Flow Equalization & Resource Recovery Facility Levee Improvements & Bayfront Recycled Water Facility Project

FINAL ENVIRONMENTAL IMPACT REPORT
SCH#2020050414

MAY 2021

WEST BAY
SANITARY DISTRICT

West Bay Sanitary District
500 Laurel Street | Menlo Park, CA 94025

FERRF LEVEE IMPROVEMENTS AND BAYFRONT RECYCLED WATER FACILITY FINAL ENVIRONMENTAL IMPACT REPORT

FINAL EIR

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CHAPTER 1 INTRODUCTION

This document is the Final Environmental Impact Report (EIR) for the West Bay Sanitary District (WBSD, or District) Flow Equalization and Resource Recovery Facility (FERRF) Levee Improvements and Bayfront Water Recycling Facility Project. The EIR is prepared as an informational document for action by the WBSD for the proposed project in Menlo Park, California.

Per the California Environmental Quality Act (CEQA) Guidelines Section 15132, the Final EIR shall consist of:

- The Draft EIR or a revision of the draft.
- Comments and recommendations received on the Draft EIR either verbatim or in summary.
- A list of persons, organizations, and public agencies commenting on the Draft EIR.
- The responses of the Lead Agency to significant environmental points raised in the review and consultation process.
- Any other information added by the Lead Agency.

In accordance with CEQA Guidelines Section §15132, this document together with the December 2020 Draft EIR constitutes the Final EIR for the FERRF Levee Improvements and Bayfront Water Recycling Facility Project.

1.1 ENVIRONMENTAL REVIEW PROCESS

1.1.1 Public Scoping of the Draft EIR

Public outreach for the project included public noticing, issuance of a Notice of Preparation (NOP) for an EIR and a public scoping meeting as required under CEQA Guidelines Section 15082. Comments received from public outreach were taken into consideration during the preparation of this draft EIR. The NOP summary of comments received at the scoping meeting and the written comments received on the NOP are included in Appendix A of the Draft EIR. Additional information on the public outreach conducted for the project and identified concerns is further discussed in Section 2.6, Public Outreach, in the Draft EIR.

1.1.2 Public Review of the Draft EIR

The Draft EIR was circulated for public review beginning December 18, 2020 and ended February 1, 2021. The Notice of Availability was mailed to properties adjoining the project site, including the proposed pipeline alignments and posted to the County Clerk's office as well as filed at the State Clearinghouse for State Agency Review.

A total of five comments were received by the District. These included three comment letters from State Agencies including the California Department of Fish and Wildlife (CDFW), California Department of Transportation (Caltrans), and the State Lands Commission (SLC), one comment letter from a local agency, the San Mateo County Local Agency Formation Commission (LAFCo), and one comment from the public, Ms. Zimmer from the Amah Mutsun Native American tribe.

1.1.3 Agency Review of Response to Comment

In preparation of the responses to comments, the District performed follow up consultation with the State Lands Commission (March 11, 2021) and LAFCo (March 12, 2021) to discuss these agencies' concerns and discuss proposed responses. The outcome of these consultations are reflected in the responses to those agencies' comments and in the text revisions to the Draft EIR text presented as errata (see 1.2, below).

State agencies are required to be provided the Lead Agency's proposed responses to comment a minimum of 10 days prior to certification of the Environmental Impact Report. All commentors on the Draft EIR (including three State agencies, one local agency, and one public commentor) were provided the proposed responses to comments letters via email on April 8, 2021 and included notification of the anticipated public hearing date for certification of the EIR on April 28, 2021 at a regular District Board meeting.

1.2 CHANGES TO THE DRAFT EIR

CEQA anticipates that the public review process will elicit information that can result in modification of the project design and refined impact analysis to reduce potential environmental effects of the project. As provided in CEQA Guidelines Section 15088.5, when significant new information is added to the EIR after public noticing of the Draft EIR, the EIR must be recirculated to give the public a meaningful opportunity for review. Significant new information is defined as 1) a new significant environmental impact, 2) a substantial increase in the severity of an environmental impact requiring new mitigation, or 3) a feasible project alternative or mitigation measure considerably different from those previously analyzed that would clearly reduce environmental impacts. Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

This Final EIR includes the following modifications to the Draft EIR:

- Additional information that provides more background setting, project description details, and new analysis.
- Text changes to provide clarity to the analysis, make minor text corrections, or fix grammatical or typographic errors.
- Text changes to reflect the comments received on the Draft EIR.
- Text changes to biological resource mitigation measures to reflect input from the California Department of Fish and Wildlife.
- Text changes to the cultural and tribal resources mitigation measures to reflect input from the State Lands Commission and a Native American tribe.

These revisions do not constitute considerably different changes in the project description, environmental setting, conclusions of the environmental analysis, or in the mitigation requirements incorporated into the project or otherwise provide significant new information that would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5.

1.3 FINAL EIR ORGANIZATION

The Final EIR for the FERRF Levee Improvements and Bayfront Water Recycling Facility Project is as organized as follows:

Chapter 1 **Introduction.** This chapter explains the contents of a Final EIR and the environmental review process for the FERRF Levee Improvements and Bayfront Water Recycling Facility Project.

Chapter 2 **Additional Information.** This chapter describes and summarizes additional information related to the environmental analysis of the FERRF Levee Improvements and Bayfront Water Recycling Facility Project and the effect this information has on the discussions contained in the Draft EIR.

Chapter 3 **Public Comment on Draft EIR.** This chapter contains copies of the comment letters received on the Draft EIR during the public review period. The comment letters have been individually numbered. A list of those who commented is provided at the front of the chapter.

Chapter 4 **Responses to Draft EIR Comment.** This chapter provides the written comments received on the Draft EIR and provides a written response to each comment raising a significant environmental issue submitted on the Draft EIR.

Chapter 5 **Errata and Revisions.** This chapter includes the changes to the Draft EIR needed to respond to comments and clarify or amplify the information provided in the Draft EIR. The changes correct inaccuracies and clarify the analysis in the EIR.

Appendix A **Revised Biological Resources Report, April 2021.** This appendix contains a revised Biological Resources Report which was revised to reflect CDFW comments on the Draft EIR.

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CHAPTER 2 ADDITIONAL INFORMATION

The Draft EIR presented Appendix C - Biological Resources Report. The California Department of Fish and Wildlife submitted a comment letter which resulted in edits to the Draft EIR text (see Chapter 5) as well as edits to the Biological Resources Report. The Biological Resources Report has been revised to reflect the agency's comments and is presented as Appendix A to this Final EIR.

Additional and clarifying text was added to the Draft EIR as noted in this FEIR Chapter 4 Response to Comments and Chapter 5 Errata and Revisions to clarify existing language within the document to address comments received.

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CHAPTER 3 PUBLIC COMMENT ON THE DRAFT EIR

This chapter contains copies of the comment letters received on the Draft EIR during the public review period. The comment letters have been individually numbered and will appear on the following pages in the order presented below. Comments were received from the following agencies/individuals:

State Agencies:

- California Department of Fish and Wildlife (CDFW)
- California Department of Transportation (Caltrans)
- State Lands Commission (SLC)

Local Agency:

- San Mateo County Local Agency Formation Commission (LAFCO)

Public:

- Amah Mutsun Native American Tribe (Amah Mutsun)

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State of California – Natural Resources Agency
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

January 28, 2021

Mr. Sergio Ramirez
West Bay Sanitary District
500 Laurel Street
Menlo Park, CA 94025
info@westbaysanitary.org

Subject: Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project, Draft Environmental Impact Report, SCH No. 2020050414, San Mateo County

Dear Mr. Ramirez:

The California Department of Fish and Wildlife (CDFW) has reviewed the draft Environmental Impact Report (EIR) prepared by the West Bay Sanitary District (District) for the Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project (Project) located in San Mateo County. CDFW is submitting comments on the draft EIR regarding potentially significant impacts to biological resources associated with the Project.

CDFW ROLE

CDFW is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA; Pub. Resources Code, § 21000 et seq.) pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as a California Endangered Species Act (CESA) Permit, a Lake and Streambed Alteration (LSA) Agreement, or other provisions of the Fish and Game Code that afford protection to the state's fish and wildlife trust resources.

REGULATORY REQUIREMENTS

California Endangered Species Act

Please be advised that a CESA Permit must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially reduce the number or restrict the range of an endangered, rare or threatened species. (Pub. Resources Code, §§ 21001, subd. (c), 21083; CEQA Guidelines, §§ 15380, 15064, and 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code section 2080.

Lake and Streambed Alteration Program

Notification is required, pursuant to CDFW's LSA Program (Fish and Game Code section 1600 et. seq.) for any Project-related activities that will substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. CDFW, as a Responsible Agency under CEQA, will consider the CEQA document for the Project. CDFW may not execute the final LSA Agreement until it has complied with CEQA (Public Resources Code section 21000 et seq.) as the responsible agency.

PROJECT DESCRIPTION SUMMARY

Proponent: West Bay Sanitary District

Location and Description: The proposed Project is located at 1700 Marsh Road, Menlo Park, San Mateo County, at the District's 20-acre Menlo Park Flow Equalization and Resource Recovery Facility (FERRF) site, which is at the end of Marsh Road in Menlo Park, adjacent to Bedwell Bayfront Park, on the edge of Flood Slough in the San Francisco Baylands. Westpoint Slough and Don Edwards National Wildlife Refuge are located to the north of the site, Flood Slough and salt evaporation ponds are located to the west, and Bedwell Bayfront park abuts the site's southern and eastern boundaries. Northern coastal salt marsh and tidal slough are located along the western and northern shorelines, and the eastern and southern boundaries of the property contain developed land and California annual grassland habitat.

The FERRF contains three open basins surrounded by earthen levees that provide wastewater storage for District flows when the conveyance system to the plant is at capacity, usually during wet weather events, or when the conveyance system to the plant is undergoing maintenance or repairs. The existing levees surrounding the site were built in the late 1960s and are not certified by the Federal Emergency Management Agency to protect the site from the 100-year flood event.

The project involves improvements and repairs to the levees to protect the site from the 100-year flood event as well as 50-year sea level rise projections. Levee improvements

consist of sheet pile installation (large sheets of metal inserted into the ground that rise above the ground surface) and the reconfiguration of a portion of existing levee into an ecotone levee, also known as a living shoreline. The sheet pile walls are interlocking steel metal plates that are driven or vibrated into the existing earthen levees. Approximately 3,400 linear feet of sheet piles would be placed on top of the bank, and the sheet piles would be driven or vibrated into the ground approximately 30 feet deep. Ecotone levees are nature-based and involve gentle slopes or ramps, to provide a gradual transition zone between tidal marshes and flood risk management levees. The ecotone levee will be constructed by installing coffer dams at low tide to isolate the area from tidal action. The cofferdams are anticipated to be sheet piles that would be vibrated into bay mud and staged on top of the existing levee. The existing marsh habitat is proposed to be mechanically removed, and then the ecotone levee will be revegetated from salvaged marsh sod, seeds, and container plants. In addition to flood improvements, the project would install a new satellite recycled water facility at the site. The system will also require new influent and effluent pump stations and piping to transport the recycled water to customers. Pipeline alignments will primarily utilize existing street right-of-way for installation.

