Draft Initial Study and Mitigated Negative Declaration

Vallejo Mare Island Pump Station 3W Effluent Bypass Project

Vallejo, California

September 2020

Prepared for:

Vallejo Flood and Wastewater District

Prepared by:

HDR

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1 Introduction

1.1 Project Background

The Vallejo Flood and Wastewater District (VFWD) proposes to construct several new facilities to replace existing wastewater treatment plant (WWTP) functions currently performing the same functions associated with the existing Mare Island Pump Station (MIPS) and rehabilitate several existing facilities with aging equipment at its WWTP. VFWD would construct a new MIPS and chlorine contact tank (CCT)-D adjacent to the existing CCT-C. The new configuration would consolidate the WWTP's two CCTs and treated effluent pump stations in a common area of the plant. Hydraulic upgrades would be made to pump stations associated with CCT-C. Additionally, the Project would replace the existing pumps at the Carquinez treated effluent pump station and 3W utility water pump station with newer, more energy-efficient pumps. New outfall and bypass piping would be constructed. Outfall piping would connect the new MIPS discharge piping to the existing Mare Island Straight outfall pipe. Flow meter vaults would be constructed for each of the outfalls to provide monitoring information for the plant for increased reporting accuracy. Bypass piping would be added to both the Mare Island Straight outfall as well as the Carquinez outfall to allow non-compliant effluent water to be diverted to the Ryder Street Basin for additional treatment if disruptions occur in the treatment process. A new Bioassay Facility constructed adjacent to the CCTs would provide permanent testing facilities for plant personnel. The existing Biotower media would be replaced and upgrades would be made to the electrical system and catwalk. The existing Confined Space Training Facility would be demolished and a new facility would be constructed within the facility fence line. Lastly, as part of its Proposed Project, VFWD would decommission and demolish the existing MIPS. All demolition and construction would occur within the existing fence line of the VFWD WWTP facility.

The VFWD WWTP original design was completed in the 1950s. The current MIPS was constructed in 1955. Since then, additional facilities and improvements have been constructed to expand the plant, including the Carquinez pump station and CCT-C in 1988, the Ryder Street Basin in 2007, and the outfall at Mare Island Strait in 2014. The current plant capacity is 60 million gallons per day (mgd), with a secondary treatment capacity of 30 mgd.

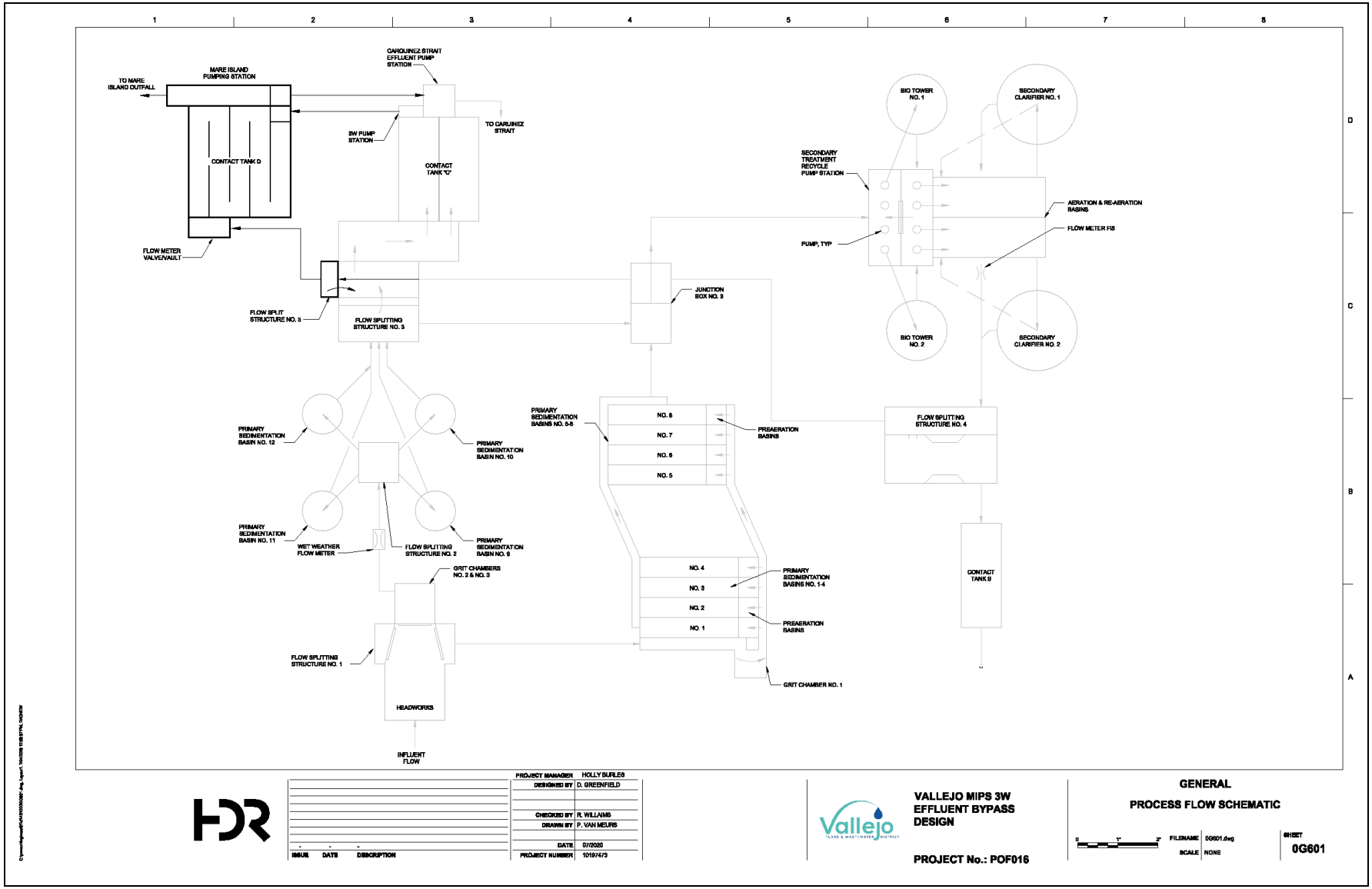
Treatment capacity and flows during and after construction would be consistent with current operations. The overall WWTP footprint would not change. The Proposed Project would not involve any new discharge to surface water, and discharge locations and volumes would remain consistent with existing operations. Figure 1 and Figure 2 show the site layout and process flow schematic, respectively.

1.2 Project Location

VFWD's WWTP is located on approximately 22 acres in Solano County at 450 Ryder Street in Vallejo, California. The Proposed Project is located in an industrial area along the Mare Island Strait approximately 2 miles north of the confluence of the Mare Island Strait, Carquinez Strait, and San Pablo Bay. Work would take place on approximately 1.7 acres of the site, with an additional 15 acres available on and off site for use as staging areas. Potential staging and laydown areas used at neighboring properties would require agreements with landowners prior to construction work.

Figure 1. Site layout

Figure 2. Process flow schematic



1.3 Purpose and Need and Project Objectives

The objective of the Proposed Project is to rehabilitate and replace critical aging wastewater treatment infrastructure to support the WWTP's ability to treat wastewater to a high quality prior to discharge in the San Francisco Bay. The existing MIPS was constructed in 1955 and has reached the end of its safe and useful service life. In 2014, the facility was damaged by the Napa earthquake. Concrete has begun spalling from the ceiling, multiple other structural deficiencies exist, critical electrical and mechanical equipment is below grade without adequate flood protection, the north wall of the structure leaks, and large portions of the structure's original functionality have already been abandoned. Failure of the MIPS would result in a loss of 50 percent of VFWD's wet weather wastewater treatment capacity and the discharge of raw wastewater to the Mare Island Strait and, ultimately, to the San Francisco Bay during large storm events.

1.4 Environmental Review Process

The California Environmental Quality Act (CEQA) applies to all discretionary activities proposed to be implemented or approved by a California public agency. VFWD is the Lead Agency and decision maker as to whether to approve the Proposed Project. In this role, CEQA requires an agency to review the potential effects of a proposed project's actions on environmental resources, and the CEQA Guidelines are the primary rules and source of interpretation of CEQA (Public Resources Code Section 21083). First, the Lead Agency prepares an Initial Study, which is a preliminary analysis used to determine whether the proposed action may have a significant environmental effect. The Initial Study may use a checklist format, but fact-based explanations should be provided to support the checklist (CEQA Guidelines Section 15063).

If the Initial Study concludes that the proposed project could have a significant effect on the environment, then an Environmental Impact Report should be prepared; otherwise, the Lead Agency may prepare a Negative Declaration (ND) or Mitigated Negative Declaration (MND). An ND or MND is a written statement explaining why the proposed project would not have a significant environmental effect. For MNDs, the document must describe the mitigation measures included in the proposed project to avoid potentially significant effects [CEQA Guidelines Sections 15063, 15371; Public Resources Code Section 21092.69(a)].

CEQA requires the Lead Agency to provide the public and relevant agencies an opportunity to comment by filing and distributing a Notice of Intent to adopt an ND or MND on a project. Following the 30-day public review period, the Lead Agency considers the ND or MND, together with any comments received, before approving the proposed project. Although there is no requirement to prepare formal responses to comments, the Lead Agency should have adequate information in the record explaining why the comment does not affect the conclusion that there would be no significant effects, and the Lead Agency must notify any commenting agencies of the date of any public hearing on the proposed project for which the ND or MND is prepared (CEQA Guidelines Sections 15072, 15073).

When adopting an MND, the Lead Agency must also adopt a monitoring and reporting program for the mitigation measures included in the MND and, if it approves the project, the Lead Agency may file a Notice of Determination with the State Clearinghouse within 5 working days after project approval [CEQA Guidelines Sections 15074(d), 15075; Public Resources Code Sections 21081.6, 21092.3]. Where, as in this case, the Lead Agency is a local agency, the Notice of Determination must be filed with the County Recorder's Office [CEQA Guidelines Section 15075(d)].

VFWD is applying for funding through the U.S. Environmental Protection Agency's (EPA's) Wastewater State Revolving Fund program (33 U.S. Code Section 1383). This program is administered by the State Water Resources Control Board (SWRCB) in California and provides federal funding for a wide range of water quality infrastructure projects. In addition to CEQA documentation prepared for a project, the application requirements include completion of an evaluation form for federal environmental coordination that is commonly referred to as "cross-cutter requirements" or "CEQA Plus." SWRCB, as the federal lead agency delegate, requires compliance with National Environmental Policy Act requirements. As such, VFWD has taken a CEQA Plus approach to the environmental review, providing analysis pursuant to the federal cross-cutter considerations, as discussed in Appendix A.

1.5 Description of the Proposed Project

VFWD proposes to construct several new facilities to replace WWTP functions currently performed at the existing MIPS and to rehabilitate several existing facilities with aging equipment at its WWTP. VFWD would construct a new MIPS and CCT-D adjacent to the existing CCT-C. The new configuration would consolidate the WWTP's two CCTs and treated effluent pump stations in a common area of the plant. Hydraulic upgrades would be made to pump stations associated with CCT-C. Additionally, the Proposed Project would replace the existing pumps at the Carquinez treated effluent pump station and 3W utility water pump station with newer, more energy-efficient pumps. New outfall and bypass piping would be constructed. Outfall piping would connect the new MIPS to the existing Mare Island Straight outfall pipe. Flow meter vaults would be constructed for each of the outfalls to provide monitoring information for the plant. Bypass piping would be added to both the Mare Island Straight outfall and the Carquinez outfall to allow non-compliant effluent water to be diverted to the Ryder Street Basin for additional treatment. The existing Biotower media would be replaced and upgrades would be made to the electrical system and catwalk. The existing Confined Space Training Facility would be demolished and a new facility would be constructed within the fence line. A new Bioassay Facility constructed adjacent to the CCTs would provide permanent compliance testing facilities for plant personnel. Lastly, as part of its Proposed Project, VFWD would decommission and demolish the existing MIPS. All demolition and construction would occur within the existing fence line of the VFWD facility.

The new MIPS and the rehabilitated Carquinez pump station would operate in a parallel fashion to handle flow from CCT-C and CCT-D. The operating configurations of the pump stations and CCT facilities for normal and wet weather conditions would not change, aside from the addition of flow by gravity under certain conditions.

New instrumentation and controls would tie in to the existing effluent pump station electrical room. The new energy-efficient pumps would use less power than existing operations.

New MIPS

The new MIPS would have five new pumps controlled by panels that would be located in the effluent pump station electrical room. Both rehabilitated and new piping would be used to connect to the existing Mare Island Strait outfall pipe on Ryder Street within VFWD's property. This new effluent pump station would have a capacity of 30 mgd.

New CCT-D

A new CCT-D structure would be constructed similar to that of the existing structure of CCT-C (Figure 1). The new CCT-D structure would be directly adjacent to CCT-C to the southwest. A control valve structure would be constructed on the influent end of CCT-D to provide the desired flow split between the two CCTs. A new 36-inch pipe would be installed to connect the new MIPS to the Carquinez pump station. This intertie would allow for flow from either CCT-C or CCT-D to flow to either pump station. A new sodium hypochlorite feed point would be added at the influent end of CCT-D. Sodium bisulfite would be piped to the effluent end to ensure residual chlorine is neutralized prior to discharge through the effluent pump stations. Controls would be added to ensure proper dosing of sodium bisulfite and to avoid double dosing in this operating condition.

CCT-C Upgrades

A new flow splitting structure (FSS) would be constructed adjacent to CCT-C, called FSS No. 5. FSS No. 5 would split flow between CCT-C and CCT-D. The parshall flume at the influent side of CCT-C would be replaced with a magnetic flowmeter. A new vault would be constructed using existing and new walls, and it would be covered with a solid, watertight top. A new 36-inch pipe would be installed to connect the Carquinez pump station to the new MIPS. This intertie would allow for flow from either CCT-C or CCT-D to flow to either effluent pump station.

Carquinez Pump Station

The existing Carquinez pump station would be rehabilitated with four new pumps installed to match the existing layout and 30 mgd capacity. New piping would connect to the existing 42-inch force main immediately downstream of the Carquinez pump station. Wet well improvements would improve hydraulics and energy efficiency, and increase pump service life.

3W Pump Station

The existing 3W pump station would be rehabilitated with three new pumps and piping installed to match the existing layout and 1,650 gpm peak capacity. The 3W pump station would be just west of the CCT-C facility. Wet well improvements would improve hydraulics and energy efficiency, and increase pump service life.

Outfall and Bypass Piping

Outfall piping would connect the new MIPS to the existing Mare Island Straight outfall pipe. A bypass would be constructed to divert WWTP effluent that does not meet permit conditions to the Ryder Street storage basin, from the Mare Island or Carquinez outfalls. The bypass would route flow through Junction Box No. 1. Flow meter vaults would be constructed for each of the outfalls to provide monitoring information for the plant.

Bioassay Facility

The existing Bioassay Facility operates from a modular trailer and draws sample water from the CCT-B/MIPS effluent stream. As part of the WWTP upgrades, VFWD would construct a new permanent concrete block building near the new MIPS and Carquinez pump station to house the Bioassay Facility. The existing trailer-based structure would be removed from the site once the new Bioassay Facility is connected to the new treated effluent system and is functionally operable.

Biotowers

The two existing Biotowers would be decommissioned one at a time, including the removal and disposal of the dome cover on one tower. The towers would be drained, the media inside would be removed, and new media would be installed before placing the Biotowers back into service. The spent media would be broken down for disposal. During the media replacement, upgrades to the electrical system and catwalk would also be made.

Confined Space Training Facility

The existing Confined Space Training Facility would be demolished. A new Confined Space Training Facility would be designed, relocated on site, and constructed. The location of the Confined Space Training Facility is still to be determined, but would be within the WWTP fence line.

Decommissioning and Demolition of Existing MIPS Building

The MIPS pumps would remain in service until the new pumps have been operationally tested. At that point, the existing pumps could be removed and the existing MIPS would be decommissioned and demolished.

The old MIPS may contain lead, asbestos, and polychlorinated biphenyls, and has experienced water intrusion and mold. Testing and building demolition would be performed such that these contaminants are contained and material is profiled and transported for disposal in accordance with applicable rules and regulations. Containment and spill kits would be present on site during decommissioning and demolition work.

The site of the old MIPS would include the complete demolition of the entire structure, including the Pre-Aeration Tanks, so that future construction of another building may occur. All utility connections would be decommissioned to accommodate future re-build.

The motor control center (MCC) is located in the original plant control room in the southeast corner of the ground level floor of the MIPS. The MCC would be reconstructed in a separate structure in the vicinity of MIPS**.**

An estimated 2,700 cubic yards of material—including concrete debris, wood debris, metal debris, soil, piping, and other debris—would be excavated and hauled off site.

Temporary laydown areas would be located throughout the site. These areas would be used to stockpile disassembled and demolished material before it is loaded onto trucks to be hauled off site. Additional off-site areas may be used for temporary laydown during decommissioning and demolition activities. Landowner agreement for any off-site staging/laydown areas and work areas would be obtained prior to construction.

Construction Details

Construction of the Proposed Project would include the activities listed in Table 1. Project construction is anticipated to begin in March 2023 and last approximately 34 months. Work hours would be from 7 a.m. to 5 p.m., Monday through Friday. The start of construction may be delayed until State Revolving Fund or other funding mechanisms are secured. Construction would be accomplished in phases, as shown in Table 1. All on-site power would be used during construction. Geotechnical estimates show that site dewatering would be required for all excavation beyond 3 feet deep. No vegetation removal is planned.

Table 1. Construction activity sequencing

Activity	Phase	General time frame
Mobilization and site preparation. Implementation of environmental controls	1	Spring 2023 (approximately 1 month)
Pouring of concrete slabs and structures and installation of prefabricated pumps and piping at the Carquinez pump station, 3W pump station, and MCC. Rerouting of fiber optic and other utility lines. Function testing of new pumps and equipment.	2	Spring 2023 to Winter 2024 (approximately 11 months)
Pouring of concrete slabs and structures and installation of prefabricated pumps and piping at the new MIPS, CCT-D, Mare Island Strait Effluent Pipe, Bioassay Facility, Biotowers, and Confined Space Training Facility Function testing of new pumps and equipment.	2	Spring 2024 to Winter 2025 (approximately 10 months)
Remediation and demolition of old MIPS building	3	Spring 2025 to Fall 2025 (approximately 9 months)
Site restoration	4	Fall 2025 (approximately 3 months)

The construction equipment expected to be used for the Proposed Project is listed in Table 2. No more than 69 workers are estimated to be on site during construction, with an average of roughly 34 workers on site throughout the construction phases. Construction materials would be hauled on site using street-legal trucks. Materials and estimated quantities to be used during construction are listed in Table 2.

The site would be accessed from Interstate Highways 80 and 780 via Curtola Parkway, Solano Avenue, Lemon Street, and Sonoma Boulevard. This access route would be used by workers and demolition-related traffic. All demolition and construction would occur within the existing fence line of the WWTP owned by VFWD. Project staging would take place on the WWTP site in areas not used for operations or traffic. Additional off-site areas may be used for temporary laydown during decommissioning and demolition activities. See Figure 1 for the location of staging areas. Landowner agreement for any off-site staging/laydown areas and work areas would be obtained prior to construction. Prior to the start of construction work, site limits would be delineated with fencing and construction site entrances would be established.

Table 2. Construction equipment and materials

Equipment	Quantity	Operation in Project phase	Total trips over all phases	Materials and quantities
Worker vehicles	69	1, 2, 3, 4	34,160	NA
Mechanical truck	2	1, 2, 3, 4	NA	NA
Forklift	2	1, 2	NA	NA
Crane	2	1, 2, 3	NA	NA
Scissor lift	3	1, 2	NA	NA
Excavator	2	1, 2, 3, 4	NA	Approximately 8,200 cy excavation
Backhoe	1	1, 2, 4	NA	NA
End loader	1	1, 2, 3, 4	NA	NA
Delivery truck	2	1, 2, 4	6	Approximately 300 cy masonry grout Approximately 10,000 masonry blocks
Haul trucks (10 cy capacity)	10	2, 3, 4	634	Approximately 1,100 cy subbase Approximately 1,800 cy imported fill Approximately 3,735 cy demolition
Concrete pump truck (10 cy capacity)	2	1, 2	212	Approximately 1,800 cy concrete Approximately 3,200 sy pavement
Welding equipment	1	1, 2, 3, 4	NA	NA
Scaffolding system	1	1, 2	NA	NA
Dewatering pump	1	1, 2, 3, 4	NA	NA
Concrete saw cutter	2	3	NA	NA
Cutting torch	1	2, 3	NA	NA
Vibrator hammer	1	3	NA	NA

Notes: cy = cubic yards, NA = not applicable, sy = square yards

Operations and Maintenance

Replacement of MIPS would require relocating existing WWTP utilities, including electrical service, potable water service, fiber optic and telecommunications, and utility water. Ongoing operation of new MIPS facilities at the WWTP would be provided by VFWD. Telephone and fiber-optic cables in the old MIPS building would be relocated during decommissioning and demolition. Utility connections at the old MIPS building would be decommissioned to accommodate a future re-build on the site of the old MIPS. Realignment would not affect other property owners.

1.6 Permits and Approvals

No responsible or trustee agencies are involved in the Proposed Project. The existing MIPS building is over 50 years old and is being considered for listing eligibility on the California Register of Historic Resources and the National Register of Historic Places. HDR has initiated the outreach process to the Native American Heritage Commission for Assembly Bill 52 consultation in Solano County. Any additional City or County approvals would be obtained prior to Project construction.

2 Environmental Checklist Form

1. **Project Title:** Vallejo Mare Island Pump Station 3W Effluent Bypass Project
2. **Lead Agency name and address:** Vallejo Flood and Wastewater District
3. **Contact person and phone number:** Kyle Broughton, (707) 644-8949, ext. 1307
4. **Project location:** 450 Ryder Street, Vallejo, CA 94590
5. **General Plan designation:** Public Facilities and Institutions, Industrial, Business/Light Industrial, and Mixed Use
6. **Zoning:** Planned Development Industrial, Public Facilities
7. **Description of project:** The Vallejo Flood and Wastewater District (VFWD) proposes to construct several new facilities to replace existing wastewater treatment plant (WWTP) functions currently performing the same functions associated with the existing Mare Island Pump Station (MIPS) and rehabilitate several existing facilities with aging equipment at its WWTP. VFWD would construct a new Mare Island treated effluent pump station (MIPS) and chlorine contact tank (CCT)-D adjacent to the existing CCT-C. The new configuration would consolidate the WWTP's two CCTs and treated effluent pump stations in a common area of the plant. Several upgrades would be made to CCT-C. Additionally, the Project would replace the existing pumps at the Carquinez treated effluent pump station and the 3W utility water pump station with newer, more energy-efficient pumps. New outfall and bypass piping would be constructed. Outfall piping would connect the new MIPS discharge piping to the existing Mare Island Straight outfall pipe. Flow meter vaults would be constructed for each of the outfalls to provide monitoring information for the plant for increased reporting accuracy. Bypass piping would be added to both the Mare Island Straight outfall and the Carquinez outfall to allow non-compliant effluent water to be diverted to the Ryder Street Basin for additional treatment if disruptions occur in the treatment process. A new Bioassay Facility constructed adjacent to the CCTs would provide permanent testing facilities for plant personnel. The existing Biotower media would be replaced and upgrades would be made to the electrical system and catwalk. The existing Confined Space Training Facility would be demolished and a new facility would be constructed within the fence line. Lastly, as part of its Proposed Project, VFWD would decommission and demolish the existing MIPS. All demolition and construction would occur within the existing fence line of the VFWD WWTP facility.
8. **Surrounding land uses and setting:** The Proposed Project is located in an industrial urban area within the city of Vallejo just east of the Mare Island Strait.
9. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):** Clean Water State Revolving Fund Application, Water Infrastructure Finance and Innovation Act Application.
10. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?** In compliance with Assembly Bill 52, VFWD will notify tribes who have expressed interest regarding the Proposed Project.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	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

Each of these impacts can be reduced to a less than significant level through implementation of prescribed mitigation measures.

Determination (To be Completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the project would not have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ 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.

☐ I find that the proposed project may have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ 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.

☐ 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.

Kyla Bright — Signature

8/31/20 — Date:

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 in the parentheses following each question. 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 there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries 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," as described in (5) below, 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. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. 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 significance.

2.1 Aesthetics

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
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 building within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, 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 points). 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?	☐	☐	☒	☐

Environmental Setting

According to the Vallejo General Plan, scenic resources in Vallejo include San Pablo Bay, Mare Island Strait, the waterfront, Sulphur Springs Mountain, the Vaca Mountains, White Slough, the Mare Island Strait Wetlands, Sky Valley, and other natural open spaces. State Route 37 within Vallejo from Highway 29 west is eligible for designation as a State Scenic Highway. The City has established residential view district zoning regulations to preserve the scenic views from the residential areas of Vallejo hills (City of Vallejo 2017).

The Proposed Project is located in an industrial area of Vallejo along the Mare Island Strait, approximately 2 miles north of the confluence of the Mare Island Strait, Carquinez Strait, and San Pablo Bay. Mare Island contains a large inventory of commercial and industrial facilities. The existing MIPS building within the Project area was assessed for eligibility on the California Register of Historical Resources (see Section 2.5, *Cultural Resources*). According to this analysis, Mare Island Pump Station lacks significance under any of the four California Register of Historical Resources eligibility criteria and, accordingly, does not qualify as a historical resource under CEQA.

Impact Analysis

a) Have a substantial adverse effect on a scenic vista?

Impact: No Impact.

The Proposed Project is located in a highly industrialized area of Vallejo. It involves the construction of several new facilities to replace existing WWTP functions and the rehabilitation of several existing facilities. Newly proposed structures would be similar in visual quality to those currently at the pump station in terms of their size and industrial nature. These Project elements would not obstruct views or adversely affect a scenic vista because the surrounding area is industrial and no scenic viewpoints or observation points exist in the vicinity. Therefore, no impact would occur, and no mitigation is required.

Mitigation Measures: None Required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?

Impact: No Impact.

The Proposed Project is not located along the portion of Highway 29 that is considered a State Scenic Highway. No state scenic highways would be adversely affected. The Project area is industrial and sparsely vegetated. Work and equipment staging would occur on developed land or existing structures, and tree and vegetation removal would not be required during construction.

Under the Proposed Project, the existing MIPS building would be demolished. However, the technical analysis of the MIPS building in Appendix E concluded that it does not meet any of the four eligibility criteria for listing on the California Register of Historic Resources and is, for the purposes of CEQA, not considered a historical resource and would not be significantly affected by demolition (see Section 2.5, *Cultural Resources*). As a result, no mitigation is required.

Mitigation Measures: None Required.

c) In non-urbanized areas, 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 points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Impact: No Impact.

As discussed in item a, the Proposed Project is located in an industrial area and would involve the construction of several new facilities to replace existing WWTP functions, and the rehabilitation of several existing facilities. These Project elements would be consistent with previous use and the current industrial zoning regulations within the city of Vallejo. Additionally, the Vallejo General Plan discusses policies and regulations established to protect scenic vistas and panoramic views of the surrounding natural and human-made environment from residential neighborhoods located on hills. The Proposed Project is located outside of these areas and would not conflict with these policies and regulations. As such, there would be no impact and no mitigation is required.

Mitigation Measures: None Required.

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

Impact: Less Than Significant Impact.

Operation of construction vehicles and equipment could cause an additional source of light or glare during construction. However, construction would be temporary and would only occur during daylight hours. Once construction is complete, nighttime operation would occur along with the rest of the

facility. Some new lighting would be required for security purposes and for lighting of the Project area, which would cause additional glare. However, new lighting would be consistent with existing facility LED lighting for nighttime operation. Light and glare from the Project area would be consistent with existing conditions at the facility and other industrial uses in the vicinity of the Project area and would face away from sensitive receptors, including an existing church located approximately 600 feet northeast of the Project site on Sonoma Boulevard, homes located 1,400 feet from the site, and the Mare Island Strait. Therefore, the Proposed Project would not adversely affect nighttime views in the area. Impacts would be less than significant. As a result, no mitigation is required.

Mitigation Measures: None Required.

References

City of Vallejo. 2017. “General Plan 2040.” August 29, 2017. https://www.cityofvallejo.net/.../planning_division/general_plan_2040.

2.2 Agriculture and Forestry Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
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 non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

Less than 1 percent of the land in Vallejo is used for agricultural purposes, and there is no land designated for forest land or timberland in the city (City of Vallejo 2017). According to the California Department of Conservation (DOC), the Project area is located on land designated for Urban and Built-Up Land, which is reserved for land uses occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to 10-acre parcel. This land is typically reserved for industrial and other urban land uses, outside of areas designated for California Important Farmland (DOC 2019). The Project area is also zoned "Planned Development Industrial" (City of Vallejo 2020) and designated for industrial land uses in the Vallejo General Plan (City of

Vallejo 2017). Given the Project area's industrial zoning, the Project area is also located outside of properties considered under the Williamson Act Program.

Impact Analysis

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Impact: No Impact.

The Project area is located in an area zoned and designated for industrial purposes. No California Important Farmland exists in the Project area. All Project activities would be contained to the designated Project area and would not convert farmland to non-agricultural use. Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Impact: No Impact.

There are no agricultural land uses or properties under a Williamson Act contract within the Project area. Project activities would be consistent with the Project area's industrial land use. Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

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))?

Impact: No Impact.

There is no forest land or timberland located in the vicinity of the Project area. All Project activities would be contained to the Project area, which is zoned for industrial purposes, and would not conflict with existing zoning or cause rezoning of forest land, timberland, or Timberland Production. There would be no impact and no mitigation is required.

Mitigation Measures: None Required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

Impact: No Impact.

As discussed in item c, no forest land is located in the Project area and none would be adversely affected by the Proposed Project. Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

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

Impact: No Impact.

The Proposed Project is located in an industrial zoning area and Project activities would be consistent with this zoning and contained to the Project area. No farmland or forest land is located in the Project area, and none would be converted or adversely affected as a result of the Proposed Project. Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

References

California Department of Conservation (DOC). 2019. "Important Farmland Categories." Accessed June 28, 2020. https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx.

City of Vallejo. 2017. "General Plan 2040." August 29, 2017. https://www.cityofvallejo.net/.../planning_division/general_plan_2040.

———. 2020. "Vallejo Prospector." Accessed June 28, 2020. http://gis.zoomprospector.com/client/vallejo/.

2.3 Air Quality

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
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?	☐	☐	☒	☐

Environmental Setting

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (for example, factories) and indirect sources (for example, traffic associated with new development), as well as monitoring ambient pollutant concentrations. BAAQMD's jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa—and portions of Solano and Sonoma Counties.

Air Quality Management Plan

BAAQMD's most recent clean air plan is the 2017 Clean Air Plan, adopted in April 2017. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—reactive organic gas (ROG) and nitrogen oxide (NOx)—and to reduce transport of ozone and its precursors to neighboring air basins. BAAQMD uses the Clean Air Plan to evaluate a project's potential cumulative air quality impacts. The BAAQMD CEQA Guidelines state that "for any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impacts should be based on an evaluation of the consistency of the project with the local general plan and the general plan with the regional air quality plan." A proposed project would be consistent with the Attainment Plan if the project is consistent with assumptions used in the General Plan.

Methods and Thresholds

The air quality analysis presented here evaluated the Proposed Project's short-term construction and long-term operation emissions using the methodologies and significance thresholds outlined below.

Methods

Emissions of criteria air pollutants were estimated using existing conditions information, Project construction details, and Project operations information, as well as a combination of emission factors from the following sources:

- CalEEMod (Version 2016.3.2) emission model for estimating exhaust emissions from off-road construction equipment and on-road motor vehicles
- CalEEMod (Version 2016.3.2) emission model for calculating the long-term mobile, energy, and area source emissions

Bay Area Air Quality Management District Guidelines

BAAQMD's CEQA Air Quality Guidelines (2017) advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance.

OPERATIONAL IMPACT THRESHOLDS

Table 3 presents the thresholds of significance for operational-related criteria air pollutant and precursor emissions. These represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the San Francisco Bay Area Air Basin's existing air quality conditions. If daily average or annual emissions of operational-related criteria air pollutants or precursors would exceed any applicable threshold of significance listed in Table 3, the Proposed Project would result in a cumulatively significant impact.

Table 3. BAAQMD thresholds of significance for operational emissions

Pollutant/Precursor	Maximum annual emissions (tpy)	Average daily emissions (lbs/day)
ROG	10	54
NO_X	10	54
PM_{10}	15	82
$PM_{2.5}$	10	54

Source: BAAQMD (2017)
Notes: lbs = pounds, PM = particulate matter, tpy = tons per year

CONSTRUCTION IMPACT THRESHOLDS

Table 4 presents the thresholds of significance for construction-related criteria air pollutants and precursor emissions. If daily average emissions of construction-related criteria air pollutants or precursors would exceed any applicable threshold of significance listed in Table 4, the Proposed Project would result in a significant cumulative impact.

Table 4. BAAQMD thresholds of significance for construction emissions

Pollutant/Precursor	Average daily emissions (lbs/day)
ROG	54
NO_X	54
PM_{10}	82[a]
$PM_{2.5}$	54[a]

Source: BAAQMD (2017)
[a] applies to construction exhaust emissions only

LOCAL COMMUNITY RISK AND HAZARD IMPACT THRESHOLDS

The thresholds of significance for local community risk and hazard impacts are identified below, which apply to the siting of a new source. Local community risk and hazard impacts are associated with toxic air contaminants (TACs) and fine particulate matter ($PM_{2.5}$) because emissions of these pollutants can have significant health impacts at the local level. If emissions of TACs or $PM_{2.5}$ exceed any of the thresholds of significance listed below, the Proposed Project would result in a significant impact.

- Non-compliance with a qualified risk reduction plan; or
- An excess cancer risk level of more than 10 in one million, or a non-cancer (that is, chronic or acute) hazard index greater than 1.0 would be a cumulatively considerable contribution; or
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ would be a cumulatively considerable contribution.

A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source, plus the contribution from the project, exceed the following:

- Non-compliance with a qualified risk reduction plan; or
- An excess cancer risk level of more than 100 in one million, or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.

A lead agency should enlarge the 1,000-foot radius on a case-by-case basis if an unusually large source or sources of risk or hazard emissions that may affect a proposed project are beyond the recommended radius.

LOCAL CARBON MONOXIDE IMPACT THRESHOLDS

The thresholds of significance for local carbon monoxide (CO) emissions are the 1- and 8-hour California Ambient Air Quality Standards of 20.0 parts per million (ppm) and 9.0 ppm, respectively. By definition, these represent levels that are protective of public health. If a project would cause local emissions of CO to exceed these thresholds of significance, the proposed project would result in a significant impact on air quality.

ODOR IMPACT THRESHOLDS

The thresholds of significance for odor impacts are qualitative in nature. A project that would result in the siting of a new source should consider the screening level distances and the complaint history of the odor sources:

- Projects that would site a new odor source farther than the applicable screening distance shown in Table 5 from an existing receptor would not likely result in a significant odor impact.
- A type of odor source with five or more confirmed complaints in the new source area per year averaged over 3 years is considered to have a significant impact on receptors within the screening distance shown in Table 5.

Table 5 presents odor screening distances recommended by BAAQMD for a variety of land uses. Projects that would site a new odor source or a new receptor farther than the applicable screening distance shown in Table 5 from an existing receptor or odor source, respectively, would not likely result in a significant odor impact. The odor screening distances in Table 5 should not be used as absolute screening criteria, but rather as information to consider along with the odor parameters and complaint history.

Table 5. BAAQMD odor screening distances

Land use/Type of operation	Project screening distance (miles)
Wastewater treatment plant	2
Wastewater pumping facilities	1
Sanitary landfill	2
Transfer station	1
Composting facility	1
Petroleum refinery	2
Asphalt batch plant	2
Chemical manufacturing	2
Fiberglass manufacturing	1
Painting/coating operations	1
Rendering plant	2
Coffee roaster	1
Food processing facility	1
Confined animal facility/feed lot/dairy	1
Green waste and recycling operations	1
Metal smelting plants	2

Source: BAAQMD (2017)

Impact Analysis

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

Impact: No Impact.

An air quality management plan describes air pollution control strategies to be taken by a city/county or region classified as a nonattainment area. Its main purpose is to bring the area into compliance with the requirements of federal and state air quality standards. CEQA requires that certain proposed projects be analyzed for consistency with the air quality management plan.

BAAQMD recommends that the agency approving a project where an air quality plan consistency determination is required analyze the project with respect to the following questions. If all the questions are concluded in the affirmative, and those conclusions are supported by substantial evidence, BAAQMD considers the project consistent with air quality plans prepared for the Bay Area.

1. Does the project support the primary goals of the Air Quality Plan (AQP)?

   The primary goals of the 2017 Bay Area Clean Air Plan (CAP), the current AQP to date, are to:

   - Attain air quality standards;
   - Reduce population exposure and protect public health in the Bay Area; and
   - Reduce greenhouse gas emissions and protect the climate.

2. Does the project include applicable control measures from the AQP?

   Agencies approving projects should require that they include all AQP control measures that can feasibly be incorporated into the project design or applied as mitigation, or justify the reasons, supported by substantial evidence, why a measure or measures are not incorporated into the project. Projects that incorporate all feasible air quality plan control measures are considered consistent with the 2017 CAP.

3. Does the project disrupt or hinder implementation of any AQP control measures?

   If approval of a project would not cause the disruption, delay, or otherwise hinder the implementation of any AQP control measure, it would be considered consistent with the 2017 CAP. Examples of how a project may cause the disruption or delay of control measures include a project that precludes an extension of a transit line or bike path, or proposes excessive parking beyond parking requirements.

As indicated in responses to items b and c below, the Proposed Project would not exceed BAAQMD's significance criteria for criteria air pollutant emissions during construction. In addition, the Proposed Project would not result in any new long-term air quality or greenhouse gas (GHG) emissions or increase the population of the city. Therefore, the Project would not conflict with or obstruct implementation of the applicable AQP. As a result, no mitigation is required.

Mitigation Measures: None Required.

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?

Impact: Less Than Significant Impact.

Construction Emissions

Project construction activities have the potential to generate emissions from equipment used during construction and to generate dust. Likely air pollutants from construction including the following: PM dust, criteria pollutants from fuel combustion, and diesel PM. Construction activities at individual

sites within the Proposed Project area are anticipated to result in short-term increases in emissions associated with the operation of construction equipment.

Equipment Exhaust and Related Construction Activities

The construction emissions for the typical construction equipment and activities were calculated using the CalEEMod model. The total exhaust emissions generated during each year of the construction period are listed in Table 6. The construction emission estimates are also detailed in Appendix B. As identified in Table 6, the construction emissions would not exceed BAAQMD's daily thresholds. The impact of Project construction on criteria pollutant emissions would be less than significant.

Table 6. Daily construction emissions (pounds per day)

Year	CO	ROGs	NO_X	PM_{10}	$PM_{2.5}$
2023	21.1	1.8	25.5	2.1	1.0
2024	26.9	2.2	20.0	1.1	0.8
2025	17.2	1.3	11.9	0.7	0.5
Peak day (pound/day)	26.9	2.2	25.5	2.1	1.0
BAAQMD thresholds	NA	54.0	54.0	82.0	54.0
Exceedance	NA	No	No	No	No

Note: NA = not applicable

Fugitive Dust

Fugitive dust emissions are generally associated with land clearing, exposure, and cut and-fill operations. Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather conditions. For mitigation of fugitive dust emissions, BAAQMD recommends implementing best management practices (BMPs) as a pragmatic and effective approach to controlling fugitive dust emissions (BAAQMD 2017). BAAQMD notes that individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent. Therefore, implementation of these BMPs would maintain the Project's fugitive dust emissions below a level of significance.

BAAQMD Best Management Practices

For all proposed projects, BAAQMD recommends the implementation of all basic construction BMPs listed in Table 7, whether or not construction-related emissions exceed applicable thresholds of significance.

Table 7. Basic construction best management practices recommended for all projects

Best management practices
1. All exposed surfaces (for example, parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off site shall be covered.
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.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
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.
6. Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, Title 13, Section 2485 of the California Code of Regulations [CCR]). Clear signs shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and 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 phone number shall also be visible to ensure compliance with applicable regulations.

Source: BAAQMD (2017)

Operational Emissions

VFWD proposes to construct several new facilities to replace WWTP functions currently performed at the existing MIPS and rehabilitate several existing facilities with aging equipment at its WWTP. Because the Proposed Project would replace existing facilities with newer, more efficient ones, and would not increase the number of on-site employees, it would not result in any long-term increase in air quality emissions. The impact of Project operation on criteria pollutant emissions would be less than significant.

Mitigation Measures: None Required.

c) Expose sensitive receptors to substantial pollutant concentrations?

Impact: Less Than Significant Impact.

Project construction would result in emissions of diesel PM from heavy-duty construction equipment and trucks operating in the Proposed Project area (for example, water trucks and haul trucks). Diesel PM is characterized as a TAC by the California Air Resources Board (CARB). The Office of Environmental Health Hazard Assessment has identified carcinogenic and chronic noncarcinogenic effects from long-term (chronic) exposure, but it has not identified health effects attributable to short-term (acute) exposure to diesel PM.

At this time there are no residences, hospitals, or schools within 1,000 feet (the area of effect for analysis of health risks according to the BAAQMD CEQA Air Quality Guidelines) of the Project site. The nearest sensitive receptor to the Project site is an existing church located approximately 600 feet northeast of the Project site on Sonoma Boulevard. The closest homes to the Project site are located approximately 1,400 feet from the active construction areas. Therefore, the Proposed Project's impact related to exposure of sensitive receptors to construction-period TACs and health risk would be less than significant. As a result, no mitigation is required.

Mitigation Measures: None Required.

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

Impact: Less Than Significant Impact.

Construction

Construction of the Proposed Project could result in emission of odors from construction equipment and vehicles (for example, diesel exhaust). It is anticipated that these odors would be short-term, limited in extent at any given time, and distributed throughout the Project area during the duration of construction. Therefore, the odors would not affect a substantial number of individuals. This impact is considered less than significant.

Operation

The Proposed Project site is a WWTP located approximately 1,400 feet from the closest residence. Because the Proposed Project would replace existing facilities with newer, more efficient ones, it would not result in any new sources of long-term odors. Therefore, the impact is considered less than significant. As a result, no mitigation is required.

Mitigation Measures: None Required.

References

Bay Area Air Quality Management District (BAAQMD). 2017. "Clean Air Plan." https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en.

2.4 Biological Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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, and 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 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?	☐	☐	☐	☒

Environmental Setting

This section describes the regional and local environmental setting with regard to biological resources.

Methodology

The following data reviews and analyses were performed to characterize the environmental setting of the Proposed Project area, and to determine the potential effects Project-related activities could have on biological resources.

Desktop Review

To identify potential constraints in the Proposed Project area, queries of publicly available data on biological resources were performed. The Proposed Project area includes areas of proposed work, demolition, and potential staging areas as defined in Section 1.5, *Description of the Proposed Project*. Preliminary searches of the following databases were performed to identify special-status species and their habitats, as well as aquatic resources, with the potential to occur in the Proposed Project area:

- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation System (2020a)
- USFWS Critical Habitat Portal (2020b)
- USFWS National Wetland Inventory (NWI) (USFWS 2020c)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database QuickView Tool in BIOS 5 (2020)
- California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California (2020)
- Google Earth aerial imagery (2020)

The USFWS database was queried to identify federally protected species and critical habitat under the agency's jurisdiction with the potential to occur in the Proposed Project area. A query of the USFWS NWI database provided a baseline for potential waters of the U.S., including wetlands that occur within and surrounding the Proposed Project footprint. The query of CDFW's QuickView tool provided a list of processed and unprocessed occurrences for special-status species in the Benecia, Mare Island, Cuttings Warf, Cordelia, Fairfield South, Vine Hill, Walnut Creek, Briones Valley, and Richmond, California, U.S. Geological Survey (USGS) 7.5-minute quadrangles. Lastly, the CNPS database was queried to identify special-status plant species with the potential to occur in the aforementioned USGS quadrangles. Results of the database queries are provided in Appendix D.

Impact Analysis

The impact analysis was based on the Proposed Project description, the environmental setting, and federal, state, and local regulatory requirements regarding impacts on biological resources. In addition, the impact analysis used data collected from the literature and data review. When information about the presence of a particular special-status species was unknown, but suitable habitat was present, the impact analysis took a conservative approach by inferring the presence of special-status species within the Proposed Project area until preconstruction or protocol-level surveys determine otherwise. Impacts on specific biological resources are identified and appropriate avoidance, minimization, and/or mitigation measures are discussed further in the impact analysis section.

Local Setting

Topography, Hydrology, and Soils

The Proposed Project is located along the Mare Island Straight near San Pablo Bay. The topography of the surrounding area features fairly flat ground with little elevation change. Elevation within the Proposed Project area ranges from approximately 5 to 15 feet above mean sea level. The Proposed Project area falls within the San Pablo Bay (Hydrologic Unit Code 1805000208) watershed. The

Proposed Project area is highly developed, and no natural drainages appear to occur; however, adjacent waterways include the Mare Island Straight to the west and a couple of unnamed tributaries. The Proposed Project area is underlain solely by "made land," or earthen fill. Made land is typically well-drained and not considered a hydric soil (Natural Resources Conservation Service 2007).

Land Use and Land Cover

Land use within the Proposed Project area consists mainly of industrial and existing wastewater facilities. Most of the Proposed Project area features disturbed ruderal and developed landscapes; however, scattered areas of landscaped vegetation and trees occur in and adjacent to the Proposed Project area.

Special-status Natural Communities and Aquatic Resources

Sensitive habitats considered are those that are of special concern to resource agencies or those that are protected under CEQA, Sections 1600 to 1603 of the California Fish and Game Code (FGC), and/or Sections 401 and 404 of the Clean Water Act. In addition, any areas under the San Francisco Bay Conservation and Development Commission (BCDC) would be considered sensitive habitat. BCDC jurisdiction includes all tidal waters associated with the San Francisco Bay, along with a 100-foot band of shoreline. Sensitive habitats typically either contain special-status species, their associated habitat, or are sufficiently rare themselves to warrant protection as ranked by the NatureServe Heritage Program Status Rank (Faber-Langendoen et al. 2012).

No special-status natural communities were identified within the Proposed Project area, with the exception of a portion of the proposed staging areas falling within BCDC jurisdiction. However, sensitive aquatic communities occur adjacent to the Proposed Project area. A wetted channel, defined by NWI as estuarine marine wetland, runs south of the Proposed Project area, flowing from the west where it confluences with the Mare Island Straight. Based on aerial imagery, this channel supports emergent vegetation and appears to hold water year round. A second channel, not defined by the NWI query, runs east to west below the northernmost staging area. Based on aerial imagery, this channel may be seasonally wetted and support emergent vegetation. The Mare Island Straight borders the Proposed Project area to the west. Although the Proposed Project area is surrounded by aquatic resources, no in-water work is expected as part of the Proposed Project because activities would be limited to existing developed areas and gravel lots.

Aquatic resources provide a variety of functions for plants and wildlife including habitat, foraging opportunities, cover, migration, and movement corridors for both special-status and common species. A delineation of aquatic resources has not been performed; however, the Proposed Project footprint is limited to existing paved areas, buildings/structures, and gravel lots.

Special-status Species

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their persistence in a given area, or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as CDFW and USFWS, and by private organizations such as CNPS. The degree to which a species is at risk of extinction is the determining factor in assigning a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For this biological review, special-status species are defined as follows:

- listed, proposed, or candidates for listing under the federal Endangered Species Act (50 Code of Federal Regulations 17.11 – listed; 61 *Federal Register* 7591, February 28, 1996 candidates)
- listed or proposed for listing under the California Endangered Species Act (FGC 1992 Section 2050 et seq.; 14 CCR Section 670.1 et seq.)
- designated Species of Special Concern by CDFW
- designated Fully Protected by CDFW (FGC Sections 3511, 4700, 5050, and 5515)
- species that meet the definition of rare or endangered under CEQA (14 CCR Section 15380), including California Rare Plant Rank 1B and 2B

The results of the USFWS, CDFW, and CNPS database queries identified several special-status species with the potential to be affected by Proposed Project-related activities. Appendix C summarizes all special-status species identified in the database results and describes the habitat requirements for each species, providing conclusions regarding the potential for each species to be affected by Proposed Project components. In cases where a determination was made that no suitable habitat for a given species is present in the Proposed Project area (Appendix C), that species is not analyzed further in this document.

Impact Analysis

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?

Impact: Potentially Significant Unless Mitigation Incorporated.

Based on the results of the literature review, 6 special-status wildlife species have the potential to occur in or directly adjacent to the Proposed Project area. Given the highly urbanized nature of the Proposed Project area, special-status birds and bats were determined to be the only species groups with the potential to be substantially adversely affected by Project-related activities, either directly through habitat modifications or indirectly through effects that could occur postconstruction. Impacts are discussed in more detail below, along with mitigation measures to avoid, minimize, and/or mitigate for potential impacts, as necessary.

Migratory Birds and Raptors

The Proposed Project area and immediate surroundings may provide nesting and/or foraging habitat for several special-status bird and raptor species, including burrowing owl (*Athene cunicularia*), northern harrier (*Circus hudsonius*), yellow-breasted chat (*Icteria virens*), white-tailed kite (*Elanus leucurus*), American peregrine falcon (*Falco peregrinus*), and loggerhead shrike (*Lanius ludovicianus*), as well as nesting, wintering, and/or foraging habitat for other migratory birds and raptors not identified in Appendix C. All native breeding birds (except game birds during the hunting season), regardless of their listing status, are protected under California FGC 3503.

Demolition of existing structures, ground disturbance, and any vegetation removal, including trees, during the nesting season could result in direct impacts on nesting birds, should they be present in construction areas. However, most of these species are more likely to be nesting in areas adjacent to the Proposed Project area than in it. Additionally, the Proposed Project area is highly disturbed and industrialized. Birds in the area are likely acclimated to a high level of ongoing disturbance.

Potential staging areas are already used for staging, and the proposed work areas and demolition areas are within existing building footprints. The existing conditions on the Proposed Project site are not expected to change in a way that would drastically affect nesting birds. However, increased noise from construction activity, demolition of old facilities, and other human activity could result in nest abandonment if nesting birds are present in the vicinity of the Proposed Project area. Any direct or indirect effect would be considered a significant impact on migratory and special-status bird species. Implementation of the following avoidance and minimization measures would be required:

MM-BIO-1: Minimize Footprint. To the greatest extent feasible, the work areas would be reduced to the smallest possible footprint throughout the duration of Proposed Project activities. Ground disturbance and staging would be limited to previously developed areas and/or gravel lots.

MM-BIO-2: Worker Environmental Awareness Training. If any sensitive biological resources are found during preconstruction surveys, a qualified biologist would be retained to conduct mandatory contractor/worker environmental awareness training for any personnel required to enter a Project site. The awareness training would be provided to all personnel required to enter a Project site to inform them of the locations of sensitive biological resources and the need to avoid impacts on biological resources (for example, wildlife and aquatic resources), and to brief them on the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the Project, the contractor would require them to receive the mandatory training prior to starting work. If no sensitive resources, such as active nests or bat roosts, are found during preconstruction surveys (see MM-BIO-3 and MM-BIO-5), then worker environmental awareness training would not be required.

MM-BIO-3: Migratory Bird and Raptor Surveys. If clearing and/or construction activities would occur during the migratory bird nesting season (March 1 to August 31), then preconstruction surveys to identify active migratory bird and/or raptor nests or burrowing owl burrows would be conducted by a qualified biologist at least 7 days prior construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining the presence or absence of active nest sites within the proposed impact area, including construction access routes and staging areas, along with a 100-foot buffer, where feasible.

MM-BIO-4: Nest Avoidance. If active nest sites are identified in the survey areas, a no-disturbance buffer should be established for all active nest sites prior to commencement of any Project-related activities to avoid disturbances to migratory bird nesting activities. A no-disturbance buffer constitutes a zone in which Project-related activities (that is, vegetation removal, earth moving, and construction) cannot occur. The size of no-disturbance buffers would be determined by a qualified biologist based on the species, activities proposed in the vicinity of the nest, and topographic and other visual barriers. A qualified biologist would monitor the nest until the nest is deemed inactive. The amount and duration of the monitoring would be determined by the qualified biologist and would depend on the same factors mentioned above when determining the size of the no-disturbance buffer.

Implementation of the aforementioned mitigation measures would minimize impacts on migratory birds and raptors through minimization, education, monitoring, and avoidance. As shown, implementation of the aforementioned mitigation measures would reduce impacts on these species from potentially significant to a less than significant level.

Bats

Bats roost in a wide variety of habitats, including buildings, mines, under bridges, rock crevices, caves, under tree bark, and in snags. The pallid bat (*Antrozus pallidus*) is considered a California Species of Special Concern. Pallid bats may use a variety of habitats and structures throughout the Proposed Project area for roosting and foraging. Specifically, these bats could roost in existing infrastructure.

The Proposed Project area is highly disturbed and industrialized. Potential staging areas are already used for staging, and the proposed work areas and demolition areas are within existing building footprints. Special-status bats roosting or foraging in the Proposed Project area are likely acclimated to a certain level of disturbance. However, construction of the Proposed Project, as well as demolition of retired facilities, could require the temporary and/or permanent removal of roosting habitat for these special-status bat species. Removal of maternity roosting habitat, as a result of demolition of structures, would be considered a direct impact. Construction of the Proposed Project could also result in noise, dust, and other indirect disturbances to special-status bats in the Proposed Project area.

In addition to MM-BIO-1 and MM-BIO-2, to minimize potential impacts on special-status bats, implementation of the following mitigation measure would be required.

MM-BIO-5: Special-status Bat Surveys. Prior to demolition of existing structures, an agency-approved biologist would conduct a daytime site reconnaissance of the structure(s). The biologist would look for special-status bats and bat sign including existing roost sites and bat guano deposits, and will listen for roosting bats. If potential roost sites are identified, an exit nighttime survey will be conducted to determine the species of roosting bats and relative bat activity, and to estimate the number of individual bats. This nighttime survey may be an active or passive acoustic monitoring survey. If special-status bat individuals or roosts are found within or directly adjacent to the Project area, the area would be left unaffected until the individual(s) have left the area or a relocation decision has been made in consultation with CDFW. If the daytime survey does not identify the presence of potential bat roosts, no further mitigation is required.

Impacts on special-status bats would be minimized to a less than significant level through the implementation of mitigation measures MM-BIO-1, MM-BIO-2, and MM-BIO-5. As shown, implementation of the aforementioned mitigation measures would reduce impacts on these species from a potentially significant to a less than significant level.

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

Impact: Potentially Significant Unless Mitigation Incorporated.

Sensitive habitats include (1) areas of special concern to resource agencies, (2) areas protected under CEQA, (3) areas designated as sensitive natural communities by CDFW, (4) areas outlined in FGC Section 1600, (5) areas regulated under Clean Water Act Section 404, and (6) areas protected under local regulations and policies. The Proposed Project area consists mainly of developed and ruderal habitat, which are not considered to be natural communities of special concern. Aquatic resources, including fringing marsh vegetation, occur adjacent to some of the proposed staging areas and would be considered sensitive communities. All ground disturbance associated with the Proposed Project would occur in previously disturbed or developed footprints, and impacts on sensitive communities or aquatic resources are not anticipated. However, portions of the proposed

staging areas fall within BCDC jurisdiction. Although Project-related activities would not change the current land use or significantly change the existing conditions of the Project area, it is recommended that stockpiled disassembled and demolished material should be stored at least 100 feet from the Mare Island Strait to avoid lands within BCDC jurisdiction and to reduce the potential for runoff into nearby aquatic resources. Any direct or indirect impacts on sensitive communities or aquatic resources would be considered a significant impact; therefore, MM-BIO-6 is proposed.

MM-BIO-6: Avoid Stockpiling Materials within 100 Feet of the Mare Island Strait. Stockpiled disassembled and demolished material should be stored at least 100 feet from the Mare Island Strait, where possible,

Implementation of MM-BIO-1 would minimize impacts on sensitive communities and aquatic resources through avoidance, minimization, and on-site education. In addition, implementation of MM-BIO-6 would compensate for potential runoff and encroachment into sensitive communities and aquatic resources through mitigation, and would reduce impacts to a less than significant level.

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?

Impact: No Impact.

All ground disturbance associated with the Proposed Project would occur in previously disturbed or developed footprints, and impacts on aquatic resources are not anticipated. It is recommended that stockpiled disassembled and demolished material should be stored at least 100 feet from the Mare Island Strait to reduce potential for runoff into nearby aquatic resources.

Mitigation: None Required.

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 wildlife nursery sites?

Impact: No Impact.

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to (1) sustain species with specific foraging requirements, (2) preserve a species' distribution potential, and (3) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

The Proposed Project would be limited to existing facilities and would include the demolition/ and retirement of the old pump station. Existing conditions limit wildlife movement, and the Proposed Project would not be a significant change from existing conditions. These components do not include anything that would change the permeability of the Mare Island Strait or a riparian corridor. Existing conditions limit movement, and the Proposed Project would not be a significant change from existing conditions. In addition, there are no aquatic resources within the Proposed Project area; therefore, there is no connectivity for fish passage or other aquatic species. Additionally, suitable habitat for special-status terrestrial species is limited because of existing infrastructure, limited tree availability, and pockets of ruderal habitat.

No permanent impacts on fish or wildlife movement or corridors would result from the Proposed Project. Thus, there would be no impact on fish and wildlife movement and native wildlife nursery.

Mitigation: None Required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact: No Impact.

The Nature and Built Environment Element of the 2040 City of Vallejo General Plan emphasizes the conservation, management, and preservation of natural communities and resources (City of Vallejo 2017). The City of Vallejo's tree ordinance prohibits the planting, trimming, pruning, or removal of trees without a permit. The Proposed Project would be consistent with the City of Vallejo General Plan and City tree ordinances. All impacts on special-status species and their habitats would be mitigated for. No conflict with any local policies would occur and no impact is anticipated.

Mitigation: None Required.

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?

Impact: No Impact.

Although not yet adopted, the Solano Multispecies Habitat Conservation Plan was developed to support the issuance of a Section 10(a)1(B) incidental take permit under the federal Endangered Species Act of 1973. The plan also addresses other species of concern recognized by CDFW and CNPS. Should this plan be adopted, the Proposed Project would not conflict with the provisions of an adopted natural community conservation plan, habitat conservation plan, or other approved local, regional, or state habitat conservation plan; therefore, no impact is anticipated.

Mitigation: None Required.

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2.5 Cultural Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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 dedicated cemeteries?	☐	☒	☐	☐

Environmental Setting

Prehistory

Archaeological evidence indicates that human occupation of California began at least 11,000 years ago (Erlandson et al. 2007). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (for example, shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area (Schenck and Dawson 1929). The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, the University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages.

Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence (Lillard and Purves 1936; Lillard et al. 1939). In 1939, Lillard noted that each cultural period led directly to the next, and that influences spread from the Delta region to other regions in central California (Lillard et al. 1939). In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System. This system proposed a uniform, linear sequence of cultural succession (Beardsley 1948, 1954). It was challenged by Gerow, whose work looked at radiocarbon dating to show that Early and Middle Horizon sites were not subsequent developments but, at least partially, contemporaneous (Gerow 1954, 1974; Gerow and Force 1968). To address some of the flaws in the

Central California Taxonomic System, Fredrickson (1973) introduced a revision that incorporated a system of spatial and cultural integrative units. Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: PaleoIndian (10,000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500), and Emergent (Upper and Lower, A.D. 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence (Moratto 1984).

Ethnography

At the time of European settlement, the Project area was included in territory controlled by the southwestern-most extension of the Patwin (Johnson 1978:350; Powers 1877). The Patwin were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Johnson 1978; Kroeber 1925, 1932). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near freshwater sources and in ecotones where plant life and animal life were diverse and abundant.

The Patwin subsistence base varied seasonally and included gathering seeds and plant resources on the plains, netting migratory waterfowl in the tule marshes, and netting salmon and other fish in the rivers and streams. Acorns were a staple in the Patwin diet and were obtained from communally owned hill and valley oak groves (Johnson 1978). The Patwin typically stored the acorns in granaries as insurance against famine in poor harvest years. Ethnographic reports indicate the Patwin obtained large game such as deer, tule elk, and antelope, by using nets or shooting with bows and arrows. The Hill Patwin trade system included various resources that were exchanged with Wappo, Nomlaki, and Southeastern Pomo, and the River Patwin. The River Patwin obtained obsidian from sources to the west and east. Initially, finished shell beads were obtained from coastal tribes, but later, the River Patwin traded for whole shells from the Pacific Coast and produced the beads themselves (Johnson 1978). Relationships with nearby tribes as well as other Patwin tribelets were not always friendly. Johnson notes that relations were strained especially with Napa Valley groups and that the provocations primarily consisted of poaching, with the subsequent retaliations consisting of organized battles on individuals or groups or surprise attacks on villages (Johnson 1978).

Patwin mortuary practices included burials in cemeteries located at one end of the village, possessions of the deceased being buried along with them and, at some locations, property was burned near the grave. Typically, only people who died away from the village were cremated (Johnson 1978). Johnson notes that according to a Hill Patwin informant “the River people [Patwin] set a corpse upright, then pushed the head down, broke the back, wrapped the body in a skin, and put it in the grave” (Johnson 1978). In addition, long burial ropes constructed of hemp were wrapped around the deceased and temporary containers made of tule reeds were utilized for transport (Johnson 1978).

