of these measures would reduce potential impacts to special status fish to a less-than-significant level pursuant to CEQA.

Consistent with the BRA, while there have been no observations of northwestern pond turtle (Pacific pond turtle) on the Project site the species is known to inhabit stream mouths and the shoreline of the San Joaquin River in Contra

Costa County. The riverbank at the Project site could attract pond turtles as marginally suitable spots for sunning are present on site. Warm, sandy banks are not present on site for egg-laying. However, northwestern pond turtles could move through the Project site along the shoreline between occupied habitats. If present, individuals could potentially be harmed during construction activities. With the continuation of impact avoidance measures 1 through 3 in Section 5.3 "Implications for the Proposed Project: Pacific Pond Turtle" of the BRA (Attachment 1), potential impacts would be reduced to a less-than-significant level pursuant to CEQA.

Ten additional species were identified in the recent database search results as having potential to occur on the Project site including norther harrier, western ridged mussel, and 8 additional migratory bird species. Marginally suitable habitat occurs for northern harrier in the Littoral Zone; however, habitat is of poor quality and forage and nesting requirements are not present for this species. Therefore, northern harrier is not expected to occur on the Project. Suitable habitat exists for western ridged mussel within aquatic areas of the Project site; however, there is only one CNDDB record of the species within the search area, and the record is from the 1800s and is mapped in a non-specific area. As such, this species is not expected to occur on the Project.

Special status and migratory birds (including bank swallow and burrowing owl) could occur on the Project. Suitable nesting habitat mainly consisting of the row of eucalyptus trees on the eastern portion of the site. A few other small trees and ornamental shrubs provide some nesting opportunities, as well. Impacts to bird species covered under the Migratory Bird Treaty Act (MBTA) are regarded as significant pursuant to CEQA and impact avoidance measures are warranted for these bird species. By continuing to follow impact avoidance and minimization measures 1 through 4 in Section 5.3 "Implications for the Proposed Project: Special-Status and Migratory Birds" of the BRA (Attachment 1), potential impacts form the Proposed Project would be reduced to a less-than-significant level pursuant to CEQA. Burrowing owl was not discussed in the BRA but was given a potential for occurrence of "possible." The closest CNDDB occurrence of burrowing owl is approximately 2.5 miles southeast of the Project site. While it would be possible for burrowing owls to use the Project site, it would be unlikely due to lack of suitable burrows and forage habitat on the site. Further, 24-hour-per-day operations activities for the Proposed Project would make the site less attractive to burrowing owls. Measure 2 in Section 5.3 "Implications for the Proposed Project: Special-Status and Migratory Birds" of the BRA, requires a preconstruction nesting bird survey if construction activities take place during the typical nesting bird season (i.e., February 1 through August 31). This survey would be sufficient to identify any potential burrowing owls on the Proposed Project and would reduce any potential impacts form the Proposed Project to a less-than-significant level pursuant to CEQA.

Please feel free to contact me at (661) 373-0810 or at the email address below if you have any questions or comments concerning this report.

Sincerely,

CHAMBERS GROUP, INC.



Jackie Mayfield
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Attachments

Attachment 1 – 2019 Biological Resources Assessment

Attachment 2 – Project Figures

Attachment 3 – Database Search Results

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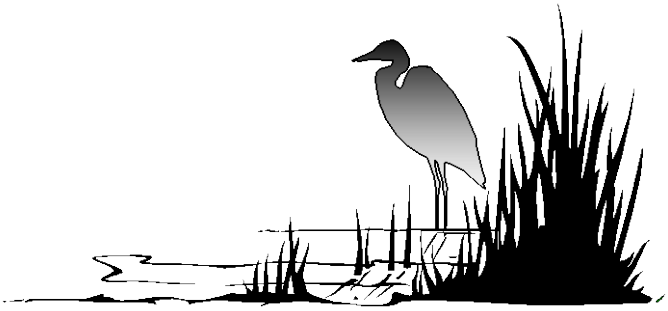
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ATTACHMENT 1 – 2019 BIOLOGICAL RESOURCES ASSESSMENT

BIOLOGICAL RESOURCE ASSESSMENT
FOR
CARBON CAPTURE AND MINERALIZATION PROJECT
895 EAST THIRD STREET
CITY OF PITTSBURG
CONTRA COSTA COUNTY, CALIFORNIA



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The information provided in this document is intended solely for the use and benefit of Brezack & Associates and the City of Pittsburg.

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SUMMARY

This report presents the results of an assessment of existing and potentially occurring biological resources on an industrial parcel in the City of Pittsburg, Contra Costa County, California. The report provides background and site-specific information pertaining to special-status plants, wildlife species and habitats, which may represent constraints to the proposed activities.

The biological study area (BSA) is located at 895 E. Third Street. The property is bordered by existing industrial facilities and open fallow fields. A small portion of the site is situated on the shoreline of New York Slough just upstream (east) of the confluence with the Sacramento River, opposite of Browns Island, and 1.0 km (0.6 mi) east of the Pittsburg Marina.

The site is largely paved. The existing vegetation on the site is mostly non-native ruderal (i.e. weedy) plants with landscaping trees and shrubs. A small portion of the site is on the shoreline of New York Slough, which is armored (i.e. riprapped), and supports very sparse freshwater marsh plants. Although jurisdictional wetlands and other waters are present, no special status natural communities are located in the study area.

A total of 81 special-status plant species have been recorded from the nine 7.5-minute USGS quadrangles including and surrounding the BSA. A total of 8 special-status plant species have been recorded from within a within 1.6 km (1 mi) of the BSA. One special status species, Mason's lilaeopsis, is present in the BSA at the discharge point of a stormwater outfall. No Federal listed, Proposed, or Candidate plant species are considered to have potential to occur in the study area. Marginal habitat exists for one other non-listed special-status species, Suisun marsh aster.

A total of 86 special-status animal species have been recorded in the nine 7.5-minute USGS quadrangles including and surrounding the BSA. A total of 17 special-status animal species have been recorded from within a 4.8 km (3 mi) radius of the BSA (Figure 6). Based on the existing habitats on site and its geographic location, the occurrence of 72 of these species can be ruled out entirely based on absence of suitable habitat, the site's location outside of the species known range, or absence of regional species occurrences. Although marginally suitable habitat is present within the BSA, the occurrence of another eight of these species are not expected to occur on site due to the site's level of disturbance, habitat alteration, or geographic location relative to known occurrences.

Although not detected during the present survey, eight of the species could occur within the study area. Six of these are fish species and include Chinook salmon, Delta smelt, longfin smelt (San Francisco bay delta DPS), green sturgeon, Sacramento splittail, and

steelhead (Central Valley DPS and Central California Coast DPS). Also potentially occurring within the study area are Pacific pond turtle, bank swallow, and a wide variety of migratory bird species. Two marine mammals, harbor seal and California sea lion, are known to move through the project vicinity.

The proposed project would not result in significant direct or indirect impacts on special-status plants, wildlife, and habitats. Impact avoidance measures are recommended to include as part of the proposed project. These measures are outlined in the report to reduce potential impacts to a less-than-significant level. With the incorporation of the avoidance measures outlined in this report, project implementation would not result in any potentially significant adverse biological effects.

1.0 INTRODUCTION

This report presents the results of a biological assessment of a portion of two industrial parcel (APN 073-020-019 and 073-020-015) at 895 E. Third Street in the City of Pittsburg, Contra Costa County, California (Figures 1 and 2). The property is leased by San Francisco Bay Aggregates (Applicant), which proposes to build a carbon mineralization and recapture facility on the site.

The purpose of this Biological Resource Assessment (BRA) is to identify biological resources that are present or that might be present the project site, and that could constrain proposed maintenance actions. Biological constraints consist of federally and state-listed endangered and rare species[1] and their habitats, other special-status species regulated under state or local laws or ordinances, wetlands and other aquatic habitats, and other special-status natural communities. The report provides background and site-specific information pertaining to special-status plant and wildlife species and other regulated biological resources (e.g., wetlands, other waters, natural communities, and protected trees) which represent potential constraints to the proposed activity. The BRA also identifies appropriate impact avoidance measures for potential impacts that may result from project implementation.

This BRA has been prepared to facilitate an environmental review by the lead agency (the City of Pittsburg) in conformance with the guidelines of the California Environmental Quality Act (CEQA). It is also intended to support review by federal and State regulatory agencies with jurisdiction over the project.

1.1 Project Setting

The Applicant is proposing to construct the first phase of a carbon mineralization and recapture facility on a former industrial site near New York Slough. The parcel occupies approximately 2.5 ac. An existing stormwater outfall and 6-inch thermal wastewater discharge outfall occupy approximately 25 lf of shoreline. The site is approximately 95% paved, and includes several buildings, and pads and other appurtenances remaining from past use.

[1] For purposes of this analysis, the term species includes all taxa at the species, subspecies or variety taxonomic levels.

Figure 1. Project Location



Figure 2. Aerial View of Project Location



Source: Google Earth, 2019

1.2 Project Description

The proposed project would reuse a former industrial site within an industrial-zoned area of Pittsburg. The primary function of the proposed project is to take flue gas from local ready-mix concrete producers and recyclers to produce CO_2-sequestered and upcycled rocks for fresh concrete production. On a temporary basis, the CO_2 outlet stream of gas from the gas-fired steam boiler process equipment would be used until the flue gas transfer operations are online.

The proposed project would link together four component modules into a cycle for the overall Process. A module is a set of equipment from which an interim product is produced. Each module is made separately, and the completed modules are joined together to form the process of producing ingredients for fresh concrete production. The four modules are presented on Figure 4 are:

1. CO_2 Capture Module – removal of CO_2 from flue gas,
2. Carbonate Coating Module – calcium carbonate ($CaCO_3$) coating on the surface of the substrate rock,
3. Reformation Module – creation of upcycled rock for coating or placement in fresh concrete, and
4. Stripper Module– separation of aqueous ammonia and calcium chloride solutions for use in the CO_2 Capture and Carbonate Coating modules.

The construction of the proposed project would not require any disturbance of soil beneath the existing site caps. The majority of the equipment would be skid mounted for mobilization to and from the proposed project site. No new foundation construction or new buildings would be constructed.

The duration of construction of the proposed project is estimated to be 3 to 4 months. It is estimated that a maximum of six construction workers are required. Construction activity entails off-loading transported equipment and connecting the separate Modules together.

2.0 METHODS AND LIMITATIONS

2.1 Definitions

The following terms are used to evaluate habitat suitability and on-site biological resources.

Biological Study Area The biological study area (BSA) encompasses the project footprint and adjacent lands within a radius of approximately 31 m (100 ft; see Figure 2).

Project Footprint The project footprint is based on the proposed limits of work shown on the site plans (see Attachment 5 of this JARPA submittal). Construction-related activities within the project footprint include vegetation clearing, grading, soil stabilization, and construction of permanent and temporary facilities.

2.2 Data Sources

Lists of potentially occurring special-status plant and animal species were compiled based on a review of databases maintained by the California Natural Diversity Database (CNDDB, 2019), the U.S. Fish and Wildlife Service (USFWS, 2019), and the California Native Plant Society (CNPS, 2019). Botanical nomenclature conforms to the Jepson Online Interchange (Jepson Herbarium, no date) and Baldwin, et al (2012). Common names of plant species[2] are derived from Calflora (2019). Plant habitat affinities and local distribution information was obtained from Lake (2010), Ertter and Bowerman (2002), and Ertter and Naumovich (2013). Nomenclature for special-status plant species conforms to the California Department of Fish and Wildlife (CDFW[3]; CDFW 2018c,d).

Nomenclature for common wildlife species conforms to CDFW (2016), with taxonomic nomenclature updates conforming to the American Ornithologist's Union and supplements (AOU, 2018) for birds, Jennings (2004) for amphibians and reptiles, and the American Society of Mammologists (ASM, 2018) for mammals. Nomenclature for freshwater, anadromous, and euryhaline fishes conforms to Moyle and Davis (2000). Local information on breeding bird species is based on Glover (2009). Nomenclature for special-status animal species conforms to the CDFW (2018e,f).

[2] For purposes of this discussion, the term "species" implies all recognized taxa at the species or subspecific level.

[3] On January 1, 2013, the CA Department of Fish and Game (CDFG) changed its name to the CDFW; all publications released prior to that date are referenced by the former name CDFG.

The classification of vegetation types described herein conforms to Sawyer et al. (2009) and, where applicable, Cowardin et al. (1979) and Holland (1986). Special-status plant community designations conform to the CDFW (CNDDB, 2019 and CDFW, 2018b). Information regarding soils was obtained from the web-based database Web Soil Survey[4], operated by the Natural Resources Conservation Service (NRCS; USDA, 2018).

2.3 Special-Status Biological Resources

A literature review was conducted to investigate the potential presence of special-status biological resources within the BSA. Occurrence summaries were obtained from the following sources:

1. Database queries for the Antioch North, Antioch South, Clayton, Rio Vista, Jersey Island, Brentwood, Birds Landing, Denverton, and Honker Bay 7.5-minute USGS quadrangles (CNDDB, 2019; CNPS, 2019; USFWS, 2019).
2. An assessment of habitat types and surrounding land uses completed by reviewing recent aerial photographs.
3. Reconnaissance-level surveys by a qualified biologist.

The presence or potential for occurrence of special-status biological resources within the BSA is based on direct observation or an evaluation of the suitability of existing habitats occurring within the BSA. Suitability is based on familiarity with the specific habitat requirements (i.e., elevation, geology, soil chemistry and type, vegetation communities, microhabitats), geographic distribution, local occurrence records, and the degree of habitat disturbance or alteration. The criteria for assessing the potential for occurrence of special-status species are summarized below.

Species Occurrence Assessment Criteria

None Applied to plant or animal species for which suitable habitat is lacking, which are not known to occur locally, or which are thought to be locally extirpated.

Absent Applied to plant or animal species for which suitable habitat is present but which would have been detectable at the time surveys were conducted.

Not Expected Applied to plant and animal species for which suitable habitat or key habitat elements may be present but which are considered to be of poor quality or are spatially isolated from either known occurrences or areas of suitable habitat. When the existing

[4] Available at http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

habitats within the BSA do not coincide with a species' life history or ecological requirements, its occurrence is not expected.

Possible Applied to plant and animal species for which suitable habitat or key habitat elements are present within the BSA. The occurrence of these species is either considered likely, or, at the least, its presence cannot be ruled out.

Present Applied to plant and animal species that were either observed directly or, in the case of animal species, whose presence can be presumed based on detection of diagnostic sign (i.e. tracks, scat, burrows, carcasses, castings, prey remains, *etc*.).

The conclusions presented in this document are based on a reconnaissance-level survey was performed by biologist Chris Rogers on April 25, 2019. All plant and wildlife observations were recorded, and habitats characterized and mapped.

A delineation of potentially jurisdictional waters of the U.S./waters of the State was not performed, although the limits of the federal and state jurisdictional waters were estimated based on physical indicators of the High Tide Line.

3.0 EXISTING CONDITIONS

3.1 Location and Setting

SFBA intends to construct and operate the proposed Project on a 2.5 acre parcel of land located at 895 East 3rd Street, Pittsburg, California 94565 in Contra Costa County. The Assessor's Parcel Number for the proposed project site is 073-020-019-3. As shown on Figure 1, the parcel is bounded to the north by New York Slough, Suisun Bay, part of the Sacramento-San Joaquin River Delta; to the east by land owned by USS-POSCO Industries (UPI) and by a PG&E substation; to the south by an easement that runs along East 3rd Street; and to the west by Koch Carbon Inc.

The proposed project site was previously host to a 20 megawatt cogeneration power plant, owned and operated by GWF Power Systems Company, Inc. (GWF). The facility was decommissioned in 2012 and the site has since been an empty lot used for truck parking. The proposed project site has a perimeter chain link fence. As shown on Figure 2, two buildings remain in place.

The proposed project site is a paved and gravel lot with several existing buildings. Vegetation is dominated by non-native ruderal (i.e. weedy) plants and landscaping trees. A small easement extends to the shoreline of New York Slough, which supports sparse emergent wetland vegetation in intermittent patches, and armored sections with little or no vegetation. No submerged aquatic vegetation is present along the shoreline. The plant communities and wildlife habitats present in the BSA are described below.

No native soils or land surfaces remain on the site. Underlying geology of the paved project vicinity is assumed to consist of clay soils derived from alluvial deposits, which supported agriculture in the past. These soils are older and more stable than the peat and muck that more recently accreted to form the delta islands to the north of the New York Slough, and throughout the delta. Soils on site are mapped as belonging to the Clear Lake series (USDA, 2018). The Clear Lake series consists of poorly drained soils that, in an undisturbed condition, support annual grasses and forbs and scattered live oaks. These soils are generally deep, with groundwater at about 2 m (80 in). Clear Lake soils are classified as Xeric Endoaquerts.

The New York Slough reach of the San Joaquin River constitutes a prominent hydrologic feature of the project area. At the project site, the river is tidally influenced, with tidal fluctuations of an average of 1.6 m (5.2 ft).

3.2 Plant Communities and Wildlife Habitats

Prior to shoreline development, the project area was upland grassland subsequently used for agriculture or grazing. The shoreline is not a relic of filling of wetlands or mudflats, as has occurred in other areas in the Delta, although river bank maintenance and reinforcements have likely altered the shoreline by restricting the natural recruitment of

native plants wetland and emergent plants. The remaining narrow patches of freshwater emergent marsh vegetation along much of the Pittsburg shoreline are poorly developed and relatively impermanent as the substrate erodes away or is armored.

The existing vegetation on the shoreline, river bank and upland portions of the BSA is characterized by mostly non-native herbs, forbs, shrubs, and trees that are capable of occupying recently or frequently disturbed areas, or have been planted on the project site. Beyond the top of the river bank, the landscape is ruderal or barren as a result of routine maintenance. Vegetation and wildlife habitats in the BSA are summarized below and shown on Figure 3. Tables 1 and 2 list plant and wildlife species observed on the site.

Developed

Developed lands are those from which all natural and non-natural plant assemblages have been removed and replaced by paved or graveled surfaces, structures, equipment storage yards, etc. Few native and non-native animal species are well adapted to developed areas, while others have benefited greatly from urbanization and anthropogenic effects. These species are attracted by certain resources readily available in developed settings such as food, water and shelter while being tolerant of human disturbances such as noise, lighting, and the movement of people and machinery. Many mammals are attracted to human development providing a source of food (e.g., rubbish, garden plants, pet food, and pets).

The majority of the BSA is developed, including concrete pavement and industrial buildings, and a concrete-covered stormwater outfall and discharge pipe that extends into the waters of New York Slough (Figure 3). The above-ground structures are maintained and in use, diminishing their suitability for nesting or roosting wildlife. Nonetheless, certain birds and bats could reside within or on these structures at various times of year. Ornamental landscaping trees also are included within this cover type.

Animal species or their sign[5] detected in developed areas during the present wildlife reconnaissance survey include American crow, California scrub-jay, house finch, mourning dove, and northern mockingbird, turkey vulture, California ground squirrel, and Sierran chorus frog.

Developed areas are not a vegetation type, and are not classified by Sawyer, et al. (2009); they would be classified as upland following Cowardin, et al. (1979). Unless found to support special-status plant or animal species, impacts to developed areas would not typically be regarded as significant pursuant to the statutes and guidelines of CEQA (see discussion in Section 4.1).

[5] Wildlife sign include tracks, vocalization, scat, white-wash, feathers, fur, shed skin, nests, burrows, prey remains, and dead individuals.

Figure 3. Vegetation and Habitat Types



Table 1. Plant Species Observed

Common Name	***Scientific Name***
arroyo willow	*Salix lasiolepis*
* black mustard	*Brassica nigra*
* bull mallow	*Malva nicaeensis*
* bull thistle	*Cirsium vulgare*
coyote brush	*Baccharis pilularis*
* fennel	*Foeniculum vulgare*
floating water primrose	*Ludwigia peploides* ssp. *peploides*
* hare barley	*Hordeum murinum* ssp. *leporinum*
* Himalayan blackberry	*Rubus armeniacus*
* iris	*Iris* sp. (cultivar)
* Italian ryegrass	*Festuca perennis*
* Italian thistle	*Carduus pycnocephala*
* Jersey cudweed	*Pseudognaphalium luteooalbum*
Mason's lilaeopsis	***Lilaeopsis masonii***
* milk thistle	*Silybum marianum*
*perennial pepperweed	*Lepidium latifolium*
* prickly ox-tongue	*Helminthotheca echioides*
* rattail fescue	*Festuca myuros*
redwood	*Sequoia sempervirens* (cultivar)
* red brome	*Bromus rubens*
* red-stem filaree	*Erodium cicutarium*
* river redgum	*Eucalyptus camaldulensis*
saltgrass	*Distichlis spicata*
* slender oat	*Avena barbata*
* smilo grass	*Stipa miliacea*
* stinkwort	*Dittrichia graveolens*
* storksbill	*Geranium dissectum*
* strawberry tree	*Arbutus unedo* (cultivar)
+ Suisun marsh aster	***Symphyotrichum lentum***
* sweet clover	*Melilotus indica*
tule	*Schoenoplectus acutus*
willow herb	*Epilobium ciliatum*
* yellow star thistle	*Centaurea solstitialis*

Notes: Species in **bold** are special status species; see Sections 2.3 and 4.2.
* non-native species; + observed on adjacent property only

Table 2. Wildlife Species or Sign Observed

Common Name	***Scientific Name***
American crow	*Corvus brachyrhynchos*
California scrub-jay	*Aphelocoma californica*
California ground squirrel	*Otospermophilus beecheyi*
house finch	*Haemorhous mexicanus*
mourning dove	*Zenaida macroura*
northern mockingbird	*Mimus polyglottos*
red-tail hawk	*Buteo jamaicensis* (dec.)
Sierran chorus frog	*Pseudacris sierra*
turkey vulture	*Cathartes aura*

Aquatic Habitat

Although tidally influenced, the aquatic habitat of the lower San Joaquin River is predominantly a freshwater environment, especially during the winter months when Delta outflows are around 900 m^3/second (32,000 ft^3/second) (USFWS, 2002). Salt water intrusion occurs during the summer months, making the system somewhat brackish. However, the shoreline vegetation at the stormwater outfall location is indicative of freshwater conditions.

The lower San Joaquin River supports a wide range of wildlife species. A total of 32 fish species have been collected during sampling conducted at the Antioch Dunes National Wildlife Refuge (ADNWR), including the special-status species Delta smelt, longfin smelt, Sacramento splittail, Chinook salmon, steelhead, hardhead (USFWS, 2002). Also known from the project vicinity is Sacramento perch (CNDDB, 2019).

Wildlife known to inhabit the aquatic environment in the project vicinity include such mammals as American beaver, California sea lion common muskrat, harbor seal, and northern river otter, and the reptile species Pacific pond turtle. A wide variety of resident and migratory water fowl are also commonly encountered in the open water habitat of the lower San Joaquin River.

No aquatic animal species or their sign were detected in this habitat during the reconnaissance survey.

Aquatic habitat is not classified by Sawyer, et al. (2009). However, impacts to open waters are regulated under federal, State or local laws and policies and be considered significant pursuant to the statutes and guidelines of CEQA (see discussion in Section 4.1).

Littoral Zone

The littoral zone is the near-shore environment of seas, lakes or rivers. In areas subject to tidal action, it extends from the high water mark, which is only briefly inundated, to the shoreline, which is permanently submerged. It includes the intertidal zone. In freshwater ecosystems, the littoral zone occurs on the edge of large lakes and rivers, often with extensive areas of wetland. The littoral zone may form a narrow or broad fringing wetland, with extensive areas of aquatic plants sorted by their tolerance to different water depths. Typically, four zones are recognized, from higher to lower on the shore: wooded wetland, wet meadow, marsh and aquatic vegetation. The littoral zone of freshwater ecosystems is among the most ecologically significant on earth. Due to their high physical complexity and connectivity, the littoral zone supports especially high biodiversity.

The littoral zone is an important interface between terrestrial and aquatic ecosystems. It is the warmest of the aquatic systems since it is shallow and can absorb more of the sun's heat. It sustains a fairly diverse community, which can include several species of algae (like diatoms), rooted and floating aquatic plants, grazing snails, clams, insects, crustaceans, fishes, and amphibians. The vegetation and animals living in the littoral zone are food for other creatures such as turtles, snakes, and ducks. Many vertebrates and invertebrates use both the littoral zone as well as the terrestrial ecosystem for food and habitat.

There are three categories of plants that may occur in the littoral zone of freshwater ecosystems. Emergent plants are those that are rooted in the subsurface substrate but have leaves and stems that float at the surface or grow above the surface, such as cattails and tules. Floating plants are broad, flat-leaved plants that are not rooted in the subsurface substrate, such as duckweed and water hyacinth. Submersed plants are those that grow completely beneath the surface such as pondweed and water milfoil.

In the BSA, the littoral zone is very narrow to absent due to the steepness and armoring of the river bank around the outfall. Additionally, the BSA encompasses only 25 linear feet of shoreline frontage on New York Slough. Within the BSA, the littoral zone is mostly unvegetated, but supports very small patches of tule and the special-status species Mason's lilaeopsis (see discussion in Section 4.2, below). The floating-leaved plant, floating water primrose, also was present on the littoral shore.

Wildlife known to inhabit the littoral zone of the Sacramento - San Joaquin Delta include such mammals as American beaver, common muskrat, and northern river otter, and the reptile species Pacific pond turtle. A wide variety of resident and migratory water fowl are also commonly encountered in the open water habitat of the lower San Joaquin River.

No animal species or their sign were detected in this habitat during the reconnaissance survey.

Vegetation in the littoral zone on site does not conform to any particular natural association described in Sawyer et al. (2009), but are composed of plant species that respond to changes in shoreline conditions, annual floods, and daily tidal cycles. This vegetation is classified as "palustrine emergent persistent seasonally flooded/saturated freshwater wetlands" (P-EM1-E0) following Cowardin, et al. (1979). Impacts to this plant community qualifying as wetlands may be regulated under federal, State or local laws and policies and would be considered significant pursuant to the statutes and guidelines of CEQA (see discussion in Section 4.1).

Ruderal Uplands

Ruderal habitat is that from which the native vegetation has been completely removed by grading, cultivation, or other surface disturbances. Left undeveloped, such areas may become recolonized by invasive non-native as well as native plant species. Ruderal sites are typically dominated by herbaceous species, although scattered woody shrubs and trees may also begin to appear over time. Ruderal sites are characteristic of road sides, fallow agricultural fields, industrial or vacant lots, and landslides.

From a wildlife perspective, ruderal habitat includes those habitats in which the native vegetation has been completely removed by grading, cultivation, or other surface disturbances. Vegetative cover is typically sparse, consisting of herbaceous "weeds", scattered shrubs, and occasional trees. Due to the relative openness of the landscape and the high level of human activity, ruderal sites typically provide little habitat for wildlife species.

Wildlife species commonly encountered in ruderal habitats include reptiles such as southern alligator lizard, northern alligator lizard, and western fence lizard. Passerines (perching birds) that may forage on disturbed ground or among the scattered trees and shrubs include Brewer's blackbird, European starling, house finch, mourning dove, northern mockingbird, and western scrub-jay, among others. Fossorial (i.e., burrowing) mammals such as Botta's pocket gopher and California ground squirrel are also expected, along with other rodents such as brush rabbit, California vole, and deer mouse. California ground squirrel burrows were observed in the ruderal portions of the site. Other mammals that are naturally tolerant of human habitation and activities include mule deer, raccoon, striped skunk, and Virginia opossum.

Historically, the vicinity of the BSA supported grasslands (Stanford et al., 2011). However, these lands have long been subjected to intensive agricultural and industrial uses significantly altering the natural vegetation of the area. The site is currently paved over 95% of the total area. Several patches of unpaved ground support sparse to relatively dense patches of weedy annual grasses and forbs. Additionally, weeds are growing from cracks and joints in the paved areas. The most prevalent plant species in the ruderal areas include black mustard, bull mallow, fennel, foxtail barley, rattail fescue, slender oats, willow herb, and yellow sweetclover.

Ruderal habitat is not specifically described by Sawyer, et al. (2009); it would be classified as upland following Cowardin, et al. (1979). As a non-native plant association, ruderal habitat has no global or State rarity ranking. Unless found to support special-status plant or animal species, or as otherwise regulated features such as drainages or water bodies, impacts to ruderal habitat would not be regarded as significant pursuant to statutes and guidelines of CEQA (see discussion in Section 4.1).

3.3 Wildlife Movement Corridors

Under CEQA, project impacts are considered significant if they would interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Wildlife corridors (i.e., linear habitats that naturally connect and provide passage between two or more large habitats or habitat fragments) are important for persistence of wildlife over time. Wildlife must have access to adequate resources, and corridors are used to find suitable forage, nesting and resting sites, mates and new home ranges. In addition, corridors for dispersal within breeding populations will decrease the likelihood that subpopulations will go extinct or become locally extirpated. Even where patches of pristine habitat are fragmented, as commonly occurs with riparian vegetation, wildlife movement between populations is facilitated through habitat linkages, migration corridors and movement corridors.

Wildlife movement includes migration (i.e., usually one direction per season), inter-population movement (i.e., long-term genetic exchange) and small travel pathways (i.e., daily movement within an animal's home range). Daily movement patterns define an animal's home range where activities such as foraging, resting and conspecific (i.e., individuals of the same species) interactions occur. Generally, longer movements usually by dispersing individuals connect breeding populations, permitting gene flow between these subpopulations. Functional corridors must generally provide adequate habitat cover to permit animal dispersal between areas large enough to serve as home ranges. Corridor requirements vary between organisms; a suitable corridor for a butterfly or bird may be a series of "stepping stones" of suitable habitat, while a terrestrial vertebrate may need a continuous band of suitable habitat for successful movement. Habitat loss, fragmentation, and degradation resulting from a change in land use or habitat conversion can alter the use and viability of corridors.

The aquatic habitat of New York Slough and the shoreline of the subject property may be considered wildlife movement corridors. Although over-land movement is restricted by fencing, barren ground, and moderately intense human disturbance in the form of vehicles, pedestrians, lighting and noise, the shoreline is somewhat protected from these limitations. Vegetation on the river bank provides cover for dispersing wildlife, forming a corridor between more extensive areas of undeveloped, natural habitats. Open water also facilitates the movement of numerous aquatic species such as mountain beaver, common

muskrat and northern river otter. The San Joaquin River serves as an important corridor for resident and anadromous fish.

Nonetheless, project implementation is not expected to interfere substantially with the local or regional movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; impacts would not be considered significant pursuant to CEQA guidelines.

4.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

Certain natural plant communities, wildlife habitats and landscape features are considered to have special-status due to their restricted occurrence in the State, their tendency to support special-status plant or animal species, or because impacts are restricted or otherwise regulated under federal, State, or local laws or ordinances. These are discussed below.

4.1 Special-Status Natural Communities, Habitats and Landscape Features

Special-Status Natural Communities

Special-status natural communities are those that are considered rare in the region, support special-status plant or animal species, or receive regulatory protection under the Clean Water Act (CWA), Lake and Streambed Alteration Program (LSAP), and/or the Porter-Cologne Water Quality Control Act (PCWQCA). A number of communities have been designated as rare and these communities are given the highest inventory priority (CNDDB, 2019; CDFW, 2018b). Vegetation alliances given a rarity ranking of G1/S1, G2/S2 or G3/S3 are considered to be of high inventory priority by the CNDDB; impacts may therefore be considered significant pursuant to statutes and guidelines of CEQA. Alliances ranked as G4/S4 or G5/S5 are generally considered common and impacts would not normally be considered as significant (for a definition of rarity rankings, see Attachment D).

Wetland and riparian habitats are considered by federal and State regulatory agencies to represent a sensitive and declining resource. Wetland and riparian habitats can serve significant biological functions by providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory animal species.

Special-status natural communities recorded from the project region include Alkali Meadow, Alkali Seep, Cismontane Alkali Marsh, Coastal and Valley Freshwater Marsh, Coastal Brackish Marsh, Northern Claypan Vernal Pool, Serpentine Bunchgrass Grassland, Stabilized Interior Dunes, and Valley Needlegrass Grassland (CNDDB, 2019). None of these special-status natural communities are present within the project footprint and none would be impacted by the proposed project.

Small, fringing patches of freshwater emergent marsh are present along the shoreline near the BSA. This vegetation occurs in a narrow band, averaging 0.6 – 1.8 m (2 – 6 ft) in width. It does not conform to the any described special-status natural community, but does constitute jurisdictional wetlands. Impacts resulting from project implementation would be deemed significant pursuant to the statutes and guidelines of CEQA. Impact avoidance

measures are recommended to be included as part of the proposed project, as outlined in Section 5.1, below.

Eelgrass Habitat

In the subtidal zone, impacts to eelgrass habitat are regulated under the CWA, Magnuson-Stevens Fishery Conservation and Management Act (MSA), the California Coastal Act (CCA), and the California Code of Regulations (CCR)[6]. According to these laws and regulations, any activities which may potentially impact eelgrass habitat must mitigate for those impacts. This requires mitigation for harmful impacts to existing eelgrass beds as well as potential eelgrass habitat.

The presence of eelgrass beds is not expected at the project location; it has been determined that eelgrass has been fully replaced by the native species widgeon grass east of the Carquinez Bridge (Merkel & Associates Inc., 2004). Furthermore, the proposed project would not result in any changes to the aquatic environment of New York Slough that would affect eelgrass.

Essential Fish Habitat

The maintenance of healthy fisheries is dependent on the protection of those habitats essential for the growth and reproduction of fish species. The NMFS and regional fishery management councils are charged with ensuring that fishing activities have a minimal impact on fish habitat. Essential fish habitat (EFH) includes those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.[7] While private landowners and state agencies are not required to consult with NMFS, pursuant to the MSA, a consultation is required[8] if each of the following factors is satisfied:

1. The federal government has authorized, funded, or undertaken part or all of a proposed activity. For example, if a project proposed by a federal or state agency or an individual requires a federal permit, then the federal agency authorizing the project through the issuance of a permit must consult with NMFS.

2. The action will "adversely" affect EFH. An adverse effect is defined as any impact that reduces quality and/or quantity of EFH. This includes direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to species and their habitat, and other ecosystem components, or reduction of the quality and/or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of EFH.

[6] CCR Title 14
[7] 16 USC 1802(10)
[8] MSA § 305(b)(2)

The project area is located within EFH for Pacific Groundfish.

Groundfish are fish that live in, on, or near the bottom of the water body they inhabit. They occur in the ocean and bays, including the upriver extent of saltwater intrusion in estuaries. Over 80 groundfish species are covered under the Pacific Groundfish Fishery Management Plan (FMP), including 64 species of rockfish, 12 species of flatfish, six species of roundfish, six species of sharks and skates, and others. At least 31 groundfish species inhabit estuaries and nearshore kelp forests during part or all of their life cycle (NMFS, 2005a). Several groundfish species covered under the Pacific Coast Groundfish FMP have distributions in Suisun Bay, and have the potential to occur in the project area as juveniles and/or adults. Starry flounder is the only species that may be abundant in Suisun Bay. All life stages may occur in the project vicinity.[9] As designated by NOAA, Essential Fish Habitat (EFH) means those waters and substrate that are essential to fish for spawning, breeding, feeding, and growing to maturity.

Because the proposed project does not include any work within the aquatic environment, and discharges through the outfall would be within permitted parameters, there is no potential for adverse effects on EFH.