The proposed project consists of the following components:

- Flood protection, including installation of metal sheet pile walls;
- Construction of an ecotone levee and installation of fill;
- On-site stormwater drainage improvements;
- Improvement of an existing stormwater ditch;
- Raising existing grades near the northeast corner and southwest corners of the FERRF site;
- Construction and operation of a new Bayfront RWF, including a new off-site influent pump station and off-site influent and distribution pipeline system and bayside outfall to discharge concentrate from the Bayfront RWF reverse osmosis process.

COMMENTS AND RECOMMENDATIONS

CDFW offers the below comments and recommendations to assist the District in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

COMMENT 1: Fully Protected Species

CDFW-1

Issue: Numerous State fully protected species are likely to be present in or near the Project site, including salt marsh harvest mouse (*Reithrodontomys raviventris*),

American peregrine falcon (*Falco peregrinus anatum*), California black rail (*Laterallus jamaicensis coturniculus*), California brown pelican (*Pelecanus occidentalis californicus*), and white-tailed kite (*Elanus leucurus*). CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish pursuant to Fish and Game Code §§ 3511, 4700, 5050, and 5515. Take, as defined by Fish and Game Code § 86 is to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill". Take of any fully protected species is prohibited. CDFW cannot authorize incidental take of fully protected species unless the take is for necessary scientific research including efforts for species recovery. Without appropriate avoidance and minimization measures, Project activities conducted within occupied territories have the potential to significantly impact these species. Potentially significant impacts include, but are not limited to inadvertent entrapment, reduced reproductive success, reduced health and vigor, nest abandonment, loss of nest trees, and/or loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), and direct mortality.

CDFW-1

Recommendation 1:

Fully Protected Species Surveys

To avoid impacts to fully protected species, CDFW recommends that a qualified biologist conduct species-specific surveys (using standard protocol or methodology, if available https://wildlife.ca.gov/Conservation/Survey-Protocols) of the Project site before Project implementation. If Project activities will take place when fully protected species are active or are breeding, CDFW recommends that additional pre-activity surveys for active nests or individuals be conducted by a qualified biologist no more than five (5) days prior to the start or restart of Project construction and should continue during Project construction.

Recommendation 2:

Fully Protected Species Avoidance

In the event a fully protected species is found within or adjacent to the Project site, CDFW recommends that a qualified biologist develops an appropriate no-disturbance buffer to be implemented. The qualified biologist should also be on-site during all Project activities to ensure that the fully protect species are not being disturbed by Project activities.

COMMENT 2: Vague Language

CDFW-2

The draft EIR has several minimization and mitigation measures that are not strong enough or specific enough to be implemented. Wording such as "to the extent feasible", "if necessary", and portions of measures that will be determined at a later date, including buffer distances are not able to be implemented consistently during

construction. The vague language used in the draft EIR provides uncertainty that can result in no protections to the species.

CDFW-2

To reduce the risk to species, CDFW suggests revising any minimization or mitigation measure that includes language such as “to the extent feasible”, undefined areas, buffers, or other vague language to better define measures to be implemented.

COMMENT 3: Regeneration of Habitat

Issue: The draft EIR does not discuss the amount of time it will take for salt marsh or other habitats to naturally regenerate on-site post-construction. The draft EIR also does not analyze the impacts related to temporal loss of salt marsh and other habitat from effects of potential increase in turbidity to vegetation regeneration. Depending on the length of time it takes for habitat to develop and post-construction conditions, there are potentially significant impacts to species, habitats, and water quality due to a lag in development of habitats.

CDFW-3

Recommendation: The draft EIR should discuss the amount of time it will take for salt marsh and other habitats to reestablish on-site post construction, and evaluate the potential impacts to species, habitats, and water quality. The draft EIR should consider development of a revegetation plan depending on the evaluation of habitat impacts.

COMMENT 4: California Ridgway’s Rail and California Black Rail

Issue: California black rail, a state fully protected species, has the potential to occur within the Project area. Both California black rail and California ridgeway rail (*Rallus longirostris obsoletus*) could be impacted by project activities. Complete avoidance measures should be incorporated into the Project to ensure full take avoidance of the species.

Evidence of Impacts: California black rail populations have been documented as declining in California in recent decades primarily as a result of habitat loss and degradation, (Evens et al. 1991, Conway and Sulzman 2007). Black rail populations and their required habitat features are vulnerable to both human-caused and natural stressors.

CDFW-4

Grading, compacting, and filling aquatic habitat could cause direct habitat loss (Bauer et al. 2015). Construction near a wetland or water feature supporting these species would impact the quality of their habitat if dust, debris, petroleum, or other contaminants are discharged from the construction site into their habitat.

Vegetation clearing may impact rails where they require a dense cover of upland vegetation for protection from predators (Eddleman et al. 1994, Evens and Thorne 2015).

Disturbance to nesting rails, such as humans or pets intruding into the marsh, have been reported to cause rails to abandon nests or to try to defend nests, exposing eggs (Flores and Eddleman 1993). Intrusion can alter habitat and cause mortality through crushing of rails that generally freeze in place and are hesitant to flush (Evens and Thorne 2015).

Recommendation: To avoid impacts to California black rail and California ridgeway's rail, CDFW recommends that activities within or adjacent to tidal marsh or suitable rail habitat, be avoided during rail breeding season, January 15 – August 31 for Ridgway's rail and February 1 – August 31 for California black rail.

CDFW also recommends the in-water work period for the San Francisco Bay is June 1 – November 30; however, with the presence of ridgeway rails, the in-water work period should be reduced to September 1 – November 30 to avoid impacts.

CDFW-4 If Project activities within 700 feet of habitat will be conducted during the nesting season (January 15 to August 31) multiple, pre-construction call back surveys should be required prior to initiation of Project activities. A minimum of 4 surveys should be conducted between January and April, a minimum of 2-3 weeks apart. The listening stations should be established at 150-meter intervals along road, trails, and levees that will be affected by Project implementation.

If California black rail are detected through surveys, then Project activities should not occur within 700 feet of an identified calling center. If the activity occurs where the Project site is across a major channel or slough from the Project site greater than 700 feet in distance the activity may continue. If bird activity is surveyed or discovered within the buffer limits immediate consultation with CDFW should be required. If rails are observed within the Project area at any time work should be stopped immediately by a qualified biologist and the rail species allowed to leave the area on its own. If the rail species does not leave the area, then no work should commence until CDFW has made a determination on how to proceed with work activities.

Daily monitoring surveys of Project sites should occur until the Project is complete. If an injured or dead rail is discovered at the Project sites, it should be reported to CDFW immediately for consultation and all Project activities cease.

COMMENT 5: Salt Marsh Harvest Mouse

CDFW-5 **Issue:** Impacts to salt marsh habitat, including vegetation removal/disturbance, could cause take of salt marsh harvest mouse if the species is present during Project activities; and such take should be considered a significant impact under CEQA. Salt marsh harvest mouse is a fully protected species under the Fish and Game Code section 4700; therefore, CDFW cannot issue a Project permit for their take. Complete avoidance measures must be incorporated into the Project to ensure full take avoidance of the species.

Salt marsh harvest mice are endemic to the San Francisco Bay in salt marsh and brackish wetland habitats. The species has lost a significant amount of tidal marsh habitat in the last century as a result of filling and diking, changes in water salinity, invasive plant species, and pollution (Zeiner et al. 1990, U.S. Fish and Wildlife Service 2010). The continued fragmentation and degradation of salt marsh and wetland habitat is also a concern for the species. As salt marsh harvest mice are restricted to salt marsh and wetland habitats, activities that compromise these habitats may negatively affect the species.

Vegetation removal may impact salt marsh harvest mice as they need non-submerged vegetation for cover from predators and utilize grasses, seeds, and other vegetation as a food source (Zeiner et al. 1990). Areas with non-submerged vegetation are particularly used during high tides (Smith et al. 2014). Additionally, vegetation clearing can cause fragmentation and create edge effects that permeate far beyond the Project site (Harris 1988, Murcia 1995).

Road construction and use can result in mortality for small mammals (Trombulak and Frissell 2000).

CDFW-5

Artificial light has been shown to suppress the immune system of some mammals (Bedrosian et al. 2011), and it can cause disruption of normal circadian rhythms. Although it has not been studied in salt marsh harvest mice specifically, rodents often decrease foraging in higher light levels due to higher risk of predation (Clarke 1983, Daly et al. 1992, Bird et al. 2004).

Construction sites often have significant amounts of noise from generators and equipment. Rodents have been shown to increase their vigilance behavior when exposed to noise because they need to rely more on visual detection of predators when auditory cues are masked by noise (Rabin et al. 2006). This can result in unnecessary increased energy expenditure that may negatively impact survival.

Recommendation: In addition to the exclusion fencing, CDFW recommends that an approved qualified biologist, familiar with salt marsh harvest mouse walk through and inspect suitable habitat immediately prior to vegetation removal and search for signs of harvest mice or other sensitive wildlife and plants.

Prior to Project activities (e.g., vegetation removal, disturbance to vegetation) occurring in potential salt marsh harvest mouse habitat each day, an approved qualified biologist, familiar with salt marsh harvest mice, shall walk through and inspect suitable habitat and search for signs of harvest mice or other sensitive wildlife and plants. If a salt marsh harvest mouse is discovered, no work shall occur within 150 feet of that location. Following inspection, personnel, under the supervision of the qualified biologist, will disturb (e.g., flush) vegetation to force movement of salt marsh harvest mice into

CDFW-5

adjacent marsh areas. Immediately following vegetation flushing, personnel, under the supervision of the qualified biologist, will remove vegetation with hand tools (e.g., weed-eater, hoe, rake, trowel, shovel, grazing) so that vegetation is no taller than two inches. If string trimmers (a.k.a. weed whackers) are used, they shall be used to the minimum extent necessary and shall be used to take down vegetation height a couple inches at a time so that the biological monitor can search for potential salt marsh harvest mouse nests. If a nest is discovered, all work shall stop immediately and CDFW shall be notified. Work shall not resume until CDFW provides written permission to do so. After vegetation removal, the mouse-proof barrier should be installed as described in the EIR. A qualified biologist should inspect the integrity of the exclusion fencing daily to ensure there are no gaps, tears, or damage. Vegetation removal shall include a two-foot-wide buffer from the edge of the Project site to ensure mice will not enter the Project site. Large equipment shall not enter suitable salt marsh harvest mouse habitat until all vegetation has been taken down to ground level. If an injured or killed mouse is discovered at any time during Project activities, all work shall cease immediately and CDFW shall be contacted for further direction. A restoration ecologist with documented experience with salt marsh habitat restoration shall monitor the site to ensure that marsh habitat restores naturally to the same coverage rate prior to disturbance. If after three years, the site is not revegetated, the restoration ecologist shall develop a site restoration plan to revegetate all salt marsh habitat temporarily impacted by the Project. Restoration may include hand transplanting of marsh vegetation (e.g., pickleweed) from clean donor areas.