Historic Context

In 1952, the Vallejo Sanitation and Flood Control District was established through a special act of the California legislature, which included it in Enabling Act 8934. The special district was intended to provide sanitation and flood services within the District’s boundary. The official and legal name of the District was changed to Vallejo Flood and Wastewater District (VFWD) by Ordinance No. 2018-76, § 1, adopted on February 13, 2018 (PMC 2006; VFWD 1952 [February 2020 Version]: Title 6, Chapter 6.12.050; VFWD 2012). Construction on the WWTP began after the District was created

and, in 1959, the Vallejo WWTP was complete and the plant began treating Vallejo's sewage. The WWTP, as originally designed, was a physical/chemical plant consisting of screening, influent pumping, sedimentation tanks with pre-aeration, and chlorination disinfection prior to discharge. All of these treatment components resided within the Control Building, now referred to as the MIPS. At that time, all effluent was pumped to the Carquinez Strait outfall near the location of the current Cal State Maritime Academy because of the level of treatment at the time and the deep channel discharge point (in comparison with the adjacent Mare Island Strait/Napa River discharge point added in later years). Sludge was pumped to digestion tanks with gas flaring. The original effluent pumps were powered by liquid diesel engines. The MIPS structure also housed the control building for the entire WWTP process, including the point-of-entry for ancillary utilities to the WWTP (potable water, telephone, electrical feed). A gravity line to the Mare Island Strait originally served as the WWTP's overflow (VFWD 2012, 2020).

The MIPS building itself was constructed in 1957 as the primary pump station of the WWTP and was originally known as the Control Building. Now the building is commonly known as MIPS.

Methodology

The following data reviews and analyses were performed to identify potential historical resources and to determine the potential impacts of Project-related activities on identified cultural resources.

Research

A record search was conducted for the Project area by the Northwest Information Center of the California Historical Resources Information System at Sonoma State University on May 29, 2020. The Northwest Information Center results indicated that no portion of the Project area had been previously surveyed, nor have any resources been documented within the Project area or the 0.25-mile search radius. Three previous studies have been conducted with the search radius.

The Native American Heritage Commission (NAHC) was contacted by HDR to request a review of its Sacred Lands File and to provide the names of individuals and/or organizations in the area that may have knowledge concerning cultural resources in the Project vicinity. Contact with the NAHC and local Native American tribes and representatives is summarized in Section 2.18, *Tribal Cultural Resources*.

As currently described, the Project area consists of the VFWD facility which, other than the Mare Island Pump station building discussed further below, consists of modern industrial infrastructure. Accordingly, no pedestrian archaeological survey was deemed necessary.

Impact Analysis

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

Impact: No Impact.

As described above, cultural resources that meet the definition of a historical resource under CEQA Section 21084.46 consist of a district, site, building, structure, and object that is significant for its traditional, cultural, and/or historical associations. The cultural resources analysis did not locate any previously recorded archaeological resources (either prehistoric or historical) but did identify one historic built environment resource: the MIPS building.

The three-story, rectangular building is partially subterranean and composed of cast-in-place concrete. The façade faces northeast and has three bays. Around 1965, a one-story addition was attached to the façade, where the primary entrance resides. The one-story addition is clad in brick veneer and the remaining elevations exhibit a concrete stucco exterior. The building's flat roof is punctured by metal vent pipes and electrical equipment. On the façade, the roof has a deep overhang covered with concrete stucco. All of the building's fenestration is non-historic (less than 50 years old), and multiple windows and doors have been replaced or filled in with concrete. The interior features of MIPS include concrete and linoleum flooring as well as metal and plastic equipment. Although some equipment is still in use, much of the equipment on the interior is unused. Interior walls feature exposed concrete, brick veneer near where the addition connects, and gypsum board in the control area. Interior fenestration is predominantly non-historic laminated single-leaf doors and steel-framed window walls.

The building's setting is the remainder of the WWTP, which, as a whole, has been extensively modernized. Much of the current setting is non-historic, dating from the 1970s to 1990s. Historic aerial imagery indicates that minimal expansion occurred between 1958 and 1968, including the addition on the façade of the MIPS. Between 1968 and 1982, additional expansion occurred within the 1968 footprint, consisting of approximately four new structures. Between 1982 and 1988, approximately five structures were added and the footprint of the WWTP began to expand northwest. Between 1988 and 1993, eight more structures were added and the footprint expanded to the southwest. Between 1993 and 2005, approximately four more structures were added and the footprint remained very similar. Between 2005 and today, minimal construction has occurred and the current WWTP footprint appears minimally changed since approximately 1993 (Nationwide Environmental Title Research 2020).

Research did not reveal the MIPS to be associated with any persons or events significant within the context of local, regional, or statewide history, nor does it appear to represent an important or distinctive work of an individual involved in water conveyance or wastewater management. The building also does not appear to provide any information potential to answer important research questions. Therefore, the MIPS lacks significance under any of the four California Register of Historic Resources eligibility criteria and, accordingly, does not qualify as a historical resource under CEQA. Further, the Project site is not located within a historic preservation district nor is it identified as a historic landmark.

Therefore, with no historical resources on the Project site, there would be no impact as a result of Project implementation.

Mitigation Measures: None Required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Impact: Potentially Significant Unless Mitigation Incorporated.

Archaeological deposits that meet the definition of historical resource under CEQA Section 21084.1 or CEQA Guidelines Section 15064.5 could be present within the Project site and could be damaged or destroyed by ground-disturbing construction activities (for example, site preparation, grading, excavation, and/or trenching) associated with implementation of the Project. Should this occur, the ability of the deposits to convey their significance, either as containing information about prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired.

As discussed above, the Project area has been completely developed, precluding an examination or assessment of the native ground surface. Although no archaeological sites have been previously identified, it is possible that unknown buried archaeological materials could be found during ground-disturbing construction activities, including unrecorded Native American prehistoric archaeological materials, which could have the potential to uncover and damage or destroy unknown resources. This would be a significant impact.

Mitigation Measures:

MM-CUL-1: Subsurface Discoveries. If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, representatives from VFWD and the archaeologist would meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts on historical resources or unique archaeological resources, VFWD shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Proposed Project design, costs, and other considerations. If avoidance is not feasible, other appropriate measures (for example, data recovery) would be instituted. Work may proceed on other parts of the Project site while mitigation is being carried out.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Impact: Potentially Significant Unless Mitigation Incorporated.

Human remains associated with pre-contact archaeological deposits could exist on the Project site and could be encountered at the time potential future development occurs. The associated ground-disturbing activities have the potential to disturb human remains interred outside of formal cemeteries. Any human remains encountered during ground-disturbing activities are required to be treated in accordance with CCR Section 15064.5(e) (CEQA), Public Resources Code Section 5097.98, and California Health and Safety Code Section 7050.5, which state the mandated procedures of conduct following the discovery of human remains. Descendant communities may ascribe religious or cultural significance to such remains, and may view their disturbance as an unmitigable impact. Disturbance of unknown human remains would be a significant impact.

Mitigation Measures:

MM-CUL-2: Human Remains. Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, and CCR Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Solano County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the NAHC within 24 hours, which will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity,

reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.

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2.6 Energy

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☒	☐

Environmental Setting

Federal

Corporate Average Fuel Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and EPA jointly administer the standards (49 CFR Part 533). The U.S. Congress has specified that Corporate Average Fuel Economy standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility, (2) economic practicality, (3) effect of other standards on fuel economy, and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by EPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. EPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline, depending on the compliance year and vehicle type (49 CFR Parts 523, 534, 535, and 538).

State

California Air Resources Board

AIRBORNE TOXIC CONTROL MEASURE TO LIMIT DIESEL-FUELED COMMERCIAL MOTOR VEHICLE IDLING

In 2004, CARB adopted an Airborne Toxic Control Measure to Limit Diesel-fueled Commercial Motor Vehicle Idling to reduce public exposure to diesel particulate matter emissions (Title 13 CCR Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location. While the goal of this measure is primarily to reduce public

health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

REGULATION TO REDUCE EMISSIONS OF DIESEL PARTICULATE MATTER, OXIDES OF NITROGEN, AND OTHER CRITERIA POLLUTANTS FROM IN-USE HEAVY-DUTY DIESEL-FUELED VEHICLES

In addition to limiting exhaust from idling trucks, in 2008 CARB approved the Truck and Bus regulation to reduce NO_X, PM_{10}, and $PM_{2.5}$ emissions from existing diesel vehicles operating in California (13 CCR Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower, such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions installing diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

Impact Analysis

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

Impact: Less Than Significant Impact.

Construction

Electricity is not expected to be consumed in a large quantity during Project construction because construction equipment and vehicles are typically diesel- or gas-powered, not electric. Electricity for construction would be provided by diesel- or gas-powered generators or by Pacific Gas and Electric and would be provided through an existing on-site hookup; however, electricity usage from such a connection is anticipated to be minimal (that is, mostly for security lighting).

Natural gas is not expected to be consumed in large quantities during Project construction (that is, no natural gas-powered equipment or vehicles). Therefore, natural gas associated with construction activities is considered negligible.

Regarding transportation-related fuel consumption during construction, it is assumed that only diesel fuel would be used in off-road construction equipment and for haul trucks used during delivery of solar panels to the Project site. On-road vehicles for construction workers are assumed to be solely powered by gasoline. The diesel and gasoline fuel consumptions were calculated using the carbon dioxide (CO_2) emissions discussed in Section 2.8, *Greenhouse Gas Emissions*, and EPA's default emission rates of 19.4 pounds of CO_2 per gallon of gasoline and 22.2 pounds of CO_2 per gallon of diesel.[1]

[1] EPA, *Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel*, February 2005

Construction of the Project would result in fuel consumption from the use of construction tools and equipment, haul truck trips, and vehicle trips generated from construction workers traveling to and from the site. Project construction is expected to consume a total of approximately 118,200 gallons of diesel fuel from construction equipment and vendor, hauling, and water truck trips, and approximately 2,464 gallons of gasoline from construction worker vehicle trips. Construction activities and corresponding fuel energy consumption would be temporary and localized because the use of diesel fuel and heavy-duty equipment would not be a typical condition of the Project. The gasoline consumed during construction represents a negligible amount when compared with all of the gasoline sold within Solano County in 2017 (217 millions of gallons) (California Energy Commission 2020). The diesel consumed during Project construction would represent approximately 0.49 percent of all diesel sold in Solano County in 2017 (24 millions of gallons) (California Energy Commission 2020). In addition, there are no unusual Project characteristics that would cause the use of construction equipment to be less energy efficient compared with other similar construction sites in other parts of the state. Therefore, construction-related fuel consumption by the Project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction sites in the region. The Project would have a less than significant impact. As a result, no mitigation is required.

Operations

VFWD proposes to construct several new facilities to replace WWTP functions currently performed at the existing MIPS and rehabilitate several existing facilities with aging equipment at its WWTP. The Proposed Project would install new, more efficient pumps, hydraulic modifications, and improvements allowing for gravity flow, which would result in an increase in energy efficiency. Because the Proposed Project would replace existing facilities with newer, more efficient ones, and would not increase the number of on-site employees, it would not result in any long-term increase in energy consumption. The Project would have a less than significant impact. As a result, no mitigation is required.

Mitigation Measures: None Required.

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

Impact: Less Than Significant Impact.

Construction

Construction equipment would comply with federal, state, and regional requirements where applicable. With respect to truck fleet operators, EPA and NHTSA have adopted fuel efficiency standards for medium- and heavy-duty trucks. The energy analysis for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations regarding heavy-duty truck idling limits of 5 minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also

result in the efficient use of construction-related energy. Therefore, this impact would be less than significant. As a result, no mitigation is required.

Operations

As discussed in response to item a, the Proposed Project would not result in any long-term increases in energy consumption. Therefore, this impact would be less than significant. As a result, no mitigation is required.

Mitigation Measures: None Required.

References

California Energy Commission. 2020. "2017 California Annual Retail Fuel Outlet Report Results (CEC-A15)." Accessed July 21, 2020. https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/2017_A15_Results.xlsx.

2.7 Geology and Soils

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Environmental Setting

The Proposed Project is located in Solano County, where the unique landscape provides conditions for earthquakes, landslides, and other geologic hazards. The county is crossed by a number of faults, where previous fault movements have caused rock fractures in the Earth's surface. The Project area lithology is made up of marine sedimentary and metasedimentary rocks, which includes Upper Cretaceous sandstone, shale, and conglomerate (DOC 2010). The surficial deposit is of artificial fill (USGS 2002). The Proposed Project area is located in the city of Vallejo. While there are

no Alquist-Priolo fault zones in Vallejo, the closest and most prominent active faults are the Rodgers Creek Fault and the Concord-Green Valley Fault. The Concord-Green Valley Fault is closest to the Proposed Project area, approximately 7.5 miles away from the Project area. According to USGS, no historical seismic events have been attributed to these faults, and the probability of the Concord-Green Valley Fault causing an earthquake with magnitude 6.7 or higher before 2036 is about 3 percent. Earthquakes at this magnitude can damage structures and foundations not designed to resist earthquake shaking (City of Vallejo 2017).

Impact Analysis

a-i) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: 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?

Impact: No Impact.

The Proposed Project is located in the western portion of Solano County. While there are no Alquist-Priolo fault zones near the Project area, the closest active fault is the Concord-Green Valley Fault. This fault is located approximately 8 miles east of the Project area. The Project area is not within an Earthquake Hazard Zone (DOC 2010) and, therefore, no impact would occur from the rupture of a known fault. As a result, no mitigation is required.

Mitigation Measures: None Required.

a-ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: Strong seismic ground shaking?

Impact: Less Than Significant Impact.

The Proposed Project is located in areas with moderate-to-high levels of potential for seismic shaking (California Geological Survey [CGS] 2016). Additionally, the Project area is within the zone labeled by Solano County as “highest potential for earthquake damage” (Solano County 2015). However, because the Project site is not intended for residential or commercial use and because both construction and WWTP operation workers would be at the site only for short periods of time, the Project itself would not directly or indirectly cause potential substantial adverse effects as it relates to strong seismic ground shaking. Furthermore, although certain construction activities would cause vibration, as analyzed in Section 2.13, *Noise*, such vibration would not be significant and would not be expected to cause any seismic vibrations. Furthermore, the Project area is not within an Earthquake Hazard Zone (DOC 2010). As a result, a less than significant impact would occur and no mitigation is required.

Mitigation Measures: None Required.

a-iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: Seismic-related ground failure, including liquefaction?

Impact: Less Than Significant Impact.

Liquefaction can occur when earthquake motion turns loosely packed, water-saturated soil to liquid, which causes a loss in support for structures. While the Proposed Project is located in an area that has not been evaluated by CGS for liquefaction hazards (CGS 2016), it is within an area listed as “very high” for liquefaction potential (Solano County 2015). It was also labeled as an area with “very

high" liquefaction susceptibility on the City of Vallejo General Plan (City of Vallejo 2018). Furthermore, Solano County as a whole is known for high susceptibility to liquefaction because of Delta soils throughout the area (Association of Bay Area Governments 2014). However, excavations and construction of new footings would occur only within an area surrounded by pavement, which would help retain the structural integrity of the soils in these areas and prevent infiltration of water. The Project itself would not directly or indirectly cause potential substantial adverse effects as it relates to seismic-related ground failure, such as liquefaction. Furthermore, the Project area is not within an Earthquake Hazard Zone (DOC 2010). As a result, a less than significant impact would occur and no mitigation is required.

Mitigation Measures: None Required.

a-iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: Landslides?

Impact: No Impact.

The Proposed Project is located in an area that has not been evaluated for seismic landslide hazards (CGS 2016). The overall upland and western areas of Solano County are susceptible to landslides because of earthquakes, heavy rainfall, and high slope percentage (Solano County 2015). However, the Project area is located where the slope percentage is less than 4 percent, suggesting a low susceptibility to landslides and slope hazards (Solano County 2015). Additionally, land stability was analyzed by DOC, and the analysis does not map the Project area as having any sort of landslide susceptibility. Furthermore, the Project site is not intended for residential or commercial use. Therefore, the Proposed Project would have no impact that would directly or indirectly cause potential adverse effects involving landslides and no mitigation is required.

Mitigation Measures: None Required.

b) Result in substantial soil erosion or the loss of topsoil?

Impact: Less Than Significant Impact.

The Proposed Project would include the replacement and rehabilitation of several WWTP facilities by replacing existing pumps and constructing new outfall and bypass piping. There is the potential that construction activities for the Proposed Project could contribute to erosion. The replacement and rehabilitation of WWTP facilities would remove ground cover and expose soils. Exposed soils would be vulnerable to erosion. Ground disturbance is not anticipated to exceed 1 acre and, therefore, a SWPPP would not be required. However, erosion control methods would be implemented to protect soil resources during the construction process. Additionally, after the facilities are replaced and rehabilitated, the exposed soils within the work area would be stabilized. Therefore, the Proposed Project would not result in substantial soil erosion or loss of top soil. As a result, the impact would be less than significant and no mitigation is required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

The Proposed Project would include the replacement and rehabilitation of several WWTP facilities. In addition, the Proposed Project would replace existing pumps and construct new outfall and

bypass piping. All demolition and construction would occur within the existing fence line of the VFWD facility. The Proposed Project area is not within an Earthquake Fault Zone and is located in an area where the slope percentage is less than 4 percent, which suggests low susceptibility to unstable soil. Furthermore, the Proposed Project area would be constructed on an industrial-paved, urban-intended flat land and the Project intention is not for residential or commercial use. Engineering design would follow geotechnical recommendations for placing and securing structures on site. Therefore, the Proposed Project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As a result, there would be no impact and no mitigation is required.

Mitigation Measures: None Required.

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

Impact: No Impact.

The Proposed Project area currently sits on artificial fill that is not on top of Bay Mud layer (USGS 2002). Bay Mud consists of very soft to soft fat clay, which is considered expansive soil. Because the Proposed Project area sits on artificial fill that is not over a Bay Mud layer, it is not located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994). Furthermore, the Proposed Project would construct and replace existing infrastructure that is not intended for residential or commercial use. Engineering design would follow geotechnical recommendations for placing and securing structures on site. Therefore, the Project would have no impact that creates substantial direct or indirect risk to life or property and no mitigation is required.

Mitigation Measures: None Required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact: No Impact.

The Proposed Project would include subsurface work. However, the Proposed Project would not require the installation of septic tanks or use of any other additional wastewater systems or sewers. Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact: No Impact.

The Proposed Project is made up of marine sedimentary and metasedimentary rocks (DOC 2010) with surface deposits of artificial fill (USGS 2002). Metasedimentary rocks are a type of metamorphic rock, formed during high temperature and pressure. Paleontological resources, such as fossils, are rarely found in metamorphic rocks because of the high heat and pressure needed to create such rocks—fossils do not usually survive these extreme conditions. Remains of marine organisms are typically found in marine sedimentary rocks. However, given the omnipresence of such remains, they would not be considered a unique paleontological resource or geologic feature. Additionally, artificial fill would not be a natural prehistoric soil. Therefore, the Proposed Project would have no impact on unique paleontological resources or geologic features and no mitigation is required.

Mitigation Measures: None Required.

References

Association of Bay Area Governments Resilience Program. 2014. "Solano County Earthquake Hazard Map." Accessed June 12, 2020. http://resilience.abag.ca.gov/earthquakes/solano/.

California Department of Conservation (DOC). 2010. "Geologic Map of California." Accessed June 12, 2020. https://maps.conservation.ca.gov/cgs/gmc/.

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California Geological Survey (CGS). 2016. "Earthquake Shaking Potential for California." Accessed June 12, 2020. https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_048.pdf.

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———. 2015. "General Plan: Figure HS-6 Seismic Shaking Potential, Figure HS-7 Slope Hazards, Figure HS-8 Landslide Stability, Figure HS-9 Liquefaction Potential." Accessed June 12, 2020. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=21582.

U.S. Department of the Interior, U.S. Geological Survey (USGS). 2002. "Comments on Potential Geologic and Seismic Hazards Affecting Mare Island, Solano County, California, Figure 2 & 3 Geologic Map of Mare Island and Surrounding Regions." Accessed June 12, 2020. https://pubs.usgs.gov/of/2002/0425/pdf/of02-425.pdf.

2.8 Greenhouse Gas Emissions

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☒	☐

Environmental Setting

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHG emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including CO_2, methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

Two terms are typically used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change, such as adjusting transportation design standards to withstand more intense storms and higher sea levels.

There are four primary strategies for reducing GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel, (3) transitioning to lower GHG-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.

GHGs vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of

each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table 8 shows the GWPs for each type of GHG. For example, SF_6 is 23,900 times more potent at contributing to global warming than CO_2.

Table 8. Global warming potential of greenhouse gases

Gas	Atmospheric lifetime (Years)	GWP (100-year time horizon)
Carbon dioxide (CO_2)	50–200	1
Methane (CH_4)	12	21
Nitrous oxide (N_2O)	114	310
HFC-23	270	11,700
HFC-134a	14	1,300
HFC-152a	1.4	140
PFC: Tetrafluoromethane (CF_4)	50,000	6,500
PFC: Hexafluoromethane (C2F6)	10,000	9,200
Sulfur hexafluoride (SF_6)	3,200	23,900

Source: Intergovernmental Panel on Climate Change (2007)

Methods and Thresholds

The GHG analysis presented here provides an evaluation of the Proposed Project's short-term construction and long-term operation emissions using the methodologies and significance thresholds outlined below.

Emissions of criteria air pollutants were estimated using existing conditions information, Project construction details, and Project operations information, as well as a combination of emission factors from the following sources:

- CalEEMod (Version 2016.3.2) emission model for estimating exhaust emissions from off-road construction equipment and on-road motor vehicles
- CalEEMod (Version 2016.3.2) emission model for calculating the long-term mobile, energy, and area source emissions

Bay Area Air Quality Management District

The BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017) advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance.

OPERATIONAL IMPACT THRESHOLDS

Table 9 presents the Thresholds of Significance for operational-related GHG emissions. Because the Project is not a stationary source of emissions, the 1,100 metric tons (MT) CO_2e per year and 4.6 MT of CO_2e/service population/year thresholds are used for this assessment.

Table 9. BAAQMD thresholds of significance for operational emissions

Pollutant/Precursor	Maximum annual emissions (tpy)	Average daily emissions (lbs/day)
GHGs – projects other than stationary sources	Compliance with Qualified GHG Reduction Strategy or 1,100 MT of CO_2e per year or 4.6 MT of CO_2e/service population/year	Not applicable
GHGs – stationary sources	10,000 MT of CO_2e per year	Not applicable

Source: BAAQMD (2017)

CONSTRUCTION IMPACT THRESHOLDS

BAAQMD has not proposed GHG thresholds for construction emissions.

Impact Analysis

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

Impact: Less Than Significant Impact.

The analysis of GHG emissions, unlike air quality analysis, which is a "per day" threshold, is an aggregate quantity requiring summation over the total estimated number of work days (that is, the total number of days that any construction grading vehicle would have an engine running).

Construction Emissions

Construction of the Proposed Project would result in temporary emissions associated with the on-site construction equipment and on-road haul trucks and worker commutes. Construction-related GHG emissions include site preparation, excavation, and associated construction of the proposed facilities.

The most recent version of the CalEEMod model (Version 2016.3.2) was used to calculate the Project's construction emissions (see Appendix B). Table 10 quantifies the expected GHG emissions from construction activities. As shown, construction of the Proposed Project would generate 909 MT of CO_2e. As discussed above, BAAQMD has not proposed GHG thresholds for construction emissions; however, the annual and total emissions are lower than the 1,100 MT CO_2e per year threshold for operational emissions. Therefore, the GHG impact of the Project's construction activities would be less than significant. As a result, no mitigation is required.

Table 10. Construction greenhouse gas emissions

Year	Pollutant emissions (MT/year)			
	CO_2	CH_4	N_2O	CO_2e
2023	376.5	0.1	0.0	379.0
2024	452.1	0.1	0.0	455.6
2025	236.4	0.1	0.0	238.1
Total	**1,065.0**	**0.3**	**0.0**	**1,072.7**

Operational Emissions

VFWD proposes to construct several new facilities to replace WWTP functions currently performed at the existing MIPS and rehabilitate several existing facilities with aging equipment at its WWTP. Because the Proposed Project would replace existing facilities with newer, more efficient ones, and would not increase the number of on-site employees, it would not result in any long-term increase in GHG emissions. The impact of Project operation would be less than significant. As a result, no mitigation is required.

Mitigation Measures: None Required.

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

Impact: Less Than Significant Impact.

As indicated in item a, the Proposed Project would not result in any long-term increase in GHG emissions. Therefore, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality management plan. This impact is considered to be less than significant. As a result, no mitigation is required,

Mitigation Measures: None Required.

References

Bay Area Air Quality Management District (BAAQMD). 2017. “Clean Air Plan.” https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en.

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2.9 Hazards and Hazardous Materials

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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 likely 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 has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Environmental Setting

Hazards are defined as natural and human-made agents or conditions that shall be respected if life and property are to be protected, particularly during periods of growth and development. These hazards include seismic and other geologic hazards, as well as fire and flooding, which can occur naturally or as a result of human structures or activities. Hazardous materials are characterized as biological, chemical, radiological, and/or physical, which have the potential to inflict harm on humans, animals, or the environment, either alone or through the interaction with other factors.

The old MIPS may contain lead, asbestos, and polychlorinated biphenyls, and has experienced water intrusion and mold.

Database Review

According to the California Environmental Protection Agency, the provisions in Government Code Section 65962.5, which detail the information required from the Department of Toxic Substances Control, are commonly referred to as the "Cortese List." The list, or a site's presence on the list, has bearing on the local permitting process and on compliance with CEQA. The Cortese List, which includes the resources listed below, was reviewed for references to the Proposed Project area:

- list of Hazardous Waste and Substances sites from the Department of Toxic Substances Control EnviroStor database
- list of Leaking Underground Storage Tank Sites from the SWRCB GeoTracker database
- list of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit
- list of "active" Cease and Desist Orders and Cleanup and Abatement Orders from SWRCB
- list of hazardous waste facilities subject to corrective action identified by the Department of Toxic Substances Control

Results of the list review are discussed in item d below.

Impact Analysis

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 likely release of hazardous materials into the environment?

Impact: Less Than Significant Impact.

The Proposed Project would involve use of common construction materials to replace and rehabilitate the existing WWTP facilities. Additionally, the old MIPS may contain lead, asbestos, and polychlorinated biphenyls, and has experienced water intrusion and mold. While known hazardous materials are contained in the existing MIPS building, Project activities would be contained within the VFMD facility and not in a public area. Potentially hazardous materials would be separated, contained, and profiled before being transported to an approved facility for disposal, in accordance with applicable state and federal regulations. Measures would be implemented during demolition activities to prevent and mitigate hazardous materials from entering the environment. Therefore, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment. As a result, no mitigation is required.

Mitigation Measures: None Required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact: No Impact.

There are no existing or proposed schools within one-quarter mile of the Proposed Project area. Other sensitive receptors are within the area, including a church within 600 feet and residential uses within 1,400 feet. No acutely hazardous materials are known and because of the measures in place including containment of the materials during decommissioning and after demolition, no hazardous emissions are expected. Therefore, no impact would occur and no mitigation would be required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

The Proposed Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would not create a significant hazard to the public or the environment. Therefore, no impact would occur and no mitigation would be required.

Mitigation Measures: None Required.

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

Impact: No Impact.

No public airport or public use airport is located within 2 miles of the Proposed Project area. Therefore, no impact would occur and no mitigation would be required.

Mitigation Measures: None Required.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact: No Impact.

The Proposed Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Proposed Project would take place within the fenced area of the VFWD facility, with the possibility of the staging and laydown area located off site but nearby. Because most, if not all, Project activities would be within the VFWD facility and not on private roadways, vehicles arriving or leaving the site would not affect traffic flows in the area (see Section 2.17, *Transportation*, for the transportation analysis). Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impact: No Impact.

The Proposed Project area is labeled as a “moderate wildfire risk area” (City of Vallejo 2017). However, the nature of the Proposed Project would not increase the risk of wildland fires. While Project construction activities may increase the risks of wildland fires, fire suppression is located nearby and is readily available (see Section 2.20, *Wildfire*). Furthermore, the Project area is located in an urban environment that is not surrounded by any forestry or vegetated open space. Therefore, there would be no impact and no mitigation is required.

Mitigation Measures: None Required.

References

California State Department of Toxic Substances Control. 2020. “EnviroStor.” Accessed June 12, 2020. https://www.envirostor.dtsc.ca.gov/.

City of Vallejo. 2017. “General Plan 2040: MAP NBE-4 Wildfire Risk Areas.” Accessed June 12, 2020. https://www.cityofvallejo.net/cms/one.aspx?pageId=25644.

State Water Resources Control Board (SWRCB). 2020. “GeoTracker.” Accessed June 12, 2020. https://geotracker.waterboards.ca.gov/.

2.10 Hydrology and Water Quality

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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 flooding on- or offsite;	☐	☐	☐	☒
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?	☐	☐	☐	☒

Environmental Setting

The Proposed Project is located approximately 400 feet northeast of the Mare Island Strait. It would upgrade VFWD's infrastructure and processes to more modern and more efficient wastewater treatment during large storm events of wet weather wastewater and discharge of raw wastewater to the Mare Island Strait and ultimately to the San Francisco Bay. Stormwater on the WWTP site is managed by the Municipal Regional Stormwater Permit Order No. R2-2015-0049. Water in Vallejo is supplied by the Solano Irrigation District's Solano Project by wells and surface water supplies.

Groundwater levels drop in dry years, but rebound in wet years. Water quality from the Solano Project, which provides municipal and industrial water to cities in Solano County, is used for both municipal and agricultural uses (Solano County 2008). The Proposed Project is located in Flood Zone AE on FEMA Flood Insurance Rate Maps (FEMA 2016) with a base flood depth of 10 feet. The depth to groundwater is estimated to be 3 feet below the ground surface (HDR 2020). Stormwater is collected in the storm drain system.

Impact Analysis

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Impact: No Impact.

The Proposed Project would maintain water treatment processes to meet water quality standards. There would be no change in effluent from the WWTP. The Proposed Project would not result in the violation of any water quality standards or waste discharge requirements. The Proposed Project would require minor excavation and backfilling. Temporary dewatering by pumps would be required within areas of excavation that are deeper than 3 feet given the high groundwater levels. Surface grading would be minor and would return the topography to predevelopment conditions. To protect water quality and control erosion during the construction period, VFWD and all Project contractors would implement water quality and sediment and erosion control BMPs during all phases of construction. Water quality standards would be maintained and waste would be disposed of consistent with all applicable permits and approvals. Project waste is anticipated to be trucked off site for disposal. Applicable BMPs would include, but are not limited to, erosion control, sediment control, refueling restrictions, and hazardous materials management BMPs. Ground disturbance is not anticipated to exceed 1 acre and, therefore, a SWPPP would not be required. Groundwater resources would be protected by refueling and containment procedures.

Activities directly related to the proposed facility upgrades would not violate water quality or waste discharge requirements. Furthermore, with the implementation of BMPs during construction, the Proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction or operation. As a result, no impacts would result from implementation of the Proposed Project and no mitigation would be required.

Mitigation Measures: None Required.

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

Impact: No Impact.

The Proposed Project is limited to constructing and improving above surface facilities and would not interfere with existing groundwater recharge. Demolition of subsurface portions of the old MIPS building would be conducted so that any potentially hazardous substances are contained and remediated and the area would be dewatered during demolition work. The majority of the WWTP is already paved, with the exception of the area where CCT-D would be constructed, which is currently crushed rock and would be replaced with a concrete structure. The Proposed Project would result in only minor increases in impervious surface compared with the overall WWTP site. Therefore, the Proposed Project would have no impact on groundwater supply.

Mitigation Measures: None Required.

c-i) 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: result in substantial erosion or siltation on- or off-site?

c-ii) 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: substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

c-iii) 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: 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?

c-iv) 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: impede or redirect flood flows?

Impact: No Impact.

The Proposed Project would not alter the existing drainage pattern of the site, including through altering the course of a river or stream. Only minor new impervious surfaces would be added; however, they would be surrounded by other existing paved areas and would not cause a major increase in impervious surface over the entire WWTP site. Site grading would be returned to predevelopment topography and there would be no net increase in impervious surfaces created by the Proposed Project. Therefore, the Proposed Project would have no potential to affect erosion or siltation, increase the rate of surface runoff that could result in flooding or exceed the capacity of existing stormwater drainage systems, provide additional sources of polluted runoff, or impede or redirect flood flows as a result of altering the site's existing drainage pattern. As a result, no mitigation is required.

Mitigation Measures: None Required.

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

Impact: Less Than Significant Impact.

The Proposed Project is located in Flood Zone AE on FEMA Flood Insurance Rate Maps (FEMA 2016) with a base flood depth of 10 feet. Although any risk of a release of construction pollutants or fuel because of flooding would be temporary, Project contractors would implement water quality and containment BMPs during all phases of construction and demolition, as noted under item a above. During operation, WWTP facilities would incorporate secondary containment for equipment containing potential pollutants. Therefore, the Proposed Project would have a less than significant impact on the release of pollutants attributable to Project inundation. As a result, no mitigation would be required.

Mitigation Measures: None Required.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact: No Impact.

The Proposed Project is located within the Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin. The Proposed Project would not alter storm drain collection systems or water quality on the WWTP site. The Proposed Project is located outside of the Solano Subbasin, which is managed by the Solano Groundwater Sustainability Plan. Therefore, the Proposed Project would not obstruct implementation of a water quality control plan or sustainable groundwater management plan and no mitigation is required.

Mitigation Measures: None Required.

References

FEMA. 2016. "Flood Insurance Rate Map." Accessed June 26. 2020. https://msc.fema.gov/portal/search?AddressQuery=vallejo%20wastewater%20treatment%20plan#searchresultsanchor.

HDR. 2020. *60% Draft Geotechnical Investigation Report*.

Solano County. 2008. "Draft Environmental Impact Report, Solano County 2008 Draft General Plan." Accessed June 25, 2020. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=15179.

2.11 Land Use and Planning

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

Environmental Setting

The Proposed Project area is located within the city of Vallejo and has designated land uses of Public Facilities and Institutions, Industrial, Business/Light Industrial, and Mixed Use (City of Vallejo 2018). The Proposed Project area is zoned as Planned Development Industrial, Public Facilities (City of Vallejo 2020). The property is owned by the City (City of Vallejo 2020).

Impact Analysis

a) Physically divide an established community?

Impact: No Impact.

The Proposed Project would not physically divide an established community. The Proposed Project is located on a 22-acre parcel in an industrial area within the existing VFWD WWTP facility fence line. All work would occur within the fence line, with limited staging activities taking place adjacent to the WWTP outside the fence line. Therefore, the Proposed Project would not change existing land uses or physically divide an established community and no mitigation is required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

The Proposed Project would not cause a significant environmental impact resulting from a conflict with any land use plan, policy, or regulation adopted for the purpose of avoid or mitigating an environmental effect. The overall footprint of the Proposed Project would not change, and the Proposed Project would not change land uses in the Project area or conflict with zoning designations. Therefore, the Proposed Project would not cause a significant environmental impact resulting from a conflict with any land use, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As a result, no mitigation is required.

Mitigation Measures: None Required.

References

City of Vallejo. 2018. “City of Vallejo General Plan 2040 Land Use Map.” Accessed July 9, 2020. file:///C:/Users/hrolf/Downloads/General%20Plan%202040%20Land%20Use%20Map%20(1).pdf.

———. 2020. “Vallejo Prospector: Parcel Information, Demographics, Business Statistics, & Interactive Map.” Accessed July 9, 2020. http://gis.zoomprospector.com/client/Vallejo/.

2.12 Mineral Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

Environmental Setting

Mineral resources mined in Solano County include mercury, sand and gravel, clay, stone products, calcium, and sulfur (Solano County 2008). Mineral Resource Zones in Solano County are defined by the California Surface Mining and Reclamation Act. These mineral land classifications identify areas of known and unknown mineral resources.

Impact Analysis

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?

Impact: No Impact.

The Proposed Project is located in the city limits of Vallejo and is classified as a Mineral Resource Zone 1 or 4, meaning that the area has unknown or no known mineral resources (DOC 1983). Therefore, no loss of availability of known mineral resources that would be of value to the region and the residents of the state would occur. As a result, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

There are no mines located on the Proposed Project site or locally important mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan in the Proposed Project area. Therefore, the Proposed Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on any local land use plans. As a result, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

References

California Department of Conservation (DOC). 1983. “Mineral Resource Zones and Resource Sectors, Napa and Western Solano Counties.” Accessed July 5, 2020. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_146-3/SR-146_Plate_3.2.pdf.

Solano County. 2008. *Final Environmental Impact Report Solano County 2008 Draft General Plan*. Accessed July 21, 2020. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=12068.

2.13 Noise

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
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?	☐	☐	☐	☒

Environmental Setting

Noise is defined as unwanted sound. Pressure waves traveling through air exert a force registered by the human ear as sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level), which is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. Consequently, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hertz and above 5,000 Hertz to imitate the human ear's decreased sensitivity to low and extremely high frequencies. This emulation of the human ear's frequency sensitivity is referred to as A-weighting and is expressed in units of dBA. Frequency A-weighting follows an international standard method of frequency deemphasis and is typically applied to community noise measurements. In practice, the specific sound level from a source is measured using a meter incorporating an electrical filter corresponding to the A-weighting curve. All noise levels reported are A-weighted unless otherwise stated.

Noise Exposure and Community Noise

Community noise varies continuously over a period of time with respect to the sound sources contributing to the community noise environment. Community noise is primarily the product of many distant noise sources that constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. Community noise is constantly changing throughout the day because of short-duration single event noise sources, such as aircraft flyovers, vehicle passbys, and

sirens. These successive additions of sound to the community noise environment vary the community noise level from instant to instant. This requires the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below (California Department of Transportation [Caltrans] 2013):

- L_{eq}: the equivalent sound level (L_{eq}) is used to describe noise over a specified period of time, typically 1 hour, in terms of a single numerical value. The L_{eq} is the constant sound level that would contain the same acoustic energy as the varying sound level, during the same time period (that is, the average noise exposure level for the given time period).
- L_{max}: the instantaneous maximum noise level (L_{max}) for a specified period of time.
- L_{dn}: 24-hour day and night (L_{dn}) A-weighed noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10 p.m. and 7 a.m. is weighted (penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises. Similar to L_{dn}, community noise equivalent level adds a 5 dBA "penalty" for the evening hours between 7 p.m. and 10 p.m. in addition to a 10 dBA penalty between the hours of 10 p.m. and 7 a.m.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

1. Subjective effects of annoyance, nuisance, dissatisfaction
2. Interference with activities such as speech, sleep, learning
3. Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial settings can experience noise in the last category. A satisfactory method for measuring the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction does not exist. However, a wide variation in individual thresholds of annoyance does exist, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting human reaction to a new noise environment is the way it compares with the existing environment to which one has adapted; that is, the "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans 1998):

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3 dBA change is considered a perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected.
- A 10 dBA change is subjectively heard as approximately a doubling in loudness and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the dB system. The human ear perceives sound in a nonlinear fashion—hence, the dB scale was developed. Because

the dB scale is based on logarithms, two noise sources do not combine in a simple additive fashion; rather, they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dB, the combined sound level would be 53 dB, not 100 dB. Because of this sound characteristic, if there are two noise emission sources, one producing a noise level greater than 9 dB than the other, the contribution of the quieter noise source is negligible and the sum of the noise sources is that of the louder noise source.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver, such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the change in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans 1998).

The Project area is characterized by an industrial landscape and, therefore, hard surfaces are generally present throughout.

Thresholds

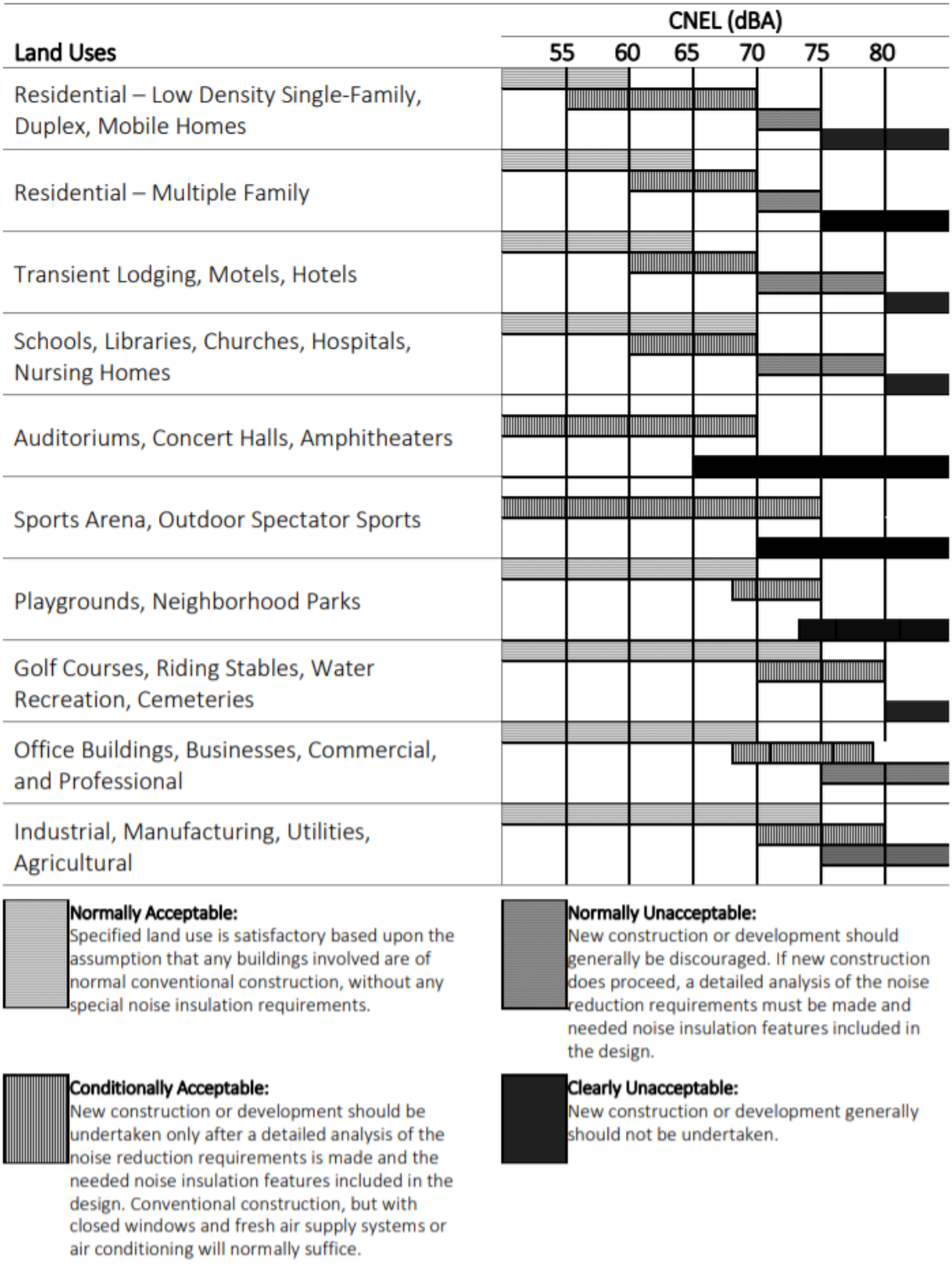
City of Vallejo General Plan

The applicable noise standards governing the Project site are set forth in the Nature and Built Environment Element of the General Plan. The City of Vallejo has adopted the State of California Land Use Noise Compatibility Matrix as part of the Nature and Built Environment Element of the General Plan. The outdoor noise exposure standards are shown in Figure 3.

The City's General Plan also includes the following Action that provides recommended hours for construction activities:

> Action NBE-5.13C: Update City regulations to restrict the allowable hours to between 7 AM and 7 PM on weekdays for construction, demolition, maintenance, and loading/unloading activities that may impact noise-sensitive land uses.

Figure 3. Land use compatibility for community noise environments



Source: City of Vallejo (2018)

City of Vallejo Municipal Code

The City of Vallejo Municipal Code does not contain quantitative standards for noise. Municipal Code Section 7.84.010 (General prohibition--Loud unnecessary and unusual noise) regulates noise as follows:

> 7.84.010 General prohibition--Loud unnecessary and unusual noise
>
> Notwithstanding any other provisions of the Vallejo Municipal Code and in addition thereto, it shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. The standard which may be considered in determining whether a violation of the provisions of this chapter exists may include, but not be limited to, the following:
>
> A. The level of noise;
>
> B. Whether the nature of the noise is usual or unusual;
>
> C. Whether the origin of the noise is natural or unnatural;
>
> D. The level and intensity of the background noise, if any;
>
> E. The proximity of the noise to residential sleeping facilities;
>
> F. The nature and zoning of the area within which the noise emanates;
>
> G. The density of the inhabitation of the area within which the noise emanates;
>
> H. The time of the day and night the noise occurs;
>
> I. The duration of the noise;
>
> J. Whether the noise is recurrent, intermittent, or constant; and
>
> K. Whether the noise is produced by a commercial or noncommercial activity.

Impact Analysis

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?

Impact: Less Than Significant Impact.

Construction Noise

Construction noise, although temporary, can potentially affect nearby sensitive receptors, such as residences. Construction of the Proposed Project would require the use of heavy equipment that may be periodically audible at off-site locations. Received noise levels would fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. Additionally, noise from construction equipment would vary depending on the construction phase and the number and type of equipment at a location at any given time.

The nearest sensitive receptor to the Project site is an existing church located approximately 600 feet northeast of the Project site on Sonoma Boulevard. The closest homes to the Project site are located approximately 1,400 feet from the active construction areas. Construction noise would attenuate with increased distance from the noise sources.

Construction is performed in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. Table 1 in Section 1.5, *Description of the Proposed Project*, lists the phases of construction and Table 2 lists the required equipment for each phase of construction. The various construction phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 11 lists maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation of the site and pile driving, tends to generate the highest noise levels because the noisiest construction equipment is pile driving equipment and earthmoving equipment. Earthmoving equipment includes excavating machinery such as excavators, backhoes, and front loaders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings.

Table 11. Typical maximum construction noise levels (L_{max})

Type of equipment	Range of maximum sound levels measured (dBA at 50 ft)	Suggested maximum sound levels for analysis (dBA at 50 ft)
Pile drivers, 12,000 to 18,000 ft-lb/blow	81–96	93
Rock drills	83–99	96
Jack hammers	75–85	82
Pneumatic tools	78–88	85
Pumps	74–84	80
Dozers	77–90	85
Scrapers	83–91	87
Haul trucks	83–94	88
Cranes	79–86	82
Portable generators	71–87	80
Rollers	75–82	80
Tractors	77–82	80
Front-end loaders	77–90	86
Hydraulic backhoe	81–90	86
Hydraulic excavators	81–90	86
Graders	79–89	86
Air compressors	76–89	86
Trucks	81–87	86

Source: *Noise Control for Buildings and Manufacturing Plants*, Bolt, Beranek & Newman, 1987

Construction of the Proposed Project is expected to require the use of forklifts, cranes, front-end loaders, backhoes, and pickup trucks. This equipment would be used on the Project site. Based on Table 11, the maximum noise level generated on the Proposed Project site is assumed to be 88 dBA

L_{max} at 50 feet from the haul trucks. Each loader and backhoe would generate 86 dBA Lmax at 50 feet. Each doubling of a sound source with equal strength increases the noise level by 3 dBA. Because each piece of construction equipment operates as an independent noise source, the combined noise level during construction would be 91 dBA L_{max} at a distance of 50 feet. The Proposed Project would include construction activities within 600 feet of the existing church and 1,400 feet of the existing residences. Distance attenuation would reduce the construction noise at these sensitive uses to 70 dBA L_{max} and 62 dBA L_{max}, respectively. The Project would be required to comply with the City's recommended construction hours (7 a.m. to 7 p.m. on weekdays). Therefore, impacts from construction noise are considered less than significant. As a result, no mitigation is required.

Operational Noise

VFWD proposes to construct several new facilities to replace WWTP functions currently performed at the existing MIPS and rehabilitate several existing facilities with aging equipment at its WWTP. Because the Proposed Project would replace existing facilities with newer, more efficient ones, and would not increase the number of on-site employees, it would not result in any long-term increase in noise. The impact would be less than significant. As a result, no mitigation is required.

Mitigation Measures: None Required.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Impact: Less Than Significant Impact.

Vibration associated with construction of the Project has the potential to be an annoyance to nearby land uses.

The City of Vallejo does not have adopted limits for determining significance of vibration impacts to structures or persons. Caltrans and the Federal Transit Administration (FTA) have developed two of the decisive works in the assessment of vibrations from transportation and construction sources (Caltrans 2020; FTA 2018). The Caltrans vibration limits reflect standard practice for analyzing vibration impacts to structures from continuous and intermittent sources.

The Caltrans *Construction Induced Vibration Guidance Manual* identifies two impact criteria for buildings and humans. Table 12 describes impact criteria for buildings, and Table 13 describes impact criteria for humans.

Table 12. California Department of Transportation vibration damage potential threshold criteria

Structure and condition	Maximum PPV (inch/second)	
	Transient sources	Continuous/frequent intermittent sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50

Source: Caltrans (2020)

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity

Table 13. California Department of Transportation guideline vibration annoyance potential

Human response	Maximum PPV (inch/second)	
	Transient sources	Continuous/frequent intermittent sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.00	0.40

Source: Caltrans (2020)

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Construction activities generate groundborne vibration when heavy equipment travels over unpaved surfaces or when it is engaged in soil movement. The impacts of groundborne vibration include discernible movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Vibration-related problems generally occur as a result of resonances in the structural components of a building because structures amplify groundborne vibration.

Table 14 lists the vibration source amplitudes for typical construction equipment. Because pile driving is required, the highest reference PPV for the Proposed Project would be 1.518 inch per second, associated with the upper range of on-site impact pile drivers.

Table 14. Typical vibration source levels for construction equipment

Equipment	PPV at 25 feet (inch/second)	Approximate Lv[a] at 25 feet (velocity in dB)
Pile driver (impact) – upper range	1.518	112
Pile driver (impact) – typical	0.644	104
Pile drive (sonic) – upper range	0.734	105
Pile drive (sonic) – typical	0.170	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall) – in soil	0.008	66
Hydromill (slurry wall) – in rock	0.017	75
Vibratory roller	0.210	94
Hoe ram	0.089	87
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: FTA (2018): Table 7-4
[a] root mean square velocity in dB re 1 micro-inch/second

The existing church is located approximately 600 feet northwest of the Project construction areas that would require the use of large equipment. The FTA vibration guidance provides the following equation to calculate PPV at sensitive receptors:

$$PPV_{equipment} = PPV_{Ref} (25/D)^{n} \text{ (inch/second)}$$

Where:
PPVRef = reference PPV at 25 feet
D = distance from equipment to the receiver in feet
n = 1.5 is a value related to the vibration attenuation rate through ground

Distance attenuation would reduce the construction vibration levels to 0.01 inch/second. This level is much lower than the 0.12 inch/second threshold listed in Table 14 for buildings extremely susceptible to vibration damage. In addition, this level is below the distinctly perceptible level of 0.04 inch/second for vibration annoyance. The construction vibration impact would be less than significant. As a result, no mitigation is required.

Operation

VFWD proposes to construct several new facilities to replace WWTP functions currently performed at the existing MIPS and rehabilitate several existing facilities with aging equipment at its WWTP. Because the Proposed Project would replace existing facilities with newer, more efficient ones, and would not increase the number of on-site employees, it would not result in any long-term increase in

groundborne noise or vibration. The impact would be less than significant. As a result, no mitigation is required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

The Project would not involve the construction of sensitive land uses. The Project site is not located within 2 miles of a public airport or a private airstrip. The nearest airport to the Project site is the Napa County Airport, located approximately 8 miles north of the Project site. Therefore, the Project would not expose people to excessive airport noise levels and no impact is identified for these issue areas. As a result, no mitigation is required.

Mitigation Measures: None Required.

References

California Department of Transportation (Caltrans). 2013. "Technical Noise Supplement to the Traffic Noise Analysis Protocol." Accessed July 21, 2020. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf.

———. 2020. "Transportation and Construction Vibration Guidance Manual." Accessed July 21, 2020. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf.

City of Vallejo. 2018. "General Plan 2040." Accessed July 21, 2020. https://www.cityofvallejo.net/city_hall/departments___divisions/planning_and_development_services/planning_division/general_plan_2040.

Federal Transit Administration (FTA). 2018. "Transit Noise and Vibration Impact Assessment Manual." Accessed July 21, 2020. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

2.14 Population and Housing

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting

VFWD's WWTP is located on approximately 22 acres in the city of Vallejo in an area zoned Planned Development Industrial (City of Vallejo 2020). The Proposed Project would upgrade VFWD's infrastructure and processes to more modern and more efficient wastewater treatment during large storm events of wet weather wastewater and discharge of raw wastewater to the Mare Island Strait and ultimately to the San Francisco Bay. The nearest residences are located 1,400 feet from the Proposed Project. VFWD's MIPS currently serves the community by treating wastewater prior to discharge into the San Francisco Bay.

Impact Analysis

a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

Impact: No Impact.

The Proposed Project would not induce substantial unplanned population growth in the area of the existing facility, neither directly as a result of construction nor indirectly through growth inducement since the capacity of treatment would be consistent with current operations. The existing VFWD WWTP facility is located within a Business/Light Industrial zone and there is no housing or residential use in the immediate surrounding area. The Proposed Project would replace the existing facilities within the existing WWTP facility footprint. The majority of the construction work would be temporary in nature and take place on 1.7 acre of the site, with an additional 15 acres available for on- and off-site use as staging areas. No new housing would be created or needed because infrastructure would not expand beyond the existing capacities that serve Vallejo residents. Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

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

Impact: No Impact.

The Proposed Project would not displace substantial numbers of existing people or housing. No temporary worker housing would be needed. The nearest residences are located 1,400 feet from the Proposed Project. Temporary construction and demolition would not affect residences nearby because it would occur within the existing VFWD facility fence line. Therefore, no replacement housing would be needed and no mitigation is required.

Mitigation Measures: None Required.

References

City of Vallejo. 2018. "City of Vallejo General Plan 2040 Land Use Map." Accessed July 9, 2020. https://www.cityofvallejo.net/city_hall/departments___divisions/planning_and_development_services/planning_division/general_plan_2040.

———. 2020. "Vallejo Prospector: Parcel Information, Demographics, Business Statistics, & Interactive Map." Accessed July 9, 2020. http://gis.zoomprospector.com/client/Vallejo/.

2.15 Public Services

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless 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?	☐	☐	☐	☒

Environmental Setting

The Proposed Project is located in the city of Vallejo in Solano County, California. It is located in an area of local responsibility by the Vallejo Fire Department. The closest fire station to the site is Vallejo Fire Department Station 22, located approximately 1 mile southeast of the site. Law enforcement services for the Proposed Project area are provided by the Vallejo Police Department and the Solano County Sherriff. The California Highway Patrol also provides law enforcement on unincorporated public roads in the area. Lincoln Elementary School is the closest school to the Proposed Project and is located approximately 1 mile north of the site. Several public parks are located in the vicinity of the Proposed Project. Independence Park is located approximately ½ mile northwest of the site. Wilson Park is located approximately ½ mile northeast of the site. Lake Dalwigk Park is located approximately ½ mile southeast of the site.

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 any of the public services: Fire Protection?

a-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 any of the public services: Police Protection?

Impact: No Impact.

The Proposed Project would not create any new permanent jobs or require additional employees on site for WWTP operations. The number of workers on site at a given time during construction would not exceed 69, with an average of roughly 34 workers on site throughout the phases of construction. Additionally, Project work would be temporary and limited in nature. Therefore, the Proposed Project would have no impact on service ratios or response times for fire protection or police protection in the area and no mitigation is required.

Mitigation Measures: None Required.

a-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 any of the public services: Schools?

a-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 any of the public services: Parks?

Impact: No Impact.

There are no schools in the Proposed Project area and the nearest school (Lincoln Elementary) is roughly 1 mile away. There are no parks in the Proposed Project area and the nearest parks (Independence Park, Wilson Park, and Lake Dalwigk Park) are located roughly ½ mile away. Furthermore, no new housing would be created as a result of the Proposed Project. Therefore, the Proposed Project would have no impact on schools or parks in the area and no mitigation is required.

Mitigation Measures: None Required.

a-v) 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: Other public facilities?

Impact: No Impact.

No other public facilities would be affected by the Proposed Project because the Project would not construct housing or create general increases in population or service requirements. As a result, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

2.16 Recreation

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

Environmental Setting

While the Project area is located in an industrial zoning area of the city of Vallejo, open space accounts for 36 percent of the existing land use in Vallejo (City of Vallejo 2017). The City of Vallejo is home to a number of public recreational facilities, including Blue Rock Springs Golf Course, Florence Douglas Senior Center, Mare Island Strait Boat Launch, and the Municipal Marina. The city also features a number of privately owned recreational facilities such as Mare Island Golf Course, Hiddenbrooke Golf Course, Vallejo Yacht Club, and Glen Cove Marina (City of Vallejo 2017).

Recreational facilities and open space areas within a 2-mile radius of the Project area include Independence Park (1.2 mile northwest), Vallejo Launch Ramp (0.18 mile northwest), Wilson Park (0.07 mile northeast), Lake Dalwigk Park (0.5 mile east), and Mare Island (0.9 mile southwest across the Mare Island Strait). The Mare Island Strait in the vicinity of the Project area is also used for recreation by boaters.

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?

Impact: No Impact.

The Proposed Project does not include elements that would result in an increase in population, such as the creation of homes or businesses, which would lead to a greater demand on local recreational facilities. The Proposed Project would require construction workers on a temporary basis. The Project is located in an industrial area, and Project activities would be contained to these areas. The Project would not limit or restrict access to recreational facilities, boat launch areas, and open space areas within its vicinity. Therefore, there would be no impact on neighborhood and regional parks or other recreational facilities. As a result, no mitigation is required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

The Proposed Project is located in a highly industrialized area of Vallejo and involves the construction of several new facilities to replace existing WWTP functions, and the rehabilitation of several existing facilities. The Project does not include recreational facilities, nor does it require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Further, as discussed in item a, the Proposed Project would not result in an increase in population that would place a greater demand on existing recreational facilities. Therefore, no impact would occur and no mitigation is required.

Mitigation Measures: None Required.

References

City of Vallejo. 2017. “General Plan 2040.” August 29, 2017. https://www.cityofvallejo.net/.../planning_division/general_plan_2040.

2.17 Transportation

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict with 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?	☐	☐	☐	☒

Environmental Setting

The MIPS is located in the south side of the city of Vallejo on State Route 29 (SR 29), or Sonoma Boulevard. It is regionally accessible through SR 29 and Interstate 80 (I-80), and locally accessible through Curtola Parkway and Lemon Street. The construction activity is expected to start in 2023 and last 34 months. As noted on Table 1 of Section 1.5, *Description of the Proposed Project*, it is assumed that the construction would be supported by a maximum of 69 workers and 14 street legal trucks, which consist of 10 haul trucks, 2 delivery trucks, and 2 concrete pump trucks.

The traffic impact of the construction activity was evaluated by assessing the intersection level of service (LOS) and vehicle miles traveled (VMT) in accordance with the City of Vallejo's traffic guidelines and CEQA guidelines. The latest traffic data found were used and grown to the construction year of 2025 for a baseline scenario. The construction activity was added to the baseline scenario to determine the impact of the construction activity.

Impact Analysis

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact: Less Than Significant Impact.

The City of Vallejo uses the intersection LOS and volume-to-capacity (v/c) ratios to determine the significance of traffic impacts (City of Vallejo 2012). The City traffic impact analysis guidelines state that the impact would be considered significant if following thresholds were exceeded, and mitigation must be identified to improve operations to the acceptable LOS D or better:

- The intersection operates at LOS C without the project, and v/c increases by more than 0.04 with the project.

- The intersection operates at LOS D without the project, and v/c increases by more than 0.02 with the project.
- The intersection operates at LOS E or LOS F without the project, and v/c increases by more than 0.01 with the project.

While the construction activity would be temporary, an analysis was conducted to evaluate the magnitude of temporary traffic impacts. Five signalized intersections were selected for analysis because of their local and regional operational significance and proximity to the Project site. These intersections provide key access through SR 29 to other local streets such as Curtola Parkway and Lemon Street, and to I-80:

1. Maritime Academy Drive and Sonoma Boulevard
2. Curtola Parkway and Lemon Street
3. Lemon Street and Sonoma Boulevard
4. Solano Avenue and Sonoma Boulevard
5. Curtola Parkway and Sonoma Boulevard

To evaluate a representative but conservative scenario based on when impacts might be at their worst during the proposed activities, traffic operations during the last year of the construction, which would be 2025, were analyzed with the highest number of trips that could be generated by the construction. The existing turn movement counts for the study intersections were obtained from the 2019 Vallejo Martine Terminal/Orcem Project Final Environmental Impact Report and were grown using the annual growth rate recommended by the City traffic engineer (City of Vallejo 2019). These calculated 2025 turn movement counts were used to represent the 2025 no construction condition. As summarized in Table 15, the busiest phase of the construction was assumed to be supported by a maximum of 69 workers and 14 street legal trucks that travel during the morning (AM) and afternoon (PM) peak hours, although averages would be lower. The construction of CCT-D is expected to be the busiest phase, and it would last no more than 12 months to result in a short-term temporary impact. The generated trips were distributed to local and regional population centers based on engineering judgments and added to the 2025 no construction condition to represent the 2025 construction condition (Table 15).

Table 15. Maximum peak hour trip generation during the 2025 construction condition

Equipment	AM peak hour trip	PM peak hour trip
Worker vehicles	69	69
Delivery truck	2	2
Haul truck	10	10
Concrete pump truck	2	2
Total	**83**	**83**

Synchro 10 traffic analysis software, which follows the Highway Capacity Manual methodology, was used to evaluate the traffic operations at the study intersections. Table 16 summarizes the analysis results for the 2025 no construction and 2025 construction conditions during the AM and PM peak hours. While most intersections operate at LOS A or LOS B during both AM and PM peak hours, the Curtola Parkway and Lemon Street intersection and Sonoma Boulevard and Curtola Parkway

intersection were assessed to operate at LOS C and LOS D during the 2025 no construction condition. Thus, the construction's temporary impact on the v/c ratio for these intersections was evaluated.