Critical Habitat

Critical habitat is a term defined under FESA[10] as (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of Section 4 of this Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Critical habitat designations affect only federal agency actions or federally funded or permitted activities. Critical habitat designations do not affect activities by private landowners if there is no federal "nexus"—that is, no federal funding or authorization. Federal agencies are required to avoid "destruction" or "adverse modification" of designated critical habitat. Most activities that require consultation by federal agencies proceed without modification. In areas where the species is not present, some project modifications that would not have occurred without the critical habitat designation may be required.

Based on a review of CNDDB (2019), the project site is located within designated critical habitat for Delta smelt and spring-run Chinook (see discussion under Section 4.3, below).

[9] NOAA EFH Mapper, available online at https://www.habitat.noaa.gov/protection/efh/efhmapper/
[10] FESA § 2(5)

However, because the proposed project does not include any work within the aquatic environment, and discharges through the outfall would be within permitted parameters, there is no potential for adverse effects on critical habitat.

Waters of the U.S. / Waters of the State

Certain habitat and site features fall under federal and state jurisdiction (see discussion of Special-Status Natural Communities in Section 4.1, below). These typically include stream and drainage courses, water bodies, tidal lands, wetlands, and riparian habitats. The extent of jurisdiction of a given agency varies and is defined by specific guidelines issued by each agency.

Wetlands belong to the broad category of Waters of the U.S. and are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions".[11] Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands are areas of land which are permanently or seasonally wet and support vegetation specifically adapted to growing in saturated soils under conditions of low oxygen. Wetlands are considered valuable to humans because they provide flood protection, recharge ground water supplies, improve water quality by filtering out pollutants and sediments, protect shorelines and stream banks from erosion, serve as important spawning and nursery areas for invertebrates, fish, shellfish and birds, provide recreation, open space, and aesthetic values, provide water and sanctuaries for wildlife, and frequently support endangered, threatened, or rare species of wildlife and plants. The value of a particular wetland is assessed based on its size, proximity to open areas supporting a variety of other habitat types, its level of disturbance, the presence of invasive plant species, exposure to human activities that might disrupt wildlife movements or breeding, exposure to pollutants, or other conditions affecting the wetlands functions listed above.

To meet the legal definition of a wetland, a site must exhibit specific indicators of hydrologic, soil, and vegetation parameters. Indicators of all three wetlands parameters must be present for a site to be classified as a wetland (Environmental Laboratory, 1987). Although emergent wetlands occur in the BSA, no wetlands are present directly opposite of the existing wharf; no significant direct or indirect impacts on wetlands would result from project implementation.

As summarized by the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA), both agencies assert jurisdiction over “non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)” and “wetlands that abut such tributaries” (USEPA/USACE,

[11] 40 CFR 230.3[t]

2008). The extent of USACE jurisdiction in tidal waters normally corresponds to the Mean High Water[12], which was observed in the field to correspond with the upper limit of wetland vegetation.

The project site would not involve the placement of fill below the HTL of the San Joaquin River, a traditional navigable Waters of the U.S.[13] and a Waters of the State[14], nor would it cause any changes that affected navigability, Therefore, the proposed project would not be regulated pursuant to the CWA[15] under the jurisdiction of the USACE and RWQCB and the Rivers and Harbors Act of 1899 (RHA)[16] (USACE). Impacts below the top of bank are regulated as waters of the state by the CFGC[17] and RWQCB. Similarly, the project does not require authorization from these agencies with regard to waters of the state.

Impact avoidance measures recommended to be included as part of the proposed project are outlined in Section 5.1.

[12] High Tide Line is defined at 33 CFR 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm."

[13] As defined in 40 CFR § 230.3(s), Waters of the U.S. include:

- All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of tide;
- All interstate waters, including interstate wetlands;
- All other waters, such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce;
- Tributaries of the above;
- Territorial seas; and
- Wetlands adjacent to waters defined above.
- Although isolated wetlands no longer fall under USACE jurisdiction, impacts to isolated wetlands continue to be regulated under State law (see below).

[14] As defined under California Water Code § 13050(e), Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state". These include nearly every surface or ground water in California, or tributaries thereto, and include drainage features outside USACE jurisdiction (e.g., dry and ephemeral/seasonal stream beds and channels, etc.), isolated wetlands (e.g., vernal pools, seeps, springs and other groundwater-supplied wetlands, etc.), and storm drains and flood control channels.

[15] CWA § 401

[16] RHA § 10

[17] CFGC § 1602

4.2 Special-Status Plant Species

Special-status plant species include all plant species that meet one or more of the following criteria:[18]

- Listed or proposed for listing as Threatened or Endangered under the federal Endangered Species Act (FESA) or candidates for possible future listing as Threatened or Endangered under the FESA.[19]
- Listed[20] or candidates for listing by the State of California as Threatened or Endangered under the California Endangered Species Act (CESA).[21] A species, subspecies, or variety of plant is **endangered** when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors.[22] A plant is **threatened** when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures.[23]
- Listed as Rare under the California Native Plant Protection Act (CNPPA).[24] A plant is **Rare** when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.[25]
- Meet the definition of Rare or Endangered under CEQA.[26] Species that may meet the definition of Rare or Endangered include the following:
  - Species considered to be "rare, threatened or endangered in California" (CRPR 1A, 1B and 2);
  - Species that may warrant consideration on the basis of local significance or recent biological information;
  - Some species included on the California Natural Diversity Database's (CNDDB) *Special Plants, Bryophytes, and Lichens List*.
- **Locally significant species,** that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as

[18] This definition is provided in CDFG (2009).
[19] 50 CFR §17.12
[20] Refer to current online published lists available at: http://www.dfg.ca.gov/biogeodata.
[21] CFGC § 2050 et seq.
[22] CFGC § 2062
[23] CFGC § 2067
[24] CFGC § 1900, et seq.
[25] CFGC § 1901
[26] CEQA § 15380[b] and [d]

within a county or region[27] or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines[28]). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

In addition, plant species have been assigned global and State rarity rankings (for a definition of these rankings, see Attachment D). Species ranked as S1, S2, or S3 are considered to be critically imperiled, imperiled or vulnerable to extinction within the boundaries of the State (CDFW, 2018c). As such, these species may be considered to meet the criteria for listing as endangered, threatened or rare under CESA.[29] Species ranked as S4 or S5 are generally considered common enough to be secure and not at risk of extinction. Impacts on special-status plants species, as thusly defined, would be regarded as significant pursuant to CEQA[30] and should be addressed in environmental review documents.[31]

A total of 81 special-status plant species have been recorded from the nine 7.5-minute USGS quadrangles including and surrounding the BSA (CNPS, 2019; CNDDB, 2019; USFWS, 2019). A total of 8 special-status plant species have been recorded from within a 4.8 km (3 mi) radius of the BSA; all eight of these have been recorded from within 1.6 km (1 mi) of the BSA (Figure 4).

One State-listed rare plant species, Mason's lilaeopsis, is present in the BSA at the mouth of the stormwater outfall (Figure 5). This species is described in detail below. No Federal listed, Proposed, or Candidate plant species are considered to have potential to occur in the BSA. Marginal habitat exists for one non-listed rare plant, Suisun marsh aster, which has been observed within 30 ft of the stormwater outfall on the adjacent property to the west (C. Rogers, pers. obs.), but does not occur on the subject property.

[27] CEQA § 15125 (c)
[28] CEQA Appendix G
[29] CEQA § 15380(d)
[30] CEQA § 15065
[31] CEQA § 15125

Figure 4. Special-Status Plant Records from the Project Vicinity

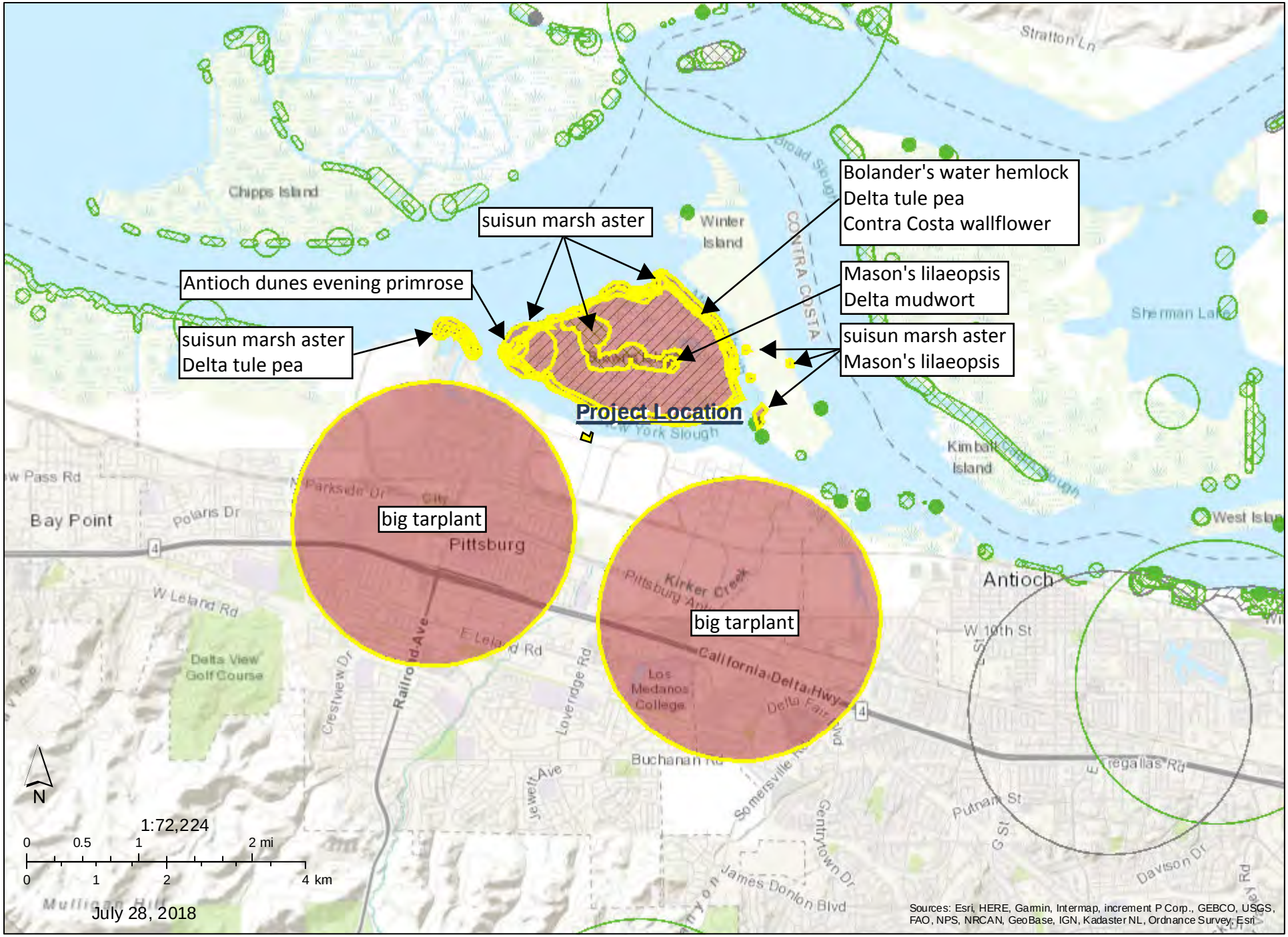


Figure 5. Location of Mason's lilaeopsis and Suisun marsh aster



A total of 70 special-status species in the database queries are considered to have no potential for occurrence at the project site due to a lack of suitable habitat, lack of suitable soils, and distance of the BSA from known occurrences. Another five of the target species are considered absent from the project site because they would have been detectable during the present survey. Another five of the target species are not expected to occur on site because the habitat is of very poor quality and highly altered, or due because the project site is spatially isolated from either known occurrences or areas of suitable habitat. No impact avoidance, minimization or mitigation measures are warranted and no further surveys or analysis related to this group of special-status plant species are necessary.

Attachment B is a list of all special-status plant species evaluated as part of this analysis. An explanation of all rarity status codes is provided in Attachment D. The following discussions provide details on species with at least marginally suitable habitat in the BSA.

Suisun Marsh Aster

Regulatory Status: Federal: none; State: none; CRPR: 1B.2. It has been assigned a global and state ranking of G2/S2; species assigned a ranking of S2 are considered imperiled in the state due to their very restricted range, very few populations, or other factors making them very vulnerable to extirpation (CDFW, 2018c). As such, this species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA. Impacts to species with such a ranking may be regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Suisun Marsh aster (*Symphyotrichum lentum*) is a perennial, rhizomatous herb belonging to the sunflower family (Asteraceae). It produces stems up to 16 m (5 ft) tall, with sessile basal and cauline leaves up to 15 cm (6 in) long. Flowers are violet and occur in heads at the tips of branches. Flowering occurs May through November. Suisun marsh aster is a native species endemic to California and found only in Contra Costa, Napa, Sacramento, San Joaquin and Solano counties. It is associated with in freshwater and brackish marshes around Suisun Bay, growing from sea level to 3 m (0-10 ft) in elevation.

Critical Habitat: Suisun marsh aster is not listed under FESA; as such, no critical habitat has been designated for the species.

Habitat Suitability and Potential to Occur: Suitable habitat for Suisun marsh aster is present within the littoral zone of the BSA. There are 21 records of Suisun marsh aster within an 8 km (5 mi) radius of the project site (CNDDB, 2019)which includes records from the shoreline to the north and east of the project site. Suisun marsh aster was documented during a 2018 survey of the adjacent property to the west; the nearest plants to the BSA were approximately 30 ft to the west. It appears to persist in unarmored sections of shoreline with natural substrates.

Potential Project-Related Effects: Suisun marsh aster is not present in the BSA, and nearby populations would not be affected directly or indirectly by the proposed project. Marginally suitable habitat exists along the shoreline, but the shoreline is already armored around the outfall, which appears to limit the occurrence of this species. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to shoreline habitat. However, because of the proximity of this species to the project site, impact avoidance measures are recommended to be included as part of the proposed project, as described in Section 5.2, below.

Bolander's Water Hemlock

Regulatory Status: Federal: none; State: none; CRPR: 2B.1. It has been assigned a global and state ranking of G5T4/S2; species assigned a ranking of S2 are considered imperiled in the state due to their very restricted range, very few populations, or other factors making them very vulnerable to extirpation (CDFW, 2018c). As such, this species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA. Impacts to species with such a ranking may be regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Description: Bolander's water hemlock (*Cicuta maculata* var. *bolanderi*) is a perennial member of the carrot family (Apiaceae). It produces erect hollow stems with pinnately compound leaves and serrate leaflets. Inflorescences are umbellate, with clusters of small white flowers. Flowering occurs July through September. Bolander's water hemlock occurs in coastal salt and freshwater marshes. It has been recorded from coastal regions of Contra Costa, Los Angeles, Marin, Sacramento, Santa Barbara, San Luis Obispo, and Solano counties.

Critical Habitat: Bolander's water hemlock is not listed under FESA; as such, Critical Habitat has not been designated for the species.

Habitat Suitability and Potential to Occur: The BSA supports marginally suitable shoreline habitat for the species, though lacks the well-developed tidal marsh with which it is usually associated. However, the species is not expected on site as this large perennial species would have been detectable during the present survey.

Two occurrences of Bolander's water hemlock have been recorded within 5 km (3 mi) of the project site. The nearest record (Occ. # 2) is a 1978 observation on Browns Island across New York Slough from the BSA, and is presumed extant. The tidal marsh on Browns Island is well-developed and intact, with unarmored shorelines, as contrasted to the southern shoreline of New York Slough and the BSA.

Potential Project-Related Effects: Although there is marginally suitable habitat for the species within the BSA, it was not observed and is considered absent. It is a large plant with distinctive leaves, recognizable when not yet in flower. No project-related activities would affect this species; therefore project implementation would have no potential for impacting this species. Impact avoidance, minimization or mitigation measures are not warranted.

Delta Tule Pea

Regulatory Status: Federal: none; State: none; CRPR: List 1B.2. It has been assigned a global and state ranking of G5T2/S2; species assigned a ranking of S2 are considered imperiled in the state due to their very restricted range, very few populations, or other factors making them very vulnerable to extirpation (CDFW, 2018c). As such, this species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA. Impacts to species with such a ranking may be regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*) is a robust perennial vine belonging to the pea family. It has winged stems reaching 2.4 m (8 ft) in length and climbs by tendrils located at the tips of the leaves. The leaves are 2.5-5 cm (1-2 in) long and have 10-16 leaflets. Flowers are bright pink to purple, to 2.5 cm (1 in) long, and are produced May through June. Delta tule pea is a native species endemic to California and found only in Contra Costa, Napa, Sacramento, San Joaquin Solano, Sonoma and Yolo counties. It is associated with in freshwater and brackish marshes around Suisun Bay, growing from sea level to 4 m (0-13 ft) in elevation.

Critical Habitat: Delta tule pea is not listed under FESA; as such, no critical habitat has been designated for the species.

Habitat Suitability and Potential to Occur: Marginally suitable habitat for Delta tule pea is present within the littoral zone of the BSA. There are 12 records of Delta tule pea within an 8 km (5 mi) radius of the project site (CNDDB, 2019); it has been recorded from Browns Island across New York Slough from the project site. Habitat conditions on Browns Island are typical for this species, and differ from the project site, with relatively intact stands of dense brackish tidal wetlands on the margins and interior of the island. No individuals were detected within the BSA.

Potential Project-Related Effects: Marginally suitable habitat for the Delta tule pea is present in the BSA. This species typically occurs in well-developed marsh habitat where there is a prevalence of other tall vegetation that it uses for support. Marsh vegetation along the shoreline of the BSA is very sparse and inconsistent with conditions where the species is observed nearby. Project implementation is would not

have any direct or indirect effects on the species. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to shoreline habitat. Impact avoidance measures or mitigation measures are not warranted for this species.

Mason's Lilaeopsis

Regulatory Status: Federal: None; State: Rare; CRPR: List 1B.1. It has been assigned a global and state ranking of G2/S2; species assigned a ranking of S2 are considered imperiled in the state due to their very restricted range, very few populations, or other factors making them very vulnerable to extirpation (CDFW, 2018c). As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to CEQA. Impacts to species with such a ranking may be regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Mason's lilaeopsis (*Lilaeopsis masonii*) is a diminutive member of the carrot family (Apiaceae). It is a prostrate perennial producing rhizomes and linear, cylindric to flattened leaves 1.3-7.6 cm (0.5-3 in) long. Flowers are white to maroon, 1 mm (0.04 in) long at the end of basal peduncles 2-20 mm (0.08-0.8 in) long. Flowering occurs June through August. Mason's lilaeopsis is a native species endemic to California and is found only in Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano and Yolo counties. It forms dense to sparse colonies on exposed muddy streambanks and levees associated with freshwater and intertidal marshes of the Napa, Sacramento and San Joaquin rivers and the Point Reyes Peninsula, growing from sea level to 10 m (0-33 ft) in elevation.

Critical Habitat: Critical habitat has not been designated for Mason's lilaeopsis.

Habitat Suitability and Potential to Occur: A small patch of Mason's lilaeopsis occurs within the BSA, on fine sediments accumulated in riprap at the mouth of the stormwater outfall (see Figure 5, and photographs 4 and 5 in Attachment A). The total area is approximately 3 ft^2. Marginally suitable habitat for Mason's lilaeopsis is present within the littoral zone of the BSA, but was not otherwise present. There are 12 records of Mason's lilaeopsis within an 8 km (5 mi) radius of the project site (CNDDB, 2019); it has been recorded from the Browns Island due north of the project site, in relatively undisturbed habitat on the unarmored shoreline.

Potential Project-Related Effects: Although Mason's lilaeopsis is present in the BSA, it occurs at the mouth of a stormwater outfall that is currently in use (i.e. it discharges runoff from the site during storm events). This use would not change with implementation of the proposed project, therefore any changes to the small population of Mason's lilaeopsis would not be attributable to the project. However,

because of the presence of the species within the project area, impact avoidance measures are recommended as part of the proposed project, as outlined in Section 5.3, below.

Delta Mudwort

Regulatory Status: Federal/State: None; CRPR: List 2B.1. It has been assigned a global and state ranking of G4G5/S2; species assigned a ranking of S2 species assigned a ranking of S2 are considered imperiled in the state due to its very restricted range, very few populations, or other factors making it very vulnerable to extirpation (CDFW, 2014c). As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA. Impacts to species with such a ranking may be regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Delta mudwort (*Limosella australis*) is a tufted annual belonging to the figwort family (Scrophulariaceae). It produces green, linear awl-like to cylindrical leaves cm (0.5-1.5 in) long. Flowers are white to lavender-blue, 3 mm (0.12 in) long and develop May through August. Delta mudwort has been regarded as a rare native species in California, although recent treatments indicate that it may actually have been accidentally imported in the ballast of ships from the east coast of North America. Here, it is found in the San Joaquin-Sacramento River Delta, occurring in Contra Costa, Sacramento, San Joaquin, and Solano counties. It has also been recorded from Marin County (Abbot's Lagoon). It is found on exposed muddy or sandy intertidal flats and brackish marshes, growing from sea level to 3 m (0-10 ft) in elevation.

Critical Habitat: Delta mudwort is not listed under FESA; as such, no critical habitat has been designated for the species.

Habitat Suitability and Potential to Occur: Marginally suitable habitat for Delta mudwort is present within the littoral zone of the BSA. There are ten records of Delta mudwort within an 8 km (5 mi) radius of the project site (CNDDB, 2019); it has been recorded from the interior of Browns Island, across New York slough from the BSA, and from the Dow Wetlands Preserve 3.2 km (2 mi) to the east. The species is not present within the small shoreline area within the BSA.

Potential Project-Related Effects: Marginally suitable habitat for Delta mudwort is present in the BSA, but is considered to be unlikely to occur on site. Project implementation is would not have any direct or indirect effects on the species. Impact avoidance measures are not warranted for this species.

Eel-Grass Pondweed

Regulatory Status: Federal: None; State: Rare; CRPR: List 2B.2. It has been assigned a global and state ranking of G4G5/S3; species assigned a ranking of S3 are considered vulnerable in the state due to their restricted range, relatively few populations, or other factors making them very vulnerable to extirpation (CDFW, 2018c). As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA. Impacts to species with such a ranking may be regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Eel-grass pondweed (*Potamogeton zosteriformis*) is an annual aquatic herb belonging to the pondweed family (Potamogetonaceae). It produces submerged linear leaves 5-20 cm (2-8 in) long, 2-5 mm (0.08-0.2 in) wide on flat to winged stems. Flowers are greenish and clustered at the ends of peduncles 2-6 cm (0.8-204 in) long. Flowering occurs June through July. Eel-grass pondweed is a native species but is not endemic to California. It is found only in Contra Costa, Lake, Lassen, Modoc and Shasta counties as well as through the western and mid-western states. It grows in muddy soil of ponds, lakes and streams, growing from sea level to 1300 m (0-4264 ft) in elevation.

Critical Habitat: Eel-grass pondweed is not listed under FESA; as such, no critical habitat has been designated for the species.

Habitat Suitability and Potential to Occur: Marginally suitable habitat for eel-grass pondweed is present in the subtidal zone of the BSA. A focused survey for this diminutive, difficult to find species was beyond the scope of this effort. Eel-grass pondweed has not been recorded from within an 8 km (5 mi) radius of the project site (CNDDB, 2019). As described in Section 4.1, eelgrass has been fully replaced by the native species widgeon grass east of the Carquinez Bridge (Merkel & Associates Inc., 2004). Therefore, it is not expected to occur on site.

Potential Project-Related Effects: Although marginally suitable habitat for eel-grass pondweed is present in the BSA, it is not expected to occur on site because it is outside of the known range of the species, and because the rapidly deepening bathymetry of New York Slough is not conducive to its establishment or persistence. Project implementation would not have any direct or indirect effects on the species. Impact avoidance, minimization or mitigation measures are not warranted.

Slender-Leaved Pondweed

Regulatory Status: FESA: none; CESA: none; CRPR: 2B.2; Global/State rarity ranking: G5T2/S3

Description: Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina;* formerly *Potamogeton filiformis*) is a rhizomatous aquatic herb belonging to the pondweed family (Potamogetonaceae). This completely aquatic herb produces long, sessile leaves from a tuber buried in the submersed substrate. It produces inconspicuous flowers on submerged spikes. Flowering occurs May through July. Slender-leaved pondweed occurs in shallow freshwater marshes and swamps below 2135 m (7000 ft) in elevation.

Critical Habitat: Critical Habitat has not been designated for slender-leaved tarplant.

Habitat Suitability and Potential to Occur: Slender-leaved pondweed has been recorded within 1.25 km (0.8 mi) of the BSA, off the northwest shore of Browns Island[32]. Habitat conditions within New York Slough, with its rapidly deepening bathymetry and relatively swift tidal currents, differ substantially from the typical occurrence of this species.

Suitable habitat for slender-leaved pondweed is present on the subject parcel. Because this annual species would not have been detectable during the present survey, its presence cannot be ruled out.

Potential Project-Related Effects: Although marginally suitable habitat for eel-grass pondweed is present in the BSA, it is not expected to occur because habitat conditions are not consistent with where it is observed. Project implementation would not have any direct or indirect effects on the species. Impact avoidance, minimization or mitigation measures are not warranted.

4.3 Special-Status Animal Species

Special-status animal species include listed as Endangered, Threatened, Rare, or as Candidates for listing under the FESA (USFWS, 2018) or CESA (CDFW, 2018f). Other species regarded as having special-status include special animals, as listed by the CDFW (2018e). Additional bird species receive protection under the Bald and Golden Eagle Protection Act (BGEPA)[33], the Migratory Bird Treaty Act (MBTA)[34] and the Migratory Bird Treaty Reform Act (MBTRA)[35]. The USFWS maintains a list of bird species of conservation concern (BCC) which includes species of migratory nongame birds that could become candidates for listing under FESA (USFWS, 2008). The California Fish and Game Code (CFGC) provides specific language protecting birds and raptors[36], "fully protected birds"[37], "fully protected mammals"[38], "fully protected reptiles and

[32] http://online.sfsu.edu/katboyer/Boyer_Lab/Pondweeds!_files/BrownsWinter.pdf
[33] 16 USC 668
[34] 16 USC 703-711
[35] 70 FR 12710
[36] §§ 3503 and 3503.5
[37] CFGC § 3511

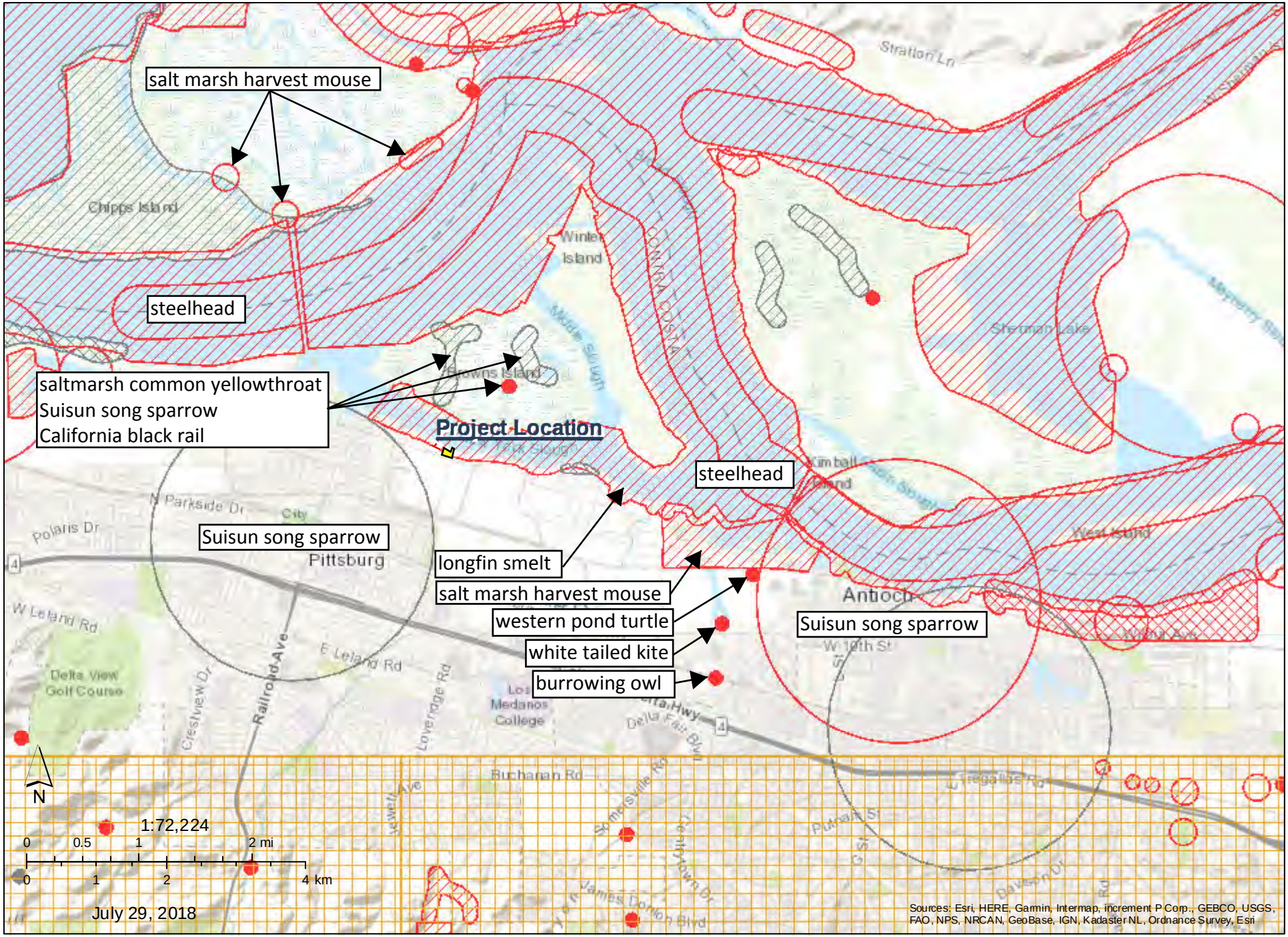
amphibians"[39] and "fully protected fish".[40] The California Code of Regulations (CCR) prohibits the take[41] of fully protected fish[42], certain fur-bearing mammals,[43] and restricts the taking of amphibians[44] and reptiles[45]. Additional definitions are given in CEQA.[46] Impacts on special-status animal species, as thusly defined, may qualify as significant pursuant to the guidelines of the CEQA.

In addition, animal species have been assigned global and State rarity rankings (for a definition of these rankings, see Attachment D). Species with a ranking of G1/S1, G2/S2, or G3/S3 are considered to be critically imperiled, imperiled or vulnerable to extinction within the boundaries of the state, respectively (CDFW, 2018e). As such, these species may be considered to meet the criteria for listing as endangered, threatened or rare under CESA.[47] Species ranked as G4/S4 or G5/S5 are generally considered common enough to be secure and not at risk of extinction. Impacts on special-status animal species, as thusly defined, would be regarded as significant pursuant to CEQA[48] and should be addressed in environmental review documents.[49]

A total of 86 special-status animal species have been recorded in the nine 7.5-minute USGS quadrangles including and surrounding the BSA (CNDDB, 2019; USFWS, 2019). A total of 17 special-status animal species have been recorded from within a 4.8 km (3 mi) radius of the BSA (Figure 6). Based on the existing habitats on site and its geographic location, the occurrence of 72 of these species can be ruled out entirely based on absence of suitable habitat, the site's location outside of the species known range, or absence of regional species occurrences. Although marginally suitable habitat is present within the BSA, the occurrence of another eight of these species are not expected to occur on site due to the site's level of disturbance, habitat alteration, or geographic location relative to known occurrences (see Attachment C).

[38] CFGC § 4700
[39] CFGC § 5050
[40] CFGC § 5515
[41] Pursuant to CFGC § 86, "take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.
[42] 14 CCR § 5.93
[43] 14 CCR § 460
[44] 14 CCR § 5.05
[45] 14 CCR § 5.60
[46] § 15380(d)
[47] CEQA Guidelines § 15380(d)
[48] CEQA Guidelines § 15065(a)
[49] CEQA Guidelines § 15065(b), (c)

Figure 6. Special-Status Animal Records from the Project Vicinity



Although not detected during the present survey, eight of the species could occur within the BSA. Six of these are fish species and include Chinook salmon, Delta smelt, longfin smelt (San Francisco bay delta DPS[50]), green sturgeon, Sacramento splittail, and steelhead (Central Valley DPS and Central California Coast DPS). Also potentially occurring within the BSA are Pacific pond turtle, bank swallow, and a wide variety of migratory bird species. Two marine mammals, harbor seal and California sea lion, are known to move through the project vicinity. These species along with other high-profile species known from the region are described in detail below. Attachment C is a list of all special-status animal species evaluated as part of this analysis. An explanation of all rarity status codes is provided in Attachment D.

Federal/State-Listed, Proposed, Candidate, or Fully Protected Fish and Wildlife Species

Chinook Salmon (Central Valley Spring-Run ESU)

Regulatory Status: Federal: Threatened[51], five-year review completed ((NMFS, 2016); State: Threatened (CDFW, 2018d); CDFW: Special Animal (2018e), Species of Special Concern (Moyle, *et al* 2015); Global/State rarity ranking: G5/S1 (CDFW, 2018e); AFS: Endangered; species assigned a ranking of S1 are considered critically imperiled in the state because of their extreme rarity or due to factors making them especially vulnerable to extirpation (CDFW, 2018e). Impacts to species with such rankings are regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Chinook salmon (*Oncorhynchus tshawytscha*) are anadromous, with adults migrating from the ocean into the freshwater streams and rivers of their birth in order to mate. They are semelparous, a reproductive strategy whereby they spawn only once and then die. They are the largest of the salmon species, with adults often exceeding 18 kg (40 lbs). They feed on terrestrial and aquatic insects, amphipods, and other crustaceans while young, and primarily on other fishes when older. Juvenile Chinook may spend from three months to two years in freshwater before migrating to estuarine areas as smolts and then into the ocean to feed and mature. Chinook salmon remain at sea for one to six years (more commonly two to four years), with the exception of a small proportion of yearling males (called jack salmon) which mature in freshwater or return after only two to three months in salt water. They prefer streams that are deeper and larger than those used by other Pacific salmon species.

There are different seasonal "runs" (e.g., spring, summer, fall, or winter) in the migration of Chinook from the ocean to freshwater, even within a single river system. These runs have been identified on the basis of the season in which the adult Chinook enter freshwater to begin their spawning migration. However, distinct runs also differ

[50] Distinct Population Segment
[51] 70 FR 37160

in the degree of maturation at the time of river entry, the temperature and flow characteristics of their spawning site, and their actual time of spawning. Freshwater entry and spawning timing are believed to be related to local temperature and water flow regimes.

The Central Valley spring-run Chinook migrate as immature adults between February and early July, with the peak run occurring in April or May. They will spend the summer in deep pools of their natal rivers and spawn in early fall. Spawning females prepare redds (i.e., nest) in gravelly substrate. After laying eggs, adult Chinook guard their redds from just a few days to nearly a month before dying. Chinook salmon eggs hatch three to five months after deposition. The emerged fry may spend a few months in their natal stream then outmigrate from December through March with the peak downstream migration occurring November to December.

Critical Habitat: Critical habitat has been designated for the Central Valley Spring-Run ESU of Chinook by the NMFS[52]. The project site is located in the North Diablo Range Hydrologic Unit 5543 of designated critical habitat.