COMMENT 6: Western Burrowing Owl (*Athene cunicularia*)

CDFW-6

Issue: The draft EIR acknowledges burrowing owls could be present on-site or in the surrounding area, and construction activities could cause loss of habitat or abandonment of active nests. The EIR identifies that burrowing owl, a California Species of Special Concern, has previously been documented on-site, and that suitable habitat exists on-site. The EIR notes that surveys will be completed in conformance with CDFW's 2012 guidelines, however, not all aspects of the guidelines are included in the mitigation measures for this species. The Project could result in burrowing owl nest abandonment, loss of young, reduced health and vigor of owlets, or injury or mortality of adults. Burrowing owls are a California Species of Special Concern due to population decline and breeding range retraction. Based on the above, the Project may potentially significantly impact burrowing owls.

Recommendation: Burrowing owl surveys should be conducted by a qualified CDFW-approved biologist. Since suitable burrowing owl habitat is present, CDFW recommends that surveys be conducted following the methodology described in Appendix D: Breeding and Non-breeding Season Surveys of the CDFW Staff Report on Burrowing Owl Mitigation (Staff Report), which is available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843. In accordance with the

Staff Report, a minimum of four survey visits should be conducted within 500 feet of the Project Area during the owl breeding season which is typically between February 1 and August 31. A minimum of three survey visits, at least three weeks apart, should be conducted during the peak nesting period, which is between April 15 and July 15, with at least one visit after June 15. Pre-construction surveys should be conducted no-less-than 14 days prior to the start of construction activities with a final survey conducted within 24 hours prior to ground disturbance.

In accordance with CDFW's 2012 Staff Report, owls may be disturbed up to 1,640 feet (500 meters) from a project. Therefore, the buffer area surveyed should be increased commensurate with the type of disturbance anticipated as outlined in the CDFW 2012 Staff Report and include burrow surrogates such as culverts, piles of concrete or rubble, and other non-natural features. The CEQA document for the Project should also include measures to avoid or minimize loss of burrowing owl foraging habitat, and mitigation for loss of habitat that cannot be fully avoided.

CDFW-6

Please be advised that CDFW does not consider exclusion of burrowing owls or "passive relocation" as a "take" avoidance, minimization, or mitigation method, and considers exclusion as a significant impact. The long-term demographic consequences of exclusion techniques have not been thoroughly evaluated, and the survival rate of evicted or excluded owls is unknown. Burrowing owls are dependent on burrows at all times of the year for survival or reproduction; therefore, eviction from nesting, roosting, overwintering, and satellite burrows or other sheltering features may lead to indirect impacts or "take" which is prohibited under Fish and Game Code section 3503.5. All possible avoidance and minimization measures should be considered before temporary or permanent exclusion and closure of burrows is implemented to avoid "take." Any passive relocation plan for non-nesting owls will be subject to CDFW review. If passive relocation is used, habitat compensation should be required, with the acreage amount identified in the eviction plan.

If the Project would impact an unoccupied active burrowing owl burrow or burrow surrogate (i.e., a burrow used in the past three years for nesting or a burrow where a non-nesting owl would be evicted as described above), the following habitat preservation should be implemented prior to Project construction:

> Impacts to each nesting site should be mitigated by permanent preservation of two occupied nesting sites with appropriate foraging habitat through a conservation easement and provision of an endowment for long-term management. Impacts to burrowing owl roosting, overwintering, and foraging habitat should be mitigated by permanent preservation of off-site habitat occupied by burrowing owl at a 2:1 mitigation to impact ratio, through a conservation easement and provision of an endowment for long term management. The CDFW 2012 Staff Report states, "current scientific literature supports the conclusion that mitigation for permanent

habitat loss necessitates replacement with an equivalent or greater habitat area for breeding, foraging, wintering, dispersal…". The Project may implement alternative methods for preserving habitat with written acceptance from CDFW. Finding suitable habitat to preserve as described above may be infeasible, and in this case impacts to burrowing owl as described above will be fully avoided in order to avoid potentially significant impacts.

CDFW-6

COMMENT 7: Noise and Vibrations Impacts to Fish Species

Issue: Special-status fish species are likely to be present within the tidally influenced habitat within and adjacent to the Project area, including:

- Central California Coast steelhead (*Oncorhynchus mykiss*); FT
- Longfin smelt (*Spirinchus thaleichthys*); ST
- North American green sturgeon (*Acipenser medirostris*); FT, SSC

FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered; SFP = State Fully Protected; SSC = California Species of Special Concern

CDFW-7

The draft EIR does not provide any mitigation measures to protect special-status fish species from construction equipment noise and vibrations that could cause disruptions to special-status fish species. Additionally, fish could be crushed, injured, or killed if they are present when construction of the ecotone levee begins.

Recommendation: To reduce the potential for noise and vibration impacts to special-status fish and to encourage fish to leave the area, CDFW recommends initiating a soft start to allow fish to leave the area prior to operating the vibratory hammer at full capacity. The hammer operatory shall initiate noise from the hammer for 15 seconds at reduced energy followed by a one-minute waiting period. This procedure shall be repeated two additional times before commencing hammering at full capacity.

Additionally, depending on the specific pile-driving methods, ITP consultation with CDFW may be recommended.

COMMENT 8: Dewatering Plan

CDFW-8

Issue: The draft EIR states that a dewatering plan will be implemented if necessary but does not provide any information about the dewatering plan or how it will be decided whether a dewatering plan is necessary. It is also unclear whether sheet pile walls are required and whether it would be less impactful to dewater the Project area as a whole versus deterring fish from the area.

CDFW-8

Recommendation: CDFW recommends that the EIR include additional information and a more detailed proposed dewatering plan to address the comments above. The dewatering plan should also include a figure showing where cofferdams and other structures or equipment will be placed for the diversion.

COMMENT 9: Special-Status Plants

Issue: The proposed Project may significantly impact multiple special-status plants due to disturbance or destruction of individuals and habitat, including:

- Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*); 1B.2
- Point Reyes bird's beak (*Chloropyron maritimum* ssp. *Palustre*); 1B.2
- Congon's tarplant (*Centromadia parryi* ssp. *Congdonii*); 1B.1
- Saline clover (*Trifolium hydrophilum*); 1B.2

CNPS Plant Ranks

- 1B = Rare, Threatened, or Endangered in California and Elsewhere
- 2A = Presumed Extirpated in California, But Common Elsewhere
- 2B = Rare, Threatened, or Endangered in California, But More Common Elsewhere

CDFW-9

CNPS Threat Ranks

- 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Recommendation: CDFW recommends that the Project area be surveyed for special-status plants by a qualified botanist following the "Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities," which can be found online at https://wildlife.ca.gov/Conservation/Survey-Protocols. This protocol, which is intended to maximize detectability, includes identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. In the absence of protocol-level surveys being performed, additional surveys may be necessary.

CDFW-9

CDFW recommends impacts to special-status plants be avoided. If Project impacts to special-status plants cannot be completely avoided, consultation with CDFW is warranted and the Project should provide compensatory mitigation such as off-site habitat preservation or another method. If a state-listed or state Rare[1] plant is identified during botanical surveys and take cannot be avoided, acquisition of take authorization through an Incidental Take Permit (ITP) issued by CDFW pursuant to Fish and Game Code Sections 2081(b) and/or Section 1900 et seq is necessary to comply with Fish and Game Code, CESA and the Native Plant Protection Act.

COMMENT 10: Nesting Birds

CDFW-10

The draft EIR describes methods to reduce impacts to nesting birds. CDFW concurs that measures should be conducted to assist in the avoidance of native bird species. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA). Sections 3503, 3503.5, and 3513 of the Fish and Game Code prohibit take of birds and their active nests, including raptors and other migratory nongame birds as listed under the MBTA. Additionally, many special-status bird species may be present and/or nesting at the site, including:

- Alameda song sparrow (*Melospiza melodia pusillula*); SSC
- American peregrine falcon (*Falco peregrinus anatum*); SFP
- Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*); SSC
- Black skimmer (*Rynchops niger*); SSC
- California black rail (*Laterallus jamaicensis coturniculus*); ST, SFP
- California brown pelican (*Pelecanus occidentalis californicus*); SFP
- California least tern (*Sterna antillarum browni*); FE, SE
- California Ridgeway's rail (*Rallus obsoletus obsoletus*); FE, SE
- Loggerhead shrike (*Lanius ludovicianus*); SSC
- Northern harrier (*Circus cyaneus*); SSC
- San Francisco common yellowthroat (*Geothlypis trichas sinuosa*); SSC
- Short-eared owl (*Asio flammeus*); SSC
- Western burrowing owl (*Athene cunicularia*); SSC
- Western snowy plover (*Charadrius nivosus nivosus*); FT, SSC

[1] In this context, "Rare" means listed under the California Native Plant Protection Act.

- White-tailed kite (*Elanus leucurus*); SFP

FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered; SFP = State Fully Protected; SSC = State Species of Special Concern

Issue: Mitigation Measure BIO-6b specifies up to a 250-foot construction buffer for nesting birds, and up to 1000 feet for and raptors. Depending on the species, nest stage, and site conditions, these distances may not be sufficient to prevent disturbance-related nest failure and subsequent take. The Project proponent is responsible for ensuring that the Project does not result in any violation of the MBTA or relevant Fish and Game Codes.

Recommendation 1: If work will occur during nesting bird season (January 15 through August 31) no more than five (5) days prior to work commencing, including staging, clearing and grubbing, a qualified biologist should survey a sufficient area around the Project site to identify any nests that are present and determine their status and an appropriate buffer. Once construction work begins, the survey effort should continue to identify any nest starts established after the work commences. 'Sufficient' in this context means any nest within an area that could potentially be affected by the Project. In addition to direct impacts, such as nest destruction, nesting birds might be affected by noise, vibration, odors, lighting, and movement of workers or equipment. Identified active nests should be surveyed for the first 24 hours prior to any construction-related activities to establish a behavioral baseline of the adults and any nestlings. Once work commences, all active nests should continue to be monitored by the qualified biologist to detect any signs of disturbance and behavioral changes as a result of the Project. If signs of disturbance and behavioral changes are observed, the biologist should reassess the appropriate buffer to prevent disturbance-related nest failure and subsequent take.

CDFW-10

Recommendation 2: A qualified biologist, experienced in raptor behavior, should be assigned to monitor the behavior of any raptors nesting within disturbance distance of Project activities. Even within species, disturbance distances can vary according to time of year or geographical location. The qualified biologist should have authority to order the cessation of all Project activities within disturbance distance of any raptor nest if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to: defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, interrupted feeding patterns, and flying away from the nest. Project activities within line of sight of the nest should not resume until the qualified biologist has consulted with CDFW and both the qualified biologist and CDFW confirm that the bird's behavior has normalized or the young have left the nest.

COMMENT 12: Light Pollution

Issue: The Project would generate sources of light near sensitive natural vegetation communities, including permanent lighting from additional buildings and temporary lighting for proposed nighttime construction. The draft EIR does not discuss the type or color of lighting that will be used outdoor, i.e., bright security lighting along the perimeter, white light, blue light, etc.

Although the draft EIR does provide some discussion of the effects of increased lighting and glare over natural conditions it does not adequately analyze potentially significant impacts on rare, threatened, endangered, or nocturnal wildlife species, and migratory birds. Artificial lighting and light pollution are potential significant impacts to rare, threatened, endangered, and nocturnal wildlife and migratory birds because light pollution impacts can disrupt routine behavior of the species life cycle, degrade the quality of the environment utilized by said species and can substantially reduce the number of individuals.