Table 16. 2025 no construction and 2025 construction conditions LOS results

Intersection		Peak hour	2025 no construction		2025 construction	
No.	Name		Delay	LOS	Delay	LOS
1	Maritime Academy Drive and Sonoma Boulevard	AM	8.5	A	8.5	A
		PM	9.3	A	9.4	A
2	Curtola Parkway and Lemon Street	AM	25.1	C	25.9	C
		PM	35.5	D	38.6	D
3	Lemon Street and Sonoma Boulevard	AM	8.4	A	8.5	A
		PM	10.3	B	12.5	B
4	Solano Avenue and Sonoma Boulevard	AM	6.9	A	6.9	A
		PM	11.5	B	11.4	B
5	Sonoma Boulevard and Curtola Parkway	AM	22.4	C	22.6	C
		PM	29.2	C	29.5	C

Table 17 summarizes the v/c ratio results for the 2025 no construction and 2025 construction conditions during the AM and PM peak hours at Curtola Parkway and Lemon Street intersection and Sonoma Boulevard and Curtola Parkway intersection. The threshold would be exceeded during the PM peak hour at Curtola Parkway and Lemon Street as the v/c increases by 0.05 because of the construction compared with the threshold of 0.02. While this would be considered a significant impact under a permanent condition, the construction activity is only anticipated to be temporary and the impact would be short-term. Additionally, the LOS at all study intersections would not degrade and would continue to operate at the acceptable LOS D or better. Therefore, the construction would cause less than significant impacts. As a result, no mitigation is required.

Table 17. 2025 no construction and 2025 construction conditions AM and PM peak hour v/c ratios

Intersection		Peak hour	2025 no construction		2025 construction		v/c difference
No.	Name		v/c	LOS	v/c	LOS	
2	Curtola Parkway and Lemon Street	AM	0.64	C	0.68	C	0.04
		PM	0.86	D	0.91	D	0.05
5	Sonoma Boulevard and Curtola Parkway	AM	0.57	C	0.58	C	0.01
		PM	0.75	C	0.75	C	0.00

Mitigation Measures: None Required.

b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Impact: Less Than Significant Impact.

The Proposed Project would not cause a long-term increase in VMT. The construction activity is anticipated to occur in Traffic Analysis Zone (TAZ) 1223, and the VMT per employee measure was evaluated for a temporary impact in 2020 and in 2030 using the Metropolitan Transportation Commission Travel Model One, as summarized in Table 18. In TAZ 1223, it is projected that the VMT per employee would be 23.82 in 2020 and 23.66 in 2030 with no construction. It was assumed in this analysis that the workers would commute 16 miles each way to and from the Project site, and street legal trucks would travel 10 miles each way to and from the Project site.

Table 18. TAZ 1223 VMT per employee comparison in 2020 and 2030

Year	VMT per employee		
	2025 no construction	2025 construction	% increase
2020	23.82	24.00	0.77%
2030	23.66	23.83	0.75%

In total, the construction would generate 2,488 VMT, and an average 29.96 VMT per employee. Thus, TAZ 1223's VMT per employee would increase by 0.77 percent to 24.00 in 2020 and by 0.75 percent to 23.83 in 2030 with the construction. While the VMT would increase in both 2020 and 2030, the increase would be temporary and short-term. Therefore, the construction would cause less than significant impacts. As a result, no mitigation is required.

Mitigation Measures: None Required.

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

Impact: No Impact.

The Proposed Project would not change geometric design features or require incompatible uses. Neither permanent nor temporary geometric design changes are anticipated because all street legal trucks and employees would use the existing roadways to enter and exit the Project site. Thus, the Proposed Project would have no impact and no mitigation is required.

Mitigation Measures: None Required.

d) Result in inadequate emergency access?

Impact: No Impact.

The Proposed Project would not result in inadequate emergency access. The construction and truck deliveries would not cause any roadway closures or detours affecting the existing emergency access. Thus, the Proposed Project would have no impact and no mitigation is required.

Mitigation Measures: None Required.

References

City of Vallejo. 2012. "Traffic Impact Analysis/Study Guidelines." Accessed June 29, 2020. http://www.ci.vallejo.ca.us/city_hall/departments___divisions/public_works/engineering_division/traffic_engineering.

———. 2019. “Draft Final Vallejo Marine Terminal and Orcem Project Environmental Impact Report.” https://www.cityofvallejo.net/cms/One.aspx?portalId=13506&pageId=15440311.

2.18 Tribal Cultural Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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) 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) 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?	☐	☒	☐	☐

Environmental Setting

The environmental setting applicable to tribal cultural resources is consistent with the discussion provided in Section 2.5, *Cultural Resources*, and, accordingly, it is not repeated here.

Methodology

Native American Consultation

The NAHC was contacted by HDR on behalf of VFWD seeking information from the Sacred Lands File, which tracks Native American cultural resources, and the names of Native American individuals and groups that would be appropriate to contact regarding this Project. Because no tribal representatives had previously requested Project notification with VFWD under Assembly Bill 52 legislation, the NAHC-generated contact list was used for the Assembly Bill 52 notifications. The NAHC replied with a letter dated May 4, 2016, in which it indicated that the Sacred Lands File has no information about the presence of Native American cultural resources in the immediate Project area, and provided a list of Native American contacts (groups and individuals) who may have information regarding known and recorded sites. On June 11, 2020, letters were sent to the following contacts:

- Chairperson Charlie Wright, Cortina Rancheria – Kletsel, Dehe Band of Wintun Indians
- Chairperson Merlene Sanchez, Guidiville Indian Rancheria
- Chairperson Gene Whitehouse, United Auburn Indian Community of the Auburn Rancheria
- Chairperson Anthony Roberts, Yocha Dehe Wintun Nation
- Chairperson Corrina Gould, the Confederated Villages of Lisjan

To date, one response has been received. In a letter dated June 29, 2020, the Yocha Dehe Wintun Nation's Tribal Historic Preservation Officer, Leland Kinter, noted that "… the Tribe is not aware of any known cultural resources near this project site and a cultural monitor is not needed." However, the letter also states that the Tribe has determined that the Project is within its ancestral territory and requested copies of the Project mitigation measures and recommended cultural sensitivity training for Project personnel. VFWD replied in a letter dated July 15, 2020, acknowledging the Tribe's response, providing the proposed mitigation measures, and agreeing to cultural sensitivity training as part of the Worker Environmental Awareness Program—thus concluding the Assembly Bill 52 consultation effort. VFWD's July 15, 2020, letter does note that, in the event of an inadvertent discovery during construction and depending on the nature of the find, it may be necessary to reengage with the Tribe.

No further responses have been received.

Impact Analysis

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)?

Impact: Less Than Significant Impact.

A review of the National Register of Historic Places, the California Register of Historical Resources, local registers of historic resources, a records search conducted by the Northwest Information Center, an NAHC Sacred Lands File search, and consultation with the local Native American community did not identify eligible or potentially eligible tribal cultural resources that may be significantly affected by the Proposed Project.

Mitigation Measures: None Required.

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?

Impact: Potentially Significant Unless Mitigation Incorporated.

A tribal cultural resource is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register of Historical Resources, or included in a local register of historical resources, or if VFWD, acting as the Lead Agency, supported by substantial evidence, chooses at its discretion to treat the resources as a tribal cultural resource.

As discussed under impact items b and c in Section 2.5, impacts from construction in the Project area could affect unknown archaeological resources including Native American artifacts and human remains, which could be recognized as tribal cultural resources. As shown in the impact discussions for items b and c in Section 2.5, the proposed mitigation measures MM-CUL-1 and MM-CUL-2 would ensure impacts on unknown archeological resources, including those of importance to Native Americans, as well as human remains would be minimized.

Therefore, compliance with existing federal, state, and local laws and regulations, and adoption of the mitigation measures, would protect any unrecorded tribal cultural resources that may be

unearthed as a result of implementation of the Project by providing for the early detection of potential conflicts between construction and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. Accordingly, impacts on tribal cultural resources would be less than significant with mitigation incorporated.

Mitigation Measures:

MM-CUL-1 (see Section 2.5)

MM-CUL-2 (see Section 2.5)

2.19 Utilities and Service Systems

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒
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 waste?	☐	☐	☐	☒

Environmental Setting

The Proposed Project area is served by the public service and utility providers within Solano County. Primary utility companies serving Solano County include Solano County Water Agency, VFWD, and NorCal Waste Systems. VFWD provides sewer service and wastewater treatment for the city of Vallejo and adjacent unincorporated areas, including Mare Island (Solano County 2008). The Proposed Project would upgrade VFWD's infrastructure and processes to more modern and more efficient wastewater treatment during large storm events of wet weather wastewater and discharge of raw wastewater to the Mare Island Strait and ultimately to the San Francisco Bay.

Impact Analysis

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?

Impact: Less Than Significant Impact.

The Proposed Project would involve the relocation of electric power, natural gas, and telecommunications lines within the WWTP as part of the decommissioning of the existing MIPS. However, modifications would be contained within the WWTP and would not affect other utility users. Existing lines would be relocated so that future construction on the old MIPS site could use the utility lines. Fiber optic lines would be rerouted to serve the new MIPS. Installation of new utilities would be completed before prior utilities are disconnected to avoid service interruptions to the WWTP. As part of the Proposed Project, new wastewater treatment facilities would be built. However, these facilities would not expand treatment capacities, but rather would replace old facilities and create redundancy in system operations. Therefore, impacts from the relocation or construction of new utilities would be less than significant because they would be contained in WWTP facilities and would not affect outside users. As a result, no mitigation is required.

Mitigation Measures: None Required.

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

Impact: No Impact.

Water used during construction of the Proposed Project would come from existing water infrastructure on site, or it would be trucked in from off site. No new wells or utility connections would be required during or after construction. Operation of the Proposed Project would not alter the current need for water supply at Project facilities from existing conditions, including in normal, dry, or multiple dry years. Therefore, the Proposed Project would have no impact on water supplies and no mitigation would be required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

VFWD is the wastewater treatment provider for the Proposed Project. The Project has been designed for the purpose of providing continued treatment capacity to the VFWD service area by improving old facilities. The Proposed Project would not alter existing treatment capacities for VFWD. Therefore, the Proposed Project would have no impact on wastewater treatment capacities and demands and no mitigation is required.

Mitigation Measures: None Required.

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 waste?

Impact: No Impact.

The Proposed Project would generate materials during construction and decommissioning that would require disposal. During Proposed Project activities, usable excess construction materials such as lumber, tarp, fencing, etc. would be supplied by the contractor and then removed upon completion of construction. Construction debris and material requiring disposal in a landfill would be hauled off site to a suitable facility. Solid waste would be transported off site by the contractor for

disposal at a landfill where capacity exists to serve the Proposed Project's construction waste. Potentially hazardous waste, such as that coming from the decommissioned MIPS facility, would be stored, profiled, and transported to an appropriate facility for disposal in accordance with federal, state, and local regulations.

Operation of the Proposed Project would not generate a need for additional solid waste collection services beyond current disposal needs. All proposed construction activities would comply with applicable solid waste disposal laws and policies and VFWD would recycle waste when possible. Therefore, the Project would not generate solid waste in excess of state and local standards, or in excess of the capacity of local landfills, or otherwise impair the attainment of solid waste reduction goals. Therefore, the Proposed Project would have no impact on compliance with solid waste regulations and no mitigation is required.

Mitigation Measures: None Required.

References

Solano County. 2008. "Draft Environmental Impact Report, Solano County 2008 Draft General Plan." Accessed June 25, 2020. https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=15179.

2.20 Wildfire

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
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?	☐	☐	☐	☒

Environmental Setting

The city of Vallejo consists largely of low-density residential and industrial development. According to the City of Vallejo General Plan 2040, the area in which the Project area sits is zoned as Public Facilities and Institutions, Industrial, and Business/Light Industrial. The threat of structural fire associated with low-density residential is considered moderate. In areas of the city with higher concentrations of commercial and industrial structures, taller buildings, and older structures, the risk of structural fire is higher.

The Proposed Project does not fall within a State Responsibility Area nor does it fall within a high fire hazard severity zone outlined by the California Department of Forestry and Fire Protection (Solano County 2008). Solano County consists of eight fire protection districts. Of these eight districts, the East Vallejo Fire Protection District is located closest to the Project area. However, the East Vallejo Fire Protection District serves seven noncontiguous unincorporated areas. The Project area does not fall within an unincorporated area of the city. The City of Vallejo Fire Department is responsible for serving the Project area.

The City of Vallejo Fire Department Fire Suppression division consist of 76 firefighters, firefighter-paramedics, engineers, captains, and battalion chiefs. On average, each fire station in Solano County covers approximately 39 square miles. Two City fire stations are located within 1 mile of the Project area: Station 21, located at 1220 Marin Street, and Station 22, located at 700 Fifth Street.

Impact Analysis

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact: No Impact.

Construction associated with the Proposed Project could result in minor impacts on local traffic during the 34-month construction period. However, emergency access routes would be maintained during construction to ensure emergency vehicles can travel to work areas when needed. Therefore, for the duration of construction, the Proposed Project would not interfere with emergency evacuation plans or impair implementation of the City's Emergency Operations Plan (City of Vallejo 2015).

The Proposed Project does not involve construction of any facilities that could affect existing evacuation and emergency service routes. Therefore, during long-term operations, the Proposed Project would not interfere with emergency response or evacuation plans.

Because construction traffic would be limited and Project construction would not alter emergency services, implementation of the Proposed Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. As a result, there would be no impact and no mitigation is required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

The Proposed Project area features a fairly neutral and flat grade with minimal vegetation. Any vegetation existing within the Proposed Project footprint is ruderal and limited to property edges, parking areas, drainage edges, and intermittently through dirt lots. Further, the Proposed Project is planned within the existing facility footprint, which is highly developed. Therefore, the Proposed Project does not have the potential to exacerbate fire risk and would not expose workers to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire during construction.

In the long term, Proposed Project activities would not exacerbate the physical conditions beyond current existing conditions. Therefore, the Proposed Project would have no impact related to exacerbation of wildfire risks or the exposure of Project occupants to increased pollutant concentrations of uncontrolled wildfire. As a result, no mitigation would be required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

Replacement of MIPS would require the relocation of existing WWTP utilities, including electrical service, potable water service, fiber optic and telecommunications, and utility water. Telephone and fiber optic cables in the old MIPS building would be relocated during decommissioning and demolition. Utility connections at the old MIPS building would be decommissioned to accommodate a future rebuild on the site of the old MIPS. Realignment would not affect other property owners.

These changes would not affect the environment in a way that would exacerbate fire risks beyond existing conditions. Therefore, the Proposed Project would have no impact related to the installation or maintenance of associated infrastructure that could exacerbate fire risk or that may result in temporary or ongoing impacts on the environment. As a result, no mitigation would be required.

Mitigation Measures: None Required.

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?

Impact: No Impact.

As discussed in item b, the Proposed Project area contains flat topography and with minimal vegetation. In addition, there would not be a significant increase in the amount of impervious surface in the Proposed Project area; therefore, it would not alter current surface drainage and would not create new flood or landslide risks. Therefore, the Proposed Project does not have the potential to 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 would occur and no mitigation is required.

Mitigation Measures: None Required.

References

City of Vallejo. 2015. *City of Vallejo Emergency Operations Plan*. Adopted February 2015.

———. 2017. *2040 City of Vallejo General Plan*. Amended July 24, 2018.

Solano County. 2008. *Solano County General Plan*. Adopted August 5, 2008.

2.21 Mandatory Findings of Significance

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

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?

Impact: Less Than Significant Impact.

The Proposed Project involves rehabilitation and new construction of several facilities at the Vallejo WWTP. Section 1.5, *Description of the Proposed Project*, includes measures that would be implemented with the Proposed Project that would reduce impacts to the environment and resources. In addition, where necessary, mitigation measures are proposed to offset the remaining potential for impacts. Mitigation measures include MM-BIO-1: Minimize Footprint, MM-BIO-2: Worker Environmental Awareness Training, MM-BIO-3: Migratory Bird and Raptor Surveys, MM-BIO-4: Nest Avoidance, MM-BIO-5: Special Status Bat Surveys, MM-BIO-6: Avoid Stockpiling Materials Within 100 Feet of the Mare Island Strait, MM-CUL-1: Subsurface Discoveries, and MM-CUL-2: Human Remains.

Given the limited footprint of disturbance and incorporation of environmental protection measures and mitigation measures to reduce the potential for adverse impacts, impacts from the Proposed Project are not expected to substantially degrade the quality of the environment, 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. The Proposed Project area is directly adjacent to a waterway, the Mare Island Strait, and is also within a nesting/roosting area for bird and bat species; however, mitigation measures listed above would be incorporated to minimize Project impacts. As a result, this impact would be less than significant and no mitigation is required.

Mitigation Measures: None Required.

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)?

Impact: Less Than Significant Impact.

The Proposed Project is part of operations at Vallejo WWTP, which serves the City of Vallejo and portions of Solano County. Construction impacts from the Proposed Project and other future projects related to the Vallejo WWTP would be short-term and temporary and would be generally consistent with existing operations of the WWTP. VFWD would coordinate with the City of Vallejo and Solano County regarding other ongoing or planned construction projects in the area before and during the construction period. Therefore, impacts of the Proposed Project would be less than significant because they are individually limited and would not be cumulatively considerable when viewed in connection with other past, present, or probable future projects. As a result, no mitigation is required.

Mitigation Measures: None Required.

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

Impact: No Impact.

The Proposed Project involves rehabilitation and new construction of several facilities at the Vallejo WWTP. This Project would ultimately improve operations at the Vallejo WWTP. Construction of these facilities would not directly or indirectly cause an adverse impact on human beings. Therefore, the Proposed Project would have no adverse effects on human beings, either directly or indirectly.

Mitigation Measures: None Required.

Appendix A. SRF Application

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ENVIRONMENTAL PACKAGE (CONSTRUCTION)

This Environmental Package has been prepared to serve both the Clean Water and Drinking Water (CW & DW) State Revolving Fund (SRF) Programs, within the Division of Financial Assistance, State Water Resources Control Board (State Water Board). A complete Environmental Package is required for all projects seeking funds from SRF Programs. Detailed information, including statutes and guidelines on the California Environmental Quality Act (CEQA), can be obtained at http://www.opr.ca.gov/ceqa/.

NOTE: The CEQA and federal cross-cutting document(s) must be completed prior to receiving a financing agreement for a project. All environmental documents, including addendums, supplemental and subsequent CEQA documents, must be circulated through the Governor's Office of Planning and Research (OPR), State Clearinghouse (SCH), and be less than five (5) years old at the time a financing agreement is executed for a project.

More information about the SRF Programs' environmental review process can be found in the State Environmental Review Process (SERP). The SERP addresses how the State Water Board utilizes CEQA to meet the SRF Programs' environmental requirements. To view the DW or CW SERP, respectively, please visit: https://www.waterboards.ca.gov/drinking_water/services/funding/documents/srf/serp.pdf, or http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/policy0513/appendix_i_envguide.pdf. For more information on the State Water Board's implementation of federal cross-cutting authorities in the SRF Programs, please visit: https://www.epa.gov/sites/production/files/2015--08/documents/crosscutterhandbook.pdf. For more information on program policy and guidance, please visit: https://www.epa.gov/drinkingwatersrf/program-policy-and-guidance-drinking-water-state-revolving-fund-program.

I. GENERAL INFORMATION

Applicant (Entity) Name: Enter the entity that will be the legal signatory to the financing agreement.

Project Title: Enter the title of the project. The project title must be consistent throughout the technical package (i.e., Project Technical Report/Engineering Report, Authorizing Resolution, etc.) and the environmental document for the project.

Environmental Contact Person and Phone/Email: Provide the contact information for the person/entity responsible for coordinating with the State Water Board on the environmental review.

Project Description: Provide a brief description of the activities that are expected to occur during the project construction and operation. The project description must be consistent with both the environmental document and the Project Technical Report/Engineering Report.

II. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) STATUS

CEQA Lead Agency: Provide the name of the lead agency preparing the environmental document(s) pursuant to CEQA Guidelines.

NOTE: If the applicant is not the lead agency, but is a public agency acting as a responsible agency, they must adopt/certify the CEQA document, approve the project, and then file a Notice of Determination with the County Clerk and the OPR, SCH. If the applicant is not a public agency (e.g., non-profit, private water system, etc.) and not subject to CEQA, please contact the State Water Board for assistance in determining the lead agency for the proposed project.

Environmental Document Status: Is the project covered under a CEQA exemption?
Has the CEQA process started for this project?
Has compliance with the federal cross-cutting requirements started?

Provide the State Clearinghouse Number: Enter the number assigned to the project at the time of filing at the OPR, SCH.

Type of CEQA Document: Identify how CEQA will be complied with for the project (i.e. type of CEQA document; Negative Declaration, Mitigated Negative Declaration, Environmental Impact Report) prepared/to be prepared for this Project).

Public Hearing/Meeting Date(s) for CEQA Document Adoption/Certification and Project Approval: All projects, except those with little to no environmental impacts (Statutorily and/or Categorically exempt), must hold a public hearing or meeting to adopt/certify the CEQA document(s) and approve the project. Please provide the date(s) of when such meeting(s) were held to adopt/certify CEQA document(s) and approve the project. Please note, all CEQA documents must be circulated through the OPR, SCH, and be less than five (5) years old at the time a financing agreement is executed for a project.

List and describe all related environmental permits, approvals, and certifications required for the project: Indicate which permits, approvals, and/or certifications are required for the project, including those issued by the county, state, and federal agencies. Examples include the California Department of Fish and Wildlife (CDFW) Lake or Streambed Alteration (LSA) Agreement, Clean Water Act (CWA), Sections 404 Permit and 401 Certification, Coastal Development permit, etc.

NOTE: Any project, regardless of funding, must obtain approval for any temporary or permanent disturbance to federal and state waters. The CWA, Sections 404 and 401 require consultation with the United States Army Corps of Engineers (USACE) and the Regional Water Quality Control Board(s) (RWQCB), if a project may result in the discharge of dredged or fill material into waters of the United States, including wetlands. The CWA, Section 404 Permit process through the USACE can be lengthy, and, as with the CWA, Section 401 Certification process, may ultimately require project alterations to avoid an adverse impact on waters of the United States. The applicant must consult with the USACE and the RWQCB(s) early on in the planning process if any portion of the project site contains or may impact waters of the United States, so that practical project alternatives and/or impact avoidance can be discussed. For more information on the CWA, Sections 404 Permit and 401 Certification processes, please visit https://www.epa.gov/cwa-404/section-404-permit-program and https://19january2017snapshot.epa.gov/sites/production/files/2016-11/documents/cwa_401_handbook_2010.pdf.

Project and Environmental Settings: Evaluate the project in regard to the questions listed under the Environmental Setting and check the applicable boxes. If you answer "Yes" to any of the questions, explain the potential significant environmental impacts, both direct and indirect. When considering potential environmental impacts, you must include all of the project's elements: facilities, conveyance lines, storage, points of diversions, points of discharge, staging areas, operation, and other elements of service area - as applicable. Use attachment(s) if necessary.

III. CEQA EXEMPTION INFORMATION

Complete this Section only if the project is exempt from CEQA.

Categorical Exemptions — Check the applicable class(es) and provide a brief description of how the project is consistent with the exemption class(es) and whether any exception(s) to the exemption(s) apply.

Statutory Exemptions — Check the applicable section(s) and explain how the project is consistent with the exemption(s).

Division of Financial Assistance Environmental Review Staff will review the exemption information provided to determine if the State Water Board concurs with the applicant's determination, and what type of federal cross-cutting documentation may be necessary.

Completion of the Environmental Package, including the Evaluation Section for Federal Environmental Coordination (See Section IV below), is required for all SRF funded projects regardless of whether the project is CEQA exempt. The applicant should contact Environmental Review Staff before completing any additional federal cross-cutting documents. Contact the Division of Financial Assistance Project Manager to obtain the contact information for Environmental Review Staff.

IV. EVALUATION SECTION FOR FEDERAL ENVIRONMENTAL COORDINATION

This section is required for all projects requesting SRF funding. The applicant should discuss in detail the steps taken to meet the federal cross-cutting environmental regulations identified below, and provide the appropriate supporting information. **Supporting information must be uploaded to FAAST labeled E2 "Document Type" (e.g., E2-Air Quality Estimates, E2-Biological Assessment, etc.)** Please contact the Environmental Review Staff (refer to contact list at http://www.waterboards.ca.gov/water_issues/programs/grants_loans/environmental_requirements.shtml for the CW SRF Program or http://www.waterboards.ca.gov/drinking_water/services/funding/environmental_requirements.shtml for the DW SRF Program) if you have any questions.

Potential Co-Funding Sources

Indicate if the project is also pursuing funding from another federal agency(ies). If more than one (1) federal agency is involved in a project, the agencies will need to coordinate to determine who will be the federal lead agency when conducting consultations (i.e., Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act). Provide the Division of

Financial Assistance Environmental Review Staff with contact information of the environmental coordinator/reviewer of the other federal agency(ies), to coordinate and identify the federal lead agency for the project.

United States Forest Service, Bureau of Land Management, and Other Federal Land

Required Documentation: Explain if any portion of the proposed project is located on United States Forest Service (USFS), Bureau of Land Management (BLM), or any other federally managed land. If applicable, attach a colored map identifying the project location with respect to the USFS, the BLM, or other federal land and provide further explanation, or indicate where this information may be found (e.g., CEQA document, biological report/assessment, etc.). To aid the State Water Board in federal coordination, please provide the name and contact information for the USFS Office, the BLM District, or other federal regional unit with whom the water system has been in contact.

Regulatory Information: If any portion of the proposed project is located on the USFS, the BLM land, or other federally managed land, a USFS Special-Use Authorization, BLM Land Use Permit, or other form of federal land use authorization, respectively, may be required. These documents (e.g., permits, leases, easements) authorize specific uses and activities upon the USFS, the BLM, or other federally managed land (e.g., construction upon USFS or BLM land). For more information on the USFS Special-Use Authorization and how to obtain one, please visit: https://www.fs.fed.us/specialuses/special_about.shtml. For more information on the BLM Land Use Application and Permit and how to obtain one, please visit: https://www.blm.gov/services/electronic-forms.

Environmental Alternative Analysis

Required Documentation: Briefly explain the direct and indirect environmental impacts associated with each project alternative considered and the environmental reasoning behind why the project alternative was selected. Also, indicate where more information can be found (e.g., Project Technical Report/Engineering Report or in a separate environmental alternative analysis document). The environmental alternative analysis must include the following elements:

- Range of feasible project alternatives that each meet the applicant's project needs and objectives, as well as a "no project/no action" alternative;
- Comparative environmental analysis among the project alternatives that includes discussions of beneficial and adverse environmental impacts on the existing environment, future environment, and individual sensitive environmental issues identified through project management or public participation;
- Analysis of direct, indirect, and cumulative impacts on sensitive environmental resources, if applicable, for each project alternative considered;
- Potential reasonably foreseeable future environmental impacts, if applicable, for each project alternative considered;
- Appropriate mitigation measures not already included in the proposed action or alternatives, if appropriate, to mitigate adverse environmental impacts; and
- Thorough discussions of the environmental reasoning for selection of the chosen alternative for the project.

Regulatory Information: SRF Programs' federal regulations and the SERP require an environmental alternative analysis for projects covered under a Negative Declaration, Mitigated Negative Declaration, or an Environmental Impact Report.

Archaeological and Historic Preservation Act (AHPA)

Required Documentation: Explain if the project will cause irreparable loss or damage to archaeological or historic resources or data through alteration of the terrain as a result of reservoir or dam construction (i.e., flooding, building of access roads, or construction of a reservoir). Please explain, or indicate where this information can be found [e.g., Historic Properties Identification Report (HPIR), CEQA document, etc.]. Provide supplemental information as needed. The HPIR (see the National Historic Preservation Act below) will suffice as documentation for this requirement.

Regulatory Information: The AHPA was established in 1960 for the preservation of significant scientific, prehistoric, historic and archaeological materials and data that might be lost or destroyed as a result of flooding, the construction of access roads, relocation of railroads and highways, or any other federally funded activity that is associated with the construction of a dam or reservoir. Under this law, historical and archaeological resources do not have to be eligible, or considered eligible, in the National Register of Historic Places for an impact to occur. If a project will have an adverse effect to significant historical or archaeological resources or data, the State Water Board will coordinate with the United States Environmental Protection Agency (USEPA) to initiate consultation with the relevant federal agencies.

Bald and Golden Eagle Protection Act

Required Documentation: Explain if the project has the potential to adversely affect Bald or Golden Eagles. Please indicate where the impact assessment specific to Bald or Golden Eagles can be found [e.g., page number(s) of the biological report/assessment, CEQA document, etc.].

Regulatory Information: The bald eagle will continue to be protected by the Bald and Golden Eagle Protection Act (Act) even though it has been delisted under the Endangered Species Act. This law, originally passed in 1940, provides for the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 U.S.C. 668c; 50 CFR 22.3). The 1972 amendments increased civil penalties for violating provisions of the Act to a maximum fine of $5,000 or one year imprisonment with $10,000 or not more than two years in prison for a second conviction. Felony convictions carry a maximum fine of $250,000 or two years of imprisonment. The fine doubles for an organization. Rewards are provided for information leading to arrest and conviction for violation of the Act.

Clean Air Act

Required Documentation: Identify the air basin and local air district for the project area. Provide the estimated project construction and operational air emissions (in tons per year) in the table, and attach supporting calculations, regardless of attainment status [emissions can be estimated by using the California Emissions Estimator Model (CalEEMod): http://caleemod.com/]. Local air

quality thresholds of significance can be determined by contacting the Local Air District, or by visiting the Local Air District's website. Submit additional supporting documents utilized to compile the data, and any air quality studies/models that have been completed for the project. Indicate where more information can be found (e.g., CEQA document, etc.).

Regulatory Information: For SRF Programs' financed projects, we recommend the applicant include a General Conformity Determination section in the CEQA document(s), so that another public review process would not be needed, should a General Conformity Determination be required. The applicant should check with the local air quality management district and review the California Air Resources Board's air emissions map for information on the State Implementation Plan (https://www.arb.ca.gov/planning/sip/sip.htm). The applicant should refer to the USEPA's Green Book for information on attainment status (https://www.epa.gov/green-book) and to the USEPA's General Conformity Training for information on the federal *de minimis* levels (https://www.epa.gov/general-conformity/de-minimis-emission-levels). For information on how to proceed evaluating General Conformity requirements, please contact the Division of Financial Assistance Environmental Review Staff through the assigned Project Manager.

Coastal Barriers Resources Act

Since there is no designated Coastal Barrier Resources System in California, no impacts from California projects are expected. However, should the applicant believe there may be impacts to the Coastal Barrier Resources System due to special circumstances, please adhere to the following guidance.

Required Documentation: Explain if the project will impact, or be located within or near, the Coastal Barrier Resources System or its adjacent wetlands, marshes, estuaries, inlets, and near-shore waters. If applicable, describe the project location with respect to the Coastal Barrier Resources System, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.). Provide the status of any consultations conducted with the appropriate Coastal Zone management agency and the United States Department of Interior, Fish and Wildlife Service (USFWS). During the planning process, the applicant should consult with the appropriate Coastal Zone management agency (e.g., City or County with an approved Local Coastal Program, the California Coastal Commission, or the San Francisco Bay Conservation and Development Commission) to determine if the project will have an impact on the Coastal Barrier Resources System.

Regulatory Information: The Coastal Barriers Resources Act is intended to discourage development in the Coastal Barrier Resources System and adjacent wetlands, marshes, estuaries, inlets, and near-shore waters.

If the project will have an impact on the Coastal Barrier Resources System, the State Water Board must consult with the appropriate Coastal Zone management agency and the USFWS. Any recommendations from the Coastal Zone management agency and the USFWS will be incorporated into the project's design prior to approval of SRF financing. For more information on Coastal Barrier Resources System in the project area, please visit: http://www.fws.gov/CBRA/.

Coastal Zone Management Act

Required Documentation: Explain if any portion of the project is located within the coastal zone and describe the project location with respect to coastal areas, or indicate where this information may be found (e.g., CEQA document, biological report/assessment, etc.). If applicable, provide the status or copy of the coastal zone permit or coastal exemption.

To help determine if the project is located within a coastal zone, please contact the city or county in which the project is located, or your local California Coastal Commission office (https://www.coastal.ca.gov/enforcement/cdp_pamphlet.pdf). California's coastal zone is defined as extending seaward to the state's outer limit of jurisdiction, including all offshore islands, and extending inland generally 1,000 yards from the mean high tide line of the sea. In significant coastal estuarine, habitat, and recreational areas it extends inland to the first major ridgeline paralleling the sea or five (5) miles from the mean high tide line of the sea, whichever is less, and in developed urban areas the zone generally extends inland less than 1,000 yards. The coastal zone for the San Francisco Bay Conservation and Development Commission (BCDC) includes the open water, marshes, and mudflats of the greater San Francisco Bay, and areas 100 feet inland from the line of highest tidal action. The BCDC boundary also includes: the Suisun Marsh and buffer zone: managed wetlands diked off from the Bay; and open waters diked off from the Bay and used in salt production.

Regulatory Information: Projects involving construction activities in the coastal zone will require consultation with either the California Coastal Commission (or the designated local agency with a Local Coastal Program), or the BCDC (for projects located in the San Francisco Bay area).

For more information on Coastal Zone Management Act requirements, please refer to the following websites:

- United States Coastal Zone Boundaries through the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), and National Marine Fisheries Service (NMFS) website at https://coast.noaa.gov/czm/mystate/;
- California Coastal Commission website at http://www.coastal.ca.gov/ccatc.html; and/or
- San Francisco Bay Conservation and Development Commission website at http://www.bcdc.ca.gov/.

Endangered Species Act (ESA)

Required Documentation: Explain if the project construction and operational activities may directly or indirectly affect any federally listed threatened or endangered species that are known or have a potential to occur on the project site, in the surrounding area, or in the service area. Please also indicate where more information can be found (e.g., biological report/assessment, CEQA document, etc.).

The applicant must provide a biological assessment/report, prepared by a qualified biologist, that addresses possible direct, indirect, and cumulative impacts of the project to federally listed species under the ESA. Biological assessments/reports must include a clear description of the project, construction information, an up-to-date field survey, a species assessment table for all federally protected species, and an analysis of impacts to those species that have the potential to occur within or adjacent to the project site. Official species lists requested from the USFWS Information for Planning and Conservation database (https://ecos.fws.gov/ipac/) and the NMFS (http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html) must

accompany the biological assessment/report, as well as recently-generated species lists from the CDFW California Natural Diversity Database (https://www.wildlife.ca.gov/Data/CNDDB) and the California Native Plant Society Inventory of Rare and Endangered Plants of California (http://www.rareplants.cnps.org/).

Regulatory Information: The USFWS and NMFS must be consulted for any projects that may have the potential to impact a federally listed species. The State Water Board will reach out to the USFWS or NMFS for technical assistance prior to initiating consultation under Section 7 of the ESA. If consultation is required, the Division of Financial Assistance Environmental Review Staff will coordinate with the USEPA to initiate a Section 7, ESA consultation with the USFWS and/or NMFS. The USFWS and NMFS must provide written concurrence prior to execution of SRF financing agreement. The USFWS and NMFS comments may include conservation measures, for which the applicant's SRF financing agreement will be conditioned to ensure compliance.

For further information on the ESA requirements, visit http://www.fws.gov/endangered/laws-policies/index.html and http://www.nmfs.noaa.gov/pr/laws/esa/. Note that compliance with both the state and federal ESAs is required of projects having the potential to impact state and federal special-status species or critical habitat. Although overlap exists between the state and federal ESAs, there might be additional or more restrictive state requirements. For further information on the California ESA, refer to the CDFW website at http://www.dfg.ca.gov/habcon/cesa/.

For further guidance on the preparation of a biological report/assessment, please visit https://www.fws.gov/midwest/endangered/section7/ba_guide.html.

Environmental Justice

Required Documentation: Place a check (✓) in the box(es) that describe the impact of the project and provide a brief explanation for your answer(s). Explain any disproportionately high and adverse human health or environmental effects of the project's activities on minority and low-income populations, or indicate where this information can be found.

Regulatory Information: The USEPA has defined environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

Fair Treatment means that no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative consequences of industrial, governmental, and commercial operations or programs and policies.

Meaningful Involvement means that: 1) potentially affected community members have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; 2) the public's contribution can influence the agency's decision; 3) the concerns of all participants involved will be considered in the decision-making process; and 4) the decision-makers seek out and facilitate the involvement of those potentially affected.

Environmental justice concern indicates the actual or potential lack of fair treatment or meaningful involvement of minority, low-income, or indigenous populations, or tribes in the development, implementation, and enforcement of environmental laws, regulations, and policies.

Your project may involve an "environmental justice concern" if the project could:

a) Create new disproportionate impacts on minority, low-income, or indigenous populations;
b) Exacerbate existing disproportionate impacts on minority, low-income, or indigenous populations; or
c) Present opportunities to address existing disproportionate impacts on minority, low-income, or indigenous populations that are addressable through the project.

Farmland Protection Policy Act

Required Documentation: Explain if any portion of the project is located on prime, unique, or important farmland, and provide information on the acreage that would be converted to other uses. Also, explain if any portion of the project boundaries is under a Williamson Act Contract, and specify the amount of acreage affected. Include this information in the Environmental Package or indicate where it can be found (e.g., farmland conversion assessment, CEQA document, etc.). If the project area is protected farmland or farmland under the Williamson Act Contract, please consult with appropriate federal, state, and local agencies and provide necessary documents to the State Water Board.

Regulatory Information: Projects involving impacts to farmland designated as prime and unique, local and statewide importance, or under a Williamson Act Contract, will require consultation with the United States Department of Agriculture, Natural Resources Conservation Service and/or California Department of Conservation. The applicant should discuss with the State Conservationist or local representative the project's potential impacts to important farmland. The State Conservationist can provide advice on: (a) what further actions must be taken by the applicant to further evaluate important farmlands, (b) the significance of all identified important farmlands, (c) the sizing of the project as it relates to secondary growth, (d) the continued viability of farming and farm support services in the project area, and (e) alternatives or mitigation measures for reducing potential adverse effects on important farmlands.

For more information on the Farmland Protection Policy Act go to https://www.nrcs.usda.gov/wps/portal/nrcs/detail/?cid=nrcs143_008275, and for the Williamson Act go to https://www.conservation.ca.gov/dlrp/wa/Pages/wa_overview.aspx.

Fish and Wildlife Coordination Act (FWCA)

Required Documentation: Explain if the project involves any direct or indirect impacts from construction or operational activities to a body of water and provide the additional supporting information, as needed, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.).

Regulatory Information: Projects that may impact a stream or other water body by impounding, diverting, deepening a channel, or otherwise controlling or modifying flow for any purpose (including navigation and drainage) will require consultation with the USFWS and CDFW. The FWCA is not applicable to those projects in which the maximum surface area impoundment of water is less than ten (10) acres, or to activities for or in connection with programs primarily for land management and use carried out by federal agencies with respect to federal lands under their jurisdiction.

The Division of Financial Assistance Environmental Review Staff will coordinate with the USEPA to initiate consultation with the relevant agencies, if necessary.

Floodplain Management: Executive Orders 11988, 12148, and 13690

Required Documentation: Explain if any portion of the project is located within a 100-year floodplain as depicted on a floodplain map or otherwise designated by the United States Department of Homeland Security, Federal Emergency Management Agency (FEMA). Describe any proposed measures that will be implemented to minimize or avoid redirection of the flood flow by the project, or indicate where this information can be found (e.g., CEQA document, floodplains/hydrological assessment, etc.). Provide information of any consultations completed with relevant agencies, along with the relevant FEMA floodplain map. If applicable, attach any reports (floodplains/hydrological assessment) completed for the project.

Regulatory Information: Each agency shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities. Before taking an action, each agency shall determine whether the project will occur in a designated floodplain. Through Executive Order 13690, there are three (3) methods for establishing flood elevation and hazard area:

I. Use data and methods informed by best-available, actionable climate science;
II. Build two (2) feet above the 100-year flood elevation for standard projects and build three (3) feet above the 100-year flood elevation for critical buildings; and
III. Build to the 500-year flood elevation.

If an agency determines or proposes to conduct, support, or allow a project to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. The project design and construction should take natural systems, ecosystem processes, and nature-based approaches into consideration when planning to construct within a floodplain whenever possible.

For technical assistance regarding the Floodplain Management requirements for construction within a 100-year floodplain, please contact your local Floodplain Administrator. For assistance identifying the Floodplain Administrator for your project area, please contact your regional Department of Water Resources Floodplain Management Specialist at https://water.ca.gov/nfip.

For further information regarding Floodplain Management requirements, please consult the FEMA website at http://www.fema.gov, as well as the USEPA Floodplain Management Executive Order 11988 at https://www.fema.gov/executive-order-11988-floodplain-management and Executive Order 13690 at https://www.gpo.gov/fdsys/pkg/FR-2015-02-04/pdf/2015-02379.pdf.

Magnuson-Stevens Fishery Conservation and Management Act

Required Documentation: Explain if the project construction activities involve direct, indirect, and/or cumulative impacts to Essential Fish Habitat (EFH), or indicate where this information can be found (e.g., biological report/assessment, EFH impact assessment/evaluation, CEQA document, etc.). To determine the project's location relative to designated EFH and to obtain an unofficial or official NMFS species list, consisting of both endangered species and EFH that could potentially occur in the project area, please visit:

http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html. If the project may adversely impact EFH, the applicant must contact the NMFS to obtain an official species list, and can do so by following the link above and the associated website instructions. If the applicant is unable to obtain an official NMFS species list, please contact the Division of Financial Assistance Environmental Review Staff for further assistance.

Regulatory Information: The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended, is designed to manage and conserve national fishery resources. EFH consultations are only required for actions that may adversely affect EFH. The NMFS is responsible for publishing maps and other information on the locations of designated EFH and can provide information on ways to promote conservation of EFHs. If a project may adversely affect a designated EFH, consultation with the NMFS will be required.

The Division of Financial Assistance Environmental Review Staff will reach out to the NMFS for technical assistance while reviewing the project. The Division of Financial Assistance Environmental Review Staff will coordinate with the USEPA to initiate consultation with the NMFS under the MSFCMA. The NMFS can respond informally or in writing. The NMFS comments may include conservation measures, for which the applicant's SRF financing agreement will be conditioned to ensure compliance. For more information, see the brochure at http://www.nmfs.noaa.gov/sfa/reg_svcs/Council%20stuff/council%20orientation/2007/2007TrainingCD/TabT-EFH/EFH_CH_Handout_Final_3107.pdf.

Marine Mammal Protection Act

Required Documentation: Explain if the project construction activities involve direct, indirect, and/or cumulative impacts to marine mammals, or indicate where this information can be found (e.g., biological report/assessment, EFH impact assessment/evaluation, CEQA document, etc). If the project may adversely impact marine mammals, the applicant should contact the Division of Financial Assistance Environmental Review Staff for further assistance.

Regulatory Information: The Marine Mammal Protection Act (MMPA) was enacted on October 21, 1972. All marine mammals are protected under the MMPA. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in the United States waters and by the United States citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States.

Jurisdiction for MMPA is shared by the USFWS and the NMFS.

Migratory Bird Treaty Act

Required Documentation: Explain if the project will impact federally protected migratory birds and provide a list of all protected migratory bird species that have the potential to occur in the project area, including their migration schedules and past sightings within the project area. Please indicate where this information can be found [e.g., page number(s) of the biological report/assessment, CEQA document, etc.].

Regulatory Information: The Migratory Bird Treaty Act (MBTA) restricts the killing, taking, collecting and selling or purchasing of native bird species or their parts, nests, or eggs. The MBTA, along with subsequent amendments to this act, provides legal protection for almost all

breeding bird species occurring in the United States and must be included in the CEQA document. Each agency must make a finding that a project will comply with the MBTA in the CEQA document. For further information, please consult the Migratory Bird Program through the USFWS website at https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php.

National Historic Preservation Act (NHPA)/Historic Sites Act (HAS)

Required Documentation: A Historic Properties Identification Report (HPIR), written by a cultural resources professional who meets the Secretary of the Interior's Professional Qualification Standards in Archaeology or Architectural History (www.nps.gov/history/local-law/arch_stnds_9.htm), as appropriate, needs to be sent to the State Water Board's on-staff archaeologists. Contact the Project Manager or Division of Financial Assistance Environmental Review Staff for the assigned archaeologist's contact information. For detailed information on the contents of the report, visit http://ohp.parks.ca.gov/pages/1071/files/106Checklist_Details.pdf. The HPIR must include all supporting documentation, such as the results of the California Historical Resources Information System (CHRIS) records search, the results of the Sacred Lands File Search and Native American correspondence, and site records from the records search and from new resources found during the field survey. In the Environmental Package, explain the NHPA, Section 106 finding of effect, or indicate where this information can be found (e.g., HPIR, cultural report).

Regulatory Information: Section 106 of the NHPA requires federal agencies to take into account the effects of project activities on historic properties. The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. Historic properties are any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). The term also includes properties of religious and cultural importance to a Native American tribe that meets the National Register criteria.

The USEPA has given authority to the State Water Board to carry out the requirements of Section 106 of NHPA and its implementing regulations, found at 36 C.F.R. Part 800, in regards to the SRF Programs. The Division of Financial Assistance Environmental Review Staff consults with the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and consulting parties on behalf of the USEPA and the applicant.
http://www.waterboards.ca.gov/water_issues/programs/grants_loans/cwsrf_requirements.shtmlshtml

HSA became law on August 21, 1935 declaring the national policy to preserve for public use historic sites, building, and objects of national significance for the inspiration and benefit of the people of the United States. Applicants complying with the NHPA are likely meeting the objectives of the HSA. However, if compliance with the HSA is required, applicants are encouraged to contact the Division of Financial Assistance Environmental Review Staff for guidance on how to assure compliance.

Protection of Wetlands

Required Documentation: Explain if there is any area within the project boundaries that should be evaluated for wetland delineation and/or that requires a permit certification from the USACE, RWQCB(s), and/or CDFW. Provide a copy of the applicable permit(s) to the the Division of Financial Assistance Environmental Review, and indicate where more information can be found (e.g., CEQA document, wetland assessment/delineation report, biological report/assessment, etc.).

Regulatory Information: In accordance with Executive Order 11990, Protection of Wetlands, any proposed project that will be in or will potentially affect wetlands must be assessed so that adverse impacts to wetlands can be avoided, to the extent possible. A wetland delineation report must be prepared for any project that will be located in or will potentially impact a wetland. The USACE Wetland Delineation Manual is available at https://www.cpe.rutgers.edu/Wetlands/1987-Army-Corps-Wetlands-Delineation-Manual.pdf. In addition, the CDFW determines whether or not an activity may adversely impact fish and wildlife resources, and a LSA may need to be prepared. For more information on Fish and Game codes please visit https://www.wildlife.ca.gov/Conservation/LSA.

Rivers and Harbors Act, Section 10

Required Documentation: Explain if the project involves any regulated activities conducted below the Ordinary High Water (OHW) elevation of navigable waters of the United States that must be approved/permitted by the USACE per Section 10 of the Rivers and Harbors Act (Section 10). Indicate where more information on the project's construction and regulated activities can be found (e.g., Project Technical Report/Engineering Report, CEQA document, etc.). Provide a copy of the Section 10 Permit to the Division of Financial Assistance Environmental Review, if applicable.

Regulatory Information: If a project involves the construction of structures or any other regulated activities in, under, or over navigable waters of the United States, a Section 10 Permit from the USACE is required. Regulated activities include the placement/removal of structures, work involving dredging, disposal of dredged material, filling, excavation, or any other disturbance of soils/sediments or modification of a navigable waterway. Navigable waters of the United States are those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. Tributaries and backwater areas associated with navigable waters of the United States, and located below the OHW elevation of the adjacent navigable waterway, are also regulated under Section 10. The applicant must consult with the USACE to obtain a Section 10 Permit, if applicable. For more information, please visit http://www.in.gov/indot/files/24_army.pdf.

Safe Drinking Water Act/Sole Source Aquifer Protection

Required Documentation: Explain if the project is located in an area designated by the USEPA, Region 9, as a sole source aquifer, and identify the sole source aquifer (e.g., Fresno County Aquifer; Campo/Cottonwood Creek Aquifer; Santa Margarita Aquifer, Scott's Valley; or Ocotillo-Coyote Wells Aquifer) that will be affected. The applicant must comply with the Safe Drinking Water Act and document whether or not the project has the potential to contaminate a Sole Source Aquifer. The applicant shall be held responsible for providing an alternate project location

and/or appropriate mitigation measures if a Sole Source Aquifer were to be significantly impacted by a project. Include this information in the Environmental Package, or indicate where this information may be found (e.g., biological report/assessment, CEQA document, etc.).

Regulatory Information: For projects impacting a listed Sole Source Aquifer, the applicant must identify an alternative project location, and/or develop adequate mitigation measures in consultation with the USEPA. For more information, please visit the Sole Source Aquifer Program website at https://www.epa.gov/dwssa or contact the Division of Financial Assistance Environmental Review Staff for further assistance.

Wild and Scenic Rivers Act

Required Documentation: Explain if a segment of the project is located within a wild and scenic river, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.). If the project is located within a wild and scenic river watershed, please provide a map identifying the watershed where the project is located.

Regulatory Information: There are construction restrictions or prohibitions for projects near or in a designated "wild and scenic river." A listing of designated "wild and scenic rivers" can be obtained at http://www.rivers.gov/california.php. Watershed information can be obtained through the "California Watershed Portal" at http://www.conservation.ca.gov/dlrp/watershedportal.

Wilderness Act

Required Documentation: Explain if a segment of the project is located within a designated Wilderness or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.). If the project is located within a designated Wilderness, please provide a map identifying the Wilderness Area in relation to where the project is located.

Regulatory Information: Except as specifically provided for in the Wilderness Act (Act), and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment, or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such areas. If you have questions, please contact the Division of Financial Assistance Environmental Review Staff for further assistance.

ENVIRONMENTAL PACKAGE
(CONSTRUCTION)

I. GENERAL INFORMATION

Applicant (Entity) Name: Vallejo Flood and Wastewater District

Project Title: Mare Island Pump Station 3W Effluent Bypass Project

Environmental Contact Person: Kyle Broughton **Phone:** (707) 644-8949, ext 1307

Email: KBroughton@vallejowastewater.org

Project Description:

See Attached.

II. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) STATUS

CEQA Lead Agency[1]: Vallejo Flood and Wastewater District
Environmental Document Status: Draft
Is the project categorically or statutorily exempt? ☐ **Yes or** ☑ **No**
Has the CEQA process started for this project[2]? ☑ **Yes or** ☐ **No**
Has compliance with the federal cross-cutting requirements started? ☑ **Yes or** ☐ **No**
Provide the State Clearinghouse Number[3]:
What type of CEQA document (Negative Declaration, Mitigated Negative Declaration, Environmental Impact Report) was prepared for this Project? Mitigated Negative Declaration
Public Hearing/Meeting Date(s) for CEQA Document Adoption/Certification and Project Approval[4]: None
List and describe all related <u>environmental</u> permits, approvals, and certifications required for the project:

None

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[1]If the CEQA lead agency has not been identified, please contact the the Division of Financial Assistance *Environmental Review Staff for guidance.*
[2]The CEQA process and applicable federal cross-cutting requirements must be completed prior to receiving a financing agreement for the project.
[3]All environmental documents must be circulated through the Governor's Office of Planning and Research, State Clearinghouse.
[4]The Clean/Drinking Water State Revolving Fund (SRF) Programs require at least one (1) public hearing/meeting, for projects that are not exempt under CEQA, in which the CEQA document(s) must be adopted/certified. All environmental documents must be less than five (5) years old at the time a financing agreement is executed for the project.

Project Setting:

Describe the current resource condition(s) and types of land use(s) in the project area and surrounding properties, and indicate if the project is located on tribal and/or federal land(s):

See Attached.

Environmental Setting:

Will the project:

Yes	No	
☐	☑	Be located in or adjacent to a sensitive biological area?
☑	☐	Involve potential impacts to state or federally listed threatened or endangered species?
☑	☐	Be located on or adjacent to wildlife migration routes?
☑	☐	Be located in or adjacent to recreational facilities or resources?
☐	☑	Be located on or adjacent to a unique stream or water body, or involve disturbance in a waterway or wetland?
☐	☑	Involve removal of mature trees or trees of local importance?
☐	☑	Involve a substantial alteration of ground contours?
☐	☑	Involve new or increased use of a critically over-drafted groundwater basin or groundwater basin subject to salinity intrusion?
☐	☑	Be located in an area with important geological resources (e.g., paleontological resources, mineral resources, etc.)?
☐	☑	Involve substantial excavation and soil removal?
☐	☑	Produce substantial quantities of dust, ash, smoke, fumes, odors, or other air quality pollutants?
☐	☑	Involve substantial change in noise or vibration levels beyond the project area or be located in an area with sensitive noise receptors?
☐	☑	Be located on slopes with a grade of 10 percent or more, on highly erodible soil, or in a geologically unstable area?
☑	☐	Involve disposal of hazardous, flammable, or explosive materials?
☑	☐	Be located within a 100-year flood zone and have the potential to redirect flood flows?
☑	☐	Increase traffic above existing levels, or cause potential traffic related impacts?
☐	☑	Involve substantial increase in energy consumption (e.g., electricity, oil, natural gas)?
☐	☑	Contribute to significant cumulative impacts associated with successive projects of the same type, at or near the project site, over time?
☐	☑	Include a reasonable possibility that the project will have a significant impact on the environment due to unusual circumstances?
☐	☑	Involve growth inducing activities?
☐	☑	Involve damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway?
☐	☑	Be located on a hazardous waste site that is included on any lists compiled pursuant to Section 65962.5 of the Government Code?
☐	☑	Increase health risks associated with hazardous chemicals?

- [x] [ ] Be located on a site or area that has the potential to be contaminated by hazardous materials?
- [ ] [x] Impact additional utilities services areas (e.g., gas lines, sewers, landfills, etc.)?
- [x] [ ] Involve a substantial adverse change in the significance of a historical resource?

If answers to any of the above questions are “Yes”, explain:

See Attached.

III. CEQA EXEMPTION INFORMATION

Categorical Exemptions (CE): California Code of Regulations (CCR), title 14, division 6, chapter 3, article 19, sections 15300 et seq. Identify the class(es) (e.g. Class 1: Existing Facilities, Class 2: Replacement of Reconstruction, etc.) that apply:

N/A

Statutory Exemptions (SE): CCR, title 14, division 6, chapter 3, article 18, sections 15260 et seq. Check the statute(s) that apply:

- [ ] 15262, Feasibility and Planning Studies: A project involving only feasibility or planning studies for possible future actions that the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an Environmental Impact Report or Negative Declaration but does require consideration of environmental factors. This section does not apply to the adoption of a plan that will have a legally binding effect on later activities.

- [ ] 15282, Other Statutory Exemptions: The installation of new pipeline or maintenance, repair, restoration, removal, or demolition of an existing pipeline as set forth in Section 21080.21 of the Public Resources Code, as long as the project does not exceed one mile in length.

- [ ] Other (list specific code reference):

Attach photos of the project area, as well as any documentation used to support the exemption determination. Explain how the project is consistent with the above listed SE(s) or CE(s) requirements by thoroughly describing the screening process and/or steps that were taken to determine if an exemption was appropriate for the project, including, but not limited to, the Initial Study:

IV. EVALUATION SECTION FOR FEDERAL ENVIRONMENTAL COORDINATION

Potential Co-Funding Sources

Will the project potentially be co-funded by any other federal agencies?

☐ No – No other federal agencies will provide funding for the project.

☑ Yes – The project will potentially receive funding from other federal agency(s). Please list the agency(ies) and explain the funding status:

In addition to this SRF application, VFWD also applied for funding through the EPA WIFIA program. That application is currently in review.

United States Forest Service, Bureau of Land Management, and Other Federal Land (http://www.fs.usda.gov/r5) (https://www.blm.gov/california)

Is any portion of the proposed project site located on the United States Forest Service (USFS), the Bureau of Land Management (BLM), or any other federally managed land? [For an interactive map outlining federally managed land, please visit: https://www.blm.gov/maps/frequently-requested/california.]

☑ No – The proposed project will not be located on the USFS, the BLM, or any other federally managed land.

☐ Yes – The proposed project will be located on the USFS, the BLM, or other federally managed land. Please explain or indicate where more information can be found (e.g., biological report/assessment, CEQA document, etc.), and attach a colored map identifying the project location with respect to the USFS, the BLM, or other federal land. Attach a copy of the appropriate authorization/permit for the use of federal land (e.g., USFS Special-Use Authorization, BLM Land Use Permit) or indicate the status of the authorization/permit below.

Please indicate the USFS Office, the BLM District, or other federal regional unit in which the project is located and the contact information of the associated federal representative with whom the water system has been in contact:

USFS Office/BLM District/Federal Regional Unit:
(https://www.fs.usda.gov/main/r5/about-region/offices) (https://www.blm.gov/office/california-state-office)

Contact Person:

Contact E-Mail/Phone Number:

Environmental Alternative Analysis

The SRF Programs require an environmental alternative analysis for projects that have a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report pursuant to the CEQA.

Please attach a copy of the environmental alternative analysis or indicate where it can be found (e.g., Project Technical Report/Engineering Report): See Attached.

Please briefly summarize the direct and indirect environmental impacts associated with each project alternative considered, including a "no project/no action" alternative, and the environmental considerations behind the selected project alternative:

The Proposed Project Alternative, Alternative Layouts, and a No Action Alternative were considered. See Attached for a definition and analysis of Alternatives.

Archaeological and Historic Preservation Act (AHPA)
(https://www.nps.gov/archeology/tools/laws/AHPA.htm)

Will the project cause the irreparable loss or damage to a significant archaeological or historic resource or data through alteration of the terrain resulting from dam or reservoir construction (i.e., flooding, building of access roads, or construction of a reservoir) and require compliance under the AHPA?

☑ No – The project construction will not cause an irreparable loss or damage of significant archaeological or historic resources or data through alteration of the terrain resulting from dam or reservoir construction. The project does not require compliance with the AHPA.

☐ No – The project construction will not cause an irreparable loss or damage of significant archaeological or historic resources or data through alteration of the terrain resulting from dam or reservoir construction. The project does not require compliance with the AHPA. Please explain, or indicate where this information can be found [e.g., Historic Properties Identification Report (HPIR; see the National Historic Preservation Act below), CEQA document, etc.]:

Bald and Golden Eagle Protection Act (https://www.fws.gov/birds/policies-and-regulations/laws-legislations/bald-and-golden-eagle-protection-act.php)

The purpose of the Bald and Golden Eagle Protection Act is to not agitate the bald and golden eagle to the extent of not 1) Abusing an eagle, 2) Interfering with its substantial lifestyle, including shelter, breeding, feeding, or 3) Nest abandonment.

Will the project conflict with the intent of the Bald and Golden Eagle Protection Act?

☑ No – The project does not conflict with the intent of the Bald and Golden Eagle Protection Act.

☐ Yes – The project may conflict with the intent of the Bald and Golden Eagle Protection Act.
Explain:

Clean Air Act (https://www.epa.gov/laws-regulations/summary-clean-air-act

Identify Project Air Basin: (http://www.arb.ca.gov/ei/maps/statemap/abmap.htm)

Identify Local Air District: (https://ww3.arb.ca.gov/capcoa/dismap.htm)

Complete the following table: The project construction and operational air emissions can be estimated by using the California Emissions Estimator Model (CalEEMod) (http://caleemod.com/)

Pollutant	Federal Status (Attainment, Nonattainment, Maintenance, or Unclassified)	Nonattainment Rates (i.e., marginal, moderate, serious, severe, or extreme)	Threshold of Significance for Project Air Basin (if applicable – contact Local Air District)	Estimated Construction Emissions (Tons/Year)	Estimated Operation Emissions (Tons/Year)
Ozone (O_3)	Nonattainment	Marginal	NA	NA	None
Carbon Monoxide (CO)	Maintenance	NA	100	2.6	None
Oxides of Nitrogen (NO_x)	NA	NA	100	2.0	None

Reactive Organic Gases (ROG) or Volatile Organic Compounds (VOC)	NA	NA	100	0.2	None
Lead (Pb)	Attainment	NA	NA	NA	NA
Particulate Matter less than 2.5 microns in diameter ($PM_{2.5}$)	Nonattainment	NA	100	0.1	None
Particulate Matter less than 10 microns in diameter (PM_{10})	Attainment	NA	NA	0.1	None
Sulfur Dioxide (SO_2)	Attainment	NA	NA	0.005	None

Is the project subject to a General Conformity Determination?

☐ Yes – The project is in a nonattainment area or maintenance area subject to maintenance plans for a federal criteria pollutant and project emissions are above the federal de minimis levels. The project is subject to General Conformity Determination. Please include supporting documents utilized to compile the data, and any air quality studies/models (e.g., CalEEMod report) that have been completed for the project. Indicate where more information can be found (e.g., CEQA document, etc.):

☑ No – The project is located in an attainment or unclassified area for all federal criteria pollutants, and/or the project emissions are below the federal de minimis levels. The project is not subject to General Conformity Determination. Please include supporting documents utilized to compile the data, and any air quality studies/models (e.g., CalEEMod report) that have been completed for the project. Indicate where more information can be found (e.g., CEQA document, etc.):

See Attached CEQA Document.

Coastal Barriers Resources Act (https://www.fws.gov/ecological-services/habitat-conservation/coastal.html)

Will the project impact or be located within or near the Coastal Barrier Resources System or its adjacent wetlands, marshes, estuaries, inlets, and near-shore waters? (Note: Since there

are currently no coastal barrier units in California, projects located in California are not expected to impact the Coastal Barrier Resources System. If there is a special circumstance in which the project may impact the Coastal Barrier Resource System, indicate your reasoning below.)

☑ No - The project will not impact or be located within or near the Coastal Barrier Resources System or its adjacent wetlands, marshes, estuaries, inlets, and near-shore waters.