Habitat Suitability and Occurrence Data: The 6-inch thermal wastewater outfall is located within suitable habitat for the Central Valley Spring-Run ESU of Chinook. No occurrences for the Central Valley Spring-Run ESU of Chinook have been recorded from within an 8 km (5 mi) radius of the project site (CNDDB, 2019). Nonetheless, due to the presence of suitable aquatic habitat within the BSA and given that the project site is located within designated critical habitat, the presence of Chinook must be assumed.

Potential Project-Related Effects: Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

<u>Chinook Salmon Sacramento River Winter-Run ESU</u>

Regulatory Status: Federal: Endangered[53], five-year review completed ((NMFS, 2011b); State: Endangered (CDFW, 2018f); CDFW: Special Animal; Global/State rarity ranking: G5/S1 (CDFW, 2018e); AFS: Endangered; species assigned a ranking of S1 are considered critically imperiled in the state because of their extreme rarity or due to factors making them especially vulnerable to extirpation (CDFW, 2018e). Impacts to

[52] 70 FR 52488
[53] 79 FR 20802

species with such rankings are regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Description: The Sacramento River winter-run Chinook (*Oncorhynchus tshawytscha*) begin their upstream migration in the Sacramento River as immature adults between January and May, with the peak run occurring in March. Reaching the Keswick Dam, which forms Lake Shasta, they spawn from April through early August (Moyle et al., 2008). The young fish appear between July and mid-October, remaining there for five to ten months before moving downstream. Juvenile fish typically enter the Sacramento-San Joaquin Delta from January to April.

The Sacramento River winter-run Chinook ESU includes all naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries in California, as well as two artificial propagation programs. This ESU is represented by a single extant naturally spawning population that has been completely displaced from its historical spawning habitat by the construction of Shasta and Keswick Dams. The remaining spawning habitat is artificially maintained by cold-water releases from the reservoir behind Shasta Dam.

Critical Habitat: Critical habitat has been designated for the Sacramento River winter-run Chinook ESU (NMFS 1993[54]). Critical habitat includes 1) the Sacramento River from Keswick Dam, Shasta County (river mile 302) to Chipps Island (river mile 0) at the westward margin of the Sacramento-San Joaquin Delta; 2) all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait; 3) all waters of San Pablo Bay westward of Carquinez Bridge, and 4) all waters of San Francisco Bay from of the San Francisco/Oakland Bay Bridge and Golden Gate Bridge to San Pablo Bay. The project site is not located in designated critical habitat for this ESU.

Habitat Suitability and Potential to Occur: The 6-inch thermal wastewater outfall is located within suitable habitat for the Sacramento River winter-run of Chinook. No occurrences for the Sacramento River winter-run of Chinook have been recorded from within an 8 km (5 mi) radius of the project site (CNDDB, 2019). Nonetheless, due to the presence of suitable habitat on site, the presence of Chinook must be assumed.

Potential Project-Related Effects: Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic

[54] 58 FR 33212

habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

Delta Smelt

Regulatory Status: Federal: Threatened (San Francisco Bay/Delta DPS); State: Endangered; CDFW: Special Animal (CDFW 2018e), Species of Special Concern (Moyle, *et al* 2015); Global/State rarity ranking: G1/S1; AFS: Endangered; species assigned a ranking of S1 are considered critically imperiled in the state because of their extreme rarity or due to factors making them especially vulnerable to extirpation (CDFW, 2018e). Impacts to species with such rankings are regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Description: The Delta smelt (*Hypomesus transpacificus*) is a small, annual species endemic to the Sacramento-San Joaquin Estuary. Adults range in size from 60-120 mm (2.3-4.7 in) long, have slender, translucent bodies and relatively large eyes (Moyle, 2002). Delta smelt are found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties. Historically, they occurred from Suisun Bay to Sacramento on the Sacramento River and to Mossdale on the San Joaquin River (Moyle et al., 1992).

Delta smelt spend much of their lives in brackish water, occurring in turbid, trophically rich waters at the freshwater edge of the entrapment zone over large shoals around 7 m (23 ft) deep, feeding on small crustaceans such as copepods and amphipods (Bennett, 2005). They are weakly anadromous, with adults migrating upstream after the first high-winter outflows to spawn in fresh water. Spawning occurs between December and April. Most adults die after spawning.

Critical Habitat: Critical Habitat for the Delta smelt was designated on December 19, 1999[55]. Critical habitat for the species encompasses all waters bounded by and contiguous in Suisun Bay (including the contiguous Grizzly and Honker Bays), the length of Goodyear, Suisun, Cutoff, First Mallard and Montezuma sloughs, and the existing continuous waters contained within the Delta, within Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties.

The proposed project is located on the shores of New York Slough, which is included in the Critical Habitat designation.

Habitat Suitability and Potential to Occur: The 6-inch thermal wastewater outfall is located within suitable migratory habitat for Delta smelt, and the species is presumed to be present. However, the shoreline at the project location does not provide suitable breeding or rearing habitat for the species.

[55] 59 FR 65256

Potential Project-Related Effects: Project implementation would not impede the movement of any fish species. Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

Longfin Smelt

Regulatory Status: Federal: Candidate (San Francisco Bay/Delta DPS); State: Threatened; CDFW: Special Animal (CDFW 2018e), Species of Special Concern (Moyle, *et al* 2015); Global/State rarity ranking: G5/S1; species assigned a ranking of S1 are considered critically imperiled in the state because of their extreme rarity or due to factors making them especially vulnerable to extirpation (CDFW, 2018e). Impacts to species with such rankings are regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Description: Longfin smelt (*Spirinchus thaleichthys*) are small fish growing to 9-11 cm (3.5-4.3 in) in length. They inhabit the Sacramento-San Joaquin River Delta, San Francisco Estuary and scattered bays and inlets of the Pacific Coast from Monterey to Alaska. Although consid`ered pelagic and anadromous (Moyle, 2002), certain populations are not anadromous and complete their entire life cycle in freshwater lakes and streams. Within the San Francisco Bay and Delta system, the term pelagic refers to organisms that occur in open water away from the bottom of the water column and away from the shore. Juvenile and adult longfin smelt have been found throughout the year in salinities ranging from pure freshwater to pure seawater.

In the San Francisco Bay and Delta system, longfin smelt typically spend their first year of life in Suisun Bay and Suisun Marsh. The remainder of their life is spent in the Bay or Gulf of Farallones (Moyle, 2008). In their second winter, longfin smelt return to the Bay and migrate upstream to spawn. Spawning occurs in fresh water over sandy-gravelly substrates, rocks and aquatic plants and may occur as early as November and as late as June, although spawning typically occurs from January to April (Moyle, 2002). In the Delta, the furthest downstream longfin have been known to spawn is in the upper Suisun Bay around Pittsburg and Montezuma Slough in Suisun Marsh (Robinson and Greenfield, 2011). Larvae move downstream into the Estuary January through March, where juveniles and adults feed on small copepods and mysid shrimp. Juveniles and adults aggregate in deep-water channels and over shoals greater than 7 m (23 ft) deep. The species is thought to be intolerant temperatures greater than >22°C (72°F). Longfin smelt usually live for two years, spawn and then die (Moyle, 2002).

Critical Habitat: Critical Habitat has not been designated for the longfin smelt.

Habitat Suitability and Potential to Occur: The 6-inch thermal wastewater outfall is located within suitable habitat for longfin smelt. The San Joaquin River and New York Slough may support longfin smelt of unknown numbers and life stages. In the CNDDB, this record (Occ. #45) is based on sampling conducted between 1979 and 1982.

Potential Project-Related Effects: No suitable spawning habitat for longfin smelt is present within the BSA. However, migrating and foraging longfin smelt may occur in the project vicinity. Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

North American Green Sturgeon

Regulatory Status: Federal: Threatened (Southern DPS); State: Threatened; CDFW: Special Animal (CDFW 2018e), Species of Special Concern (Moyle, *et al* 2015); Global/State rarity ranking: G3/S1S2; AFS: Vulnerable; species assigned a ranking of S1 are considered critically imperiled in the state because of their extreme rarity or due to factors making them especially vulnerable to extirpation (CDFW, 2018e). Impacts to species with such rankings are regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

The North American green sturgeon (*Acipenser medirostris*) is a long-lived, slow-growing anadromous fish species found primarily in marine and estuarine waters of the eastern Pacific. The species ranges from Mexico to at least Alaska in marine waters and is observed in bays and estuaries up and down the west coast of North America (Moyle et al., 1995). They are believed to spend the majority of their lives in nearshore oceanic waters, bays, and estuaries, spawning in the Rogue, Klamath and Sacramento rivers. Young green sturgeon reside in fresh water, with adults returning to freshwater to spawn when they are about 15 years of age and more than 1.3 m (4 ft) in length. Spawning is believed to occur every two to five years (Moyle, 2002).

The Southern DPS consists of the population segment of green sturgeon that utilizes the Sacramento River and tributaries for spawning; the Sacramento River contains the only known spawning population in the DPS. In winter, they aggregate in estuaries and migrate north along the North Pacific coastal shelf. They overwinter in waters

north of Vancouver Island and return south in spring. Mature fish enter and migrate rapidly up the Sacramento River in March and April, where they spawn and then either return to the estuary or over-summer and migrate out of the river with the first fall flow event (Heublein et al., 2009). They may be found in San Francisco Bay throughout the year, though numbers increase in summer with the return of migrants moving into the estuary for feeding, holding, and spawning (Lindley et al., 2011). In the San Francisco Estuary, green sturgeon are associated with turbid water where they prey on benthic organisms such as clams and crabs. Green sturgeon live from 40 to 60 years.

Critical Habitat: Critical habitat has been designated for the Southern DPS of North American green sturgeon by NMFS[56]. The project site is located within designated critical habitat.

Habitat Suitability and Occurrence Data: The 6-inch thermal wastewater outfall is located within suitable habitat for North American green sturgeon belonging to the Southern DPS. No nearby occurrences of this DPS are recorded by the CNDDB (2019). Nonetheless, due to the presence of suitable aquatic habitat on site and given that the project site is located within designated critical habitat, the presence of sturgeon must be assumed.

Potential Project-Related Effects: Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

Sacramento Splittail

Regulatory Status: Federal: Candidate[57]; State: None; CDFW: Special Animal (CDFW 2018e), Species of Special Concern (Moyle, *et al* 2015); Global/State rarity ranking: G2/S2; AFS: Vulnerable; species assigned a ranking of S2 are considered imperiled in the state due to their very restricted range, very few populations, or other factors making them very vulnerable to extirpation (CDFW, 2018e). As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the statutes and guidelines of CEQA.[58] Impacts to species with such a ranking may be regarded as significant pursuant to the statutes and guidelines of CEQA and should be addressed in environmental review documents.

[56] 74 FR 52300

[57] 77 FR 19756

[58] CEQA § 15380(d)

Description: Sacramento splittail (*Pogonichthys macrolepidotus*) is the only member of the genus and endemic to central California. The fish have elongate body that is dusky olive-gray on back with silvery sides, with a small head and enlarged upper tail lobe. Adults reach a length of 40 cm (16 in). Splittail live as long as 8-10 years, reaching maturity at around two years of age.

Splittail are currently restricted to brackish waters of the San Francisco estuary and its tributaries and are found most often in slow moving sections of rivers and sloughs including dead end sloughs and shallow edge habitats (Moyle, 2002). It is known from the Sacramento, San Joaquin, Napa, Mokelumne and Petaluma rivers (Sommer et al., 2007). Its distribution is limited to the estuary and estuarine environments of large streams, including lower Walnut Creek, where it inhabits small, shallow, turbid sloughs lined with emergent vegetation (Leidy, 2007). Splittail are frequently found in areas subject to flooding because they require flooded vegetation for spawning and rearing in waters at least 1 m (3.3 ft) deep. Spawning occurs from late February to July, with peak spawning in March and April. Young-of-year splittail move into the estuary between April and August where they inhabit broad shoals or channels of intertidal habitat at the mouths of estuarine streams (Feyrer et al., 2005). Splittail feed on benthic macroinvertebrates and detritus.

Critical Habitat: Critical Habitat has not been designated for the Sacramento splittail.

Occurrence Data and Habitat Suitability: The project site is located within suitable habitat for the Sacramento splittail. The species is considered to potentially occur on site. Sacramento splittail has not been recorded from within an 8 km (5 mi) radius of the project site (CNDDB, 2019). The 6-inch thermal wastewater outfall is located within suitable habitat, therefore, the presence of longfin smelt must be assumed.

Potential Project-Related Effects: No suitable spawning habitat for longfin smelt is present within the BSA. However, migrating and foraging longfin smelt may occur in the project vicinity Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

Steelhead

Regulatory Status: Federal: Threatened[59], five-year review completed (NMFS, 2016); State: None; CDFW: Special Animal (CDFW 2018e), Species of Special Concern (Moyle, *et al* 2015); Global/State rarity ranking: G5T2/S2; AFS: Threatened; species assigned a ranking of S2 are considered imperiled in the state due to their very restricted range, very few populations, or other factors making them very vulnerable to extirpation (CDFW, 2018e). Impacts to species with such rankings are regarded as significant pursuant to CEQA and should be addressed in environmental review documents.

Description: Central Valley steelhead (*Oncorhyncus mykiss*) mature between two and three years of age. They are mainly "winter" run, though a small summer-run population exists. The small summer-run population migrates into the Sacramento River starting in July. The majority of steelhead begin migration in the fall. Spawning migration peaks in September and October and may continue through February or March. Unlike the Chinook salmon, not all steelhead die after spawning. Some may return to the ocean and return to spawn several times. Most juvenile steelhead spend one to two years in fresh water before migrating toward the ocean in the winter and spring, with an outmigration peak in mid-March (Moyle et al., 2008). USFWS trawl data from Chipps Island, indicate that juvenile steelhead are present in Suisun Bay from at least October through July, with hatchery fish (clipped adipose fin) emigration peaking between January and March, and wild juvenile outmigration more evenly spread out over six months or more (USFWS, 2008). The difference in emigration peak is a reflection of the timing of hatchery releases of juvenile steelhead. Fish salvage data from the Delta pumps indicate that most steelhead move through the Delta from November to June, with the peak numbers occurring in February through April (USFWS, 2008).

The Central Valley steelhead DPS includes all naturally spawned populations of steelhead below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries. The Sacramento and San Joaquin rivers offer the only migration route to the drainages of the Sierra Nevada and southern Cascade mountain ranges for anadromous fish. The distance from the Pacific Ocean to spawning streams can exceed 300 km (186 mi), providing unique potential for reproductive isolation among steelhead. Critical Habitat for the Central Valley DPS encompasses 67 watersheds within its freshwater and estuarine range. Critical Habitat includes the entire watersheds of the Northern Diablo Range, Sutter Creek, Omo Ranch, Consumnes, Big Canyon Creek, Herald, Ono, Nevada City, Mildred Lake, Elmira and Paynes, along with a portion of the Lower Mokelumne watershed and the deep water shipping channel of the Sacramento Delta.

[59] 71 FR 834

Critical Habitat: Critical Habitat has been designated for the Central Valley DPS of steelhead by the NMFS (2005b). The project site is not located within designated Critical Habitat for the species.

Habitat Suitability and Potential to Occur: The project site is located within suitable habitat for the Central Valley DPS of steelhead. One occurrence for the Central Valley DPS of steelhead is recorded from within an 8 km (5 mi) radius of the project site (CNDDB 2019). This record (Occ. #27) is a 2012 sighting from the Bouldin Island quadrangle.

Potential Project-Related Effects: The 6-inch thermal wastewater outfall is located in suitable habitat for the Central Valley DPS of steelhead. Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

Other Sensitive and Locally Rare Wildlife Species

Pacific Pond Turtle

Regulatory Status: FESA: none; CESA: none; CDFW: Species of Special Concern; BLM: Sensitive (southwestern pond turtle); USFS: Sensitive; Global/State rarity ranking: G3G4/S3.

Description: The Pacific pond turtle (*Emys marmorata*, hereafter referred to as PPT[60]), is the only fresh-water turtle native to greater California. It is distributed along much of the West Coast from the Puget Sound in Washington south to the Baja Peninsula, Mexico. Overall, the PPT is a habitat generalist and has been observed in slow-moving rivers and streams (e.g. in oxbows), lakes, reservoirs, permanent and ephemeral wetlands, stock ponds, and sewage treatment plants. The species prefers aquatic habitat with refugia such as undercut banks and submerged vegetation (Holland, 1994), and requires emergent basking sites such as mud banks, rocks, logs, and root wads to thermoregulate their body temperature (Holland, 1994; Bash, 1999). The PPT is omnivorous, feeding on a variety of aquatic and terrestrial invertebrates, fish, amphibians and aquatic plants.

The PPT regularly utilizes upland terrestrial habitats, most often during the summer and winter, especially for oviposition (i.e., egg-laying), overwintering, seasonal

[60] Formerly classified as *Clemmy marmorata* and *Actinemys marmorata*; also known as western pond turtle.

terrestrial habitat use, and overland dispersal (Reese, 1996; Holland, 1994). Females have been reported to range as far as 500 m (1640 ft) from a watercourse to find suitable nesting habitat (Reese and Welsh, 1997). Nest sites are most often situated on south or west-facing slopes, are sparsely vegetated with short grasses or forbs, and are scraped in sands or hard-packed, dry, silt or clay soils (Holland, 1994; Rathbun et al., 1992; Holte, 1998; Reese and Welsh, 1997). The species exhibits high site fidelity, returning in sequential years to the same terrestrial site to nest or overwinter (Reese, 1996).

Females lay their clutches as early from as early as the end of April in the southern half of the State, although they egg laying occurs predominantly in June and July. In the early morning or late afternoon, gravid females leave the water and move upland to nest (Holland, 1994). Natural incubation times vary, ranging from 80 to 100 days in California. In northern California and Oregon, hatchlings remaining the nest after hatching and overwinter, emerging in the spring. In southern and central California, those PPTs that don't overwinter emerge from the nest in the early fall (Holland, 1994).

Critical Habitat: Critical Habitat has not been designated for the PPT. The proposed project would not result in impacts to Critical Habitat for this species.

Habitat Suitability and Potential to Occur: The waters of New York Slough and its banks provide both suitable breeding habitat and a movement corridor for PPT. While the section in which the project is located provides perennial water, it lacks vegetative cover and warm, sandy banks for breeding. However, the project site is not mapped as providing either core or movement habitat for PPT (Jones & Stokes, 2006). No PPTs were observed during the present survey.

There are four records of the species occurring within 4.8 km (3 mi) of the project site. This nearest record (Occ. #144) consists of two adults observed in 1998 in a pond on the Dow Chemical facility on the south shoreline of New York Slough approximately 1.5 km (0.9 mi) east of the project site.

Potential Project-Related Effects: Construction and operation of the proposed project would not result in take of the species, or significant adverse effects pursuant to CEQA. The existing stormwater outfall would continue to function as it currently does. Discharge of thermal wastewater through the existing 6-inch outfall will be consistent with previously permitted use, and will not result in changes to aquatic habitat. Impact avoidance measures are recommended to be included as part of the proposed project, as outlined in Section 5.3, below.

<u>Migratory Birds</u>

The BSA supports suitable nesting habitat for a variety of special-status and migratory passerines (perching birds), mainly consisting of the row of eucalyptus trees on the eastern portion of the site. A few other small trees and ornamental shrubs provide some nesting opportunities, as well. Migratory birds are protected under the MBTA and MBTRA. Under the MBTA it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. A list of bird species covered under the MBTA is maintained by the USFWS (2013). Certain other migratory birds receive protection under the BGEPA and CFGC. Impacts to birds species covered under the MBTA are regarded as significant pursuant to the statutes and guidelines of CEQA and should be addressed in environmental review documents.

No bird nests were observed on site during the present survey.

If nesting pairs are present at the time of construction, direct or indirect impacts on breeding migratory birds could result. Such impacts would be considered significant pursuant to the statutes and guidelines of CEQA. Impact avoidance measures are warranted and are outlined in Section 5.3, below.

5.0 CONCLUSIONS AND RECOMMENDATIONS

As described in Section 3.0, the BSA consists mainly of a paved property that was formerly an industrial facility. A small portion of the project (i.e. approximately 25 lf of shoreline), including a stormwater outfall and a 6-inch wastewater discharge outfall, are located along the southern shore of New York Slough just upstream (east) of the confluence with the Sacramento River, opposite of Browns Island, and 1.0 km (0.6 mi) east of the Pittsburg Marina (Figure 1). The property is bordered by existing and former industrial facilities and open fallow fields. Most of the remaining shoreline within the limits of the City of Pittsburg supports primarily industrial and some residential and recreational development. Plant communities and habitats occurring within the BSA include anthropogenic, aquatic, littoral zone, river bank, and ruderal uplands. Although developed and highly altered by agriculture which predated the current industrial use, the shoreline and aquatic habitat within the BSA is considered to have relatively high wildlife habitat values.

However, implementation of the proposed project would not result in direct or indirect impacts to jurisdictional wetlands and other waters of the U.S. and of the State, essential fish habitat, or special-status plant or wildlife species. One special status plant, Mason's lilaeopsis, occurs within the BSA, but would also not be directly or indirectly impacted by the proposed project. For those biological resources that are located within the BSA, or may be assumed to pass nearby during movement within New York, Slough, the following avoidance measures are recommended to be included as part of the proposed project.

5.1 Special-status Natural Communities and Landscape Features

As discussed in Section 4.1, the proposed action would not impact Waters of the U.S. and Waters of the State, and falls under the jurisdiction of federal and state regulatory agencies. The project site touches upon waters designated as Essential Fish Habitat. It also overlaps with designated critical habitat for two federally listed animal species; this is discussed under the headings for each species in Sections 5.2 and 5.3, below.

Implications for the Proposed Project: Jurisdictional Wetlands and Waters of the U.S./Waters of the State

As described in Section 4.1 above, project implementation would not result in potentially significant impacts to features falling under the jurisdiction of the USACE, CDFW and RWQCB. No discharge of fill material into waters of the U.S. or of the state would occur, nor would there be any alteration of the bed or bank of New York Slough, and no loss or impact to jurisdictional wetlands or riparian habitat, or loss of beneficial uses associated with them. Therefore, no action would occur that would be subject to federal, state and

local laws and policies that regulate wetlands and other waters[61], nor would there be impacts to these resources considered significant pursuant to the statutes and guidelines of CEQA. To avoid, minimize or mitigate for impacts associated with the project, the measures outlined below should be incorporated into the project design.

Implications for the Proposed Project: Eelgrass Habitat

The presence of eelgrass beds is not expected within the work area and would not be directly or indirectly impacted by project implementation. No impact avoidance, minimization or mitigation measures are warranted.

Implications for the Proposed Project: Essential Fish Habitat

The project site is located within designated EFH for the Pacific Groundfish Fishery. Operation of the thermal wastewater discharge would be within permitted parameters for temperature, and would not result in adverse effects on EFH.

Implications for the Proposed Project: Critical Habitat

The project site is located within designated critical habitat for Delta smelt and spring-run Chinook; project construction and operation would not result in take of these species. Impact avoidance and minimization measures are warranted.

5.2 Special-Status Plant Species

One state-listed plant species, Mason's lilaeopsis, is present on the shoreline of the BSA. No impact this species would result from construction or operation of the proposed project. However, because of its location within the project area, the incorporation of the measures outlined below are recommended to ensure potential impacts would be avoided..

Implications for the Proposed Project: Special-Status Plant Species

One special-status species, Mason's Lilaeopsis, was detected within the BSA. Although not detected, suitable or marginally suitable habitat is present on the shoreline for several other special status species, such as Suisun marsh aster. Accidental impacts could result during movement or placement of equipment or people near stormwater outfall. With the incorporation of the measures outlined below, potential impacts would be reduced to a less-than-significant level pursuant to CEQA.

1. The location of special-status plants and suitable habitat shall be designated as environmentally sensitive areas and clearly marked in the field with high visibility construction fencing or staking prior to construction and operations.

[61] Except with regard to NPDES; see Section X. X Hydrology.

2. The identification and protection of special-status plant populations and habitats shall be a part of a worker environmental awareness program (WEAP) for all workers onsite. A video tape of the initial training session can be used for orientation of new employees onsite. Documentation of participation shall be kept onsite for review by City and/or resource agencies.
3. Alteration of the riprap at the stormwater outfall shall be avoided. Boats, barges and any floating or submerged equipment should be prevented from contacting the shoreline to avoid crushing native vegetation.
4. An Project Biologist with 3 years of professional biological experience in the San Francisco Bay Delta region (resume onsite for City and/or resource agency review) shall inspect the shoreline for proper maintenance of the construction fencing or staking, and identify activities that may pose a risk of impacting special-status plant populations and habitats annually.
5. The project biologist shall report any rare plant observations to the CNDDB. Accidental impacts to rare plant populations shall be reported to the CDFW. Discovery of any additional special status plants species will be reported to the CDFW, and a suitable response agreed upon before restating work in that area.
6. If changes to the condition of the shoreline are determined to be necessary, then the project proponent will prepare a Mitigation and Monitoring Plan (MMP) subject to approval by regulatory agencies including launching boats from shoreline or working on the storm drain or cooling water discharge pipe.

5.3 Special-Status Animal Species

As described in Section 4.3 above, suitable or marginally suitable habitat is present on site for a total of eight special-status animal species. These include six fish species (Chinook salmon, Delta smelt, longfin smelt, green sturgeon, Sacramento splittail, and steelhead). Also potentially occurring within the BSA are Pacific pond turtle, bank swallow. No activities associated with construction or operation of the proposed project are expected to have any adverse effect on these species.

However, because of the sensitivity of the aquatic species and their habitat, a discussion of the implications and impact avoidance measures are is presented below.

Implications for the Proposed Project: Special-Status Fish Species

Project implementation could result in significant adverse effects on Delta smelt and chinook salmon (Central Valley spring-run Evolutionarily Significant Unit [ESU[62]] and Sacramento River winter-run ESU), longfin smelt, Sacramento perch, Sacramento splittail,

[62] NMFS has relied on the Evolutionarily Significant Unit (ESU) concept and considers DPSs to represent ESUs if the population is reproductively isolated and represents an important component in the evolutionary legacy of the species.

as well as designated EFH for the Pacific Groundfish Fishery. Protected marine mammals that may also occur in the project vicinity include California sea lion and harbor seal. With the incorporation of the measures outlined below, potential impacts would be reduced to a less-than-significant level pursuant to CEQA.

1. The identification and protection of special-status species populations and habitats shall be a part of a worker environmental awareness program (WEAP) for all workers onsite. A video tape of the initial training session can be used for orientation of new employees onsite. Documentation of participation in training shall be kept onsite for review by City and/or resource agencies.

2. No work will occur within the waters of New York Slough.
3. All discharges through the stormwater outfall will be the same as with current and past use of the site, i.e. conveyance and discharge of runoff from the project site only, through existing catchments and culverts.
4. No alteration or reconfiguration of the shoreline at the stormwater outfall would occur. The existing rock slope protection and soil on the shoreline shall be left in place.
5. No change to the location or operation of the 6-inch thermal wastewater outfall shall occur. The discharge will be operated according to previously permitted operation parameters with regard to volume and of the discharge and allowable temperature changes within the aquatic environment, to be outlined in an NPDES permit specific to the proposed project.
6. To ensure toxic substances are not released into the aquatic environment, the following measures shall be followed:
    a. all engine-powered equipment shall be well-maintained and free of leaks of fuel, oil, hydraulic fluid or any other potential contaminant;
    b. all engine-powered equipment used and operated from the decks of barges, boats or the wharf shall be positioned over drip-pans;
    c. a spill prevention and response plan shall be prepared in advance of the commencement of work; a spill kit with appropriate clean-up supplies shall be kept on hand during the construction and operations phases of the project;
    d. refueling and maintenance or mobile equipment shall not be performed directly over the waters of the river. Only approved and certified fuel cans with "no-spill" spring-loaded nozzles shall be used.
7. Any wildlife encountered during work shall be allowed to leave the construction area unharmed and shall not be flushed, hazed, or herded away from the project site.
8. Any special-status species detected shall be reported to the CDFW and a survey form shall be submitted to the CNDDB.

Implications for the Proposed Project: Pacific Pond Turtle

Although no individuals of Pacific pond turtle were observed during the present survey, the species is known to inhabit stream mouths and the shoreline of the San Joaquin River in Contra Costa County. The river bank at the project could attract pond turtles due; marginally suitable spots for sunning are present on site. Warm, sandy banks are not present on site for egg-laying. Nonetheless, Pacific pond turtles could move through the work area along the shoreline between occupied habitats. If present, individuals could be harmed during construction activities. With the incorporation of the measures outlined below, potential impacts would be reduced to a less-than-significant level pursuant to CEQA.

1. Boats, barges and any floating or submerged equipment should be prevented from contacting the shoreline to avoid crushing individuals that may move through the work area.
2. If pond turtles are observed, they should be permitted to move out of the work area on their own. If pond turtles are stationary and remain in harm's way, they may be relocated; only a qualified biologist with a valid scientific collecting permit and prior authorization from the CDFW may relocate Pacific pond turtles.
3. The project biologist shall report any sightings, relocations or mortalities of Pacific pond turtle to the CDFW.

Implications for Proposed the Project: Special-Status and Migratory Birds

Although the removal or pruning of trees or other vegetation on the river banks is not proposed, project implementation would temporarily increase noise and human activity levels nearby; these activities could result in indirect impacts on birds by disrupting breeding or causing abandonment of occupied nests. If present at the time of construction, such indirect impacts on special-status and migratory birds would be considered significant pursuant to CEQA. To ensure compliance to the MBTA and the CFGC related to protections for migratory birds, the measures outlined below should be performed prior to the commencement of construction activities. With the incorporation of the measures outlined below, potential impacts would be reduced to a less-than-significant level pursuant to CEQA.

1. If construction activities are scheduled to occur outside of the breeding season (i.e., September 1 through January 31), no preconstruction surveys or other mitigation measures are necessary.
2. If construction activities are scheduled to occur during the breeding season (i.e., February 1 through August 31), a preconstruction nesting bird survey should be conducted of the wharf structures, the identified work area and a buffer zone (see #3, below). The survey should be performed by a qualified biologist no more than two weeks prior to the initiation of work. If no nesting or breeding activity is

observed, work may proceed without restrictions. To the extent allowed by access, all active nests identified within 76 m (250 ft) for raptors and 33 m (100 ft) for passerines should be mapped.

3. For any active nests found near the construction limits (76 m [250 ft] for raptors and 33 m [100 ft] for passerines), the project biologist should make a determination as to whether or not construction activities are likely to disrupt reproductive behavior. If it is determined that construction is unlikely to disrupt breeding behavior, construction may proceed. If it is determined that construction may disrupt breeding, the no-construction buffer zone should be expanded; avoidance is the only mitigation available. The ultimate size of the no-construction buffer zone may be adjusted by the project biologist based on the species involved, topography, lines of site between the work area and the nest, physical barriers, and the ambient level of human activity. For raptors, the project biologist will contact CDFW and/or the USFWS Division of Migratory Bird Management for guidance regarding site evaluations and buffer adjustments.

   If it is determined that construction activities are likely to disrupt raptor breeding, construction activities within the no-construction buffer zone may not proceed until the project biologist determines that the nest is long longer occupied.

4. If maintenance of a no-construction buffer zone is not practicable, active nests should be monitored by a qualified biologist to document breeding and rearing behavior of the adult birds. If it is determined that construction activities might cause nest abandonment, work should cease until the project biologist determines that the nest is long longer occupied. For raptors, the CDFW and/or the USFWS Division of Migratory Bird Management should be contacted for guidance.

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ATTACHMENT A

SITE PHOTOGRAPHS

Photographs taken April 26, 2019



Photo 1
Typical paved conditions on site, looking northwest.



Photo 2
Ruderal habitat in unpaved area.



Photo 3
Row of eucalyptus trees along western property line.



Photo 4
Typical shoreline condition at stormwater outfall. Sparse wetland vegetation in riprap, with Mason's lilaeopsis located within red circle.



Photo 5
Close-up of Mason's lilaeopsis at stormwater outfall.