Evidence of Impacts: Sensitive species, wildlife, and their habitats may be adversely affected by increased and artificial night lighting, even temporarily due to night construction activities. Light plays a vital role in ecosystems by functioning as both an energy and an information source (Gaston et al. 2012, 2013). The addition of artificial
CDFW-11 light into a landscape disrupts this role, altering the natural circadian, lunar, and seasonal cycles under which species have evolved. Artificial lights result in direct illumination, altering the natural patterns of light and dark, and sky glow (i.e., scattered light in the atmosphere), which can extend the ecological impacts of light far beyond the light source (Longcore and Rich 2004). On cloudy nights in urban areas, for example, the sky glow effect can be of an equivalent or greater magnitude than high-elevation summer moonlight (Kyba et al. 2013). The addition of artificial light into a landscape can impact a broad range of system processes, including:

- Activity patterns
- Availability and detectability of food resources
- Movement, navigation and migration
- The timing of phenological events
- Physiological functions
- Foraging behavior and predator-prey interactions
- Phototaxis (attraction and movement towards light)
- Circadian rhythms (both physiological and behavioral)
- Causing disorientation, entrapment, and temporary blindness

CDFW-11

Recommendation: CDFW recommends further discussion of the types of lighting that may be used at the site, and how this lighting may impact local species and the nearby sensitive natural vegetation communities. To mitigate the potentially negative impacts of artificial light, light structures can be shielded and downward facing so that trespass of light is minimized. In addition, lights can be motion-activated, or turned off or dimmed during critical times of the year (e.g., migration) or during times of night that have the most significant impact on wildlife (i.e., dawn and dusk) (Gaston et al., 2012, 2013). Lights with wildlife-friendly spectral composition (i.e., minimize light avoidance/ attraction) can also be used (Sweeney et al. 2011; Gaston et al. 2012, 2013). LED lights are well suited for operating at variable brightness and being switched off or dimmed during certain times of the year or during times of low demand, as they operate at full efficiency and have no “warm-up” time (Gaston et al., 2012, 2013). Vegetation may also be used to shield sensitive areas against light, and light-absorbent surfaces can be used in in place of reflective surfaces (Gaston et al., 2012, 2013). In addition, all lights should be disposed of properly, as many contain mercury and other toxins.

CDFW-12

COMMENT 13: Fencing Hazards

Issue: The Project may result in the use of open pipes used as fence posts, property line stakes, signs, etc. Raptor's talons can become entrapped within the bolt holes of metal fence stakes resulting in mortality.

Recommendation: CDFW recommends that all hollow posts and pipes be capped to prevent wildlife entrapment and mortality because these structures mimic the natural cavities preferred by various bird species and other wildlife for shelter, nesting, and roosting. Metal fence stakes used on the Project site should be plugged with bolts or other plugging materials to avoid this hazard. Further information on this subject may be found at: https://ca.audubon.org/conservation/protect-birds-danger-open-pipes.

CDFW-13

ENVIRONMENTAL DATA

CEQA requires that information developed in draft environmental impact reports and negative declarations be incorporated into a data base which may be used to make subsequent or supplemental environmental determinations. [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form, online field survey form, and contact information for CNDDB staff can be found at the following link: https://wildlife.ca.gov/data/CNDDB/submitting-data. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

CDFW-14

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs., tit. 14, § 753.5; Fish and Game Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW appreciates the opportunity to comment on the draft EIR to assist the District in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Ms. Stephanie Holstege, Environmental Scientist at (707) 210-5104 or Stephanie.Holstege@wildlife.ca.gov; or Mr. Wesley Stokes, Senior Environmental Scientist (Supervisory), at (707)339-6066, or Wesley.Stokes@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Stacy Sherman for
692D021D81CA4F7...
Gregg Erickson
Regional Manager
Bay Delta Region

cc: Office of Planning and Research, State Clearinghouse (SCH#2020050414)

References

Bauer S, Olson J, Cockrill A, van Hattem M, Miller L, et al. (2015). Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds. PLOS ONE 10(9): e0137935. https://doi.org/10.1371/journal.pone.0137935

Bedrosian, T. A., L. K. Fonken, J. C. Walton, and R. J. Nelson. 2011. Chronic exposure to dim light at night suppresses immune responses in Siberian hamsters. Biology Letters 7:468–471.

Bird, B. L., L. C. Branch, and D. L. Miller. 2004. Effects of coastal lighting on foraging behavior of beach mice. Conservation Biology 18:1435–1439.

Conway, C. J., and C. Sulzman. 2007. Status and habitat use of the California black rail in the southwestern USA. Wetlands 27:987–998.

Daly, M., P. R. Behrends, M. I. Wilson, and L. F. Jacobs. 1992. Behavioural modulation of predation risk: moonlight avoidance and crepuscular compensation in a nocturnal desert rodent, *Dipodomys merriami*. Animal Behaviour 44:1–9

Eddleman, W. R., R. E. Flores, and M. Legare. 1994. Black Rail (*Laterallus jamaicensis*). A. Poole and F. B. Gill, editors. The Birds of North American Online. Cornell Lab of Ornithology, Ithica, NY, USA. http://bna.birds.cornell.edu/bna/species/123.

Evens, J. G., G. W. Page, S. A. Laymon, and R. W. Stallcup. 1991. Distribution, relative abundance, and status of the California black rail in Western North America. The Condor 93:952–966.

Evens, J., and K. Thorne. 2015. Appendix 5.1- Case Study- California black rail (*Laterallus jamaicensis corturniculus*). In Baylands Ecostem Habitat Goals Science Update (2015), Science Foundation Chapter 5.

Flores, R. E., and W. R. Eddleman. 1993. Nesting biology of the California black rail in southwestern Arizona. Western Birds 24:81–88.

Gaston, K. J., Davies, T. W., Bennie, J., & Hopkins, J. (2012). Reducing the ecological consequences of night-time light pollution: options and developments. *Journal of Applied Ecology*, *49*(6), 1256-1266.

Gaston, K. J., Bennie, J., Davies, T. W., & Hopkins, J. (2013). The ecological impacts of nighttime light pollution: a mechanistic appraisal. *Biological reviews*, *88*(4), 912-927.

Hallmann, C. A., R. P. B. Foppen, C. A. M. Van Turnhout, H. De Kroon, and E. Jongejans. 2014. Declines in insectivorous birds are associated with high neonicotinoid concentrations. Nature 511:341–343

Kyba, C. C., & Hölker, F. (2013). Do artificially illuminated skies affect biodiversity in nocturnal landscapes?.

Longcore, T., & Rich, C. (2004). Ecological light pollution. *Frontiers in Ecology and the Environment*, *2*(4), 191-198.

O'Hare, M., Sanchez, D. L., & Alstone, P. (2013). Environmental risks and opportunities in cannabis cultivation. BOETC Analysis Corp. University of California, Berkeley, CA, USA.

Trombulak, S. C., and C. A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14:18–30.

U.S. Fish and Wildlife Service [USFWS]. 2010. Salt marsh harvest mouse (*Reithrodontomys raviventris*) 5-year review: summary and evaluation. Sacramento Fish and Wildlife Office, USFWS, Sacramento, CA, USA

Zeiner, D. C., W. F. Laudenslayer, Jr, K. E. Mayer, and M. White. 1990. California's Wildlife Volume I-III. California Department of Fish and Game, editor. Sacramento, CA, USA.

DEPARTMENT OF TRANSPORTATION
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Making Conservation a California Way of Life.

February 1, 2021

SCH #: 2020050414
GTS #: 04-SM-2021-00342
GTS ID: 21569
Co/Rt/Pm: SM/84/26.09

Sergio Ramirez, District Manager
West Bay Sanitary District
500 Laurel Street
Menlo Park, CA 94025

Re: Flow Equalization and Resource Recovery Facility Levee Improvements (FERRF) + Draft Environmental Impact Report (EIR)

Dear Sergio Ramirez:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for this project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the December 2020 Draft EIR.

Project Understanding

The proposed project would construct a FEMA flood protection ecotone levee and improvements including sheet piles, raising existing grades, improving existing stormwater facilities and removing/capping decommissioned wastewater facilities. The FERRF site is approximately 20 acres and located at at the northern terminus of Marsh Road, approximately ¾ of a mile from State Route (SR)-84.

Travel Demand Analysis

Caltrans-1 With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide. This project appears to generate 24 trips per day given its

Caltrans-1 autonomous nature, and therefore is below the City of Menlo Park's VMT screening threshold of 100 trips per day.

Lead Agency

Caltrans-2 As the Lead Agency, the City of Menlo Park is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Encroachment Permit

Caltrans-3 Please be advised that any permanent work or temporary traffic control that encroaches onto the ROW requires a Caltrans-issued encroachment permit. If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application package, digital set of plans clearly delineating the State ROW, digital copy of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement. Your application package may be emailed to D4Permits@dot.ca.gov.

To download the permit application and to obtain more information on all required documentation, visit https://dot.ca.gov/programs/traffic-operations/ep/applications.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Laurel Sears at laurel.sears@dot.ca.gov. Additionally, for future notifications and requests for review of new projects, please contact LDIGR-D4@dot.ca.gov.

Sincerely,

Mark Leong

MARK LEONG
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

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CALIFORNIA STATE LANDS COMMISSION
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Governor's Office of Planning & Research

Feb 01 2021

STATE CLEARINGHOUSE

February 1, 2021

File Ref: SCH # 2020050414

West Bay Sanitary District
Attn: Sergio Ramirez, District Manager
500 Laurel Street
Menlo Park, CA 94025

VIA ELECTRONIC MAIL ONLY (Info@westbaysanitary.org)

Subject: Draft Environmental Impact Report (EIR) for the Flow Equalization and Resource Recovery Facility Levee Improvements and Recycled Water Facility Project, San Mateo and Santa Clara Counties

Dear Mr. Ramirez:

The California State Lands Commission (Commission) staff has reviewed the Draft EIR for the Flow Equalization and Resource Recovery Facility Levee Improvements and Recycled Water Facility Project (Project), which is being prepared by the West Bay Sanitary District (District). The District, as the public agency proposing to carry out the Project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The Commission is a trustee agency for projects that could directly or indirectly affect State sovereign land and their accompanying Public Trust resources or uses. Additionally, because the Project will involve work on State sovereign land, the Commission may act as a responsible agency. Commission staff requests that the District consult with us on preparation of the Draft EIR as required by CEQA section 21153, subdivision (a), and the State CEQA Guidelines section 15086, subdivisions (a)(1) and (a)(2). A letter was previously submitted to the District on the Project's Notice of Preparation on June 22, 2020.

Commission Jurisdiction and Public Trust Lands

SLC-1

The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306). All tidelands and submerged lands granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust Doctrine.