☐ Yes –The project will impact or be located within or near the Coastal Barrier Resources System or its adjacent wetlands, marshes, estuaries, inlets and near-shore waters. Describe the project location with respect to the Coastal Barrier Resources System, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.). Please provide the status of any consultation with the appropriate Coastal Zone management agency and the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS):

Coastal Zone Management Act
(http://coastal.ca.gov/cdp/cdp-forms.html and/or http://www.bcdc.ca.gov/)

Is any portion of the project site located within the coastal zone? [NOTE: California's coastal zone generally extends 1,000 yards inland from the mean high tide line, but may extend further if the area is located in significant coastal estuarine, habitat, and/or recreational areas, or to a lesser extent if the area is located in a developed urban area or within a coastal zone of the San Francisco Bay Conservation and Development Commission.] (To help determine if the project is located within a coastal zone, please visit https://coastal.ca.gov/maps/, or contact your local California Coastal Commission office or the city or county in which the project is located.)

☐ No – The project is not within the coastal zone.

☑ Yes – The project is located within the coastal zone. Attach a copy of the coastal zone permit or coastal exemption, or indicate the status of the coastal zone permit below (http://www.coastal.ca.gov/enforcement/cdp_pamphlet.pdf). Describe the project location with respect to coastal areas, or indicate where this information can be found (e.g., CEQA document, biological report/assessment, etc.)

The Coastal Zone Permit has not yet been completed. See Attached CEQA Document for Project location information regarding coastal areas.

Endangered Species Act (ESA)
(https://www.epa.gov/laws-regulations/summary-endangered-species-act)

- **Required documents:** Attach a project-level biological report/assessment prepared by a qualified professional biologist that includes an up-to-date field survey and species list information (from the USFWS, the NMFS, the California Natural Diversity Database, and the California Native Plant Society) analyzing the project's direct and indirect impacts on special status species in the project area. An official species list is required from the USFWS and the NMFS. Refer to the USFWS Midwest Region website for guidance on preparing a biological report/assessment that meets ESA, Section 7 requirements: https://www.fws.gov/Midwest/endangered/section7/index.html.
  Refer to the following resources for information regarding possible biological impacts and to obtain official and unofficial species lists for analysis: https://ecos.fws.gov/ipac/, http://www.rareplants.cnps.org/, https://www.fisheries.noaa.gov/topic/consultations#endangered-species-act-consultations, and/or https://www.wildlife.ca.gov/Data/CNDDB.

Biological Field Survey Date(s):

Does the project involve any direct or indirect impacts from construction or operation activities that may affect federally listed threatened or endangered species, or their critical habitat, that are known or have a potential to occur on the project site, in the surrounding area, or in the service area?

☐ No – The project will not have an impact on any federally listed species or their critical habitat. Please explain, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.):

☑ Yes – The project will have an impact on one or more federally listed species or their critical habitat. Please provide information on the federally listed species that could potentially be affected by the project and any proposed avoidance and conservation measures. Please indicate below where more information can be found (e.g., biological report/assessment, CEQA document, etc.). If any consultations with state or federal agencies have been conducted for the project, please discuss the consultation efforts:

See Attached CEQA Document.

Environmental Justice
(https://www.epa.gov/environmentaljustice)

Does the project involve an activity that is likely to be of particular interest to or have particular impact upon minority, low-income, or indigenous populations?

☑ No – The project is not likely to be of any particular interest to or have an impact on certain minority, low-income, or indigenous populations. Please explain, or indicate where this information can be found: See Attached.

☐ Yes – The project is likely to be of particular interest to or have an impact on certain minority, low-income, or indigenous populations.

Check the appropriate box(es):

- ☐ The project is likely to affect the health of these populations.
- ☐ The project is likely to affect the environmental conditions of these populations.
- ☐ The project is likely to present an opportunity to address an existing disproportionate impact of these populations.
- ☐ The project is likely to result in the collection of information or data that could be used to assess potential impacts on the health or environmental conditions of these populations.
- ☐ The project is likely to affect the availability of information to these populations.
- ☐ Other reasons (please describe):

Please explain the selection above, or indicate where this information can be found:

Farmland Protection Policy Act
(http://www.nrcs.usda.gov/wps/portal/nrcs/detail/?cid=nrcs143_008275)

Is any portion of the project located on prime, unique, or important farmland? (Please refer to the following resources regarding important farmland: https://maps.conservation.ca.gov/dlrp/ciff/ and or http://www.conservation.ca.gov/DLRP/fmmp/Pages/Index.aspx)

☑ No – The project is not located on and will not impact prime, unique, or important farmland. Please explain, or indicate where this information can be found (e.g., farmland conversion assessment, CEQA document, etc.):

☐ Yes – The project is located on and/or will impact prime, unique, or important farmland. Attach documents/assessments evaluating the conversion of prime/unique farmland and farmland of statewide/local importance to non-agricultural uses, as well as any consultation(s) conducted with relevant agencies. Include information on the acreage that would be converted from important farmland to other uses. Indicate if any portion of the project boundaries is under a Williamson Act Contract, and specify the amount of acreage affected. Include this information here or indicate it can be found (e.g., farmland conversion assessment, CEQA document, etc.):

Fish and Wildlife Coordination Act (FWCA)

(https://www.fws.gov/ecological-services/es-library/pdfs/fwca.pdf)

Will the project impact any bodies of water by impounding, diverting, deepening a channel, or otherwise controlling/modifying flow (including navigation and drainage)?

☑ No – The project will not impact any bodies of water and will not require compliance with the FWCA.

☐ Yes – The project will impact a body of water and will require compliance with the FWCA. Consultation with the USFWS and the California Department of Fish and Wildlife will be required. Please discuss the potential project impacts to the water body, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.):

Floodplain Management: Executive Orders 11988, 12148 and 13690 (https://www.fema.gov/executive-order-11988-floodplain-management, https://www.archives.gov/federal-register/codification/executive-order/12148.html, and https://www.whitehouse.gov/the-press-office/2015/01/30/executive-order-establishing-federal-flood-risk-management-standard-and-)

- **Required documents:** Attach an official floodplain map that includes the project area. Please refer to the Federal Emergency Management Agency (FEMA) Flood Map Service Center for official floodplain maps: https://msc.fema.gov/portal. If the project area is unmapped by the FEMA, please explain below.

Is any portion of the project located within a 100-year floodplain as depicted on a floodplain map or otherwise designated by the FEMA?

☐ No – The project is not located within a 100-year floodplain.

☑ Yes – The project or a portion of the project is located within a 100-year floodplain. Attach any reports (floodplains/hydrological assessment) completed for the project, and provide information of any consultations completed with relevant agencies. Describe the floodplain and any proposed measures that will be implemented to minimize or avoid redirection of the flood flow by the project, or indicate where this information can be found (e.g., floodplains/hydrological assessment, CEQA document, etc.):

See Attached CEQA Document.

Magnuson-Stevens Fishery Conservation and Management Act (https://www.fisheries.noaa.gov/resource/document/magnuson-stevens-fishery-conservation-and-management-act)

Does the project involve any direct or indirect impacts from construction or operational activities or changes in water quality/quantity that may impact Essential Fish Habitat (EFH)? (Please refer to the NMFS Mapper to help determine the project's proximity and potential direct/indirect impacts to EFH, and to obtain a NMFS species list for the project location: https://www.fisheries.noaa.gov/region/west-coast.)

☑ No – The project will not impact EFH. Please explain, or indicate where this information can be found (e.g., biological report/assessment, EFH impact assessment/evaluation, CEQA document, etc.): See Attached CEQA Document.

☐ Yes – The project may adversely impact EFH and consultation with the NMFS will be required. Describe how EFH could potentially be impacted by this project and any proposed avoidance and conservation measures, or indicate where this information can be found (e.g., biological report/assessment, EFH impact assessment/evaluation, CEQA document, etc.). Please attach an official NMFS species list, obtained through the NMFS Mapper link above, and explain any previous consultations/coordination conducted with the NMFS for the project:

Marine Mammal Protection Act (https://www.fws.gov/international/laws-treaties-agreements/us-conservation-laws/marine-mammal-protection-act.html)

Does the project involve any direct or indirect impacts from construction or operational activities or changes in water quality/quantity that may impact marine mammals?

☑ No – The project will not impact Marine Mammals.

☐ Yes – The project may adversely impact marine mammals and consultation with the NMFS and/or the USFWS will be required. Describe how marine mammals could potentially be impacted by this project and any proposed avoidance and conservation measures, or indicate where this information can be found (e.g., biological report/assessment, marine mammals impact assessment/evaluation, CEQA document, etc.). Please attach an official copy of the USFWS/NMFS species list(s), and explain any previous consultations/coordination conducted with the USFWS/NMFS for the project:

Migratory Bird Treaty Act

(http://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php, and/or https://www.fws.gov/birds/policies-and-regulations.php)

Will the project impact protected migratory birds that are known or have a potential to occur on the project site, or the surrounding area? (Please refer to the USFWS's IPaC tool to request an official list of "birds of conservation concern" with the potential to occur in the project area: https://ecos.fws.gov/ipac/)

☐ No – The project will not impact protected migratory birds. Please explain, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.):

☑ Yes – The project may impact protected migratory birds. Attach documentation (e.g., biological report/assessment) that includes an official copy of the USFWS IPaC list of all the "birds of conservation concern" that could occur where the project is located. Discuss the project's direct and indirect impacts (such as noise, vibration impacts, or modification of habitat) to migratory birds, and the mitigation measures that will be implemented to reduce or eliminate these impacts. Please indicate where more information can be found [e.g., page number(s) of the biological report/assessment, CEQA document, etc.]:

See Attached CEQA Document.

National Historic Preservation Act (NHPA)/Historic Sites Act (HSA)

(http://www.achp.gov/

https://www.nps.gov/history/local-law/hsact35.htm)

- **Required documents:** A Historic Properties Identification Report (HPIR) written by a cultural resources professional who meets the Secretary of the Interior's Professional Qualification Standards in Archaeology or Architectural History (www.nps.gov/history/local-law/arch_stnds_9.htm), as appropriate. The report must include a current records search (not older than five years) from the California Historical Resources Information System (CHRIS) (http://ohp.parks.ca.gov/?page_id=1068) extending to a half-mile beyond the project's area of potential effects (APE), maps showing all recorded resources and surveys in relation to the APE, records of Native American outreach (http://nahc.ca.gov), and resource records from the CHRIS search and newly identified resources. Please contact Division of Financial Assistance Environmental Review Staff to receive additional details. Refer to the California Office of Historic Preservation website (under Section 106 Submission Checklists header) for guidance regarding the information required to consult under Section 106 of the NHPA: http://ohp.parks.ca.gov/pages/1071/files/106Checklist_Details.pdf.

If the project is a type of activity that does not have the potential to cause effects to historic properties, a HPIR is not necessary. Contact the Division of Financial Assistance Environmental Review Staff to discuss this. This decision is based on the type of activities, not on the presence or absence of historic properties.

Note: Please do not upload confidential documents to the FAAST system. Contact the Project Manager or Division of Financial Assistance Environmental Review Staff for guidance regarding submission of confidential documents.

Identify Section 106 of the NHPA finding of effect contained in the cultural resources report:

- ☑ No Historic Properties Affected
- ☐ No Adverse Effect to Historic Properties
- ☐ Adverse Effect to Historic Properties

If relevant, please justify compliance with both the HSA and the NHPA. Provide a brief explanation for the above identified determination, or indicate where this information can be found (e.g., HPIR or Cultural Report):

The one identified cultural resource - the Mare island Pump Station - does not meet any of the eligibility criteria for NRHP listing; see HPIR for details.

Protection of Wetlands
(https://www.epa.gov/cwa-404/protection-wetlands)

Will any portion of the project be located in or potentially affect a wetland?
(The USFWS National Wetlands Inventory contains a Wetlands Mapper that may help identify wetland locations: http://www.fws.gov/wetlands/Data/Mapper.html)

☑ No – The project will not be located in and/or will not potentially affect a wetland. Please explain, or indicate this information can be found (e.g., wetland assessment/delineation report, biological report/assessment, CEQA document, etc.): See Attached CEQA Document.

☐ Yes – The project will be located in and/or will potentially affect a wetland. Attach a wetland assessment/delineation report consistent with the United States Army Corps of Engineer (USACE) guidance (https://www.codot.gov/programs/environmental/wetlands/documents/sacramento-district-minimum-standards-for-delineations-reports) describing the project's potential impacts to wetlands and/or potential wetland areas; and the avoidance, minimization, and conservation measures that will be implemented to reduce such impacts. Please indicate where more information can be found (e.g., wetland assessment/delineation report, biological report/assessment, CEQA document, etc.):

Rivers and Harbors Act, Section 10
(https://www.epa.gov/cwa-404/section-10-rivers-and-harbors-appropriation-act-1899)

Will the project involve the construction of structures or any other regulated activities in, under, or over navigable waters of the United States? (**NOTE:** Regulated activities include the placement/removal of structures, work involving dredging, disposal of dredged material, filling, excavation, or any other disturbance of soils/sediments or modification of a navigable waterway.)

☑ No – The project is not located in or near navigable waters of the United States. There will be no construction of structures, modification of existing structures, or any other regulated activity work in, under, or over navigable waters of the United States.

☐ Yes – The project will involve the construction of structures and/or one or more of the listed regulated activities in, under, or over navigable waters of the United States, and will require a Section 10 Permit. Please provide a copy of the permit obtained from the USACE, or the current status of the permit. Indicate below where more information on the project's construction and regulated activities can be found (e.g., Project Technical Report/Engineering Report, CEQA document, etc.):

Safe Drinking Water Act/Sole Source Aquifer Protection
(http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/index.cfm)

Is the project located in an area designated by the USEPA, Region 9, as a Sole Source Aquifer? (Please refer to the USEPA's website for an interactive map of the Sole Source Aquifer locations: https://www.epa.gov/dwssa). Sole Source Aquifers is California include the Fresno County Aquifer, Santa Margarita Aquifer, Campo/Cottonwood Creek Aquifer or the Ocotillo-Coyote Wells Aquifer.

☑ No - The project is not within the boundaries of a Sole Source Aquifer.

☐ Yes – The project is located in and/or will impact a Sole Source Aquifer:

Provide the necessary information, including an alternative project location and/or adequate mitigation measures, for the State Water Board to initiate consultation with the USEPA, Region 9, Ground Water Office, or indicate where this information may be found (e.g., biological report/assessment, CEQA document, etc.):

Wild and Scenic Rivers Act
(http://www.rivers.gov/california.php)

Identify the watershed within the project location:
(https://cfpub.epa.gov/surf/locate/index.cfm)

Will the project affect a wild and scenic river?
Wild and Scenic Rivers in California include: Amargosa River, Lower American River, North Fork American River, Bautista Creek, Big Sur River, Black Butter River, Cottonwood Creek, Eel River, Feather River, Fuller Mill River, Kern River, Kings River, Klamath River Merced River, Owens River Headwaters, Palm Canyon Creek, Piru Creek, San Jacinto River (North Fork), Sespe Creek, Sisquoc River, Smith River, Trinity River, and Tuolumne River.

☑ No – The project will not impact any of the wild and scenic rivers listed above. Please explain, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.): See Attached CEQA Document.

☐ Yes – The project will impact a wild and scenic river. Attach a map of the impacted wild and scenic river and identify the wild and scenic river as well as the relative project location.

Explain how the project will impact the wild and scenic river, or indicate where this information can be found (e.g., biological report/assessment, CEQA document, etc.):

Wilderness Act

(www.justice.gov/enrd/wilderness-act-1964)

Except as specifically provided for in this Wilderness Act (Act), and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment, or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such areas.

Is the project located in an area designated as wilderness?

☑ No - The project is not within the boundaries of a Wilderness Area.

☐ Yes – The project is located in and/or will impact a Wilderness Area:

Provide the necessary information, including an alternative project location and/or adequate mitigation measures, for the Division of Financial Assistance Environmental Review Staff to coordinate with the USEPA to complete the consultation with the National Park Service and indicate where this information may be found (e.g., biological report/assessment, CEQA document, etc.):

V. ENVIRONMENTAL PACKAGE ATTACHMENTS

E1 - CEQA DOCUMENTS[5]

Notice of Exemption (NOE)
Required Attachments:

- Notice of Exemption filed with the State Clearinghouse and the County Clerk

Negative Declaration (ND)
Required Attachments:

- draft and final Initial Study/Negative Declaration
- comments and responses
- resolution/minutes adopting the ND and approving the project
- Notice of Determination (NOD) filed with the State Clearinghouse and the County Clerk

Mitigated Negative Declaration (MND)
Required Attachments:

- draft and final Initial Study/Mitigated Negative Declaration
- comments and responses
- Mitigation Monitoring and Reporting Plan/Program (MMRP) resolution/minutes adopting the MND and approving the project
- NOD filed with the State Clearinghouse and the County Clerk

Environmental Impact Report (EIR)
Required Attachments:

- draft and final Environmental Impact Report
- comments and responses
- statement of overriding considerations, if applicable
- Mitigation Monitoring and Reporting Plan/Program (MMRP)resolution/minutes certifying the EIR and approving the project
- NOD filed with the State Clearinghouse and the County Clerk

[5]If a Joint CEQA/NEPA document is prepared for the project, please submit all relevant documents.

E2 - FEDERAL CROSS-CUTTING DOCUMENTS

- United States Forest Service, Bureau of Land Management, and Other Federal Land – Map of Federal Lands and the Federal Land Use Authorization/Permit, if applicable
- Environmental Alternative Analysis, if applicable
- Clean Air Act – CalEEMod Report or Other Air Quality Models/Studies Used, Required**
- Coastal Zone Management Act – Coastal Permit or Coastal Exemption, if applicable
- Endangered Species Act, Section 7 – Biological Report/Assessment, Required**
- Farmland Protection Policy Act – Farmland Conversion Assessment, if applicable
- Fish and Wildlife Coordination Act – Assessment of Impacts to Water Body, if applicable
- Floodplain Management –
    - Official Floodplain Map (required) and
        - Floodplains/Hydrological Assessment, if applicable
- Magnuson-Stevens Fishery Conservation and Management Act – EFH Impact Assessment, Official NMFS Species List, if applicable
- Migratory Bird Treaty Act – List of Migratory Birds (May be Included in the Biological Report/Assessment), if applicable
- National Historical Preservation Act, Section 106 – Historic Properties Identification Report, Required**
- Protection of Wetlands – Wetland Assessment/Delineation Report, Clean Water Act Section 401 Certification and/or Clean Water Act Section 404 Permit, if applicable
- Rivers and Harbors Act, Section 10 – Section 10 Permit, if applicable
- Wild and Scenic Rivers Act – Map of Wild and Scenic Rivers Watershed, if applicable
- Other Federal Cross-Cutting Documentation (i.e., Coastal Barrier Resources Act, Environmental Justice, etc.), if applicable - Environmental Justice assessment included in SRF Attachment
- Other Documentation –
- Other Documentation –

** If your project is exempt, these documents may not be required. Please contact Division of Financial Assistance Environmental Review Staff for clarification.

I. GENERAL INFORMATION

The Vallejo Flood and Wastewater District (VFWD) proposes to upgrade the existing Mare Island Pump Station (MIPS) by making improvements to its wastewater treatment functions within the facility by replacing and rehabilitating aging infrastructure within its Wastewater Treatment Plant (WWTP). The facility overall would maintain its current functions with a more modern, reliable, and efficient system. Specifically, VFWD would construct a new MIPS and chlorine contact tank (CCT)-D adjacent to the existing CCT-C. The new configuration would consolidate the WWTP's two CCTs and treated effluent pump stations in a common area of the plant. Several upgrades would be made to CCT-C. Additionally, the Project would replace the existing pumps at the Carquinez treated effluent pump station and 3W utility water pump station with newer, more energy-efficient pumps. New outfall and bypass piping would be constructed. Outfall piping would connect the new MIPS discharge piping to the existing Mare Island Straight outfall pipe. Flow meter vaults would be constructed for each of the outfalls to provide monitoring information for the plant for increased reporting accuracy. Bypass piping would be added to both the Mare Island Straight outfall as well as the Carquinez outfall to allow non-compliant effluent water to be diverted to the Ryder Street Basin for additional treatment if disruptions occur in the treatment process. A new Bioassay Facility constructed adjacent to the CCTs would provide permanent testing facilities for plant personnel. The existing Biotower media would be replaced and upgrades would be made to the electrical system and catwalk. The existing Confined Space Training Facility would be demolished and a new facility would be constructed within the fence line. Lastly, as part of its Proposed Project, VFWD would decommission and demolish the existing MIPS. All proposed construction and demolition would occur within the existing fence line of the VFWD WWTP facility. Treatment capacity and flows during and after construction would be consistent with current operations. The overall WWTP footprint would not change. The Project would not involve new discharge to surface water, and discharge locations and volumes would remain consistent with existing operations.

II. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) STATUS

Project Setting:

The Project is located in the Vallejo WWTP. Surrounding land uses include industrial, residential, and commercial areas in the city of Vallejo. No tribal or federal land is in the Project area.

Environmental Setting:

The Project is located in an industrial area directly adjacent to the Napa River, which is used by boaters for recreation. Aside from the Napa River, no scenic resources exist in the area. The Project is located in the Bay Area Air Quality Management District and is situated on an area of fill within the 100-year floodplain. The Project is regionally accessible through State Route 29 and Interstate 80, and locally accessible through Curtola Parkway and Lemon Street. The Project has the potential to affect six special-status wildlife species. See the attached CEQA document for more information on special-status species. The Project also contains natural landscape connectivity and linkage areas for some species.

The old MIPS building is over 50 years old; however, it was determined that it does not meet eligibility requirements for listing as a historical resource.

With the implementation of mitigation measures during Project construction, impacts would be reduce to a less than significant level.

IV. EVALUATION SECTION FOR FEDERAL ENVIRONMENTAL COORDINATION

Environmental Alternative Analysis:

A CEQA Initial Study and Mitigated Negative Declaration (IS/MND) analysis for the Project is attached.

Proposed Project Alternative

Potentially significant impacts of the Proposed Project include construction impacts on air quality, biological resources, and cultural resources. These would be direct impacts from Project construction; however, with the implementation of mitigation measures, as prescribed in the IS/MND, impacts would be reduced to a less than significant level.

Alternative Layouts

Alternative 0 would be a simple replacement of the existing MIPS. This alternative would not provide a new CCT-D, effluent interties between the existing CCTs, or an ability to feed 3W from either existing CCT. For Alternative 0, the existing MIPS would be replaced with a new MIPS to the south of the existing headworks along Ryder Street. This new MIPS would be fed by gravity from CCT-B. The discharge piping from the new MIPS would connect to the existing outfall line in Ryder Street. To provide adequate space for the variable frequency drives and other electrical equipment required by the new MIPS, a new electrical building would also be required. The new electrical building would require pile supports and new power feeds.

Alternative 1 would locate the new CCT-D to the west of the existing CCT-C. The new CCT would be constructed in the area currently being used as a laydown area. A new feed pipe, with control valve and flow meter, would be routed through the existing CCT-C influent channels to feed the new CCT-D. A diversion box and overflow weir would be added on the existing CCT-C. The proposed arrangement would operate by plant personnel choosing a flow through CCT-D. The set flow would be metered using the new control valve and flow meter. The remaining flow would overflow the weir located in the new Flow Splitter Structure No. 5 attached to CCT-C. At the effluent end of CCT-C, an intertie between the new CCT-D and the existing CCT-C would be required just prior to entering the Carquinez Pump Station. To facilitate this intertie, a 36-inch pipe would be routed to the discharge side of the effluent weir. The pipe would require a new penetration through two existing walls.

Alternative 2 would locate the new CCT-D to the north of the existing CCT-C. The new CCT would be constructed in the area currently being used as a corporation yard. To supply flow to CCT-D, a new flow split structure would be built on the existing 42-inch pipe. Downstream of the

new flow split, a new feed pipe, with a control valve and flow meter control, would be installed to direct flow to CCT-D. The existing feed pipe would remain with an overflow weir to feed CCT-C. This arrangement would provide a similar functionality as the existing Flow Splitter Structure No. 4. Similar to Alternative 1, a 36-inch effluent intertie between the new CCT-D and the existing CCT-C is provided prior to entering the Carquinez pump station. This intertie enables effluent from either CCT to be pumped by either effluent pump station.

These alternative layouts would include the same auxiliary facilities as the Proposed Project Alternative and, therefore, would have the same impacts on air quality, biological resources, and cultural resources as a result of construction activities. However with implementation of mitigation measures, as prescribed in the IS/MND, impacts would be reduced to a less than significant level.

No Action Alternative

The No Action Alternative for the Proposed Project would involve no new construction, facility upgrades, or demolition activities at the Vallejo WWTP. This alternative would have no changes from existing conditions or impacts on environmental resources. However, it would leave the aging WWTP facilities in their current state, perpetuate the potential for limited operational capacity in the event of an operational failure, and create the potential for untreated effluent entering the environment.

The No Action Alternative would have no construction-related impacts on air quality, biological resources, cultural resources, or other environmental resources. Ongoing operations would continue with the existing and, in many cases, aged infrastructure. Water treatment would continue; however, inefficiencies both in how the water is treated and tested—and the related energy consumption—would continue. Certain facilities would remain in modular housing and other new facilities would not be built. The WWTP facility is in an industrial area and, as such, similar to the Proposed Project analysis, there would be no operational impacts associated with aesthetics and scenic resources, biological impacts on the adjacent waterway or nesting birds and bats, cultural resources, hydrology or flood zones, hazardous materials from the remaining MIPS facility, transportation, or utilities. Adverse operational impacts, however, could affect air quality, energy consumption, noise sourced from the facility, and potentially water quality in the long-term if upgrades are not made.

Environmental Justice:

The Project and Vallejo WWTP serve the city of Vallejo in Solano County. Vallejo is made up of 63.4 percent minorities,[1] and 14.1 percent of people in Vallejo are in poverty.[1] While minority and poverty populations exist in Vallejo and could be affected by the proposed upgrades to the WWTP, impacts on biological and cultural resources would not affect these populations. The nearest sensitive receptor to the Project site is an existing church located approximately 600 feet northeast of the Project site on Sonoma Boulevard. The closest homes to the Project

[1] U.S. Census Bureau. 2020. “QuickFacts.” Accessed July 9, 2020. https://www.census.gov/quickfacts/fact/map/US/PST045219.

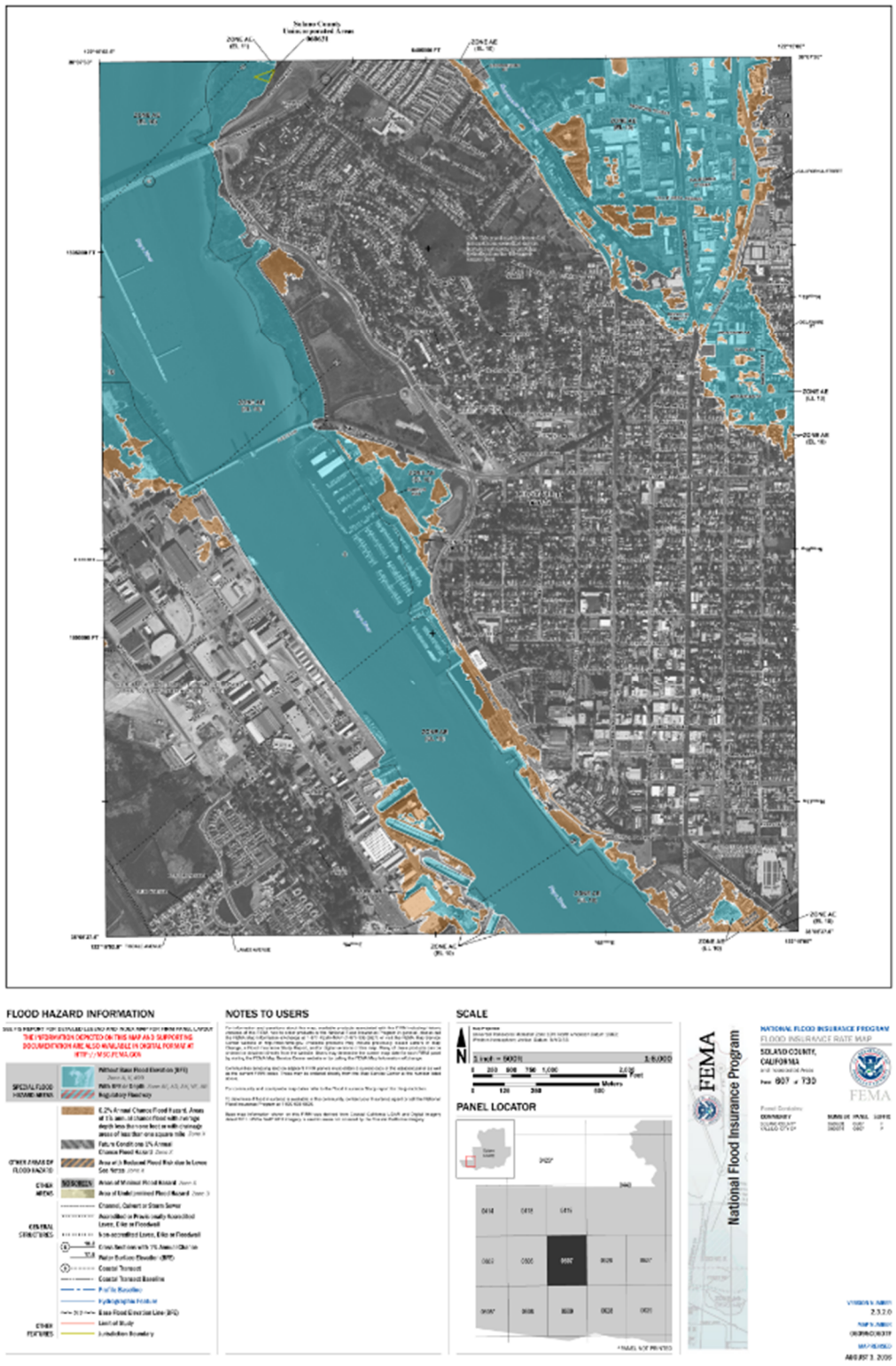
site are located approximately 1,400 feet from the active construction areas. Impacts from construction-related noise and air quality could affect children at these sensitive receptors. Construction noise would attenuate with increased distance from the noise sources. Mitigation measures prescribed by the Bay Area Air Quality Management District are proposed to offset potential impacts on air quality and health-related impacts of the Project on all populations, including minority or low-income communities, during construction.

Impacts on water quality and utility service from the No Action Alternative could adversely affect populations of minorities, people in poverty, and children if an operational failure at the Vallejo WWTP were to reduce service capacities to residents and commercial uses in the service area.

Therefore, the Project would not adversely affect minority and low-income populations.

V. ENVIRONMENTAL PACKAGE ATTACHMENTS

E2 – FEDERAL CROSS-CUTTING DOCUMENTS



Appendix B. Air Quality Emissions Calculations

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Vallejo MIPS

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.50	Acre	0.50	21,780.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Parking land use used to represent the size of the facility

Construction Phase - Phases and dates from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Trips and VMT -

Demolition -

Grading - Project area is 0.5 acres

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	20.00
tblConstructionPhase	NumDays	100.00	240.00
tblConstructionPhase	NumDays	100.00	260.00
tblConstructionPhase	NumDays	10.00	150.00
tblConstructionPhase	NumDays	1.00	65.00
tblGrading	AcresOfGrading	0.00	0.50
tblGrading	AcresOfGrading	0.00	0.50
tblGrading	MaterialExported	0.00	8,200.00
tblGrading	MaterialImported	0.00	2,900.00
tblGrading	MaterialImported	0.00	1,100.00
tblOffRoadEquipment	HorsePower	231.00	63.00
tblOffRoadEquipment	LoadFactor	0.29	0.31
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblTripsAndVMT	HaulingTripNumber	371.00	218.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1589	1.6672	1.9026	4.2200e-003	0.0243	0.0640	0.0883	6.5200e-003	0.0589	0.0654	0.0000	376.4513	376.4513	0.1031	0.0000	379.0282
2024	0.2059	1.9622	2.5739	5.1300e-003	0.0161	0.0803	0.0963	4.3600e-003	0.0738	0.0782	0.0000	452.1357	452.1357	0.1397	0.0000	455.6271
2025	0.1009	0.8918	1.3297	2.6700e-003	0.0553	0.0376	0.0929	0.0101	0.0345	0.0447	0.0000	236.3685	236.3685	0.0699	0.0000	238.1155
Maximum	**0.2059**	**1.9622**	**2.5739**	**5.1300e-003**	**0.0553**	**0.0803**	**0.0963**	**0.0101**	**0.0738**	**0.0782**	**0.0000**	**452.1357**	**452.1357**	**0.1397**	**0.0000**	**455.6271**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1589	1.6672	1.9026	4.2200e-003	0.0238	0.0640	0.0878	6.4500e-003	0.0589	0.0653	0.0000	376.4509	376.4509	0.1031	0.0000	379.0278
2024	0.2059	1.9622	2.5739	5.1300e-003	0.0161	0.0803	0.0963	4.3600e-003	0.0738	0.0782	0.0000	452.1352	452.1352	0.1397	0.0000	455.6266
2025	0.1009	0.8918	1.3297	2.6700e-003	0.0331	0.0376	0.0706	6.7400e-003	0.0345	0.0413	0.0000	236.3682	236.3682	0.0699	0.0000	238.1153
Maximum	**0.2059**	**1.9622**	**2.5739**	**5.1300e-003**	**0.0331**	**0.0803**	**0.0963**	**6.7400e-003**	**0.0738**	**0.0782**	**0.0000**	**452.1352**	**452.1352**	**0.1397**	**0.0000**	**455.6266**

Vallejo MIPS - Bay Area AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.76**	**0.00**	**8.20**	**16.39**	**0.00**	**1.82**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-3-2023**	**7-2-2023**	0.5168	0.5168
2	**7-3-2023**	**10-2-2023**	0.5225	0.5225
3	**10-3-2023**	**1-2-2024**	0.5218	0.5218
4	**1-3-2024**	**4-2-2024**	0.4665	0.4665
5	**4-3-2024**	**7-2-2024**	0.4767	0.4767
6	**7-3-2024**	**10-2-2024**	0.4901	0.4901
7	**10-3-2024**	**1-2-2025**	0.7139	0.7139
8	**1-3-2025**	**4-2-2025**	0.3509	0.3509
9	**4-3-2025**	**7-2-2025**	0.2422	0.2422
10	**7-3-2025**	**9-30-2025**	0.2322	0.2322
		Highest	0.7139	0.7139

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization and Site Preparation	Site Preparation	3/6/2023	3/31/2023	5	20	
2	Carquinez pump station, 3W pump station, and MCC	Building Construction	4/3/2023	3/1/2024	5	240	
3	New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Building Construction	3/4/2024	2/28/2025	5	260	
4	Rerouting of fiber optic and other utility lines	Trenching	9/30/2024	12/27/2024	5	65	
5	Remediation and demolition of old MIPS building	Demolition	3/3/2025	9/26/2025	5	150	
6	Site restoration	Site Preparation	9/29/2025	12/26/2025	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization and Site Preparation	Aerial Lifts	3	8.00	63	0.31
Mobilization and Site Preparation	Cranes	2	4.00	231	0.29
Mobilization and Site Preparation	Excavators	2	8.00	158	0.38
Mobilization and Site Preparation	Forklifts	2	6.00	89	0.20
Mobilization and Site Preparation	Graders	0	8.00	187	0.41
Mobilization and Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Mobilization and Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Carquinez pump station, 3W pump station, and MCC	Aerial Lifts	3	8.00	63	0.31
Carquinez pump station, 3W pump station, and MCC	Cranes	2	4.00	231	0.29

Carquinez pump station, 3W pump station, and MCC	Excavators	2	8.00	158	0.38
Carquinez pump station, 3W pump station, and MCC	Forklifts	2	6.00	89	0.20
Carquinez pump station, 3W pump station, and MCC	Rubber Tired Loaders	1	8.00	203	0.36
Carquinez pump station, 3W pump station, and MCC	Tractors/Loaders/Backhoes	1	8.00	97	0.37
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Aerial Lifts	3	8.00	63	0.31
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Cranes	2	4.00	231	0.29
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Excavators	2	8.00	158	0.38
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Forklifts	2	6.00	89	0.20
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Rubber Tired Loaders	1	8.00	203	0.36
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Rerouting of fiber optic and other utility lines	Cranes	2	4.00	63	0.31
Rerouting of fiber optic and other utility lines	Excavators	2	8.00	158	0.38
Rerouting of fiber optic and other utility lines	Rubber Tired Loaders	1	8.00	203	0.36
Remediation and demolition of old MIPS building	Concrete/Industrial Saws	0	8.00	81	0.73
Remediation and demolition of old MIPS building	Cranes	2	4.00	231	0.29
Remediation and demolition of old MIPS building	Excavators	2	8.00	158	0.38
Remediation and demolition of old MIPS building	Rubber Tired Dozers	1	1.00	247	0.40
Remediation and demolition of old MIPS building	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Site restoration	Excavators	2	8.00	158	0.38
Site restoration	Graders	0	8.00	187	0.41
Site restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization and Site Preparation	11	28.00	0.00	1,388.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Carquinez pump station, 3W pump stati	11	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
New MIPS, CCT-D, Mare Island Strait Effl	11	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rerouting of fiber optic and other utility lines	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Remediation and demolition of old MIPS	5	13.00	0.00	218.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site restoration	3	8.00	0.00	138.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Mobilization and Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.9000e-004	0.0000	8.9000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.1414	0.1708	3.3000e-004		5.9200e-003	5.9200e-003		5.4500e-003	5.4500e-003	0.0000	28.8129	28.8129	9.3200e-003	0.0000	29.0458
Total	**0.0141**	**0.1414**	**0.1708**	**3.3000e-004**	**8.9000e-004**	**5.9200e-003**	**6.8100e-003**	**1.2000e-004**	**5.4500e-003**	**5.5700e-003**	**0.0000**	**28.8129**	**28.8129**	**9.3200e-003**	**0.0000**	**29.0458**

3.2 Mobilization and Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5200e-003	0.1151	0.0356	5.1000e-004	0.0117	2.1000e-004	0.0119	3.2200e-003	2.0000e-004	3.4200e-003	0.0000	49.8153	49.8153	2.3600e-003	0.0000	49.8742
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	4.8000e-004	5.3100e-003	2.0000e-005	2.2100e-003	1.0000e-005	2.2300e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.7328	1.7328	3.0000e-005	0.0000	1.7336
Total	**4.2700e-003**	**0.1156**	**0.0409**	**5.3000e-004**	**0.0139**	**2.2000e-004**	**0.0142**	**3.8100e-003**	**2.1000e-004**	**4.0200e-003**	**0.0000**	**51.5481**	**51.5481**	**2.3900e-003**	**0.0000**	**51.6078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-004	0.0000	4.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.1414	0.1708	3.3000e-004		5.9200e-003	5.9200e-003		5.4500e-003	5.4500e-003	0.0000	28.8128	28.8128	9.3200e-003	0.0000	29.0458
Total	**0.0141**	**0.1414**	**0.1708**	**3.3000e-004**	**4.0000e-004**	**5.9200e-003**	**6.3200e-003**	**6.0000e-005**	**5.4500e-003**	**5.5100e-003**	**0.0000**	**28.8128**	**28.8128**	**9.3200e-003**	**0.0000**	**29.0458**

3.2 Mobilization and Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5200e-003	0.1151	0.0356	5.1000e-004	0.0117	2.1000e-004	0.0119	3.2200e-003	2.0000e-004	3.4200e-003	0.0000	49.8153	49.8153	2.3600e-003	0.0000	49.8742
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	4.8000e-004	5.3100e-003	2.0000e-005	2.2100e-003	1.0000e-005	2.2300e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.7328	1.7328	3.0000e-005	0.0000	1.7336
Total	**4.2700e-003**	**0.1156**	**0.0409**	**5.3000e-004**	**0.0139**	**2.2000e-004**	**0.0142**	**3.8100e-003**	**2.1000e-004**	**4.0200e-003**	**0.0000**	**51.5481**	**51.5481**	**2.3900e-003**	**0.0000**	**51.6078**

3.3 Carquinez pump station, 3W pump station, and MCC - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1373	1.3789	1.6657	3.2000e-003		0.0577	0.0577		0.0531	0.0531	0.0000	280.9254	280.9254	0.0909	0.0000	283.1968
Total	**0.1373**	**1.3789**	**1.6657**	**3.2000e-003**		**0.0577**	**0.0577**		**0.0531**	**0.0531**	**0.0000**	**280.9254**	**280.9254**	**0.0909**	**0.0000**	**283.1968**

3.3 Carquinez pump station, 3W pump station, and MCC - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7000e-004	0.0297	8.5600e-003	1.0000e-004	2.5600e-003	3.0000e-005	2.5900e-003	7.4000e-004	3.0000e-005	7.7000e-004	0.0000	9.7346	9.7346	4.1000e-004	0.0000	9.7447
Worker	2.3500e-003	1.5000e-003	0.0166	6.0000e-005	6.9300e-003	4.0000e-005	6.9800e-003	1.8400e-003	4.0000e-005	1.8800e-003	0.0000	5.4305	5.4305	1.1000e-004	0.0000	5.4331
Total	**3.2200e-003**	**0.0312**	**0.0252**	**1.6000e-004**	**9.4900e-003**	**7.0000e-005**	**9.5700e-003**	**2.5800e-003**	**7.0000e-005**	**2.6500e-003**	**0.0000**	**15.1650**	**15.1650**	**5.2000e-004**	**0.0000**	**15.1778**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1373	1.3789	1.6657	3.2000e-003		0.0577	0.0577		0.0531	0.0531	0.0000	280.9250	280.9250	0.0909	0.0000	283.1965
Total	**0.1373**	**1.3789**	**1.6657**	**3.2000e-003**		**0.0577**	**0.0577**		**0.0531**	**0.0531**	**0.0000**	**280.9250**	**280.9250**	**0.0909**	**0.0000**	**283.1965**

3.3 Carquinez pump station, 3W pump station, and MCC - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7000e-004	0.0297	8.5600e-003	1.0000e-004	2.5600e-003	3.0000e-005	2.5900e-003	7.4000e-004	3.0000e-005	7.7000e-004	0.0000	9.7346	9.7346	4.1000e-004	0.0000	9.7447
Worker	2.3500e-003	1.5000e-003	0.0166	6.0000e-005	6.9300e-003	4.0000e-005	6.9800e-003	1.8400e-003	4.0000e-005	1.8800e-003	0.0000	5.4305	5.4305	1.1000e-004	0.0000	5.4331
Total	**3.2200e-003**	**0.0312**	**0.0252**	**1.6000e-004**	**9.4900e-003**	**7.0000e-005**	**9.5700e-003**	**2.5800e-003**	**7.0000e-005**	**2.6500e-003**	**0.0000**	**15.1650**	**15.1650**	**5.2000e-004**	**0.0000**	**15.1778**

3.3 Carquinez pump station, 3W pump station, and MCC - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0300	0.2923	0.3830	7.4000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	64.8381	64.8381	0.0210	0.0000	65.3624
Total	**0.0300**	**0.2923**	**0.3830**	**7.4000e-004**		**0.0120**	**0.0120**		**0.0110**	**0.0110**	**0.0000**	**64.8381**	**64.8381**	**0.0210**	**0.0000**	**65.3624**

3.3 Carquinez pump station, 3W pump station, and MCC - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	6.7900e-003	1.9000e-003	2.0000e-005	5.9000e-004	1.0000e-005	6.0000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	2.2313	2.2313	9.0000e-005	0.0000	2.2336
Worker	5.1000e-004	3.1000e-004	3.5600e-003	1.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.3000e-004	1.0000e-005	4.3000e-004	0.0000	1.2036	1.2036	2.0000e-005	0.0000	1.2041
Total	**7.0000e-004**	**7.1000e-003**	**5.4600e-003**	**3.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**6.0000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**3.4349**	**3.4349**	**1.1000e-004**	**0.0000**	**3.4377**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0300	0.2923	0.3830	7.4000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	64.8381	64.8381	0.0210	0.0000	65.3623
Total	**0.0300**	**0.2923**	**0.3830**	**7.4000e-004**		**0.0120**	**0.0120**		**0.0110**	**0.0110**	**0.0000**	**64.8381**	**64.8381**	**0.0210**	**0.0000**	**65.3623**

3.3 Carquinez pump station, 3W pump station, and MCC - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	6.7900e-003	1.9000e-003	2.0000e-005	5.9000e-004	1.0000e-005	6.0000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	2.2313	2.2313	9.0000e-005	0.0000	2.2336
Worker	5.1000e-004	3.1000e-004	3.5600e-003	1.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.3000e-004	1.0000e-005	4.3000e-004	0.0000	1.2036	1.2036	2.0000e-005	0.0000	1.2041
Total	**7.0000e-004**	**7.1000e-003**	**5.4600e-003**	**3.0000e-005**	**2.1900e-003**	**2.0000e-005**	**2.2100e-003**	**6.0000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**3.4349**	**3.4349**	**1.1000e-004**	**0.0000**	**3.4377**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1449	1.4094	1.8471	3.5600e-003		0.0578	0.0578		0.0531	0.0531	0.0000	312.6639	312.6639	0.1011	0.0000	315.1919
Total	**0.1449**	**1.4094**	**1.8471**	**3.5600e-003**		**0.0578**	**0.0578**		**0.0531**	**0.0531**	**0.0000**	**312.6639**	**312.6639**	**0.1011**	**0.0000**	**315.1919**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3000e-004	0.0327	9.1700e-003	1.1000e-004	2.8500e-003	4.0000e-005	2.8800e-003	8.2000e-004	4.0000e-005	8.6000e-004	0.0000	10.7597	10.7597	4.4000e-004	0.0000	10.7707
Worker	2.4600e-003	1.5100e-003	0.0172	6.0000e-005	7.7200e-003	5.0000e-005	7.7600e-003	2.0500e-003	4.0000e-005	2.1000e-003	0.0000	5.8040	5.8040	1.1000e-004	0.0000	5.8066
Total	**3.3900e-003**	**0.0342**	**0.0263**	**1.7000e-004**	**0.0106**	**9.0000e-005**	**0.0106**	**2.8700e-003**	**8.0000e-005**	**2.9600e-003**	**0.0000**	**16.5637**	**16.5637**	**5.5000e-004**	**0.0000**	**16.5774**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1449	1.4094	1.8471	3.5600e-003		0.0578	0.0578		0.0531	0.0531	0.0000	312.6635	312.6635	0.1011	0.0000	315.1916
Total	**0.1449**	**1.4094**	**1.8471**	**3.5600e-003**		**0.0578**	**0.0578**		**0.0531**	**0.0531**	**0.0000**	**312.6635**	**312.6635**	**0.1011**	**0.0000**	**315.1916**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3000e-004	0.0327	9.1700e-003	1.1000e-004	2.8500e-003	4.0000e-005	2.8800e-003	8.2000e-004	4.0000e-005	8.6000e-004	0.0000	10.7597	10.7597	4.4000e-004	0.0000	10.7707
Worker	2.4600e-003	1.5100e-003	0.0172	6.0000e-005	7.7200e-003	5.0000e-005	7.7600e-003	2.0500e-003	4.0000e-005	2.1000e-003	0.0000	5.8040	5.8040	1.1000e-004	0.0000	5.8066
Total	**3.3900e-003**	**0.0342**	**0.0263**	**1.7000e-004**	**0.0106**	**9.0000e-005**	**0.0106**	**2.8700e-003**	**8.0000e-005**	**2.9600e-003**	**0.0000**	**16.5637**	**16.5637**	**5.5000e-004**	**0.0000**	**16.5774**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0267	0.2493	0.3640	7.1000e-004		9.9600e-003	9.9600e-003		9.1700e-003	9.1700e-003	0.0000	61.9674	61.9674	0.0200	0.0000	62.4684
Total	**0.0267**	**0.2493**	**0.3640**	**7.1000e-004**		**9.9600e-003**	**9.9600e-003**		**9.1700e-003**	**9.1700e-003**	**0.0000**	**61.9674**	**61.9674**	**0.0200**	**0.0000**	**62.4684**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-004	6.4100e-003	1.7600e-003	2.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	2.1182	2.1182	9.0000e-005	0.0000	2.1203
Worker	4.6000e-004	2.7000e-004	3.1500e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1033	1.1033	2.0000e-005	0.0000	1.1038
Total	**6.4000e-004**	**6.6800e-003**	**4.9100e-003**	**3.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1100e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**3.2215**	**3.2215**	**1.1000e-004**	**0.0000**	**3.2241**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0267	0.2493	0.3640	7.1000e-004		9.9600e-003	9.9600e-003		9.1700e-003	9.1700e-003	0.0000	61.9673	61.9673	0.0200	0.0000	62.4683
Total	**0.0267**	**0.2493**	**0.3640**	**7.1000e-004**		**9.9600e-003**	**9.9600e-003**		**9.1700e-003**	**9.1700e-003**	**0.0000**	**61.9673**	**61.9673**	**0.0200**	**0.0000**	**62.4683**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-004	6.4100e-003	1.7600e-003	2.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	2.1182	2.1182	9.0000e-005	0.0000	2.1203
Worker	4.6000e-004	2.7000e-004	3.1500e-003	1.0000e-005	1.5300e-003	1.0000e-005	1.5400e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1033	1.1033	2.0000e-005	0.0000	1.1038
Total	**6.4000e-004**	**6.6800e-003**	**4.9100e-003**	**3.0000e-005**	**2.0900e-003**	**2.0000e-005**	**2.1100e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**3.2215**	**3.2215**	**1.1000e-004**	**0.0000**	**3.2241**

3.5 Rerouting of fiber optic and other utility lines - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0258	0.2185	0.3046	5.9000e-004		0.0104	0.0104		9.5700e-003	9.5700e-003	0.0000	52.1240	52.1240	0.0169	0.0000	52.5454
Total	**0.0258**	**0.2185**	**0.3046**	**5.9000e-004**		**0.0104**	**0.0104**		**9.5700e-003**	**9.5700e-003**	**0.0000**	**52.1240**	**52.1240**	**0.0169**	**0.0000**	**52.5454**

3.5 Rerouting of fiber optic and other utility lines - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	6.5000e-004	7.4200e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.5112	2.5112	5.0000e-005	0.0000	2.5123
Total	**1.0600e-003**	**6.5000e-004**	**7.4200e-003**	**3.0000e-005**	**3.3400e-003**	**2.0000e-005**	**3.3600e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.5112**	**2.5112**	**5.0000e-005**	**0.0000**	**2.5123**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0258	0.2185	0.3046	5.9000e-004		0.0104	0.0104		9.5700e-003	9.5700e-003	0.0000	52.1239	52.1239	0.0169	0.0000	52.5454
Total	**0.0258**	**0.2185**	**0.3046**	**5.9000e-004**		**0.0104**	**0.0104**		**9.5700e-003**	**9.5700e-003**	**0.0000**	**52.1239**	**52.1239**	**0.0169**	**0.0000**	**52.5454**

3.5 Rerouting of fiber optic and other utility lines - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0600e-003	6.5000e-004	7.4200e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	2.0000e-005	9.1000e-004	0.0000	2.5112	2.5112	5.0000e-005	0.0000	2.5123
Total	**1.0600e-003**	**6.5000e-004**	**7.4200e-003**	**3.0000e-005**	**3.3400e-003**	**2.0000e-005**	**3.3600e-003**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**0.0000**	**2.5112**	**2.5112**	**5.0000e-005**	**0.0000**	**2.5123**

3.6 Remediation and demolition of old MIPS building - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0401	0.0000	0.0401	6.0800e-003	0.0000	6.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0546	0.4830	0.6472	1.2900e-003		0.0218	0.0218		0.0201	0.0201	0.0000	113.1399	113.1399	0.0366	0.0000	114.0547
Total	**0.0546**	**0.4830**	**0.6472**	**1.2900e-003**	**0.0401**	**0.0218**	**0.0619**	**6.0800e-003**	**0.0201**	**0.0261**	**0.0000**	**113.1399**	**113.1399**	**0.0366**	**0.0000**	**114.0547**

3.6 Remediation and demolition of old MIPS building - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.4000e-004	0.0173	5.6100e-003	8.0000e-005	1.8400e-003	3.0000e-005	1.8700e-003	5.1000e-004	3.0000e-005	5.4000e-004	0.0000	7.7090	7.7090	3.7000e-004	0.0000	7.7182
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3200e-003	1.3700e-003	0.0159	6.0000e-005	7.7000e-003	5.0000e-005	7.7500e-003	2.0500e-003	4.0000e-005	2.0900e-003	0.0000	5.5592	5.5592	1.0000e-004	0.0000	5.5616
Total	**2.8600e-003**	**0.0187**	**0.0215**	**1.4000e-004**	**9.5400e-003**	**8.0000e-005**	**9.6200e-003**	**2.5600e-003**	**7.0000e-005**	**2.6300e-003**	**0.0000**	**13.2682**	**13.2682**	**4.7000e-004**	**0.0000**	**13.2798**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0181	0.0000	0.0181	2.7300e-003	0.0000	2.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0546	0.4830	0.6472	1.2900e-003		0.0218	0.0218		0.0201	0.0201	0.0000	113.1398	113.1398	0.0366	0.0000	114.0546
Total	**0.0546**	**0.4830**	**0.6472**	**1.2900e-003**	**0.0181**	**0.0218**	**0.0399**	**2.7300e-003**	**0.0201**	**0.0228**	**0.0000**	**113.1398**	**113.1398**	**0.0366**	**0.0000**	**114.0546**

3.6 Remediation and demolition of old MIPS building - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.4000e-004	0.0173	5.6100e-003	8.0000e-005	1.8400e-003	3.0000e-005	1.8700e-003	5.1000e-004	3.0000e-005	5.4000e-004	0.0000	7.7090	7.7090	3.7000e-004	0.0000	7.7182
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3200e-003	1.3700e-003	0.0159	6.0000e-005	7.7000e-003	5.0000e-005	7.7500e-003	2.0500e-003	4.0000e-005	2.0900e-003	0.0000	5.5592	5.5592	1.0000e-004	0.0000	5.5616
Total	**2.8600e-003**	**0.0187**	**0.0215**	**1.4000e-004**	**9.5400e-003**	**8.0000e-005**	**9.6200e-003**	**2.5600e-003**	**7.0000e-005**	**2.6300e-003**	**0.0000**	**13.2682**	**13.2682**	**4.7000e-004**	**0.0000**	**13.2798**

3.7 Site restoration - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.3000e-004	0.0000	3.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0152	0.1228	0.2843	4.4000e-004		5.6500e-003	5.6500e-003		5.2000e-003	5.2000e-003	0.0000	38.4091	38.4091	0.0124	0.0000	38.7197
Total	**0.0152**	**0.1228**	**0.2843**	**4.4000e-004**	**3.3000e-004**	**5.6500e-003**	**5.9800e-003**	**4.0000e-005**	**5.2000e-003**	**5.2400e-003**	**0.0000**	**38.4091**	**38.4091**	**0.0124**	**0.0000**	**38.7197**

3.7 Site restoration - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4000e-004	0.0110	3.5500e-003	5.0000e-005	1.1700e-003	2.0000e-005	1.1900e-003	3.2000e-004	2.0000e-005	3.4000e-004	0.0000	4.8800	4.8800	2.3000e-004	0.0000	4.8858
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	3.6000e-004	4.2300e-003	2.0000e-005	2.0500e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.4824	1.4824	3.0000e-005	0.0000	1.4831
Total	**9.6000e-004**	**0.0113**	**7.7800e-003**	**7.0000e-005**	**3.2200e-003**	**3.0000e-005**	**3.2600e-003**	**8.7000e-004**	**3.0000e-005**	**9.0000e-004**	**0.0000**	**6.3625**	**6.3625**	**2.6000e-004**	**0.0000**	**6.3689**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5000e-004	0.0000	1.5000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0152	0.1228	0.2843	4.4000e-004		5.6500e-003	5.6500e-003		5.2000e-003	5.2000e-003	0.0000	38.4091	38.4091	0.0124	0.0000	38.7196
Total	**0.0152**	**0.1228**	**0.2843**	**4.4000e-004**	**1.5000e-004**	**5.6500e-003**	**5.8000e-003**	**2.0000e-005**	**5.2000e-003**	**5.2200e-003**	**0.0000**	**38.4091**	**38.4091**	**0.0124**	**0.0000**	**38.7196**

3.7 Site restoration - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.4000e-004	0.0110	3.5500e-003	5.0000e-005	1.1700e-003	2.0000e-005	1.1900e-003	3.2000e-004	2.0000e-005	3.4000e-004	0.0000	4.8800	4.8800	2.3000e-004	0.0000	4.8858
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	3.6000e-004	4.2300e-003	2.0000e-005	2.0500e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.4824	1.4824	3.0000e-005	0.0000	1.4831
Total	**9.6000e-004**	**0.0113**	**7.7800e-003**	**7.0000e-005**	**3.2200e-003**	**3.0000e-005**	**3.2600e-003**	**8.7000e-004**	**3.0000e-005**	**9.0000e-004**	**0.0000**	**6.3625**	**6.3625**	**2.6000e-004**	**0.0000**	**6.3689**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.581705	0.037849	0.193793	0.109044	0.014574	0.005304	0.018664	0.026966	0.002656	0.002072	0.005755	0.000900	0.000719

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Vallejo MIPS

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.50	Acre	0.50	21,780.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Parking land use used to represent the size of the facility

Construction Phase - Phases and dates from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Trips and VMT -

Demolition -

Grading - Project area is 0.5 acres

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	20.00
tblConstructionPhase	NumDays	100.00	240.00
tblConstructionPhase	NumDays	100.00	260.00
tblConstructionPhase	NumDays	10.00	150.00
tblConstructionPhase	NumDays	1.00	65.00
tblGrading	AcresOfGrading	0.00	0.50
tblGrading	AcresOfGrading	0.00	0.50
tblGrading	MaterialExported	0.00	8,200.00
tblGrading	MaterialImported	0.00	2,900.00
tblGrading	MaterialImported	0.00	1,100.00
tblOffRoadEquipment	HorsePower	231.00	63.00
tblOffRoadEquipment	LoadFactor	0.29	0.31
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblTripsAndVMT	HaulingTripNumber	371.00	218.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8345	25.5249	21.1421	0.0864	1.5320	0.6141	2.1460	0.4057	0.5657	0.9714	0.0000	8,912.3278	8,912.3278	1.2865	0.0000	8,944.4902
2024	2.1964	20.0441	26.9013	0.0537	0.2078	0.8536	1.0614	0.0557	0.7853	0.8410	0.0000	5,209.9144	5,209.9144	1.6063	0.0000	5,250.0721
2025	1.2706	11.9011	17.1691	0.0345	0.6672	0.4642	0.9589	0.1163	0.4271	0.4545	0.0000	3,347.6626	3,347.6626	1.0328	0.0000	3,373.4838
Maximum	**2.1964**	**25.5249**	**26.9013**	**0.0864**	**1.5320**	**0.8536**	**2.1460**	**0.4057**	**0.7853**	**0.9714**	**0.0000**	**8,912.3278**	**8,912.3278**	**1.6063**	**0.0000**	**8,944.4902**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8345	25.5249	21.1421	0.0864	1.4828	0.6141	2.0969	0.3989	0.5657	0.9646	0.0000	8,912.3278	8,912.3278	1.2865	0.0000	8,944.4902
2024	2.1964	20.0441	26.9013	0.0537	0.2078	0.8536	1.0614	0.0557	0.7853	0.8410	0.0000	5,209.9144	5,209.9144	1.6063	0.0000	5,250.0721
2025	1.2706	11.9011	17.1691	0.0345	0.3729	0.4642	0.6647	0.0717	0.4271	0.4545	0.0000	3,347.6626	3,347.6626	1.0328	0.0000	3,373.4838
Maximum	**2.1964**	**25.5249**	**26.9013**	**0.0864**	**1.4828**	**0.8536**	**2.0969**	**0.3989**	**0.7853**	**0.9646**	**0.0000**	**8,912.3278**	**8,912.3278**	**1.6063**	**0.0000**	**8,944.4902**

Vallejo MIPS - Bay Area AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**14.27**	**0.00**	**8.24**	**8.89**	**0.00**	**0.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization and Site Preparation	Site Preparation	3/6/2023	3/31/2023	5	20	
2	Carquinez pump station, 3W pump station, and MCC	Building Construction	4/3/2023	3/1/2024	5	240	
3	New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Building Construction	3/4/2024	2/28/2025	5	260	
4	Rerouting of fiber optic and other utility lines	Trenching	9/30/2024	12/27/2024	5	65	
5	Remediation and demolition of old MIPS building	Demolition	3/3/2025	9/26/2025	5	150	
6	Site restoration	Site Preparation	9/29/2025	12/26/2025	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization and Site Preparation	Aerial Lifts	3	8.00	63	0.31
Mobilization and Site Preparation	Cranes	2	4.00	231	0.29
Mobilization and Site Preparation	Excavators	2	8.00	158	0.38

Mobilization and Site Preparation	Forklifts	2	6.00	89	0.20
Mobilization and Site Preparation	Graders	0	8.00	187	0.41
Mobilization and Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Mobilization and Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Carquinez pump station, 3W pump station, and MCC	Aerial Lifts	3	8.00	63	0.31
Carquinez pump station, 3W pump station, and MCC	Cranes	2	4.00	231	0.29
Carquinez pump station, 3W pump station, and MCC	Excavators	2	8.00	158	0.38
Carquinez pump station, 3W pump station, and MCC	Forklifts	2	6.00	89	0.20
Carquinez pump station, 3W pump station, and MCC	Rubber Tired Loaders	1	8.00	203	0.36
Carquinez pump station, 3W pump station, and MCC	Tractors/Loaders/Backhoes	1	8.00	97	0.37
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Aerial Lifts	3	8.00	63	0.31
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Cranes	2	4.00	231	0.29
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Excavators	2	8.00	158	0.38
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Forklifts	2	6.00	89	0.20
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Rubber Tired Loaders	1	8.00	203	0.36
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Rerouting of fiber optic and other utility lines	Cranes	2	4.00	63	0.31
Rerouting of fiber optic and other utility lines	Excavators	2	8.00	158	0.38
Rerouting of fiber optic and other utility lines	Rubber Tired Loaders	1	8.00	203	0.36
Remediation and demolition of old MIPS building	Concrete/Industrial Saws	0	8.00	81	0.73
Remediation and demolition of old MIPS building	Cranes	2	4.00	231	0.29
Remediation and demolition of old MIPS building	Excavators	2	8.00	158	0.38
Remediation and demolition of old MIPS building	Rubber Tired Dozers	1	1.00	247	0.40