ATTACHMENT B

SPECIAL-STATUS PLANT SPECIES EVALUATED FOR THE CARBON CAPTURE AND MINERALIZATION PROJECT, 895 E. THIRD STREET, PITTSBURG, CA

Potentially Occurring Special Status Plant Species

May 16, 2019

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Adoxaceae - Muskroot Family				
Viburnum ellipticum oval-leaved viburnum	Federal: none State: none CNPS: 2B.3 CNDDB: G4G5/S3? Other: DFG: SP	Occurs in chaparral, cismontane woodland, lower montane coniferous forest. Recorded from Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Mendocino, Napa, Shasta, Sonoma, Tehama.Also recorded from Oregon, Washington.	May-Jun Shrub (deciduous)	None: no suitable habitat present.
Alismataceae - Water-plantain Family				
Sagittaria sanfordii Sanford's arrowhead	Federal: none State: none CNPS: 1B.2 CNDDB: G3/S3 Other: DFG: SP	Occurs in freshwater marsh, marshes and swamps Moisture: shallow-water. Recorded from Butte, Del Norte, Fresno, Kern, Merced, Orange, Sacramento, San Joaquin, Shasta, Tehama, Ventura.	May-Oct Perennial Herb (rhizomatous), Emergent	None: no suitable habitat present.
Apiaceae - Carrot Family				
Cicuta maculata var. *bolanderi* Bolander's water hemlock	Federal: none State: none CNPS: 2B.1 CNDDB: G5T4/S2 Other:	Occurs in marshes and swamps. Moisture: freshwater or brackish. Recorded from Contra Costa, Los Angeles, Marin, Sacramento, San Luis Obispo, Santa Barbara, Solano. Recorded from within 1 mile of project site..	Jul-Sep Perennial Herb	Absent marginally suitable habitat present. Would have been detectable during present survey.
Eryngium jepsonii Jepson's coyote thistle	Federal: none State: none CNPS: 1B.2 CNDDB: G2?/S2? Other: DFG: SP	Occurs in valley and foothill grassland, vernal pools Moisture: vernally-flooded. Recorded from Alameda, Contra Costa, Napa, San Mateo, Solano, Yolo.	Apr-Aug Perennial Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Lilaeopsis masonii Mason's lilaeopsis	Federal: none State: SR CNPS: 1B.1 CNDDB: G2/S2 Other: DFG: SP	Occurs in brackish and freshwater marshes and swamps, riparian scrub. Recorded from Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, Yolo. Recorded from within 1 mile of project site..	Apr-Nov Perennial Herb (rhizomatous)	Present: suitable habitat present. Would have been detectable during present survey.
Sanicula saxatilis rock sanicle	Federal: none State: SR CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in broadleafed upland forest, chaparral, valley and foothill grassland Substrate: rocky. Recorded from Contra Costa, Santa Clara.	Apr-May Perennial Herb	None: no suitable habitat present.
Asteraceae - Sunflower Family				
Blepharizonia plumosa big tarplant	Federal: none State: none CNPS: 1B.1 CNDDB: G2/S2 Other: DFG: SP	Occurs in valley and foothill grassland. Recorded from Alameda, Contra Costa, San Joaquin, Stanislaus. Additional distribution: presumed extirpated in Solano County. Recorded from within 1 mile of project site..	Jul-Oct Annual Herb	None: no suitable habitat present.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	Federal: none State: none CNPS: 1B.1 CNDDB: G3T2/S2 Other: DFG: SP	Occurs in valley and foothill grassland. Substrate: alkaline. Recorded from Alameda, Contra Costa, Monterey, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano. Additional distribution: presumed extirpated in Santa Cruz and Solano counties.	May-Nov Annual Herb	Absent marginally suitable habitat present. Would have been detectable during present survey.
Centromadia parryi ssp. *parryi* pappose tarplant	Federal: none State: none CNPS: 1B.2 CNDDB: G3T2/S2 Other:	Occurs in coastal prairie, meadows, seeps, coastal salt marsh, valley and foothill grassland. Moisture: vernally mesic,Substrate: often alkaline, Recorded from Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma.	May-Nov Annual Herb	Absent no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Cirsium hydrophilum var. *hydrophilum* Suisun thistle	Federal: FE State: none CNPS: 1B.1 CNDDB: G2T1/S1 Other: DFG: SP	Occurs in coastal salt marsh, marshes and swamps. Recorded from Solano.	Jul-Sep Perennial Herb	None: no suitable habitat present.
Eriophyllum jepsonii Jepson's woolly sunflower	Federal: none State: none CNPS: 4.3 CNDDB: G3/S3 Other: DFG: SP	Occurs in chaparral, cismontane woodland, coastal sage scrub, coastal scrub, foothill woodland, northern coastal scrub Substrate: serpentine. Recorded from Alameda, Contra Costa, Kern, San Benito, Santa Clara, Stanislaus, Ventura.	Apr-Jun Perennial Herb	None: no suitable habitat present.
Helianthella castanea Diablo helianthella	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Recorded from Alameda, Contra Costa, Marin, San Mateo, San Francisco. Additional distribution: presumed extirpated in Marin and San Francisco counties.	Mar-Jun Perennial Herb	None: no suitable habitat present.
Hesperevax caulescens hogwallow starfish	Federal: none State: none CNPS: 4.2 CNDDB: G3/S3 Other: DFG: SP	Occurs in foothill woodland, valley and foothill grassland. Moisture: mesic,Substrate: clay, Recorded from Alameda, Amador, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Merced, Napa, San Diego, San Joaquin, San Luis Obispo, Solano, Stanislaus, Sutter, Tehama, Yolo.	Mar-Jun Annual Herb	None: no suitable habitat present.
Isocoma arguta Carquinez goldenbush	Federal: none State: none CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in valley and foothill grassland Substrate: alkaline, Habitats Note: alkaline. Recorded from Contra Costa, Solano.	Aug-Dec Shrub	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Lasthenia conjugens Contra Costa goldfields	Federal: FE State: none CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools Moisture: mesic. Recorded from Alameda, Contra Costa, Marin, Mendocino, Monterey, Napa, Santa Barbara, Santa Clara, Solano, Sonoma. Additional distribution: presumed extirpated in Mendocino, Santa Barbara and Santa Clara counties.	Mar-Jun Annual Herb	None: no suitable habitat present.
Madia radiata showy madia	Federal: none State: none CNPS: 1B.1 CNDDB: G2/S2 Other: DFG: SP	Occurs in cismontane woodland, valley and foothill grassland. Recorded from Contra Costa, Fresno, Kern, Kings, Monterey, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Santa Clara, Stanislaus. Additional distribution: Presumed extirpated from Contra Costa, Kings, Monterey, Santa Barbara and San Joaquin counties..	Mar-May Annual Herb	None: no suitable habitat present.
Microseris paludosa marsh microseris	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Recorded from Marin, Mendocino, Monterey, San Benito, San Francisco, San Luis Obispo, San Mateo, Santa Cruz, Sonoma; presumed extirpated in San Francisco and San Mateo counties.	Apr-Jul Perennial Herb	None: no suitable habitat present.
Monolopia gracilens woodland woollythreads	Federal: none State: none CNPS: 1B.2 CNDDB: G3/S3 Other:	Occurs in broadleafed upland forest (openings), chaparral (openings), cismontane woodland, North Coast coniferous forest (openings), valley and foothill grassland. Substrate: serpentinite. Recorded from Alameda, Contra Costa, Monterey, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz.	Feb-Jul Annual Herb	None: no suitable habitat present.
Senecio hydrophiloides sweet marsh ragwort	Federal: none State: none CNPS: 4.2 CNDDB: Other: DFG: SP	Occurs in lower montane coniferous forest, meadows, yellow pine forest Moisture: moist. Recorded from Lassen, Modoc, Plumas, Siskiyou.Also recorded from Nevada, Oregon.	May-Aug Perennial Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Symphyotrichum lentum Suisun Marsh aster	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in brackish and freshwater marshes and swamps. Recorded from Contra Costa, Napa, Sacramento, San Joaquin, Solano. Recorded from within 25ft of project site..	Apr-Nov Perennial Herb (rhizomatous)	Present: suitable habitat present. Would have been detectable during present survey.
Boraginaceae - Borage Family				
Amsinckia grandiflora large-flowered fiddleneck	Federal: FE State: SE CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in cismontane woodland, valley and foothill grassland. Recorded from Alameda, Contra Costa, San Joaquin.	Apr-May Annual Herb	None: no suitable habitat present.
Cryptantha hooveri Hoover's cryptantha	Federal: none State: none CNPS: 1A CNDDB: GH/SH Other: DFG: SP	Occurs in inland dunes, valley and foothill grassland (sandy). Substrate: sandy. Recorded from Contra Costa, Madera, Stanislaus. Presumed extinct.	Apr-May Annual Herb	None: no suitable habitat present.
Phacelia phacelioides Mt. Diablo phacelia	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland Substrate: rocky. Recorded from Contra Costa, San Benito, Santa Clara, Stanislaus.	Apr-May Annual Herb	None: no suitable habitat present.
Plagiobothrys hystriculus bearded popcorn-flower	Federal: none State: none CNPS: 1B.1 CNDDB: G2/S2 Other: DFG: SP	Occurs in valley and foothill grassland, vernal pools Moisture: moist. Recorded from Solano.	Apr-May Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Brassicaceae - Mustard Family				
Arabis blepharophylla coast rock cress	Federal: none State: none CNPS: 4.3 CNDDB: G4/S4 Other: DFG: SP	Occurs in broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub, mixed evergreen forest, northern coastal scrub. Recorded from Contra Costa, Marin, Monterey, San Francisco, San Mateo, Santa Cruz, Sonoma.	Feb-May Perennial Herb	None: no suitable habitat present.
Erysimum capitatum ssp. *angustatum* Contra Costa wallflower	Federal: FE State: SE CNPS: 1B.1 CNDDB: G5T1/S1 Other: DFG: SP	Occurs in inland dunes. Recorded from Contra Costa. Recorded from within 1 mile of project site..	Mar-Jul Perennial Herb	None: no suitable habitat present.
Streptanthus albidus ssp. *peramoenus* most beautiful jewel-flower	Federal: none State: none CNPS: 1B.2 CNDDB: G2T2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, valley and foothill grassland. Substrate: serpentinite. Recorded from Alameda, Contra Costa, Monterey, Santa Clara, San Luis Obispo.	Mar-Oct Annual Herb	None: no suitable habitat present.
Streptanthus hispidus Mt. Diablo jewel-flower	Federal: none State: none CNPS: 1B.3 CNDDB: G2/S2 Other: DFG: SP	Occurs in chaparral, valley and foothill grassland Substrate: rocky. Recorded from Contra Costa.	Mar-Jun Annual Herb	None: no suitable habitat present.
Tropidocarpum capparideum caper-fruited tropidocarpum	Federal: none State: none CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in valley and foothill grassland (alkaline hills). Substrate: alkaline. Recorded from Alameda, Contra Costa, Glenn, Monterey, San Joaquin, San Luis Obispo, Santa Clara. Additional distribution: Rediscovered in 2000 on Ft. Hunter Liggett. Presumed extirpated in Alameda, Contra Costa, Glenn, Santa Clara and San Joaquin counties.	Mar-Apr Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Bryaceae				
Anomobryum julaceum slender silver-moss	Federal: none State: none CNPS: 4.2 CNDDB: G5?/S2 Other: DFG: SP	Occurs in broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest. Moisture: damp soil and rock on outcrops, Habitats Note: usually on roadcuts. Recorded from Butte, Contra Costa, Humboldt, Los Angeles, Mariposa, Santa Barbara, Santa Cruz, Shasta, Sonoma.Also recorded from Oregon.	n/a Moss	None: no suitable habitat present.
Campanulaceae - Bellflower Family				
Campanula exigua chaparral harebell	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in chaparral. Substrate: rocky, usually serpentinite. Recorded from Alameda, Contra Costa, San Benito, Santa Clara, Stanislaus.	May-Jun Annual Herb	None: no suitable habitat present.
Downingia pusilla dwarf downingia	Federal: none State: none CNPS: 2B.2 CNDDB: GU/S2 Other: DFG: SP	Occurs in foothill woodland, valley and foothill grassland, vernal pools Moisture: moist, Habitats Note: clay. Recorded from Mariposa, Merced, Napa, Placer, Sacramento, Solano, Sonoma, Stanislaus, Tehama, Yuba.Also recorded from South America.	Mar-May Annual Herb	None: no suitable habitat present.
Legenere limosa legenere	Federal: none State: none CNPS: 1B.1 CNDDB: G2/S2 Other: DFG: SP	Occurs in vernal pools Moisture: vernally-flooded. Recorded from Lake, Napa, Placer, Sacramento, San Mateo, Shasta, Solano, Sonoma, Stanislaus, Tehama, Yuba.	Apr-Jun Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Chenopodiaceae - Goosefoot Family				
Atriplex cordulata var. *cordulata* heartscale	Federal: none State: none CNPS: 1B.2 CNDDB: G3T2/S2 Other: DFG: SP	Occurs in chenopod scrub, meadows, seeps, valley and foothill grassland (sandy). Substrate: saline or alkaline. Recorded from Alameda, Butte, Contra Costa, Fresno, Glenn, Kern, Kings, Madera, Merced, San Joaquin, Solano, Stanislaus, Tulare, Yolo.	Apr-Oct Annual Herb	None: no suitable habitat present.
Atriplex coronata var. *coronata* crownscale	Federal: none State: none CNPS: 4.2 CNDDB: G4T3/S3 Other: DFG: SP	Occurs in chenopod scrub, shadscale scrub, valley and foothill grassland, vernal pools vernally-flooded, alkaline, Habitats Note: alkaline. Recorded from Alameda, Contra Costa, Fresno, Glenn, Kern, Kings, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, Stanislaus.	Mar-Oct Annual Herb	None: no suitable habitat present.
Atriplex depressa brittlescale	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in chenopod scrub, meadows, seeps, playas, valley and foothill grassland, vernal pools. Substrate: clay, alkaline. Recorded from Alameda, Colusa, Contra Costa, Fresno, Glenn, Kern, Merced, Solano, Stanislaus, Tulare, Yolo.	Apr-Oct Annual Herb	None: no suitable habitat present.
Extriplex joaquiniana San Joaquin spearscale	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in chenopod scrub, meadows, playas, seeps, valley and foothill grassland Substrate: alkaline. Recorded from Alameda, Colusa, Contra Costa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, San Joaquin, San Luis Obispo, Santa Clara, Solano, Tulare, Yolo. Additional distribution: presumed extirpated in Santa Clara, San Joaquin, and Tulare counties; questionable in San Luis Obispo County.	Apr-Oct Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Convolvulaceae - Morning-glory Family				
Convolvulus simulans small-flowered morning-glory	Federal: none State: none CNPS: 4.2 CNDDB: G4/S4 Other: DFG: SP	Occurs in chaparral, coastal sage scrub, coastal scrub, northern coastal scrub, valley and foothill grassland Substrate: serpentine, Habitats Note: clay. Recorded from Contra Costa, Kern, Los Angeles, Orange, Riverside, San Benito, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Stanislaus.San Clemente Island, Santa Catalina Island, Santa Cruz Island.Also recorded from Baja California.	Mar-Jul Annual Herb	None: no suitable habitat present.
Ericaceae - Heath Family				
Arctostaphylos auriculata Mt. Diablo manzanita	Federal: none State: none CNPS: 1B.3 CNDDB: G2/S2 Other: DFG: SP	Occurs in chaparral (sandstone), cismontane woodland Substrate: sedimentary sandstone. Recorded from Contra Costa.	Jan-Mar Shrub (evergreen)	None: no suitable habitat present.
Arctostaphylos manzanita ssp. *laevigata* Contra Costa manzanita	Federal: none State: none CNPS: 1B.2 CNDDB: G5T2/S2 Other: DFG: SP	Occurs in chaparral Habitats Note: rocky. Recorded from Contra Costa.	Jan-Apr Shrub (evergreen)	None: no suitable habitat present.
Fabaceae - Legume Family				
Astragalus tener var. *tener* alkali milk-vetch	Federal: none State: none CNPS: 1B.2 CNDDB: G2T2/S2 Other: DFG: SP	Occurs in playas, valley and foothill grassland (adobe clay), vernal pools Substrate: adobe clay, alkaline. Recorded from Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, San Francisco, San Joaquin, Santa Clara, Solano, Sonoma, Stanislaus, Yolo. Additional distribution: presumed extirpated in Contra Costa, Monterey, San Benito, Santa Clara, San Francisco, San Joaquin, Sonoma, and Stanislaus counties.	Mar-Jun Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Lathyrus jepsonii var. *jepsonii* Delta tule pea	Federal: none State: none CNPS: 1B.2 CNDDB: G5T2/S2 Other: DFG: SP	Occurs in marshes and swamps (freshwater and brackish). Recorded from Contra Costa, Napa, Sacramento, San Joaquin, Solano, Sonoma, Yolo. Recorded from within 1 mile of project site..	May-Sep Perennial Herb	Not Expected: marginally suitable habitat present.
Trifolium hydrophilum saline clover	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Recorded from Alameda, Colusa, Monterey, Napa, San Benito, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma. Additional distribution: questionable in Colusa County.	Apr-Jun Annual Herb	None: no suitable habitat present.
Grimmiaceae				
Grimmia torenii Toren's grimmia	Federal: none State: none CNPS: 1B.3 CNDDB: G2/S2 Other:	Occurs in chaparral, cismontane woodland, lower montane coniferous forest. Substrate: rocky, boulders, rock walls, carbonate and volcanic., Habitats Note: openings. Recorded from Contra Costa, Colusa, Lake, Mendocino, Monterey, Santa Cruz, San Mateo.	Moss	None: no suitable habitat present.
Juglandaceae - Walnut Family				
Juglans hindsii Northern California black walnut	Federal: none State: none CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in riparian forest, riparian woodland. Recorded from Contra Costa, Lake, Napa, Sacramento, Solano, Yolo. Additional distribution: presumed extirpated in Sacramento, Solano and Yolo counties; questionable occurrence in Lake County.	Apr-May Tree (deciduous)	Absent no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Liliaceae - Lily Family				
Calochortus pulchellus Mt. Diablo fairy-lantern	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Recorded from Alameda, Contra Costa, Solano.	Apr-Jun Perennial Herb (bulbiferous)	None: no suitable habitat present.
Fritillaria agrestis stinkbells	Federal: none State: none CNPS: 4.2 CNDDB: G3/S3 Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland, pinyon and juniper woodland, valley and foothill grassland. Substrate: clay, sometimes serpentinite. Recorded from Alameda, Contra Costa, Fresno, Kern, Mariposa, Mendocino, Monterey, Placer, Sacramento, San Benito, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz, Stanislaus, Tuolumne, Ventura.	Mar-Jun Perennial Herb (bulbiferous)	None: no suitable habitat present.
Fritillaria liliacea fragrant fritillary	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland Substrate: often serpentinite. Recorded from Alameda, Contra Costa, Marin, Monterey, San Benito, San Francisco, San Mateo, Santa Clara, Solano, Sonoma.	Feb-Apr Perennial Herb (bulbiferous)	None: no suitable habitat present.
Linaceae - Flax Family				
Hesperolinon breweri Brewer's western flax	Federal: none State: none CNPS: 1B.2 CNDDB: G2?/S2? Other: DFG: SP	Occurs in chaparral, cismontane woodland, valley and foothill grassland Substrate: usually serpentinite. Recorded from Contra Costa, Napa, Solano.	May-Jul Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Malvaceae - Mallow Family				
Hibiscus lasiocarpus var. *occidentalis* woolly rose-mallow	Federal: none State: none CNPS: 1B.2 CNDDB: G5T3/S3 Other: DFG: SP	Occurs in freshwater marsh, marshes and swamps. Habitats Note: also in riprap on levees. Recorded from Butte, Colusa, Contra Costa, Glenn, Sacramento, San Joaquin, Solano, Sutter, Yolo.	Jun-Sep Perennial Herb (rhizomatous)	Absent marginally suitable habitat present. Would have been detectable during present survey.
Malacothamnus hallii Hall's bush-mallow	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in chaparral, coastal scrub. Recorded from Contra Costa, Mendocino, Merced, San Mateo, Santa Clara, Stanislaus, Lake.	May-Oct Shrub (evergreen)	None: no suitable habitat present.
Sidalcea keckii Keck's checkerbloom	Federal: FE State: none CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in cismontane woodland, foothill woodland, valley and foothill grassland Substrate: serpentine. Recorded from Fresno, Merced, Tulare. Additional distribution: also possibly in Colusa, Napa, Solano and Yolo counties.	Apr-May Annual Herb	None: no suitable habitat present.
Montiaceae - Montia Family				
Calandrinia breweri Brewer's calandrinia	Federal: none State: none CNPS: 4.2 CNDDB: G4/S4 Other: DFG: SP	Occurs in chaparral, coastal scrub Substrate: sandy or loamy, Habitats Note: disturbed sites and burns. Recorded from Contra Costa, Los Angeles, Marin, Mariposa, Mendocino, Monterey, Napa, San Bernardino, San Diego, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Sonoma, Ventura. Santa Cruz Island, Santa Rosa Island. Also recorded from Baja California.	Mar-Jun Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Onagraceae - Evening Primrose Family				
Oenothera deltoides ssp. *howellii* Antioch Dunes evening-primrose	Federal: FE State: SE CNPS: 1B.1 CNDDB: G5T1/S1 Other: DFG: SP	Occurs in inland dunes. Recorded from Contra Costa, Sacramento. Recorded from within 1 mile of project site..	Mar-Sep Perennial Herb	None: no suitable habitat present.
Orobanchaceae - Broomrape Family				
Chloropyron molle ssp. *hispidum* hispid bird's-beak	Federal: none State: none CNPS: 1B.1 CNDDB: G2T2/S2 Other: DFG: SP	Occurs in alkali sink, meadows, playas, valley and foothill grassland Substrate: alkaline, Habitats Note: alkaline. Recorded from Alameda, Kern, Merced, Placer, Solano.	Jun-Sep Annual Herb, Hemiparasitic	None: no suitable habitat present.
Chloropyron molle ssp. *molle* soft bird's-beak	Federal: FE State: SR CNPS: 1B.2 CNDDB: G2T1/S1 Other: DFG: SP	Occurs in coastal salt marsh. Recorded from Contra Costa, Marin, Napa, Sacramento, Solano, Sonoma. Additional distribution: presumed extiprated in Marin, Sacramento, and Sonoma counties.	Jul-Nov Annual Herb, Hemiparasitic	None: no suitable habitat present.
Cordylanthus nidularius Mt. Diablo bird's-beak	Federal: none State: SR CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in chaparral. Substrate: serpentine. Recorded from Contra Costa.	Jul-Aug Annual Herb, Hemiparasitic	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Papaveraceae - Poppy Family				
Eschscholzia rhombipetala diamond-petaled California poppy	Federal: none State: none CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in valley and foothill grassland. Substrate: alkaline, clay. Recorded from Alameda, Colusa, Contra Costa, San Joaquin, San Luis Obispo, Stanislaus. Additional distribution: presumed extirpated in Contra Costa and Colusa counties.	Mar-Apr Annual Herb	None: no suitable habitat present.
Poaceae - Grass Family				
Neostapfia colusana Colusa grass	Federal: FT State: SE CNPS: 1B.1 CNDDB: G2/S2 Other: DFG: SP	Occurs in vernal pools Moisture: vernally-flooded. Recorded from Colusa, Merced, Solano, Stanislaus, Yolo.	May-Aug Annual Herb	None: no suitable habitat present.
Puccinellia simplex California alkali grass	Federal: none State: none CNPS: 1B.2 CNDDB: G3/S2 Other:	Occurs in chenopod scrub, meadows, seeps, valley and foothill grassland, vernal pools. Sinks, flats, and lake margins. Moisture: vernally mesic, Habitats Note: alkaline. Recorded from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, San Luis Obispo, Santa Clara, Santa Cruz, Solano, Stanislaus, Tulare, Yolo. Additional distribution: Presumed extirpated in Kings County.	Mar-May Annual Herb	None: no suitable habitat present.
Polemoniaceae - Phlox Family				
Collomia diversifolia serpentine collomia	Federal: none State: none CNPS: 4.3 CNDDB: G4/S4 Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland Substrate: serpentine. Recorded from Colusa, Contra Costa, Glenn, Lake, Mendocino, Napa, Shasta, Stanislaus, Yolo.	May-Jun Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Eriastrum ertterae Lime Ridge eriastrum	Federal: none State: none CNPS: 1B.1 CNDDB: G1/S1 Other:	Occurs in chaparral. Substrate: alkaline or semi-alkaline, sandy, Habitats Note: openings or edges. Recorded from Contra Costa. Additional distribution: known only from the Lime Ridge area.	Jun-Jul Annual Herb	None: no suitable habitat present.
Navarretia gowenii Lime Ridge navarretia	Federal: none State: none CNPS: 1B.1 CNDDB: G1/S1 Other:	Occurs in chaparral. Recorded from Contra Costa, Stanislaus. Additional distribution: Known only from four occurrences; Lime Ridge, Walnut Creek (discovered 1998) and Quinto Canyon, (Stanislaus).	May-Jun Annual Herb	None: no suitable habitat present.
Navarretia heterandra Tehama navarretia	Federal: none State: none CNPS: 4.3 CNDDB: G4/S4 Other: DFG: SP	Occurs in valley and foothill grassland, vernal pools Moisture: moist. Recorded from Butte, Colusa, Lake, Shasta, Tehama, Trinity, Yuba.Also recorded from Oregon.	Apr-Jun Annual Herb	None: no suitable habitat present.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	Federal: none State: none CNPS: 1B.1 CNDDB: G4T2/S2 Other: DFG: SP	Occurs in cismontane woodland, lower montane coniferous forest, meadows, seeps, valley and foothill grassland, vernal pools Moisture: mesic, Habitats Note: clay. Recorded from Colusa, Glenn, Lake, Lassen, Marin, Mendocino, Napa, Solano, Sonoma, Sutter, Tehama, Yolo.	Apr-Jul Annual Herb	None: no suitable habitat present.
Navarretia nigelliformis ssp. *nigelliformis* adobe navarretia	Federal: none State: none CNPS: 4.2 CNDDB: G4T3/S3 Other:	Occurs in valley and foothill grassland, vernal pools. Moisture: vernally mesic,Substrate: clay, sometimes serpentinite, Recorded from Alameda, Butte, Colusa, Contra Costa, Fresno, Kern, Merced, Monterey, Placer, Sutter, Tulare.	Apr-Jun Annual Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Navarretia nigelliformis ssp. *radians* shining navarretia	Federal: none State: none CNPS: 1B.2 CNDDB: G4T2/S2 Other: DFG: SP	Occurs in cismontane woodland, foothill woodland, valley and foothill grassland, vernal pools Moisture: vernally-flooded. Recorded from Alameda, Contra Costa, Fresno, Merced, Monterey, San Benito, San Joaquin, San Luis Obispo.	May-Jul Annual Herb	None: no suitable habitat present.
Polygonaceae - Buckwheat Family				
Eriogonum nudum var. *psychicola* Antioch Dunes buckwheat	Federal: none State: none CNPS: 1B.1 CNDDB: G5T1/S1 Other:	Occurs in inland dunes. Recorded from Contra Costa. Additional distribution: Known only from the Antioch sand dunes.	Jul-Oct Perennial Herb	None: no suitable habitat present.
Eriogonum truncatum Mt. Diablo buckwheat	Federal: none State: none CNPS: 1B.1 CNDDB: G1/S1 Other: DFG: SP	Occurs in chaparral, coastal scrub, valley and foothill grassland Substrate: sandy. Recorded from Alameda, Contra Costa, Solano. Additional distribution: rediscovered in May 2005 in Mount Diablo State Park. Presumed extirpated in Solano County.	Apr-Dec Annual Herb	None: no suitable habitat present.
Potamogetonaceae - Pondweed Family				
Potamogeton zosteriformis eel-grass pondweed	Federal: none State: none CNPS: 2B.2 CNDDB: G5/S3 Other: DFG: SP	Occurs in freshwater marsh, marshes and swamps. Substrate: soft sediment, Habitats Note: in water to 12' deep. Recorded from Contra Costa, Lake, Lassen, Modoc, Shasta.Also recorded from Idaho, Oregon, Utah, Washington.	Jun-Jul Annual Herb, Aquatic	Not Expected: marginally suitable habitat present. Site is outside of species' range.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Stuckenia filiformis ssp. *alpina* slender-leaved pondweed	Federal: none State: none CNPS: 2B.2 CNDDB: G5T5/S3 Other: DFG: SP	Occurs in marshes and swamps. Moisture: shallow, freshwater. Recorded from Alameda, Butte, Contra Costa, El Dorado, Lassen, Mariposa, Merced, Modoc, Mono, Placer, San Mateo, Santa Clara, Shasta, Sierra, Solano, Sonoma. Additional distribution: presumed extirpated from Santa Clara County.Also recorded from Arizona, Nevada, Oregon, Washington.	May-Jul Perennial Herb (rhizomatous), Aquatic	Not Expected: marginally suitable habitat present. Would have been detectable during present survey.
Pottiaceae				
Triquetrella californica coastal triquetrella	Federal: none State: none CNPS: 1B.2 CNDDB: G2/S2 Other: DFG: SP	Occurs in coastal bluff scrub, coastal scrub. Substrate: soil. Recorded from Contra Costa, Del Norte, Marin, Mendocino, San Diego, San Francisco, San Mateo, Sonoma.Also recorded from Oregon.	n/a Moss	None: no suitable habitat present.
Primulaceae - Primrose Family				
Androsace elongata ssp. *acuta* California androsace	Federal: none State: none CNPS: 4.2 CNDDB: G5?T3T4/S3S4 Other: DFG: SP	Occurs in chaparral, cismontane woodland, coastal scrub, meadows, seeps, pinyon and juniper woodland, valley and foothill grassland Moisture: dry. Recorded from Alameda, Colusa, Contra Costa, Fresno, Glenn, Kern, Los Angeles, Merced, Riverside, San Benito, San Bernardino, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Siskiyou, Stanislaus, Tehama.Also recorded from Oregon, Baja California.	Mar-Jun Annual Herb	None: no suitable habitat present.
Ranunculaceae - Buttercup Family				
Delphinium californicum ssp. *interius* Hospital Canyon larkspur	Federal: none State: none CNPS: 1B.2 CNDDB: G3T3/S3 Other: DFG: SP	Occurs in chaparral (openings), cismontane woodland (mesic), coastal scrub Moisture: moist. Recorded from Alameda, Contra Costa, Merced, San Benito, San Joaquin, Santa Clara, Stanislaus.	Apr-Jun Perennial Herb	None: no suitable habitat present.

Potentially Occurring Special Status Plant Species

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Myosurus minimus ssp. *apus* little mousetail	Federal: none State: none CNPS: 3.1 CNDDB: G5T2Q/S2 Other: DFG: SP	Occurs in valley and foothill grassland, vernal pools vernally-flooded, alkaline, Habitats Note: alkaline. Recorded from Alameda, Butte, Colusa, Contra Costa, Kern, Riverside, San Bernardino, San Diego, Solano, Stanislaus, Tulare.Also recorded from Baja California, Oregon.	Mar-Jun Annual Herb	None: no suitable habitat present.
Ranunculus lobbii Lobb's aquatic buttercup	Federal: none State: none CNPS: 4.2 CNDDB: G4/S3 Other: DFG: SP	Occurs in cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools Moisture: mesic. Recorded from Alameda, Contra Costa, Marin, Mendocino, Napa, Solano, Sonoma, Santa Cruz, San Mateo.Also recorded from Oregon.	Feb-May Annual Herb, Aquatic	None: no suitable habitat present.
Rubiaceae - Madder Family				
Galium andrewsii ssp. *gatense* serpentine bedstraw	Federal: none State: none CNPS: 4.2 CNDDB: G5T3/S3 Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland, lower montane coniferous forest, yellow pine forest Substrate: serpentine. Recorded from Alameda, Contra Costa, Fresno, Monterey, San Benito, San Luis Obispo, Santa Clara.	Apr-Jul Perennial Herb	None: no suitable habitat present.
Scrophulariaceae - Figwort Family				
Limosella australis Delta mudwort	Federal: none State: none CNPS: 2B.1 CNDDB: G4G5/S2 Other: DFG: SP	Occurs in brackish and freshwater marshes and swamps, and riparian scrub. Moisture: wet,Substrate: usually on mud banks, Recorded from Contra Costa, Sacramento, San Joaquin, Solano.Also recorded from Oregon. Recorded from within 1 mile of project site..	May-Aug Perennial Herb (stoloniferous)	Not Expected: marginally suitable habitat present. Would have been detectable during present survey.

ATTACHMENT C

SPECIAL-STATUS ANIMAL SPECIES EVALUATED FOR THE CARBON CAPTURE AND MINERALIZATION PROJECT, 895 E. THIRD STREET, PITTSBURG, CA

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Agelaius tricolor tricolored blackbird	Federal none State SCE Other ABC: WL BLM: S DFW: SSC FWS: BCC; MBTA Global/State Rank: G2G3/S1S2	Highly colonial species. Requires open water, protected nesting substrate, and foraging areas with insect prey within a few km of the colony. Greatest concentrations are in the Central Valley and vicinity. Largely endemic to California. DFG listing covers nesting colonies only.	None: no suitable nesting habitat present.
Ambystoma californiense California tiger salamander - Central Calif. DPS	Federal FT State ST Other DFW: WL Global/State Rank: G2G3/S2S3	Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding. Recorded from Alameda, Amador, Butte, Calaveras, Contra Costa, Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Stanislaus, Sutter, Tulare, Yolo counties.	None: no suitable habitat present.
Andrena blennospermatis Blennosperma vernal pool andrenid bee	Federal none State none Other DFW: SA Global/State Rank: G2/S2	Solitary ground-nesting bee inhabiting upland areas near vernal pools. Host plant is Blennosperma. Recorded from Contra Costa, El Dorado, Lake, Placer, Sacramento, San Joaquin, Solano, Sonoma, Tehama, Yolo counties. Additional distribution: inner Coast Ranges.	None: no suitable habitat present. No host plants present.
Anniella pulchra Northern California legless lizard	Federal none State none Other DFW: SSC FS: S Global/State Rank: G3/S3	Occurs in chaparral, coastal dunes and coastal scrub. Inhabits sandy or loose loamy soils under sparse vegetation. Prefers soils with a high moisture content. Recorded from Alameda, Contra Costa, Fresno, Kern, Los Angeles, Madera, Merced, Merced, Monterey, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Santa Cruz, Tulare counties.	None: no suitable habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Anthicus antiochensis Antioch Dunes anthicid beetle	Federal none State none Other DFW: SA Global/State Rank: G1/S1	Interior sand dunes and sand bars. Known to occupy small sand deposits, including dredge spoils. Recorded from Contra Costa, Glenn, Shasta, Solano, Sutter, Tehama counties. Additional distribution: extirpated from the Antioch Dunes, the species' type locality.	None: no suitable habitat present.
Anthicus sacramento Sacramento anthicid beetle	Federal none State none Other DFW: SA Global/State Rank: G1/S1	Known to occupy small sand deposits, including dredge spoils. Recorded from Sacramento, Solano counties. Additional distribution: restricted to sand dune areas of the Sacramento-San Joaquin River Delta.	None: no suitable habitat present.
Antrozous pallidus pallid bat	Federal none State none Other BLM: S DFW: SSC FS: S Global/State Rank: G5/S3 WBWG: H	Inhabits rocky terrain in open areas in lowlands, foothills and mountainous areas near water throughout California below 2,000 meters. Roosts in caves, rock crevices, mines, hollow trees, buildings and bridges in arid regions in low numbers (<200). Active from March-November; migrates in some areas, but may hibernate locally. Recorded from Calaveras, Imperial, Inyo, Kern, Lake, Marin, Mariposa, Mono, Napa, Orange, Riverside, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Siskiyou, Sonoma, Tuolumne counties. Also from Arizona, Nevada, New Mexico, Oregon, Washington.	None: no suitable roosting habitat present.
Apodemia mormo langei Lange's metalmark butterfly	Federal FE State none Other DFW: SA Global/State Rank: G5T1/S1	Inhabits stabilized dunes. Primary host plant is Eriogonum nudum var. auriculatum. Feeds on nectar of other wildflowers, as well as host plant. Recorded from Contra Costa County. Additional distribution: endemic to Antioch Dunes.	None: no suitable habitat present. No host plants present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Aquila chrysaetos golden eagle	Federal none State none Other CDF: S DFW: FP, WL FWS: BCC, BEPA, MBTA Global/State Rank: G5/S3	Nests and winters in rolling foothills and mountain areas in sage-juniper flats and deserts. Nests on cliff-walled canyons and large trees in open areas. DFW listing covers nesting and wintering birds only.	None: no suitable nesting habitat present.
Archoplites interruptus Sacramento perch	Federal none State none Other DFW: SSC Global/State Rank: G2G3/S1	Common in ponds and impoundments. Prefers warm water. Aquatic vegetation is essental for young. Tolerates wide range of physico-chemical water conditions. Freshwater. Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Recorded from Contra Costa, Lake, Sacramento counties. Additional distribution: native range is Sacramento-San Joaquin, Pajaro, and Salinas River drainages, and Clear Lake.	Not expected: marginally suitable habitat present. Water in New York Slough is likely unsuitable.
Ardea herodias great blue heron	Federal none State none Other CDF: S DFW: SA FWS: MBTA Global/State Rank: G5/S4	Nests colonially in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites are usually in close proximity to foraging areas such as marshes, lake margins, tide-flats, rivers and streams, wet meadows. DFG listing covers nesting colonies only. Recorded from Alameda, Butte, Del Norte, Humboldt, Imperial, Lake, Lassen, Marin, Merced, Monterey, Placer, Riverside, Sacramento, San Joaquin, San Mateo, Santa Clara, Shasta, Siskiyou, Solano, Sonoma, Stanislaus, Tehama, Tulare, Yolo counties.	None: no suitable nesting habitat present.
Arizona elegans occidentalis California glossy snake	Federal none State none Other DFW: SSC Global/State Rank: G5T2/S2	Habitat generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils. Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. Recorded from Alameda, Contra Costa, Fresno, Kern, Los Angeles, Riverside, San Benito, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Ventura counties.	None: no suitable habitat present.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Artemisiospiza belli belli Bell's sage sparrow	Federal none State none Other ABC: WL DFW: WL FWS: BCC, MBTA Global/State Rank: G5T2T4/S2?	syn: Amphispiza belli belli Inhabits dry brushy foothills, chaparral and coastal sage scrub habitats west of the Sierras from Redding south into Baja California, Mexico. Breeding begins in March; double-brooded. DFW listing covers nesting birds only.	None: no suitable nesting habitat present.
Asio flammeus short-eared owl	Federal none State none Other ABC: WL Aud: WL DFW: SSC FWS: BCC, MBTA Global/State Rank: G5/S3	Inhabits both freshwater and salt water swamp lands, lowland meadows, and irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depressions concealed in vegetation. DFW listing covers nesting birds only. Recorded from Contra Costa, Imperial, Los Angeles, Modoc, Monterey, San Mateo, Solano counties.	None: no suitable nesting habitat present.
Athene cunicularia burrowing owl	Federal none State none Other BLM: S DFW: SSC FWS: BCC; MBTA Global/State Rank: G4/S3	Inhabits open, dry annual or perenial grasslands, deserts and scrublands characterized by low-growing vegetation. Nests underground in mammal burrows, especially those of California ground squirrel. DFW listing covers burrow sites and some wintering sites only.	Possible: marginally suitable habitat present. No suitable burrows detected. See report for discussion.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Baeolophus inornatus oak titmouse	Federal none State none Other ABC: WL DFW: SA FWS: BCC, MBTA Global/State Rank: G4/S4	Common species primarily associated with oaks. Occurs in montane hardwood-conifer, montane hardwood, blue, valley, and coastal oak woodlands, and montane and valley foothill riparian habitats. Range encircles San Joaquin Valley, extending east from the coast through Kern Co. onto the western slope of the Sierra Nevada north to Shasta Co. DFW listing covers nesting individuals only.	None: no suitable habitat present.
Bombus caliginosus obscure bumble bee	Federal none State none Other DFW: SA Global/State Rank: G4?/S1S2	Coastal areas, on Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia. Distributed in coastal areas from northern Washington to southern California. Recorded from Del Norte, Humboldt, Marin, Mendocino, Monterey, San Luis Obispo, San Mateo, Santa Barbara, Sonoma counties. Also from Oregon, Washington.	Not expected: marginally suitable habitat present. Few Baccharis plants present on property, but not in work area.
Bombus crotchii Crotch bumble bee	Federal none State none Other DFW: SA Global/State Rank: G3G4/S1S2	Inhabits open grassland and scrub habitats. Food plants include Antirhinum, Clarkia, Dendromecon, Eschscholzia, Eriogonum, and Phacelia. Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. Exclusive to coastal California east towards the Sierra-Cascade Crest and into western Nevada. Recorded from Alameda, Calaveras, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Los Angeles, Madera, Mariposa, Mendocino, Merced, Modoc, Monterey, San Benito, San Bernardino, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Siskiyou, Sonoma, Stanislaus, Tehama, Tulare, Tuolumne, Ventura, Yolo counties. Also from SW Nevada.	None: no suitable habitat present.