SLC-1

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The state holds these lands for the benefit of all people of the state for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

SLC-2

Based on the information provided in the Draft EIR and a review of in-house records, the proposed Project would extend onto the bed of Westpoint Slough, which at this location is within Commission-managed lands conveyed to the State by Leslie Salt Co. According to the Project Description, the proposed ecotone levee on the northern perimeter of the site would recontour the existing levee with a 10:1 to 20:1 slope to the water line and would extend beyond Assessor Parcel Number 055-400-010 onto the bed of Westpoint Slough. Therefore, a lease from the Commission will be required. As more detailed plans are prepared, please submit them to Dobri Tutov in the Lands Management Division (contact information provided below) for further review.

Project Description

The District proposes to construct levee improvements to protect the District's existing facilities and San Francisco Bay water quality from the current 100-year floodplain and future sea level rise, and to construct a new Recycled Water Facility at the District's Menlo Park Flow Equalization Facility and Resource Recovery (FERRF) site, located on the edge of Flood Slough in the San Francisco Baylands. The Project would meet the District's objectives and needs as follows:

- Provide Federal Emergency Management Agency 100-year and anticipated sea-level rise flood protection.
- Allow the District to provide recycled water to customers.

From the Project Description, Commission staff understands that the Project would include the following components that may have the potential to affect State sovereign lands:

- Construction of an ecotone levee (living shoreline)

The Proposed Project Alternative is considered the environmentally superior alternative. This alternative would allow the District to obtain all the project objectives and preserve habitat functions on the northern levee under anticipated sea-level rise conditions.

Environmental Review

Commission staff requests that the District consider the following comments prior to certifying the Draft EIR, to ensure that impacts to State sovereign land are adequately analyzed for the Commission's use to support a future lease approval for the Project.

Cultural Resources

SLC-3

1. Tribal Outreach: The Draft EIR (page 6-13) states that no Native American tribes contacted the District under AB 52; however, the Native American Heritage Commission's (NAHC's) Sacred Lands File search indicated positive results and the District conducted outreach to five Tribes recommended by the NAHC. The Draft EIR further states that responses to the outreach indicated that Native American burials were found in the area. From Commission staff's perspective, the Draft EIR could be more informative if it were to provide additional details about which Tribe or Tribes responded, whether there were any other concerns expressed about cultural sensitivity or heritage, whether the Tribes requested a site visit or Project monitoring, or whether they suggested measures to avoid or otherwise protect Tribal cultural resources. Importantly, in addition to its Consultation provisions, AB 52 requires that public agencies avoid, when feasible, damaging effects to Tribal Cultural Resources, and offers examples of mitigation measures that should be included in EIRs unless other measures are agreed to through Consultation (see Pub. Resources Code, § 21084.3). When it enacted AB 52, the Legislature expressed its preference for preservation in place of Tribal Cultural Resources (Assem. Bill No. 52 (2013-2014 Reg. Sess.) § 1). In order to make the Draft EIR more informative, Commission staff recommends that the District include additional information in a revised EIR that more comprehensively discusses the District's communication with the contacted Tribes and how the results of that outreach and coordination, including any requests or suggestions made by the Tribes, were incorporated into the EIR's mitigation measures or Project design decisions. Without such a record, Commission staff is unable to determine whether Tribal concerns have been fully addressed and resolved, and thus whether the significance determination is supported.

SLC-4

2. Tribal Cultural Resources: MM CUL-1b states that "It is possible for a lead agency to determine that an artifact is considered significant to a local tribe...even if it would not otherwise be considered significant under CEQA." Commission staff appreciate that the District recognizes that significance determinations, in the Tribal Cultural Resource's context, must consider the importance or value *beyond* the commonly understood archaeological metrics. However, in most cases, it is appropriate to defer to a culturally affiliated Tribe for a final determination of the significance of Tribal Cultural Resources, which are not limited to "artifacts" as the measure suggests. As a result, Commission staff requests that MM CUL-1b be modified to state that "As such, all Native American artifacts (tribal finds) or other Tribal Cultural Resources shall be considered as a significant Tribal Cultural Resource, pursuant to Public Resources Code section 21074 until the lead agency in consultation with the appropriate Tribe has enough evidence to make a determination of significance." Commission staff further recommend, consistent with the above comment related to avoidance (preservation in place) and maintenance of cultural integrity, that the District expand the discussion of disposition and treatment of unanticipated discoveries, including measures providing for reburial of discovered materials or returning discovered materials to Tribal custody if they cannot be reburied on site. It

SLC-4 is the Commission's policy that ownership/custody of Native American artifacts, materials, and resources collected from State-owned lands be returned after evaluation to the culturally affiliated Tribe whenever possible regardless of significance. This modification would allow for the protection of any Tribal Cultural Resources that may be identified during the ongoing regulatory process.

3. Title to Resources: The Draft EIR should also mention that the title to all

SLC-5 archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the California State Lands Commission (Pub. Resources Code, § 6313). Commission

SLC-6 staff requests that the District consult with Staff Attorney Jamie Garrett, should any cultural resources on State lands be discovered during construction of the proposed Project. In addition, Commission staff requests that the following statement be

SLC-7 included in MM CUL-1a: "The final disposition of archaeological, historical, and paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission."

Thank you for the opportunity to comment on the Draft EIR for the Project. As a responsible and trustee agency, Commission staff will need to rely on the certified EIR for the issuance of a lease as specified above and, therefore, we request that you consider our comments prior to certification of the Final EIR.

SLC-8 Please send copies of future Project-related documents, including electronic copies of the certified EIR, approving resolution, Mitigation and Monitoring Program, Notice of Determination, CEQA Findings and, if applicable, Statement of Overriding Considerations when they become available. Please refer questions concerning environmental review to Cynthia Herzog, Senior Environmental Scientist, at (916) 574-1310 or cynthia.herzog@slc.ca.gov. For questions concerning archaeological or historic resources under Commission jurisdiction, please contact Staff Attorney Jamie Garrett, at (916) 574-0398 or jamie.garrett@slc.ca.gov. For questions concerning Commission leasing jurisdiction, please contact Dobri Tutov, Public Land Management Specialist, at (916) 574-0722 or dobri.tutov@slc.ca.gov.

Sincerely,

Nicole Dobroski, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
C. Herzog, Commission
D. Tutov, Commission
J. Garrett, Commission

SAN MATEO LAFCo
LOCAL AGENCY FORMATION COMMISSION
455 COUNTY CENTER, 2ND FLOOR • REDWOOD CITY, CA 94063-1663 • PHONE (650) 363-4224 • FAX (650) 363-4849

January 29, 2021

West Bay Sanitary District
Attn: Sergio Ramirez, District Manager
500 Laurel Street
Menlo Park, CA 94025

Subject: Draft Environmental Impact Report for the Flow Equalization and Resource Recovery Facility Levee Improvements and Recycled Water Facility Project

Dear Mr. Ramirez,

Thank you for the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Flow Equalization and Resource Recovery Facility Levee Improvements and Recycled Water Facility Project (Project).

The Local Agency Formation Commission (LAFCo) is a state mandated local agency established in every county to oversee the boundaries of cities and special districts. San Mateo LAFCo has jurisdiction over the boundaries of the 20 cities, 22 independent special districts, and many of the 33 active county and city governed special districts serving San Mateo County.

As noted in the June 9, 2020 comment letter from LAFCo for the Notice of Prepetition for the Project, West Bay Sanitary District would be required to submit a resolution of application San Mateo LAFCo to activate the power of recycled water in accordance with Government Code 56824 if additional areas, outside of the Sharon Heights Golf and Country Club and the Stanford Linear Accelerator Center to receive recycled water.

LAFCO-1

The DEIR accurately describes LAFCo's authority regarding the activation of the recycled water power for the District. The DEIR also states that recycled water distribution pipelines would be located in the road right-of-way of Marsh Road, Bayfront Expressway, Constitution Drive, Chilco Street, and Hamilton Avenue. This pipeline is shown as Figure 2-9 The document notes that future distribution pipelines and a recycled water distribution tank would be subject to future CEQA review.

LAFCo has the following comments regarding the DEIR:

LAFCO-2 For the new recycled water distribution pipelines that are proposed to be constructed as part of

LAFCO-2 | the Project, the EIR should identify the service area and proposed customers of the recycled water. Figure 2-9 illustrates the recycled water boundaries and the general location of the pipeline. However, the DEIR does not describe what the various phases shown on the figure mean, the service area for the recycled water that will be distributed via the proposed pipeline, or the location of customers.

LAFCO-3 |

LAFCO-4 | Will service connections to customers be part of the Project or will the pipeline be installed with no service connections? The DEIR should identify environmental impacts of any customer connections to the recycled water transmission line.

LAFCO-5 |

San Mateo LAFCo looks forward to reviewing all future environmental documents related to the Project.

Sincerely,

Rob Bartoli

Rob Bartoli
Management Analyst

Attachment A – June 9, 2020 LAFCo Comment Letter on NOP

Attachment B – Figure 2-9 from DEIR

SAN MATEO
LAFCo
LOCAL AGENCY FORMATION COMMISSION
455 COUNTY CENTER, 2ND FLOOR • REDWOOD CITY, CA 94063-1663 • PHONE (650) 363-4224 • FAX (650) 363-4849

June 9, 2020

West Bay Sanitary District
Attn: Phil Scott, District Manager
500 Laurel Street
Menlo Park, CA 94025

Subject: Notice of Preparation of an Environmental Impact Report for the Flow Equalization and Resource Recovery Facility Levee Improvements and Recycled Water Facility Project

Dear Mr. Scott,

Thank you for the opportunity to comment on the Notice of Preparation of an Environmental Impact Report (EIR) for the Flow Equalization and Resource Recovery Facility Levee Improvements and Recycled Water Facility Project (Project).

The Local Agency Formation Commission (LAFCo) is a state mandated local agency established in every county to oversee the boundaries of cities and special districts. San Mateo LAFCo has jurisdiction over the boundaries of the 20 cities, 22 independent special districts, and many of the 33 active county and city governed special districts serving San Mateo County.

The Notice of Prepetition (NOP) for the Project identifies a proposed development of levee improvements and the construction of a new recycled water facility. The NOP states that in addition to the facility, new pipeline will be constructed to connect serve customers with the recycled water.

In 2017, San Mateo LAFCo approved an application by West Bay Sanitary District to provide recycled water service within only the portions of its service area encompassing Sharon Heights Golf and Country Club and the Stanford Linear Accelerator Center (see Attachment A). The application was submitted pursuant go Government Code Section 56824. In approving the application, LAFCo amended the functions and services of the District to include recycled water as detailed below.

Function Services	
Solid Waste Collection and Disposal by Franchise Agreement; Recycling	Collect, transfer, and dispose of solid waste and provide solid waste handling service, including, but not limited to, source reduction, recycling, composting activities, pursuant to Division 30 (commencing with Section 40000), and consistent with Section 41821.2 of the Public Resources Code.
Sewage Collection	
Sewage Treatment (as member of Silicon Valley Clean Water - formerly South Bayside System Authority)	
On-site Wastewater Disposal	
Recycled Water	Construct and operate a satellite wastewater treatment plant, influent pump station and pipeline, solid discharge pipeline back to the sewer, and a recycled water pump station and delivery pipeline in Phases I and II, Sharon Heights Golf & Country Club and Stanford Lands

Currently, the District only has the authority to provide recycled water in the Sharon Heights Golf & Country Club and Stanford Lands of the District's service area. Any additional areas that are proposed to receive recycled water services shall require LAFCo authorization pursuant to Government Code 56824. An application shall be made to San Mateo LAFCo by resolution from the District if additional areas to receive recycled water.