Remediation and demolition of old MIPS building	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Site restoration	Excavators	2	8.00	158	0.38
Site restoration	Graders	0	8.00	187	0.41
Site restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization and Site Preparation	11	28.00	0.00	1,388.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Carquinez pump station, 3W pump stati	11	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
New MIPS, CCT-D, Mare Island Strait Effl	11	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rerouting of fiber optic and other utility lines	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Remediation and demolition of old MIPS	5	13.00	0.00	218.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site restoration	3	8.00	0.00	138.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Mobilization and Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0893	0.0000	0.0893	0.0124	0.0000	0.0124			0.0000			0.0000
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449		3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**	**0.0893**	**0.5922**	**0.6815**	**0.0124**	**0.5449**	**0.5572**		**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3480	11.3401	3.4733	0.0516	1.2127	0.0205	1.2331	0.3323	0.0196	0.3519		5,530.8322	5,530.8322	0.2553		5,537.2145
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0782	0.0424	0.5845	2.0600e-003	0.2300	1.3800e-003	0.2314	0.0610	1.2700e-003	0.0623		205.4217	205.4217	4.0000e-003		205.5216
Total	**0.4263**	**11.3826**	**4.0578**	**0.0536**	**1.4427**	**0.0218**	**1.4645**	**0.3933**	**0.0208**	**0.4142**		**5,736.2539**	**5,736.2539**	**0.2593**		**5,742.7361**

3.2 Mobilization and Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0402	0.0000	0.0402	5.5700e-003	0.0000	5.5700e-003			0.0000			0.0000
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449	0.0000	3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**	**0.0402**	**0.5922**	**0.6324**	**5.5700e-003**	**0.5449**	**0.5504**	**0.0000**	**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3480	11.3401	3.4733	0.0516	1.2127	0.0205	1.2331	0.3323	0.0196	0.3519		5,530.8322	5,530.8322	0.2553		5,537.2145
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0782	0.0424	0.5845	2.0600e-003	0.2300	1.3800e-003	0.2314	0.0610	1.2700e-003	0.0623		205.4217	205.4217	4.0000e-003		205.5216
Total	**0.4263**	**11.3826**	**4.0578**	**0.0536**	**1.4427**	**0.0218**	**1.4645**	**0.3933**	**0.0208**	**0.4142**		**5,736.2539**	**5,736.2539**	**0.2593**		**5,742.7361**

3.3 Carquinez pump station, 3W pump station, and MCC - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449		3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**		**0.5922**	**0.5922**		**0.5449**	**0.5449**		**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.6700e-003	0.3028	0.0825	1.0500e-003	0.0271	3.4000e-004	0.0274	7.7900e-003	3.3000e-004	8.1200e-003		111.2380	111.2380	4.4300e-003		111.3488
Worker	0.0251	0.0136	0.1879	6.6000e-004	0.0739	4.5000e-004	0.0744	0.0196	4.1000e-004	0.0200		66.0284	66.0284	1.2800e-003		66.0605
Total	**0.0338**	**0.3164**	**0.2704**	**1.7100e-003**	**0.1010**	**7.9000e-004**	**0.1018**	**0.0274**	**7.4000e-004**	**0.0281**		**177.2664**	**177.2664**	**5.7100e-003**		**177.4093**

3.3 Carquinez pump station, 3W pump station, and MCC - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449	0.0000	3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**		**0.5922**	**0.5922**		**0.5449**	**0.5449**	**0.0000**	**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.6700e-003	0.3028	0.0825	1.0500e-003	0.0271	3.4000e-004	0.0274	7.7900e-003	3.3000e-004	8.1200e-003		111.2380	111.2380	4.4300e-003		111.3488
Worker	0.0251	0.0136	0.1879	6.6000e-004	0.0739	4.5000e-004	0.0744	0.0196	4.1000e-004	0.0200		66.0284	66.0284	1.2800e-003		66.0605
Total	**0.0338**	**0.3164**	**0.2704**	**1.7100e-003**	**0.1010**	**7.9000e-004**	**0.1018**	**0.0274**	**7.4000e-004**	**0.0281**		**177.2664**	**177.2664**	**5.7100e-003**		**177.4093**

3.3 Carquinez pump station, 3W pump station, and MCC - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897		3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**		**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3900e-003	0.2994	0.0795	1.0400e-003	0.0271	3.4000e-004	0.0274	7.8000e-003	3.2000e-004	8.1200e-003		110.4781	110.4781	4.3500e-003		110.5868
Worker	0.0236	0.0123	0.1744	6.4000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		63.4126	63.4126	1.1600e-003		63.4415
Total	**0.0320**	**0.3117**	**0.2539**	**1.6800e-003**	**0.1010**	**7.8000e-004**	**0.1018**	**0.0274**	**7.2000e-004**	**0.0281**		**173.8907**	**173.8907**	**5.5100e-003**		**174.0283**

3.3 Carquinez pump station, 3W pump station, and MCC - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897	0.0000	3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**	**0.0000**	**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3900e-003	0.2994	0.0795	1.0400e-003	0.0271	3.4000e-004	0.0274	7.8000e-003	3.2000e-004	8.1200e-003		110.4781	110.4781	4.3500e-003		110.5868
Worker	0.0236	0.0123	0.1744	6.4000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		63.4126	63.4126	1.1600e-003		63.4415
Total	**0.0320**	**0.3117**	**0.2539**	**1.6800e-003**	**0.1010**	**7.8000e-004**	**0.1018**	**0.0274**	**7.2000e-004**	**0.0281**		**173.8907**	**173.8907**	**5.5100e-003**		**174.0283**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897		3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**		**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3900e-003	0.2994	0.0795	1.0400e-003	0.0271	3.4000e-004	0.0274	7.8000e-003	3.2000e-004	8.1200e-003		110.4781	110.4781	4.3500e-003		110.5868
Worker	0.0236	0.0123	0.1744	6.4000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		63.4126	63.4126	1.1600e-003		63.4415
Total	**0.0320**	**0.3117**	**0.2539**	**1.6800e-003**	**0.1010**	**7.8000e-004**	**0.1018**	**0.0274**	**7.2000e-004**	**0.0281**		**173.8907**	**173.8907**	**5.5100e-003**		**174.0283**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897	0.0000	3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**	**0.0000**	**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3900e-003	0.2994	0.0795	1.0400e-003	0.0271	3.4000e-004	0.0274	7.8000e-003	3.2000e-004	8.1200e-003		110.4781	110.4781	4.3500e-003		110.5868
Worker	0.0236	0.0123	0.1744	6.4000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		63.4126	63.4126	1.1600e-003		63.4415
Total	**0.0320**	**0.3117**	**0.2539**	**1.6800e-003**	**0.1010**	**7.8000e-004**	**0.1018**	**0.0274**	**7.2000e-004**	**0.0281**		**173.8907**	**173.8907**	**5.5100e-003**		**174.0283**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2402	11.5940	16.9301	0.0328		0.4634	0.4634		0.4264	0.4264		3,177.0855	3,177.0855	1.0275		3,202.7738
Total	**1.2402**	**11.5940**	**16.9301**	**0.0328**		**0.4634**	**0.4634**		**0.4264**	**0.4264**		**3,177.0855**	**3,177.0855**	**1.0275**		**3,202.7738**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.1500e-003	0.2959	0.0772	1.0300e-003	0.0271	3.3000e-004	0.0274	7.8000e-003	3.2000e-004	8.1100e-003		109.7483	109.7483	4.2600e-003		109.8549
Worker	0.0223	0.0112	0.1618	6.1000e-004	0.0739	4.3000e-004	0.0744	0.0196	4.0000e-004	0.0200		60.8288	60.8288	1.0500e-003		60.8551
Total	**0.0304**	**0.3071**	**0.2390**	**1.6400e-003**	**0.1010**	**7.6000e-004**	**0.1018**	**0.0274**	**7.2000e-004**	**0.0281**		**170.5771**	**170.5771**	**5.3100e-003**		**170.7100**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2402	11.5940	16.9301	0.0328		0.4634	0.4634		0.4264	0.4264	0.0000	3,177.0855	3,177.0855	1.0275		3,202.7738
Total	**1.2402**	**11.5940**	**16.9301**	**0.0328**		**0.4634**	**0.4634**		**0.4264**	**0.4264**	**0.0000**	**3,177.0855**	**3,177.0855**	**1.0275**		**3,202.7738**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.1500e-003	0.2959	0.0772	1.0300e-003	0.0271	3.3000e-004	0.0274	7.8000e-003	3.2000e-004	8.1100e-003		109.7483	109.7483	4.2600e-003		109.8549
Worker	0.0223	0.0112	0.1618	6.1000e-004	0.0739	4.3000e-004	0.0744	0.0196	4.0000e-004	0.0200		60.8288	60.8288	1.0500e-003		60.8551
Total	**0.0304**	**0.3071**	**0.2390**	**1.6400e-003**	**0.1010**	**7.6000e-004**	**0.1018**	**0.0274**	**7.2000e-004**	**0.0281**		**170.5771**	**170.5771**	**5.3100e-003**		**170.7100**

3.5 Rerouting of fiber optic and other utility lines - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7951	6.7244	9.3717	0.0183		0.3199	0.3199		0.2943	0.2943		1,767.9031	1,767.9031	0.5718		1,782.1975
Total	**0.7951**	**6.7244**	**9.3717**	**0.0183**		**0.3199**	**0.3199**		**0.2943**	**0.2943**		**1,767.9031**	**1,767.9031**	**0.5718**		**1,782.1975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0341	0.0178	0.2519	9.2000e-004	0.1068	6.3000e-004	0.1074	0.0283	5.8000e-004	0.0289		91.5959	91.5959	1.6700e-003		91.6378
Total	**0.0341**	**0.0178**	**0.2519**	**9.2000e-004**	**0.1068**	**6.3000e-004**	**0.1074**	**0.0283**	**5.8000e-004**	**0.0289**		**91.5959**	**91.5959**	**1.6700e-003**		**91.6378**

3.5 Rerouting of fiber optic and other utility lines - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7951	6.7244	9.3717	0.0183		0.3199	0.3199		0.2943	0.2943	0.0000	1,767.9031	1,767.9031	0.5718		1,782.1975
Total	**0.7951**	**6.7244**	**9.3717**	**0.0183**		**0.3199**	**0.3199**		**0.2943**	**0.2943**	**0.0000**	**1,767.9031**	**1,767.9031**	**0.5718**		**1,782.1975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0341	0.0178	0.2519	9.2000e-004	0.1068	6.3000e-004	0.1074	0.0283	5.8000e-004	0.0289		91.5959	91.5959	1.6700e-003		91.6378
Total	**0.0341**	**0.0178**	**0.2519**	**9.2000e-004**	**0.1068**	**6.3000e-004**	**0.1074**	**0.0283**	**5.8000e-004**	**0.0289**		**91.5959**	**91.5959**	**1.6700e-003**		**91.6378**

3.6 Remediation and demolition of old MIPS building - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5350	0.0000	0.5350	0.0810	0.0000	0.0810			0.0000			0.0000
Off-Road	0.7280	6.4401	8.6299	0.0172		0.2907	0.2907		0.2675	0.2675		1,662.8720	1,662.8720	0.5378		1,676.3172
Total	**0.7280**	**6.4401**	**8.6299**	**0.0172**	**0.5350**	**0.2907**	**0.8257**	**0.0810**	**0.2675**	**0.3485**		**1,662.8720**	**1,662.8720**	**0.5378**		**1,676.3172**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.1300e-003	0.2274	0.0732	1.0600e-003	0.0254	4.2000e-004	0.0258	6.9600e-003	4.0000e-004	7.3600e-003		114.1090	114.1090	5.3200e-003		114.2418
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0162	0.2337	8.8000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		87.8639	87.8639	1.5200e-003		87.9018
Total	**0.0393**	**0.2436**	**0.3069**	**1.9400e-003**	**0.1322**	**1.0400e-003**	**0.1332**	**0.0353**	**9.7000e-004**	**0.0363**		**201.9728**	**201.9728**	**6.8400e-003**		**202.1436**

3.6 Remediation and demolition of old MIPS building - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2407	0.0000	0.2407	0.0365	0.0000	0.0365			0.0000			0.0000
Off-Road	0.7280	6.4401	8.6299	0.0172		0.2907	0.2907		0.2675	0.2675	0.0000	1,662.8720	1,662.8720	0.5378		1,676.3172
Total	**0.7280**	**6.4401**	**8.6299**	**0.0172**	**0.2407**	**0.2907**	**0.5315**	**0.0365**	**0.2675**	**0.3039**	**0.0000**	**1,662.8720**	**1,662.8720**	**0.5378**		**1,676.3172**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.1300e-003	0.2274	0.0732	1.0600e-003	0.0254	4.2000e-004	0.0258	6.9600e-003	4.0000e-004	7.3600e-003		114.1090	114.1090	5.3200e-003		114.2418
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0162	0.2337	8.8000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		87.8639	87.8639	1.5200e-003		87.9018
Total	**0.0393**	**0.2436**	**0.3069**	**1.9400e-003**	**0.1322**	**1.0400e-003**	**0.1332**	**0.0353**	**9.7000e-004**	**0.0363**		**201.9728**	**201.9728**	**6.8400e-003**		**202.1436**

3.7 Site restoration - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0101	0.0000	0.0101	1.1700e-003	0.0000	1.1700e-003			0.0000			0.0000
Off-Road	0.4664	3.7784	8.7484	0.0135		0.1739	0.1739		0.1600	0.1600		1,302.7316	1,302.7316	0.4213		1,313.2649
Total	**0.4664**	**3.7784**	**8.7484**	**0.0135**	**0.0101**	**0.1739**	**0.1840**	**1.1700e-003**	**0.1600**	**0.1611**		**1,302.7316**	**1,302.7316**	**0.4213**		**1,313.2649**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0104	0.3323	0.1070	1.5500e-003	0.0371	6.1000e-004	0.0377	0.0102	5.8000e-004	0.0108		166.6941	166.6941	7.7600e-003		166.8882
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0198	9.9600e-003	0.1438	5.4000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		54.0701	54.0701	9.3000e-004		54.0934
Total	**0.0302**	**0.3422**	**0.2508**	**2.0900e-003**	**0.1028**	**9.9000e-004**	**0.1038**	**0.0276**	**9.3000e-004**	**0.0285**		**220.7642**	**220.7642**	**8.6900e-003**		**220.9816**

3.7 Site restoration - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5300e-003	0.0000	4.5300e-003	5.3000e-004	0.0000	5.3000e-004			0.0000			0.0000
Off-Road	0.4664	3.7784	8.7484	0.0135		0.1739	0.1739		0.1600	0.1600	0.0000	1,302.7316	1,302.7316	0.4213		1,313.2649
Total	**0.4664**	**3.7784**	**8.7484**	**0.0135**	**4.5300e-003**	**0.1739**	**0.1784**	**5.3000e-004**	**0.1600**	**0.1605**	**0.0000**	**1,302.7316**	**1,302.7316**	**0.4213**		**1,313.2649**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0104	0.3323	0.1070	1.5500e-003	0.0371	6.1000e-004	0.0377	0.0102	5.8000e-004	0.0108		166.6941	166.6941	7.7600e-003		166.8882
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0198	9.9600e-003	0.1438	5.4000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		54.0701	54.0701	9.3000e-004		54.0934
Total	**0.0302**	**0.3422**	**0.2508**	**2.0900e-003**	**0.1028**	**9.9000e-004**	**0.1038**	**0.0276**	**9.3000e-004**	**0.0285**		**220.7642**	**220.7642**	**8.6900e-003**		**220.9816**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.581705	0.037849	0.193793	0.109044	0.014574	0.005304	0.018664	0.026966	0.002656	0.002072	0.005755	0.000900	0.000719

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Unmitigated	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**		**1.2000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**		**1.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Vallejo MIPS

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.50	Acre	0.50	21,780.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Parking land use used to represent the size of the facility

Construction Phase - Phases and dates from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Trips and VMT -

Demolition -

Grading - Project area is 0.5 acres

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	20.00
tblConstructionPhase	NumDays	100.00	240.00
tblConstructionPhase	NumDays	100.00	260.00
tblConstructionPhase	NumDays	10.00	150.00
tblConstructionPhase	NumDays	1.00	65.00
tblGrading	AcresOfGrading	0.00	0.50
tblGrading	AcresOfGrading	0.00	0.50
tblGrading	MaterialExported	0.00	8,200.00
tblGrading	MaterialImported	0.00	2,900.00
tblGrading	MaterialImported	0.00	1,100.00
tblOffRoadEquipment	HorsePower	231.00	63.00
tblOffRoadEquipment	LoadFactor	0.29	0.31
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblTripsAndVMT	HaulingTripNumber	371.00	218.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8494	25.7210	21.2926	0.0854	1.5320	0.6146	2.1466	0.4057	0.5662	0.9719	0.0000	8,801.7724	8,801.7724	1.2963	0.0000	8,834.1798
2024	2.2009	20.0525	26.8797	0.0535	0.2078	0.8536	1.0614	0.0557	0.7853	0.8410	0.0000	5,194.9436	5,194.9436	1.6064	0.0000	5,235.1038
2025	1.2728	11.9051	17.1667	0.0344	0.6672	0.4642	0.9589	0.1163	0.4271	0.4545	0.0000	3,340.1434	3,340.1434	1.0331	0.0000	3,365.9701
Maximum	**2.2009**	**25.7210**	**26.8797**	**0.0854**	**1.5320**	**0.8536**	**2.1466**	**0.4057**	**0.7853**	**0.9719**	**0.0000**	**8,801.7724**	**8,801.7724**	**1.6064**	**0.0000**	**8,834.1798**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	1.8494	25.7210	21.2926	0.0854	1.4828	0.6146	2.0975	0.3989	0.5662	0.9651	0.0000	8,801.7724	8,801.7724	1.2963	0.0000	8,834.1798
2024	2.2009	20.0525	26.8797	0.0535	0.2078	0.8536	1.0614	0.0557	0.7853	0.8410	0.0000	5,194.9436	5,194.9436	1.6064	0.0000	5,235.1038
2025	1.2728	11.9051	17.1667	0.0344	0.3729	0.4642	0.6647	0.0717	0.4271	0.4545	0.0000	3,340.1434	3,340.1434	1.0331	0.0000	3,365.9701
Maximum	**2.2009**	**25.7210**	**26.8797**	**0.0854**	**1.4828**	**0.8536**	**2.0975**	**0.3989**	**0.7853**	**0.9651**	**0.0000**	**8,801.7724**	**8,801.7724**	**1.6064**	**0.0000**	**8,834.1798**

Vallejo MIPS - Bay Area AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**14.27**	**0.00**	**8.24**	**8.89**	**0.00**	**0.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization and Site Preparation	Site Preparation	3/6/2023	3/31/2023	5	20	
2	Carquinez pump station, 3W pump station, and MCC	Building Construction	4/3/2023	3/1/2024	5	240	
3	New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Building Construction	3/4/2024	2/28/2025	5	260	
4	Rerouting of fiber optic and other utility lines	Trenching	9/30/2024	12/27/2024	5	65	
5	Remediation and demolition of old MIPS building	Demolition	3/3/2025	9/26/2025	5	150	
6	Site restoration	Site Preparation	9/29/2025	12/26/2025	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization and Site Preparation	Aerial Lifts	3	8.00	63	0.31
Mobilization and Site Preparation	Cranes	2	4.00	231	0.29
Mobilization and Site Preparation	Excavators	2	8.00	158	0.38

Mobilization and Site Preparation	Forklifts	2	6.00	89	0.20
Mobilization and Site Preparation	Graders	0	8.00	187	0.41
Mobilization and Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Mobilization and Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Carquinez pump station, 3W pump station, and MCC	Aerial Lifts	3	8.00	63	0.31
Carquinez pump station, 3W pump station, and MCC	Cranes	2	4.00	231	0.29
Carquinez pump station, 3W pump station, and MCC	Excavators	2	8.00	158	0.38
Carquinez pump station, 3W pump station, and MCC	Forklifts	2	6.00	89	0.20
Carquinez pump station, 3W pump station, and MCC	Rubber Tired Loaders	1	8.00	203	0.36
Carquinez pump station, 3W pump station, and MCC	Tractors/Loaders/Backhoes	1	8.00	97	0.37
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Aerial Lifts	3	8.00	63	0.31
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Cranes	2	4.00	231	0.29
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Excavators	2	8.00	158	0.38
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Forklifts	2	6.00	89	0.20
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Rubber Tired Loaders	1	8.00	203	0.36
New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Rerouting of fiber optic and other utility lines	Cranes	2	4.00	63	0.31
Rerouting of fiber optic and other utility lines	Excavators	2	8.00	158	0.38
Rerouting of fiber optic and other utility lines	Rubber Tired Loaders	1	8.00	203	0.36
Remediation and demolition of old MIPS building	Concrete/Industrial Saws	0	8.00	81	0.73
Remediation and demolition of old MIPS building	Cranes	2	4.00	231	0.29
Remediation and demolition of old MIPS building	Excavators	2	8.00	158	0.38
Remediation and demolition of old MIPS building	Rubber Tired Dozers	1	1.00	247	0.40

Remediation and demolition of old MIPS building	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Site restoration	Excavators	2	8.00	158	0.38
Site restoration	Graders	0	8.00	187	0.41
Site restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization and Site Preparation	11	28.00	0.00	1,388.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Carquinez pump station, 3W pump stati	11	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
New MIPS, CCT-D, Mare Island Strait Effl	11	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rerouting of fiber optic and other utility lines	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Remediation and demolition of old MIPS	5	13.00	0.00	218.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site restoration	3	8.00	0.00	138.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Mobilization and Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0893	0.0000	0.0893	0.0124	0.0000	0.0124			0.0000			0.0000
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449		3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**	**0.0893**	**0.5922**	**0.6815**	**0.0124**	**0.5449**	**0.5572**		**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3577	11.5262	3.6660	0.0507	1.2127	0.0210	1.2336	0.3323	0.0201	0.3524		5,436.4526	5,436.4526	0.2654		5,443.0872
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0834	0.0524	0.5423	1.9000e-003	0.2300	1.3800e-003	0.2314	0.0610	1.2700e-003	0.0623		189.2459	189.2459	3.7000e-003		189.3385
Total	**0.4411**	**11.5786**	**4.2083**	**0.0526**	**1.4427**	**0.0224**	**1.4650**	**0.3933**	**0.0213**	**0.4147**		**5,625.6985**	**5,625.6985**	**0.2691**		**5,632.4257**

3.2 Mobilization and Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0402	0.0000	0.0402	5.5700e-003	0.0000	5.5700e-003			0.0000			0.0000
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449	0.0000	3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**	**0.0402**	**0.5922**	**0.6324**	**5.5700e-003**	**0.5449**	**0.5504**	**0.0000**	**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3577	11.5262	3.6660	0.0507	1.2127	0.0210	1.2336	0.3323	0.0201	0.3524		5,436.4526	5,436.4526	0.2654		5,443.0872
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0834	0.0524	0.5423	1.9000e-003	0.2300	1.3800e-003	0.2314	0.0610	1.2700e-003	0.0623		189.2459	189.2459	3.7000e-003		189.3385
Total	**0.4411**	**11.5786**	**4.2083**	**0.0526**	**1.4427**	**0.0224**	**1.4650**	**0.3933**	**0.0213**	**0.4147**		**5,625.6985**	**5,625.6985**	**0.2691**		**5,632.4257**

3.3 Carquinez pump station, 3W pump station, and MCC - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449		3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**		**0.5922**	**0.5922**		**0.5449**	**0.5449**		**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.2100e-003	0.3042	0.0935	1.0200e-003	0.0271	3.6000e-004	0.0274	7.7900e-003	3.4000e-004	8.1400e-003		108.4264	108.4264	4.7600e-003		108.5454
Worker	0.0268	0.0168	0.1743	6.1000e-004	0.0739	4.5000e-004	0.0744	0.0196	4.1000e-004	0.0200		60.8290	60.8290	1.1900e-003		60.8588
Total	**0.0360**	**0.3211**	**0.2678**	**1.6300e-003**	**0.1010**	**8.1000e-004**	**0.1018**	**0.0274**	**7.5000e-004**	**0.0282**		**169.2555**	**169.2555**	**5.9500e-003**		**169.4042**

3.3 Carquinez pump station, 3W pump station, and MCC - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4083	14.1424	17.0843	0.0328		0.5922	0.5922		0.5449	0.5449	0.0000	3,176.0739	3,176.0739	1.0272		3,201.7541
Total	**1.4083**	**14.1424**	**17.0843**	**0.0328**		**0.5922**	**0.5922**		**0.5449**	**0.5449**	**0.0000**	**3,176.0739**	**3,176.0739**	**1.0272**		**3,201.7541**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	9.2100e-003	0.3042	0.0935	1.0200e-003	0.0271	3.6000e-004	0.0274	7.7900e-003	3.4000e-004	8.1400e-003		108.4264	108.4264	4.7600e-003		108.5454
Worker	0.0268	0.0168	0.1743	6.1000e-004	0.0739	4.5000e-004	0.0744	0.0196	4.1000e-004	0.0200		60.8290	60.8290	1.1900e-003		60.8588
Total	**0.0360**	**0.3211**	**0.2678**	**1.6300e-003**	**0.1010**	**8.1000e-004**	**0.1018**	**0.0274**	**7.5000e-004**	**0.0282**		**169.2555**	**169.2555**	**5.9500e-003**		**169.4042**

3.3 Carquinez pump station, 3W pump station, and MCC - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897		3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**		**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9000e-003	0.3008	0.0900	1.0100e-003	0.0271	3.5000e-004	0.0274	7.8000e-003	3.4000e-004	8.1300e-003		107.7072	107.7072	4.6600e-003		107.8237
Worker	0.0253	0.0152	0.1613	5.9000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		58.4217	58.4217	1.0700e-003		58.4485
Total	**0.0342**	**0.3160**	**0.2513**	**1.6000e-003**	**0.1010**	**7.9000e-004**	**0.1018**	**0.0274**	**7.4000e-004**	**0.0281**		**166.1289**	**166.1289**	**5.7300e-003**		**166.2722**

3.3 Carquinez pump station, 3W pump station, and MCC - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897	0.0000	3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**	**0.0000**	**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9000e-003	0.3008	0.0900	1.0100e-003	0.0271	3.5000e-004	0.0274	7.8000e-003	3.4000e-004	8.1300e-003		107.7072	107.7072	4.6600e-003		107.8237
Worker	0.0253	0.0152	0.1613	5.9000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		58.4217	58.4217	1.0700e-003		58.4485
Total	**0.0342**	**0.3160**	**0.2513**	**1.6000e-003**	**0.1010**	**7.9000e-004**	**0.1018**	**0.0274**	**7.4000e-004**	**0.0281**		**166.1289**	**166.1289**	**5.7300e-003**		**166.2722**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897		3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**		**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9000e-003	0.3008	0.0900	1.0100e-003	0.0271	3.5000e-004	0.0274	7.8000e-003	3.4000e-004	8.1300e-003		107.7072	107.7072	4.6600e-003		107.8237
Worker	0.0253	0.0152	0.1613	5.9000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		58.4217	58.4217	1.0700e-003		58.4485
Total	**0.0342**	**0.3160**	**0.2513**	**1.6000e-003**	**0.1010**	**7.9000e-004**	**0.1018**	**0.0274**	**7.4000e-004**	**0.0281**		**166.1289**	**166.1289**	**5.7300e-003**		**166.2722**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3353	12.9901	17.0238	0.0328		0.5323	0.5323		0.4897	0.4897	0.0000	3,176.5247	3,176.5247	1.0274		3,202.2085
Total	**1.3353**	**12.9901**	**17.0238**	**0.0328**		**0.5323**	**0.5323**		**0.4897**	**0.4897**	**0.0000**	**3,176.5247**	**3,176.5247**	**1.0274**		**3,202.2085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.9000e-003	0.3008	0.0900	1.0100e-003	0.0271	3.5000e-004	0.0274	7.8000e-003	3.4000e-004	8.1300e-003		107.7072	107.7072	4.6600e-003		107.8237
Worker	0.0253	0.0152	0.1613	5.9000e-004	0.0739	4.4000e-004	0.0744	0.0196	4.0000e-004	0.0200		58.4217	58.4217	1.0700e-003		58.4485
Total	**0.0342**	**0.3160**	**0.2513**	**1.6000e-003**	**0.1010**	**7.9000e-004**	**0.1018**	**0.0274**	**7.4000e-004**	**0.0281**		**166.1289**	**166.1289**	**5.7300e-003**		**166.2722**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2402	11.5940	16.9301	0.0328		0.4634	0.4634		0.4264	0.4264		3,177.0855	3,177.0855	1.0275		3,202.7738
Total	**1.2402**	**11.5940**	**16.9301**	**0.0328**		**0.4634**	**0.4634**		**0.4264**	**0.4264**		**3,177.0855**	**3,177.0855**	**1.0275**		**3,202.7738**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.6400e-003	0.2973	0.0873	1.0100e-003	0.0271	3.5000e-004	0.0274	7.8000e-003	3.3000e-004	8.1300e-003		107.0141	107.0141	4.5700e-003		107.1283
Worker	0.0239	0.0138	0.1493	5.6000e-004	0.0739	4.3000e-004	0.0744	0.0196	4.0000e-004	0.0200		56.0438	56.0438	9.7000e-004		56.0680
Total	**0.0326**	**0.3111**	**0.2366**	**1.5700e-003**	**0.1010**	**7.8000e-004**	**0.1018**	**0.0274**	**7.3000e-004**	**0.0281**		**163.0579**	**163.0579**	**5.5400e-003**		**163.1963**

3.4 New MIPS, CCT-D, Mare Island Strait Effluent Pipe, and bioassay facility - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2402	11.5940	16.9301	0.0328		0.4634	0.4634		0.4264	0.4264	0.0000	3,177.0855	3,177.0855	1.0275		3,202.7738
Total	**1.2402**	**11.5940**	**16.9301**	**0.0328**		**0.4634**	**0.4634**		**0.4264**	**0.4264**	**0.0000**	**3,177.0855**	**3,177.0855**	**1.0275**		**3,202.7738**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.6400e-003	0.2973	0.0873	1.0100e-003	0.0271	3.5000e-004	0.0274	7.8000e-003	3.3000e-004	8.1300e-003		107.0141	107.0141	4.5700e-003		107.1283
Worker	0.0239	0.0138	0.1493	5.6000e-004	0.0739	4.3000e-004	0.0744	0.0196	4.0000e-004	0.0200		56.0438	56.0438	9.7000e-004		56.0680
Total	**0.0326**	**0.3111**	**0.2366**	**1.5700e-003**	**0.1010**	**7.8000e-004**	**0.1018**	**0.0274**	**7.3000e-004**	**0.0281**		**163.0579**	**163.0579**	**5.5400e-003**		**163.1963**

3.5 Rerouting of fiber optic and other utility lines - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7951	6.7244	9.3717	0.0183		0.3199	0.3199		0.2943	0.2943		1,767.9031	1,767.9031	0.5718		1,782.1975
Total	**0.7951**	**6.7244**	**9.3717**	**0.0183**		**0.3199**	**0.3199**		**0.2943**	**0.2943**		**1,767.9031**	**1,767.9031**	**0.5718**		**1,782.1975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0220	0.2330	8.5000e-004	0.1068	6.3000e-004	0.1074	0.0283	5.8000e-004	0.0289		84.3869	84.3869	1.5500e-003		84.4256
Total	**0.0365**	**0.0220**	**0.2330**	**8.5000e-004**	**0.1068**	**6.3000e-004**	**0.1074**	**0.0283**	**5.8000e-004**	**0.0289**		**84.3869**	**84.3869**	**1.5500e-003**		**84.4256**

3.5 Rerouting of fiber optic and other utility lines - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7951	6.7244	9.3717	0.0183		0.3199	0.3199		0.2943	0.2943	0.0000	1,767.9031	1,767.9031	0.5718		1,782.1975
Total	**0.7951**	**6.7244**	**9.3717**	**0.0183**		**0.3199**	**0.3199**		**0.2943**	**0.2943**	**0.0000**	**1,767.9031**	**1,767.9031**	**0.5718**		**1,782.1975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0365	0.0220	0.2330	8.5000e-004	0.1068	6.3000e-004	0.1074	0.0283	5.8000e-004	0.0289		84.3869	84.3869	1.5500e-003		84.4256
Total	**0.0365**	**0.0220**	**0.2330**	**8.5000e-004**	**0.1068**	**6.3000e-004**	**0.1074**	**0.0283**	**5.8000e-004**	**0.0289**		**84.3869**	**84.3869**	**1.5500e-003**		**84.4256**

3.6 Remediation and demolition of old MIPS building - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5350	0.0000	0.5350	0.0810	0.0000	0.0810			0.0000			0.0000
Off-Road	0.7280	6.4401	8.6299	0.0172		0.2907	0.2907		0.2675	0.2675		1,662.8720	1,662.8720	0.5378		1,676.3172
Total	**0.7280**	**6.4401**	**8.6299**	**0.0172**	**0.5350**	**0.2907**	**0.8257**	**0.0810**	**0.2675**	**0.3485**		**1,662.8720**	**1,662.8720**	**0.5378**		**1,676.3172**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.3300e-003	0.2311	0.0771	1.0400e-003	0.0254	4.2000e-004	0.0258	6.9600e-003	4.1000e-004	7.3700e-003		112.1900	112.1900	5.5100e-003		112.3278
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0345	0.0200	0.2156	8.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		80.9522	80.9522	1.4000e-003		80.9872
Total	**0.0419**	**0.2511**	**0.2927**	**1.8500e-003**	**0.1322**	**1.0400e-003**	**0.1332**	**0.0353**	**9.8000e-004**	**0.0363**		**193.1422**	**193.1422**	**6.9100e-003**		**193.3150**

3.6 Remediation and demolition of old MIPS building - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2407	0.0000	0.2407	0.0365	0.0000	0.0365			0.0000			0.0000
Off-Road	0.7280	6.4401	8.6299	0.0172		0.2907	0.2907		0.2675	0.2675	0.0000	1,662.8720	1,662.8720	0.5378		1,676.3172
Total	**0.7280**	**6.4401**	**8.6299**	**0.0172**	**0.2407**	**0.2907**	**0.5315**	**0.0365**	**0.2675**	**0.3039**	**0.0000**	**1,662.8720**	**1,662.8720**	**0.5378**		**1,676.3172**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.3300e-003	0.2311	0.0771	1.0400e-003	0.0254	4.2000e-004	0.0258	6.9600e-003	4.1000e-004	7.3700e-003		112.1900	112.1900	5.5100e-003		112.3278
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0345	0.0200	0.2156	8.1000e-004	0.1068	6.2000e-004	0.1074	0.0283	5.7000e-004	0.0289		80.9522	80.9522	1.4000e-003		80.9872
Total	**0.0419**	**0.2511**	**0.2927**	**1.8500e-003**	**0.1322**	**1.0400e-003**	**0.1332**	**0.0353**	**9.8000e-004**	**0.0363**		**193.1422**	**193.1422**	**6.9100e-003**		**193.3150**

3.7 Site restoration - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0101	0.0000	0.0101	1.1700e-003	0.0000	1.1700e-003			0.0000			0.0000
Off-Road	0.4664	3.7784	8.7484	0.0135		0.1739	0.1739		0.1600	0.1600		1,302.7316	1,302.7316	0.4213		1,313.2649
Total	**0.4664**	**3.7784**	**8.7484**	**0.0135**	**0.0101**	**0.1739**	**0.1840**	**1.1700e-003**	**0.1600**	**0.1611**		**1,302.7316**	**1,302.7316**	**0.4213**		**1,313.2649**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0107	0.3376	0.1126	1.5300e-003	0.0371	6.2000e-004	0.0377	0.0102	5.9000e-004	0.0108		163.8909	163.8909	8.0500e-003		164.0921
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0213	0.0123	0.1327	5.0000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		49.8167	49.8167	8.6000e-004		49.8383
Total	**0.0320**	**0.3499**	**0.2453**	**2.0300e-003**	**0.1028**	**1.0000e-003**	**0.1038**	**0.0276**	**9.4000e-004**	**0.0285**		**213.7076**	**213.7076**	**8.9100e-003**		**213.9304**

3.7 Site restoration - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5300e-003	0.0000	4.5300e-003	5.3000e-004	0.0000	5.3000e-004			0.0000			0.0000
Off-Road	0.4664	3.7784	8.7484	0.0135		0.1739	0.1739		0.1600	0.1600	0.0000	1,302.7316	1,302.7316	0.4213		1,313.2649
Total	**0.4664**	**3.7784**	**8.7484**	**0.0135**	**4.5300e-003**	**0.1739**	**0.1784**	**5.3000e-004**	**0.1600**	**0.1605**	**0.0000**	**1,302.7316**	**1,302.7316**	**0.4213**		**1,313.2649**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0107	0.3376	0.1126	1.5300e-003	0.0371	6.2000e-004	0.0377	0.0102	5.9000e-004	0.0108		163.8909	163.8909	8.0500e-003		164.0921
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0213	0.0123	0.1327	5.0000e-004	0.0657	3.8000e-004	0.0661	0.0174	3.5000e-004	0.0178		49.8167	49.8167	8.6000e-004		49.8383
Total	**0.0320**	**0.3499**	**0.2453**	**2.0300e-003**	**0.1028**	**1.0000e-003**	**0.1038**	**0.0276**	**9.4000e-004**	**0.0285**		**213.7076**	**213.7076**	**8.9100e-003**		**213.9304**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.581705	0.037849	0.193793	0.109044	0.014574	0.005304	0.018664	0.026966	0.002656	0.002072	0.005755	0.000900	0.000719

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Unmitigated	0.0102	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**		**1.2000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4900e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.1000e-004	1.1000e-004	0.0000		1.2000e-004
Total	**0.0102**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1000e-004**	**1.1000e-004**	**0.0000**		**1.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix C. Special-status Species Tables

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Scientific Name	Common Name	Federal	State	CRPR	Habitat Characteristics	Species Analyzed	Rationale
Amsinckia lunaris	bent-flowered fiddleneck	None	None	1B.2	Coastal bluff scrub, cismontane woodland, and grassland. Elevation: 5–1,640 feet. Blooming period: March–June	N	Suitable habitat not present.
Arctostaphylos pallida	pallid manzanita	FT	SE	1B.1	Sandy, gravelly, or siliceous shale soils in chaparral, coastal scrub, cismontane woodland, and broadleafed upland and closed-cone coniferous forests. Elevation: 605–1,525 feet. Blooming period: December–March	N	Suitable habitat not present.
Astragalus tener var. tener	alkali milk-vetch	None	None	1B.2	Alkaline soils in playas, adobe clay grassland, and vernal pools. Elevation: 0–195 feet. Blooming period: March–June	N	Suitable habitat not present.
Atriplex persistens	vernal pool smallscale	None	None	1B.2	Alkaline vernal pools. Elevation: 30–375 feet. Blooming period: June, August–October	N	Suitable habitat not present.
Balsamorhiza macrolepis	big-scale balsamroot	None	None	1B.2	Occasionally in serpentine soils in chaparral, cismontane woodland, and grassland. Elevation: 295–5,100 feet. Blooming period: March–June	N	Suitable habitat not present.
Blepharizonia plumosa	big tarplant	None	None	1B.1	Usually clay soils in grassland. Elevation: 95–1,655 feet. Blooming period: July–October	N	Suitable habitat not present.
Calochortus pulchellus	Mount Diablo fairy-lantern	None	None	1B.2	Chaparral, cismontane woodland, riparian woodland, grassland. 98–2,755 feet. Blooming period: April–June	N	Suitable habitat not present.
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	None	None	1B.2	Coastal scrub, dunes, and bluff scrub and north coast coniferous forest. Elevation: 0–345 feet. Blooming period: March–September	N	Suitable habitat not present.
Carex lyngbyei	Lyngbye's sedge	None	None	2B.2	Brackish or freshwater marshes and swamps. Elevation: 0–35 feet. Blooming period: April–August	N	Suitable habitat not present.
Castilleja affinis var. neglecta	Tiburon paintbrush	FE	ST	1B.2	Serpentinite grassland. Elevation: 196–1,312 feet. Blooming period: April–June (synonym of C. affinis, and C. a. ssp. neglecta)	N	Suitable habitat not present.
Ceanothus purpureus	holly-leaved ceanothus	None	None	1B.2	Volcanic and rocky soils in chaparral and cismontane woodland. Elevation: 390–2,100 feet. Blooming period: February–June	N	Suitable habitat not present.
Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None	1B.1	Alakline soils in grassland. Elevation: 0–755 feet. Blooming period: May–November	N	Suitable habitat not present.
Centromadia parryi ssp. parryi	pappose tarplant	None	None	1B.2	Often in alkaline soils in chaparral, coastal prairie, meadows, seeps, coastal salt marshes and swamps, and vernally mesic grassland. Elevation: 0–1,380 feet. Blooming period: May–November	N	Suitable habitat not present.
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	None	None	1B.2	Coastal salt marshes and swamps. Elevation: 0–35 feet. Blooming period: June–October	N	Suitable habitat not present.
Chloropyron molle ssp. molle	soft bird's-beak	FE	SR	1B.2	Coastal salt marshes and swamps. Elevation: 0–10 feet. Blooming period: June–November	N	Suitable habitat not present.
Cicuta maculata var. bolanderi	Bolander's water-hemlock	None	None	2B.1	Marshes and swamps near coast in fresh or brackish water. Elevation: 0–656 feet. Blooming period: July–September	N	Suitable habitat not present.
Cirsium andrewsii	Franciscan thistle	None	None	1B.2	Sometimes in serpentine and mesic soils in coastal scrub, prairie, and bluff scrub and broadleafed upland forest. Elevation: 0–490 feet. Blooming period: March–July	N	Suitable habitat not present.
Cirsium hydrophilum var. hydrophilum	Suisun thistle	FE	None	1B.1	Salt marshes and swamps. Elevation: 0–5 feet. Blooming period: June–September	N	Suitable habitat not present.
Dirca occidentalis	western leatherwood	None	None	1B.2	Mesic soils in broadleaf upland and riparian forests, closed-cone and north coast coniferous forests, chaparral, and cismontane and riparian woodlands. Elevation: 80–1,395 feet. Blooming period: January–April	N	Suitable habitat not present.
Downingia pusilla	dwarf downingia	None	None	2B.2	Vernal pools and mesic grassland. Elevation: 0–1,460 feet. Blooming period: March–May	N	Suitable habitat not present.
Eriogonum luteolum var. caninum	Tiburon buckwheat	None	None	1B.1	Serpentine, sandy, and gravelly soils in chaparral, cismontane woodland, coastal prairie, and grassland. Elevation: 0–2,295 feet. Blooming period: May–September	N	Suitable habitat not present.
Eriogonum truncatum	Mt. Diablo buckwheat	None	None	1B.1	Sandy soils in chaparral, coastal scrub, and grassland. Elevation: 5–1,150 feet. Blooming period: April–September (November and December)	N	Suitable habitat not present.
Eryngium jepsonii	Jepson's coyote thistle	None	None	1B.2	Clay soil in vernal pools and grassland. Elevation: 5–985 feet. Blooming period: April–August	N	Suitable habitat not present.
Extriplex joaquinana	San Joaquin spearscale	None	None	1B.2	Alkaline soils in chenopod scrub, meadows, seeps, playas, and grassland. Elevation: 0–2,740 feet. Blooming period: April–October (synonym of Atriplex joaquiniana)	N	Suitable habitat not present.
Fritillaria liliacea	fragrant fritillary	None	None	1B.2	Often in serpentine soils in cismontane woodland, grassland, coastal prairie and scrub. Elevation: 5–1,345 feet. Blooming period: February–April	N	Suitable habitat not present.
Helianthella castanea	Diablo helianthella	None	None	1B.2	Usually rocky, axonal soils, often in partial shade of broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and grassland. Elevation: 197–4,265 feet. Blooming period: March–June	N	Suitable habitat not present.
Holocarpha macradenia	Santa Cruz tarplant	FE	ST	1B.1	Often clay or sandy soils in coastal prairie, scrub, and grassland. Elevation: 30–720 feet. Blooming period: June–October	N	Suitable habitat not present.
Hoita strobilina	Loma Prieta hoita	None	None	1B.1	Usually serpentinite, mesic areas in chaparral, cismontane woodland, and riparian woodland. Elevation: 98–2,851 feet. Blooming period: May–October	N	Suitable habitat not present.
Isocoma arguta	Carquinez goldenbush	None	None	1B.1	Alkaline soils in grassland. Elevation: 0–65 feet. Blooming period: August–December	N	Suitable habitat not present.

Lasthenia conjugens	Contra Costa goldfields	FE	None	1B.1	Mesic soils in vernal pools, grassland, alkaline playas, and cismontane woodland. Elevation: 0–1,540 feet. Blooming period: March–June	N	Suitable habitat not present.
Lathyrus jepsonii var. jepsonii	Delta tule pea	None	None	1B.2	Freshwater and brackish marshes and swamps. Elevation: 0–16 feet. Blooming period: May–September	N	Suitable habitat not present.
Legenere limosa	legenere	None	None	1B.1	Vernal pools. Elevation: 0–2,885 feet. Blooming period: April–June	N	Suitable habitat not present.
Leptosiphon jepsonii	Jepson's leptosiphon	None	None	1B.2	Usually volcanic soils in chaparral, cismontane woodland, and grassland. Elevation: 325–1,640 feet. Blooming period: March–May	N	Suitable habitat not present.
Lilaeopsis masonii	Mason's lilaeopsis	None	SR	1B.1	Brackish or freshwater marshes and swamps, riparian scrub. Elevation: 0–33 feet. Blooming period: April–November	N	Suitable habitat not present.
Limosella australis	Delta mudwort	None	None	2B.1	Usually mud banks in freshwater or brackish marshes and swamps, riparian scrub. Elevation: 0–9 feet. Blooming period: May–August	N	Suitable habitat not present.
Malacothamnus hallii	Hall's bush-mallow	None	None	1B.2	Chaparral and coastal scrub. Elevation: 30–2,495 feet. Blooming period: April–October	N	Suitable habitat not present.
Meconella oregana	Oregon meconella	None	None	1B.1	Coastal scrub and prairie. Elevation: 820–2,035 feet. Blooming period: March–April	N	Suitable habitat not present.
Navarretia gowenii	Lime Ridge navarretia	None	None	1B.1	Chaparral. Elevation: 590–1,000 feet. Blooming period: May–June	N	Suitable habitat not present.
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	FE	SE	1B.1	Inland dunes. Elevation: 0–100 feet. Blooming period: March–September	N	Suitable habitat not present.
Puccinellia simplex	California alkali grass	None	None	1B.2	Alkaline and vernal mesic soils in sinks, flats, and lake margins of chenopod scrub, meadows, seeps, grassland, and vernal pools. Elevation: 5–3,050 feet. Blooming period: March–May	N	Suitable habitat not present.
Senecio aphanactis	chaparral ragwort	None	None	2B.2	Chaparral, cismontane woodland, coastal scrub, and alkaline flats. Elevation: 49–2,624 feet. Blooming period: January–April	N	Suitable habitat not present.
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	None	None	1B.2	Alkaline soils in meadows, seeps, marshes and swamps. Elevation: 0–835 feet. Blooming period: February–May	N	Suitable habitat not present.
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	None	None	1B.2	Serpentinite in chaparral, cismontane woodland, grassland. Elevation: 311–3,281 feet. Blooming period: March–October	N	Suitable habitat not present.
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	None	None	2B.2	Shallow freshwater marshes and swamps. Elevation: 980–7,055 feet. Blooming period: May–July	N	Suitable habitat not present.
Suaeda californica	California seablite	FE	None	1B.1	Coastal salt marshes and swamps. Elevation: 0–50 feet. Blooming period: July–October	N	Suitable habitat not present.
Symphyotrichum lentum	Suisun Marsh aster	None	None	1B.2	Brackish and freshwater marshes and swamps. Elevation: 0–9 feet. Blooming period: (April)May–November (synonym of Aster chilensis var. lentus and A. lentus)	N	Suitable habitat not present.
Trifolium amoenum	two-fork clover	FE	None	1B.1	Coastal bluff scrub and grassland that sometimes have serpentine soils. Elevation: 15–1,360 feet. Blooming period: April–June	N	Suitable habitat not present.
Trifolium hydrophilum	saline clover	None	None	1B.2	Marshes, swamps, vernal pools, and grassland with mesic or alkaline soils. Elevation: 0–985 feet. Blooming period: April–June	N	Suitable habitat not present.
Viburnum ellipticum	oval-leaved viburnum	None	None	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation: 705–4,595 feet. Blooming period: May–June	N	Suitable habitat not present.

Sources:

Source for all plant species habitat characteristics with a CRPR value is: California Native Plant Society (CNPS). 2019 (INSERT DATE). Inventory of Rare and Endangered Plants (online edition, v8-03). Sacramento, CA: CNPS. http://www.rareplants.cnps.org/.

Jepson Flora Project. 2018 (September 21, Revision 6). Jepson eFlora. Berkeley, CA: The Jepson Herbarium. http://ucjeps.berkeley.edu/eflora/.

Plant Nomenclature and Listing Status: California Department of Fish and Wildlife (CDFW). 2019 (March). Special Vascular Plants, Bryophytes, and Lichens List. Sacramento, CA: CDFW, Natural Heritage Division.

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; CRPR: California Rare Plant Rank

Species Status:

Federal (USFWS and USDA)	State (CDFW)
FE Endangered	SE Endangered
FT Threatened	ST Threatened
FC Federal Candidate Species	SR Rare
FSS Forest Service Sensitive	
WL Watch List	

CNPS Rare Plant Ranks:

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 more common elsewhere

2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3 Plants about which we need more information - review list

4 Plants of limited distribution - watch list

CRPR Threat Code Extension:

None Plants lacking any threat information

.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)

.2 Moderately threatened in California (20–80% of occurrences threatened; moderate degree and immediacy of threat)

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

Scientific Name	Common Name	Federal	State	Habitat Characteristics	Species Analyzed	Rationale	Citation
Invertebrates							
Bombus occidentalis	western bumble bee	None	SCE	Open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Typically nests underground in abandoned rodent burrows, such as old squirrel or other animal nests, and in open west-southwest slopes bordered by trees, although a few nests have been reported from above-ground locations such as in logs among railroad ties. Availability of nest sites may depend on rodent abundance (Xerces 2014).	N	No, all work done in developed or highly highly disturbed areas.	Xerces. 2014. Jepsen, S. & Foltz Jordan, S. Species Fact Sheet. Bombus occidentalis. Xerces Society for Invertebrate Conservation.
Branchinecta lynchi	vernal pool fairy shrimp	FT	None	Endemic to the grasslands of the Central Valley and the Central and South Coast Range mountains California, and the Agate Desert of southern Oregon. Found only in cool water vernal pools and vernal pool-like habitats; does not occur in riverine, marine, or other permanent bodies of water (USFWS 2007	N	Suitable habitat not present.	USFWS. 2007. Vernal Pool Fairy Shrimp (Branchinecta lynchi) 5-Year Review: Summary and Evaluation. USFWS; Sacramento, CA.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	None	Dependent on host plant, elderberry (*Sambucus* spp.), which most commonly grows in riparian woodlands, but also in some upland habitats such as oak savannas and annual grasslands. Current presumed range in Central Valley extends from Shasta County south to Fresno County, including the valley floor and lower foothills up to about 500 feet in elevation (USFWS 2017)	N	Suitable habitat not present.	USFWS. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus). USFWS; Sacramento, CA.
Speyeria callippe callippe	callippe silverspot	FE	None	Found on grassy hilltops in coastal scrub habitats. Historically, was known to occur in grassland habitats across all seven counties bordering San Francisco Bay. Has been extirpated from much of this historic range, and is now known only from a few locations in San Mateo, Alameda, Sonoma, and Solano Counties. Host plant is California golden violet *Viola pedunculata*). (USFWS 2019).	N	Suitable habitat not present.	USFWS. 2019. Callippe Silverspot Butterfly Species Information. Available at: https://www.fws.gov/sacramento/es_species/Accounts/Invertebrates/callippe_silverspot_butterfly
Syncaris pacifica	California freshwater shrimp	FE	SE	Found only in Marin, Napa, and Sonoma Counties in shallow pools (12 to 36 inches) of low elevation (below 3 feet), low gradient (less than 1%) streams with exposed live roots of trees along undercut banks (greater than 6 inches) (USFWS 2017).	N	Suitable habitat not present.	USFWS. 2017. Endangered Species Accounts. USFWS; Sacramento. Available online: https://www.fws.gov/sacramento/es_species/Accounts/Invertebrates/ca_freshwater-shrimp/
Fish							
Acipenser medirostris	green sturgeon (southern DPS)	FT	SSC	Spawning occurs primarily in the Sacramento River, but those that spawn in the Feather and Yuba Rivers a also part of the southern DPS. Oceanic waters, bays, and estuaries during non-spawning season. Enters San Francisco Bay late winter through early spring, and spawn occurs from April through early July. Spawn in cool sections of river mainstems in deep pools containing small to medium-sized gravel, cobble, or boulder substra (NMFS 2015).	N	No in-water work is planned as part of the proposed project.	NMFS. 2015. Southern Distinct Population Segment of the North American Green Sturgeon (Acipenser medirostris) 5-Year Review: Summary and Evaluation. NMFS; Long Beach, CA.
Acipenser transmontanus	white sturgeon	None	SSC	Salt water from Ensenada to Alaska. Spawn in large river systems along the west coast. Currently, se sustaining populations only occur in the Sacramento, Columbia, and Fraser Rivers. Spawn in large, deep pools (Moyle 2002).	N	No in-water work is planned as part of the proposed project.	Moyle, P. B. 2002. Inland fishes of California. Revised and expande University of California Press, Berkeley. xv + 502 pp.
Entosphenus tridentatus	Pacific lamprey	None	SSC	Cold, clear water for spawning and incubation. Peak spawning appears to be closely tied to water temperatur that are suitable for early development, but can occur at temperatures above 72ºF. Adults use gravel areas to build nests, while ammocoetes need soft sediments in which to burrow during rearing. Nests are generally associated with cover, including gravel and cobble substrates, vegetation and woody debris. Ammocoetes burrow into larger substrates as they grow. Ammocoetes also need detritus that produces algae for food and habitats with slow or moderately slow water velocities, such as low gradient riffles, pool tailouts and lateral sca pools (CDFW 2015).	N	No in-water work is planned as part of the proposed project.	CDFW. 2015. Fish Species of Special Concern Accounts, 3rd Edition. Available online: https://www.wildlife.ca.gov/Conservation/SSC/Fishes
Hypomesus transpacificus	delta smelt	FT	SE	Endemic to open waters of San Francisco Bay and Sacramento-San Joaquin River Delta. Distribution includ San Pablo Bay up through Suisun Bay, upstream through the delta to the Sacramento River below Isleton, and the San Joaquin River below Mossdale. Spawning has not been observed in the wild, but is thought to take place in sloughs and shallow edge-water channels in the upper delta and in Montezuma Slough near Suisun Bay. (USFWS 2010).	N	No in-water work is planned as part of the proposed project.	USFWS. 2010. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to Reclassify the Delta Smelt from Threatened to Endangered throughout its Range. USFWS; Sacramento CA.
Lampetra ayresii	river lamprey	None	SSC	Occurs in the Sacramento-San Joaquin River systems, although it likely occurs elsewhere. Small lampreys that spend most of their lives in freshwater, with about 3 to 4 months in salt water. Adults migrate into freshwater f spawning in autumn (Moyle 2002).	N	No in-water work is planned as part of the proposed project.	Moyle, P. B. 2002. Inland fishes of California. Revised and expande University of California Press, Berkeley. xv + 502 pp. | Moyle, P. B., R. m. Yoshiyama, J. E. Williams, and E. D. Wikramanayake. 1995. Fish species of special concern in California. Second Edition
Lavinia exilicauda exilicauda	Sacramento hitch	None	SSC	Has a scattered distribution within the Central Valley, from the Tulare Lake Basin to Shasta Reservoir (Moyle 2002).	N	No in-water work is planned as part of the proposed project.	Moyle, P. B. 2002. Inland fishes of California. Revised and expande University of California Press, Berkeley. xv + 502 pp. | Moyle, P. B., R. m. Yoshiyama, J. E. Williams, and E. D. Wikramanayake. 1995. Fish species of special concern in California. Second Edition
Oncorhynchus mykiss irideus (pop. 8)	steelhead (central California coast DPS)	FT	None	Includes naturally spawned anadromous steelhead originating below natural and manmade impassable barriers from the Russian River to and including Aptos Creek, and all drainages of San Francisco and San Pablo Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. Also, steelhead from two artificial propagation programs: Don Clausen Fish Hatchery Program and Kingfisher Flat Hatchery Program (Monterey Bay Salmon and Trout Project). Spawning habitat includes gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning habitat includes estuarine and marine waters (NOAA 2019).	N	No in-water work is planned as part of the proposed project.	NOAA. 2019. NOAA Fisheries, West Coast Region, Protected Species Accounts. Available online: https://archive.fisheries.noaa.gov/wcr/protected_species/salmon_steelhead/salmon_and_steelhead_listings/steelhead/central_california_coast/central_california_coast_steelhead.html
Oncorhynchus mykiss irideus (pop. 11)	steelhead (central valley DPS)	FT	None	Includes naturally spawned anadromous steelhead originating below natural and manmade impassable barri from the Sacramento and San Joaquin Rivers and their tributaries; excludes such fish originating from San Francisco and San Pablo Bays and their tributaries. This DPS does include steelhead from two artificial propagation programs: Coleman National Fish Hatchery Program and Feather River Fish Hatchery Program. Spawning habitat includes gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning habitat includes estuarine and marine waters (NOAA 2019	N	No in-water work is planned as part of the proposed project.	NOAA. 2019. NOAA Fisheries, West Coast Region, Protected Species Accounts. Available online: https://archive.fisheries.noaa.gov/wcr/protected_species/salmon_steelhead/salmon_and_steelhead_listings/steelhead/california_central_valley/california_central_valley_steelhead.html
Oncorhynchus mykiss irideus (pop. 16)	steelhead (northern California DPS)	FT	None	Includes naturally spawned anadromous steelhead originating below natural and manmade impassable barriers in California coastal river basins from Redwood Creek to and including the Gualala River. Spawning habitat includes gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning habitat includes estuarine and marine waters (NOAA 2019).	N	No in-water work is planned as part of the proposed project.	NOAA. 2019. NOAA Fisheries, West Coast Region, Protected Species Accounts. Available online: https://archive.fisheries.noaa.gov/wcr/protected_species/salmon_steelhead/salmon_and_steelhead_listings/steelhead/northern_california_coast/northern_california_coast_steelhead.htn
Oncorhynchus tshawytscha (pop. 6)	chinook salmon (Central Valley spring-run ESU)	FT	ST	Currently found in the Sacramento-San Joaquin River Delta, the Sacramento River and its tributaries, includir American, Yuba and Feather Rivers, and Mill, Deer, and Butte Creeks. The numbers of adults are dependent on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures greater than 80°F are lethal to adults (NMFS 2016)	N	No in-water work is planned as part of the proposed project.	NMFS. 2016. 5-Year Review: Summary and Evaluation of Central Valley Spring-run Chinook Salmon ESU. NMFS; Long Beach, CA.
Oncorhynchus tshawytscha (pop. 7)	chinook salmon (Sacramento River winter-run ESU)	FE	SE	Currently found in the Sacramento River below Keswick Dam. Spawns in the Sacramento River but not il tributaries. Requires clean, cold water over gravel beds with water temperatures between 42 and 57°F for spawning (NMFS 2011).	N	No in-water work is planned as part of the proposed project.	NMFS. 2011. 5-Year Review: Summary and Evaluation o Sacramento River Winter-run Chinook Salmon ESU. NMFS; Long Beach, CA.
Oncorhynchus tshawytscha (pop. 13)	chinook salmon (Central Valley fall / late fall-run ESU)	None	SSC	Currently found primarily in the Sacramento River, where most spawning and rearing of juveniles takes place the reach between Red Bluff Diversion Dam and Redding's Keswick Dam. The specific habitat requirements of late fall-run chinook salmon have not been determined but they are presumably similar to other Central Valley chinook salmon runs. It is believed that optimal conditions fall within the range of physical and chemical characteristics of the unimpaired Sacramento River above Shasta Dam (CDFW 2015	N	No in-water work is planned as part of the proposed project.	CDFW. 2015. Fish Species of Special Concern Accounts, 3rd Edition. Available online: https://www.wildlife.ca.gov/Conservation/SSC/Fishes
Pogonichthys macrolepidotus	Sacramento splittail	None	None	Splittail depend both on brackish-water rearing habitats in the San Francisco Estuary and on floodplain and ri edge spawning habitats immediately above the estuary (CDFW 2015).	N	No in-water work is planned as part of the proposed project.	CDFW. 2015. Fish Species of Special Concern Accounts, 3rd Edition. Available online: https://www.wildlife.ca.gov/Conservation/SSC/Fishes
Spirinchus thaleichthys	longfin smelt	FCT	ST	Considered pelagic and anadromous, though anadromy in this species is poorly understood, and certain populations are not anadromous, completing their life cycle in freshwater lakes and streams (USFWS 2012).	N	No in-water work is planned as part of the proposed project.	USFWS. 2012. Endangered and Threatened Wildlife and Plants; 12 month Finding on a Petition to List the San Francisco Bay-Delta Population of the Longfin Smelt as Endangered or Threatene
Amphibians							
Ambystoma californiense	California tiger salamander	FT	ST	Breeds in fish-free ephemeral ponds which form in winter and dry in summer. Some also breed in slow stream and semi-permanent waters, including cattle ponds. Spends most of the year underground in small mammal burrows, especially those of California ground squirrel(*Otospermophilus beecheyi*). Typical habitat associations include grassland, oak savanna, edges of mixed woodland, and lower elevation coniferous forest (Nafis 2020).	N	Suitable habitat not present.	Nafis, Gary. 2020. California Herps: A Guide to Reptiles and Amphibians of California. Available online: http://www.californiaherps.com/