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Bombus occidentalis western bumble bee	Federal none State none Other DFW: SA FS: S Global/State Rank: G2G3/S1 Xerces: I	Once very common in the western United States and western Canada, but populations from southern British Columbia to Central California have nearly disappeared. Still found in the northern and eastern portions of its historic range. It is an important pollinators of wild flowering plants and crops (e.g., Centaurea, Chrysothamnus, Cirsium, Eriogonum, Melilotus, and Trifolium). Recorded from Alameda, Alpine, Butte, Calaveras, Contra Costa, Del Norte, El Dorado, Fresno, Humboldt, Imperial, Lake, Lassen, Marin, Mariposa, Mendocino, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Bernardino, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Sonoma, Tehama, Trinity, Tulare, Tuolumne, Yolo counties.	Not expected: marginally suitable habitat present. Few host plants present; work areas have been highly modified.
Branchinecta conservatio Conservancy fairy shrimp	Federal FE State none Other DFW: SA Global/State Rank: G2/S2	Inhabits large, turbid, astatic pools located in swales formed by old, braided alluvium, filled by winter/spring rains, and lasting until June. Recorded from Butte, Glenn, Merced, Solano, Stanislaus, Tehama, Yuba counties. Additional distribution: endemic to the grasslands of the northern two-thirds of the Central Valley.	None: no suitable habitat present.
Branchinecta lynchi vernal pool fairy shrimp	Federal FT State none Other DFW: SA Global/State Rank: G3/S3	Inhabits small, clear-water sandstone-depression astatic rain-filled pools and grassed swales, earth slumps, or basalt-flow depression pools. Recorded from Alameda, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Glenn, Kings, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Ventura, Yuba counties. Additional distribution: endemic to the grasslands of the Central Valley, Central Coast and South Coast mountains.	None: no suitable habitat present.
Branchinecta mesovallensis midvalley fairy shrimp	Federal none State none Other DFW: SA Global/State Rank: G2/S2S3	Inhabits vernal pools. Recorded from Fresno, Merced, Sacramento counties.	None: no suitable habitat present.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Buteo regalis ferruginous hawk	Federal none State none Other AUD: WL BLM: S DFW: WL FWS: BCC; MBTA Global/State Rank: G4/S3S4	Winters in open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats. Feeds primarily on lagomorphs (rabbits and hares), ground squirrels, and mice. Population trends may follow lagomorph population cycles. Does not nest in California. DFW listing covers wintering birds. General distribution: recorded throughout coastal California, Cetral Valley, San Joaquin Valley, central and southern Sierra Nevada, eastern Sierras and inland deserts.	None: no suitable habitat present. Does not nest in California.
Buteo swainsoni Swainson's hawk	Federal none State ST Other ABC: WLBCC AUD: WL DFW: SA FS: S FWS: BCC; MBTA Global/State Rank: G5/S3	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. DFW listing covers nesting birds. Recorded from Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Kings, Lassen, Los Angeles, Madera, Merced, Modoc, Mono, Placer, Sacramento, San Bernardino, San Joaquin, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo counties.	None: no suitable nesting habitat present.
Callophrys mossii bayensis San Bruno elfin butterfly	Federal FE State none Other DFW: SA Global/State Rank: G4T1/S1 Xerces: C	Inhabits coastal, mountainous areas with grassy ground cover. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is Sedum spathulifolium. Recorded from San Mateo, Marin counties. Additional distribution: primary populations are located in the vicinity of San Bruno Mountain.	None: no suitable habitat present.

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Calypte costae Costa's hummingbird	Federal none State none Other AUD: WL DFW: SA FWS: BCC, MBTA Global/State Rank: G5/S4 USBC: Watch List	Primary habitats are desert wash, edges of desert riparian and valley foothill riparian, coastal scrub, desert scrub, desert succulent shrub, lower-elevation chaparral, and palm oasis. Most common and widespread in southern California, but also breeds locally along the western edge of the San Joaquin Valley and the eastern edge of the Sierra Nevada north through Inyo Co. Occurs regularly in spring and summer in Siskiyou Co. DFW listed covers nesting individuals only.	None: no suitable habitat present. Does not breed in Contra Costa County.
Charadrius montanus mountain plover	Federal none State none Other ABC: WLBCC AUD: WL BLM: S DFW: SSC FWS: BCC; MBTA Global/State Rank: G3/S2S3	Winters on short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Prefers short vegetation, bare ground and flat topography, as well as grazed areas and areas with burrowing rodents. AUD & ABC listings cover full species; DFW listing covers wintering birds only. Recorded from Fresno, Kern, Los Angeles, Merced, San Benito, Solano, Tulare, Yolo counties.	None: no suitable nesting or wintering habitat present.
Coelus gracilis San Joaquin dune beetle	Federal none State none Other BLM: S DFW: SA Global/State Rank: G1/S1	Burrows in the sand of well-developed sand dunes. Inhabits fossil dunes on sandy substrates. Occurs along the western edge of San Joaquin Valley. Extirpated from Antioch Dunes (type locality). Recorded from Contra Costa, Fresno, Kings, San Benito counties.	None: no suitable habitat present.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Corynorhinus townsendii townsendii Townsend's big-eared bat	Federal none State SCT Other BLM: S DFW: SSC FS: S Global/State Rank: G3G4/S2 WBWG: H	Inhabits humid coastal regions of northern and central California. Roosts in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites are limiting. Extremely sensitive to disturbance. BLM, DFW and FS listings cover full species. Recorded from Alameda, Colusa, Humboldt, Lake, Marin, Mendocino, Napa, San Joaquin, Santa Cruz, Yolo counties.	
Coturnicops noveboracensis yellow rail	Federal none State none Other ABC: WLBCC AUD: WL DFW: SSC FWS: BCC; MBTA Global/State Rank: G4/S1S2	The yellow rail is a small, secretive marshbird that runs under vegetation in freshwater marshlands. Breeds in north-central California and Oregon. Summer resident in the eastern Sierra Nevada. Winters in the San Francisco Bay Area. Recorded from Mono County.	None: no suitable nesting habitat present. Does not breed in Contra Costa County.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	Federal FT State none Other DFW: SA Global/State Rank: G3T2/S2	Prefers to lay eggs in elderberrry (Sambucus mexicana) stems 2-8 inches in diameter. Some preference is shown for "stressed" elderberries. Recorded from Butte, Colusa, El Dorado, Fresno, Glenn, Kern, Madera, Mariposa, Merced, Napa, Placer, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties. Additional distribution: occurs only in the Central Valley of California.	None: no suitable habitat present. No host plants present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Dipodomys heermanni berkeleyenis Berkeley kangaroo rat	Federal none State none Other DFW: SA Global/State Rank: G3G4T1/S1	Inhabits open grassy hilltops and open spaces in chaparral and blue oak or gray pine woodlands. Needs fine, deep, well-drained soil for burrowing. Last recorded in 1936. Recorded from Alameda, Contra Costa counties.	None: no suitable habitat present.
Dumontia oregonensis hairy water flea	Federal none State none Other DFW: SA Global/State Rank: G1G3/S1	Vernal pools. Recorded from Sacramento County. Additional distribution: In California, known only from Mather Field. Also from Oregon.	None: no suitable habitat present.
Efferia antiochi Antioch efferian robberfly	Federal none State none Other DFW: SA Global/State Rank: G1G2/S1S2	There is no published information on the life history or behavior of this species, but robber flies are predaceous on other insects, and larvae usually develop in the ground or in rotting wood where they prey upon other insect larvae. Recorded from Contra Costa, Fresno counties. Additional distribution: also recorded from Scout Island in the San Joaquin River.	None: no suitable habitat present.
Elanus leucurus white-tailed kite	Federal none State none Other DFW: FP FWS: MNB, MBTA Global/State Rank: G5/S3S4	Inhabits rolling foothills andvalley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Utilizes open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. DFW listing covers nesting individuals only.	None: no suitable nesting habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Elaphrus viridis delta green ground beetle	Federal FT State none Other DFW: SA Global/State Rank: G1/S1	Inhabits the margins of vernal pools in grasslands. Prefers the sandy mud substrate where it slopes gently into the water, with low-growing vegetation, 25-100% cover. Recorded from Solano County. Additional distribution: occurs between Jepson Prairie and Travis Air Force Base.	None: no suitable habitat present.
Emys marmorata Pacific pond turtle	Federal none State none Other BLM: S DFW: SSC FS: S Global/State Rank: G3G4/S3	A thoroughly aquatic turtle inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and sandy banks or grassy open fields in upland areas for egg-laying. Recorded from Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kern, Kings, Lake, Lassen, Los Angeles, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Orange, Placer, Plumas, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Tehama, Trinity, Tulare, Tuolumne, Ventura, Yolo, Yuba counties.	Possible: suitable habitat present. Individuals could move along the shoreline. See report for discussion.
Eucerceris ruficeps redheaded sphecid wasp	Federal none State none Other DFW: SA Global/State Rank: G1G3/S1S2	Nests in hard-packed sand utilizing abandoned halictine bee burrows. Occurs on interior dunes. Recorded from Fresno, Stanislaus counties. Additional distribution: central California.	None: no suitable habitat present.
Falco peregrinus anatum American peregrine falcon	Federal Delisted State Delisted Other CDF: S DFW: FP FWS: BCC, MBTA Global/State Rank: G4T4/S3S4	Nests near wetlands, lakes, rivers, or other water bodies, on cliffs, banks, dunes, mounds, and human-made structures. Nests consist of a scrape on a depression or ledge in an open site. DFW listing covers nesting individuals only.	None: no suitable nesting habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Geothlypis trichas sinuosa saltmarsh common yellowthroat	Federal none State none Other DFW: SSC FWS: BCC, MBTA Global/State Rank: G5T3/S3	Inhabits freshwater and salt marshes. Requires thick, continuous cover down to water surface for foraging. Nests in tall grasses, tule patches and willows. Resident of the San Francisco Bay region. Recorded from Alameda, Marin, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma counties.	None: no suitable habitat present.
Haematopus bachmani black oystercatcher	Federal none State none Other AUD: WL FWS: BCC; MBTA Global/State Rank: n/a USBC: Watch List	A permanent resident on rocky shores of marine habitats along almost the entire California coast, and on adjacent islands. Uncommon to locally fairly common in northern and central California and on Channel Islands. Rare on mainland coast south of Pt. Conception (Santa Barbara Co.). DFW listing covers nesting birds.	None: no suitable nesting habitat present.
Haliaeetus leucocephalus bald eagle	Federal Delisted State SE Other BLM: S CDF: S DFW: FP FWS: BCC, MBTA Global/State Rank: G5/S3 USFS: S	Found on ocean shores, lake margins, and rivers. Mostly nests within 1 mile of water. Nests in large, old-growth, or dominant live trees with open branches, especially ponderosa pine. Roosts communally in winter. Occasional visitor to San Francisco Bay habitats, primarily in migration and winter. Delisted in 2007 and no longer covered under FESA. DFW listing covers nesting and wintering birds only. Recorded from Alameda, Butte, Calaveras, Colusa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Inyo, Lake, Lassen, Los Angeles, Madera, Mendocino, Modoc, Mono, Monterey, Napa, Nevada, Plumas, Riverside, San Bernardino, San Luis Obispo, Santa Barbara, Shasta, Sierra, Siskiyou, Tehama, Trinity, Tuolumne, Yuba counties.	None: no suitable nesting habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Helminthoglypta nickliniana bridgesi Bridges' Coast Range shoulderband snail	Federal none State none Other DFW: SA Global/State Rank: G3T1/S1S2	Prefers to hide under downed branches or logs, or in crevices in boulders and rock outcrops, on open hillsides with tall grasses and weeds. Recorded from Alameda, Contra Costa counties.	None: no suitable habitat present.
Hygrotus curvipes curved-foot hygrotus diving beetle	Federal none State none Other DFW: SA Global/State Rank: G1/S1	Aquatic inhabitant known only from a single,shallow, muddy pool. Recorded from Alameda, Contra Costa counties. Additional distribution: known from Oakley, Byron, Mountain House.	None: no suitable habitat present.
Hypomesus transpacificus delta smelt	Federal FT State SE Other AFS: T DFW: SA Global/State Rank: G1/S1	Occurs in open brackish and freshwater of large channels. Most frequently found at salinities < 2ppt.; seldom found at salinities > 10 ppt. Occurs in the Sacramento-San Joaquin Delta. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Recorded from Solano, Sacramento, San Joaquin, Solano, Yolo counties.	Possible: suitable habitat present. No suitable breeding or rearing habitat is present at the project site. See report for discussion.
Idiostatus middlekaufi Middlekauf's shieldback katydid	Federal none State none Other DFW: SA Global/State Rank: G1G2/S1	Associated with various native dune shrubs. Recorded from Contra Costa County. Additional distribution: formerly found at the Antioch Dunes, but has not been seen for several decades.	None: no suitable habitat present.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Ixobrychus exilis least bittern	Federal none State none Other DFW: SSC FWS: BCC, MBTA Global/State Rank: G5/S2	Nests colonially in marshlands and the borders of ponds and reservoirs providing ample cover. Nests are usually placed low in tules over water. DFW listing covers nesting birds only. Recorded from Inyo County.	None: no suitable nesting habitat present.
Lanius ludovicianus loggerhead shrike	Federal none State none Other DFW: SCC FWS: BCC; MBTA Global/State Rank: G4/S4	Year-round resident in California. Inhabits shrublands and open woodlands associated with grasslands with areas bare ground and impaling sites such as thorny vegetation, multi-stemmed plants or barbed wire. Breeds from early Feb. - July; double- to triple-brooded DFW listing covers nesting individuals only.	Not expected: marginally suitable habitat present. Site is highly modified. See report for details.
Lasiurus blossevillii western red bat	Federal none State none Other DFW: SSC FS: S Global/State Rank: G5/S3 WBWG: H	Roosts primarily in trees, 2-40 feet above the ground. Prefers habitat edges and mosaics with trees that are protected from above and open below, with open areas for foraging. Found from sea level to higher elevations with mixed conifer forests.	None: no suitable roosting habitat present.
Lasiurus cinereus hoary bat	Federal none State none Other DFW: SA Global/State Rank: G5/S4 WBWG: M	Ubiquitous throughout California. A solitary foliage rooster that prefers evergreens, but will use deciduous trees in forested habitats, particularly in edge habitat (Bolster 2005). May forage in small to large groups. Feeds primarily on moths, but will eat a variety of other insects. Migrates great distances.	None: no suitable roosting habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Laterallus jamaicensis coturniculus California black rail	Federal none State ST Other ABC: WL DFW: FP FWS: BCC, MBTA Global/State Rank: G3G4T1/S1	Inhabits freshwater marshes, wet meadows and shallow margins bordering large bays. Also found in freshwater and brackish marshes, near sea level. AUD, FWS & ABC listings cover full species. Recorded from Alameda, Butte, Contra Costa, Imperial, Los Angeles, Marin, Napa, Nevada, Orange, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Cruz, Solano, Sonoma, Yuba counties.	Not expected: no suitable nesting habitat present. Individuals could move along shoreline of project site. See report for details.
Lepidurus packardi vernal pool tadpole shrimp	Federal FE State none Other DFW: SA Global/State Rank: G4/S3S4	Inhabits vernal pools and grassy swales of unplowed grasslands. Tolerant of mud-bottoms and highly turbid conditions. Recorded from Alameda, Butte, Colusa, Fresno, Kings, Merced, Placer, Sacramento, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, Yuba counties.	None: no suitable habitat present.
Limnodromus griseus short-billed dowitcher	Federal none State none Other FWS: BCC, MBTA Global/State Rank: n/a	Common in saltwater habitats. Common to abundant during spring (late March to mid-May) and fall (mid-July to October) migration along the entire coast of California, where it typically occurs on intertidal mudflats of estuarine habitats.	None: no suitable nesting habitat present.
Limosa fedoa marbled godwit	Federal none State none Other FWS: BCC, MBTA Global/State Rank: n/a	Most common on estuarine mudflats, but also occurs on sandy beaches, open shores, saline emergent wetlands, and adjacent wet upland fields. A common to abundant migrant and winter visitant from mid-August to early May in estuarine habitats the length of the state. A fairly common migrant and winter visitant at the Salton Sea, but generally rare elsewhere in the interior of the state.	None: no suitable nesting habitat present.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Linderiella occidentalis California linderiella	Federal none State none Other DFW: SA Global/State Rank: G2G3/S2S3	Inhabits seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Found in pools of water with very low alkalinity, conductivity, and total dissolved solids. Recorded from Alameda, Butte, Contra Costa, Fresno, Madera, Merced, Monterey, Placer, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Cruz, Shasta, Solano, Sonoma, Stanislaus, Sutter, Tehama, Yuba counties.	None: no suitable habitat present.
Lytta molesta molestan blister beetle	Federal none State none Other DFW: SA Global/State Rank: G2/S2	Associated with grassland habitats and adults are found on various wild flowers or flowers of native shrubs. Recorded from Contra Costa, Fresno, Kern, Madera, Merced, Tulare counties. Additional distribution: inhabits the Central Valley.	None: no suitable habitat present.
Masticophis lateralis euryxanthus Alameda whipsnake	Federal FT State ST Other DFW: SA Global/State Rank: G4T2/S2	Inhabits south-facing slopes and ravines where shrubs form a vegetative mosaic with oak trees and grasses. Restricted to valley-foothill hardwood habitat of the Coast Ranges between Monterey and northern San Francisco Bay. Recorded from Alameda, Contra Costa counties.	None: no suitable habitat present.
Melanerpes lewis Lewis' woodpecker	Federal none State none Other AUD: WL BLM: S DFW: SA FWS: BCC; MBTA Global/State Rank: G4/S4	Requires open habitats with scattered trees and snags with cavities. Cover provided by cavities and foliage of trees and shrubs. An uncommon, local winter resident occurring in open oak savannahs, broken deciduous, and coniferous habitats. Found along eastern slopes of the Coast Ranges south to San Luis Obispo Co. Also winters in the Central Valley, Modoc Plateau, and the Transverse and other Ranges in southern California. Breeds locally along eastern slopes of the Coast Ranges, and in the Sierra Nevada, Warner Mts., Klamath Mts., and in the Cascade Range. DFW listing covers nesting individuals only.	None: no suitable nesting habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Melospiza melodia song sparrow "Modesto population"	Federal none State none Other DFW: SSC FWS: MBTA Global/State Rank: G5/S3?	Moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semiopen canopies to allow light, and exposed ground or leaf litter for foraging. Associated with emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Also may nest in riparian forests of Valley Oak with an understory of blackberry, along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites. Recorded from Butte, Colusa, Colusa, Contra Costa, Placer, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, Yolo counties.	None: no suitable nesting habitat present.
Melospiza melodia maxillaris Suisun song sparrow	Federal none State none Other DFW: SSC FWS: BCC; MBTA Global/State Rank: G5T3/S3	Inhabits cattails, tules and other sedges, and pickleweed. Also known to frequent tangles bordering sloughs. Occurs in brackish-water marshes surrounding Suisun Bay. Recorded from Contra Costa, Solano counties.	None: no suitable nesting habitat present.
Metapogon hurdi Hurd's metapogon robberfly	Federal none State none Other DFW: SA Global/State Rank: G1G2/S1S2	Associated primarily with interior sand dunes. Recorded from Contra Costa, Fresno counties. Additional distribution: presumed extirpated from the Antioch Dunes.	None: no suitable habitat present.
Myrmosula pacifica Antioch multilid wasp	Federal none State none Other DFW: SA Global/State Rank: GH/SH	Inhabits interior dunes. This species is probably a synonym of a more widespread mutillid. Thus, this species may not be as unique as was originally believed. Recorded from Contra Costa, Inyo, Solano, Yolo counties.	None: no suitable habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	Federal none State none Other DFW: SSC Global/State Rank: G5T2T3/S2S3	One of eleven recognized subspecies. Inhabits oak and riparian woodlands with a well-developed understory in the SF Bay Area. They exhibit high site fidelity and may live in the same nest community for generations. Nest structures are key indicator of their presence and are easily identified by their conical appearance. Recorded from Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara counties.	
Numenius americanus long-billed curlew	Federal none State none Other DFW: WL FWS: BCC; MBTA Global/State Rank: G5/S2	Breeds in upland shortgrass prairies and wet meadows in northeastern California. Inhabits gravelly soils and gently rolling terrain are favored over others. DFW listing covers nesting birds only.	None: no suitable nesting habitat present.
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	Federal FT State none Other AFS: T DFW: SA Global/State Rank: G5T2Q/S2	The Distinct Population Segment includes steelhead inhabiting the Sacramento and San Joaquin Rivers and their tributaries. Also included are river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay westward of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge.	
Perdita scituta antiochensis Antioch andrenid bee	Federal none State none Other DFW: SA Global/State Rank: G1T1/S1	Restricted to sand dunes. Active in early fall. Known to visit the flowers of various native plants, especially Eriogonum nudum, Gutierrezia californica, Heterotheca grandiflora, and Lessingia glandulifera. Recorded from Contra Costa County. Additional distribution: Antioch Dunes.	None: no suitable habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Perognathus inornatus San Joaquin pocket mouse	Federal none State none Other DFW: SA Global/State Rank: G2G3/S2S3	Occurs in dry, open grasslands or scrub areas on fine-textured soils between 350 and 600 m (1100 and 2000 ft) in the Central and Salinas valleys.	None: no suitable habitat present. Site is outside of the species' range.
Phalacrocorax auritus double-crested cormorant	Federal none State none Other DFW: WL FWS: MBTA Global/State Rank: G5/S4	Nests colonially on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins. DFG listing covers rookery sites only. Recorded from Alameda, Contra Costa, Del Norte, Humboldt, Lake, Lassen, Mariposa, Monterey, Sacramento, San Diego, San Francisco, Santa Barbara, Sonoma, Ventura counties.	None: no suitable nesting habitat present.
Philanthus nasalis Antioch specid wasp	Federal none State none Other DFW: SA Global/State Rank: G1/S1	Associated with sand dunes. Previously known only from the Antioch Dunes. Now known only from inland sandhills of Santa Cruz County. Found on flowers of Eriogonum nudum decurrens, Gnaphalium beneolens, G. "Zayateense", Ericameria. Recorded from Contra Costa, Santa Cruz counties.	None: no suitable habitat present.
Phrynosoma blainvillii coast horned lizard	Federal none State none Other BLM: S DFW: SSC FS: S Global/State Rank: G3G4/S3S4	Inhabits coastal sage scrub and chaparral in arid and semi-arid climate condit. Prefers friable, rocky, or shallow sandy soils. Diet consists of native ants and beetles. Active from April-Oct, with peak April-May. Recorded from Alameda, Butte, Contra Costa, El Dorado, Fresno, Kern, Los Angeles, Madera, Merced, Monterey, Nevada, Orange, Placer, Riverside, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Santa Clara, Stanislaus, Tulare, Tuolumne, Ventura, Ventura counties. Also from Mexico.	None: no suitable habitat present.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Pica nuttalli yellow-billed magpie	Federal none State none Other DFW: SA FWS: BCC, MBTA Global/State Rank: G3G4/S3S4	Inhabits valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, orchard vineyard, cropland, pasture, and urban habitats. A common, yearlong resident of the Central Valley, and coastal mountain ranges south from San Francisco Bay to Santa Barbara Co. Also breeds locally on the coast in Monterey Co., and is casual in winter on the coast north to Sonoma Co. Rare visitor in Shasta Valley, Siskiyou Co. DFW listing covers nesting and communal roost sites.	None: no suitable nesting habitat present.
Picoides nuttallii Nuttall's woodpecker	Federal none State none Other ABC: WL FWS: BCC, MBTA Global/State Rank: n/a	Inhabits oak woodland and mixed riparian woodlands. Forage along bark of trees for insects; also feeds on acorns. Cavity nester. Breeding begins in March; single-brooded.	None: no suitable nesting habitat present.
Pogonichthys macrolepidotus Sacramento splittail	Federal none State none Other DFW: SSC Global/State Rank: GNR/S3	Inhabits slow-moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young. Inhabits fresh and brackish water. Recorded from Sacramento, Solano, Sonoma, Stanislaus counties. Additional distribution: endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento-San Joaquin Delta, Suisun Bay and associated marshes.	
Rallus longirostris obsoletus California Ridgway's rail	Federal FE State SE Other ABC: WL DFW: FP FWS: MBTA Global/State Rank: G5T1/S1	Inhabits salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	None: no suitable habitat present.

Special-status Animal Species

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Rana draytonii California red-legged frog	Federal FT State none Other DFW: SSC Global/State Rank: G2G3/S2S3	Inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat. Recorded from Alameda, Butte, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Glenn, Lake, Los Angeles, Marin, Mariposa, Mendocino, Merced, Monterey, Napa, Nevada, Placer, Plumas, Riverside, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Solano, Sonoma, Stanislaus, Tehama, Tuolumne, Ventura, Yuba counties.	None: no suitable habitat present.
Reithrodontomys raviventris salt-marsh harvest mouse	Federal FE State SE Other DFW: FP Global/State Rank: G1G2/S1S2	Pickleweed (Salicornia) is the primary habitat. Builds loosely organized nests and does not burrow into the ground. Requires higher areas to escape flooding. Restricted to saline emergent wetlands. Recorded from Contra Costa, Marin, Napa, San Mateo, Santa Clara, Solano, Sonoma counties. Additional distribution: San Francisco Bay and its tributaries.	None: no suitable habitat present.
Riparia riparia bank swallow	Federal none State ST Other DFW: SA FWS: MBTA Global/State Rank: G5/S2	Nests colonially, primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole. DFW listing covers nesting colonies only. Recorded from Alameda, Butte, Colusa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Inyo, Lassen, Modoc, Mono, Monterey, Plumas, Sacramento, San Benito, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Shasta, Siskiyou, Sonoma, Sutter, Tehama, Ventura, Yolo counties.	

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Sorex ornatus sinuosus Suisun shrew	Federal none State none Other DFW: SSC Global/State Rank: G5T1T2Q/S1S2	Inhabits tidal marshes. Require dense low-lying cover and driftweed and other litter above the mean hightide line for nesting and foraging. Recorded from Napa, Solano counties. Additional distribution: northern shores of San Pablo and Suisun bays.	None: no suitable habitat present.
Sphecodogastra antiochensis Antioch Dunes halcitid bee	Federal none State none Other DFW: SA Global/State Rank: G1/S1 Xerces: CI	Ground-nesting bee found in stabilized dunes in open, xeric areas. Host plant is Oenothera deltoides howellii. Recorded from Contra Costa County. Additional distribution: restricted to Antioch Dunes.	None: no suitable habitat present.
Spinus lawrencei Lawrence's goldfinch	Federal none State none Other ABC: WL DFW: SA FWS: BCC; MBTA Global/State Rank: G3G4/S3S4	syn: Carduelis lawrencei Inhabits arid oak/pine woodlands, foothills and chaparral from northern California west of the Sierra Nevada south to Baja California, Mexico. Breeding begins in March; double-brooded . DFW listing covers nesting individuals only.	None: no suitable nesting habitat present.
Spirinchus thaleichthys longfin smelt-San Francisco bay-delta DPS	Federal FC State ST Other DFW: SSC Global/State Rank: G5/S1	Found mostly close to shore, in bays and estuaries, ascending coastal streams to spawn. Anadromous. Occurs in fresh and brackish water, and marine environments.	

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Sternula antillarum browni California least tern	Federal FE State SE Other ABC: WL DFW: FP FWS: MBTA Global/State Rank: G4T2T3Q/S2	Breeds in colonies on bare or sparsely vegetated, flat substrates consisting of sand beaches, alkali flats, land fills, or paved areas. Nests along the coast from San Francisco Bay south to northern Baja California. Listing covers nesting colonies.	None: no suitable nesting habitat present.
Taxidea taxus American badger	Federal none State none Other DFW: SSC Global/State Rank: G5/S3	Most abundant in dry, open stages of most shrub, forest, and herbaceous habitats. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Excavates its own burrows. General distribution: recorded from every California county except Del Norte.	None: no suitable habitat present.
Thamnophis gigas giant gartersnake	Federal FT State ST Other DFW: SA Global/State Rank: G2/S2	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California. Recorded from Butte, Colusa, Contra Costa, Fresno, Great Basin Floristic Province, Kern, Merced, Sacramento, San Joaquin, Solano, Sutter, Yolo counties.	Not expected: marginally suitable habitat present. See report for discussion.
Tringa flavipes lesser yellowlegs	Federal none State none Other FWS: BCC, MBTA Global/State Rank: n/a	Forages along shallow lacustrine, wet meadow, and estuarine mudflat habitats. It especially prefers flooded fields, drainage ditches, shallow wetlands, and other calm, freshwater habitats. Occurs in California primarily as an uncommon to fairly common fall migrant, and a very uncommon spring migrant. From October to March it is rare to very uncommon; most winter occurrences are from coastal central and southern California.	None: no suitable nesting habitat present.

Special-status Animal Species

Wood Biological Consulting

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Vulpes macrotis mutica San Joaquin kit fox	Federal FE State ST Other DFW: SA Global/State Rank: G4T2/S2	Inhabits annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing, and a suitable prey base. Recorded from Alameda, Contra Costa, Fresno, Kern, Kings, Madera, Merced, Monterey, San Benito, Santa Clara, Tulare counties.	None: no suitable habitat present. Site is outside of the species' range.

ATTACHMENT D

EXPLANATION OF RARITY STATUS CODES

EXPLANATION OF RARITY STATUS CODES

ENDANGERED SPECIES ACT (FESA) LISTING CODES

FE = federally listed as Endangered
FT = federally listed as Threatened
FPE = proposed for listing Endangered
FPT = proposed for listing Threatened
FC = federal candidate; former Category 1 candidates
FD/FPD = delisted/proposed for delisting
BCC = Bird Species of Conservation Concern
SC = species of concern; established by NMFS, effective April 15, 2004.

CALIFORNIA ENDANGERED SPECIES ACT (CESA) LISTING CODES

SE = state-listed as Endangered
ST = state-listed as Threatened
SR = state-listed as Rare
SCE = state candidate for listing as Endangered
SCT = state candidate for listing as Threatened
SD/SCD = delisted/State candidate for delisting

GLOBAL (G) AND STATE (S) RARITY_RANKINGS

G1/S1 = Critically imperiled: at high risk of extinction, extremely rare.
G2/S2 = Imperiled: at high risk of extinction, restricted range, very few populations.
G3/S3 = Vulnerable: moderate risk of extinction, restricted range, few populations.
G4/S4 = Apparently secure: uncommon, not rare, possible long-term declines.
G5/S5 = Secure: common, widespread, abundant.
H = All records are historical
Q = Very rare, but taxonomy is questionable
T = Rank assigned to a sub-specific taxon.
X = All records are extirpated (extinct in the wild)

CALIFORNIA RARE PLANT RANKINGS (CRPR)

1A: Plants presumed extinct in CA, rare or extinct elsewhere.
1B: Plants rare, threatened, or endangered in CA and elsewhere.
2A: Plants presumed extirpated in CA but common elsewhere.
2B: Plants rare, threatened or endangered in CA but common elsewhere.
3: Plants for which more information is needed – a review list.
4: Plants of limited distribution – a watch list.
.1 - Seriously endangered in CA
.2 – Fairly endangered in CA
.3 – Not very endangered in CA

OTHER CODES

ABC: WL - American Bird Conservancy Watch List of Birds of Conservation Concern.

AFS - American Fisheries Society categories of risk for marine, estuarine and diadromous fish stocks. Codes: **E**=endangered; **T**=threatened; **V**=vulnerable

AUD: WL - Audubon: Watch List 2007. Bird species facing population decline and/or threats such as loss of breeding and wintering grounds, or species with limited geographic ranges. **R** – Red List, global conservation concern; **Y** – Yellow List, national conservation concern.

BLM: S - Bureau of Land Mgt: Sensitive. Includes species under review by USFWS or NMFS, species whose numbers are declining so rapidly that federal listing may become necessary, species with small and widely dispersed populations, or species inhabiting refugia or other unique habitats.

CDF: S – CA Dept. of Forestry and Fire Protection: Sensitive. Includes species that warrant special protection during timber operations.

DFW: FP - CDFW: Fully Protected. Species protected under §§3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code.

DFW: SA - CDFW: Special Animal. Species included on the CDFW's lists of special animals.

DFW: SP - CDFW: Special Plant. Species included on the CDFW's lists of special plants.

DFW: SSC - CDFW: California Species of Special Concern.

DFW: WL - CDFW: (Watch List): taxa that don't meet SSC criteria but about which there is concern and additional information is needed to clarify status.

FS: S - USDA Forest Service: Sensitive. Species whose population viability is a concern, as evidenced by significant current or predicted downward trends in numbers or density, or in habitat capability that would reduce a species' existing distribution.

FWS: BCC - U.S. Fish and Wildlife Service: Birds of Conservation Concern. Migratory and non-migratory bird species that represent the USFWS's highest conservation priorities.

FWS: BEPA - U.S. Fish and Wildlife Service: Bald Eagle Protection Act.

FWS: MBTA U.S. Fish and Wildlife Service: International Migratory Bird Treaty Act.