LAFCo has the following comments regarding the NOP:

The Project proposes the construction of new influent and effluent piping to connect customers to the recycled water facility. The EIR should identify the service area for this recycled water and any new piping that will need to be installed for the customers to receive this service. The NOP currently only identifies the connection to a storage tank, which is stated to not be part of this project. Please clarify if the construction of the storage tank and the lines connecting it is proposed under a separate project, and if it is, describe how recycled water will be distributed to customers without the storage tank.

The EIR should identify environmental impacts of any customer connections to the recycled water transmission line.

Please clarify if the Project will have any impact on the existing recycled water service the District provides in Sharon Heights Golf & Country Club and Stanford Lands areas.

Please list San Mateo Local Agency Formation Commission as a permitting agency for the project if there are additional areas outside of Sharon Heights Golf & Country Club and Stanford Lands that will be receiving recycled water service outside of the Sharon Heights Golf & Country Club and Stanford Lands area. If such service is requested, an application to LAFCo, in accordance with Government Code Section 56824, shall be submitted. This shall include a

resolution of application from the District, a plan for service, and applicable fees and application materials.

If approval from LAFCo is required, San Mateo LAFCo would be a Responsible Agency under California Environmental Act (CEQA) (CEQA Guidelines 21069). Before action could be taken by LAFCo, the West Bay Sanitary District must certify the EIR.

San Mateo LAFCo looks forward to reviewing all future environmental documents related to the Project.

Sincerely,

Rob Bartoli

Rob Bartoli
Management Analyst

Attachment A – 2016 WBSD Application for Sharon Heights Golf & Country Club and Stanford Lands Recycled Water Service

Attachment A

RESOLUTION NO. 2007 (2016)
IN THE DISTRICT BOARD OF THE WEST BAY SANITARY DISTRICT
COUNTY OF SAN MATEO, STATE OF CALIFORNIA
*****

RESOLUTION OF APPLICATION TO REQUEST THAT THE LOCAL AGENCY FORMATION COMMISSION AUTHORIZE LATENT POWERS WITHIN WEST BAY SANITARY DISTRICT'S SERVICE AREA FOR RECYCLED WATER DELIVERY PHASE I AND PHASE II

WHEREAS, West Bay Sanitary District's (the District) Service Area for Recycled Water Delivery Phase I and Phase II, is a District Service Area organized and existing under the laws of the State of California, Health and Safety Code Section 6400 *et seq.* ("H&S Code"); and

WHEREAS, the District's Recycled Water Service Area for Phase I encompasses the entire Sharon Heights Golf and Country Club and Phase II encompasses, Stanford Linear Accelerator Center, (see Exhibit A – map) located within San Mateo County and is authorized to provide various public services as delineated in its formation Resolution; and

WHEREAS, California Government Code Section 56824.12 authorizes the District Board of Directors to request approval of the local LAFCO to activate latent powers within an existing District Service Area pursuant to California Government Code Sections 56824.10 through 56824.14; and

WHEREAS, LAFCO's proceedings to activate latent powers within the District's Service Area may be initiated by a Resolution of Application approved by the West Bay Sanitary District's Board of Directors as the governing authority for the District; and

WHEREAS, West Bay Sanitary District's Board of Directors, in accordance with Government Code Section 56824.12(c)(1), held a duly noticed public hearing on this Resolution of Application to consider public comment on the proposed application (Exhibit B) for expansion of services to be provided within the boundaries of the District to include:

1. Operation and Maintenance (O&M), and Rehabilitation and Replacement (R&R) of Recycled Water treatment facility and pipelines on District operated properties and right of ways; and

2. Distribution of Recycled Water for Irrigation, Commercial, and Industrial use to Recycled Water Phase I and Phase II service area.

WHEREAS, the proposal to add operation and maintenance of Recycled Water treatment facility and pipelines on District owned or operated properties and Distribution of Recycled Water for Irrigation, Commercial and Industrial use is consistent with District's sphere of influence and is not inconsistent with any other district or city's sphere of influence;

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the West Bay Sanitary District's Board of Directors as follows:

SECTION 1. This proposal is made pursuant to Sections 56824.10 and 56824.12 of the California Government Code.

SECTION 2. This proposal is to activate latent powers within the West Bay Sanitary District consisting of:

1. Operation and Maintenance, and Rehabilitation and Replacement of Recycled Water treatment facility and pipelines on District operated properties and right of ways; and

2. Distribution of Recycled Water for Irrigation, Commercial and Industrial use to Recycled Water Phase I and Phase II service area.

The Plan for Services was prepared pursuant to Section 56653 attached hereto as Exhibit C.

SECTION 3. The boundaries of the District shall not be affected.

SECTION 4. The reason for this proposal is to provide recycled water by treating wastewater for reuse within the service area to meet customer demands for non-potable water. This activation of latent powers will provide for the operation and maintenance, and rehabilitation and replacement of Recycled Water treatment facility and pipelines on District operated properties and right of ways and for distribution of Recycled Water for irrigation, commercial, and industrial use in Recycled Water Phase I and Phase II service area. This application is to activate this latent power throughout Phase I and Phase II territory of West Bay Sanitary District; however, it is anticipated that application may be made in the future to include other phases of Recycled Water Treatment and Distribution within the District's jurisdiction and sphere of influence pursuant to the provisions of the H&S Code.

SECTION 5. The Board hereby requests that LAFCO undertake proceedings for this proposal in accordance with Government Code Section 56824.14.

SECTION 6. This proposal does not affect the boundaries of any city or district.

SECTION 7. The District Manager is directed to file a certified copy of this Resolution with the Executive Officer of LAFCO.

PASSED AND ADOPTED by the District Board of the West Bay Sanitary District at a special meeting thereof held on 30th day of November, 2016, by the following votes:

Ayes: MORITZ, DEHN, THIELE-SARDINA, OTTE
Noes: NONE
Absent: WALKER
Abstain: NONE

Edward P. Moritz
President of the District Board of the
West Bay Sanitary District of San
Mateo County, State of California

Attest:

Secretary of the District Board of the
West Bay Sanitary District of San Mateo
County, State of California

Exhibit "A"

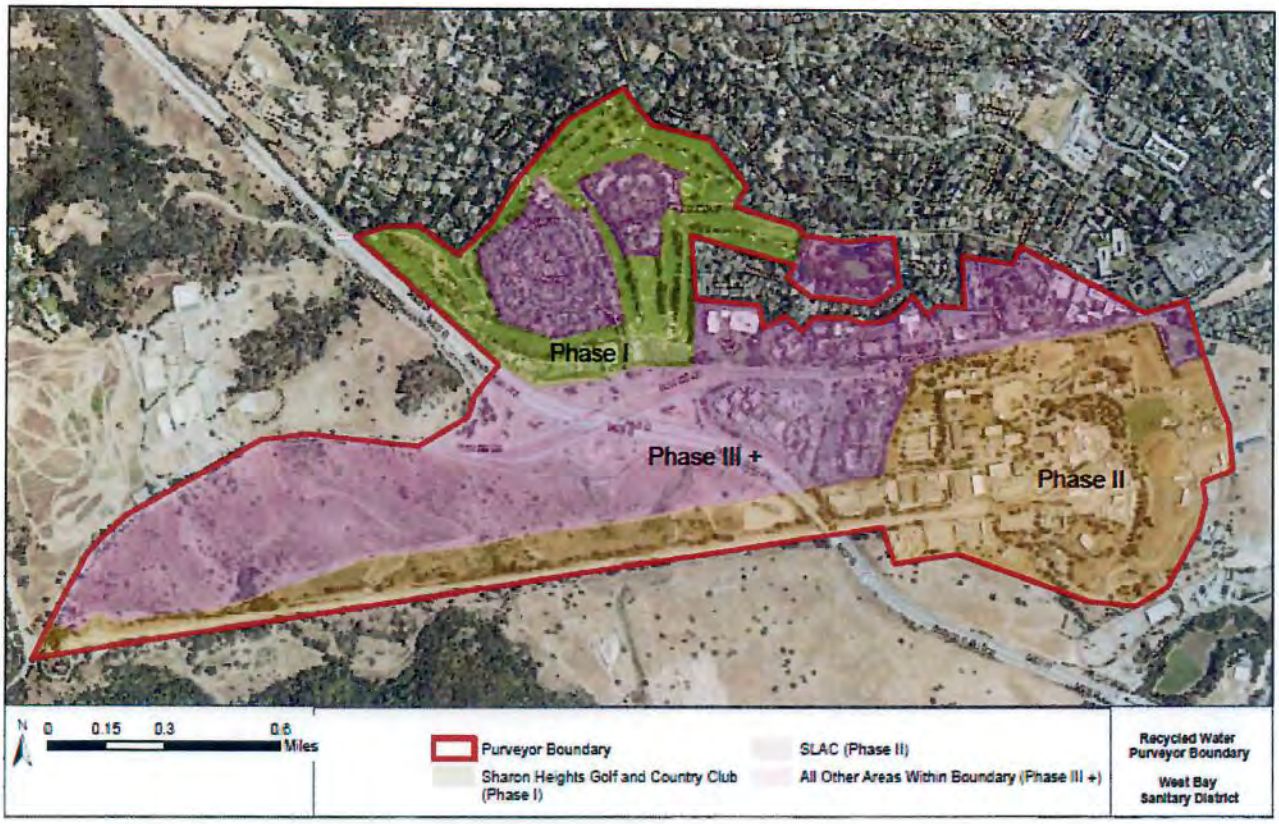
Phase I
Phase III +
Phase II
N
0
0.15
0.3
0.6
Miles
Purveyor Boundary
Sharon Heights Golf and Country Club (Phase I)
SLAC (Phase II)
All Other Areas Within Boundary (Phase III +)
Recycled Water Purveyor Boundary
West Bay Sanitary District

EXHIBIT B

APPLICATION FOR A CHANGE OF ORGANIZATION OR REORGANIZATION TO THE SAN MATEO LOCAL AGENCY FORMATION COMMISSION

A. **GENERAL INFORMATION**

1. Briefly describe the nature of the proposed change of organization or reorganization.

Application to activate the recycled water pursuant to Government Code Section 56824.12 to the Sharon Heights Golf Course and Stanford Lands (Phase I and II) as shown on the attached map Exhibit A.

2. An application for a change of organization or reorganization may be submitted by individuals in the form of a petition or by an affected public agency in the form of a certified resolution. This application is submitted by (check one):

_____ Landowners or registered voters, by petition
__X__ An affected public agency, by resolution

(If this application is submitted by petition of landowners or registered voters in the affected territory, complete the petition form.)

3. What are the reasons for the proposal?

The reason for this proposal is to provide recycled water by treating wastewater for reuse within the service area to meet customer demands for non-potable water. This activation of latent powers will provide for the operation and maintenance, rehabilitation and replacement of Recycled Water treatment facility and pipelines on District operated properties and right of ways and for distribution of Recycled Water for irrigation, commercial, and industrial use in Recycled Water Phase I and Phase II service area as shown on the attached map. This application is to activate this latent power throughout Phase I and Phase II territory of West Bay Sanitary District; however, it is anticipated that application may be made in the future to include other territory in the District's Recycled Water Treatment and Distribution program within the District's jurisdiction and sphere of influence pursuant to the provisions of the Health and Safety Code.