Rana boylii	foothill yellow-legged frog	None	SE (Central Coast, S	Ranges in the northern half of California except for the Central Valley, Modoc Plateau, and eastern side of t Sierra Nevada Mountains. Generally found in shallow flowing streams and rivers with at least cobble sized substrate. Breeding generally occurs at the margins of wide shallow channels with reduced flow variation near tributary confluences. Specifically, egg masses are placed in low flow locations on or under rocks with preferr substrates being boulders, cobbles, or gravel. Eggs have been found at depths to 34 inches in water velocities of 0 - 0.69 feet per second and at most 40 feet from shore. Maximum water temperature for breeding is 79oF and 48 to 70oF is the preferred range. Tadpoles avoid areas below 55oF and prefer temperatures between 62oF and 72.oF (Thomson et al. 2016)	N	Suitable habitat not present.	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.
Rana draytonii	California red-legged frog	FT	SSC	Ponds and streams in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cove in lowlands or foothills. Breeding habitat includes permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. Occurs from sea level to 5,000 feet in elevation. Occurs along the Coast Ranges from Mendocino County south to northern Baja California, and inland across the northernmost reaches of the Sacramento Valley and locally south through portions of the Sierra Nevada foothills as far south as northern Tulare County (Nafis 2020	N	Suitable habitat not present.	Nafis, Gary. 2020. California Herps: A Guide to Reptiles and Amphibians of California. Available online: http://www.californiaherps.com/
Taricha torosa	Coast Range newt	None	SSC	Ranges along the coast from Monterey to Ventura County and Los Angeles to San Diego County with son occurrences in southwestern Riverside County. The population north of Ventura generally occurs in mesic forests on hilly or mountainous terrain. Populations around and south of Ventura generally occur in drier oak, chaparral, and grassland habitats. Specifically, the southern population uses permanent streams for breeding, and occasionally seasonal streams free of non-native fish (Thomson et al. 201(	N	Suitable habitat not present.	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA.
Reptiles							
Anniella pulchra	Northern California legless lizard	None	SSC	Generally found in habitats with a relatively sparse amount of vegetation including coastal sand dune chaparral, pine-oak woodland, desert scrub, grassland, and riparian zones. Specifically, requires sandy to loose loamy substrates suitable for burrowing, and avoids areas with gravel or larger sized substrates and those with greater than 10% clay content. Also tends to avoid non-native grasslands, iceplant fields, and other non-native dominated herbaceous communities (Thomson et al. 2016). Occurs from the southern edge of the San Joaquin River in northern Contra Costa County south to Ventura County, south of which there is a wide area where the species of Anniella is or are unknown. Occurs in scattered locations in the San Joaquin Valley, along the southern Sierra Nevada Mountains, on the desert side of the Tehachapi Mountains, and part of the San Gabriel Mountains. Two melanistic or dusky populations occur. One is in coastal dunes from Morro Bay south to the mouth of the Santa Maria River in San Luis Obispo County. The other, recognized as Anniella pulchra nigra, occurs in beach dunes on the Monterey Peninsula and on the southern coast of Monterey Bay south of the Salinas River in Monterey County (Nafis 2020)	N	Suitable habitat not present.	Thomson, Robert C., Wright, Amber N., and Shaffer H. Bradley. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press Berkeley, CA. | Nafis, Gary. 2020. California Herps: A Guide to Reptiles and Amphibians of California. Available online: http://www.californiaherps.com/
Birds							
Agelaius tricolor	tricolored blackbird	None	CT, SSC	Mostly a year-round resident in California. Common locally throughout Central Valley and in coastal distric from Sonoma County south. Breeds locally in northeastern California. In winter, becomes more widespread along the central coast and San Francisco Bay area, and can be found in portions of the Colorado Desert (Hamilton 2004). Preferred nesting habitat includes cattails (*Typha* spp.), bulrushes (*Schoenoplectus* spp.), Himalayan blackberry (*Rubus armeniacus*), and agricultural silage. Dense vegetation is preferred but heavily lodged cattails not burned in recent years may preclude settlement. Need access to open water. Strips of emergent vegetation along canals are avoided as nest sites unless they are about 30 feet or more wide but in some ponds, especially where associated with Himalayan blackberries and deep water, settlement may be in narrower fetches of cattails. (CDFW 2020).	N	Suitable habitat not present. Emergent vegetation along channel south of proposed project area not sufficient to support nesting colonies.	Hamilton, W. J. 2004. Tricolored Blackbird (Agelaius tricolor). In The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. | CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Ammodramus savannarum	grasshopper sparrow	None	SSC	Nests in a variety of grassland habitats throughout much of the Central Valley, Coast Range Mountains, and t Inland Empire region. Prefers short to middle-height, moderately open grasslands with scattered shrubs. Avoi areas with high shrub cover (Shuford and Gardali 2008).	N	Suitable habitat not present.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Anser albifrons elgasi	tule greater white-fronted goose	None	SSC	Does not nest in California. Present in California as a migrant and winter resident (mainly September through April) in southeast Glenn County, northeast Colusa County, south central Solano County, the Sacramento-San Joaquin River Delta, and the region where Napa, Solano, and Sonoma Counties meet. Generally found in marshes dominated by cattails and bulrush (Shuford and Gardali 2008).	N	Species does not nest in California.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Aquila chrysaetos	golden eagle	BGEPA	FP	Uncommon resident in hills and mountains throughout California, and an uncommon migrant and winter resident in the Central Valley and Mojave Desert. Prefers rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, cliffs, and rock outcrops. (CDFW 2020).	N	Suitable habitat not present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Asio flammeus	short-eared owl	None	SSC	Found in open, treeless areas with elevated sites for perches, and dense vegetation for roosting and nestin Associated with perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emerge wetlands. Breeds in coastal areas in Del Norte and Humboldt Counties, San Francisco Bay Delta, northeastern Modoc plateau, east Sierras from Lake Tahoe to Inyo County and San Joaquin Valley. Winters in the Central Valley, western Sierra Nevada foothills and along the coastline (CDFW 202(	N	Suitable habitat not present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Athene cunicularia	burrowing owl	None	SSC	Resident in much of the state in open, dry grasslands and various desert habitats. Requires open areas wi mammal burrows; especially those of California ground squirrel (*Otospermophilus beecheyi*) Inhabits rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub, vacant lots and other open human disturbed lands such as airports and golf courses. Absent from northwest coast and elevations above 5,500 feet (CDFW 2020).	Y	Suitable habitat may be present near staging areas.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Buteo swainsoni	Swainson's hawk	None	ST	Nests in oak savanna and cottonwood riparian areas adjacent to foraging habitat of grasslands, agricultu fields, and pastures where they often follow farm equipment to gather killed and maimed rodents. Increasingly also nests in sparse stands of gum trees (*Eucalyptus* spp.) and Australian pines (*Casuarina equisetifolia*) and often forage along roadsides and grassy highway medians. Breeding resident in the Central Valley, Klamath Basin, Northeastern Plateau, and in juniper-sagebrush flats of Lassen County. Limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley. Winters primarily in Argentina, with most birds absent from California October through February, though a few overwinter in the Sacramento-San Joaquin River Delta. Prolific migrant through southern California in spring and fall, with large mixed-age groups of birds frequently observed kettling high overhead on thermals or foraging together on freshly cut agricultural fields (CDFW 2020).	N	Proposed project area is outside of known breeding range.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Charadrius montanus	mountain plover	None	SSC	Does not nest in California. Present in the state November through March in open grasslands and plowed fiel with no or very short vegetation. Found in flocks mostly on the west side of the Central Valley from Colusa County south to Kern County, Carrizo Plain, Antelope Valley, Imperial Valley, and western Riverside County. Single individuals are rarely found on beaches or offshore islands (CDFW 202(	N	Species does not nest in California.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Charadrius nivosus nivosus	western snowy plover	FT	SSC	Coastal populations nest on sandy or gravelly dune-backed beaches, sand spits, and on estuarine salt pans and lagoons (USFWS 2005). Inland populations nest along barren to sparsely vegetated flats and along shores of alkaline and saline lakes, reservoirs, ponds, braided river channels, agricultural wastewater ponds, and salt evaporation ponds (Shuford and Gardali 2008). Inland nesting occurs at Salton Sea, Mono Lake, and isolated sites on the shores of alkali lakes in northeastern California, the Central Valley, and southeastern deserts (CDFW 2020).	N	Suitable habitat not present.	USFWS. 2005. Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover (Charadrius alexandrinus nivosus). Federal Register Vol. 70 (188): 56969-57018 | Shuford, W.D. and Gardali, T., editors. 2008. California Bird Species of Special Concern | CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA

Circus hudsonius	northern harrier	None	SSC	Nests on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in a variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats, and desert sinks (Shuford and Gardali 2008).	Y	Suitable habitat may be present along Napa River and tributaries.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Coturnicops noveboracensis	yellow rail	None	SSC	Nests in sedge marshes and meadows with moist soil or shallow standing water. Winters in wet meadows an tidal marshes. Much is unknown about the abundance and distribution of this species because it is extremely secretive and difficult to detect. Has been found nesting on the Modoc Plateau and in Plumas and Lassen Counties. Very rarely detected in migration, and recorded in winter at a very few sites scattered along the coa though seemingly regular at Tomales Bay in Marin County and Arrowhead Marsh in Alameda County (Shuford and Gardali 2008).	N	Suitable habitat not present	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Elanus leucurus	white-tailed kite	None	FP	Fairly common resident of the Central Valley, coast, and Coast Range Mountains. Nests in oak savanna, o and willow riparian, and other open areas with scattered trees near foraging habitat. Forages in open grasslands, meadows, farmlands, and emergent wetlands. Often seen hover foraging over roadsides or grassy highway medians (CDFW 2020).	Y	Suitable habitat may be present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, C
Empidonax traillii	willow flycatcher	None	SE	Uncommon summer resident in wet meadows and montane riparian habitats from 2,000 to 8,000 feet in elevation in the Sierra Nevada and Cascade Ranges. Most numerous where extensive thickets of low, dense willows (Salix spp.) edge on wet meadows, ponds, or backwaters (CDFW 2020).	N	Proposed project area is outside of known species range.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, C
Falco peregrinus anatum	American peregrine falcon	None	FP	Breeds near wetlands, lakes, rivers, or other waters on cliffs, banks, dunes or mounds, mostly in woodland, forest, and coastal habitats. Nest is a scrape on a depression or ledge in an open site. May use man-made structures (such as bridges, skyscrapers, or electrical towers), large snags, or trees for nesting (CDFW 2020).	Y	Suitable habitat may be present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, C
Geothlypis trichas sinuosa	San Francisco common yellowthroat	None	SSC	Dwells only in the San Francisco Bay Area. Primarily found in brackish and fresh marshes, but also occupies salt marsh and riparian woodland habitat. (Shuford and Gardali 2008).	N	Suitable habitat not present	Shuford, W.D. and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
Haliaeetus leucocephalus	bald eagle	BGEPA	SE, FP	Permanent resident in the highest Coast Range mountains, across the Cascade Range, and down the Sier Nevada to the eastern Transverse Ranges of San Bernardino and Riverside Counties. Uncommon migrant and winter visitor to lowland rivers, lakes, and reservoirs. Nests in large, old-growth, or dominant live trees with op branchwork, especially ponderosa pine (*Pinus ponderosa*). Requires large bodies of water or rivers with abundant fish, and adjacent snags (CDFW 2020).	N	Suitable habitat not present	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Icteria virens	yellow-breasted chat	None	SSC	Nests in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow borders of streams, creeks, sloughs, and rivers. Often nest in dense thickets of blackberry (*Rubus* spp.) and willow (*Salix* spp.) (Shuford and Gardali 2008).	N	Suitable habitat may be present.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Lanius ludovicianus	loggerhead shrike	None	SSC	Shrublands and open woodlands with a fair amount of grass cover and areas of bare ground. Requires tall shrubs or trees, fences, or power lines for hunting perches and territorial advertisement. Also requires open areas of short grasses, forbs, or bare ground for hunting, large shrubs or trees for nest placement, and thorny vegetation or barbed wire fences for impaling prey. Ranges across most of the state, but absent from the highest mountains and the northwest forests and coast (Shuford and Gardali 2008).	Y	Suitable habitat may be present.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Laterallus jamaicensis coturniculus	California black rail	None	ST, FP	Saline, brackish, and fresh emergent wetlands. Scarce, but true abundance difficult to determine due to sma size and extremely secretive nature. Known to nest at scattered locations in the San Francisco Bay Area and Delta region, Point Reyes National Seashore, San Luis Obispo and Orange Counties, as well as the Imperial and Lower Colorado River Valleys. Appears intermittently and sparingly at a few locations in the Sacramento Valley (CDFW 2020).	N	Suitable habitat not present	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Melospiza melodia	song sparrow (Modesto population)	None	SSC	Often found in emergent freshwater marshes dominated by bulrushes, cattails, and willow. Also nests in riparian forests of valley oak (*Quercus lobata*) with a sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. Found throughout the Sacramento Valley, from the delta north to Chico (Shuford and Gardali 2008).	N	Proposed project area is outside of known species range.	Shuford, W.D. and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
Melospiza melodia maxillaris	Suisun song sparrow	None	SSC	Confined to tidal salt and brackish marshes fringing Carquinez Strait and Suisun Bay east to Antioch and the confluence of the San Joaquin and Sacramento Rivers (Shuford and Gardali 2008).	N	Proposed project area is outside of known species range.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Melospiza melodia pusillula	Alameda song sparrow	None	SSC	Restricted to tidal salt marshes, mainly on the fringes of south San Francisco Bay with strongholds near Milpitas and in the Palo Alto Baylands, though a few persist within San Francisco city limits and as far north as El Cerrito in Contra Costa County (Shuford and Gardali 2008).	N	Proposed project area is outside of known species range.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Melospiza melodia samuelis	San Pablo song sparrow	None	SSC	Restricted to tidal salt marshes, mainly on the fringes of the San Pablo Bay portion of the San Francisco Bay estuary from as far north as Napa and Sonoma to as far south as Sausalito (Shuford and Gardali 2008).	N	Degraded salt marsh habitat is present adjacent to the proposed staging areas along the Napa River an its tributaries; however, these areas are small in size, isolated from surrounding habitat, and occur outside of the proposed project area	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	SSC	Ranges along the coast from Humboldt County to Santa Barbara County in low tidally influenced habitats and adjacent ruderal areas, moist grasslands within and just above the fog belt, and infrequently, drier grasslands (Shuford and Gardali 2008).	N	Degraded salt marsh habitat is present adjacent to the proposed staging areas along the Napa River an its tributaries; however, these areas are small in size, isolated from surrounding habitat, and occur outside of the proposed project area	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
Pelecanus erythrorhynchos	American white pelican	None	SSC	In California, nests almost exclusively in large lakes in the Klamath Basin region. On migration and over winter, occurs across much of the state in open wetlands and sheltered bays and lagoons. Nests on ground on earthen, sandy, and rocky islands or rarely on peninsulas or floating tule mat islands. Nests may be in the open in the sand or interspersed with or adjacent to tall weeds and open, low-stature shrubs. Roosts along water edges, beaches, sandbars, or old drift wood (Shuford and Gardali 2008).	N	Suitable habitat not present	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento

Rallus obsoletus obsoletus	California Ridgway's rail	FE	SE, FP	Restricted to tidal marshes on the fringes of San Pablo Bay, San Francisco Bay, Monterey Bay, and Morro Ba Requires intricate network of sloughs with small natural berms along tidal channels, preferably with cordgrass (*Spartina* spp.) and pickleweed (*Salicornia* spp.) (USFWS 2017).	N	Suitable habitat not present.	USFWS. 2017. Bay Delta Fish & Wildlife Office, Species Accounts, California Ridgway's Rail (formerly California Clapper Rail). Available online: https://www.fws.gov/sfbaydelta/EndangeredSpecies/Species/Accoun ts/ClapperRail/ClapperRail.htn
Riparia riparia	bank swallow	None	ST	A colonial nester in riparian and lacustrine bluffs or cliffs with fine-textured or sandy soils into which the ne cavities are dug. Also nests in earthen banks as well as sand and gravel pits. Declined drastically in the state over the 20th Century due to loss of riparian habitat and stabilization of natural banks. Currently most numero in the Sacramento Valley along the Sacramento, Feather, and American Rivers, and Cache Creek in western Yolo County. Scarce and very local on the central coast. Occurs elsewhere in the state as an uncommon to rare migrant (CDFW 2020).	N	Suitable habitat not present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Setophaga petechia	yellow warbler	None	SSC	Usually found in riparian deciduous habitats in summer: cottonwoods, willows, alders (*Alnus* ssp.), and other small trees and shrubs typical of low, open-canopy riparian woodland. Also breeds in montane shrubbery in open coniferous forests (CDFW 2020).	N	Suitable habitat not present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Sternula antillarum browni	California least tern	FE	SE, FP	Breeds on the coast from San Francisco Bay south, and rarely up through the Delta to Sacramento County ar at the Salton Sea. Nests and roosts in colonies on fine-grain sandy or pebbly beaches, or in smaller numbers on pebbly levees at water treatment plants or evaporation ponds. Forages over near shore ocean waters and in shallow estuaries and lagoons (USFWS 2006)	N	Suitable habitat not present.	USFWS. 2006. California Least Tern 5-Year Review: Summary and Evaluation. USFWS; Carlsbad, CA.
Xanthocephalus xanthocephalus	yellow-headed blackbird	None	SSC	Nests in fresh marshes with tall, emergent vegetation such as bulrushes and cattails adjacent to deep water (Shuford and Gardali 2008).	N	Suitable habitat not present.	Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento
Mammals							
Antrozous pallidus	pallid bat	None	SSC	Ranges across nearly all of California except for high elevation portions of the Sierra Nevada Mountains and t Norte, western Siskiyou, Humboldt, and northern Mendocino Counties. Generally found in a wide variety of habitats but with some preference for drier areas. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings (CDFW 2020)	Y	Suitable habitat may be present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Corynorhinus townsendii	Townsend's big-eared bat	None	SSC	Ranges throughout California except for high elevation portions of the Sierra Nevada Mountains. Genera prefers mesic habitats but known to occur in all non-alpine habitats of California. Roosting occurs in caves, tunnels, mines, buildings, or other structures and this species may use different roosting sites for day and night (CDFW 2020).	N	Suitable habitat not present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Lasiurus blossevillii	western red bat	None	SSC	Ranges across the Central Valley, as well as the coast and Coast Range mountains from Mendocino Coun south, and east across the Los Angeles area into the Inland Empire region. Occurs in most habitats except desert and alpine areas. Roosts in trees, sometimes shrubs, and typically at the margins of habitats (CDFW 2020).	N	Suitable habitat not present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Microtus californicus sanpabloensis	San Pablo vole	None	SSC	Marshes adjacent to the southeastern part of San Pablo Bay, northwest of Richmond and west of San Pablo (Thaeler 1961).	N	Degraded salt marsh habitat is present adjacent to the proposed staging areas along the Napa River an its tributaries; however, these areas are small in size, isolated from surrounding habitat, and for the most part only support patchy, scattered vegetation, precluding the presence of this species.	Thaeler, C. S., Jr. 1961. Variation in some salt-marsh populations of Microtus californicus. Univ. California Publ. Zool. 60(2):67-94)
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	None	SSC	Found throughout the San Francisco Bay area in grasslands, scrub and wooded areas with evergreen / live oaks (Quercus spp.) and other thick-leaved trees and shrubs. Houses are typically placed on the ground, against or straddling a log or exposed roots of a standing tree, and are often located in dense brush. Nests are also placed in the crotches and cavities of trees and in hollow logs. Sometimes arboreal nests are constructed but this behavior seems to be more common in habitat with evergreen / live oak trees (Kelly 1990).	N	Suitable habitat not present.	Kelly, P. A. 1990. Population ecology and social organization of dusky-footed woodrats, Neotoma fuscipes . Ph.D. dissertation, Univ of California, Berkeley, 191 pp.
Nyctinomops macrotis	big free-tailed bat	None	SSC	Found in rugged, rocky terrain up to 8,000 feet in elevation in New Mexico, southern Arizona, and Texas whe it is probably a yearlong resident. Rare in California, and probably does not breed in the state. Many individuals wander widely in autumn, resulting in records far out of the normal range. Records of the species are from urban areas of San Diego County and vagrants found in fall and winter. A probable vagrant was collected in Alameda County but this record is suspect (CDFW 2020)	N	Suitable habitat not present.	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, CA
Reithrodontomys raviventris	salt-marsh harvest mouse	FE	SE, FP	Salt and brackish marshes with dense stands of pickleweed (*Salicornia pacifica*) adjacent to upland, salt-tolerant vegetation in the San Francisco, San Pablo, and Suisun Bay areas (USFWS 2010).	N	Degraded salt marsh habitat is present adjacent to the proposed staging areas along the Napa River an its tributaries; however, these areas are small in size, isolated from surrounding habitat, and for the most part only support patchy, scattered vegetation, precluding the presence of this species.	USFWS. 2010. Salt marsh harvest mouse (Reithrodontomys raviventris) 5-Year Review: Summary and Evaluation. USFWS; Sacramento CA.
Sorex ornatus sinuosus	Suisun shrew	None	SSC	Limited geographic distribution. Only occurs in tidal and brackish marsh communities along the north shore of San Pablo and Suisun bays, from Sonoma Creek and Tubbs Island, in Sonoma County on the west, eastward to Grizzly Island in Solano County (Bolster 1998).	N	Degraded salt marsh habitat is present adjacent to the proposed staging areas along the Napa River an its tributaries; however, these areas are small in size, isolated from surrounding habitat, and for the most part only support patchy, scattered vegetation, precluding the presence of this species.	Bolster, B.C., editor. 1998. Terrestrial Mammal Species of Special Concern in California. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D. Pierson, W.E. Rainey and T.E. Kucera. Report submitted to California Department of Fish and Game Wildlife Management Division.
Sorex vagrans halicoetes	salt-marsh wandering shrew	None	SSC	Based on available museum specimen records, occurred historically in salt marshes bordering the southern arm of the San Francisco Bay from San Pablo, south along the bay margin through Oakland, Hayward, and Alviso, then north through Palo Alto, Belmont, and South San Francisco. Currently, it is confined to small remnant stands of salt marsh found around the southern arm of the San Francisco Bay in San Mateo, Santa Clara, Alameda and Contra Costa counties (Bolster 1998).	N	Degraded salt marsh habitat is present adjacent to the proposed staging areas along the Napa River an its tributaries; however, these areas are small in size, isolated from surrounding habitat, and for the most part only support patchy, scattered vegetation, precluding the presence of this species.	Bolster, B.C., editor. 1998. Terrestrial Mammal Species of Special Concern in California. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D. Pierson, W.E. Rainey and T.E. Kucera. Report submitted to California Department of Fish and Game Wildlife Management Division.

Taxidea taxus	American badger	None	SSC	Ranges across nearly all of California except northernmost Humboldt and Del Norte Counties. Most abundant drier open stages of most shrub, forest, and herbaceous habitats, with friable soils (CDFW 2020).	N	Suitable habitat not present	CDFW. 2020. California Wildlife Habitat Relationships System Life History Accounts and Range Maps. Available online: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. CDFW Biogeographic Data Branch; Sacramento, C/

Sources:

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; DPS: Distinct Population Segment

Species Names and Status Follows; California Department of Fish and Wildlife. August 2019. Special Animals List. Available on-line: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals CDFW Biogeographic Data Branch. Sacramento, CA.

Species Status:

Federal (USFWS-USFS-BLM)	State (CDFW)
BGEPA Bald and Golden Eagle Protection Act	SE Endangered
FE Endangered	ST Threatened
FT Threatened	SCE Candidate Endangered
FCE Candidate Endangered	SCT Candidate Threatened
FCT Candidate Threatened	SCD Candidate for delisting
FCD Candidate for delisting	FP Fully Protected
FSS Forest Service Sensitive	SSC Species of Special Concern
BLMS Bureau of Land Management Sensitive	

Appendix D. Biological Resources Queries

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CNDDB 9-Quad Species List 509 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712281	WALNUT CREEK	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3712281	WALNUT CREEK	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3712282	BRIONES VALLEY	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812223	CUTTINGS WHARF	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812222	CORDELIA	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812213	MARE ISLAND	Mapped	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712281	WALNUT CREEK	Mapped	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Amphibians - Salamandridae - Taricha torosa
Animals - Arachnids	Microcina leei	Lee's micro-blind harvestman	ILARA47040	None	None	-	-	3712283	RICHMOND	Mapped	Animals - Arachnids - Phalangodidae - Microcina leei
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3712281	WALNUT CREEK	Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii

Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812212	BENICIA	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Accipitridae - Accipiter striatus
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712281	WALNUT CREEK	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812213	MARE ISLAND	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812221	FAIRFIELD SOUTH	Mapped	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812223	CUTTINGS WHARF	Mapped	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812212	BENICIA	Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3712281	WALNUT CREEK	Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812222	CORDELIA	Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius

Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712281	WALNUT CREEK	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812212	BENICIA	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812222	CORDELIA	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812212	BENICIA	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3812213	MARE ISLAND	Unprocessed	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3812212	BENICIA	Unprocessed	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Anser albifrons elgasi	tule greater white-fronted goose	ABNJB03043	None	None	SSC	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Anatidae - Anser albifrons elgasi
Animals - Birds	Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	WL	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Birds - Anatidae - Branta hutchinsii leucopareia
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Ardeidae - Ardea alba

Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812222	CORDELIA	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812222	CORDELIA	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Botaurus lentiginosus	American bittern	ABNGA01020	None	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Ardeidae - Botaurus lentiginosus
Animals - Birds	Botaurus lentiginosus	American bittern	ABNGA01020	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Ardeidae - Botaurus lentiginosus
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812222	CORDELIA	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax

Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812222	CORDELIA	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Charadrius alexandrinus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Charadriidae - Charadrius alexandrinus nivosus
Animals - Birds	Charadrius alexandrinus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Charadriidae - Charadrius alexandrinus nivosus
Animals - Birds	Charadrius montanus	mountain plover	ABNNB03100	None	None	SSC	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Charadriidae - Charadrius montanus
Animals - Birds	Charadrius montanus	mountain plover	ABNNB03100	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Charadriidae - Charadrius montanus
Animals - Birds	Falco columbarius	merlin	ABNKD06030	None	None	WL	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Falconidae - Falco columbarius
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3812212	BENICIA	Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3812222	CORDELIA	Mapped	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Spinus lawrencei	Lawrence's goldfinch	ABPBY06100	None	None	-	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Fringillidae - Spinus lawrencei
Animals - Birds	Spinus lawrencei	Lawrence's goldfinch	ABPBY06100	None	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Fringillidae - Spinus lawrencei
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812223	CUTTINGS WHARF	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812221	FAIRFIELD SOUTH	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812211	VINE HILL	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Xanthocephalus xanthocephalus	yellow-headed blackbird	ABPBXB3010	None	None	SSC	-	3812213	MARE ISLAND	Mapped	Animals - Birds - Icteridae - Xanthocephalus xanthocephalus

Animals - Birds	Xanthocephalus xanthocephalus	yellow-headed blackbird	ABPBXB3010	None	None	SSC	-	3712283	RICHMOND	Mapped	Animals - Birds - Icteridae - Xanthocephalus xanthocephalus
Animals - Birds	Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Icteriidae - Icteria virens
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Hydroprogne caspia	Caspian tern	ABNNM08020	None	None	-	-	3712283	RICHMOND	Mapped	Animals - Birds - Laridae - Hydroprogne caspia
Animals - Birds	Hydroprogne caspia	Caspian tern	ABNNM08020	None	None	-	-	3812223	CUTTINGS WHARF	Mapped	Animals - Birds - Laridae - Hydroprogne caspia
Animals - Birds	Sternula antillarum browni	California least tern	ABNNM08103	Endangered	Endangered	FP	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Laridae - Sternula antillarum browni
Animals - Birds	Sternula antillarum browni	California least tern	ABNNM08103	Endangered	Endangered	FP	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Laridae - Sternula antillarum browni
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3712281	WALNUT CREEK	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812213	MARE ISLAND	Mapped	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812212	BENICIA	Mapped	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Baeolophus inornatus	oak titmouse	ABPAW01100	None	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Paridae - Baeolophus inornatus
Animals - Birds	Baeolophus inornatus	oak titmouse	ABPAW01100	None	None	-	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Paridae - Baeolophus inornatus
Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Parulidae - Geothlypis trichas sinuosa
Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3812213	MARE ISLAND	Mapped	Animals - Birds - Parulidae - Geothlypis trichas sinuosa
Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Parulidae - Geothlypis trichas sinuosa
Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Birds - Parulidae - Geothlypis trichas sinuosa

Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Parulidae - Geothlypis trichas sinuosa
Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Parulidae - Geothlypis trichas sinuosa
Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia
Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Melospiza melodia	song sparrow (-inModesto- in population)	ABPBXA3010	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Melospiza melodia maxillaris	Suisun song sparrow	ABPBXA301K	None	None	SSC	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia maxillaris
Animals - Birds	Melospiza melodia maxillaris	Suisun song sparrow	ABPBXA301K	None	None	SSC	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia maxillaris
Animals - Birds	Melospiza melodia maxillaris	Suisun song sparrow	ABPBXA301K	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia maxillaris
Animals - Birds	Melospiza melodia maxillaris	Suisun song sparrow	ABPBXA301K	None	None	SSC	-	3812222	CORDELIA	Mapped	Animals - Birds - Passerellidae - Melospiza melodia maxillaris
Animals - Birds	Melospiza melodia maxillaris	Suisun song sparrow	ABPBXA301K	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped	Animals - Birds - Passerellidae - Melospiza melodia maxillaris
Animals - Birds	Melospiza melodia pusillula	Alameda song sparrow	ABPBXA301S	None	None	SSC	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia pusillula
Animals - Birds	Melospiza melodia pusillula	Alameda song sparrow	ABPBXA301S	None	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia pusillula
Animals - Birds	Melospiza melodia samuelis	San Pablo song sparrow	ABPBXA301W	None	None	SSC	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia samuelis
Animals - Birds	Melospiza melodia samuelis	San Pablo song sparrow	ABPBXA301W	None	None	SSC	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia samuelis
Animals - Birds	Melospiza melodia samuelis	San Pablo song sparrow	ABPBXA301W	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia samuelis
Animals - Birds	Melospiza melodia samuelis	San Pablo song sparrow	ABPBXA301W	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia samuelis
Animals - Birds	Melospiza melodia samuelis	San Pablo song sparrow	ABPBXA301W	None	None	SSC	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Passerellidae - Melospiza melodia samuelis
Animals - Birds	Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	ABPBX99011	None	None	SSC	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Passerellidae - Passerculus sandwichensis alaudinus

Animals - Birds	Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	ABPBX99011	None	None	SSC	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Passerellidae - Passerculus sandwichensis alaudinus
Animals - Birds	Pelecanus erythrorhynchos	American white pelican	ABNFC01010	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Pelecanidae - Pelecanus erythrorhynchos
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3812211	VINE HILL	Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3812222	CORDELIA	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3812211	VINE HILL	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3812212	BENICIA	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Rallus obsoletus obsoletus	California Ridgway's rail	ABNME05011	Endangered	Endangered	FP	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Rallidae - Rallus obsoletus obsoletus
Animals - Birds	Rallus obsoletus obsoletus	California Ridgway's rail	ABNME05011	Endangered	Endangered	FP	-	3812221	FAIRFIELD SOUTH	Mapped	Animals - Birds - Rallidae - Rallus obsoletus obsoletus

Animals - Birds	Rallus obsoletus obsoletus	California Ridgway's rail	ABNME05011	Endangered	Endangered	FP	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Birds - Rallidae - Rallus obsoletus obsoletus
Animals - Birds	Rallus obsoletus obsoletus	California Ridgway's rail	ABNME05011	Endangered	Endangered	FP	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Birds - Rallidae - Rallus obsoletus obsoletus
Animals - Birds	Rallus obsoletus obsoletus	California Ridgway's rail	ABNME05011	Endangered	Endangered	FP	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Birds - Rallidae - Rallus obsoletus obsoletus
Animals - Birds	Rallus obsoletus obsoletus	California Ridgway's rail	ABNME05011	Endangered	Endangered	FP	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Rallidae - Rallus obsoletus obsoletus
Animals - Birds	Numenius americanus	long-billed curlew	ABNNF07070	None	None	WL	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Scolopacidae - Numenius americanus
Animals - Birds	Numenius americanus	long-billed curlew	ABNNF07070	None	None	WL	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Birds - Scolopacidae - Numenius americanus
Animals - Birds	Asio flammeus	short-eared owl	ABNSB13040	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped	Animals - Birds - Strigidae - Asio flammeus
Animals - Birds	Asio otus	long-eared owl	ABNSB13010	None	None	SSC	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Strigidae - Asio otus
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712281	WALNUT CREEK	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Selasphorus rufus	rufous hummingbird	ABNUC51020	None	None	-	-	3812212	BENICIA	Unprocessed	Animals - Birds - Trochilidae - Selasphorus rufus
Animals - Birds	Selasphorus rufus	rufous hummingbird	ABNUC51020	None	None	-	-	3712283	RICHMOND	Unprocessed	Animals - Birds - Trochilidae - Selasphorus rufus
Animals - Birds	Empidonax traillii	willow flycatcher	ABPAE33040	None	Endangered	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Birds - Tyrannidae - Empidonax traillii
Animals - Crustaceans	Syncaris pacifica	California freshwater shrimp	ICMAL27010	Endangered	Endangered	-	-	3812223	CUTTINGS WHARF	Mapped	Animals - Crustaceans - Atyidae - Syncaris pacifica
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812223	CUTTINGS WHARF	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi

Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812221	FAIRFIELD SOUTH	Mapped	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812211	VINE HILL	Mapped	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Fish	Acipenser medirostris	green sturgeon	AFCAA01030	Threatened	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris
Animals - Fish	Acipenser medirostris	green sturgeon	AFCAA01030	Threatened	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris
Animals - Fish	Acipenser medirostris	green sturgeon	AFCAA01030	Threatened	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC	-	3712283	RICHMOND	Mapped	Animals - Fish - Centrarchidae - Archoplites interruptus
Animals - Fish	Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped	Animals - Fish - Centrarchidae - Archoplites interruptus
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3712281	WALNUT CREEK	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3812222	CORDELIA	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus

Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812212	BENICIA	Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3712283	RICHMOND	Mapped	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	-	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus

Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812212	BENICIA	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Lampetra ayresii	western river lamprey	AFBAA02030	None	None	SSC	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812212	BENICIA	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	3712283	RICHMOND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712283	RICHMOND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712281	WALNUT CREEK	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3812212	BENICIA	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8

Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3812222	CORDELIA	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	-	-	3812212	BENICIA	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 6
Animals - Fish	Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	-	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 6
Animals - Fish	Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 6
Animals - Fish	Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	-	-	3812223	CUTTINGS WHARF	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 6
Animals - Fish	Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3812211	VINE HILL	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 7
Animals - Fish	Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3812213	MARE ISLAND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 7
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	3812212	BENICIA	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	3712283	RICHMOND	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	3712282	BRIONES VALLEY	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	3712281	WALNUT CREEK	Mapped	Animals - Insects - Apidae - Bombus caliginosus

Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3712281	WALNUT CREEK	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	Candidate Endangered	-	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812222	CORDELIA	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812221	FAIRFIELD SOUTH	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Danaus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	None	None	-	-	3812221	FAIRFIELD SOUTH	Mapped	Animals - Insects - Nymphalidae - Danaus plexippus pop. 1
Animals - Insects	Danaus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	None	None	-	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Danaus plexippus pop. 1
Animals - Insects	Danaus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	None	None	-	-	3812212	BENICIA	Mapped	Animals - Insects - Nymphalidae - Danaus plexippus pop. 1
Animals - Insects	Danaus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	None	None	-	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Danaus plexippus pop. 1
Animals - Insects	Speyeria callippe callippe	callippe silverspot butterfly	IILEPJ6091	Endangered	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Insects - Nymphalidae - Speyeria callippe callippe
Animals - Insects	Speyeria callippe callippe	callippe silverspot butterfly	IILEPJ6091	Endangered	None	-	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Speyeria callippe callippe
Animals - Insects	Speyeria callippe callippe	callippe silverspot butterfly	IILEPJ6091	Endangered	None	-	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Speyeria callippe callippe
Animals - Insects	Speyeria callippe callippe	callippe silverspot butterfly	IILEPJ6091	Endangered	None	-	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Speyeria callippe callippe
Animals - Mammals	Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	AMAFD03061	None	None	-	-	3712282	BRIONES VALLEY	Mapped	Animals - Mammals - Heteromyidae - Dipodomys heermanni berkeleyensis
Animals - Mammals	Perognathus inornatus	San Joaquin Pocket Mouse	AMAFD01060	None	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Mammals - Heteromyidae - Perognathus inornatus

Animals - Mammals	Nyctinomops macrotis	big free-tailed bat	AMACD04020	None	None	SSC	-	3812211	VINE HILL	Mapped	Animals - Mammals - Molossidae - Nyctinomops macrotis
Animals - Mammals	Nyctinomops macrotis	big free-tailed bat	AMACD04020	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped	Animals - Mammals - Molossidae - Nyctinomops macrotis
Animals - Mammals	Nyctinomops macrotis	big free-tailed bat	AMACD04020	None	None	SSC	-	3712283	RICHMOND	Mapped	Animals - Mammals - Molossidae - Nyctinomops macrotis
Animals - Mammals	Nyctinomops macrotis	big free-tailed bat	AMACD04020	None	None	SSC	-	3812212	BENICIA	Mapped	Animals - Mammals - Molossidae - Nyctinomops macrotis
Animals - Mammals	Microtus californicus sanpabloensis	San Pablo vole	AMAFF11034	None	None	SSC	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Mammals - Muridae - Microtus californicus sanpabloensis
Animals - Mammals	Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	AMAFF08082	None	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Mammals - Muridae - Neotoma fuscipes annectens
Animals - Mammals	Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	AMAFF08082	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Mammals - Muridae - Neotoma fuscipes annectens
Animals - Mammals	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	FP	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Mammals - Muridae - Reithrodontomys raviventris
Animals - Mammals	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	FP	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Mammals - Muridae - Reithrodontomys raviventris
Animals - Mammals	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	FP	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Mammals - Muridae - Reithrodontomys raviventris
Animals - Mammals	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	FP	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Mammals - Muridae - Reithrodontomys raviventris
Animals - Mammals	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	FP	-	3812222	CORDELIA	Mapped	Animals - Mammals - Muridae - Reithrodontomys raviventris
Animals - Mammals	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	FP	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Mammals - Muridae - Reithrodontomys raviventris
Animals - Mammals	Reithrodontomys raviventris	salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	FP	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Mammals - Muridae - Reithrodontomys raviventris
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812222	CORDELIA	Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus

Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Sorex ornatus sinuosus	Suisun shrew	AMABA01103	None	None	SSC	-	3812222	CORDELIA	Mapped	Animals - Mammals - Soricidae - Sorex ornatus sinuosus
Animals - Mammals	Sorex ornatus sinuosus	Suisun shrew	AMABA01103	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Mammals - Soricidae - Sorex ornatus sinuosus
Animals - Mammals	Sorex ornatus sinuosus	Suisun shrew	AMABA01103	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Mammals - Soricidae - Sorex ornatus sinuosus
Animals - Mammals	Sorex ornatus sinuosus	Suisun shrew	AMABA01103	None	None	SSC	-	3812213	MARE ISLAND	Mapped and Unprocessed	Animals - Mammals - Soricidae - Sorex ornatus sinuosus
Animals - Mammals	Sorex ornatus sinuosus	Suisun shrew	AMABA01103	None	None	SSC	-	3812212	BENICIA	Mapped	Animals - Mammals - Soricidae - Sorex ornatus sinuosus
Animals - Mammals	Sorex vagrans halicoetes	salt-marsh wandering shrew	AMABA01071	None	None	SSC	-	3712283	RICHMOND	Mapped	Animals - Mammals - Soricidae - Sorex vagrans halicoetes
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712283	RICHMOND	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712281	WALNUT CREEK	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812213	MARE ISLAND	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712281	WALNUT CREEK	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712283	RICHMOND	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	3712283	RICHMOND	Mapped	Animals - Mammals - Vespertilionidae - Lasionycteris noctivagans

Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712281	WALNUT CREEK	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Myotis evotis	long-eared myotis	AMACC01070	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis evotis
Animals - Mammals	Myotis lucifugus	little brown bat	AMACC01010	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis lucifugus
Animals - Mammals	Myotis thysanodes	fringed myotis	AMACC01090	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis thysanodes
Animals - Mammals	Myotis volans	long-legged myotis	AMACC01110	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis volans
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812222	CORDELIA	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3712282	BRIONES VALLEY	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812211	VINE HILL	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mollusks	Helminthoglypta nickliniana bridgesi	Bridges' coast range shoulderband	IMGASC2362	None	None	-	-	3812211	VINE HILL	Mapped	Animals - Mollusks - Helminthoglyptidae - Helminthoglypta nickliniana bridgesi
Animals - Mollusks	Helminthoglypta nickliniana bridgesi	Bridges' coast range shoulderband	IMGASC2362	None	None	-	-	3712283	RICHMOND	Mapped	Animals - Mollusks - Helminthoglyptidae - Helminthoglypta nickliniana bridgesi
Animals - Mollusks	Helminthoglypta nickliniana bridgesi	Bridges' coast range shoulderband	IMGASC2362	None	None	-	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Mollusks - Helminthoglyptidae - Helminthoglypta nickliniana bridgesi

Animals - Mollusks	Anodonta californiensis	California floater	IMBIV04020	None	None	-	-	3812221	FAIRFIELD SOUTH	Unprocessed	Animals - Mollusks - Unionidae - Anodonta californiensis
Animals - Reptiles	Anniella pulchra	northern California legless lizard	ARACC01020	None	None	SSC	-	3712281	WALNUT CREEK	Mapped	Animals - Reptiles - Anniellidae - Anniella pulchra
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712281	WALNUT CREEK	Mapped	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812212	BENICIA	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812213	MARE ISLAND	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812222	CORDELIA	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812223	CUTTINGS WHARF	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712283	RICHMOND	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712282	BRIONES VALLEY	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812211	VINE HILL	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712281	WALNUT CREEK	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3812211	VINE HILL	Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712283	RICHMOND	Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Community - Terrestrial	Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-	-	3812211	VINE HILL	Mapped	Community - Terrestrial - Coastal Brackish Marsh
Community - Terrestrial	Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-	-	3812223	CUTTINGS WHARF	Mapped	Community - Terrestrial - Coastal Brackish Marsh
Community - Terrestrial	Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-	-	3812221	FAIRFIELD SOUTH	Mapped	Community - Terrestrial - Coastal Brackish Marsh
Community - Terrestrial	Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-	-	3812212	BENICIA	Mapped	Community - Terrestrial - Coastal Brackish Marsh

Community - Terrestrial	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120CA	None	None	-	-	3812221	FAIRFIELD SOUTH	Mapped	Community - Terrestrial - Northern Claypan Vernal Pool
Community - Terrestrial	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-	-	3812223	CUTTINGS WHARF	Mapped	Community - Terrestrial - Northern Coastal Salt Marsh
Community - Terrestrial	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-	-	3812212	BENICIA	Mapped	Community - Terrestrial - Northern Coastal Salt Marsh
Community - Terrestrial	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-	-	3812213	MARE ISLAND	Mapped	Community - Terrestrial - Northern Coastal Salt Marsh
Community - Terrestrial	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-	-	3712283	RICHMOND	Mapped	Community - Terrestrial - Northern Coastal Salt Marsh
Community - Terrestrial	Northern Maritime Chaparral	Northern Maritime Chaparral	CTT37C10CA	None	None	-	-	3712283	RICHMOND	Mapped	Community - Terrestrial - Northern Maritime Chaparral
Community - Terrestrial	Northern Maritime Chaparral	Northern Maritime Chaparral	CTT37C10CA	None	None	-	-	3712282	BRIONES VALLEY	Mapped	Community - Terrestrial - Northern Maritime Chaparral
Community - Terrestrial	Northern Vernal Pool	Northern Vernal Pool	CTT44100CA	None	None	-	-	3812223	CUTTINGS WHARF	Mapped	Community - Terrestrial - Northern Vernal Pool
Community - Terrestrial	Serpentine Bunchgrass	Serpentine Bunchgrass	CTT42130CA	None	None	-	-	3812222	CORDELIA	Mapped	Community - Terrestrial - Serpentine Bunchgrass
Community - Terrestrial	Valley Needlegrass Grassland	Valley Needlegrass Grassland	CTT42110CA	None	None	-	-	3712283	RICHMOND	Mapped	Community - Terrestrial - Valley Needlegrass Grassland
Plants - Bryophytes	Anomobryum julaceum	slender silver moss	NBMUS80010	None	None	-	4.2	3712281	WALNUT CREEK	Mapped	Plants - Bryophytes - Bryaceae - Anomobryum julaceum
Plants - Bryophytes	Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped	Plants - Bryophytes - Fissidentaceae - Fissidens pauperculus
Plants - Vascular	Cicuta maculata var. bolanderi	Bolander's water-hemlock	PDAPI0M051	None	None	-	2B.1	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Apiaceae - Cicuta maculata var. bolanderi
Plants - Vascular	Cicuta maculata var. bolanderi	Bolander's water-hemlock	PDAPI0M051	None	None	-	2B.1	3812211	VINE HILL	Mapped	Plants - Vascular - Apiaceae - Cicuta maculata var. bolanderi
Plants - Vascular	Cicuta maculata var. bolanderi	Bolander's water-hemlock	PDAPI0M051	None	None	-	2B.1	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Plants - Vascular - Apiaceae - Cicuta maculata var. bolanderi
Plants - Vascular	Cicuta maculata var. bolanderi	Bolander's water-hemlock	PDAPI0M051	None	None	-	2B.1	3812212	BENICIA	Mapped	Plants - Vascular - Apiaceae - Cicuta maculata var. bolanderi
Plants - Vascular	Eryngium jepsonii	Jepson's coyote-thistle	PDAPI0Z130	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Apiaceae - Eryngium jepsonii
Plants - Vascular	Eryngium jepsonii	Jepson's coyote-thistle	PDAPI0Z130	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Apiaceae - Eryngium jepsonii
Plants - Vascular	Eryngium jepsonii	Jepson's coyote-thistle	PDAPI0Z130	None	None	-	1B.2	3812222	CORDELIA	Mapped and Unprocessed	Plants - Vascular - Apiaceae - Eryngium jepsonii
Plants - Vascular	Eryngium jepsonii	Jepson's coyote-thistle	PDAPI0Z130	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped and Unprocessed	Plants - Vascular - Apiaceae - Eryngium jepsonii

Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3812211	VINE HILL	Mapped	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3812212	BENICIA	Mapped	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3812213	MARE ISLAND	Mapped	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Balsamorhiza macrolepis	big-scale balsamroot	PDAST11061	None	None	-	1B.2	3812222	CORDELIA	Mapped	Plants - Vascular - Asteraceae - Balsamorhiza macrolepis
Plants - Vascular	Blepharizonia plumosa	big tarplant	PDAST1C011	None	None	-	1B.1	3812212	BENICIA	Mapped	Plants - Vascular - Asteraceae - Blepharizonia plumosa
Plants - Vascular	Blepharizonia plumosa	big tarplant	PDAST1C011	None	None	-	1B.1	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Asteraceae - Blepharizonia plumosa
Plants - Vascular	Centromadia parryi ssp. congdonii	Congdon's tarplant	PDAST4R0P1	None	None	-	1B.1	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. congdonii
Plants - Vascular	Centromadia parryi ssp. congdonii	Congdon's tarplant	PDAST4R0P1	None	None	-	1B.1	3812211	VINE HILL	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. congdonii
Plants - Vascular	Centromadia parryi ssp. congdonii	Congdon's tarplant	PDAST4R0P1	None	None	-	1B.1	3812212	BENICIA	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. congdonii
Plants - Vascular	Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. parryi
Plants - Vascular	Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-	1B.2	3812222	CORDELIA	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Centromadia parryi ssp. parryi
Plants - Vascular	Cirsium andrewsii	Franciscan thistle	PDAST2E050	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Asteraceae - Cirsium andrewsii
Plants - Vascular	Cirsium hydrophilum var. hydrophilum	Suisun thistle	PDAST2E1G1	Endangered	None	-	1B.1	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Asteraceae - Cirsium hydrophilum var. hydrophilum
Plants - Vascular	Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-	3	3812221	FAIRFIELD SOUTH	Unprocessed	Plants - Vascular - Asteraceae - Erigeron biolettii
Plants - Vascular	Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-	3	3812222	CORDELIA	Unprocessed	Plants - Vascular - Asteraceae - Erigeron biolettii
Plants - Vascular	Helianthella castanea	Diablo helianthella	PDAST4M020	None	None	-	1B.2	3812222	CORDELIA	Unprocessed	Plants - Vascular - Asteraceae - Helianthella castanea
Plants - Vascular	Helianthella castanea	Diablo helianthella	PDAST4M020	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Asteraceae - Helianthella castanea
Plants - Vascular	Helianthella castanea	Diablo helianthella	PDAST4M020	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Asteraceae - Helianthella castanea

Plants - Vascular	Helianthella castanea	Diablo helianthella	PDAST4M020	None	None	-	1B.2	3712281	WALNUT CREEK	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Helianthella castanea
Plants - Vascular	Helianthella castanea	Diablo helianthella	PDAST4M020	None	None	-	1B.2	3712283	RICHMOND	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Helianthella castanea
Plants - Vascular	Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Asteraceae - Hesperevax caulescens
Plants - Vascular	Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3812221	FAIRFIELD SOUTH	Unprocessed	Plants - Vascular - Asteraceae - Hesperevax caulescens
Plants - Vascular	Holocarpha macradenia	Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	-	1B.1	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Asteraceae - Holocarpha macradenia
Plants - Vascular	Holocarpha macradenia	Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	-	1B.1	3712283	RICHMOND	Mapped	Plants - Vascular - Asteraceae - Holocarpha macradenia
Plants - Vascular	Isocoma arguta	Carquinez goldenbush	PDAST57050	None	None	-	1B.1	3812211	VINE HILL	Mapped	Plants - Vascular - Asteraceae - Isocoma arguta
Plants - Vascular	Isocoma arguta	Carquinez goldenbush	PDAST57050	None	None	-	1B.1	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Asteraceae - Isocoma arguta
Plants - Vascular	Isocoma arguta	Carquinez goldenbush	PDAST57050	None	None	-	1B.1	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Asteraceae - Isocoma arguta
Plants - Vascular	Isocoma arguta	Carquinez goldenbush	PDAST57050	None	None	-	1B.1	3812213	MARE ISLAND	Mapped	Plants - Vascular - Asteraceae - Isocoma arguta
Plants - Vascular	Isocoma arguta	Carquinez goldenbush	PDAST57050	None	None	-	1B.1	3812212	BENICIA	Mapped	Plants - Vascular - Asteraceae - Isocoma arguta
Plants - Vascular	Isocoma arguta	Carquinez goldenbush	PDAST57050	None	None	-	1B.1	3812222	CORDELIA	Mapped	Plants - Vascular - Asteraceae - Isocoma arguta
Plants - Vascular	Lasthenia conjugens	Contra Costa goldfields	PDAST5L040	Endangered	None	-	1B.1	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Lasthenia conjugens
Plants - Vascular	Lasthenia conjugens	Contra Costa goldfields	PDAST5L040	Endangered	None	-	1B.1	3812212	BENICIA	Mapped	Plants - Vascular - Asteraceae - Lasthenia conjugens
Plants - Vascular	Lasthenia conjugens	Contra Costa goldfields	PDAST5L040	Endangered	None	-	1B.1	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Asteraceae - Lasthenia conjugens
Plants - Vascular	Lasthenia conjugens	Contra Costa goldfields	PDAST5L040	Endangered	None	-	1B.1	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Asteraceae - Lasthenia conjugens
Plants - Vascular	Lasthenia ferrisiae	Ferris' goldfields	PDAST5L070	None	None	-	4.2	3812221	FAIRFIELD SOUTH	Unprocessed	Plants - Vascular - Asteraceae - Lasthenia ferrisiae
Plants - Vascular	Lessingia hololeuca	woolly-headed lessingia	PDAST5S030	None	None	-	3	3812223	CUTTINGS WHARF	Unprocessed	Plants - Vascular - Asteraceae - Lessingia hololeuca
Plants - Vascular	Lessingia hololeuca	woolly-headed lessingia	PDAST5S030	None	None	-	3	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Asteraceae - Lessingia hololeuca
Plants - Vascular	Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-	2B.2	3812213	MARE ISLAND	Mapped	Plants - Vascular - Asteraceae - Senecio aphanactis

Plants - Vascular	Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-	2B.2	3812212	BENICIA	Mapped	Plants - Vascular - Asteraceae - Senecio aphanactis
Plants - Vascular	Symphyotrichum lentum	Suisun Marsh aster	PDASTE8470	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Asteraceae - Symphyotrichum lentum
Plants - Vascular	Symphyotrichum lentum	Suisun Marsh aster	PDASTE8470	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Symphyotrichum lentum
Plants - Vascular	Symphyotrichum lentum	Suisun Marsh aster	PDASTE8470	None	None	-	1B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Asteraceae - Symphyotrichum lentum
Plants - Vascular	Symphyotrichum lentum	Suisun Marsh aster	PDASTE8470	None	None	-	1B.2	3812222	CORDELIA	Mapped	Plants - Vascular - Asteraceae - Symphyotrichum lentum
Plants - Vascular	Symphyotrichum lentum	Suisun Marsh aster	PDASTE8470	None	None	-	1B.2	3812211	VINE HILL	Mapped	Plants - Vascular - Asteraceae - Symphyotrichum lentum
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812223	CUTTINGS WHARF	Mapped and Unprocessed	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-	2B.3	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Caprifoliaceae - Viburnum ellipticum
Plants - Vascular	Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-	2B.3	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Caprifoliaceae - Viburnum ellipticum
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3812211	VINE HILL	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Atriplex coronata var. coronata	crownscale	PDCHE040C3	None	None	-	4.2	3812211	VINE HILL	Unprocessed	Plants - Vascular - Chenopodiaceae - Atriplex coronata var. coronata
Plants - Vascular	Atriplex persistens	vernal pool smallscale	PDCHE042P0	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex persistens

Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3812211	VINE HILL	Mapped	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Suaeda californica	California seablite	PDCHE0P020	Endangered	None	-	1B.1	3712283	RICHMOND	Mapped	Plants - Vascular - Chenopodiaceae - Suaeda californica
Plants - Vascular	Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	PDCON040D2	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Convolvulaceae - Calystegia purpurata ssp. saxicola
Plants - Vascular	Carex lyngbyei	Lyngbye's sedge	PMCYP037Y0	None	None	-	2B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Cyperaceae - Carex lyngbyei
Plants - Vascular	Eleocharis parvula	small spikerush	PMCYP091G0	None	None	-	4.3	3812223	CUTTINGS WHARF	Unprocessed	Plants - Vascular - Cyperaceae - Eleocharis parvula
Plants - Vascular	Eleocharis parvula	small spikerush	PMCYP091G0	None	None	-	4.3	3812211	VINE HILL	Unprocessed	Plants - Vascular - Cyperaceae - Eleocharis parvula
Plants - Vascular	Arctostaphylos pallida	pallid manzanita	PDERI04110	Threatened	Endangered	-	1B.1	3712283	RICHMOND	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos pallida
Plants - Vascular	Arctostaphylos pallida	pallid manzanita	PDERI04110	Threatened	Endangered	-	1B.1	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos pallida
Plants - Vascular	Astragalus tener var. tener	alkali milk-vetch	PDFAB0F8R1	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Fabaceae - Astragalus tener var. tener
Plants - Vascular	Astragalus tener var. tener	alkali milk-vetch	PDFAB0F8R1	None	None	-	1B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Fabaceae - Astragalus tener var. tener
Plants - Vascular	Astragalus tener var. tener	alkali milk-vetch	PDFAB0F8R1	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Fabaceae - Astragalus tener var. tener
Plants - Vascular	Hoita strobilina	Loma Prieta hoita	PDFAB5Z030	None	None	-	1B.1	3712283	RICHMOND	Mapped	Plants - Vascular - Fabaceae - Hoita strobilina
Plants - Vascular	Lathyrus jepsonii var. jepsonii	Delta tule pea	PDFAB250D2	None	None	-	1B.2	3812211	VINE HILL	Mapped	Plants - Vascular - Fabaceae - Lathyrus jepsonii var. jepsonii
Plants - Vascular	Lathyrus jepsonii var. jepsonii	Delta tule pea	PDFAB250D2	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Fabaceae - Lathyrus jepsonii var. jepsonii
Plants - Vascular	Lathyrus jepsonii var. jepsonii	Delta tule pea	PDFAB250D2	None	None	-	1B.2	3812213	MARE ISLAND	Mapped	Plants - Vascular - Fabaceae - Lathyrus jepsonii var. jepsonii
Plants - Vascular	Lathyrus jepsonii var. jepsonii	Delta tule pea	PDFAB250D2	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Fabaceae - Lathyrus jepsonii var. jepsonii
Plants - Vascular	Lathyrus jepsonii var. jepsonii	Delta tule pea	PDFAB250D2	None	None	-	1B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Fabaceae - Lathyrus jepsonii var. jepsonii

Plants - Vascular	Trifolium amoenum	two-fork clover	PDFAB40040	Endangered	None	-	1B.1	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Fabaceae - Trifolium amoenum
Plants - Vascular	Trifolium amoenum	two-fork clover	PDFAB40040	Endangered	None	-	1B.1	3812222	CORDELIA	Mapped	Plants - Vascular - Fabaceae - Trifolium amoenum
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812222	CORDELIA	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812211	VINE HILL	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Iris longipetala	coast iris	PMIRI092E0	None	None	-	4.2	3712283	RICHMOND	Unprocessed	Plants - Vascular - Iridaceae - Iris longipetala
Plants - Vascular	Iris longipetala	coast iris	PMIRI092E0	None	None	-	4.2	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Iridaceae - Iris longipetala
Plants - Vascular	Iris longipetala	coast iris	PMIRI092E0	None	None	-	4.2	3812221	FAIRFIELD SOUTH	Unprocessed	Plants - Vascular - Iridaceae - Iris longipetala
Plants - Vascular	Iris longipetala	coast iris	PMIRI092E0	None	None	-	4.2	3812222	CORDELIA	Unprocessed	Plants - Vascular - Iridaceae - Iris longipetala
Plants - Vascular	Juglans californica	southern California black walnut	PDJUG02020	None	None	-	4.2	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Juglandaceae - Juglans californica
Plants - Vascular	Calochortus pulchellus	Mt. Diablo fairy-lantern	PMLIL0D160	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Calochortus pulchellus
Plants - Vascular	Calochortus pulchellus	Mt. Diablo fairy-lantern	PMLIL0D160	None	None	-	1B.2	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Liliaceae - Calochortus pulchellus
Plants - Vascular	Calochortus pulchellus	Mt. Diablo fairy-lantern	PMLIL0D160	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Liliaceae - Calochortus pulchellus
Plants - Vascular	Calochortus umbellatus	Oakland star-tulip	PMLIL0D1E0	None	None	-	4.2	3712281	WALNUT CREEK	Unprocessed	Plants - Vascular - Liliaceae - Calochortus umbellatus
Plants - Vascular	Calochortus umbellatus	Oakland star-tulip	PMLIL0D1E0	None	None	-	4.2	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Liliaceae - Calochortus umbellatus
Plants - Vascular	Calochortus umbellatus	Oakland star-tulip	PMLIL0D1E0	None	None	-	4.2	3712283	RICHMOND	Unprocessed	Plants - Vascular - Liliaceae - Calochortus umbellatus
Plants - Vascular	Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Liliaceae - Fritillaria liliacea
Plants - Vascular	Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0	None	None	-	1B.2	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Liliaceae - Fritillaria liliacea

Plants - Vascular	Fritillaria liliacea	fragrant fritillary	PMLIL0V0C0	None	None	-	1B.2	3812213	MARE ISLAND	Mapped	Plants - Vascular - Liliaceae - Fritillaria liliacea
Plants - Vascular	Malacothamnus hallii	Hall's bush-mallow	PDMAL0Q0F0	None	None	-	1B.2	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Malvaceae - Malacothamnus hallii
Plants - Vascular	Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	-	1B.1	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Onagraceae - Oenothera deltoides ssp. howellii
Plants - Vascular	Castilleja affinis var. neglecta	Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	-	1B.2	3812222	CORDELIA	Mapped	Plants - Vascular - Orobanchaceae - Castilleja affinis var. neglecta
Plants - Vascular	Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-	4.2	3812223	CUTTINGS WHARF	Unprocessed	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
Plants - Vascular	Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-	4.2	3812213	MARE ISLAND	Unprocessed	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
Plants - Vascular	Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-	4.2	3812212	BENICIA	Unprocessed	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
Plants - Vascular	Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-	4.2	3712281	WALNUT CREEK	Unprocessed	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
Plants - Vascular	Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-	4.2	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
Plants - Vascular	Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-	4.2	3812211	VINE HILL	Unprocessed	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
Plants - Vascular	Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Orobanchaceae - Chloropyron maritimum ssp. palustre
Plants - Vascular	Chloropyron molle ssp. molle	soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	-	1B.2	3812211	VINE HILL	Mapped	Plants - Vascular - Orobanchaceae - Chloropyron molle ssp. molle
Plants - Vascular	Chloropyron molle ssp. molle	soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	-	1B.2	3812212	BENICIA	Mapped and Unprocessed	Plants - Vascular - Orobanchaceae - Chloropyron molle ssp. molle
Plants - Vascular	Chloropyron molle ssp. molle	soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	-	1B.2	3812213	MARE ISLAND	Mapped	Plants - Vascular - Orobanchaceae - Chloropyron molle ssp. molle
Plants - Vascular	Chloropyron molle ssp. molle	soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped and Unprocessed	Plants - Vascular - Orobanchaceae - Chloropyron molle ssp. molle
Plants - Vascular	Chloropyron molle ssp. molle	soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	-	1B.2	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Orobanchaceae - Chloropyron molle ssp. molle
Plants - Vascular	Meconella oregana	Oregon meconella	PDPAP0G030	None	None	-	1B.1	3712282	BRIONES VALLEY	Mapped	Plants - Vascular - Papaveraceae - Meconella oregana
Plants - Vascular	Erythranthe laciniata	cut-leaved monkeyflower	PDSCR1B1L0	None	None	-	4.3	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Phrymaceae - Erythranthe laciniata
Plants - Vascular	Erythranthe laciniata	cut-leaved monkeyflower	PDSCR1B1L0	None	None	-	4.3	3712283	RICHMOND	Unprocessed	Plants - Vascular - Phrymaceae - Erythranthe laciniata

Plants - Vascular	Puccinellia simplex	California alkali grass	PMPOA53110	None	None	-	1B.2	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Poaceae - Puccinellia simplex
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3812222	CORDELIA	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3712283	RICHMOND	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon grandiflorus	large-flowered leptosiphon	PDPLM090K0	None	None	-	4.2	3712283	RICHMOND	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon grandiflorus
Plants - Vascular	Leptosiphon jepsonii	Jepson's leptosiphon	PDPLM09140	None	None	-	1B.2	3812222	CORDELIA	Mapped	Plants - Vascular - Polemoniaceae - Leptosiphon jepsonii
Plants - Vascular	Eriogonum truncatum	Mt. Diablo buckwheat	PDPGN085Z0	None	None	-	1B.1	3812221	FAIRFIELD SOUTH	Mapped	Plants - Vascular - Polygonaceae - Eriogonum truncatum
Plants - Vascular	Polygonum marinense	Marin knotweed	PDPGN0L1C0	None	None	-	3.1	3812212	BENICIA	Mapped	Plants - Vascular - Polygonaceae - Polygonum marinense
Plants - Vascular	Polygonum marinense	Marin knotweed	PDPGN0L1C0	None	None	-	3.1	3812223	CUTTINGS WHARF	Mapped	Plants - Vascular - Polygonaceae - Polygonum marinense
Plants - Vascular	Stuckenia filiformis ssp. alpina	slender-leaved pondweed	PMPOT03091	None	None	-	2B.2	3712281	WALNUT CREEK	Mapped	Plants - Vascular - Potamogetonaceae - Stuckenia filiformis ssp. alpina
Plants - Vascular	Androsace elongata ssp. acuta	California androsace	PDPRI02031	None	None	-	4.2	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Primulaceae - Androsace elongata ssp. acuta
Plants - Vascular	Ranunculus lobbii	Lobb's aquatic buttercup	PDRAN0L1J0	None	None	-	4.2	3712282	BRIONES VALLEY	Unprocessed	Plants - Vascular - Ranunculaceae - Ranunculus lobbii
Plants - Vascular	Ranunculus lobbii	Lobb's aquatic buttercup	PDRAN0L1J0	None	None	-	4.2	3712283	RICHMOND	Unprocessed	Plants - Vascular - Ranunculaceae - Ranunculus lobbii
Plants - Vascular	Ranunculus lobbii	Lobb's aquatic buttercup	PDRAN0L1J0	None	None	-	4.2	3812223	CUTTINGS WHARF	Unprocessed	Plants - Vascular - Ranunculaceae - Ranunculus lobbii
Plants - Vascular	Limosella australis	Delta mudwort	PDSCR10030	None	None	-	2B.1	3812211	VINE HILL	Mapped	Plants - Vascular - Scrophulariaceae - Limosella australis
Plants - Vascular	Dirca occidentalis	western leatherwood	PDTHY03010	None	None	-	1B.2	3712283	RICHMOND	Mapped	Plants - Vascular - Thymelaeaceae - Dirca occidentalis
Plants - Vascular	Dirca occidentalis	western leatherwood	PDTHY03010	None	None	-	1B.2	3712282	BRIONES VALLEY	Mapped and Unprocessed	Plants - Vascular - Thymelaeaceae - Dirca occidentalis
Plants - Vascular	Dirca occidentalis	western leatherwood	PDTHY03010	None	None	-	1B.2	3812212	BENICIA	Mapped	Plants - Vascular - Thymelaeaceae - Dirca occidentalis

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

59 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812223, 3812222, 3812221, 3812213, 3812212, 3812211, 3712283 3712282 and 3712281;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	Lowest Elevation	Highest Elevation	CA Rare Plant Rank	State Listing Status	Federal Listing Status
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	3 m	500 m	1B.2		
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	150 m	1305 m	4.2		
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen shrub	Dec-Mar	185 m	465 m	1B.1	CE	FT
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1 m	60 m	1B.2		
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	1 m	590 m	4.2		
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun,Aug,Sep,Oct	10 m	115 m	1B.2		
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	45 m	1555 m	1B.2		
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	30 m	505 m	1B.1		
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	30 m	840 m	1B.2		
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	100 m	700 m	4.2		
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	Convolvulaceae	perennial herb	(Mar)Apr-Sep	0 m	105 m	1B.2		
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	0 m	10 m	2B.2		
	Tiburon	Orobanchaceae	perennial herb	Apr-Jun	60 m	400 m	1B.2	CT	FE

Castilleja affinis var. neglecta	paintbrush		(hemiparasitic)						
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	0 m	435 m	4.2		
Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	120 m	640 m	1B.2		
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	0 m	230 m	1B.1		
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	0 m	420 m	1B.2		
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	0 m	100 m	4.2		
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	0 m	10 m	1B.2		
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	0 m	3 m	1B.2	CR	FE
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	0 m	200 m	2B.1		
Cirsium andrewsii	Franciscan thistle	Asteraceae	perennial herb	Mar-Jul	0 m	150 m	1B.2		
Cirsium hydrophilum var. hydrophilum	Suisun thistle	Asteraceae	perennial herb	Jun-Sep	0 m	1 m	1B.1		FE
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	25 m	425 m	1B.2		
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	1 m	445 m	2B.2		
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	1 m	3020 m	4.3		
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	Jun-Oct	30 m	1100 m	3		
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	0 m	700 m	1B.2		
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	3 m	350 m	1B.1		
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	3 m	300 m	1B.2		
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1 m	835 m	1B.2		
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss		10 m	1024 m	1B.2		
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	3 m	410 m	1B.2		
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	60 m	1300 m	1B.2		
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	May-Jul(Aug-Oct)	30 m	860 m	1B.1		
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	10 m	220 m	1B.1	CE	FT

Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May	0 m	600 m	4.2		
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	1 m	20 m	1B.1		
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	0 m	470 m	1B.1		FE
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	20 m	700 m	4.2		
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	0 m	5 m	1B.2		
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1 m	880 m	1B.1		
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	15 m	305 m	3		
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	0 m	10 m	1B.1	CR	
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	Mar-Apr	250 m	620 m	1B.1		
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	45 m	825 m	3.2		
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	320 m	1000 m	3		
Navarretia gowenii	Lime Ridge navarretia	Polemoniaceae	annual herb	May-Jun	180 m	305 m	1B.1		
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	0 m	10 m	3.1		
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	2 m	930 m	1B.2		
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	15 m	470 m	4.2		
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	15 m	800 m	2B.2		
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May(Jun)	0 m	255 m	1B.2		
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	95 m	1000 m	1B.2		
Suaeda californica	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	0 m	15 m	1B.1		FE
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	0 m	3 m	1B.2		
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	5 m	415 m	1B.1		FE
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	0 m	300 m	1B.2		
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	215 m	1400 m	2B.3		

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 24 June 2020].