FWS: MNB - U.S. Fish and Wildlife Service: Migratory Nongame Birds of Management Concern. Species of concern in the U.S. due to documented or apparent population declines, small or restricted populations, or dependence on restricted or vulnerable habitats.

MMPA – Marin Mammal Protection Act

NMFS: SC - National Marine Fisheries Service: Species of Concern.

WBWG - Western Bat Working Group. Priority for funding, planning or conservation actions. Priority Codes: **H**=high; **MH**=medium-high; **M**=medium; **LM**=low-medium

Xerces - Xerces Society Red List.
Codes: **C**=critically imperiled; **I**=imperiled; **V**=vulnerable; **D**=data deficient

ATTACHMENT E

DATABASE PRINT-OUTS FOR SPECIAL-STATUS SPECIES

California Natural Diversity Database (2019)
USFWS Database (2019)
California Native Plant Society (2019)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Antioch North, Antioch South, Clayton, Rio Vista, Jersey Island, Brentwood, Birds Landing, Denverton, and Honker Bay 7.5-minute USGS quadrangles

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1	1B.1
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
Arctostaphylos auriculata Mt. Diablo manzanita	PDERI04040	None	None	G2	S2	1B.3
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	PDERI04273	None	None	G5T2	S2	1B.2
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Blepharizonia plumosa big tarplant	PDAST1C011	None	None	G1G2	S1S2	1B.1
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Campanula exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T1T2	S1S2	1B.1
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Chloropyron molle ssp. hispidum hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T1	S1	1B.1
Chloropyron molle ssp. molle soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T4T5	S2?	2B.1
Cirsium hydrophilum var. hydrophilum Suisun thistle	PDAST2E1G1	Endangered	None	G2T1	S1	1B.1
Cordylanthus nidularius Mt. Diablo bird's-beak	PDSCR0J0F0	None	Rare	G1	S1	1B.1
Cryptantha hooveri Hoover's cryptantha	PDBOR0A190	None	None	GH	SH	1A

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Eriastrum ertterae Lime Ridge eriastrum	PDPLM030F0	None	None	G1	S1	1B.1
Eriogonum nudum var. psychicola Antioch Dunes buckwheat	PDPGN0849Q	None	None	G5T1	S1	1B.1
Eriogonum truncatum Mt. Diablo buckwheat	PDPGN085Z0	None	None	G1	S1	1B.1
Eryngium jepsonii Jepson's coyote-thistle	PDAPI0Z130	None	None	G2	S2	1B.2
Erysimum capitatum var. angustatum Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0	None	None	G1	S1	1B.1
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Grimmia torenii Toren's grimmia	NBMUS32330	None	None	G2	S2	1B.3
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Isocoma arguta Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
Juglans hindsii Northern California black walnut	PDJUG02040	None	None	G1	S1	1B.1
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Limosella australis Delta mudwort	PDSCR10030	None	None	G4G5	S2	2B.1
Madia radiata showy golden madia	PDAST650E0	None	None	G3	S3	1B.1
Malacothamnus hallii Hall's bush-mallow	PDMAL0Q0F0	None	None	G2	S2	1B.2
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Navarretia gowenii Lime Ridge navarretia	PDPLM0C120	None	None	G1	S1	1B.1
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
Phacelia phacelioides Mt. Diablo phacelia	PDHYD0C3Q0	None	None	G2	S2	1B.2
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
Potamogeton zosteriformis eel-grass pondweed	PMPOT03160	None	None	G5	S3	2B.2
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Sanicula saxatilis rock sanicle	PDAPI1Z0H0	None	Rare	G2	S2	1B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered	None	G2	S2	1B.1
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Streptanthus hispidus Mt. Diablo jewelflower	PDBRA2G0M0	None	None	G2	S2	1B.3
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 63

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Antioch North, Antioch South, Clayton, Rio Vista, Jersey Island, Brentwood, Birds Landing, Denverton, and Honker Bay 7.5-minute USGS quadrangles

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Anniella pulchra northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Anthicus antiochensis Antioch Dunes anthicid beetle	IICOL49020	None	None	G1	S1	
Anthicus sacramento Sacramento anthicid beetle	IICOL49010	None	None	G1	S1	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Apodemia mormo langei Lange's metalmark butterfly	IILEPH7012	Endangered	None	G5T1	S1	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
Coelus gracilis San Joaquin dune beetle	IICOL4A020	None	None	G1	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061	None	None	G3G4T1	S1	
Dumontia oregonensis hairy water flea	ICBRA23010	None	None	G1G3	S1	
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Elaphrus viridis Delta green ground beetle	IICOL36010	Threatened	None	G1	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eucerceris ruficeps redheaded sphecid wasp	IIHYM18010	None	None	G1G3	S1S2	
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
Hygrotus curvipes curved-foot hygrotus diving beetle	IICOL38030	None	None	G1	S1	
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
Idiostatus middlekauffi Middlekauff's shieldback katydid	IIORT31010	None	None	G1G2	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Melospiza melodia maxillaris Suisun song sparrow	ABPBXA301K	None	None	G5T3	S3	SSC
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G2	S1S2	
Myrmosula pacifica Antioch multilid wasp	IIHYM15010	None	None	GH	SH	
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Perdita scitula antiochensis Antioch andrenid bee	IIHYM01031	None	None	G1T1	S1	
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Philanthus nasalis Antioch specid wasp	IIHYM20010	None	None	G1	S1	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G5T1	S1	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sorex ornatus sinuosus Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
Sphecodogastra antiochensis Antioch Dunes halcitid bee	IIHYM78010	None	None	G1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 71

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Antioch North, Antioch South, Clayton, Rio Vista, Jersey Island, Brentwood, Birds Landing, Denverton, and Honker Bay 7.5-minute USGS quadrangles

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Alkali Meadow	CTT45310CA	None	None	G3	S2.1	
Alkali Meadow						
Alkali Seep	CTT45320CA	None	None	G3	S2.1	
Alkali Seep						
Cismontane Alkali Marsh	CTT52310CA	None	None	G1	S1.1	
Cismontane Alkali Marsh						
Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal and Valley Freshwater Marsh						
Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coastal Brackish Marsh						
Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Claypan Vernal Pool						
Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Serpentine Bunchgrass						
Stabilized Interior Dunes	CTT23100CA	None	None	G1	S1.1	
Stabilized Interior Dunes						
Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Needlegrass Grassland						

Record Count: 9

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Contra Costa County, California



Local offices

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

San Francisco Bay-Delta Fish And Wildlife

(916) 930-5603
(916) 930-5654

650 Capitol Mall
Suite 8-300
Sacramento, CA 95814

http://kim_squires@fws.gov

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

NOT FOR CONSULTATION

Salt Marsh Harvest Mouse Reithrodontomys raviventris — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/613

San Joaquin Kit Fox Vulpes macrotis mutica — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2873

Birds

NAME	STATUS
California Clapper Rail Rallus longirostris obsoletus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern Sterna antillarum browni No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) Masticophis lateralis euryxanthus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5524	Threatened
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

NOT FOR CONSULTATION

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Delta Green Ground Beetle *Elaphrus viridis* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2319	Threatened
Lange's Metalmark Butterfly *Apodemia mormo langei* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4382	Endangered
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3394	Endangered
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NOT FOR CONSULTATION

NAME	STATUS
Antioch Dunes Evening-primrose Oenothera deltoides ssp. howellii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5970	Endangered
Colusa Grass Neostapfia colusana There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5690	Threatened
Contra Costa Goldfields Lasthenia conjugens There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7058	Endangered
Contra Costa Wallflower Erysimum capitatum var. angustatum There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7601	Endangered
Keck's Checker-mallow Sidalcea keckii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5704	Endangered
Soft Bird's-beak Cordylanthus mollis ssp. mollis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8541	Endangered

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Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Delta Smelt Hypomesus transpacificus https://ecos.fws.gov/ecp/species/321#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

NOT FOR CONSULTATION

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

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Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

E1UBL

ESTUARINE AND MARINE WETLAND

E2USN

A full description for each wetland code can be found at the National Wetlands Inventory website: https://ecos.fws.gov/ipac/wetlands/decoder

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged

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aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

81 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812128, 3812127, 3812126, 3812118, 3812117, 3812116, 3712188 3712187 and 3712186;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5? T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss		4.2	S2	G5?
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	Feb-May	4.3	S4	G4
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar(Apr)	1B.2	S2	G5T2
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	4.2	S4	G4
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	May-Jun	1B.2	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	1B.1	S2	G3T2
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	1B.1	S1	G2T1
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	1B.2	S1	G2T1
	Bolander's water-	Apiaceae	perennial herb	Jul-Sep	2B.1	S2	G5T4

Cicuta maculata var. bolanderi	hemlock						
Cirsium hydrophilum var. hydrophilum	Suisun thistle	Asteraceae	perennial herb	Jun-Sep	1B.1	S1	G2T1
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	May-Jun	4.3	S4	G4
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Cordylanthus nidularius	Mt. Diablo bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Aug	1B.1	S1	G1
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	Apr-May	1A	SH	GH
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Eriastrum ertterae	Lime Ridge eriastrum	Polemoniaceae	annual herb	Jun-Jul	1B.1	S1	G1
Eriogonum nudum var. psychicola	Antioch Dunes buckwheat	Polygonaceae	perennial herb	Jul-Oct	1B.1	S1	G5T1
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	1B.1	S1	G1
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	Apr-Jun	4.3	S3	G3
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?
Erysimum capitatum var. angustatum	Contra Costa wallflower	Brassicaceae	perennial herb	Mar-Jul	1B.1	S1	G5T1
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	Apr-Jul	4.2	S3	G5T3
Grimmia torenii	Toren's grimmia	Grimmiaceae	moss		1B.3	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2?	G2?
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	1B.1	S1	G1
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-	1B.2	S2	G5T2

				Sep)			
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	3	S3?	G3?
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Madia radiata	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	(Apr)May-Sep(Oct)	1B.2	S2	G2
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	1B.2	S2	G2
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	(Feb)Mar-Jul	1B.2	S3	G3
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia gowenii	Lime Ridge navarretia	Polemoniaceae	annual herb	May-Jun	1B.1	S1	G1
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	4.3	S4	G4
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	Mar-Sep	1B.1	S1	G5T1
Phacelia phacelioides	Mt. Diablo phacelia	Hydrophyllaceae	annual herb	Apr-May	1B.2	S2	G2
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	Apr-May	1B.1	S2	G2
Potamogeton zosteriformis	eel-grass pondweed	Potamogetonaceae	annual herb (aquatic)	Jun-Jul	2B.2	S3	G5
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Sanicula saxatilis	rock sanicle	Apiaceae	perennial herb	Apr-May	1B.2	S2	G2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Senecio hydrophiloides	sweet marsh ragwort	Asteraceae	perennial herb	May-Aug	4.2	S3	G5
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	1B.1	S2	G2
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	1B.2	S2	G2T2
Streptanthus hispidus	Mt. Diablo	Brassicaceae	annual herb	Mar-Jun	1B.3	S2	G2

	jewelflower						
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S3	G5T5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Triquetrella californica	coastal triquetrella	Pottiaceae	moss		1B.2	S2	G2
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5

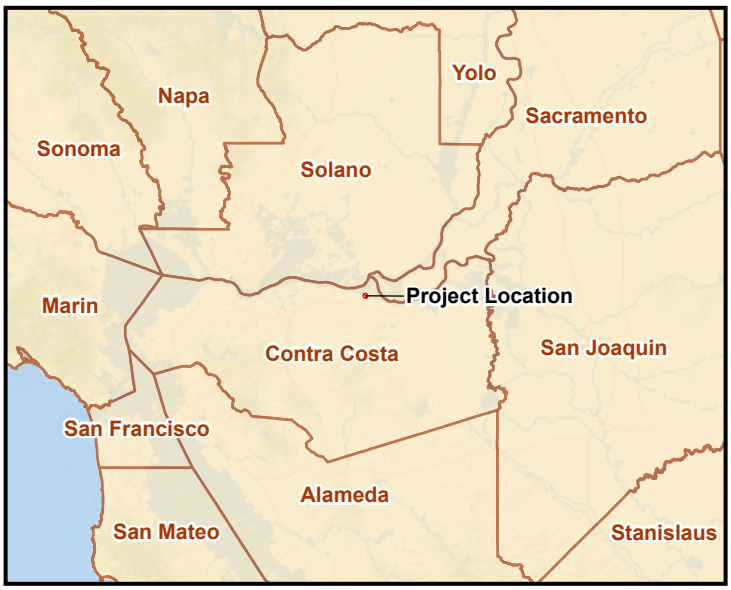
Suggested Citation

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ATTACHMENT 2 – PROJECT FIGURES







Project Location

Figure 1
SFBA Global Innovation Center
Project Location and Vicinity

N

0 375 750 1,500
Feet

Name: 21494 SFBA Global Innovation Center.Mxd
Print Date: 10/31/2024 3:17 PM Author: pcarlos

CHAMBERS GROUP



Project Location

N

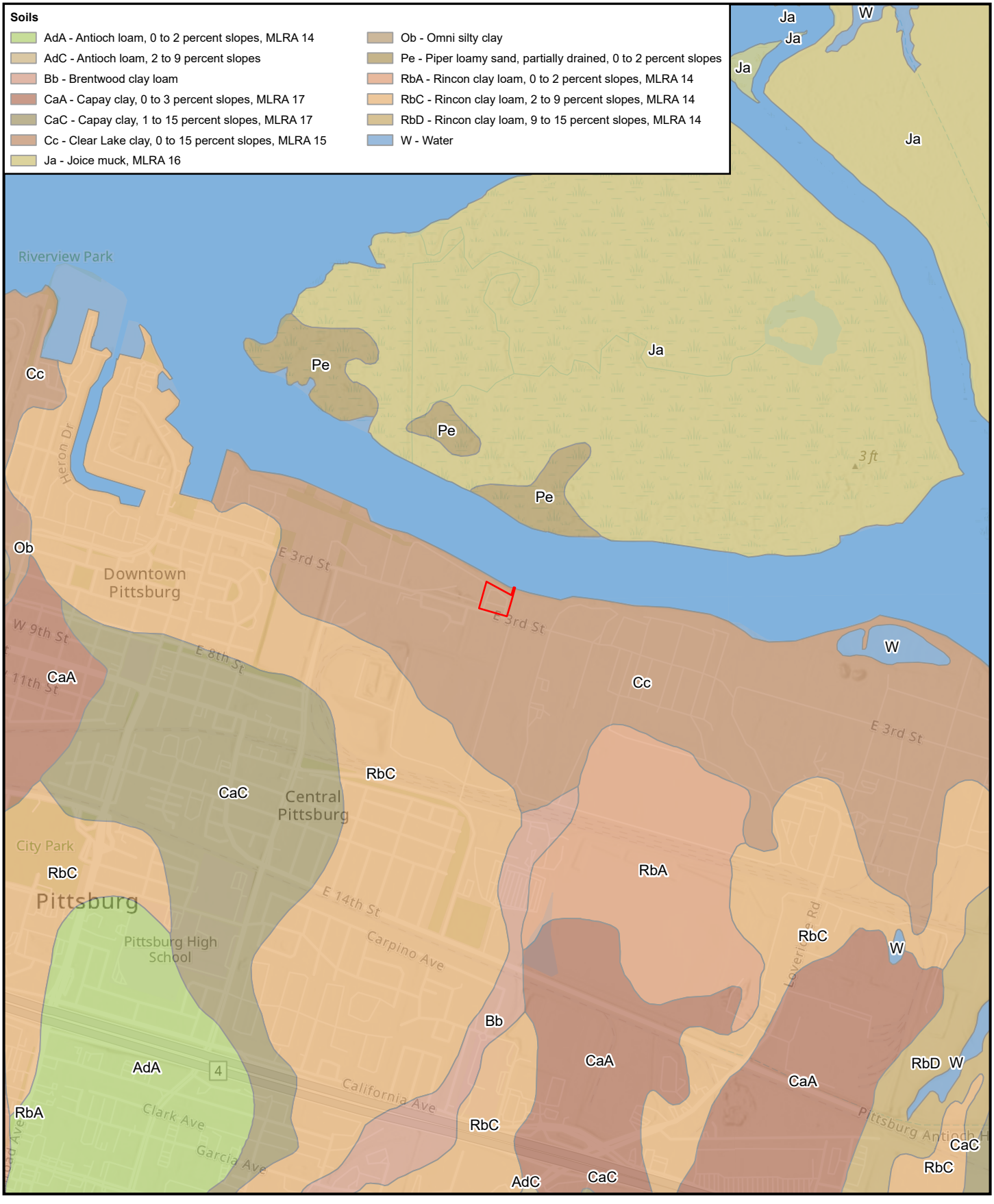
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Feet

Figure 2
SFBA Global Innovation Center
Project Location

Name: 21494 SFBA Global Innovation Center.Mxd
Print Date: 9/4/2024 1:09 PM Author: pcarlos

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Project Location

Figure 3
SFBA Global Innovation Center
USDA NRCS Soils

N

0 700 1,400 2,800
Feet

Name: 21494 SFBA Global Innovation Center.Mxd
Print Date: 10/21/2024 3:02 PM Author: pcarlos

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Project Location

National Wetlands Inventory

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

N

0 750 1,500 3,000

Feet

Figure 4
SFBA Global Innovation Center
National Wetlands Inventory

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Project Location

National Hydrography Dataset

- Canal Ditch
- Artificial Path
- Pipeline
- Coastline
- Stream River

N

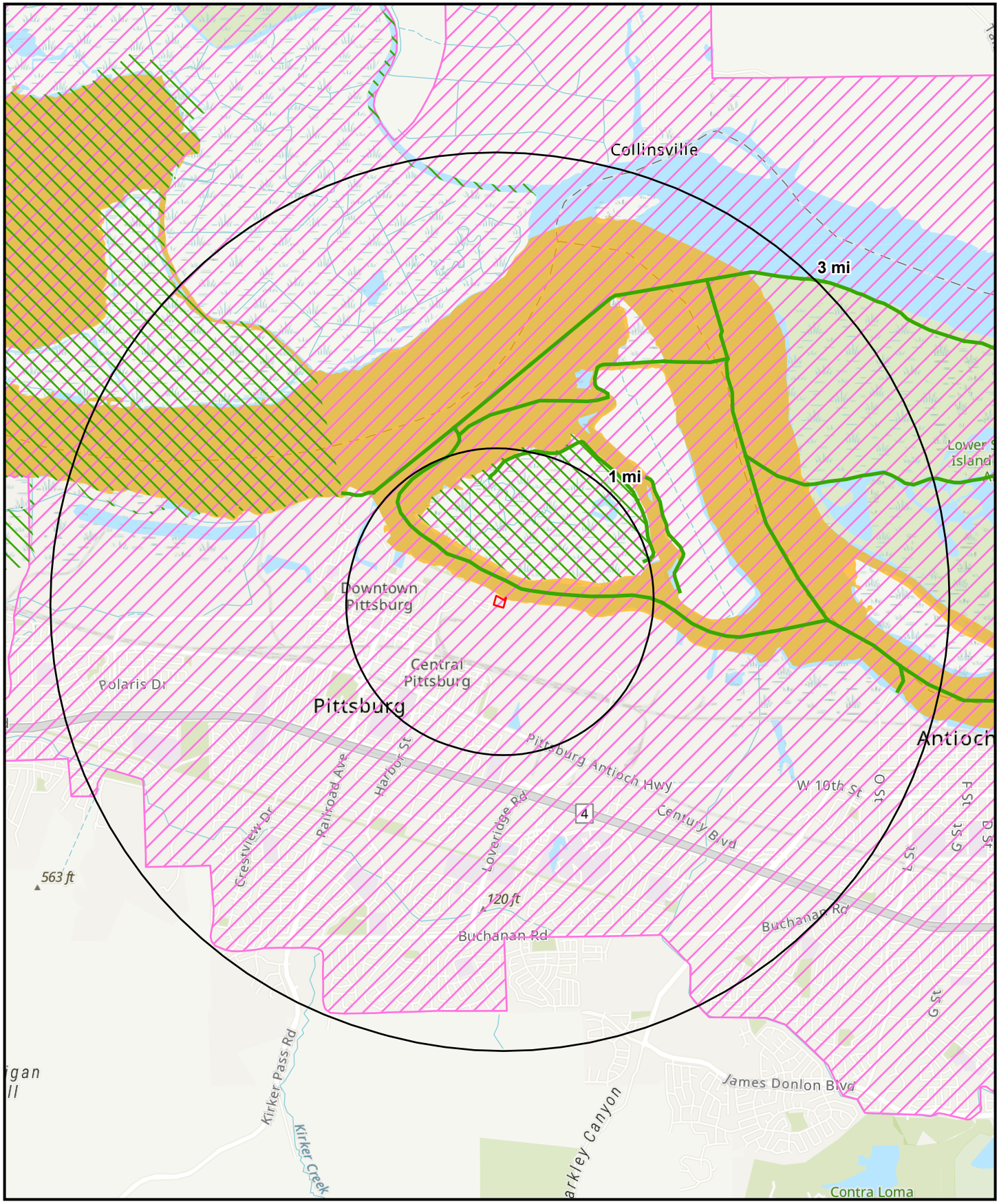
0 750 1,500 3,000

Feet

Figure 5
SFBA Global Innovation Center
National Hydrography Dataset

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Project Location

Critical Habitat

- Delta smelt (USFWS)
- Chinook Salmon (NMFS)
- Green Sturgeon - Southern DPS (NOAA)
- Green Sturgeon - Southern DPS (NOAA)

N

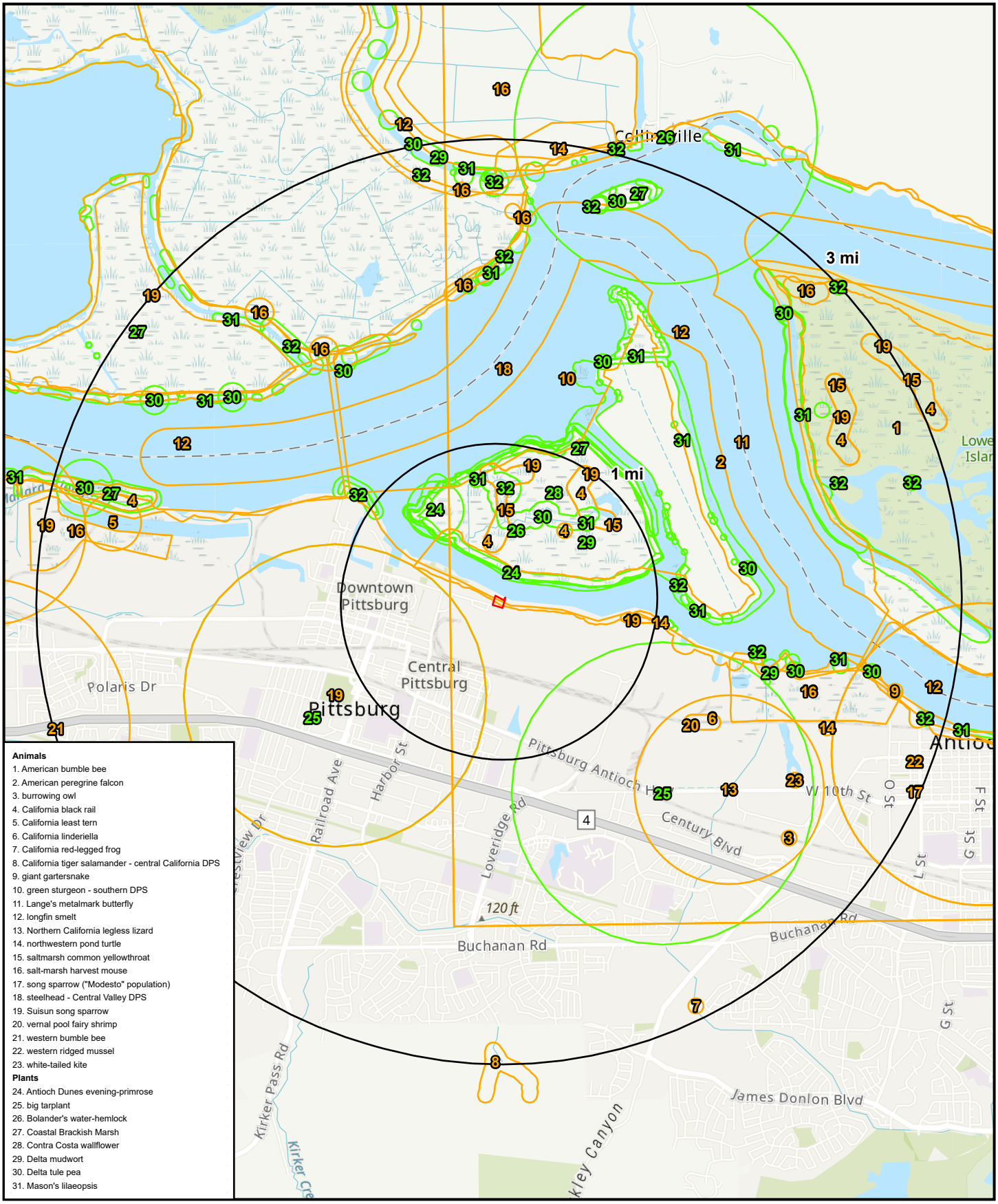
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Miles

Figure 6
SFBA Global Innovation Center
Critical Habitat

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Project Location

CNDDB Occurrences

Animals

Plants

N

0 0.5 1 2

Miles

Figure 7

SFBA Global Innovation Center

Special Status Species Within 3 Miles

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ATTACHMENT 3 – DATABASE SEARCH RESULTS

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Antioch North (3812117) OR Antioch South (3712187) OR Clayton (3712188) OR Rio Vista (3812126) OR Jersey Island (3812116) OR Brentwood (3712186) OR Birds Landing (3812127) OR Denverton (3812128) OR Honker Bay (3812118))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acipenser medirostris pop. 1 green sturgeon - southern DPS	AFCAA01031	Threatened	None	G2T1	S1	SSC
Actinemys marmorata northwestern pond turtle	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S1	
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S2S3	SSC
Anthicus antiochensis Antioch Dunes anthicid beetle	IICOL49020	None	None	G3	S3	
Anthicus sacramento Sacramento anthicid beetle	IICOL49010	None	None	G4	S4	
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Apodemia mormo langei Lange's metalmark butterfly	IILEPH7012	Endangered	None	G5T1	S1	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G1	S1	SSC
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S2	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus occidentalis western bumble bee	IIHYM24252	None	Candidate Endangered	G3	S1	
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2	SSC
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S3	SSC
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Coelus gracilis San Joaquin dune beetle	IICOL4A020	None	None	G1	S1	
Cophura hurdi Antioch cophuran robberfly	IIDIP06010	None	None	GX	SX	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S2	SSC
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061	None	None	G4T1	S2	
Dumontia oregonensis hairy water flea	ICBRA23010	None	None	G1G3	S1	
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Elaphrus viridis Delta green ground beetle	IICOL36010	Threatened	None	G1	S1	
Eucerceris ruficeps redheaded sphecid wasp	IIHYM18010	None	None	G1G3	S2	
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S2	
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
Hygrotus curvipes curved-foot hygrotus diving beetle	IICOL38030	None	None	G2	S2	
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
Idiostatus middlekauffi Middlekauff's shieldback katydid	IIORT31010	None	None	G1G2	S1	
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasiurus frantzii western red bat	AMACC05080	None	None	G4	S3	SSC
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S2	FP
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S3	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Melospiza melodia maxillaris Suisun song sparrow	ABPBXA301K	None	None	G5T3	S2	SSC
Melospiza melodia pop. 1 song sparrow ("Modesto" population)	ABPBXA3013	None	None	G5T3?Q	S3?	SSC
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G2	S1S2	
Myrmosula pacifica Antioch multilid wasp	IIHYM15010	None	None	GH	SH	
Nannopterum auritum double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Perdita hirticeps luteocincta yellow-banded andrenid bee	IIHYM01021	None	None	GNRTX	SX	
Perdita scitula antiochensis Antioch andrenid bee	IIHYM01031	None	None	G1T1	S2	
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Philanthus nasalis Antioch specid wasp	IIHYM20010	None	None	G2	S2	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	G3	S3	SSC
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S2	FP
Rana boylii pop. 4 foothill yellow-legged frog - central coast DPS	AAABH01054	Threatened	Endangered	G3T2	S2	
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S3	FP
Rhaphiomidas trochilus San Joaquin Valley giant flower-loving fly	IIDIP05010	None	None	G1	S1	
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S3	
Sorex ornatus sinuosus Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
Sphecodogastra antiochensis Antioch Dunes halcitid bee	IIHYM78010	None	None	G1	S1	
Spirinchus thaleichthys pop. 2 longfin smelt - San Francisco Bay-Delta DPS	AFCHB03040	Endangered	None	G5TNRQ	S1	
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 79

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Antioch North (3812117) OR Antioch South (3712187) OR Clayton (3712188) OR Rio Vista (3812126) OR Jersey Island (3812116) OR Brentwood (3712186) OR Birds Landing (3812127) OR Denverton (3812128) OR Honker Bay (3812118))
 AND Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1	1B.1
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G5	S2	4.2
Arctostaphylos auriculata Mt. Diablo manzanita	PDERI04040	None	None	G2	S2	1B.3
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	PDERI04273	None	None	G5T2	S2	1B.2
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Blepharizonia plumosa big tarplant	PDAST1C011	None	None	G1G2	S1S2	1B.1
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Chloropyron molle ssp. hispidum hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T1	S1	1B.1
Chloropyron molle ssp. molle soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T4T5	S2?	2B.1
Cirsium hydrophilum var. hydrophilum Suisun thistle	PDAST2E1G1	Endangered	None	G2T1	S1	1B.1
Cordylanthus nidularius Mt. Diablo bird's-beak	PDSCR0J0F0	None	Rare	G1	S1	1B.1
Cryptantha hooveri Hoover's cryptantha	PDBOR0A190	None	None	GH	SH	1A
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eriastrum ertterae Lime Ridge eriastrum	PDPLM030F0	None	Candidate Endangered	G1	S1	1B.1
Eriogonum nudum var. psychicola Antioch Dunes buckwheat	PDPGN0849Q	None	None	G5T1	S1	1B.1
Eriogonum truncatum Mt. Diablo buckwheat	PDPGN085Z0	None	None	G1	S1	1B.1
Eryngium jepsonii Jepson's coyote-thistle	PDAPI0Z130	None	None	G2	S2	1B.2
Erysimum capitatum var. angustatum Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0	None	None	G1	S1	1B.1
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Grimmia torenii Toren's grimmia	NBMUS32330	None	None	G2	S2	1B.3
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Isocoma arguta Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10030	None	None	G5	S2	2B.1
Madia radiata showy golden madia	PDAST650E0	None	None	G3	S3	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Malacothamnus hallii Hall's bushmallow	PDMAL0Q0F0	None	None	G2	S2	1B.2
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Navarretia gowenii Lime Ridge navarretia	PDPLM0C120	None	None	G1	S1	1B.1
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2T3	S2S3	1B.2
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
Phacelia phacelioides Mt. Diablo phacelia	PDHYD0C3Q0	None	None	G2	S2	1B.2
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
Potamogeton zosteriformis eel-grass pondweed	PMPOT03160	None	None	G5	S3	2B.2
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G2	S2	1B.2
Ravenella exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Sanicula saxatilis rock sanicle	PDAPI1Z0H0	None	Rare	G2	S2	1B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered	None	G2	S2	1B.1
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Streptanthus hispidus Mt. Diablo jewelflower	PDBRA2G0M0	None	None	G2	S2	1B.3
Stuckenia filiformis ssp. alpina northern slender pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2
Stuckenia striata broadleaf pondweed	PMPOT030K0	None	None	G3G4Q	S2S3	2B.3
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3	2B.3

Record Count: 63

CNPS Rare Plant Inventory

Search Results

89 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3812126:3712186:3812116:3712187:3712188:3812117:3812127:3812118:3812128**]

▲ SCIENTIFIC NAME	COMMON NAME	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	GENERAL HABITATS	MICROHABITATS	LOWEST ELEVATION (FT)	HIGHEST ELEVATION (FT)	CA ENDEMIC	DATE ADDED
Amsinckia grandiflora	large-flowered fiddleneck	annual herb	(Mar)Apr-May	FE	CE	G1	S1	1B.1	Cismontane woodland, Valley and foothill grassland		885	1805	Yes	1974-01-01
Androsace elongata ssp. *acuta*	California androsace	annual herb	Mar-Jun	None	None	G5? T3T4	S3S4	4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland		490	4280		1994-01-01
Anomobryum julaceum	slender silver moss	moss		None	None	G5	S2	4.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Roadsides (usually)	330	3280		2001-01-01
Arabis blepharophylla	coast rockcress	perennial herb	Feb-May	None	None	G4	S4	4.3	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub	Rocky	10	3610	Yes	1974-01-01
Arctostaphylos auriculata	Mt. Diablo manzanita	perennial evergreen shrub	Jan-Mar	None	None	G2	S2	1B.3	Chaparral (sandstone), Cismontane woodland		445	2135	Yes	1974-01-01
Arctostaphylos manzanita ssp. *laevigata*	Contra Costa manzanita	perennial evergreen shrub	Jan-Mar(Apr)	None	None	G5T2	S2	1B.2	Chaparral (rocky)		1410	3610	Yes	1984-01-01

Astragalus tener var. *tener*	alkali milk-vetch	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2	Playas, Valley and foothill grassland (adobe clay), Vernal pools	Alkaline	5	195	Yes	1994-01-01
Atriplex cordulata var. *cordulata*	heartscale	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy)	Alkaline (sometimes)	0	1835	Yes	1988-01-01
Atriplex coronata var. *coronata*	crownscale	annual herb	Mar-Oct	None	None	G4T3	S3	4.2	Chenopod scrub, Valley and foothill grassland, Vernal pools	Alkaline, Clay (often)	5	1935	Yes	1994-01-01
Atriplex depressa	brittlescale	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools	Alkaline, Clay	5	1050	Yes	1994-01-01
Blepharizonia plumosa	big tarplant	annual herb	Jul-Oct	None	None	G1G2	S1S2	1B.1	Valley and foothill grassland	Clay (usually)	100	1655	Yes	1994-01-01
Calandrinia breweri	Brewer's calandrinia	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2	Chaparral, Coastal scrub	Burned areas, Disturbed areas, Loam (sometimes), Sandy (sometimes)	35	4005		1994-01-01
Calochortus pulchellus	Mt. Diablo fairy-lantern	perennial bulbiferous herb	Apr-Jun	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland		100	2755	Yes	1974-01-01
Centromadia parryi ssp. *parryi*	pappose tarplant	annual herb	May-Nov	None	None	G3T2	S2	1B.2	Chaparral, Coastal prairie, Marshes and swamps (coastal salt), Meadows and seeps, Valley and foothill grassland (vernally mesic)	Alkaline (often)	0	1380	Yes	2004-01-01