4. Does this application have 100% consent of landowners in the affected area?

__x__ Yes _____ No

5. Estimated acreage: Phase I ≈ 111 acres, Phase II ≈ 467 acres. Total ≈ 578 acres

B. **SERVICES**

1. List the name or names of all existing cities and special districts whose service area or service responsibility would be altered by the proposed change of organization or reorganization.

West Bay Sanitary District

2. List all changes to the pattern of delivery of local services to the affected area. For each service affected by the proposed change(s) of organization, list the present source of service (state "none" if service is not now provided), the proposed source of service and the source of funding for construction of necessary facilities (if any) and operation. Example is given on the first two lines of the space provided for your response.

SERVICE	PRESENT SOURCE	PROPOSED SOURCE	FUNDING SOURCE	
			CONSTRUCTION	OPERATING
Recycled Water	None	West Bay Sanitary District	Clean Water State Revolving Fund Loans and grants guaranteed with a pledge of District General Fund Revenues and recovered through user agreements with irrigation, commercial and industrial users and other legal methods	User fees assessed to irrigation, commercial and industrial users. All Capital, operations and reserve costs will be recovered through the User Agreements and through Operations and Maintenance and fees such that the recycled water project will be revenue neutral to the District.

C. **PROJECT PROPOSAL INFORMATION**

1. Please describe the general location of the territory which is the subject of this proposal. Refer to major highways, roads and topographical features.

Sharon Park Golf Course and Stanford Linear Accelerator Center (SLAC)

2. Describe the present land use(s) in the subject territory.

Phase I, Sharon Heights Golf and Country Club is used as Open Space and Conversation District
Phase II, SLAC is used as a Federal Facility operated by the Dept. of Energy

3. How are adjacent lands used?

North: Residential

South: Open Space, Institutional, Residential

East: Residential, Commercial, Institutional

West: Open Space

4. Will the proposed change of organization result in additional development? If so, how is the subject territory to be developed?

No conditions of approval are requested.

5. What is the general plan designation of the subject territory?
Phase I, Sharon Heights Golf and Country Club has a General Plan land use of Parks and Recreation. The following excerpt is taken from the Menlo Park General Plan regarding the Parks and Recreation Land Use:
This designation provides for public and private golf courses, passive and active recreation uses, educational facilities, and similar and compatible uses. The letter "P" overlaid on this designation denotes a park. The maximum FAR shall be in the range of 2.5 percent to 30 percent. (See attachment 1 & 2).
Phase II, SLAC is used as a Federal Facility operated by the Dept. of Energy. SLAC resides in unincorporated SMCO not in the City of Menlo Park.

6. What is the existing zoning designation of the subject territory?

Phase I, Sharon Heights Golf and Country Club is designated as OSC, Open Space and Conversation Due to the zoning, the development potential is limited to public uses, public or private recreational uses, or agricultural uses. Source: Planning and Zoning Dept. (See attachment 1 & 2).

Phase II, SLAC is used as a Federal Facility operated by the Dept. of Energy. Resides in SMCO Zoning description is: R-E Residential Estates and S-11 Residential Density District #11

7. What prezoning, environmental review or development approvals have already been obtained for development in the subject territory?
None

8. What additional approvals will be required to proceed?

LAFCO

9. Does any portion of the subject territory contain any of the following --agricultural preserves, sewer or other service moratorium or wetlands subject to the State Lands Commission jurisdiction?

No

10. If no specific development projects are associated with this proposal, will the proposal increase the potential for development of the property? If so, how?

No specific development projects are planned.

* * * * * * * * * * *

LAFCo will consider the person signing this application as the proponent of the proposed action(s). Notice and other communications regarding this application (including fee payment) will be directed to the proponent at:

NAME: West Bay Sanitary District

ADDRESS: 500 Laurel Street, Menlo Park, CA 94025 TELEPHONE: 650-321-0384

ATTN: Phil Scott, District Manager

Signature of Proponent

ATTACHMENT 1
CITY OF MENLO PARK
ZONING DISTRICT AND GENERAL PLAN LAND USE DESIGNATION CORRESPONDENCE TABLE

Zoning District		General Plan Land Use Designation
R-E	Residential Estate District	Very Low Density Residential
R-E-S	Residential Estate Suburban District	Very Low Density Residential
R-1-S	Single Family Suburban Residential District	Low Density Residential[1] [2]
R-1-S (FG)	Single Family Suburban Residential District (Felton Gables)	Low Density Residential[3]
R-1-U	Single Family Urban Residential District	Low Density Residential
R-2	Low Density Apartment District	Medium Density Residential
R-3	Apartment District	Medium Density Residential
R-3-A	Garden Apartment Residential District	Medium Density Residential
R-3-C	Apartment-Office District	Professional and Administrative Offices[1]
R-4	High-Density Residential District	High Density Residential
R-4-S	High-Density Residential District, Special	High Density Residential
R-4-S(AHO)	High-Density Residential District, Special, Affordable Housing Overlay	High Density Residential
R-L-U	Retirement Living Units District	High Density Residential
C-1	Administrative and Professional District, Restrictive	Professional and Administrative Offices
C-1-A	Administrative and Professional District	Professional and Administrative Offices
C-1-C	Administrative, Professional and Research District, Restrictive	Professional and Administrative Offices
C-2	Neighborhood Shopping District	Retail/Commercial
C-2-A	Neighborhood Shopping District, Restrictive	Retail/Commercial
C-2-B	Neighborhood Commercial District, Restrictive	Retail/Commercial
C-2-S	Neighborhood Commercial District, Special	Retail/Commercial
C-4	General Commercial District	Retail/Commercial
M-2	General Industrial District	Limited Industry
M-3	Commercial Business Park	Commercial Business Park
SP-ECR/D	El Camino Real/Downtown Specific Plan	El Camino Real/Downtown Specific Plan
OSC	Open Space and Conservation District	Parks and Recreation
P-F	Public Facilities District	Public Facilities
FP	Flood Plain District	Non-Urban[4]
P	Parking District	Retail/Commercial
H	Historic Site District	Medium Density Residential[5]
AAGP	Allied Arts Guild Preservation District	Other
X	Conditional Development	n.a.[6]
U	Unclassified	n.a.

[1] The General Plan refers to R-1-S as potentially part of either the Very Low Density Residential or Low Density Residential land use designations. However, when developments are built to R-1-S standards, only the Low Density Residential land use designation applies.
[2] The Stanford Golf Course area between Junipero Serra and Sand Hill Road is part of the Parks and Recreation land use designation.
[3] The R-3-C zoning district may have residential uses, but at densities covered by the Professional and Administrative Offices land use designation.
[4] Bayfront Park is part of the Parks and Recreation land use designation.
[5] The two parcels currently zoned H are 1040 Hoel Drive and 1235 Crane Street.
[6] Conditional Development districts inherit the land use designation of their base zoning district.

ATTACHMENT 2

Please see index sheet for detailed legend

CITY OF MENLO PARK
ZONING MAP AND GENERAL PLAN LAND USE DIAGRAM
SHEET 1

Updated: April 2016
By: Planning Division, GIS Section

EXHIBIT C

Plan for Services

1. The services to be provided within the District are:

   - Operation and Maintenance, and Rehabilitation and Replacement (R&R) of Recycled Water treatment facility and pipelines on District operated properties and right of ways; and
   - Distribution of Recycled Water for Irrigation, Commercial, and Industrial use to Recycled Water Phase I and Phase II service area.

2. The level and range of services to be provided are operation and maintenance of District owned or operated recycled water facilities and appurtenances in a clean, productive and safe condition, and distribution of recycled water to certain irrigation, commercial, and industrial users in the service area.

3. Services may be extended within the Sharon Heights area in the Phase I service area of the golf course in the next 18 to 24 months. Extension into the Phase II service area for industrial, commercial and irrigation use may occur over the next few years.

4. Conditions including improvements or upgrades to existing facilities are not appropriate for this proposal.

5. Construction of the recycled water treatment facility will be funded with Clean Water State Revolving Fund loans and grants guaranteed by a pledge of District General Fund Revenues and recovered through User Agreements with irrigation, commercial, and industrial users and other legal methods of financing. O&M and R&R costs will be recovered through fees assessed to irrigation, commercial, and industrial users. All capital, operations, and reserve costs will be recovered through the User Agreement and through O&M and R&R fees such that the recycled water project will be revenue neutral to the District.

6. The total estimated cost to provide the new function of services within the entirety of the District's Sharon Heights area is not known at this time; however the estimated cost to construct the recycled water facility is estimated to be $15.6M, and O&M costs are estimated at $250,000 to $300,000 annually. We assume the golf course will use between 152 acre feet per year (AFY) and 200 AFY. The cost of service is estimated to be in the range of $3,600/acre foot and $4,600/acre foot depending on how much recycled water the golf course actually uses and the final construction cost of the facility. These costs have been discussed with Sharon Heights Golf and Country Club in detail and they have entered into an MOU indicating they are willing to reimburse the District for the capital and O&M costs associated with the project. SLAC has been made aware of the costs as well and are interested in the project since the long term cost of potable water will eventually rise above the cost of recycled water and has environmental benefits, but have not yet entered into a User Agreement with the District.

   Facilities will be maintained throughout the project life and financing period of 30 years, with R&R services conducted to extend the useful life beyond 30 years, as needed, to continue to provide reliable water service as long as demands continue.

7. Alternatives to provide alternate water sources for irrigation have been explored and included the construction of a well but the immediate area is not suited for a well and a well proposal in Menlo Park was determined to be prohibitively expensive, intrusive and not accepted by the community.

An alternative to create a special assessment district to fund and provide the services would require the District to purchase land for the recycled water facility (increasing capital costs) and provide recycled water at a rate less than cost-of-service for at least several years resulting in a net increase to the District rate payers. Activation of latent powers to allow the District to perform the services is preferable because it avoids the need to create a new assessment district to fund and provide the necessary services via user agreements and private partnership.