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IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

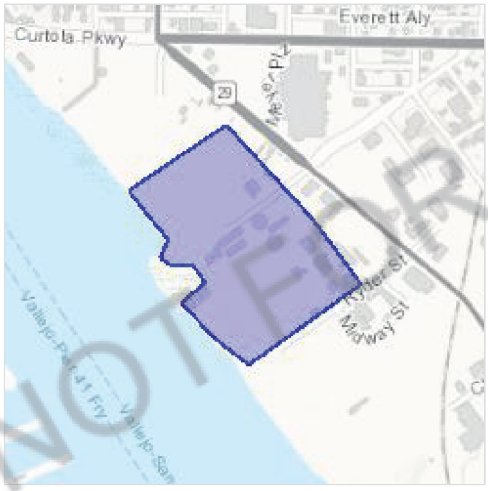
This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list 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.

NOT FOR CONSULTATION

Location

Solano 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.

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

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
Northern Spotted Owl Strix occidentalis caurina There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened

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

NOT FOR CONSULTATION

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Callippe Silverspot Butterfly Speyeria callippe callippe There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3779	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

Crustaceans

NAME	STATUS
California Freshwater Shrimp Syncaris pacifica No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7903	Endangered
Conservancy Fairy Shrimp Branchinecta conservatio There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
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

Flowering Plants

NAME	STATUS
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

NOT FOR CONSULTATION

Soft Bird's-beak Cordylanthus mollis ssp. mollis — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/8541

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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.

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

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.

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For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
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
Black Oystercatcher Haematopus bachmani This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Rail Laterallus jamaicensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7717	Breeds Mar 1 to Sep 15
Black Turnstone Arenaria melanocephala This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Common Yellowthroat Geothlypis trichas sinuosa 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	Breeds May 20 to Jul 31

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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

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides 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

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 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/4243

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

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Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

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 and understand the FAQ "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 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.

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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.

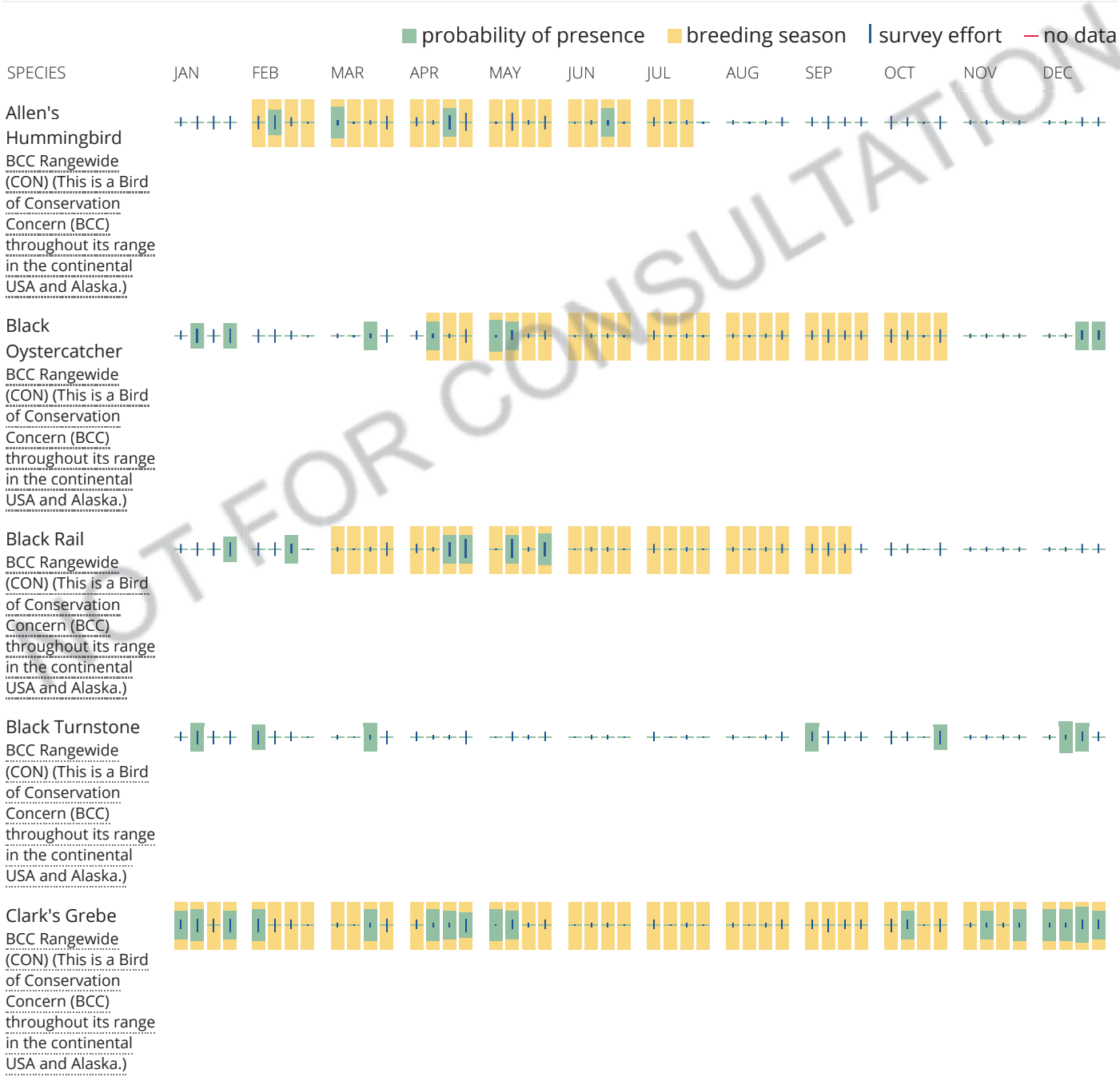
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

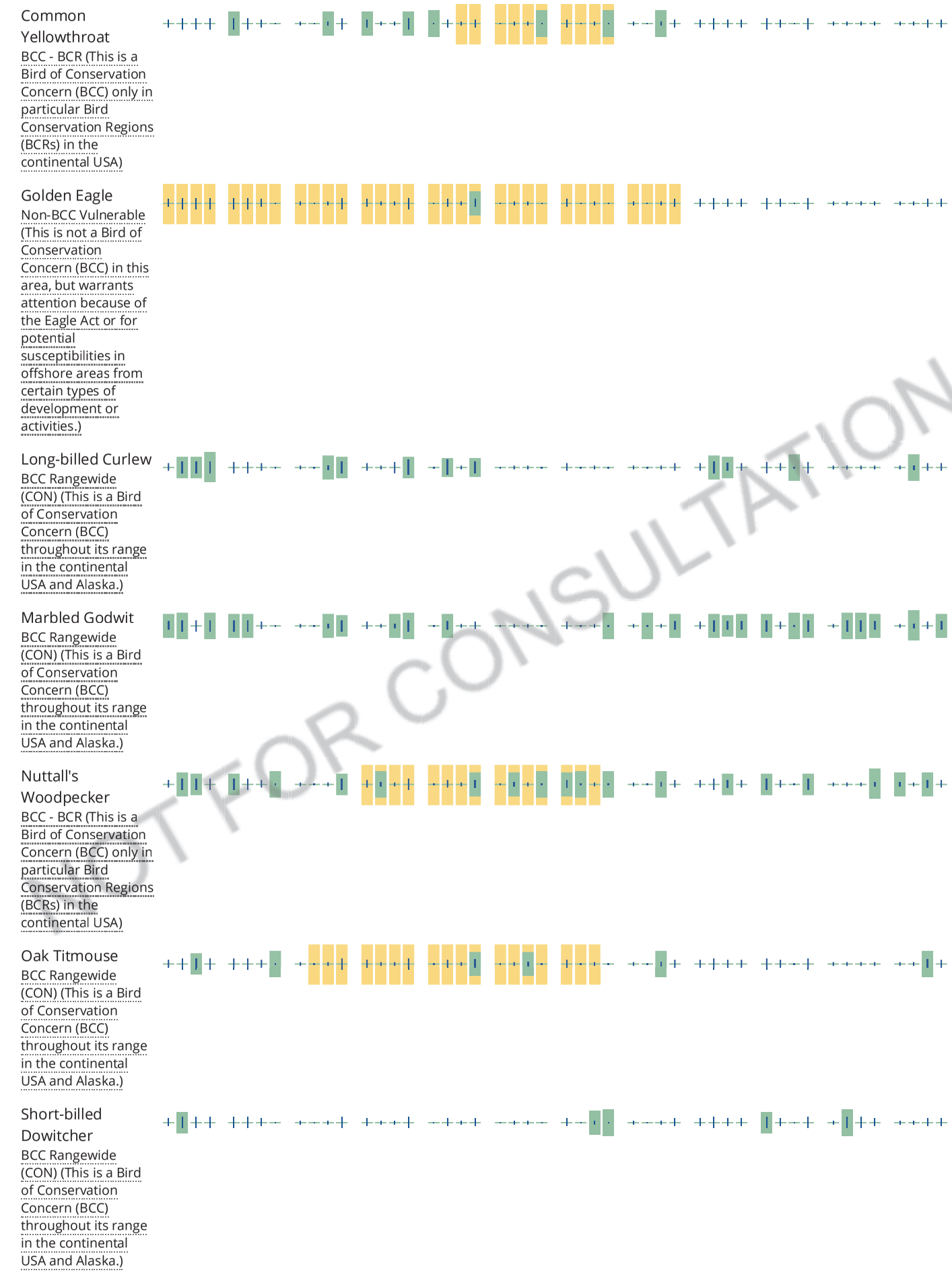
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

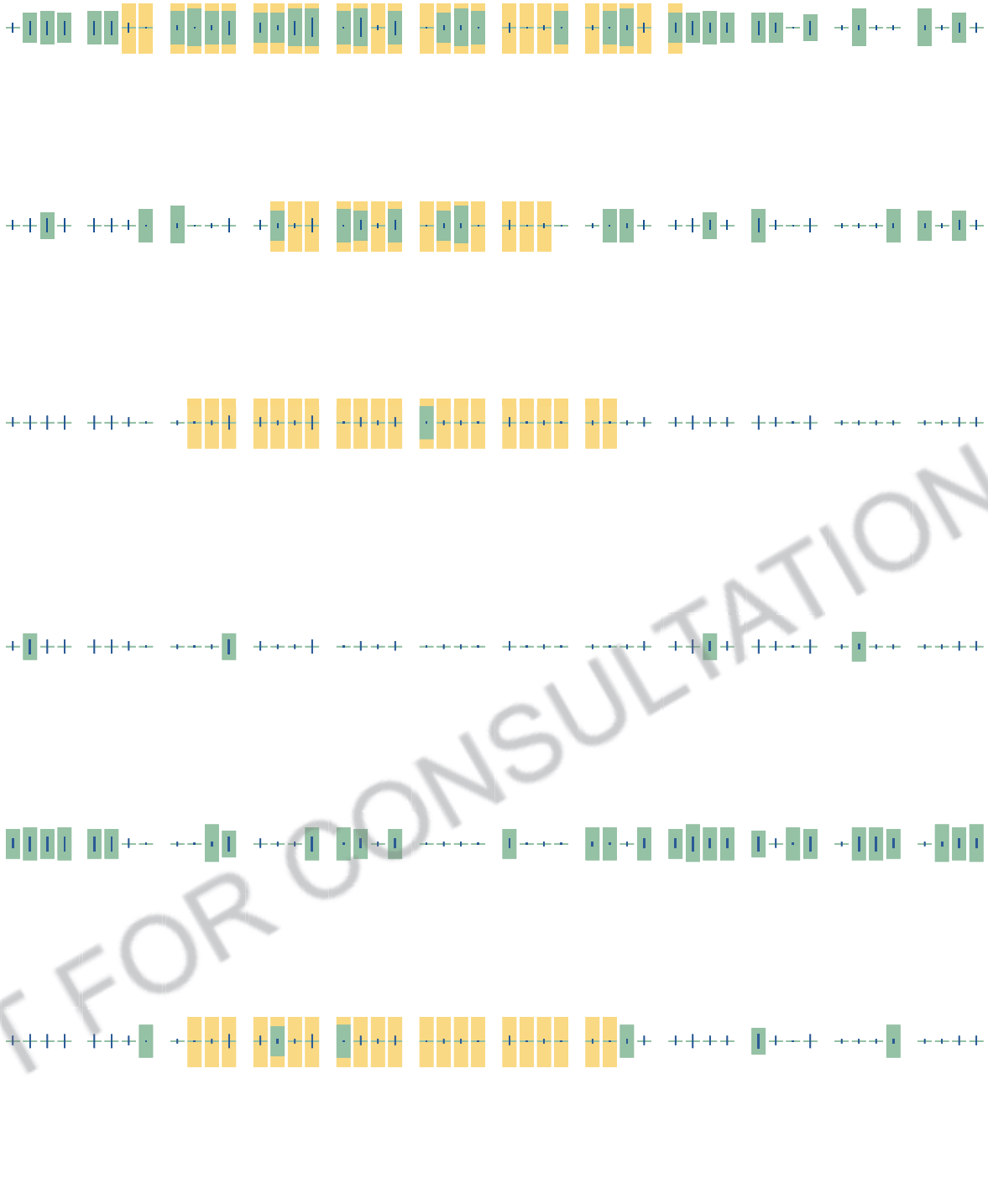
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION



NOT FOR CONSULTATION



Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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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 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 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 AKN Phenology 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 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 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).

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.

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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.

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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

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

E2SBNx

A full description for each wetland code can be found at the National Wetlands Inventory website

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 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,

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state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Solano County, California

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Map Scale: 1:6,700 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

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: Solano County, California
Survey Area Data: Version 13, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 1, 2019—May 31, 2019

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
DIC	Dibble-Los Osos clay loams, 2 to 9 percent slopes	0.6	0.7%
Ma	Made land	82.4	99.2%
W	Water	0.0	0.0%
Totals for Area of Interest		**83.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Solano County, California

DIC—Dibble-Los Osos clay loams, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: h9l9
Elevation: 100 to 2,000 feet
Mean annual precipitation: 20 to 30 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 225 to 260 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Dibble and similar soils: 60 percent
Los osos and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dibble

Setting

Landform: Mountains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 13 inches: clay loam
H2 - 13 to 30 inches: clay loam
H3 - 30 to 59 inches: weathered bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Fine Loamy 9-13 (R015XE020CA)
Hydric soil rating: No

Description of Los Osos

Setting

Landform: Mountains

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sedimentary rock

Typical profile

H1 - 0 to 7 inches: clay loam
H2 - 7 to 25 inches: clay loam, clay
H2 - 7 to 25 inches: weathered bedrock
H3 - 25 to 59 inches:

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Fine Loamy 9-13 (R015XE020CA)
Hydric soil rating: No

Minor Components

Millsholm

Percent of map unit: 10 percent
Hydric soil rating: No

Ma—Made land

Map Unit Setting

National map unit symbol: h9ln
Elevation: 0 to 2,500 feet
Farmland classification: Not prime farmland

Map Unit Composition

Made land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Made Land

Setting

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mine spoil or earthy fill

Typical profile

H1 - 0 to 60 inches: variable

Interpretive groups

Land capability classification (irrigated): 8
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Valdez

Percent of map unit: 5 percent
Landform: Alluvial fans
Hydric soil rating: Yes

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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U.S. Fish and Wildlife Service
National Wetlands Inventory

Vallejo MIPS Project

July 2, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Appendix E. Cultural Technical Report

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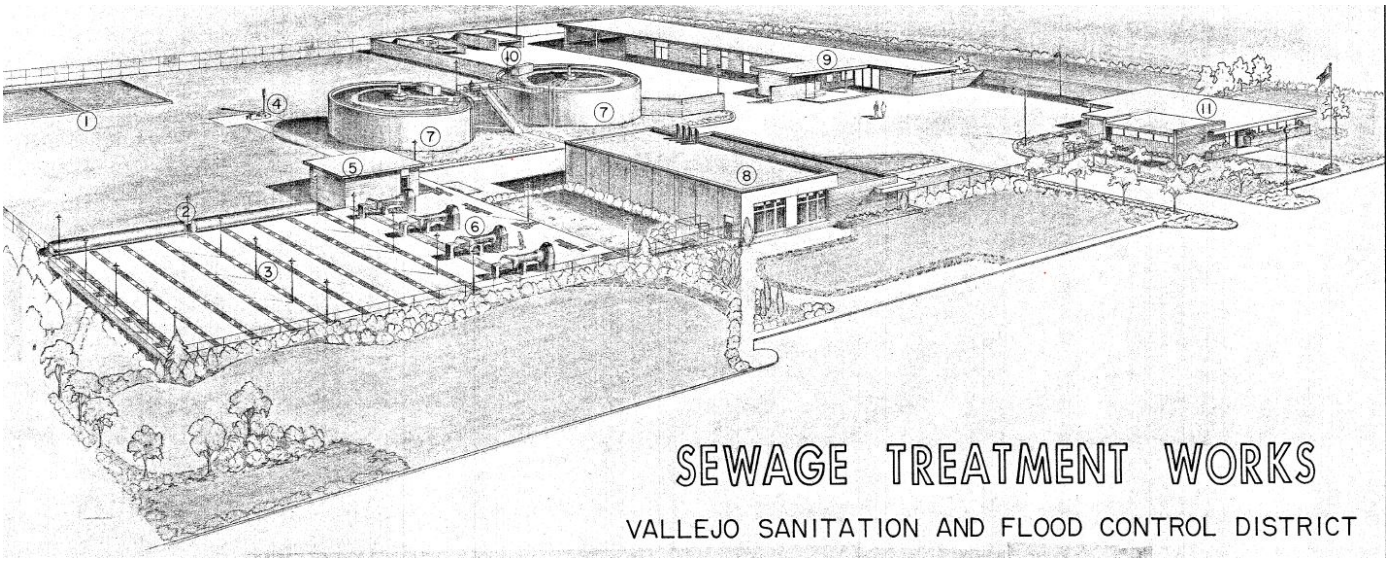
Cultural Resources Inventory and Evaluation Report

Vallejo Mare Island Pump Station 3W Effluent Bypass Project
Solano County, California



Prepared for
Vallejo Flood and Wastewater District
450 Ryder Street
Vallejo, CA 94590

Prepared by:
Jay B. Lloyd, M.A., RPA
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August 2020

7.5' Topographic Quadrangle (California): Mare Island and Benicia

EXECUTIVE SUMMARY

The Vallejo Flood and Wastewater District (VFWD) is proposing to rehabilitate and replace critical wastewater treatment infrastructure to support their wastewater treatment plant's (WWTP) ability to provide high-quality wastewater treatment prior to discharge in the San Francisco Bay (Proposed Project). A component of the Proposed Project would require the demolition of the existing Mare Island Pump Station (MIPS), constructed in 1957. The California Environmental Quality Act (CEQA) applies to all discretionary activities proposed to be implemented or approved by a California public agency. Additionally, VFWD is applying for funding through the U.S. Environmental Protection Agency's (EPA's) Wastewater State Revolving Fund program which is administered by the State Water Resources Control Board (SWRCB) in California and provides federal funding for a wide range of water quality infrastructure projects. The program's application requirements include completion of an evaluation form for federal environmental coordination. SWRCB, as the lead federal agency delegate, requires compliance with National Environmental Policy Act (NEPA) requirements as well as Section 106 of the National Historic Preservation Act (NHPA). Both Section 106 of the NHPA and CEQA essentially mandate that public agencies determine whether a proposed project will adversely affect/significantly impact the environment, and, if so, whether that effect/impact can be avoided or mitigated.

HDR Engineering, Inc. (HDR) provided cultural resources services to meet federal and state requirements on behalf of VFWD. HDR's investigation included: background research; a records search of the California Historical Resources Information System (CHRIS) to identify previously recorded cultural resources and prior studies in the Proposed Project vicinity; and a National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) eligibility assessment of the MIPS. HDR also contacted the Native American Heritage Commission (NAHC) to request a search of their Sacred Lands File and identify tribes and individuals who may have knowledge of sacred sites in the Proposed Project vicinity. HDR's evaluation recommends that the MIPS is not eligible for listing in either the NRHP or CRHR and, thus, no assessment of Proposed Project affects/impacts are recommended as they are not necessary. HDR did not identify any additional historical built-environment or archaeological resources within the Proposed Project area during the study.

Consistent with state and federal statutes, HDR advises that in the event archaeological remains are encountered at any time during development or ground-moving activities within any portion of the Proposed Project area, all work in the vicinity of the find should be halted until a qualified archaeologist can assess the discovery. In addition, if human remains are uncovered during construction, the Solano County Coroner is to be notified to arrange their proper treatment and disposition.

A copy of this report and the associated cultural resource records will be transmitted to the Northwest Information Center at Sonoma State University for inclusion in the CHRIS.

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GLOSSARY - DEFINITION OF TERMS, ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
A.D.	Anno Domini
ARMR	Archaeological Resource Management Reports
B.C.	Before Christ
BERD	Built Environment Resource Directory
ca.	Circa
CCR	California Code of Regulations
CCT	Chlorine Control Tank
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
DPR	Department of Parks and Recreation
EPA	Environmental Protection Agency
GLO	General Land Office
HDR	HDR Engineering, Inc.
MIPS	Mare Island Pump Station
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NETR	Nationwide Environmental Title Research
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
PRC	Public Resources Code
PQS	Professional Qualification Standards
RPA	Registered Professional Archaeologist
SWRCB	State Water Resources Control Board
USDOI	United States Department of the Interior
USGS	United States Geological Service
VFWD	Vallejo Flood and Wastewater District
WWTP	Wastewater Treatment Plant

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SECTION 1.0

INTRODUCTION

The VFWD is proposing to rehabilitate and replace critical aging wastewater treatment infrastructure (Figure 1) to support their WWTP's ability to treat wastewater to a high quality prior to discharge in the San Francisco Bay (Proposed Project). The existing MIPS was constructed in 1957 and has reached the end of its useful service life. In 2014, the facility was damaged by the Napa earthquake. Concrete has begun spalling from the ceiling, multiple other structural deficiencies exist, critical electrical and mechanical equipment is below grade without adequate flood protection, the north wall of the structure leaks, and large portions of the structure's original functionality have already been abandoned in place. Failure of the MIPS would result in a loss of 50 percent of VFWD's wet weather wastewater treatment capacity and the discharge of raw wastewater to the Napa River and, ultimately, to the San Francisco Bay during large storm events.

The CEQA applies to all discretionary activities proposed to be implemented or approved by a California public agency. VFWD is the Lead Agency and decision maker as to whether to approve the Proposed Project. In this role, CEQA requires an agency to review the potential effects of a proposed project's actions on environmental resources, and the CEQA Guidelines are the primary rules and source of interpretation of CEQA (Public Resources Code Section [PRC] 21083).

VFWD is applying for funding through the U.S. EPA's Wastewater State Revolving Fund program (33 U.S. Code Section 1383). This program is administered by the SWRCB in California and provides federal funding for a wide range of water quality infrastructure projects. In addition to CEQA documentation prepared for a project, the application requirements include completion of an evaluation form for federal environmental coordination that is commonly referred to as "cross-cutter requirements" or "CEQA Plus." SWRCB, as the lead federal agency delegate, requires compliance with NEPA requirements as well as Section 106 of the NHPA. Both the NHPA (54 U.S. Code Section 306108) and CEQA (Title 14 PRC 21000[g]) mandate that government agencies consider the effects of their actions on cultural resources.

For the purposes of this report, a cultural resource is defined as a prehistoric or historical archaeological site or a historical building, structure, or object. Consistent with 36 Code of Federal Regulations [CFR] Section 60.4, the term "historical" applies to archaeological artifacts and features as well as buildings, structures, or objects that are 50 years old or older. The importance or significance of a cultural resource depends on whether it qualifies (at the national level) for inclusion in the NRHP or (at the state level) for inclusion in the CRHR. Cultural resources determined eligible for the NRHP are termed "historic properties" (36 CFR 800.16[l]), while those eligible for the CRHR are referred to as "historical resources" (California Code of Regulations [CCR] 15064.5). Under both federal and state regulations, the determination of eligibility is in part based on a set of significance criteria defined in the implementing regulations (36 CFR 60.4; CCR 15064.5[3]).

On behalf of VFWD, HDR conducted a cultural resources investigation for the Proposed Project. The work documented in this report was carried out to satisfy the requirements of Section 106 of the NHPA as well as the CEQA, and the results are presented in accordance with *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990). A copy of this report will be transmitted to the Northwest Information Center (NWIC) for inclusion in the CHRIS.

Figure 1. Proposed Project location and site layout in Solano County, California.

1.1 Project Description

VFWD proposes to construct several new facilities to replace WWTP functions currently performed at the existing MIPS and to rehabilitate several existing facilities with aging equipment at its WWTP. VFWD would construct a new MIPS and chlorine control tank (CCT)-D adjacent to the existing CCT-C. The new configuration would consolidate the WWTP's two CCTs and treated effluent pump stations in a common area of the plant. Several upgrades would be made to CCT-C. Additionally, the project would replace the existing pumps at the Carquinez treated effluent pump station and 3W utility water pump station with newer, more energy-efficient pumps. New outfall and bypass piping would be constructed. Outfall piping would connect the new MIPS to the existing Mare Island Straight outfall pipe. Flow meter vaults would be constructed for each of the outfalls to provide monitoring information for the plant. Bypass piping would be added to both the Mare Island Straight outfall and the Carquinez outfall to allow non-compliant effluent water to be diverted to the Ryder Street Basin for additional treatment. A new bioassay facility constructed adjacent to the CCTs would provide permanent compliance testing facilities for plant personnel. Lastly, as part of its Proposed Project, VFWD would decommission and demolish the existing MIPS. All demolition and construction would occur within the existing fence line of the VFWD facility.

The new MIPS and the rehabilitated Carquinez pump station would operate in a parallel fashion to handle flow from CCT-C and CCT-D. The operating configurations of the pump stations and CCT facilities for normal and wet weather conditions would not change, aside from the addition of flow by gravity under certain conditions.

New instrumentation and controls would tie in to the existing effluent pump station electrical room. The new energy-efficient pumps would use less power than existing operations.

1.2 Project Area

VFWD's WWTP is located on approximately 22 acres in Solano County at 450 Ryder Street in Vallejo, California in un-sectioned portions of T3N R4W and T3N R3W as shown on the United States Geological Service's (USGS) Mare Island and Benicia 7.5-minue topographic quadrangles. The Proposed Project is located in an industrial area along the Napa River approximately 2 miles north of the confluence of the Napa River, Carquinez Strait, and San Pablo Bay. Work would take place on approximately 0.5 acre of the site (Figure 1), with an additional 15 acres available on and off site for use as staging areas. Potential staging and laydown areas used at neighboring properties would require agreements with landowners prior to construction work.

1.3 Project Personnel

John "Jay" Lloyd (M.A.), a Registered Professional Archaeologist (RPA), served as Project Manager and Principal Investigator for this investigation. Architectural Historian Leesa Gratreak (M.S.) led the built-environment field documentation, conducted historical research, developed

the historic context, and evaluated the built-environment resource for NRHP and CRHR eligibility. Mr. Lloyd meets the Secretary of the Interior's Professional Qualifications Standards (PQS) for prehistoric and historic archaeology, per 36 CFR Part 61, and Ms. Gratreak meets the PQS for History and Architectural History. Mr. Lloyd's and Ms. Gratreak's resumes are provided in Attachment A.

1.4 Summary of Report Contents

This cultural resources report has been organized into the following seven sections:

- Section 1.0, Introduction, provides the Proposed Project description, description of the Proposed Project area, key Project personnel, and overview of the report contents.
- Section 2.0, Methods, describes the methods used to conduct the survey and prepare the CRHR/NRHP evaluation.
- Section 3.0, Background, provides the natural and cultural settings within the Proposed Project area.
- Section 4.0, Results, provides the results of the inventory and background research.
- Section 5.0, California and National Register Significance Evaluations, contains the CRHR and NRHP evaluation of the built-environment resource.
- Section 6.0, Summary and Recommendations, provides the report summary and management recommendations.
- Section 7.0, References, provides bibliographic references cited throughout the report.

Resumes of key personnel are in Appendix A. Documentation of communication and consultation with the NAHC and tribal representatives is in Appendix B. The results of the records search request from the NWIC at Sonoma State University is in Appendix C. The State of California Department of Parks and Recreation (DPR) 523 Series forms documenting the built-environment resources and the archeological site are in Appendix D.

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SECTION 2.0

METHODS

This section describes the methods used to and prepare the inventory and CRHR and NRHP evaluation.

2.1 Native American Outreach

In support of the Proposed Project and in accordance with the provisions of Assembly Bill (AB) 52, HDR contacted the NAHC on May 11, 2020, to obtain a list of tribes and tribal individuals who may have an interest in the Proposed Project, and to request a search of the NAHC's Sacred Lands File for a list of any known sacred lands that might exist within the Proposed Project boundary and a 0.5-mile research radius around the boundary. Each of the tribal representatives was also contacted regarding the potential for tribal cultural resources.

2.2 Background Research and Records Search

To obtain background information pertinent to understanding the archaeology, history, and ethnohistory of the Proposed Project area, HDR requested a record search through the NWIC of the CHRIS, located at Sonoma State University in Sonoma, California, on May 4, 2020. The records searches included examining resource location maps and records for archaeological sites, historic built resources, and tribal resources; and consulting historic property files, including the NRHP, California Register of Historical Resources, the Historic Property Data File for Solano County, the Built Environment Resource Directory (BERD), and California Historic Landmarks. The background research also included a review of historical General Land Office plats (GLOs), aerial photographs, and historic USGS topographic quadrangles to identify the potential to encounter historic sites and features potentially still present within the Proposed Project area.

2.4 Cultural Resource Inventory

VFWD's Proposed Project is located within their existing facility which has been is built upon and paved over in its entirety. Accordingly, no pedestrian archaeological survey was necessary due to the paving of all open staging areas and presence of existing structures. Due to the level of previous disturbance, the potential for intact archaeological remains is considered low. Additionally, archival research as well as documentation provided by VFWD indicated that the only onsite structure more than 50 years old is the MIPS building slated for demolition. A review of historic aerial photography confirmed that MIPS was the only building and/or structure within the Proposed Project area over 50 years of age (NETR 2020). Photographs of the building were provided by VFWD's Engineering Supervisor Kyle Broughton with direction from HDR cultural resources staff.

2.5 Archival Research

HDR Architectural Historian Leesa Gratreak performed background research for the Proposed Project Area context. Due to limitations in access, public archives were unable to be visited to support this documentation. Ms. Gratreak used available public information from online sources and primary source documentation from newspapers and periodicals, historic aerials and maps, as well as background information provided by the VFWD.

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SECTION 3.0

BACKGROUND

3.1 Natural Environment

The Proposed Project is located along the Mare Island Straight/Napa River near San Pablo Bay. The topography of the surrounding area features fairly flat ground with little elevation change. Elevation within the Proposed Project area ranges from approximately 5 to 15 feet above mean sea level. The Proposed Project area falls within the San Pablo Bay watershed, is highly developed, and no natural drainages appear to occur; however, adjacent waterways include the Mare Island Straight/Napa River to the west and a couple of unnamed tributaries. The Proposed Project area is underlain solely by "made land," or earthen fill. Land use consists mainly of industrial and existing wastewater facilities. Most of the Proposed Project area features disturbed and developed landscapes; however, scattered areas of landscaped vegetation and trees occur in and adjacent to the existing facility.

3.2 Ethnography and Ethnohistory

At the time of European settlement, the Proposed Project area was included in territory controlled by the southwestern-most extension of the Patwin (Johnson 1978:350; Powers 1877). The Patwin were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Johnson 1978; Kroeber 1925, 1932). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near freshwater sources and in ecotones where plant life and animal life were diverse and abundant.

The Patwin subsistence base varied seasonally and included gathering seeds and plant resources on the plains, netting migratory waterfowl in the tule marshes, and netting salmon and other fish in the rivers and streams. Acorns were a staple in the Patwin diet and were obtained from communally owned hill and valley oak groves (Johnson 1978). The Patwin typically stored the acorns in granaries as insurance against famine in poor harvest years. Ethnographic reports indicate the Patwin obtained large game such as deer, tule elk, and antelope, by using nets or shooting with bows and arrows. The Hill Patwin trade system included various resources that were exchanged with Wappo, Nomlaki, and Southeastern Pomo, and the River Patwin. The River Patwin obtained obsidian from sources to the west and east. Initially, finished shell beads were obtained from coastal tribes, but later, the River Patwin traded for whole shells from the Pacific Coast and produced the beads themselves (Johnson 1978). Relationships with nearby tribes as well as other Patwin tribelets were not always friendly. Johnson notes that relations were strained especially with Napa Valley groups and that the provocations primarily consisted of poaching, with the

subsequent retaliations consisting of organized battles on individuals or groups or surprise attacks on villages (Johnson 1978).

Patwin mortuary practices included burials in cemeteries located at one end of the village, possessions of the deceased being buried along with them and, at some locations, property was burned near the grave. Typically, only people who died away from the village were cremated (Johnson 1978). Johnson notes that according to a Hill Patwin informant, "the River people [Patwin] set a corpse upright, then pushed the head down, broke the back, wrapped the body in a skin, and put it in the grave" (Johnson 1978). In addition, long burial ropes constructed of hemp were wrapped around the deceased and temporary containers made of tule reeds were utilized for transport (Johnson 1978).

3.3 Prehistory and Archaeology

Archaeological evidence indicates that human occupation of California began at least 11,000 years ago (Erlandson et al. 2007). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (for example, shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area (Schenck and Dawson 1929). The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, the University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages.

Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence (Lillard and Purves 1936; Lillard et al. 1939). In 1939, Lillard noted that each cultural period led directly to the next, and that influences spread from the Delta region to other regions in central California (Lillard et al. 1939). In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System. This system proposed a uniform, linear sequence of cultural succession (Beardsley 1948, 1954). It was challenged by Gerow, whose work looked at radiocarbon dating to show that Early and Middle Horizon sites were not subsequent developments but, at least partially, contemporaneous (Gerow 1954, 1974; Gerow and Force 1968). To address some of the flaws in the Central California Taxonomic System, Fredrickson (1973) introduced a revision that incorporated a system of spatial and cultural

integrative units. Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: PaleoIndian (10,000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500), and Emergent (Upper and Lower, A.D. 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence (Moratto 1984).

3.4 Historic Context

3.4.1 The Mare Island Pump Station

The MIPS was constructed in 1957 as the primary pump station of the Vallejo WWTP, originally known as the “Control Building”, the building is commonly known as “MIPS”. The WWTP is located in Vallejo, CA in Solano County, across the Napa River (also known as the Mare Island Strait), to the east, from the Mare Island Naval Shipyard.

In 1952, the Vallejo Sanitation and Flood Control District Act was created through a special act of the California legislature, which included it in Enabling Act 8934. This established the Vallejo Sanitation & Flood Control District. The special district was intended to provide sanitation and flood services within the District’s boundary. The official and legal name of the District was changed to "Vallejo Flood and Wastewater District" by Ordnance Number 2018-76, § 1, adopted Feb. 13, 2018 (PMC 2006; VFWD 2012; VFWD 1952 (February 2020 Version), Title 6, Chapter 6.12.050).

Construction began after the act was created and in 1959 the WWTP was complete and the plant began treating Vallejo’s sewage. The WWTP, as originally designed, was a physical/chemical plant consisting of screening, influent pumping, sedimentation tanks with pre-aeration, and chlorination disinfection prior to discharge. All of these treatment components resided within the Control Building now referred to as MIPS. At that time, all effluent was pumped to the Carquinez Strait outfall near the location of the current Cal State Maritime Academy due to the level of treatment at the time and the deep channel discharge point (in comparison to the adjacent Mare Island Strait/Napa River discharge point added in later years). Sludge was pumped to digestion tanks with gas flaring. The original effluent pumps were powered by liquid diesel engines. The MIPS structure also housed the control building for the entire WWTP process, including the point-of-entry for ancillary utilities to the WWTP (potable water, telephone, electrical feed). A gravity line to the Mare Island Strait originally served as the WWTP’s overflow (VFWD 2012, 2020).

MIPS was designed and constructed by the engineering firm Brown and Caldwell, though no specific engineers or designers have been found to be associated with the building’s design. The firm was founded by Ken Brown and Dave Caldwell in 1947. The firm, now global, has completed a variety of wastewater and water engineering projects nationwide, as well as many projects in the West. Research found no indication that the design and construction of MIPS was significant in the establishment, growth, or development of the firm (Brown and Caldwell 2020; Fulcrum 2020).

In the 1970s, the WWTP was upgraded to meet the requirements of the Porter-Cologne Water Quality Act (1970) and the Clean Water Act (1972). The Porter-Cologne Water Quality Act required that sewage treatment plants keep water clean, while balancing economic considerations with environmental goals. The Clean Water Act's initial focus was to reduce polluted effluent discharging from industrial and sewage treatment facilities. As a result of the passage of those acts, improvements were made to the existing Administration Building, removing administrative functions from MIPS. Improvements to the treatment process included grit removal, additional sedimentation/flocculation (primary clarifiers), carbon adsorption beds, chlorine contact basins, and dual media filters. Lime addition was added to the solids process, along with a polymer dewatering system. A 24-inch forcemain to the Mare Island Strait replaced the existing gravity bypass as the WWTP's overflow. Additional, more technologically-advanced treatments were also introduced in 1977 (VFWD 2012, 2020).

In the 1980s, the WWTP was modified with a series of projects to include secondary wastewater treatment with the addition of bio-filters, aeration basins, and secondary clarifiers. This included the 1983 purchase of Tubbs Island Farm for the beneficial reuse of biosolids, which is located approximately 9 miles northwest of the WWTP. The WWTP's wet weather capacity was increased to 60 MGD. Up to 30 MGD would be treated with secondary treatment and wet weather flows between 30 and 60 MGD would be a combination of "blended" secondary effluent and disinfected primary effluent. During this time, the aeration basins replaced the existing pre-aeration facilities in MIPS. A new Headworks facility was added, and its associated influent pumps, bar screens, and grit removal systems replaced the original MIPS influent pumping, screening, and grit removal. A new Operations Building replaced the WWTP control component of the MIPS building. During this time, many of MIPS interior components were decommissioned and related areas were left unutilized. A new effluent pump station, the Carquinez Pump Station, was added to pump "blended" wet weather flows to the deeper water channel of the Carquinez Strait. The Carquinez Pump Station was connected to the existing Carquinez outfall. With the addition of secondary treatment capabilities, the District's discharge permit allowed secondary effluent pumping to the adjacent Mare Island Strait/Napa River. The original MIPS pumps were repurposed for that service and connected to the 24-inch WWTP overflow line to serve as the secondary effluent forcemain. The MIPS effluent pumps power supply was also converted from liquid diesel generators to electric motors. In 1987, the Clean Water Act shifted to focus on polluted runoff, and the VFWD created its first Storm Drain Master Plan (VFWD 2012, 2020).

The interior of the MIPS facility remains mostly unchanged following the WWTP upgrades in the 1980s. Various structural retrofits occurred in 1988, 2005 and 2012, which substantially altered the building's exterior. Asbestos building materials have also been abated over time and in 2005 the WWTP completed a major odor reduction project. Additionally, the MIPS structure incurred earthquake damage from the 2014 South Napa Earthquake and underwent some structural repairs at that time. MIPS continues to serve as the secondary effluent pump station for 100 percent of dry weather discharges. The MIPS facility continues to serve as the point of entry for many WWTP utilities including potable water, 2W, and communication hub for telephone and fiber optic communication lines. The MIPS structure underwent a structural condition assessment in 2019

which concluded that the structure was not up to current code, materials of construction likely contained hazardous materials including asbestos, lead paint, and PCBs. The assessment also concluded that the structure was beyond its useful service life, the cost to replace MIPS was comparable and favorable to performing additional structural retrofits, and that the existing MIPS structure posed worker safety issues (VFWD 2012, 2020).

SECTION 4.0

RESULTS

4.1 Native American Outreach

The NAHC was contacted by HDR, on behalf of VFWD, seeking information from the Sacred Lands File, which tracks Native American cultural resources, and the names of Native American individuals and groups that would be appropriate to contact regarding this Proposed Project. Because no tribal representatives had previously requested project notification with VFWD under AB 52 legislation, the NAHC-generated contact list was used for the AB 52 notifications. The NAHC replied with a letter dated May 4, 2016, in which it indicated that the Sacred Lands File has no information about the presence of Native American cultural resources in the immediate Proposed Project area, and provided a list of Native American contacts (groups and individuals) who may have information regarding known and recorded sites. On June 11, 2020, letters were sent to the following contacts:

- Chairperson Charlie Wright, Cortina Rancheria – Kletsel, Dehe Band of Wintun Indians;
- Chairperson Merlene Sanchez, Guidiville Indian Rancheria;
- Chairperson Gene Whitehouse, United Auburn Indian Community of the Auburn Rancheria;
- Chairperson Anthony Roberts, Yocha Dehe Wintun Nation; and
- Chairperson Corrina Gould, the Confederated Villages of Lisjan.

To date, one response has been received. In a letter dated June 29, 2020, the Yocha Dehe Wintun Nation's Tribal Historic Preservation Officer Leland Kinter, noted that "… *the Tribe is not aware of any known cultural resources near this project site and a cultural monitor is not needed*." However, the letter also states that the Tribe has determined that the Proposed Project is within its ancestral territory and requested copies of the proposed mitigation measures and recommended cultural sensitivity training for potential Project personnel. VFWD replied in a letter dated July 15, 2020 acknowledging the Tribe's response, providing the proposed mitigation measures, and agreeing to cultural sensitivity training as part of the Worker Environmental Awareness Program; thus concluding the AB 52 consultation effort. VFWD's July 15, 2020 letter does note that, in the event of an inadvertent discovery during construction and depending on the nature of the find, it may be necessary to reengage with the Tribe.

To date, no further communication has been received. Correspondence with the NAHC and the Tribal representatives is provided in Appendix B.

4.2 Records Search

4.2.1 Previous Cultural Resource Investigations

A record search was conducted for the Proposed Project area by the NWIC of the CHRIS at Sonoma State University on May 29, 2020. The Northwest Information Center results indicated that no portion of the Proposed Project area had been previously surveyed, nor have any resources been documented within the Proposed Project area or the 0.25-mile search radius. Three previous studies have been conducted with the 0.25-mile search radius and detailed below (Table 1).

Table 1. Previous cultural resources investigations within the Proposed Project area and a 0.25 mile buffer.

Count	Author	Year	NWIC Report #	Report Name and Description	Within Project Area? (Yes/No)
1	Fredrickson, David A.	1978	S-000899	*An Archaeological Survey of Proposed Route 141 Highway Construction Project, Vallejo, Solano County, California.*	No
2	Chavez, David	1979	S-001784	*Preliminary Cultural Resources Identification: San Francisco Bay Study for Corps of Engineers Projects.*	No
3	Nelson, Wendy, Maureen Carpenter, and Julia G. Costello	2000	S-022817	*Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project, Segment WS01: Sacramento to Oakland.*	No

4.2.2 Previously Recorded Cultural Resources

The NWIC did not identify any previously recorded archaeological or historic built-environment resources either within the Proposed Project area or the 0.25-mile buffer.

4.3 Cultural Resource Identification

As noted in Chapter 3, HDR's identification effort concluded that that the only cultural resource over 50 years of age within the Proposed Project area is the MIPS building (Figure 2) slated for demolition as part of the rehabilitation of the WWTP.

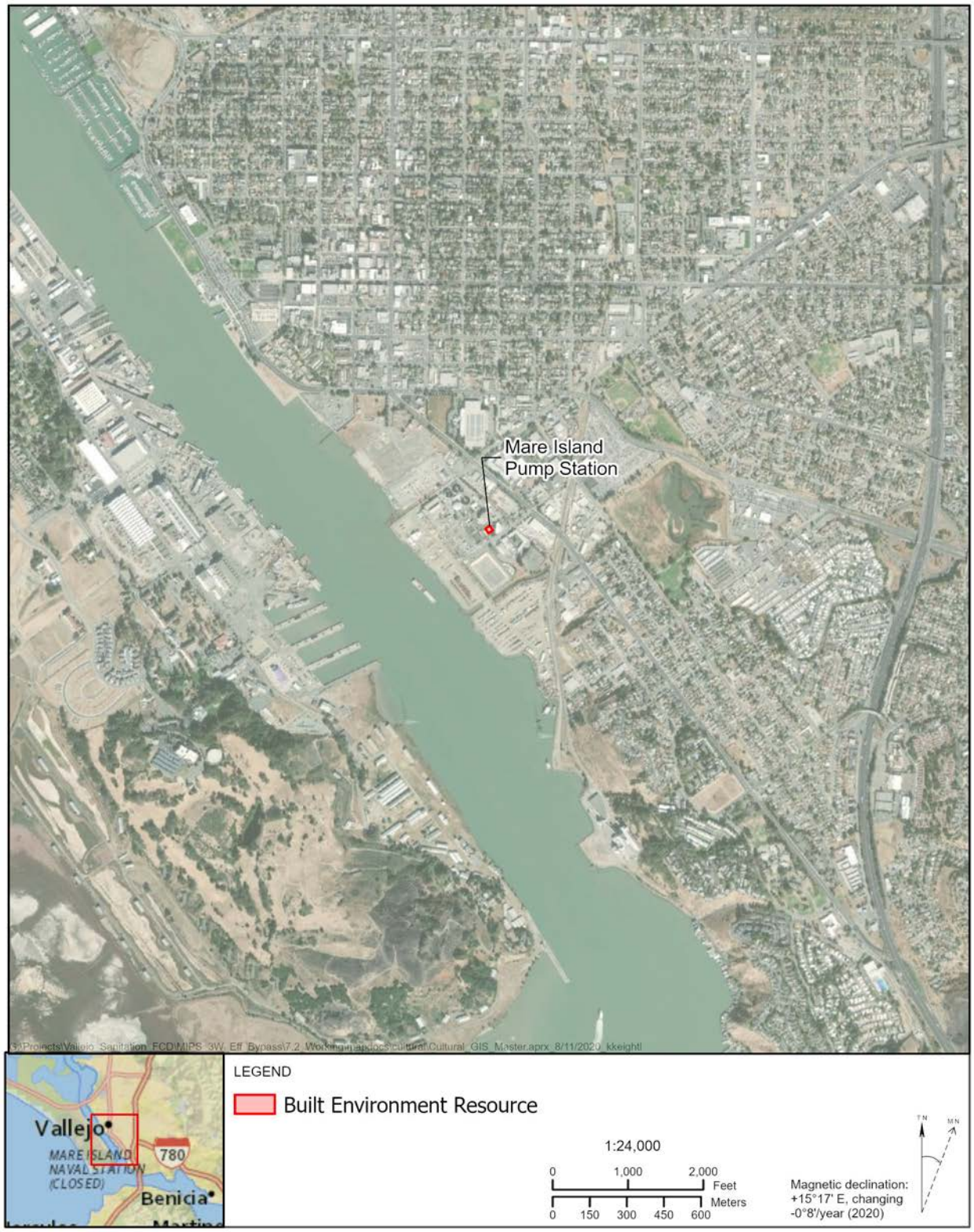

Figure 2. Resource location map.

4.4.1 The Mare Island Pump Station

The MIPS, constructed in 1957, is located in Vallejo, CA in Solano County, across the Napa River (also known as the Mare Island Strait), from the Mare Island Naval Shipyard.

The three-story, rectangular building is partially subterranean and composed of cast-in-place concrete. The façade faces northeast and has three bays. Ca. 1965, a 1-story addition was attached to the façade, where the primary entrance resides. The one-story addition is clad in brick veneer and the remaining elevations exhibit a concrete stucco exterior. The building's flat roof is punctured by metal vent pipes and electrical equipment. On the façade, the roof has a deep overhang covered with concrete stucco. All of the fenestration located on the building is non-historic (less than 50 years old), and multiple windows and doors have been replaced or in-filled with concrete. Figure 3 shows the original building form and original setting elements.

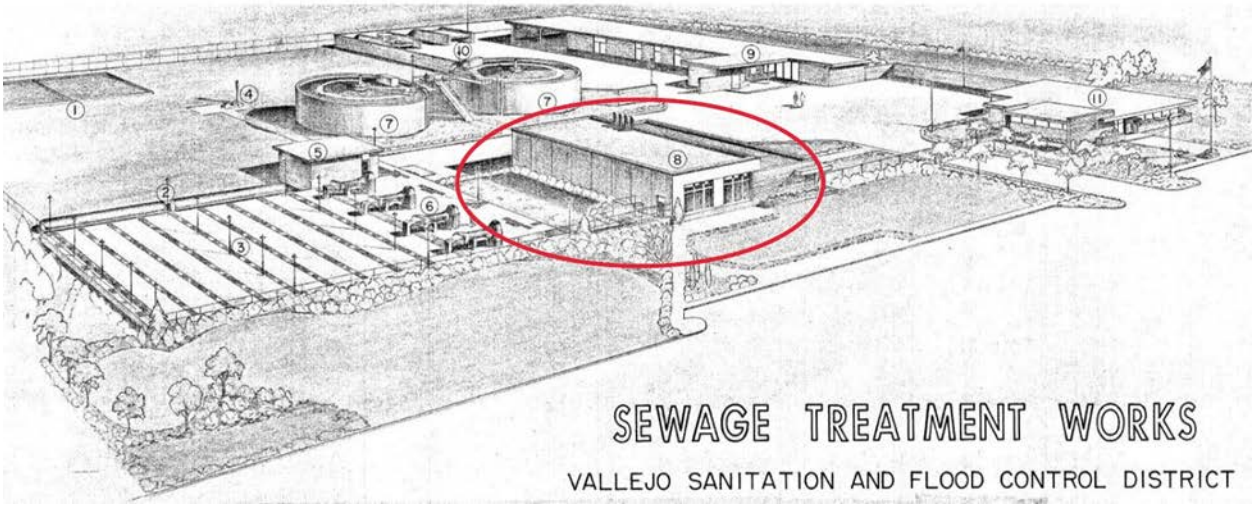

Figure 3. Overview of the 1958 WWTP, red circle indicates the MIPS, image oriented north-south (image courtesy VFWD).

The façade (northeast, Figures 4-5) features a circa (ca.) 2005-12, single-leaf steel door with a single inset glass pane. Five panes of steel-framed plate glass surround the door as sidelights and a transom. Three additional, non-historic steel-framed fixed windows are located on the façade, immediately north of the primary entrance. Exterior conduit lines (non-historic) and a steel vent (original) are located at the northern portion of the façade, affixed to the brick veneer. A non-historic exterior light is attached to the overhang above the primary entry door.

Figure 4. Overview of façade (northeast).

Figure 5. Overview of façade with primary entry door centered.

The southeast elevation (Figures 6-7) includes a portion of the addition, which is partially obscured by exterior conduit and lines and metal piping that is non-historic. A low concrete and brick wall lines the elevation where the addition is visible (eastern portion). The southern portion of the southeast elevation features one 6-part, ca. 2012 window grouping. This window configuration replaced original (1957) plate glass windows. Located immediately adjacent to the ca. 2012 window grouping, a concrete stucco in-fill area is clearly visible, which shows were a second, 6-part window grouping was once located. It appears that when the current 6-part window was replaced the adjacent grouping was in-filled (see Figure 6). A non-historic exterior light is attached to the wall between the window grouping and the concrete in-fill line. An approximately 2-foot-tall section of brick veneer is located beneath the windows on the southeast elevation, which appears to have been added when the addition was constructed. The brick veneer was removed where the concrete stucco in-fill occurred.

The southwest elevation (Figures 6 and 8) features a courser concrete stucco with larger aggregate. One single-leaf steel door is located at the southern end of the southwest elevation that appears non-historic. Three non-historic lights are attached to the elevation, two near the cornice, and one above the steel door. A conduit line is attached to the elevation approximately half way up the wall. This elevation shows indication of original construction in the tilt-up concrete wall panels separated into eight bays.

The northwest elevation (Figures 9-10) includes a portion of the addition, which is partially obscured by exterior, non-historic conduit lines. Within the portion of the elevation containing the addition, there is a steel roll-top vehicular door that is non-historic, but may have replaced a previous roll-top door, as well as two single-leaf steel doors. Both single-lead doors are non-historic and the western-most door features an inset glass pane. Within the western portion of the elevation, there is one additional roll-up steel door that is non-historic, but may have replaced a previous roll-top door. The building features no additional architectural detailing.

Interior

The interior (Figures 11-13) features of MIPS include concrete and linoleum flooring as well as metal and plastic equipment. Though some equipment is still in use, much of the equipment on the interior is sitting unused. Interior walls feature exposed concrete, brick veneer near where the addition connects, and gypsum board in the control area (Figure 11). Interior fenestration is predominantly non-historic laminated single-leaf doors and steel-framed window walls (Figures 11-12).

The three-story portion of the building features a mezzanine with a steel and concrete catwalk. The tilt-up construction of the southwest elevation is also visible on the interior (Figure 13).

Setting

Within the setting of the building is the remainder of the WWTP. As is discussed in the Historic Context (see Section 3.4). The WWTP, as a whole, has been extensively modernized and much of

the current setting is non-historic, dating from the 1970s-1990s. Historic aerial imagery indicates that minimal expansion occurred between 1958 and 1968, including the addition on the façade of MIPS. Between 1968 and 1982, additional expansion occurred within the 1968 footprint of approximately four additional structures. Between 1982 and 1988, an additional approximately five structures were added and the footprint of the WWTP began to expand northwest. Between 1988 and 1993, an additional approximately eight structures were added and the footprint expanded to the southwest. Between 1993 and 2005, an additional approximately four structures were added and the footprint remained very similar. Between 2005 and today, minimal construction has occurred and the current WWTP footprint appears minimally changed since approximately 1993 (NETR 2020).

Figure 6. Southeast elevation (right) and southwest elevation (left).

Figure 7. Southeast elevation.

Figure 8. Southwest elevation.

Figure 9. Northeast elevation (left) and northwest elevation (right).

Figure 10. Northwest elevation.

Figure 11. Interior view showing pumping equipment and interior finishes.

Figure 12. Interior view showing control panel and interior finishes.

Figure 13. Typical interior view showing mezzanine level.

SECTION 5.0

CALIFORNIA AND NATIONAL REGISTERS SIGNIFICANCE EVALUATION

The purpose of evaluating the cultural resource in the Proposed Project area is to determine whether it is eligible for inclusion in the NRHP and CRHR. As described in Chapter 1, Section 106 of the NHPA and CEQA require government agencies to consider potential effects/impacts to NRHP- and/or CRHR-eligible properties, whereas such consideration is not necessary for non-eligible resources.

The first threshold in this determination is to ascertain whether the resource satisfies the age criterion for national and state registers. Consistent with 36 CFR 60.4, to be eligible for these registers, an archaeological or built-environment resource must be 50 years old or older. Except under exceptional circumstances (National Park Service [NPS] 2002:25–43), resources less than 50 years old are dismissed from further consideration.