Centromadia parryi ssp. *rudis*	Parry's rough tarplant	annual herb	May-Oct	None	None	G3T3	S3	4.2	Valley and foothill grassland, Vernal pools	Alkaline, Roadsides (sometimes), Seeps, Vernally Mesic	0	330	Yes	2007-05-22
Chloropyron molle ssp. *hispidum*	hispid salty bird's-beak	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1	Meadows and seeps, Playas, Valley and foothill grassland	Alkaline	5	510	Yes	1974-01-01
Chloropyron molle ssp. *molle*	soft salty bird's-beak	annual herb (hemiparasitic)	Jun-Nov	FE	CR	G2T1	S1	1B.2	Marshes and swamps (coastal salt)		0	10	Yes	1974-01-01
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	perennial herb	Jul-Sep	None	None	G5T4T5	S2?	2B.1	Marshes and swamps (brackish, coastal, freshwater)		0	655		1974-01-01
Cirsium hydrophilum var. *hydrophilum*	Suisun thistle	perennial herb	Jun-Sep	FE	None	G2T1	S1	1B.1	Marshes and swamps (salt)		0	5	Yes	1974-01-01
Collomia diversifolia	serpentine collomia	annual herb	May-Jun	None	None	G4	S4	4.3	Chaparral, Cismontane woodland	Gravelly (sometimes), Rocky (sometimes), Serpentine (sometimes)	655	1970	Yes	1974-01-01
Convolvulus simulans	small-flowered morning-glory	annual herb	Mar-Jul	None	None	G4	S4	4.2	Chaparral (openings), Coastal scrub, Valley and foothill grassland	Clay, Seeps, Serpentine	100	2430		1994-01-01
Cordylanthus nidularius	Mt. Diablo bird's-beak	annual herb (hemiparasitic)	Jun-Aug	None	CR	G1	S1	1B.1	Chaparral (serpentinite)		1970	2625	Yes	1974-01-01
Cryptantha hooveri	Hoover's cryptantha	annual herb	Apr-May	None	None	GH	SH	1A	Inland dunes, Valley and foothill grassland (sandy)		30	490	Yes	1974-01-01
Delphinium californicum ssp. *interius*	Hospital Canyon larkspur	perennial herb	Apr-Jun	None	None	G3T3	S3	1B.2	Chaparral (openings), Cismontane woodland (mesic), Coastal scrub		640	3595	Yes	1984-01-01
Downingia pusilla	dwarf downingia	annual herb	Mar-May	None	None	GU	S2	2B.2	Valley and foothill grassland (mesic), Vernal pools		5	1460		1980-01-01
Eleocharis parvula	small spikerush	perennial herb	(Apr)Jun-Aug(Sep)	None	None	G5	S3	4.3	Marshes and swamps		5	9910		1980-01-01
Eriastrum ertterae	Lime Ridge eriastrum	annual herb	Jun-Jul	None	CC	G1	S1	1B.1	Chaparral (edges, openings)	Alkaline (sometimes), Sandy	655	950	Yes	2013-12-19

Eriogonum nudum var. *psychicola*	Antioch Dunes buckwheat	perennial herb	Jul-Oct	None	None	G5T1	S1	1B.1	Inland dunes		0	65	Yes	2010-06-21
Eriogonum truncatum	Mt. Diablo buckwheat	annual herb	Apr-Sep(Nov-Dec)	None	None	G1	S1	1B.1	Chaparral, Coastal scrub, Valley and foothill grassland	Sandy	10	1150	Yes	1974-01-01
Eriogonum umbellatum var. *bahiiforme*	bay buckwheat	perennial herb	Jul-Sep	None	None	G5T3	S3	4.2	Cismontane woodland, Lower montane coniferous forest	Rocky, Serpentine (often)	2295	7220	Yes	2001-01-01
Eriophyllum jepsonii	Jepson's woolly sunflower	perennial herb	Apr-Jun	None	None	G3	S3	4.3	Chaparral, Cismontane woodland, Coastal scrub	Serpentine (sometimes)	655	3365	Yes	1974-01-01
Eryngium jepsonii	Jepson's coyote-thistle	perennial herb	Apr-Aug	None	None	G2	S2	1B.2	Valley and foothill grassland, Vernal pools	Clay	10	985	Yes	2016-09-13
Erysimum capitatum var. *angustatum*	Contra Costa wallflower	perennial herb	Mar-Jul	FE	CE	G5T1	S1	1B.1	Inland dunes		10	65	Yes	1974-01-01
Erythranthe inconspicua	small-flowered monkeyflower	annual herb	May-Jun	None	None	G4	S4	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Mesic	900	2495	Yes	1974-01-01
Eschscholzia rhombipetala	diamond-petaled California poppy	annual herb	Mar-Apr	None	None	G1	S1	1B.1	Valley and foothill grassland (alkaline, clay)		0	3200	Yes	1980-01-01
Extriplex joaquinana	San Joaquin spearscale	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland	Alkaline	5	2740	Yes	1988-01-01
Fritillaria agrestis	stinkbells	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland	Clay, Serpentine (sometimes)	35	5100	Yes	1980-01-01

Fritillaria liliacea	fragrant fritillary	perennial bulbiferous herb	Feb-Apr	None	None	G2	S2	1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland	Serpentine (often)	10	1345	Yes	1974-01-01
Galium andrewsii ssp. *gatense*	phlox-leaf serpentine bedstraw	perennial herb	Apr-Jul	None	None	G5T3	S3	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	Rocky, Serpentine	490	4755	Yes	1994-01-01
Grimmia torenii	Toren's grimmia	moss		None	None	G2	S2	1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Carbonate, Openings, Rocky, Volcanic	1065	3805	Yes	2014-05-14
Helianthella castanea	Diablo helianthella	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland	Rocky (usually)	195	4265	Yes	1974-01-01
Hesperevax caulescens	hogwallow starfish	annual herb	Mar-Jun	None	None	G3	S3	4.2	Valley and foothill grassland (mesic clay), Vernal pools (shallow)	Alkaline (sometimes)	0	1655	Yes	2001-01-01
Hesperolinon breweri	Brewer's western flax	annual herb	May-Jul	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	Serpentine (usually)	100	3100	Yes	1974-01-01
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Marshes and swamps (freshwater)		0	395	Yes	1974-01-01
Isocoma arguta	Carquinez goldenbush	perennial shrub	Aug-Dec	None	None	G1	S1	1B.1	Valley and foothill grassland (alkaline)		5	65	Yes	1994-01-01

Lasthenia conjugens	Contra Costa goldfields	annual herb	Mar-Jun	FE	None	G1	S1	1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools	Mesic	0	1540	Yes	1974-01-01
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1	Marshes and swamps (coastal salt), Playas, Vernal pools		5	4005		1994-01-01
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	perennial herb	May-Jul(Aug-Sep)	None	None	G5T2	S2	1B.2	Marshes and swamps (brackish, freshwater)		0	15	Yes	1974-01-01
Legenere limosa	legenere	annual herb	Apr-Jun	None	None	G2	S2	1B.1	Vernal pools		5	2885	Yes	1974-01-01
Leptosiphon ambiguus	serpentine leptosiphon	annual herb	Mar-Jun	None	None	G4	S4	4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland	Serpentine (usually)	395	3710	Yes	1994-01-01
Leptosiphon grandiflorus	large-flowered leptosiphon	annual herb	Apr-Aug	None	None	G3G4	S3S4	4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland	Sandy (usually)	15	4005	Yes	1994-01-01
Lessingia hololeuca	woolly-headed lessingia	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	Clay, Serpentine	50	1000	Yes	1994-01-01
Lilaeopsis masonii	Mason's lilaeopsis	perennial rhizomatous herb	Apr-Nov	None	CR	G2	S2	1B.1	Marshes and swamps (brackish, freshwater), Riparian scrub		0	35	Yes	1974-01-01

Lilium rubescens	redwood lily	perennial bulbiferous herb	(Mar)Apr-Aug(Sep)	None	None	G3	S3	4.2	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Roadsides (sometimes), Serpentine (sometimes)	100	6265	Yes	1974-01-01
Limosella australis	Delta mudwort	perennial stoloniferous herb	May-Aug	None	None	G5	S2	2B.1	Marshes and swamps (brackish, freshwater), Riparian scrub	Streambanks (usually)	0	10		1994-01-01
Lupinus albifrons var. *abramsii*	Abrams' lupine	perennial herb	Apr-Jun	None	None	G5T3? Q	S3?	3.2	Broadleafed upland forest, Chaparral, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	Serpentine (sometimes)	410	6560	Yes	1974-01-01
Madia radiata	showy golden madia	annual herb	Mar-May	None	None	G3	S3	1B.1	Cismontane woodland, Valley and foothill grassland		80	3985	Yes	1988-01-01
Malacothamnus hallii	Hall's bushmallow	perennial deciduous shrub	(Apr)May-Sep(Oct)	None	None	G2	S2	1B.2	Chaparral, Coastal scrub		35	2495	Yes	1974-01-01
Meesia triquetra	three-ranked hump moss	moss	Jul	None	None	G5	S4	4.2	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest (mesic)		4265	9690		2001-01-01
Microseris paludosa	marsh microseris	perennial herb	Apr-Jun(Jul)	None	None	G2	S2	1B.2	Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley and foothill grassland		15	1165	Yes	2001-01-01

Microseris sylvatica	sylvan microseris	perennial herb	Mar-Jun	None	None	G4	S4	4.2	Chaparral, Cismontane woodland, Great Basin scrub, Pinyon and juniper woodland, Valley and foothill grassland	Serpentine (rarely)	150	4920	Yes	2001-01-01
Monolopia gracilens	woodland woollythreads	annual herb	(Feb)Mar-Jul	None	None	G3	S3	1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland	Serpentine	330	3935	Yes	2010-04-06
Myosurus minimus ssp. *apus*	little mousetail	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1	Valley and foothill grassland, Vernal pools (alkaline)		65	2100		1980-01-01
Navarretia gowenii	Lime Ridge navarretia	annual herb	May-Jun	None	None	G1	S1	1B.1	Chaparral		590	1000	Yes	2008-05-15
Navarretia heterandra	Tehama navarretia	annual herb	Apr-Jun	None	None	G4	S4	4.3	Valley and foothill grassland (mesic), Vernal pools		100	3315		1974-01-01
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Mesic	15	5710	Yes	1994-01-01
Navarretia nigelliformis ssp. *radians*	shining navarretia	annual herb	(Mar)Apr-Jul	None	None	G4T2T3	S2S3	1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools	Clay (sometimes)	215	3280	Yes	1994-01-01
Oenothera deltoides ssp. *howellii*	Antioch Dunes evening-primrose	perennial herb	Mar-Sep	FE	CE	G5T1	S1	1B.1	Inland dunes		0	100	Yes	1974-01-01

Phacelia phacelioides	Mt. Diablo phacelia	annual herb	Apr-May	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland	Rocky	1640	4495	Yes	1974-01-01
Piperia michaelii	Michael's rein orchid	perennial herb	Apr-Aug	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest		10	3000	Yes	1984-01-01
Plagiobothrys hystriculus	bearded popcornflower	annual herb	Apr-May	None	None	G2	S2	1B.1	Valley and foothill grassland (mesic), Vernal pools (margins)		0	900	Yes	1974-01-01
Potamogeton zosteriformis	eel-grass pondweed	annual herb (aquatic)	Jun-Jul	None	None	G5	S3	2B.2	Marshes and swamps (freshwater)		0	6105		1994-01-01
Puccinellia simplex	California alkali grass	annual herb	Mar-May	None	None	G2	S2	1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools	Alkaline, Flats, Lake Margins, Vernally Mesic	5	3050		2015-10-15
Ranunculus lobbii	Lobb's aquatic buttercup	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools	Mesic	50	1540		1974-01-01
Ravenella exigua	chaparral harebell	annual herb	May-Jun	None	None	G2	S2	1B.2	Chaparral (rocky, usually serpentinite)		900	4100	Yes	1974-01-01
Sagittaria sanfordii	Sanford's arrowhead	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Marshes and swamps (shallow freshwater)		0	2135	Yes	1984-01-01
Sanicula saxatilis	rock sanicle	perennial herb	Apr-May	None	CR	G2	S2	1B.2	Broadleafed upland forest, Chaparral, Valley and foothill grassland	Rocky, Scree, Talus	2035	3855	Yes	1974-01-01

Senecio aphanactis	chaparral ragwort	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2	Chaparral, Cismontane woodland, Coastal scrub	Alkaline (sometimes)	50	2625		1994-01-01
Senecio hydrophiloides	sweet marsh ragwort	perennial herb	May-Aug	None	None	G5	S4	4.2	Lower montane coniferous forest, Meadows and seeps	Mesic	0	9185		1984-01-01
Sidalcea keckii	Keck's checkerbloom	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1	Cismontane woodland, Valley and foothill grassland	Clay, Serpentine	245	2135	Yes	1974-01-01
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	perennial herb	Feb-May	None	None	G5T2	S2	1B.2	Marshes and swamps, Meadows and seeps	Alkaline	0	835	Yes	2017-06-16
Streptanthus albidus ssp. *peramoenus*	most beautiful jewelflower	annual herb	(Mar)Apr-Sep(Oct)	None	None	G2T2	S2	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	Serpentine	310	3280	Yes	1988-01-01
Streptanthus hispidus	Mt. Diablo jewelflower	annual herb	Mar-Jun	None	None	G2	S2	1B.3	Chaparral, Valley and foothill grassland	Rocky	1200	3935	Yes	1974-01-01
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	perennial rhizomatous herb (aquatic)	May-Jul	None	None	G5T5	S2S3	2B.2	Marshes and swamps (shallow freshwater)		985	7055		1994-01-01
Stuckenia striata	broadleaf pondweed	perennial rhizomatous (aquatic)	(Jun)Jul-Aug	None	None	G3G4Q	S2S3	2B.3	Marshes and swamps		-230	7005		2024-01-30
Symphyotrichum lentum	Suisun Marsh aster	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2	Marshes and swamps (brackish, freshwater)		0	10	Yes	1974-01-01
Triquetrella californica	coastal triquetrella	moss		None	None	G2	S2	1B.2	Coastal bluff scrub, Coastal scrub		35	330		2001-01-01
Tropidocarpum capparideum	caper-fruited tropidocarpum	annual herb	Mar-Apr	None	None	G1	S1	1B.1	Valley and foothill grassland (alkaline hills)		5	1495	Yes	1974-01-01
Viburnum ellipticum	oval-leaved viburnum	perennial deciduous shrub	May-Jun	None	None	G4G5	S3	2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest		705	4595		1974-01-01

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CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

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▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	FE	CE	G1	S1	1B.1
Androsace elongata ssp. *acuta*	California androsace	Primulaceae	annual herb	Mar-Jun	None	None	G5?T3T4	S3S4	4.2
Anomobryum julaceum	slender silver moss	Bryaceae	moss		None	None	G5	S2	4.2
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	Feb-May	None	None	G4	S4	4.3
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	None	None	G2	S2	1B.3
Arctostaphylos manzanita ssp. *laevigata*	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar(Apr)	None	None	G5T2	S2	1B.2
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2
Atriplex coronata var. *coronata*	crownscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4T3	S3	4.2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	None	None	G1G2	S1S2	1B.1
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G2	S2	1B.2
Centromadia parryi ssp. *parryi*	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2
Chloropyron molle ssp. *hispidum*	hispid salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1
Chloropyron molle ssp. *molle*	soft salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	FE	CR	G2T1	S1	1B.2
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	None	None	G5T4T5	S2?	2B.1

Cirsium hydrophilum var. *hydrophilum*	Suisun thistle	Asteraceae	perennial herb	Jun-Sep	FE	None	G2T1	S1	1B.1
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.3
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2
Cordylanthus nidularius	Mt. Diablo bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Aug	None	CR	G1	S1	1B.1
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	Apr-May	None	None	GH	SH	1A
Delphinium californicum ssp. *interius*	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	None	None	G3T3	S3	1B.2
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	None	None	G5	S3	4.3
Eriastrum ertterae	Lime Ridge eriastrum	Polemoniaceae	annual herb	Jun-Jul	None	CC	G1	S1	1B.1
Eriogonum nudum var. *psychicola*	Antioch Dunes buckwheat	Polygonaceae	perennial herb	Jul-Oct	None	None	G5T1	S1	1B.1
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	None	None	G1	S1	1B.1
Eriogonum umbellatum var. *bahiiforme*	bay buckwheat	Polygonaceae	perennial herb	Jul-Sep	None	None	G5T3	S3	4.2
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	Apr-Jun	None	None	G3	S3	4.3
Eryngium jepsonii	Jepson's coyote-thistle	Apiaceae	perennial herb	Apr-Aug	None	None	G2	S2	1B.2
Erysimum capitatum var. *angustatum*	Contra Costa wallflower	Brassicaceae	perennial herb	Mar-Jul	FE	CE	G5T1	S1	1B.1
Erythranthe inconspicua	small-flowered monkeyflower	Phrymaceae	annual herb	May-Jun	None	None	G4	S4	4.3
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	None	None	G1	S1	1B.1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2	S2	1B.2
Galium andrewsii ssp. *gatense*	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	Apr-Jul	None	None	G5T3	S3	4.2
Grimmia torenii	Toren's grimmia	Grimmiaceae	moss		None	None	G2	S2	1B.3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2

Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	None	None	G2	S2	1B.2
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	None	None	G1	S1	1B.1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	FE	None	G1	S1	1B.1
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	None	None	G5T2	S2	1B.2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	Mar-Jun	None	None	G4	S4	4.2
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	Apr-Aug	None	None	G3G4	S3S4	4.2
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	None	CR	G2	S2	1B.1
Lilium rubescens	redwood lily	Liliaceae	perennial bulbiferous herb	(Mar)Apr-Aug(Sep)	None	None	G3	S3	4.2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	None	None	G5	S2	2B.1
Lupinus albifrons var. *abramsii*	Abrams' lupine	Fabaceae	perennial herb	Apr-Jun	None	None	G5T3?Q	S3?	3.2
Madia radiata	showy golden madia	Asteraceae	annual herb	Mar-May	None	None	G3	S3	1B.1
Malacothamnus hallii	Hall's bushmallow	Malvaceae	perennial deciduous shrub	(Apr)May-Sep(Oct)	None	None	G2	S2	1B.2
Meesia triquetra	three-ranked hump moss	Meesiaceae	moss	Jul	None	None	G5	S4	4.2
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	None	None	G2	S2	1B.2
Microseris sylvatica	sylvan microseris	Asteraceae	perennial herb	Mar-Jun	None	None	G4	S4	4.2
Monolopia gracilens	woodland woollythreads	Asteraceae	annual herb	(Feb)Mar-Jul	None	None	G3	S3	1B.2
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1
Navarretia gowenii	Lime Ridge navarretia	Polemoniaceae	annual herb	May-Jun	None	None	G1	S1	1B.1
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1

Navarretia nigelliformis ssp. *radians*	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	None	None	G4T2T3	S2S3	1B.2
Oenothera deltoides ssp. *howellii*	Antioch Dunes evening-primrose	Onagraceae	perennial herb	Mar-Sep	FE	CE	G5T1	S1	1B.1
Phacelia phacelioides	Mt. Diablo phacelia	Hydrophyllaceae	annual herb	Apr-May	None	None	G2	S2	1B.2
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	Apr-Aug	None	None	G3	S3	4.2
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	Apr-May	None	None	G2	S2	1B.1
Potamogeton zosteriformis	eel-grass pondweed	Potamogetonaceae	annual herb (aquatic)	Jun-Jul	None	None	G5	S3	2B.2
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2
Ravenella exigua	chaparral harebell	Campanulaceae	annual herb	May-Jun	None	None	G2	S2	1B.2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2
Sanicula saxatilis	rock sanicle	Apiaceae	perennial herb	Apr-May	None	CR	G2	S2	1B.2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2
Senecio hydrophiloides	sweet marsh ragwort	Asteraceae	perennial herb	May-Aug	None	None	G5	S4	4.2
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	None	None	G5T2	S2	1B.2
Streptanthus albidus ssp. *peramoenus*	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	None	None	G2T2	S2	1B.2
Streptanthus hispidus	Mt. Diablo jewelflower	Brassicaceae	annual herb	Mar-Jun	None	None	G2	S2	1B.3
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	None	None	G5T5	S2S3	2B.2
Stuckenia striata	broadleaf pondweed	Potamogetonaceae	perennial rhizomatous (aquatic)	(Jun)Jul-Aug	None	None	G3G4Q	S2S3	2B.3
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2
Triquetrella californica	coastal triquetrella	Pottiaceae	moss		None	None	G2	S2	1B.2
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	None	None	G1	S1	1B.1
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3	2B.3

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IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

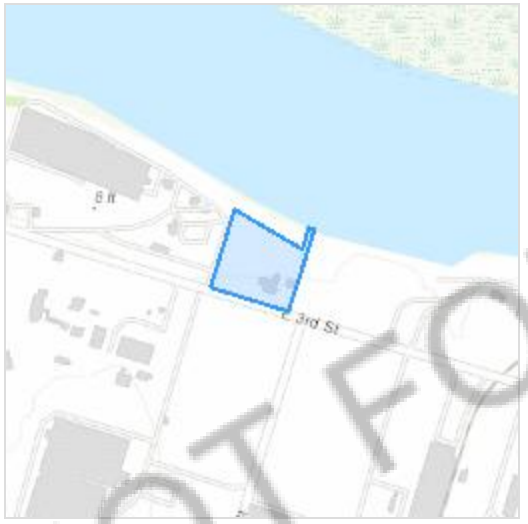
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Contra Costa County, California



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Local offices

San Francisco Bay-Delta Fish And Wildlife

(916) 930-5603
(916) 930-5654

650 Capitol Mall
Suite 8-300
Sacramento, CA 95814

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse Reithrodontomys raviventris Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered
San Joaquin Kit Fox Vulpes macrotis mutica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Least Tern Sternula antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered

NOT FOR CONSULTATION

California Ridgway''s Rail Rallus obsoletus obsoletus — Endangered

Wherever found

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/4240

Reptiles

NAME	STATUS

Northwestern Pond Turtle Actinemys marmorata — Proposed Threatened

Wherever found

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/1111

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/2891

California Tiger Salamander Ambystoma californiense — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/2076

Western Spadefoot Spea hammondii — Proposed Threatened

Wherever found

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/5425

NOT FOR CONSULTATION

Fishes

NAME	STATUS
Longfin Smelt Spirinchus thaleichthys No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9011	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

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NAME	STATUS
Colusa Grass Neostapfia colusana Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5690	Threatened
Contra Costa Goldfields Lasthenia conjugens Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7058	Endangered
Keck's Checker-mallow Sidalcea keckii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5704	Endangered
Soft Bird's-beak Cordylanthus mollis ssp. mollis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8541	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE

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Delta Smelt Hypomesus transpacificus For information on why this critical habitat appears for your project, even though Delta Smelt is not on the list of potentially affected species at this location, contact the local field office. https://ecos.fws.gov/ecp/species/321#crithab	Final

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

NOT FOR CONSULTATION

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is

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the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

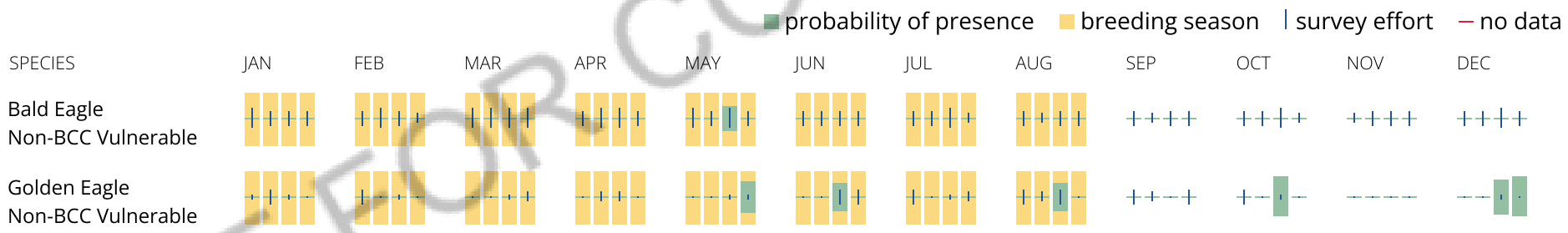
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

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The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

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Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15

NOT FOR CONSULTATION

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

NOT FOR CONSULTATION

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Spinus lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Northern Harrier Circus hudsonius — Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Nuttall's Woodpecker Dryobates nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

NOT FOR CONSULTATION

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Western Gull Larus occidentalis — Breeds Apr 21 to Aug 25
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Western Screech-owl Megascops kennicottii cardonensis — Breeds Mar 1 to Jun 30
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper

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Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

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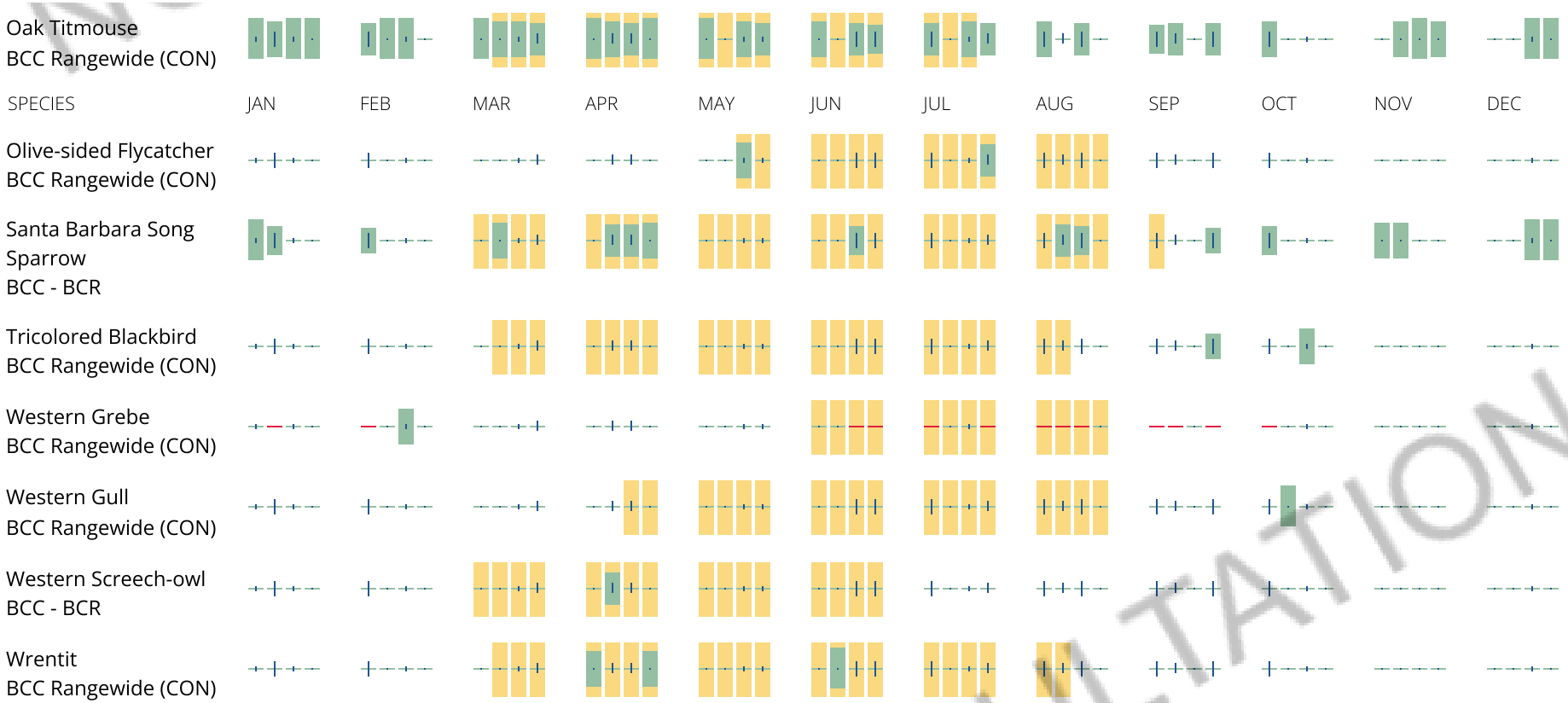
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

NOT FOR CONSULTATION

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

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Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

NOT FOR CONSULTATION

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Coastal Pelagic Species	ALL	Pacific	
		Finfish	ALL	Pacific	
		Groundfish	ALL	Pacific	Groundfish

Pacific Salmon EFH

Link	HUC Name	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
	Suisun Bay	Chinook Salmon	All	Pacific	Pacific Coast Salmon Plan

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

Link	Data Caveats	HAPC Name	Management Council
		Estuaries	Pacific Fishery Management Council

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Bigeye Thresher Shark - North Pacific,
Bluefin Tuna - Pacific,
Dolphinfish (Dorado or Mahimahi) - Pacific,
Pelagic Thresher Shark - North Pacific,
Swordfish - North Pacific

Soil Map—Contra Costa County, California
(SFBA Global Innovation Center)



Map Scale: 1:1,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Contra Costa County, California
Survey Area Data: Version 21, Sep 9, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 23, 2022—Apr 24, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cc	Clear Lake clay, 0 to 15 percent slopes, MLRA 15	2.4	100.0%
W	Water	0.0	0.0%
Totals for Area of Interest		**2.4**	**100.0%**

APPENDIX C – Cultural Resources Study Results Letter Report

SFBA Global Innovation Center Project Cultural Resources Study Results Letter Report

City of Pittsburg

October 3, 2024
Project 21494

Maurice Brenyah-Addow
City of Pittsburg
Senior Planner
65 Civic Avenue
Pittsburg, CA 94565

Subject: San Francisco Bay Aggregates Global Innovation Center Project Cultural Resources Study Results Letter Report, City of Pittsburg, Contra Costa County, California

Chambers Group was retained by the City of Pittsburg (City) to conduct a literature review and intensive pedestrian survey in support of the proposed San Francisco Bay Aggregates (SFBA) Global Innovation Center Project (Project; Proposed Project), in the City in Contra Costa County (County), California. This report is intended to provide a comprehensive cultural resources assessment for the Project site and surrounding half-mile radius (study area). The purpose of the assessment is to gather and analyze information needed to identify potential impacts to cultural resources within the Project site. The City is the lead agency for the Proposed Project.

Project Site Location and Setting

The Project is situated on a 2.5-acre parcel located at 895 East 3rd Street, Pittsburg, California 94565, in Contra Costa County, California (Figure 1). The Project site is located within and United States Geological Survey (USGS) *Antioch North*, California 7.5-minute topographic quadrangle (USGS 2021). The Project site's Assessor's Parcel Number (APN) is 073-020-019-3. The Project site is bounded to the north by New York Slough, part of the Sacramento-San Joaquin River Delta, east of the Suisun Bay; to the east by land owned by USS-POSCO Industries (UPI) and by a Pacific Gas & Electric (PG&E) substation; to the south by an easement that runs along East 3rd Street; and to the west by Koch Carbon Inc.

Project Description

SFBA (Applicant), a wholly owned subsidiary of Blue Planet Systems Corporation (Blue Planet), is proposing to develop, own, and operate a carbon capture and mineralization facility using proprietary Blue Planet process technology. The Proposed Project will convert the existing SFBA facility to a continuous production operation. Ground disturbing activities during construction include utility trenching and the build-out of a new concrete pad and berm.

Figure 1: Location and Vicinity



Regulatory Context

As lead agency, the City must ensure that the Proposed Project complies with the provisions of the California Environmental Quality Act (CEQA) and determine whether a project may have a significant effect on historical resources (PRC Section 21084.1). In addition to state regulations, proposed projects are also subject to several City policies relating to cultural, historical, and paleontological resources. Chapter 10 of the City of Pittsburg Revised Adoption Draft 2040 General Plan: Resource Conservation and Open Space (City of Pittsburg 2024) pertains specifically to cultural and historic preservation within the City. The regulatory framework as it pertains to cultural resources under CEQA is detailed below.

Under the provisions of CEQA, including the CEQA Statutes (PRC §§ 21083.2 and 21084.1), CEQA Guidelines (Title 14 CCR § 15064.5), and PRC § 5024.1 (Title 14 CCR § 4850 et seq.), properties expected to be directly or indirectly affected by a proposed project must be evaluated for eligibility for listing in the California Register of Historical Resources (CRHR; PRC § 5024.1).

California Register of Historical Resources

The purpose of the CRHR is to maintain listings of the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term *historical resources* includes a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CCR § 15064.5[a]). The criteria for listing properties in the CRHR were expressly developed in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP). The California Office of Historic Preservation (OHP 1995:2) regards "any physical evidence of human activities over 45 years old" as meriting recordation and evaluation.

A cultural resource is considered "historically significant" under CEQA if the resource meets one or more of the criteria for listing in the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR. A resource is considered significant if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of persons important in our past;
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section. A *unique archaeological resource* is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
    - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a "unique archaeological resource" under CEQA PRC § 21083.2 are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" (PRC § 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts on historical resources from a proposed project are thus considered significant if the project:

(1) physically destroys or damages all or part of a resource;

(2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or

(3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

City of Pittsburg

In addition to state regulations, projects built in the City are also subject to the following goals and policies outlined in the City's Revised Adoption Draft 2040 General Plan, Chapter 10: Resource Conservation and Open Space (City of Pittsburg 2024). Specifically, Chapter 10 of the General Plan outlines several policies relating to cultural, historical, and paleontological resources driven by Goal-10-7.

Goal-10-7: Encourage municipal and community awareness, appreciation, and support for Pittsburg's historic, cultural, and archeological resources.

Policies

10-P-7.1: Foster knowledge of our heritage by providing for the educational and cultural enrichment of this and future generations.

10-P-7.2: Redefine the New York Landing Historical District to designate and preserve historical structures not currently located within the district boundaries.

10-P-7.3: Protect archaeological/paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.

10-P-7.4: Review new development projects and work in conjunction with the California Historical Resources Information System to determine whether project areas contain known historic resources or archaeological resources, either prehistoric and/or historic-era, and whether the site has potential for such resources.

Actions

10-A-7.a: Identify mechanisms to incorporate Pittsburg's industrial heritage in historic and cultural preservation.

10-A-7.b: Coordinate with the Historic Resources Commission to implement interpretive facilities within the Historical District, including displays and signs to promote education and understanding of existing historical resources.

10-A-7.c: Halt construction immediately and conduct an archaeological investigation to collect all valuable remnants if archaeological resources are found during ground-breaking for new urban development.

10-A-7.d: Redefine the New York Landing Historical District to include the Black Diamond Grammar School, Pittsburg Seventh Day Adventist Church, Presbyterian Church, and Hindu Temple.

10-A-7.e: Require that the development process complies with the lead testing requirements established by Bay Area Air Quality Management District, Contra Costa County Environmental Health District, and Housing and Urban Development during redevelopment and rehabilitation of older residential units.

10-A-7.f: Require that new development in historic districts is compatible in bulk, height, material and design with that of the historic character and qualities of the district.

10-A-7.g: Develop an identification and preservation system for cultural resources, including tribal cultural resources, - those places or structures that qualify as "important" or "unique" to local community, ethnic, or social groups.

10-A-7.h: Require the preparation of a resource mitigation plan and monitoring program for new development by a qualified archaeologist in the event that archaeological resources are uncovered.

10-A-7.i: Require a records search for any proposed development project, to determine whether the site contains known archaeological, historic, cultural, or paleontological resources and/or to determine the potential for discovery of additional cultural or paleontological resources. If any resources are identified, identify methods to preserve the resource or to document and account for the resource. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.

10-A-7.j: Consistent with State, local, and tribal intergovernmental consultation requirements such as SB 18 and AB 52, consult as necessary with Native American tribes that may be interested in proposed new development and land use policy changes.

10-A-7.k: Require all new development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

- If human remains are discovered during any ground disturbing activity, work shall stop until the Development Services Director and the Contra Costa County Coroner have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendants have been consulted; and work may only resume when measures to relocate or preserve the remains in place, based on the above consultation, have been taken and approved by the Development Services Director.
- If archaeological resources are encountered during construction or ground disturbing activity, work within 50 feet of the find shall be halted and a qualified archaeologist meeting the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately be contacted to evaluate the find pursuant to Public Resources Code Section 21083.2. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for determining California Register of Historical Resources eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to significant resources. If the resource is of Native American origin, the NAHC shall be contacted to ensure that the Most Likely Descendant can assess the find. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Pittsburg for review and approval and submitted to the Northwest Information Center in Sonoma State after

completion. Recommendations contained within prepared reports shall be implemented throughout the remainder of ground disturbance activities.

- In the event of the identification of cultural resources on a development project site, a professionally qualified archaeologist and Tribal representative shall monitor ground-disturbing construction conducted during project implementation. The monitors shall observe ground-disturbing construction to identify potential archaeological deposits and avoid or limit damage to such deposits. The monitors shall have the discretion to reduce the intensity of monitoring, or suspend such monitoring, if field conditions clearly indicate that no potential intact archaeological deposits could be encountered. Should an intact archaeological deposit be identified, the monitors shall be empowered to temporarily halt construction in the vicinity of the find. The archaeologist shall, in consultation with the Tribal representative and City, evaluate the eligibility of the deposit for inclusion in the California Register of Historical Resources. If the deposit is eligible, the project shall attempt to feasibly avoid damage to the deposit (e.g., redesign or capping). If avoidance is not feasible, the archaeologist shall, in consultation with the Tribal representative and City, develop and implement a plan to recover the scientifically consequential data represented by the deposit in a manner respectful of tribal concerns. A report of the finds of any resource evaluation and/or data recovery efforts shall be submitted to the Northwest Information Center in Sonoma State as a condition for access to its archives.

Assembly Bill 52

California State Assembly Bill (AB) 52 was enacted in 2015 and expands CEQA by defining a new resource category: tribal cultural resources (TCRs). AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment" (PRC § 21084.2). AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency. It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a TCR, when feasible (PRC § 21084.3). PRC § 21074 (a)(1)(A) and (B) defines TCR as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and meets either of the following criteria:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k)
- A resource determined by the lead agency, in its discretion and supported by substantial evidence (PRC § 21074), to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1 (in applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe)

Environmental Setting

The Project site is situated along the western edge of the Central Valley Geomorphic Province atop a geologic formation of Pleistocene- to Holocene- age sediments comprised largely of unconsolidated and semi-consolidated marine and non-marine older alluvium, lake, playa, and terrace deposits (Jennings et al. 2010; California Department of Conservation 2024). The University of California, Davis SoilWeb database was consulted to identify soils that underlie the Project site. The database indicates that the property is underlain by Clear Lake clay, which consists of clayey alluvium derived from metamorphic and sedimentary rock; slopes range from 0 to 15 percent (UC Davis 2024).

Cultural Setting

Prehistoric Overview

During the 20th century, many archaeologists developed chronological sequences to explain prehistoric cultural changes within all or portions of California. Detailed below is the synthesis for northern California.

The Project site is situated along the western edge of the Central Valley Geomorphic Province, a region with a rich history of human occupation and land use dating back over 10,000 years. The archaeological record of the Central Valley reflects a series of cultural adaptations to gradual environmental changes, including shifts in climate, resource availability, and human population density. Over millennia, these adaptations gave rise to increasingly specialized subsistence strategies, intensified use of available resources, increased sedentism, and the establishment of regional economic networks. These trends are visible in the archaeological evidence and provide a framework for understanding the cultural history of the region. N.C. Nelson of the University of California, Berkeley, pioneered early research in the area in the early 20th century, documenting 425 shellmounds along the shores of San Francisco Bay and adjacent coastal areas when the bay was still bordered by salt marshes several miles wide (Nelson 1909). Nelson's findings suggested a regionally unified economy based on the intensive exploitation of shellfish, leading to the identification of a distinct San Francisco Bay archaeological region that included the current Project site (Moratto 1984:227). Key sites like the Emeryville Shellmound (CA-ALA-309), Ellis Landing (CA-CCO-295), and Fernandez Site (CA-CCO-259) became the foundation for the first models of cultural succession in Central California (Moratto 1984:227).

Formal archaeological investigations in the Central Valley began in earnest in the 1920s. Amateur archaeologists J.A. Bar and E.J. Dawson conducted excavations across the region, with Bar identifying two distinct cultural traditions and Dawson refining this framework into three chronological "age-groups" (Moratto 1984). This early work laid the groundwork for more formal studies, which began in the 1930s when J. Lillard and W. Purves of Sacramento Junior College established a field school and initiated systematic excavations throughout the Sacramento Delta area. Through the analysis of artifacts and mortuary traditions, Lillard and Purves identified a three-phase cultural sequence—Early, Intermediate, and Recent—that mirrored Dawson's earlier classification (Lillard et al. 1939). This system evolved further in the late 1940s and 1950s when archaeologist Richard Beardsley refined and expanded the model, extending its application to the San Francisco Bay region (Beardsley 1948, 1954). Beardsley's efforts culminated in the creation of the Central California Taxonomic System (CCTS), which became the primary framework for understanding the cultural chronology of Central California (Fredrickson 1973; Hughes 1994:1).

With the advent of radiocarbon dating in the 1950s and obsidian hydration analysis in the 1970s, archaeologists were able to date archaeological deposits with greater accuracy. These new dating techniques revealed exceptions to the CCTS framework, leading to its revision by scholars such as Fredrickson and Ragir in the 1960s and 1970s. Fredrickson (1973:113-114) proposed a revised chronology for prehistoric California that included four major periods: the Early Lithic Period, the Paleoindian Period, the Archaic Period, and the Emergent Period. He further subdivided the Archaic and Emergent Periods into Lower, Middle, and Upper phases. These revisions focused on cultural patterns rather than strictly temporal phases, with the Windmiller, Berkeley, and Augustine Patterns representing different cultural traditions across various time periods. This approach allowed for a more nuanced understanding of regional prehistory and its variability across space and time.

In the 2000s, further refinements to the cultural chronology of the San Francisco Bay Area were made by Milliken et al. (2007), who developed a "hybrid system" that combined the Early-Middle-Late Period temporal sequence with the pattern-aspect-phase cultural sequence. Their work was supported by new radiometric dating techniques, including Groza's (2002) direct dating of over 100 Olivella shell beads using accelerator mass spectrometry (AMS), which resulted in a revised chronology for the Bay Area. This hybrid system identifies six key periods.

Milliken et al.' s (2007) San Francisco Bay Area Cultural Sequence includes:

- Early Holocene (Lower Archaic) from 8000 to 3500 B.C.
- Early Period (Middle Archaic) from 3500 to 500 B.C
- Lower Middle Period (Initial Upper Archaic) from 500 B.C. to A.D. 430
- Upper Middle Period (Late Upper Archaic) from A.D. 430 to 1050
- Initial Late Period (Lower Emergent) from A.D. 1050 to 1550
- Terminal Late Period, post-A.D. 1550 to European contact

No archaeological evidence has been discovered in the Bay Area predating 8000 B.C., likely due to environmental changes that submerged early sites or buried them beneath alluvial deposits. However, evidence from the Early Holocene suggests a "generalized mobile forager" pattern, with the use of milling slabs, handstones, and wide-stemmed projectile points. By around 3500 B.C., the archaeological record shows increased sedentism, regional trade, and the symbolic integration of peoples across the region. This period, referred to as the Early Period, continued until around 500 B.C. The Lower Middle Period (500 B.C. to A.D. 430) was marked by significant cultural shifts, including the peak of the Olivella saucer bead trade and the spread of extended burial patterns. The Upper Middle Period (A.D. 430 to 1050) saw the collapse of the Olivella trade and the abandonment of several key sites, while the Late Period (A.D. 1050 to 1550) was characterized by increased sedentism, ceremonial integration, and the production of status objects. The Terminal Late Period, which began around A.D. 1550, saw continued cultural development until the arrival of European settlers.

More recent excavations, such as those conducted at CA-CCO-548 near Marsh Creek, have uncovered extensive cultural evidence, including a large village site and prehistoric cemetery containing nearly 500 burials and numerous artifacts. The site, which dates from 6,000-7,000 years B.P. to approximately 1,500 B.P., contains elements from both the Windmiller and Berkeley cultural traditions. These findings continue to contribute to understanding the complex cultural history of the Central Valley and the surrounding regions (Milliken et al. 2007).

Ethnographic Overview

Various regional syntheses have been utilized in archaeological literature for northern California. The following framework derives information from local studies to provide a useful overview for the Project site. The Project site is geographically associated with the Bay Miwok (Kroeber 1925).

Bay Miwok

The Bay Miwok traditionally inhabited the eastern portions of what is now Contra Costa County, extending from Mount Diablo northeast into the Sacramento-San Joaquin Delta. Nearby, the Plains Miwok lived along the lower reaches of the Mokelumne and Cosumnes Rivers and the Sacramento River, while the Sierra Miwok occupied the foothills and mountains of the Sierra Nevada. Anthropologists have described the Bay Miwok as more culturally similar to the Plains Miwok than the Sierra Miwok. Bay Miwok subsistence strategies relied on seasonal hunting and gathering, with acorns as a primary staple gathered in the fall and stored through winter. Other important foods included seeds, roots, greens, and berries, with meat becoming a more significant part of their diet in the winter months. Deer, elk, antelope, birds, fish, and small mammals were hunted using bows, traps, and snares, and was supplemented with freshwater mussels, clams, and insects (Heizer and Whipple 1971; Levy 1978; TRC 2023).

The Miwok used a variety of materials for tools and technology, including bone, stone, antler, and wood. They crafted baskets for numerous purposes, such as storage and winnowing, and built tule balsas for navigating rivers. Housing styles varied by region, with conical bark structures in the mountains and tule matting dwellings in the lower elevations. Semi-subterranean earth-covered homes were constructed for the winter season, and large assembly houses were used for social and ritual gatherings. The Miwok first encountered Europeans in the late 18th century when Spanish missionaries began efforts to convert them. The Bay and Plains Miwok were significantly impacted by population

removal to missions and diseases introduced by Europeans. Despite these challenges, the Miwok resisted through militarism in the 1820s and 1830s and continue to maintain strong communities today (Heizer and Whipple 1971; Levy 1978; TRC 2023).

In addition to their rich cultural practices, the Miwok people developed a sophisticated social structure and spiritual life. Central to their society were communal gatherings, which often took place in large semi-subterranean assembly houses, used for both social and ceremonial purposes. Rituals were integral to Miwok life, with ceremonies dedicated to events such as the changing seasons, harvests, and mourning. These gatherings also strengthened tribal bonds and reinforced their connection to the land and natural cycles. Spiritual beliefs were deeply tied to the environment, with the Miwok viewing animals, plants, and natural elements as having spiritual significance. Despite the disruptions caused by European contact and settlement, the Miwok people have preserved much of their cultural heritage through oral traditions, continued practices, and efforts to revitalize their language and customs. Today, the Miwok remain active in preserving their ancestral lands and promoting cultural awareness, ensuring that their history and traditions endure for future generations (Heizer and Whipple 1971; Levy 1978; TRC 2023).

Historic Overview

The first significant European settlement of California began during the Spanish Period (1769–1821) when 21 missions and four presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated economic and political life over the greater California region. The purpose of the missions was primarily political control and forced assimilation of the Native American population into Spanish society and Catholicism, along with economic support to the presidios (Castillo 1978).

In the 1700s, due to pressures from other colonizers (Russians, French, British), New Spain decided that a party should be sent north with the idea of founding both military presidios and religious missions in Alta California to secure Spain's hold on its lands. The aim of the party was twofold. The first was the establishment of presidios, which would give Spain a military presence within its lands. The second was the establishment of a chain of missions along the coast slightly inland, with the aim of Christianizing the native population. By converting the native Californians, they could be counted as Spanish subjects, thereby bolstering the colonial population within a relatively short time (Lech 2012).

The party was led by Gaspar de Portolá and consisted of two groups: one would take an overland route, and one would go by sea. All parties were to converge on San Diego, which would be the starting point for the chain of Spanish colonies. What became known as the Portolá Expedition set out on March 24, 1769. Portolá, who was very loyal to the crown and understood the gravity of his charge, arrived in what would become San Diego on July 1, 1769. Here, he immediately founded the presidio of San Diego. Leaving one group in the southern part of Alta California, Portolá took a smaller group and began heading north to his ultimate destination of Monterey Bay. Continuing up the coast, Portolá established Monterey Bay as a Spanish possession on June 3, 1770, although it would take two expeditions to accomplish this task. Having established the presidios at San Diego and Monterey, Portolá returned to Mexico. During the first 4 years of Spanish presence in Alta California, Father Junípero Serra, a member of the Portolá expedition and the Catholic leader of the new province, began establishing what would become a chain of 21 coastal missions in California. The first, founded concurrently at San Diego with the presidio, was the launching point for this group. During this time, four additional missions (San Carlos Borromeo de Carmelo, San Antonio de Padua, San Gabriel Arcángel, and San Luis Obispo de Tolosa) were established (Lech 2012).

The Mexican Period (1821–1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the missions' vast land holdings in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978; Cleland 1941). Even after the decree of secularization was issued in 1833 by the Mexican Congress, missionaries continued to operate a small diocesan church. In 1834, the San Gabriel Mission, including over 16,000 head of cattle, was turned over to the civil administrator.

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848–present). The discovery of gold that same year sparked the 1849 California Gold Rush, bringing thousands of miners and other new immigrants to California from various parts of the United States, most of whom settled in the northern part of the state. For those settlers who chose to come to California, much of their economic prosperity was fueled by cattle ranching rather than by gold. This prosperity, however, came to a halt in the 1860s because of severe floods and droughts, as well as legal disputes over land boundaries, which put many ranchos into bankruptcy.

City of Pittsburg

Pittsburg, located at the confluence of the Sacramento and San Joaquin rivers, has a history spanning over 150 years. The City's origins trace back to 1839, when the Mexican government granted approximately 9,000 acres of land, known as "Rancho Los Medanos," to Jose Antonio Mesa and Miguel Jose Mesa Garcia. During the Gold Rush in 1849, the land was acquired by Colonel Jonathan Drake Stevenson and Dr. William C. Parker. The area, initially known as New York Landing, was laid out by future U.S. Army General William Tecumseh Sherman and grew into a fishing village of about 500 residents by 1855. The discovery of coal in the 1860s led to a name change to Black Diamond, reflecting the town's coal industry, which thrived as coal was transported along what is now Railroad Avenue to the waterfront for distribution (City of Pittsburg 2024).

In the early 20th century, Charles Appleton Hooper, known as the "Father of Industry" in the region, purchased the Rancho Medanos land and additional acreage in 1900. He introduced large-scale industry and infrastructure, establishing the world's largest Redwood Manufacturing plant and the area's first electrical generation and transmission systems. Under Hooper's influence, Black Diamond was incorporated as a town in 1903. In 1911, residents voted to rename the town Pittsburg, aligning with the eastern steel industry's namesake. The establishment of Camp Stoneman in 1942, a major embarkation point for World War II soldiers, significantly impacted the City's growth and demographic diversity. After the camp's closure in 1954, the property was repurposed for educational, commercial, and residential development, contributing to Pittsburg's expansion (City of Pittsburg 2024).

Today, Pittsburg has evolved from a modest settlement into a thriving community known for its well-planned residential areas, recreational facilities, and economic growth. The City has seen significant development, including the revitalization of its historic theater district, expansion of the Marina, and construction of a modern Civic Center. Continued efforts by local government to improve infrastructure, parks, and commercial opportunities reflect Pittsburg's ongoing commitment to progress and community enrichment (City of Pittsburg 2024).

Methods of Review

Chambers Group requested a records search from the California Historical Resources Information System (CHRIS) Northwest Information Center (NWIC) at Sonoma State University on July 19, 2024. The NWIC returned the records search results on August 15, 2024, providing information on all documented cultural resources and previous archaeological investigations within the Project site and study area. The half-mile radius study area around the Project site was requested to provide additional context and information on which to base this review. Resources consulted during the records search conducted by the NWIC included the NRHP, California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), California Department of Transportation Historic Highway Bridge Inventory (Caltrans), the California State Historic Resources Inventory, local registries of historic properties, and a review of available Sanborn Fire Insurance maps as well as historic photographs, maps, and aerial imagery. The task also included a search for potential prehistoric and/or historic burials (human remains) evident in previous site records and/or historical maps. Chambers Group also submitted a request to the NAHC on July 19, 2024, for a review of the Sacred Land Files (SLFs) for the Project site and surrounding study area. The results of the NAHC SLF record search were received on August 5, 2024, and are detailed below and included in Attachment A. Additionally, the records search results are discussed below, and included in confidential Attachment B.

Project Personnel

Chambers Group Cultural Resources Department Lead Lucas Tutschulte managed the Project tasks related to cultural resources. Cultural Resources Specialist Russell Ott completed the pedestrian survey. Cultural Resources Specialist Kellie Kandybowicz conducted background research and co-authored the report. Richard Shultz, MA, RPA, served as Principal Investigator for cultural resources, co-authored the report, and performed quality control.

Cultural Resources Reports within the Half-Mile Radius Study Area

Results of the California Historical Records Information System (CHRIS) record search indicate that 13 previous cultural resource investigations have been conducted within a half-mile radius study area surrounding the Project site. Of the 13 investigations, five included the Project site and are bolded below. Further details pertaining to these reports are captured in Table 1 and are included in confidential Attachment B.

Table 1: Previous Cultural Resources Studies within the Half-Mile Study Area

Report Number	Year	Author / Company	Title	Within Project Site?
S-013831	1991	Holman & Associates	Archaeological Archival Research and Field Inspection of the City of Pittsburg Waterfront Truck Route Assessment District Project, Pittsburg, Contra Costa County, California	No
S-024289	2001	URS Corporation	Los Medanos Energy Facility, LLC, Preliminary and Final Cultural Resources Report (Condition of Certification CUL-13)	No
S-024322	**1998**	**Woodward-Clyde Consultants**	**Pittsburg District Energy Facility, Cultural Resources Technical Report (Appendix K)**	**Yes**
S-024753	2002	EarthTouch, Inc.	Nextel Site Number CA-2423B - "Pittsburg North", in Pittsburg, California (letter report)	No
S-030387	2005	CRM TECH	Historical Resources Compliance Report, Burlington Northern Santa Fe Railway Double Track Project (Segment 2), Oakley (MP 1146.1) to Port Chicago (MP 1164.4), In and Near the Cities of Oakley, Antioch, and Pittsburg, and the Port Chicago Naval Weapons Station, Contra Costa County, California	No
S-030579	**2004**	**Basin Research Associates, Inc.**	**Cultural Resources Report, Delta Energy Center Site (DEC) and Associated Linears, Cities of Pittsburg and Antioch, Contra Costa County, California, California Energy Commission (CEC) Project 98-AFC-3C**	**Yes**
S-034182	2006	Holman & Associates	A Report of Findings of Archaeological Backhoe Testing of the 420 East Third Street at Harbor Street Project, Pittsburg, Contra Costa County, California	No
S-034957	**2008**	**Pacific Legacy, Inc.**	**Extended Phase I Cultural Resources Evaluation for the USS-POSCO Project, Pittsburg, California (letter report)**	**Yes**

Table 1: Previous Cultural Resources Studies within the Half-Mile Study Area

Report Number	Year	Author / Company	Title	Within Project Site?
S-035861	2009	CRM TECH	Burlington Northern Sante Fe Railway Survey Double Track Project (Oakley to Port Chicago)-HPSR	No
S-046909	**2015**	**ICF International**	**Delta Diablo Recycled Water System Expansion Project, Historical Resources Inventory and Evaluation Report, Contra Costa County, California**	**Yes**
S-051681	1975	West, James G. and Peter D. Schulz	An Archaeological Survey of the Stockton Ship Channel Dredged Material Disposal Sites, False River Cut-off, Levee Setback Sites and U.S. Navy Lands at Port Chicago	No
S-051988	**2018**	**LSA Associates, Inc.**	**Cultural Resources Study, Koch Carbon Facility Bank Stabilization Project, Pittsburg, Contra Costa County, California**	**Yes**
S-054144	2018	LSA Associates, Inc.	Cultural Resources Study for the Making Waves Academy Project, Pittsburg, Contra Costa County, California	No

Previously Recorded Cultural Resources within the Half-Mile Radius Study Area

Based on the records search conducted by the NWIC, six cultural resources have previously been identified within a half-mile records search radius. Of the six previously identified resources, none are mapped within the Project site. These results are shown in Table 2 below and are included in confidential Attachment B.

Table 2: Previously Recorded Cultural Resources within the Study Area

Primary Number	Trinomial	Age	Description	Within Project Site?
P-07-000489	CA-CCO-000843H	Historic	Sacramento Northern Railway	No
P-07-000761	CA-CCO-000715H	Historic	Pacific Coast Stone Company Site	No
P-07-000806	CA-CCO-000732H	Historic	Atchison, Topeka & Santa Fe Railroad	No
P-07-000864		Historic	Structure	No
P-07-000869		Historic	Building	No
P-07-004993		Historic	Building	No

Background Research Results

In addition to the NWIC record search, Chambers Group archaeologists completed research to determine if any additional historic properties, landmarks, bridges, or other potentially significant or listed properties are located within the Project footprint or one-half-mile study area. This background research included, but was not limited to, the NRHP, California State Historic Property Data Files, California State Historical Landmarks, California Points of Historical Interest (CPHI), Office of Historic Preservation Archaeological Determinations of Eligibility, historical aerial imagery accessed via

Nationwide Environmental Title Research (NETR) Online, historical U.S. Geological Survey topographic maps, Built Environment Resource Directory (BERD), and Caltrans State and Local Bridge Surveys.

The Project site is currently occupied by infrastructure associated with the SFBA facility. In addition, there are paved parking areas and sidewalks throughout the property. East 3rd Street bisects the Project side on the south end.

Based on the review of topographic maps as early as 1908, it appears that buildings were located within the Project site. Topographic maps also indicate that the current alignment of East 3rd Street was in use as early as 1908. A 1939 aerial photograph indicates the Project site being used as storage; a quay wall bridges several adjacent parcels with the New York Slough just north of the Project site, and several piers or slips are noted just northeast of the northeast corner of the Project site, along the adjacent parcel to the east. A barge appears to be ported just north of the Project site at the time of the photograph. Between 1953 and 1984 aerial photographs appear to indicate that the Project site was clear of developed buildings or structures, and between 1984 and 1987 construction of the current site configuration had begun (NETRonline 2024; UCSB 2024).

As a result of archival research, no previously recorded resources or any other listed or potentially significant properties were identified within the Project site.

Field Survey Methods

Chambers Group cultural resources specialist Russell Ott conducted an intensive pedestrian survey of the entire Project site on September 9, 2024. The survey consisted of systematic surface inspection of all areas with transects at 10-meter intervals to ensure that any surface-exposed evidence of cultural resources could be identified. Chambers Group examined the ground surface for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historical artifacts (e.g., metal, glass, ceramics), sediment discoloration that might indicate the presence of a cultural midden, roads and trails, and depressions and other features that might indicate the former presence of structures or buildings (e.g., post holes, foundations).

The Project site was photographed using a digital camera and data was recorded using a hand-held global positioning system (GPS) unit with sub-meter accuracy. Chambers Group maintains all field notes, photographs, geodata, and other records related to the current study on file.

Field Survey Results

On September 9, 2024, Chambers Group carried out an intensive pedestrian survey of the Project site. The site was visually inspected using north-south oriented transects spaced 10 meters apart in the Project area north of East 3rd Street; the areas on the south side of East 3rd Street and along the street corridor were visually inspected in one pass in an east-west oriented sweep. Ground visibility across the site was confined to various exposed bare ground in between currently used buildings, driveways and sidewalks, which provided approximately 15 percent surface visibility throughout the overall site (Photos 1 through 3). The soil in the exposed areas is characterized as brown, dry, sandy silty clay mixed with artificial fill brought in during previous construction activities, with approximately 25-40 percent small to medium sized angular gravel.

No archaeological deposits, artifactual materials, or historic-period resources were identified within the Proposed Project site during the field survey.

NAHC SLF Search

On July 19, 2024, Chambers Group requested that the NAHC conduct a search of its SLF to identify if any properties have been recorded in the Project site footprint and study area.

On August 5, 2024, Chambers Group received a response from the NAHC stating that the search of its SLF was **negative** within the Project site and the surrounding study area.

The NAHC provided a list of 33 Native American tribal contacts that may have knowledge of cultural resources near the Project site. The 14 Native American tribes identified by the NAHC include Buena Vista Rancheria of Me-Wuk Indians, Calaveras Band of Mi-Wuk Indians, California Valley Miwok Tribe, Chicken Ranch Rancheria of Me-Wuk Indians, Confederated Villages of Lisjan Nation, Guidiville Rancheria of California, Ione Band of Miwok Indians, Jackson Rancheria Band of Miwuk Indians, Muwekma Ohlone Tribe of the San Francisco Bay Area, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, Northern Valley Yokut / Ohlone Tribe, Pakan'yani Maidu of Strawberry Valley Rancheria, Tule River Indian Tribe, and Wilton Rancheria. The response from the NAHC and list of tribal contacts is included in Attachment A.

AB 52 Consultation

The City of Pittsburg is the lead agency per CEQA Guidelines, and as such, is responsible for initiating tribal consultation under AB 52. As of the date of this report, Chambers Group has not been notified of the status of AB 52 consultation between the City and any requesting tribal groups, if TCRs have been identified, or if TCR mitigation measures have been presented.

As discussed above, a resource may be defined as a TCR if it meets either of the following criteria:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k)
- A resource determined by the lead agency, in its discretion and supported by substantial evidence (PRC § 21074), to be significant pursuant to criteria set forth in subdivision (c) of PRC § 5024.1 (in applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe)

Discussion

As detailed above, Chambers Group conducted background research that included cultural resources records searches, a literature review, and an intensive pedestrian survey for the Project site in accordance CEQA as well as the City's Revised Adoption Draft 2040 General Plan, Chapter 10: Resource Conservation and Open Space, specifically driven by Goal-10-7 related to the preservation of features of cultural, historical, or paleontological significance (City of Pittsburg 2024). No new cultural resources were observed during the pedestrian survey.

An archival records search through the CHRIS database at the NWIC and background research of the Project site was conducted as part of the study. The NWIC records search identified that 13 previous cultural resource investigations have been conducted within a half-mile radius study area surrounding the Project site. Of the 13 investigations, five included the Project site. The NWIC record search identified that six cultural resources have previously been identified within a half-mile records search radius. Of the six previously identified resources, none are mapped within the Project site. The NAHC SLF results also produced negative results in the study area and within the Project site.

In summary, Chambers Group found no evidence of archaeological resources within the Project site. The general Pittsburg area is associated with the traditional use area of the Bay Miwok, and as such, has the potential to yield TCRs or prehistoric archaeological materials. Based on the results of the current study in accordance with the City of Pittsburg Policies and Actions detailed in Goal-10-7 (City of Pittsburg 2024), the subsurface context within the Project site is considered low sensitivity for buried resources.

Recommendations

Based on the results of the background research, records searches, and survey, the Proposed Project site is currently a developed parcel of land. This study resulted in a low level of sensitivity for buried resources. Although the NAHC SLF records search results resulted in negative findings, there remains a general sensitivity for TCRs in the area.

Considering that the Proposed Project is located with the City's jurisdiction, and the results of this study concluded that there is a low level of sensitivity for resources, compliance with Policies and Actions detailed in Goal-10-7 is required (City of Pittsburg 2024). As such, Chambers Group recommends the following mitigation measures, in line with the

requirements of Goal-10-7, be implemented as part of Project approval to ensure that potential impacts to cultural resources are less than significant.

MM CUL-1 The Applicant shall retain the services of a Qualified Archaeologist, meeting the Secretary of the Interior Standards, on an on-call basis for the duration of ground disturbing construction activity. The Qualified Archaeologist or cultural resources specialist working under the direction of the Qualified Archaeologist shall provide training to inform all construction personnel prior to construction activities about the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the Project's initial on-site safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources.

In the event that archaeological resources (artifacts or features) are exposed during ground disturbing activities, construction activities within a 50-foot radius of the discovery shall be halted while the on-call qualified archaeologist is contacted to provide the necessary assessment. If the resource is determined to be significant or unique through significance evaluation, and site avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. These might include an archaeological monitoring and mitigation plan, treatment and/or data recovery programs, which would be implemented by a qualified archaeologist. All related close-out reporting documenting the implementation of monitoring or similar programs shall be prepared in accordance with the Office of Historic Preservation's Archaeological Resource Management Reports (ARMR). If the discovery proves to be significant, it shall be curated with a qualified scientific or educational repository, as defined by the Guidelines for the Curation of Archaeological Collections.

HUMAN REMAINS – LEGAL REQUIREMENTS In the event that human remains are discovered during ground-disturbing activities, then the Project would be subject to California Health and Safety Code 7050.5, CEQA Section 15064.5, and California Public Resources Code Section 5097.98. If human remains are found during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the County Coroner shall notify the NAHC, which shall notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Chambers Group is available to assist with any further support or document preparation related to Cultural Resources, including tribal consultation. Please contact the cultural resources staff at the contact information below if you have any questions or comments regarding this report.

Sincerely,

CHAMBERS GROUP, INC.

Kellie Kandybowicz
Cultural Resources Specialist
kkandybowicz@chambersgroupinc.com

Richard Shultz, MA, RPA
Cultural Resources Principal Investigator
rshultz@chambersgroupinc.com

Attachments

Attachment A: NAHC SLF Records Search Results Letter

Attachment B: Confidential NWIC Records Search Results



Photograph 1: Existing conditions of Project site, September 9, 2024.
View: to the southwest



Photograph 2: Existing conditions from northeast boundary of Project site. Note vegetation and low-growing grasses.
View: to the west



Photograph 3: Overview of exposed soils within Project site.
View: to the north

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ATTACHMENT A – NAHC SLF RECORDS SEARCH RESULTS LETTER

Attachment A: NAHC SLF Records Search Results Letter

STATE OF CALIFORNIA — Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

August 5, 2024

Kellie Kandybowicz
Chambers Group, Inc.

Via Email to: kkandybowicz@chambersgroupinc.com

Re: SFBA Global Innovation Center Project (21494) Project, Contra Costa County

Dear Ms. Kandybowicz:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710

Native American Heritage Commission
Native American Contact List
Contra Costa County
8/5/2024

Tribe Name	Contact Person	Contact Address	Phone #	Email Address	Cultural Affiliation
Buena Vista Rancheria of Me-Wuk Indians	Jessalynn Pastran, Chairperson	1418 20th Street, Suite 200 Sacramento, CA, 95811	(916) 491-0011	Jessalynn@bvtribe.com	Me-Wuk
Buena Vista Rancheria of Me-Wuk Indians	Jesse Galvan, THPO	1418 20th Street, Suite 200 Sacramento, CA, 95811	(916) 491-0011	Jesus@bvtribe.com	Me-Wuk
Calaveras Band of Mi-Wuk Indians	Gloria Grimes, Chairperson	P.O. Box 899 West Point, CA, 95255	(209) 419-5675	calaverasband.miwukindians@gmail.com	Mi-wuk
Calaveras Band of Mi-Wuk Indians	Debra Grimes, Tribal Cultural Resources	P.O. Box 899 West Point, CA, 95255	(209) 470-8688	calaverasmiwukpreservation@gmail.com	Mi-wuk
Calaveras Band of Mi-Wuk Indians	Adam Lewis, Tribal Cultural Resources	6286 Jensworld Blvd. Murphs, CA, 95247	(209) 273-8188	Adam2191983@gmail.com	Mi-wuk
California Valley Miwok Tribe	Lawrence Wilson Jr., Cultural Specialist	P.O. Box 695 San Andreas, CA, 95249	(209) 304-2307	l.ewilson@yahoo.com	Miwok
California Valley Miwok Tribe	Anthony Wilson, Treasurer	P.O. Box 695 San Andreas, CA, 95249	(530) 458-1675	awanata426@gmail.com	Miwok
Chicken Ranch Rancheria of Me-Wuk Indians	Stephanie Suess, Community & Resources	P.O. Box 1159 Jamestown, CA, 95327	(209) 984-9066	ssuess@crtribal.com	Me-Wuk
Chicken Ranch Rancheria of Me-Wuk Indians	Monica Fox, Tribal Administrator	P.O. Box 1159 Jamestown, CA, 95327	(209) 984-9066	mfox@crbtribal.com	Me-Wuk
Chicken Ranch Rancheria of Me-Wuk Indians	Cynthia Reyes, Cultural Manager	P.O. Box 1159 Jamestown, CA, 95327	(209) 984-9066	creyes@crtribal.com	Me-Wuk
Chicken Ranch Rancheria of Me-Wuk Indians	Joanna Portillo-Hsu, Environmental &	P.O. Box 1159 Jamestown, CA, 95327	(209) 984-9066	jportillo@crtribal.com	Me-Wuk
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Guidiville Rancheria of California	Michael Derry, Historian	PO Box 339 Talmage, CA, 95481	(707) 391-1665	historian@guidiville.net	Pomo
Ione Band of Miwok Indians	Sara Dutschke, Chairperson	9252 Bush Street Plymouth, CA, 95669	(209) 245-5800	consultation@ionemiwok.net	Miwok
Jackson Rancheria Band of Miwuk Indians	Rolland Fillmore, Cultural Preservation	P.O. Box 1090 Jackson, CA, 95642	(209) 223-8370		Miwok
Jackson Rancheria Band of Miwuk Indians	Adam Dalton, Chairperson	P.O. Box 1090 Jackson, CA, 95642	(209) 223-8370	adalton@jacksoncasino.com	Miwok
Muwekma Ohlone Tribe of the SF Bay Area	Charlene Nijmeh, Chairperson	1169 S. Main Street, Ste. 336 Manteca, CA, 95377	(408) 464-2892	cnijmeh@muwekma.org	Costanoan
Muwekma Ohlone Tribe of the SF Bay Area	Richard Massiatt, Councilmember/MLD Tribal Rep.	1169 S. Main Street, Ste. 336 Manteca, CA, 95377	(209) 321-0372	rmassiatt@muwekma.org	Costanoan
Nashville Enterprise Miwok-Maidu-Nishinam Tribe	Cosme Valdez, Chairperson	P.O. Box 580986 Elk Grove, CA, 95758-0017	(916) 396-1173	valdezcome@comcast.net	Miwok
Nashville Enterprise Miwok-Maidu-Nishinam Tribe	Leland Valdez, Cultural		(916) 429-8047		Miwok
Northern Valley Yokut / Ohlone Tribe	Timothy Perez, Tribal Compliance Officer	P.O. Box 717 Linden, CA, 95236	(209) 662-2788	huskanam@gmail.com	Costanoan Northern Valley Yokut
Northern Valley Yokut / Ohlone Tribe	Katherine Perez, Chairperson	P.O. Box 717 Linden, CA, 95236	(209) 649-8972	canutes@verizon.net	Costanoan Northern Valley Yokut
Pakan'yani Maidu of Strawberry Valley Rancheria	Tina Goodwin, Chairperson	P.O. Box 984 Marysville, CA, 95901	(617) 417-2166	tinagoodwin@washoetanf.org	Maidu Miwok
Tule River Indian Tribe	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	neil.peyron@tulerivertribe-nsn.gov	Yokut

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Wilton Rancheria	Herbert Griffin, Executive Director of Cultural	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000	hgriffin@wiltonrancheria-nsn.gov	Miwok