The NPS has established guidelines for evaluating eligibility of resources meeting the age criterion (NPS 2002). The basic steps in the process include:

1. Classifying the resource as a district, archaeological site, building, structure, or object;

2. Determining the theme, context, and relevant thematic period of significance to which the resource is associated;

3. Determining whether the resource is historically important under a set of significance criteria; and

4. (If significant) determining whether the resource retains integrity.

Although the NPS developed these guidelines specifically for evaluating resources for eligibility for inclusion in the NRHP, they are equally applicable for evaluating CRHR eligibility.

In California, cultural resources are usually classified according to *Instructions for Recording Historical Resources*, published by the California Office of Historic Preservation in 1995. This handbook contains listings of resource categories for historical and prehistoric sites as well as standing structures. For built-environment resources, it is additionally helpful to define a property along its economic dimensions (e.g., commercial vs. residential; urban vs. rural; agricultural vs. industrial).

The historic context establishes the framework within which decisions about significance are based (NPS 2002:9). The evaluation process essentially weighs the relative importance of events, people, and places against the larger backdrop of history; within this process, the context provides the comparative standards and/or examples as well as the theme(s) necessary for this assessment.

According to the NPS (2002:9), a theme is a pattern or trend that has influenced the history of an area for a certain period. A theme is typically couched in geographic (i.e., local, state, or national) and temporal terms to focus and facilitate the evaluation process.

Significance is based on how well the subject resource represents one or more of these themes through its associations with important events or people and/or through its inherent qualities. A resource must demonstrate more than just association with a theme; it must be a good representative of the theme, capable of illustrating the various thematic elements of a particular time and place in history. According to 36 CFR 60.4, in order to be included in the NRHP and thus be considered a historic property per 36 CFR 800.16(l), a cultural resource must meet at least one of the following four criteria:

(a) It is associated with events that have made a significant contribution to the broad patterns of our history; or

(b) It is associated with the lives of persons significant in our past; or

(c) It embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or

(d) It has yielded, or may be likely to yield, information important in prehistory or history.

Similarly, according to the CEQA Guidelines, in order for a resource to be eligible for the CRHR, it must meet at least one of the criteria defined in Section 5024.1 of the California Public Resources Code (PRC):

(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.

(4) Has yielded, or may be likely to yield, information important in history or prehistory.

To be included in the NRHP and CRHR, a property must not only possess historical significance but also the physical means to convey such significance—that is, it must possess integrity. Integrity refers to the degree to which a resource retains its original character. Assessing the integrity of a significant resource depends on an understanding of the components or features that give it

significance. For this reason, the issue of integrity is addressed only after significance has been established. Moreover, cultural resources that are not significant per NRHP and CRHR criteria are by definition not eligible for either register and do not require an integrity assessment.

To facilitate this assessment, the NPS has identified seven aspects of integrity.

> *Location* is the place where the historic property was constructed or the place where the historic event occurred. . . .
>
> *Design* is the combination of elements that create the form, plan, space, structure, and style of a property. . . .
>
> *Setting* is the physical environment of a historic property. . . .
>
> *Materials* are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. . . .
>
> *Workmanship* is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. . . .
>
> *Feeling* is a property's expression of the aesthetic or historic sense of a particular period of time. . . .
>
> *Association* is the direct link between an important historic event or person and a historic property. . . [NPS 2002:44–45; *emphasis added*].

If a resource is considered to be NRHP and/or CRHR eligible, it is then necessary to assess whether or not a project will cause an adverse effect. In this respect, the Criteria of Adverse Effect per 36 CFR 800.5(a)(1) and (a)(2) is applied. Federal regulations define and illustrate this concept as follows:

> (a)(1) An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. . . .
>
> (a)(2) Adverse effects on historic properties include, but are not limited to:
>
> > (i) Physical destruction of or damage to all or part of the property;
> >
> > (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's

Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;

(iii) Removal of property from its historic location;

(iv) Change of the property's use or of physical features within the property's setting that contributes to its significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's setting that contributes to its significance;

(vi) Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

To evaluate the cultural resource herein, the following NRHP bulletins were used as guides:

- *How to Apply the National Register Criteria for Evaluation* (Bulletin 15) (USDOI 2006 [1990]);
- *Researching a Historic Property* (Bulletin 39) (USDOI 1998 [1991]).

5.1 CRHR/NRHP Evaluation

5.1.1 The Mare Island Pump Station

MIPS was originally constructed in 1957, and is historically associated with the 1952 Vallejo Sanitation and Flood Control District Act, as well as the original construction of the Vallejo Wastewater Treatment Plant. As such, the resource does have local significance under NRHP Criterion A and CRHR Criterion 1 for its association with wastewater treatment in Solano County. However, the building has been extensively altered, including replacement of all of the fenestration located on the building, and multiple windows and doors have been replaced or in-filled with concrete. In addition, the setting of the WWTP as a whole has been substantially expanded between 1982 and 1993. Thus, the resource retains poor overall integrity of materials, workmanship, design, setting, feeling and association, and only retains integrity of location as it has not been moved. Due to a lack of sufficient integrity, MIPS is recommended not eligible for listing under NRHP Criterion A and CRHR Criterion 1.

The resource is not associated with the lives of any specific people significant in the past, and thus does not appear to have significance under NRHP Criterion B or CRHR Criterion 2. The resource

is not a distinctive or rare type, nor was it designed to meet any significant engineering requirements or design restrictions. In addition, the resource does not represent the work of a master or possess high artistic value. Due to the extensive alteration and expansion that has occurred to the WWTP as a whole, MIPS does not represent a significant and distinguishable entity whose components may lack individual distinction. Thus, the resource does not appear to have significance under NRHP Criterion C or CRHC Criterion 3. Lastly, the resource is unlikely to yield information important in prehistory or history as it is located within a paved setting and has a substantial concrete foundation, and it does not appear to have significance under NRHP Criterion D or CRHR Criterion 4.

Due to a lack of both integrity under Criterion A/1, and a lack of significance under Criteria B/2, C/3, and D/4, MIPS is recommended not eligible for listing in either the NRHP or the CRHR.

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SECTION 6.0

SUMMARY AND RECOMMENDATIONS

6.1 Archaeological Summary and Recommendations

HDR did not discovery evidence of any prehistoric or historical archaeological sites in the Proposed Project area during the inventory process. Additionally, the potential for intact buried archaeological sites in the Proposed Project area is low. Therefore, no specific management recommendations regarding archaeological resources are provided however provisions for the inadvertent discovery of a previously unknown archaeological resource are provided below.

6.2 General Recommendations

Unless the Proposed Project changes to encompass other areas not analyzed for this inventory, no further studies are recommended. However, because it is not possible to entirely remove the possibility of inadvertently discovering an unknown archaeological resource, HDR offers the following general recommendations:

- In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire Proposed Project area, all work in the vicinity of the find should be halted until a qualified archaeologist can evaluate the discovery.

- If human remains are uncovered, or in any other case when human remains are discovered during construction, the Solano County coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.

6.3 Historical Built-environment Resource Summary and Recommendations

The Mare Island Pump Station building is considered not eligible for inclusion in either the California (CRHR) or National (NRHP) Registers due to its lack of integrity and historical significance. Thus, there is no potential for significant impacts or adverse effects to occur to this resource and no further management or resource evaluation is recommended.

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SECTION 7.0

REFERENCES

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Appendix A

Resumes of Key Personnel

Jay B. Lloyd

Senior Archaeologist

Mr. Lloyd has been involved in cultural resources management throughout California for more than 20 years. As a senior archaeologist, he manages numerous simultaneous projects throughout the state. In this capacity, Mr. Lloyd ensures compliance with federal and state laws and regulations, and directs the work of technical staff and subcontractors. He is responsible for proposal writing, budgeting, marketing, project design and management, data acquisition, field supervision, technical reporting, and Native American coordination and consultation. Mr. Lloyd has worked on dozens of archaeological projects throughout California, including the Sierra Nevada and Cascade mountain ranges, Central Valley, Central Coast, Southern California, Modoc Plateau, and Mojave Desert regions. He has supervised survey, extended survey, testing and evaluation, construction monitoring, and data recovery projects at both prehistoric and historical archaeological sites. Additionally, Mr. Lloyd has authored and contributed to numerous National Historic Preservation Act Section 106 and California Environmental Quality Act compliance documents.

EDUCATION
Master of Arts, Linguistics, University of California, Santa Cruz

Bachelor of Arts, Anthropology, California State University, Fresno

Bachelor of Arts, Linguistics, California State University, Fresno

REGISTRATIONS/CERTIFICATIONS
Register of Professional Archaeologists (#15577)

Paleontologic Site Monitor Certification, Fossil Discovery Center

Bureau of Land Management (BLM) Principle Investigator (CA – statewide)

PROFESSIONAL AFFILIATIONS
Society for American Archaeology

Society for California Archaeology

Fresno County Archaeological Society

Association of Environmental Professionals

INDUSTRY TENURE
21 years

HDR TENURE
2 years

Office Location
Sacramento, CA

RELEVANT EXPERIENCE

Devil Canyon Relicensing Project (FERC #14797), San Bernardino County, California. Assistant Technical Lead, Cultural and Tribal Resources. Responsible for cultural resources compliance work in support of the Devil Canyon Power Development relicensing. The project has included archaeological and built-environment surveys, resource documentation, and NRHP eligibility evaluations; consultation with Native American tribes and SHPO; and close coordination with subcontractors. Reports have included a Cultural and Tribal Resources Study Approaches, a Pre-Application Document (PAD), a three-volume technical report, a Historic Properties Management Plan (HPMP), and the cultural and tribal sections of the Draft License Application (DLA). Client: Stantec Inc. for the California Department of Water Resources.

South SWP Hydropower Project (FERC #2426), Los Angeles County, California. Assistant Technical Lead, Cultural and Tribal Resources. Responsible for cultural resources compliance work in support of the South State Water Project relicensing. The project has included archaeological and built-environment surveys, resource documentation, and NRHP eligibility evaluations; consultation with Native American tribes and SHPO; and close coordination with subcontractors. Reports have included a Cultural and Tribal Resources Study Plans, a Pre-Application Document (PAD), a three-volume technical report, a Historic Properties Management Plan (HPMP), and the cultural and tribal sections of the Draft License Application (DLA). Client: Stantec Inc. for the California Department of Water Resources and Los Angeles Department of Water and Power.

Missouri Flat-Gold Hill 115kV Reconductoring Project, El Dorado and Sacramento Counties, California. Field Director. Directed field inventory studies, National Register evaluations, construction monitoring, and paleontological field studies for 12.5 miles of line reconductoring, 59 pole replacements, and 10 steel tower modifications. Client: Stillwater Sciences for Pacific Gas and Electric Company.

American River Common Features, Natomas Basin Reach 1 Contract 1, Engineering Services and Cultural Resource Monitoring during Construction, Sacramento County, California. Project Manager, Archaeological Monitor. Coordinated cultural resources monitoring during project construction. This effort has included (to date) monitoring daily construction activities, coordinating with construction personnel and Native American monitors from four separate tribal groups, keeping detailed daily notes of project activities and personnel, and attending weekly team meetings. Client: U.S. Army Corps of Engineers.

Line 108 Replacement Project, Sacramento County, California. Project Manager. Managed the cultural resources compliance effort for 12 miles of 42-inch natural gas pipeline replacement. The project required Native American consultation, records searches, archival research, pedestrian surveys, construction monitoring, and CRHR/NRHP evaluations. Client: Trigon Associates for Pacific Gas and Electric Company.

Multiple Water Districts in Kern, Tulare, Kings, Fresno, Madera, Merced, and Stanislaus Counties, California. Project Manager. Directed field studies and historical research for California and National Register eligibility evaluations of multiple water conveyance structures (canals, ditches, drains, etc.) throughout the San Joaquin Valley. Efforts have included records searches, pedestrian surveys, architectural history, archival research, geoarchaeological studies, construction monitoring, and site eligibility testing. Clients (among others): Fresno Irrigation District, Tulare Irrigation District, Kern Delta Water District, Kern County Water Agency, San Luis Canal Company, Firebaugh Canal Water District, Westlands Water District, Dudley Ridge Water District, and Central California Irrigation District.

Paradise Slide Emergency Road Repair Project, Santa Barbara County, California. Project Manager. Led the cultural resources compliance effort with Santa Barbara County, Department of Transportation (Caltrans), and Los Padres National Forest for an emergency road repair project within an NRHP-eligible archaeological site – CA-SBA-1229. The effort resulted in an Archaeological Survey Report (ASR), Historic Properties Survey Report (HPSR), Archaeological Evaluation Proposal (AEP), Finding of Effect (FOE), Memorandum of Agreement (MOA), Data Recovery Plan (DRP), and Data Recovery Report. Client: Santa Barbara County Public Works Department.

Kings River Levee Evaluation Project, Fresno County, California. Project Manager. Responsible for all cultural resources compliance work in support of geotechnical investigations on more than 140 miles of historic levees which required a Section 404 and Nationwide Permit 43 issued by the U.S. Army Corps of Engineers. The project included records searches, pedestrian surveys, Native American consultation, a geoarchaeological assessment, and a technical report of findings. Client: Kings River Conservation District.

Central California Power Connect, Kern, Santa Barbara and San Luis Obispo Counties, California. Assistant Project Manager. Assisted with leading the cultural resources team in the inventory of cultural resources for over 500 miles of proposed transmission line. Responsible for obtaining federal field work authorization permits, preparing a cultural resources research design and fieldwork plan, directed sensitivity analyses of various project alternatives, and assisted with Native American outreach. Client: ICF International for Pacific Gas and Electric Company.

EDUCATION
MS, Historic Preservation, University of Oregon, 2012

BA, Architectural History; Minors in Business Administration and Historic Preservation, University of Oregon, 2010

Certification, GIS, Clackamas Community College, 2016

PROFESSIONAL MEMBERSHIPS
Friends of the Historic Columbia River Highway Board of Directors (2013-2016), Committee Member (2013-2019), Volunteer (2013-present)

Restore Oregon, Member and Volunteer, Portland (2011-present)

Architectural Heritage Center, Education Committee, Member, Docent, and Tour Guide, Portland (2011-present)

Oregon City Parks Foundation, Volunteer and Grant Committee, Oregon City (2016-Present)

DoCoMoMo Oregon, Volunteer and Docent, Portland (2015-Present)

INDUSTRY TENURE
8 years

HDR TENURE
3 years

OFFICE LOCATION
Portland, OR

TRAINING
Oregon Department of Transportation, Cultural Resources Consultant Qualification Training for Architectural History, Salem (OR)

ACHP/CEQ Guidance for Integrating NEPA and Section 106, NWAEP, Portland (OR)

Caltrans Environmental Compliance: Introduction to Cultural Resources Compliance, Sacramento (CA)

Leesa Gratreak

Architectural Historian

Leesa Gratreak is an architectural historian with over 8 years of professional experience conducting historic surveys and providing cultural resource management services, as well as 4 years of experience volunteering with the University of Oregon conducting historic resource surveys, condition assessments and intensive level research. Her experience includes large-scale reconnaissance and intensive level survey, Section 106, Section 4(f), FERC Relicensing, NEPA, and CEQA compliance, historic research and context development, GIS mapping and analysis, MPD development, HABS/HAER documentation, National Register nominations, and preservation and restoration planning strategies for private and public entities. Leesa has worked extensively throughout the West.

RELEVANT EXPERIENCE

Caltrain, Condition Assessment of Historic Train Stations, (2018), *CA*
Role: Architectural history and historic preservation lead. Lead report author and field lead. HDR conducted in-depth condition assessment of building envelope, materials, construction, as well as interior features and significant features in the setting for six NRHP listed train stations in San Mateo and Santa Clara County, CA. Included detailed recommendations for prioritizing repairs and maintaining historic character-defining features.

Montana-Dakota Utilities Company, Architectural Resources Inventory for the MDU ARS Miles City 115 kV Transmission Line and Substation, (2018-current), *MT*
Role: Architectural history lead and primary report author. HDR is providing technical assistance with Section 106 Compliance and historical documentation for the MDU ARS Miles City 115 kV Transmission Line and Substation Project in Custer County, MT in order to permit new construction.

Pyramid Lake Paiute Tribe, Cultural Resources Inventory and National Register of Historic Places Evaluation for the Prosser Creek Hydroelectric Project Licensing, (2018), *CA*
Role: Architectural history lead and primary report author. HDR provided technical assistance with Section 106 Compliance and historical documentation for the Prosser Creek Hydroelectric Project in Nevada County, CA in order to issue a new FERC license.

California Department of Water Resources (DWR), FERC Relicense of the Devil Canyon Project, (2017-current), *CA*
Role: Architectural history lead, field lead, lead report writer. HDR is providing technical assistance with Section 106 Compliance and historical documentation for the Devil Canyon Hydroelectric Project near San Bernardino, CA in order to relicense the hydropower facility.

California Department of Water Resources (DWR), FERC Relicense of the South SWP Project, (2017-current), *CA*

Handling Cultural Resource issues in Clean Water Act Section 404 Permitting, NWAEP, Portland (OR)

Oregon Connecting to Collections, Collections Care Workshop, Oregon, Oregon Heritage Conference, Portland (OR)

Role: Architectural history lead, field lead, lead report writer. HDR is providing technical assistance with Section 106 Compliance and historical documentation for the South SWP Hydroelectric Project near in order to relicense the hydropower facilities.

U.S. Marine Corps Forces Reserve (MARFORRES), Heritage Asset and Historic Resources Inventory, (2017-current), *USA*
Role: Architectural historian, project deliverables lead, research lead. HDR is providing technical assistance to MARFORRES in order to inventory, research and create a database for all known heritage assets and historic resources located at all 160 MARFORRES locations in the U.S. Ms. Gratreak has U.S. Government Common Access Car clearance until 2021.

Pacific Gas and Electric (PG&E), Camp Far West Transmission Line FERC Relicense Cultural Resource Study, (2017-current), *CA*
Role: Architectural history lead, field lead, lead report writer. HDR is providing technical assistance with Section 106 Compliance and historical documentation for the Camp Far West Transmission Line Project, located near Wheatland, CA.

Idaho Department of Transportation (ITD), State Highway 41, Mullen to East Prairie, (2017-2018), *ID*
Role: Architectural history lead, field lead, lead report writer. HDR provided technical assistance with Section 106 and 4(f) compliance for the SH-41 upgrade and expansion project. Includes determinations of eligibility, intensive level survey, findings of effect, consultation, and mitigation recommendations.

Oregon Department of Environmental Quality (DEQ), City of Klamath Falls Sewage Treatment Plant Upgrade Project, (2018-2019), *Klamath Falls, OR*
Role: Architectural history lead, report author, lead researcher. HDR conducted a cultural resource survey for the City of Klamath Falls Sewage Treatment Plant Upgrade Project in order to complete Section 106 compliance. Included historic context development and Section 106 documentation.

Prevailing Winds, sPower (2018-2019), *Yankton, SD*
Role: Architectural Historian, field staff, and report author. HDR conducted a cultural resource survey for sPower's Prevailing Winds wind farm project in Bon Homme, Charles Mix, Hutchinson, and Yankton counties in order to complete Section 106 compliance. The 50,364-acre project includes 61 turbines 590 feet tall with a 27-mile transmission line. HDR surveyed and evaluated more than 200 architectural resources for NRHP eligibility.

Oregon Department of Transportation (ODOT), I-205 Abernathy Project, (2017-2018), *Clackamas County, OR*
Role: Architectural history lead, field lead, lead report writer. HDR provided technical assistance with Section 106 and 4(f) compliance for the I-205 upgrade and expansion Project. Includes determinations of eligibility, findings of effect, and mitigation recommendations.

ODOT, I-84: N Huntington Interchange Bridge Project, (2018-2019), *Baker County, OR*

Appendix B

Native American Heritage Commission and Tribal Correspondence

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

May 12, 2020

Jay Llody, MP, RPA, Senior Cultural Resources Specialist
HDR

Via Email to: john.lloyd@hdrinc.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Vallejo Mare Island Pump Station 3W Effluent Bypass Project, Solano County

To Mr. Lloyd:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Sarah.Fonseca@nahc.ac.gov.

Sincerely,

Sarah Fonseca
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Solano County
5/12/2020

Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
Charlie Wright, Chairperson
P.O. Box 1630
Williams, CA, 95987
Phone: (530) 473 - 3274
Fax: (530) 473-3301

Wintun

Guidiville Indian Rancheria
Merlene Sanchez, Chairperson
P.O. Box 339
Talmage, CA, 95481
Phone: (707) 462 - 3682
Fax: (707) 462-9183
admin@guidiville.net

Pomo

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road
Auburn, CA, 95603
Phone: (530) 883 - 2390
Fax: (530) 883-2380
bguth@auburnrancheria.com

Maidu
Miwok

Yocha Dehe Wintun Nation
Anthony Roberts, Chairperson
P.O. Box 18
Brooks, CA, 95606
Phone: (530) 796 - 3400
Fax: (530) 796-2143
aroberts@yochadehe-nsn.gov

Patwin

The Confederated Villages of Lisjan
Corrina Gould, Chairperson
10926 Edes Avenue
Oakland, CA, 94603
Phone: (510) 575 - 8408
cvltribe@gmail.com

Bay Miwok
Ohlone
Delta Yokut

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Vallejo Mare Island Pump Station 3W Effluent Bypass Project, Solano County.

(707) 644-8949 (Admin)
(707) 644-8976 (Billing)
www.VallejoWastewater.org
450 Ryder Street
Vallejo, CA 94590

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Rozzana Verder-Aliga

District Manager
Melissa Morton

June 11, 2020

Cortina Rancheria – Kletsel Dehe Band of Wintun Indians
Charlie Wright, Chairperson
P.O. Box 1630
Williams, CA 95987

RE: Invitation to Consult for the Secondary Effluent Project in Vallejo, Solano County, California

Dear Charlie Wright, Chairperson:

The Vallejo Flood and Wastewater District (VFWD) proposes to construct a new effluent pumping station, chlorine contact tank, and Bioassay facility; and rehabilitate the 3W and Carquinez Pump Stations to replace its existing Mare Island Pump Station (MIPS). As part of its proposed project, VFWD would decommission and demolish the existing MIPS. The Project is located at the existing VFWD wastewater treatment plant facility, between State Route 29 and the Napa River, and Solano Avenue and Ryder Street, in Vallejo, California.

The new MIPS will consist of new effluent pumps and a capacity of 30 million gallons per day (mgd). The new Carquinez Pump Station would be rehabilitated with three pumps and a capacity of 30 mgd. The new 3W Pump Station will be rehabilitated to match the design capacity of the existing 3W pump station. Each of the three pumps to be installed at the 3W pump station would have a capacity of 550 gallons per minute (gpm) for a total peak demand up to 1,650 gpm. New instrumentation and controls will tie in to the existing Carquinez Strait pump station building. The new, energy efficient pumps installed would use less power than existing operations. A bypass will be installed to divert flow to the Ryder Street storage basin that does not meet the permit conditions during dry weather flows. The existing pumps would remain in service until the new pumps have been operationally tested. At that point the existing pumps would be removed and the existing MIPS would be decommissioned and demolished.

The Project is located in an unsectioned portion of Township 3 North, Range 4 West on the Mare Island, CA (1981) and Benicia, CA (1981) USGS topographic quadrangles. The Project boundaries are defined by the fenced VFWD facility at 450 Ryder Street in Vallejo (see Attachment 1 – Location Map).

The VFWD is contacting you to initiate Native American consultation for the proposed project. At this time, we are requesting any information you may have regarding archaeological sites, traditional cultural properties, tribal cultural resources, traditional values, or other cultural resource considerations within the proposed project area so this information may be incorporated into the planning phase of the proposed project. A search of the Native American Heritage Commission's Sacred Lands File was **negative**.

Please consider this letter and preliminary proposed project information as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d) if you would like to consult on the proposed Project. Please also provide a designated lead contact person and their contact information that we may coordinate with for these efforts.

Your comments and concerns will be important to VFWD as we move forward with this project. If you have any questions or concerns with the proposed project, please contact our cultural resources consultant John "Jay" Lloyd via email (john.lloyd@hdrinc.com) or at his office (559.287.2137). Mr. Lloyd's mailing address is:

Jay Lloyd
HDR Engineering, Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Sincerely,

Kyle Broughton
Engineering Supervisor

Attachment: 1) Location map

Cc: Kyle Broughton, Vallejo Flood and Wastewater District
Leslie Tice, HDR Engineering, Inc.
Holly Burles, HDR Engineering, In

TS

Vallejo
FLOOD & WASTEWATER DISTRICT

(707) 644-8949 (Admin)
(707) 644-8976 (Billing)
www.VallejoWastewater.org
450 Ryder Street
Vallejo, CA 94590

Board of Trustees
Bob Sampayan
Hakeem Brown
Pippin Dew
Erin Hannigan
Robert McConnell
Katy Miessner
Hermie Sunga
Rozzana Verder-Aliga

District Manager
Melissa Morton

June 11, 2020

Guidiville Indian Rancheria
Merlene Sanchez, Chairperson
P.O. Box 339
Talmage, CA 95481

RE: Invitation to Consult for the Secondary Effluent Project in Vallejo, Solano County, California

Dear Merlene Sanchez, Chairperson:

The Vallejo Flood and Wastewater District (VFWD) proposes to construct a new effluent pumping station, chlorine contact tank, and Bioassay facility; and rehabilitate the 3W and Carquinez Pump Stations to replace its existing Mare Island Pump Station (MIPS). As part of its proposed project, VFWD would decommission and demolish the existing MIPS. The Project is located at the existing VFWD wastewater treatment plant facility, between State Route 29 and the Napa River, and Solano Avenue and Ryder Street, in Vallejo, California.

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Jay Lloyd
HDR Engineering, Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Sincerely,

Kyle Broughton
Engineering Supervisor

Attachment: 1) Location map

Cc: Kyle Broughton, Vallejo Flood and Wastewater District
Leslie Tice, HDR Engineering, Inc.
Holly Burles, HDR Engineering, In

TS

(707) 644-8949 (Admin)
(707) 644-8976 (Billing)
www.VallejoWastewater.org
450 Ryder Street
Vallejo, CA 94590

Board of Trustees
Bob Sampayan
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Katy Miessner
Hermie Sunga
Rozzana Verder-Aliga

District Manager
Melissa Morton

June 11, 2020

United Auburn Indian
Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road
Auburn, CA 95603

RE: Invitation to Consult for the Secondary Effluent Project in Vallejo, Solano County, California

Dear Gene Whitehouse, Chairperson:

The Vallejo Flood and Wastewater District (VFWD) proposes to construct a new effluent pumping station, chlorine contact tank, and Bioassay facility; and rehabilitate the 3W and Carquinez Pump Stations to replace its existing Mare Island Pump Station (MIPS). As part of its proposed project, VFWD would decommission and demolish the existing MIPS. The Project is located at the existing VFWD wastewater treatment plant facility, between State Route 29 and the Napa River, and Solano Avenue and Ryder Street, in Vallejo, California.

The new MIPS will consist of new effluent pumps and a capacity of 30 million gallons per day (mgd). The new Carquinez Pump Station would be rehabilitated with three pumps and a capacity of 30 mgd. The new 3W Pump Station will be rehabilitated to match the design capacity of the existing 3W pump station. Each of the three pumps to be installed at the 3W pump station would have a capacity of 550 gallons per minute (gpm) for a total peak demand up to 1,650 gpm. New instrumentation and controls will tie in to the existing Carquinez Strait pump station building. The new, energy efficient pumps installed would use less power than existing operations. A bypass will be installed to divert flow to the Ryder Street storage basin that does not meet the permit conditions during dry weather flows. The existing pumps would remain in service until the new pumps have been operationally tested. At that point the existing pumps would be removed and the existing MIPS would be decommissioned and demolished.

The Project is located in an unsectioned portion of Township 3 North, Range 4 West on the Mare Island, CA (1981) and Benicia, CA (1981) USGS topographic quadrangles. The Project boundaries are defined by the fenced VFWD facility at 450 Ryder Street in Vallejo (see Attachment 1 – Location Map).

The VFWD is contacting you to initiate Native American consultation for the proposed project. At this time, we are requesting any information you may have regarding archaeological sites, traditional cultural properties, tribal cultural resources, traditional values, or other cultural resource considerations within the proposed project area so this information may be incorporated into the planning phase of the proposed project. A search of the Native American Heritage Commission's Sacred Lands File was **negative**.

Please consider this letter and preliminary proposed project information as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d) if you would like to consult on the proposed Project. Please also provide a designated lead contact person and their contact information that we may coordinate with for these efforts.

Your comments and concerns will be important to VFWD as we move forward with this project. If you have any questions or concerns with the proposed project, please contact our cultural resources consultant John "Jay" Lloyd via email (john.lloyd@hdrinc.com) or at his office (559.287.2137). Mr. Lloyd's mailing address is:

Jay Lloyd
HDR Engineering, Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Sincerely,

Kyle Broughton
Engineering Supervisor

Attachment: 1) Location map

Cc: Kyle Broughton, Vallejo Flood and Wastewater District
Leslie Tice, HDR Engineering, Inc.
Holly Burles, HDR Engineering, In

TS

Vallejo
FLOOD & WASTEWATER DISTRICT

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Rozzana Verder-Aliga

District Manager
Melissa Morton

June 11, 2020

Yocha Dehe Wintun Nation
Anthony Roberts, Chairperson
P.O. Box 18
Brooks, CA 95606

RE: Invitation to Consult for the Secondary Effluent Project in Vallejo, Solano County, California

Dear Anthony Roberts, Chairperson:

The Vallejo Flood and Wastewater District (VFWD) proposes to construct a new effluent pumping station, chlorine contact tank, and Bioassay facility; and rehabilitate the 3W and Carquinez Pump Stations to replace its existing Mare Island Pump Station (MIPS). As part of its proposed project, VFWD would decommission and demolish the existing MIPS. The Project is located at the existing VFWD wastewater treatment plant facility, between State Route 29 and the Napa River, and Solano Avenue and Ryder Street, in Vallejo, California.

The new MIPS will consist of new effluent pumps and a capacity of 30 million gallons per day (mgd). The new Carquinez Pump Station would be rehabilitated with three pumps and a capacity of 30 mgd. The new 3W Pump Station will be rehabilitated to match the design capacity of the existing 3W pump station. Each of the three pumps to be installed at the 3W pump station would have a capacity of 550 gallons per minute (gpm) for a total peak demand up to 1,650 gpm. New instrumentation and controls will tie in to the existing Carquinez Strait pump station building. The new, energy efficient pumps installed would use less power than existing operations. A bypass will be installed to divert flow to the Ryder Street storage basin that does not meet the permit conditions during dry weather flows. The existing pumps would remain in service until the new pumps have been operationally tested. At that point the existing pumps would be removed and the existing MIPS would be decommissioned and demolished.

The Project is located in an unsectioned portion of Township 3 North, Range 4 West on the Mare Island, CA (1981) and Benicia, CA (1981) USGS topographic quadrangles. The Project boundaries are defined by the fenced VFWD facility at 450 Ryder Street in Vallejo (see Attachment 1 – Location Map).

The VFWD is contacting you to initiate Native American consultation for the proposed project. At this time, we are requesting any information you may have regarding archaeological sites, traditional cultural properties, tribal cultural resources, traditional values, or other cultural resource considerations within the proposed project area so this information may be incorporated into the planning phase of the proposed project. A search of the Native American Heritage Commission's Sacred Lands File was **negative**.

Please consider this letter and preliminary proposed project information as formal notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d) if you would like to consult on the proposed Project. Please also provide a designated lead contact person and their contact information that we may coordinate with for these efforts.

Your comments and concerns will be important to VFWD as we move forward with this project. If you have any questions or concerns with the proposed project, please contact our cultural resources consultant John "Jay" Lloyd via email (john.lloyd@hdrinc.com) or at his office (559.287.2137). Mr. Lloyd's mailing address is:

Jay Lloyd
HDR Engineering, Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Sincerely,

Kyle Broughton
Engineering Supervisor

Attachment: 1) Location map

Cc: Kyle Broughton, Vallejo Flood and Wastewater District
Leslie Tice, HDR Engineering, Inc.
Holly Burles, HDR Engineering, In

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Hermie Sunga
Rozzana Verder-Aliga

District Manager
Melissa Morton

June 11, 2020

The Confederated Villages of Lisjan
Corrina Gould, Chairperson
10926 Edes Avenue
Oakland, CA 94603

RE: Invitation to Consult for the Secondary Effluent Project in Vallejo, Solano County, California

Dear Corrina Gould, Chairperson:

The Vallejo Flood and Wastewater District (VFWD) proposes to construct a new effluent pumping station, chlorine contact tank, and Bioassay facility; and rehabilitate the 3W and Carquinez Pump Stations to replace its existing Mare Island Pump Station (MIPS). As part of its proposed project, VFWD would decommission and demolish the existing MIPS. The Project is located at the existing VFWD wastewater treatment plant facility, between State Route 29 and the Napa River, and Solano Avenue and Ryder Street, in Vallejo, California.

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The VFWD is contacting you to initiate Native American consultation for the proposed project. At this time, we are requesting any information you may have regarding archaeological sites, traditional cultural properties, tribal cultural resources, traditional values, or other cultural resource considerations within the proposed project area so this information may be incorporated into the planning phase of the proposed project. A search of the Native American Heritage Commission's Sacred Lands File was **negative**.

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Your comments and concerns will be important to VFWD as we move forward with this project. If you have any questions or concerns with the proposed project, please contact our cultural resources consultant John "Jay" Lloyd via email (john.lloyd@hdrinc.com) or at his office (559.287.2137). Mr. Lloyd's mailing address is:

Jay Lloyd
HDR Engineering, Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Sincerely,

Kyle Broughton
Engineering Supervisor

Attachment: 1) Location map

Cc: Kyle Broughton, Vallejo Flood and Wastewater District
Leslie Tice, HDR Engineering, Inc.
Holly Burles, HDR Engineering, In

TS

YOCHA DEHE
CULTURAL RESOURCES

June 29, 2020

HDR Engineering, Inc.
Attn: Jay Lloyd, Cultural Resources Consultant
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

RE: Vallejo Flood & Wastewater District Secondary Effluent Project

Dear Mr. Lloyd:

Thank you for your project notification letter dated, June 11, 2020, regarding cultural information on or near the proposed Vallejo Flood & Wastewater District Secondary Effluent Project, Vallejo, Solano County. We appreciate your effort to contact us and wish to respond.

The Cultural Resources Department has reviewed the project and concluded that it is within the aboriginal territories of the Yocha Dehe Wintun Nation. Therefore, we have a cultural interest and authority in the proposed project area.

Based on the information provided, the Tribe is not aware of any known cultural resources near this project site and a cultural monitor is not needed. However, we recommend cultural sensitivity training for any pre-project personnel. We also request that you send a copy of the current mitigation measures for this project. Additionally, we have included a copy of Yocha Dehe Wintun Nation's burial treatment protocol for your review.

Please contact the individual listed below to schedule the cultural sensitivity training, prior to the start of the project.

Laverne Bill, Cultural Resources Manager
Yocha Dehe Wintun Nation
Office: (530) 723-3891
Email: lbill@yochadehe-nsn.gov

Please refer to identification number YD-06172020-02 in correspondence concerning this project.

Thank you for providing us the opportunity to comment.

Sincerely,

Leland Kinter (Jul 2, 2020 08:26 PDT)

Tribal Historic Preservation Officer

Vallejo
FLOOD & WASTEWATER DISTRICT

(707) 644-8949 (Admin)
(707) 644-8976 (Billing)
www.VallejoWastewater.org
450 Ryder Street
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Bob Sampayan
Hakeem Brown
Pippin Dew
Erin Hannigan
Robert McConnell
Katy Miessner
Hermie Sunga
Rozzana Verder-Aliga

District Manager
Melissa Morton

July 15, 2020

Yocha Dehe Wintun Nation
Leland Kinter, Tribal Historic Preservation Officer
PO Box 18
Brooks, CA 95606

SUBJECT: YOCHA DEHE WINTUN NATION TRIBAL RESPONSE FOR THE VALLEJO MARE ISLAND PUMP STATION SECONDARY EFFLUENT PROJECT IN VALLEJO, SOLANO COUNTY, CALIFORNIA (YD-06172020-02).

Dear Mr. Kinter,

Thank you for your response letter dated June 29, 2020. As previously described, the Vallejo Flood and Wastewater District (VFWD) proposes to construct a new effluent pumping station, chlorine contact tank, and Bioassay facility; and rehabilitate the 3W and Carquinez Pump Stations to replace its existing Mare Island Pump Station (MIPS). As part of its proposed project, VFWD would decommission and demolish the existing MIPS. The project is located at the VFWD facility, between State Route 29 and the Napa River, in Vallejo, California.

As stated in your letter, the VFWD acknowledges that the project is located within Yocha Dehe Wintun Nation's aboriginal territories and, therefore, the Tribe has a cultural interest and authority with regard to identified or newly discovered Tribal Cultural Resources. Further, the VFWD also acknowledges that the Yocha Dehe Wintun Nation is not aware of any known cultural resources in the vicinity of the Project and that a cultural monitor is not required.

With regards to your recommendation for cultural sensitivity training, per your request the VFWD will contact Cultural Resources Manager Laverne Bill to provide the training prior to ground disturbance. Construction is currently anticipated to begin in the Spring of 2022.

Finally, we have also attached the project's proposed mitigation measures for your review. Mitigation Measures CUL-1 and CUL-2 detail the VFWD's policies and protocol in the case of an inadvertent discovery of either an archaeological site or human remains during construction. As currently designed, the Project is limited to the modern VFWD facility and subsurface disturbance is presumed to be

primarily within previously excavated sediments. Accordingly, archaeological sensitivity is presumably very low. However, the VFWD recognizes the possibility of an inadvertent discovery during Project implementation and will execute the appropriate measures should this situation arise.

Pending further response, the VFWD is proposing to conclude consultation under California Environmental Quality Act, specifically Public Resources Code 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill 52) with the understanding that in the event of an inadvertent discovery, it will be necessary to re-initiate consultation with the Yocha Dehe Wintun Nation per CEQA regulations.

In closing, the VFWD very much appreciates your response for the proposed project. If you have any questions regarding this letter, please contact our cultural resources consultant John "Jay" Lloyd via email (john.lloyd@hdrinc.com) or at his office (559.287.2137). Mr. Lloyd's mailing address is 2379 Gateway Oaks Drive, Suite 200, Sacramento, CA 95833.

As always, we understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. Should these types of resources or areas be identified during the project, the VFWD will develop procedures to ensure that the confidentiality of such information is maintained.

Sincerely,

Kyle Broughton
Engineering Supervisor

kb

Attachment: Mitigation Measures MM-CUL-1 and MM-CUL-2

Cc: Kyle Broughton, Vallejo Flood & Wastewater District
Leslie Tice, HDR Engineering, Inc.
Holly Burles, HDR Engineering, Inc.

Appendix C

Records Search Results from the Northwest Information Center

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

5/29/2020 NWIC File No.: 19-1938

John Lloyd
HDR, Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

Re: Mare Island Pump Station

The Northwest Information Center received your record search request for the project area referenced above, located on the Mare Island, Benicia USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a no radius:

Resources within project area:	None listed
Reports within project area:	S—899, 1784*, 22817

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Digital Database Records:	☐ enclosed	☐ not requested	☒ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database Records:	☒ enclosed	☐ not requested	☐ nothing listed
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☒ enclosed	☐ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☐ not requested	☒ nothing listed
Historical Literature:	☐ enclosed	☐ not requested	☒ nothing listed

Historical Maps: ☐ enclosed ☐ not requested ☒ nothing listed

Local Inventories: ☒ enclosed ☐ not requested ☐ nothing listed

* "Other" Reports GIS layer consists of report study areas for which the report content is almost entirely non-fieldwork related (e.g., local/regional history, or overview) and/or for which the presentation of the study area boundary may or may not add value to a record search

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Annette Neal

Researcher

Appendix D

Department of Parks and Recreation 523 Forms

State of California ♿ The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI #
PRIMARY RECORD
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

Page 1 **of** 13 ***Resource Name or #:** (Assigned by recorder) Mare Island Pump Station
P1. Other Identifier: MIPS; Vallejo Wastewater Treatment Plant (WWTP)
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Solano County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Benicia **Date** 2018 **T** 03N ; **R** 04E; **Sec** 00; M.D. **B.M.**
c. Address 450 Ryder St City Vallejo Zip 94590
d. UTM: (Give more than one for large and/or linear resources) Zone 10, 565721 mE/ 4216296 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)

***P3a. Description:**
The Mare Island Pump Station (MIPS), constructed in 1957, is located in Vellejo, CA in Solano County, across the Napa River (also known as the Mare Island Strait), from the Mare Island Naval Shipyard. The three-story, rectangular building is partially subterranean and composed of cast-in-place concrete. The façade faces northeast and has three bays. Ca. 1965, a 1-story addition was attached to the façade, where the primary entrance resides. The one-story addition is clad in brick veneer and the remaining elevations exhibit a concrete stucco exterior. The building's flat roof is punctured by metal vent pipes and electrical equipment. On the façade, the roof has a deep overhang covered with concrete stucco. All of the fenestration located on the building is non-historic (less than 50 years old), and multiple windows and doors have been replaced or in-filled with concrete. The façade features a ca. 2005-12, single-leaf steel door with a single inset glass pane.

(see Continuation Sheet page 3)

***P3b. Resource Attributes:** HP 9 (wastewater treatment plant)

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5a. Photograph or Drawing

P5b. Description of Photo: MIPS, Southeast elevation (right) and southwest elevation (left) View north. Photo taken 07/15/2020. Digital image.

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both Vallejo Flood and Wastewater District (VFWD)

***P7. Owner and Address:** VFWD, 450 Ryder St, Vallejo, CA, 94590

***P8. Recorded by:** Leesa Gratreak, HDR, Inc., 1050 SW 6th Avenue, Suite 1800, Portland, OR 97204-1134

***P9. Date Recorded:** 08/06/2020

***P10. Survey Type:** Cultural Resources Inventory and Evaluation

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
Lloyd and Gratreak. 2020. Cultural Resources Inventory and Evaluation for the Vallejo Mare Island Pump Station 3W Effluent Bypass Project. Prepared for Vallejo Flood and Wastewater District, Vallejo, Solano County, CA.

***Attachments:** ☐NONE ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California ♘ The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Mare Island Pump Station (MIPS) ***NRHP Status Code** 6Z
Page 2 **of** 13
B1. Historic Name: Vallejo Sanitation & Flood Control District Control Building
B2. Common Name: MIPS
B3. Original Use: Wastewater treatment B4. Present Use: Wastewater treatment
***B5. Architectural Style:** Utilitarian
***B6. Construction History:** (Construction date, alterations, and date of alterations)
MIPS was constructed in 1957. It has undergone extensive alteration, beginning in the early 1970s, through 2012. The façade (northeast) also received an addition ca. 1965. See continuation sheet, page 3 for the full building description, including all alterations.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
MIPS is part of the greater Vallejo Wastewater Treatment Plant, constructed between 1957 and ca. 1993.

B9a. Architect: Brown and Caldwell b. Builder: Brown and Caldwell
***B10. Significance: Theme** Wastewater treatment **Area** Solano County
Period of Significance 1957 **Property Type** Building **Applicable Criteria** N/A

MIPS is recommended not eligible for listing in the California Register and the National Register and is thus not considered a historic property under Section 106. In accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, it is not a historical resource for purposes of CEQA.
(See continuation sheet, page 3).

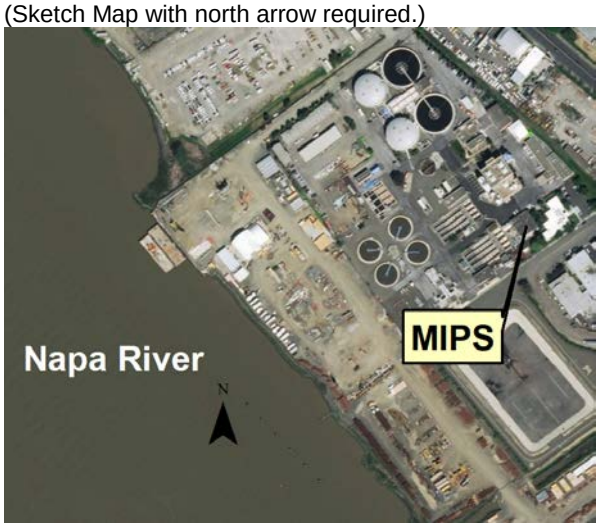
B11. Additional Resource Attributes:
***B12. References:**

(See continuation sheet, page 3)

B13. Remarks:

***B14. Evaluator:** Leesa Gratreak, HDR, Inc.
***Date of Evaluation:** 08/06/2020

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

(Continued from page 2)
P3a. Description

Five panes of steel-framed plate glass surround the door as sidelights and a transom. Three additional, non-historic steel-framed fixed windows are located on the façade, immediately north of the primary entrance. Exterior conduit lines (non-historic) and a steel vent (original) are located at the northern portion of the façade, affixed to the brick veneer. A non-historic exterior light is attached to the overhang above the primary entry door.

The southeast elevation includes a portion of the addition, which is partially obscured by exterior conduit and lines and metal piping that is non-historic. A low concrete and brick wall lines the elevation where the addition is visible (eastern portion). The southern portion of the southeast elevation features one 6-part, ca. 2012 window grouping. This window configuration replaced original (1957) plate glass windows. Located immediately adjacent to the ca. 2012 window grouping, a concrete stucco in-fill area is clearly visible, which shows were a second, 6-part window grouping was once located. It appears that when the current 6-part window was replaced the adjacent grouping was in-filled. A non-historic exterior light is attached to the wall between the window grouping and the concrete in-fill line. An approximately 2-foot-tall section of brick veneer is located beneath the windows on the southeast elevation, which appears to have been added when the addition was constructed. The brick veneer was removed where the concrete stucco in-fill occurred.

The southwest elevation features a courser concrete stucco with larger aggregate. One single-leaf steel door is located at the southern end of the southwest elevation that appears non-historic. Three non-historic lights are attached to the elevation, two near the cornice, and one above the steel door. A conduit line is attached to the elevation approximately half way up the wall. This elevation shows indication of original construction in the tilt-up concrete wall panels separated into eight bays.

The northwest elevation includes a portion of the addition, which is partially obscured by exterior, non-historic conduit lines. Within the portion of the elevation containing the addition, there is a steel roll-top vehicular door that is non-historic, but may have replaced a previous roll-top door, as well as two single-leaf steel doors. Both single-lead doors are non-historic and the western-most door features an inset glass pane. Within the western portion of the elevation, there is one additional roll-up steel door that is non-historic, but may have replaced a previous roll-top door. The building features no additional architectural detailing.

The interior features of MIPS include concrete and linoleum flooring as well as metal and plastic equipment. Though some equipment is still in use, much of the equipment on the interior is sitting unused. Interior walls feature exposed concrete, brick veneer near where the addition connects, and gypsum board in the control area. Interior fenestration is predominantly non-historic laminated single-leaf doors and steel-framed window walls. The three-story portion of the building features a mezzanine with a steel and concrete catwalk. The tilt-up construction of the southwest elevation is also visible on the interior.

Setting

Within the setting of the building is the remainder of the WWTP. The WWTP, as a whole, has been extensively modernized and much of the current setting is non-historic, dating from the 1970s-1990s. Historic aerial Imagery indicates that minimal expansion occurred between 1958 and 1968, including the addition on the façade of MIPS. Between 1968 and 1982, additional expansion occurred within the 1968 footprint of approximately four additional structures. Between 1982 and 1988, an additional approximately five structures were added and the footprint of the WWTP began to expand northwest. Between 1988 and 1993, an additional approximately eight structures were added and the footprint expanded to the southwest. Between 1993 and 2005, an additional approximately four structures were added and the footprint remained very similar. Between 2005 and today, minimal construction has occurred and the current WWTP footprint appears minimally changed since approximately 1993 (NETR 2020).

(Continued from page 2)
B10. Significance

Historical Summary

In 1952, the Vallejo Sanitation and Flood Control District Act was created through a special act of the California legislature, which included it in Enabling Act 8934. This established the Vallejo Sanitation & Flood Control District. The special district was intended to provide sanitation and flood services within the District's boundary. The official and legal name of the District was changed to "Vallejo Flood and Wastewater District" (VFWD) by Ord. No. 2018-76, § 1, adopted Feb. 13, 2018 (PMC 2006; VFWD 2012; VFWD 1952 (February 2020 Version), Title 6, Chapter 6.12.050). The Mare Island Pump Station (MIPS) was constructed in 1957 as the primary pump station of the Vallejo Wastewater Treatment Plant (WWTP), originally known as the "Control Building", the building is commonly known as "MIPS". The WWTP is located in Vellejo, CA in Solano County, across the Napa River (also known as the Mare Island Strait), to the east, from the Mare Island Naval Shipyard.

Construction began after the act was created and in 1959 the WWTP was complete and the plant began treating Vallejo's sewage. The WWTP, as originally designed, was a physical/chemical plant consisting of screening, influent pumping, sedimentation tanks with pre-aeration, and chlorination disinfection prior to discharge. All of these treatment components resided within the Control Building now referred to as MIPS. At that time, all effluent was pumped to the Carquinez Strait outfall near the location of the current Cal State Maritime Academy due to the level of treatment at the time and the deep channel discharge point (in comparison to the adjacent Mare Island Strait/Napa River discharge point added in later years). Sludge was pumped to digestion tanks with gas flaring. The original effluent pumps were powered by liquid diesel engines. The MIPS structure also housed the control building for the entire WWTP process, including the point-of-entry for ancillary utilities to the WWTP (potable water, telephone, electrical feed). A gravity line to the Mare Island Strait originally served as the WWTP's overflow (VFWD 2012, 2020).

MIPS was designed and constructed by the engineering firm Brown and Caldwell, though no specific engineers or designers have been found to be associated with the building's design. The firm was founded by Ken Brown and Dave Caldwell in 1947. The firm, now global, has completed a variety of wastewater and water engineering projects nationwide, as well as many projects in the West. Research found no indication that the design and construction of MIPS was significant in the establishment, growth, or development of the firm (Brown and Caldwell 2020; Fulcrum 2020).

In the 1970s, the WWTP was upgraded to meet the requirements of the Porter-Cologne Water Quality Act (1970) and the Clean Water Act (1972). The Porter-Cologne Water Quality Act required that sewage treatment plants keep water clean, while balancing economic considerations with environmental goals. The Clean Water Act's initial focus was to reduce polluted effluent discharging from industrial and sewage treatment facilities. As a result of the passage of those acts, improvements were made to the existing Administration Building, removing administrative functions from MIPS. Improvements to the treatment process included grit removal, additional sedimentation/flocculation (primary clarifiers), carbon adsorption beds, chlorine contact basins, and dual media filters. Lime addition was added to the solids process, along with a polymer dewatering system. A 24-inch forcemain to the Mare Island Strait replaced the existing gravity bypass as the WWTP's overflow. Additional, more technologically-advanced treatments were also introduced in 1977 (VFWD 2012, 2020).

In the 1980s, the WWTP was modified with a series of projects to include secondary wastewater treatment with the addition of bio-filters, aeration basins, and secondary clarifiers. This included the 1983 purchase of Tubbs Island Farm for the beneficial reuse of biosolids, which is located approximately 9 miles northwest of the WWTP. The WWTP's wet weather capacity was increased to 60 MGD. Up to 30 MGD would be treated with secondary treatment and wet weather flows between 30 and 60 MGD would be a combination of "blended" secondary effluent and disinfected primary effluent. (Continued on Next Page)

B10. Significance
(Continued from page 4)

During this time, the aeration basins replaced the existing pre-aeration facilities in MIPS. A new Headworks facility was added, and its associated influent pumps, bar screens, and grit removal systems replaced the MIPS influent pumping, screening, and grit removal. A new Operations Building replaced the WWTP control component of MIPS. During this time, many of MIPS interior components were decommissioned and related areas were left unutilized. A new effluent pump station, the Carquinez Pump Station, was added to pump "blended" wet weather flows to the deeper water channel of the Carquinez Strait. The Carquinez Pump Station was connected to the existing Carquinez outfall. With the addition of secondary treatment capabilities, the District's discharge permit allowed secondary effluent pumping to the adjacent Mare Island Strait/Napa River. The original MIPS pumps were repurposed for that service and connected to the 24-inch WWTP overflow line to serve as the secondary effluent forcemain. The MIPS effluent pumps power supply was also converted from liquid diesel generators to electric motors. In 1987, the Clean Water Act shifted to focus on polluted runoff, and the VFWD created its first Storm Drain Master Plan (VFWD 2012, 2020).

The interior of the MIPS facility remains mostly unchanged following the WWTP upgrades in the 1980s. Various structural retrofits occurred in 1988, 2005 and 2012, which substantially altered the building's exterior. Asbestos building materials have also been abated over time and in 2005 the WWTP completed a major odor reduction project. Additionally, the MIPS structure incurred earthquake damage from the 2014 South Napa Earthquake and underwent some structural repairs at that time. MIPS continues to serve as the secondary effluent pump station for 100 percent of dry weather discharges. The MIPS facility continues to serve as the point of entry for many WWTP utilities including potable water, 2W, and communication hub for telephone and fiber optic communication lines. The MIPS structure underwent a structural condition assessment in 2019 which concluded that the structure was not up to current code, materials of construction likely contained hazardous materials including asbestos, lead paint, and PCBs. The assessment also concluded that the structure was beyond its useful service life, the cost to replace MIPS was comparable and favorable to performing additional structural retrofits, and that the existing MIPS structure posed worker safety issues (VFWD 2012, 2020).

Evaluation of Significance

MIPS was originally constructed in 1957, and is historically associated with the 1952 Vallejo Sanitation and Flood Control District Act, as well as the original construction of the Vallejo Wastewater Treatment Plant. As such, the resource does have local significance under National Register of Historical Resources (NRHP) Criterion A and California Register of Historical Resources (CRHR) Criterion 1 for its association with wastewater treatment in Solano County. However, the building has been extensively altered, including replacement of all of the fenestration located on the building, and multiple windows and doors have been replaced or in-filled with concrete. In addition, the setting of the WWTP as a whole has been substantially expanded between 1982 and 1993. Thus, the resource retains poor overall integrity of materials, workmanship, design, setting, feeling and association, and only retains integrity of location as it has not been moved. Due to a lack of sufficient integrity, MIPS is recommended not eligible for listing under NRHP Criterion A and CRHR Criterion 1.

The resource is not associated with the lives of any specific people significant in the past, and thus does not appear to have significance under NRHP Criterion B or CRHR Criterion 2. The resource is not a distinctive or rare type, nor was it designed to meet any significant engineering requirements or design restrictions. In addition, the resource does not represent the work of a master or possess high artistic value. Due to the extensive alteration and expansion that has occurred to the WWTP as a whole, MIPS does not represent a significant and distinguishable entity whose components may lack individual distinction. Thus, the resource does not appear to have significance under NRHP Criterion C or CRHC Criterion 3. Lastly, the resource is unlikely to yield information important in prehistory or history, and it does not appear to have significance under NRHP Criterion D or CRHR Criterion 4. Due to a lack of both integrity under Criterion A/1, and a lack of significance under Criteria B/2, C/3, and D/4, MIPS is recommended not eligible for listing in either the NRHP or the CRHR.

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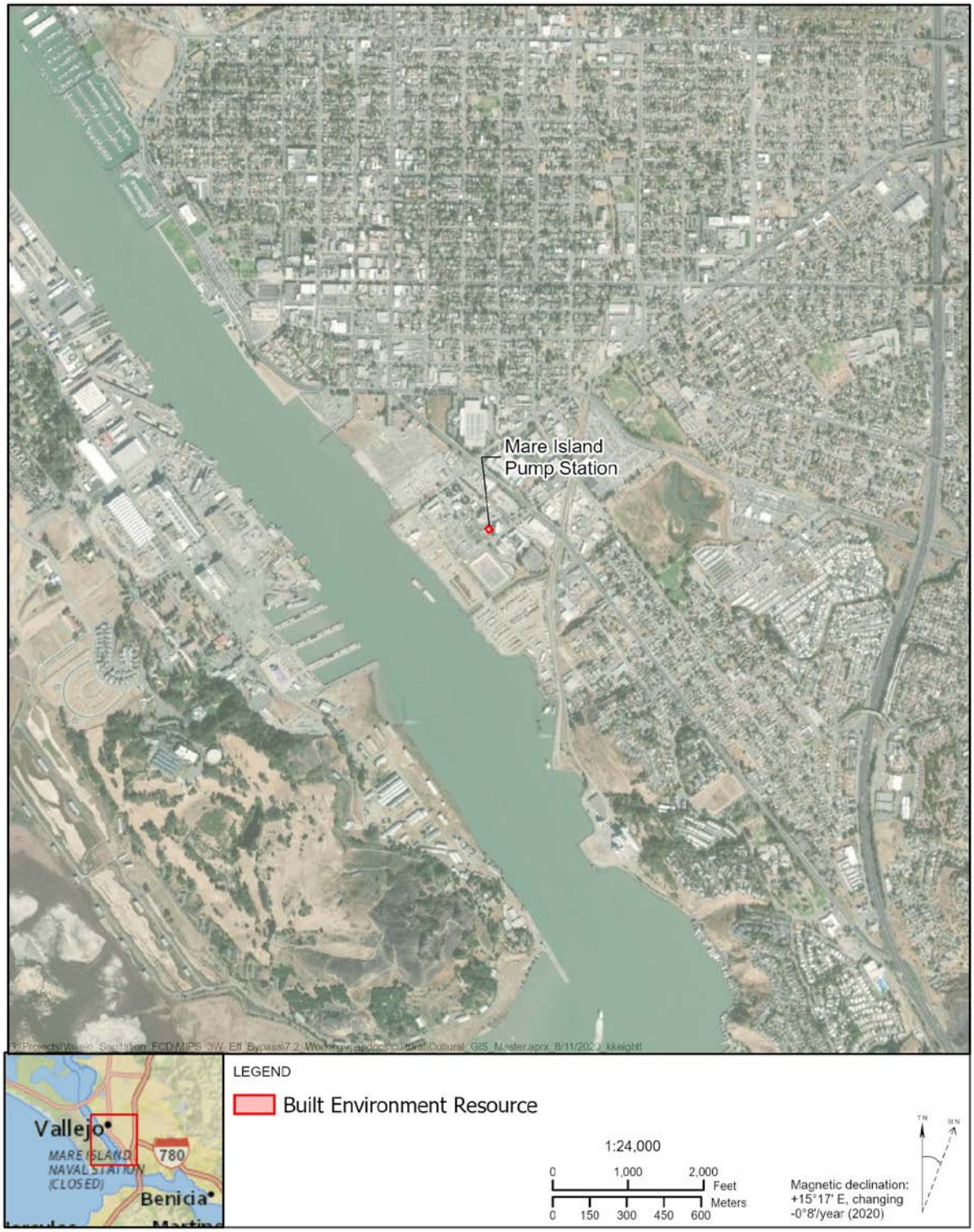
Location Map



Photographs

Photograph 1. Overview of facade (northeast)

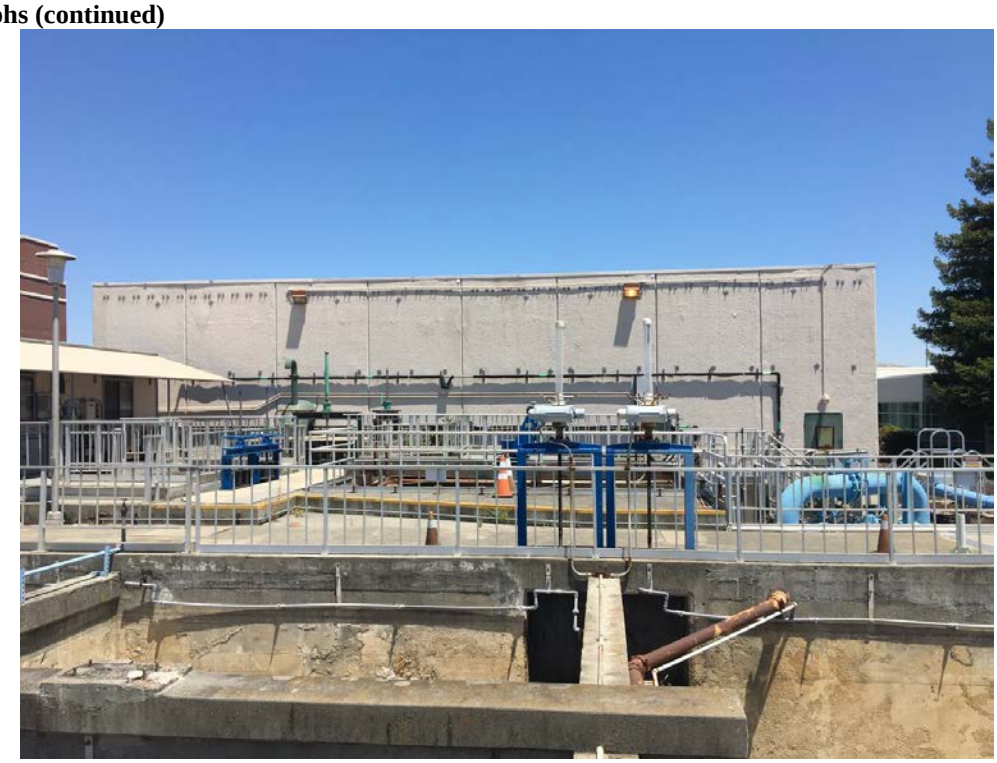
Photograph 2. Overview of facade with primary entry door centered

Photographs (continued)

Photograph 3. Southeast elevation (right) and southwest elevation (left)

Photograph 4. Southeast elevation

Photographs (continued)



Photograph 5. Southwest elevation

Photograph 6. Northeast elevation (left) and northwest elevation (right)

Photographs (continued)

Photograph 7. Northwest elevation

Photograph 8. Interior view showing pumping equipment and interior finishes

Photographs (continued)

Photograph 9. Interior view showing control panels and interior finishes

Photographs (continued)

Photograph 10. Typical interior view showing mezzanine level