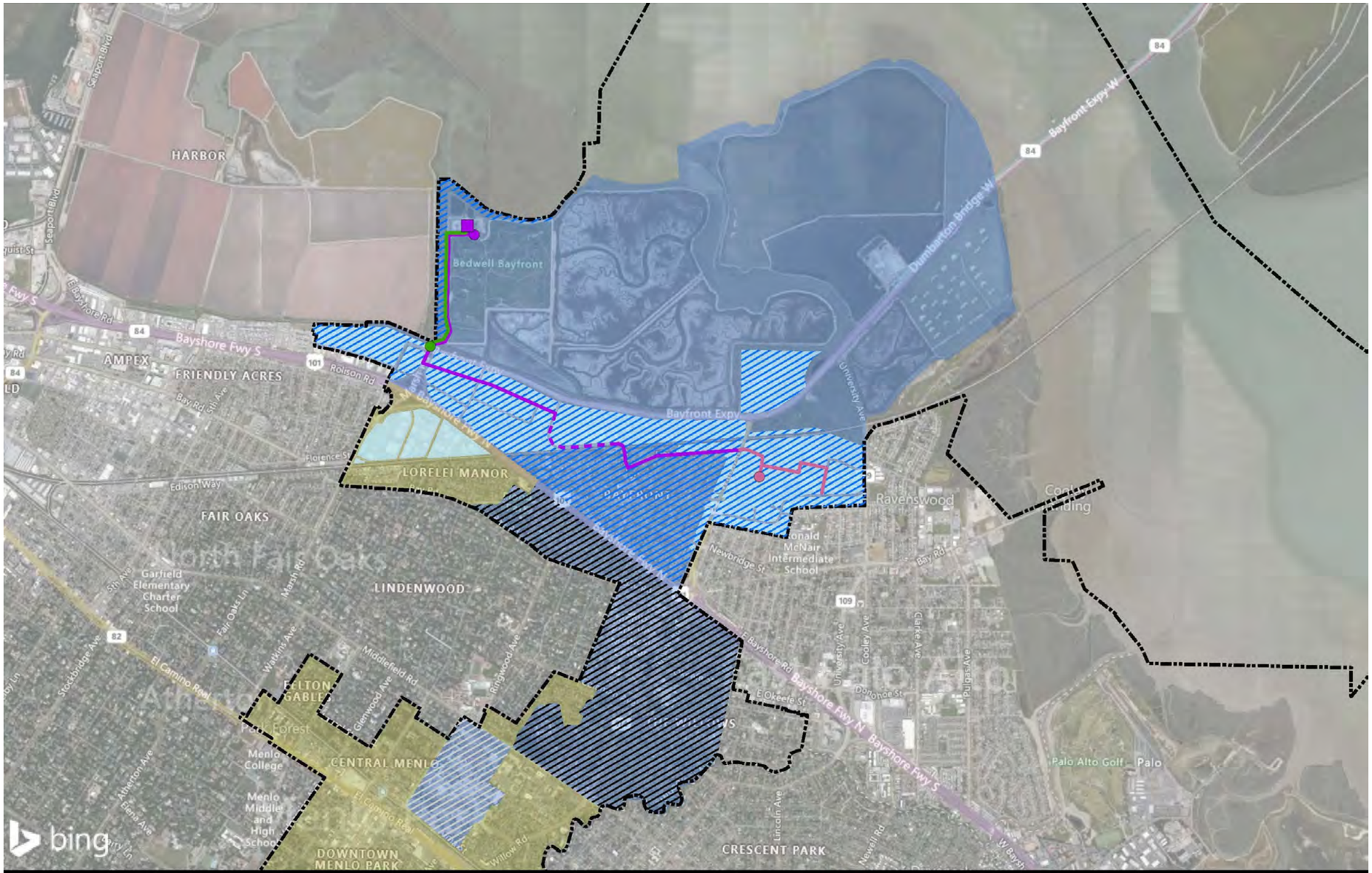

Exhibit A:
Recycled Water Purveyor Boundary
West Bay Sanitary District (WBSD)
Menlo Park Municipal Water District

Legend

- Recycled Water Facility
- Influent Sanitary Sewer Pump Station (IPS)
- Recycled Water Storage Tank (0.50 MG)
- Future Storage Tank (0.50 MG)
- Distribution Pipeline
- Existing Distribution Pipeline
- Future Distribution Pipeline
- Influent Sanitary Sewer Force Main (SSFM)
- Phase 1
- Phase 2
- Phase 3
- City Boundary
- ConnectMenlo
- Menlo Park Municipal Water
- California Water Service Company

N

0 1,750 3,500 Feet

Source: F&L, 2020

Figure 2-9 Recycled Water Purveyor Boundary

From: Amah Mutsun <amahmutsuntribal@gmail.com> on behalf of Amah Mutsun
Sent: Tuesday, February 2, 2021 3:16 PM
To: Christina Lau
Subject: Re: Comment Period Closing for West Bay Sanitary District's FERRF Levee Improvements and Bayfront Recycled Water Facility Project Draft EIR - Feb. 1, 2021

Our recommendations are as follows:

Amah Mutsun-1 | All crews have Cultural Sensitivity Training.
Amah Mustun-2 | California trained Archaeological Monitors .
Amah Mutsun-3 | Qualified Native American Monitors

On Fri, Jan 29, 2021 at 2:38 PM Christina Lau <clau@migcom.com> wrote:

> Dear Agency Representatives,
>
> The West Bay Sanitary District would like to offer a reminder that the comment period for the Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project Draft Environmental Impact Report is about to close on Monday February 1, at 5:00 pm. The Notice of Availability was sent via direct mailing to your agency and is attached for your reference. Thank you and we look forward to receiving your comments to assist in implementation of a successful project.
>
> If you have any questions about this project, please contact the West Bay Sanitary District at (650) 321-0384 or email at info@westbaysanitary.org.
>
> Sincerely,
>
> Christina
>
> **Christina Lau**
>
> *Project Manager*
>
> *she/her/hers*
>
> M I G
>
> PLANNING | DESIGN | COMMUNICATIONS | MANAGEMENT | SCIENCE | TECHNOLOGY

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facebook twitter linkedin instagram

--
Michelle Zimmer

Enrollment and Communications Officer of the
Amah Mutsun Tribal Band of Mission San Juan Bautista

CHAPTER 4 RESPONSES TO COMMENTS

This chapter provides a written response by the District, as Lead Agency for the project, to each comment raising a significant environmental issue submitted on the Draft EIR. As noted previously in Chapter 1, section 1.1.3, the District provided a response letter to all commentors via email on April 8, 2021 and included a notification of the anticipated public hearing date for certification of the EIR on April 28, 2021 at a regular District Board meeting.

4.1 RESPONSE TO COMMENTS FROM CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Comment CDFW-1: Fully Protected Species.

Issue: Numerous State fully protected species are likely to be present in or near the Project site, including salt marsh harvest mouse (*Reithrodontomys raviventris*), American peregrine falcon (*Falco peregrinus anatum*), California black rail (*Laterallus jamaicensis coturniculus*), California brown pelican (*Pelecanus occidentalis californicus*), and white-tailed kite (*Elanus leucurus*). CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish pursuant to Fish and Game Code §§ 3511, 4700, 5050, and 5515. Take, as defined by Fish and Game Code § 86 is to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill". Take of any fully protected species is prohibited. CDFW cannot authorize incidental take of fully protected species unless the take is for necessary scientific research including efforts for species recovery. Without appropriate avoidance and minimization measures, Project activities conducted within occupied territories have the potential to significantly impact these species. Potentially significant impacts include, but are not limited to inadvertent entrapment, reduced reproductive success, reduced health and vigor, nest abandonment, loss of nest trees, and/or loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), and direct mortality.

Recommendation:

1. *Fully Protected Species Surveys*

To avoid impacts to fully protected species, CDFW recommends that a qualified biologist conduct species-specific surveys (using standard protocol or methodology, if available https://wildlife.ca.gov/Conservation/Survey-Protocols) of the Project site before Project implementation. If Project activities will take place when fully protected species are active or are breeding, CDFW recommends that additional pre-activity surveys for active nests or individuals be conducted by a qualified biologist no more than five (5) days prior to the start or restart of Project construction and should continue during Project construction.

2. *Fully Protected Species Avoidance*

In the event a fully protected species is found within or adjacent to the Project site, CDFW recommends that a qualified biologist develops an appropriate no-disturbance buffer to be implemented. The qualified biologist should also be on-site during all Project activities to ensure that the fully protected species are not being disturbed by Project activities.

Response to Comment CDFW-1: The Draft EIR includes measures to minimize impacts to special-status species, including those that are state listed, federally listed, and state fully protected. The referenced website (https://wildlife.ca.gov/conservation/survey-protocols) does

not include any protocol-level surveys for fully protected species that are not already addressed in the Draft EIR. See below for a reference to species-specific survey mitigation measures included the Draft EIR. The impacts were determined to be less than significant with mitigation. The West Bay Sanitary District will consult with the appropriate resource agencies during design and will apply for permits determined necessary. It is anticipated that permits will be required from the U.S. Army Corps of Engineers (USACE; in consultation with NOAA Fisheries and U.S. Fish and Wildlife Service), and the Regional Water Quality Control Board (RWQCB). It is a requirement of all regulatory permits that the project mitigation measures be implemented.

As noted in the comments, CDFW cannot issue an Incidental Take Permit (ITP) under Fish and Game Code section 2081 for Fully Protected species. Except for Longfin smelt, each of the state listed species that could be impacted by the project are also listed as Fully Protected; therefore, a state ITP cannot be issued for those species. Mitigation measures in the EIR include pre-construction surveys, buffers, and seasonal construction limits to avoid take of fully protected species. As a result, take of fully protected species will be avoided. Impacts to Longfin smelt were found less than significant with mitigation. Take of smelt is not expected since the work area will be isolated from water.

Mitigation measures in the EIR include pre-construction surveys, buffers, construction monitoring, and seasonal construction limits to minimize impacts for all special-status species that could be affected by the project. Please see the Errata at the end of these comments for updates to these measures. These include mitigation measures BIO-1a Pre-activity surveys for special-status plants; BIO-1b Avoidance buffers (for plants), BIO-2a Biological Monitoring During Construction in the Marsh, BIO-2b Installation of Sheet Pile, Dewatering, and Relocation of Stranded Fish, BIO-3g Vegetation Removal Methods, BIO-4 Pre-construction/Pre-disturbance survey for California Black Rail and California Ridgway's Rail, BIO-5a Conduct pre-construction surveys for burrowing owls, BIO-5b Implement buffer zones for burrowing owls, BIO-5c Monitor owls during construction, BIO-6a Pre-construction/pre-disturbance surveys for nesting birds, and BIO-6b Nesting bird protection.

Comment CDFW-2: Vague Language

Issue: The draft EIR has several minimization and mitigation measures that are not strong enough or specific enough to be implemented. Wording such as "to the extent feasible", "if necessary", and portions of measures that will be determined at a later date, including buffer distances are not able to be implemented consistently during construction. The vague language used in the draft EIR provides uncertainty that can result in no protections to the species.

Recommendation

To reduce the risk to species, CDFW suggests revising any minimization or mitigation measure that includes language such as "to the extent feasible", undefined areas, buffers, or other vague language to better define measures to be implemented.

Response to Comment CDFW-2: Revisions to the Draft EIR text are included in the Final EIR Errata (which are included at the end of this letter) to remove phrases such as "if necessary" and "to the extent feasible", as appropriate. However, in some situations, language like "to the extent feasible" and "if necessary" is appropriate because the decision has to be based on the judgement of a qualified biologist that is observing field conditions and determining how best to protect the

species. The edits to the Draft EIR text will also be presented in the Final EIR, Chapter 5 Errata and Revisions. Ultimately, the measures to protect species and habitats required in project permits will govern. These are expected to be based on additional project information as the design is advanced, and to be less vague.

Comment CDFW-3: Regeneration of Habitat

Issue: The draft EIR does not discuss the amount of time it will take for salt marsh or other habitats to naturally regenerate on-site post-construction. The draft EIR also does not analyze the impacts related to temporal loss of salt marsh and other habitat from effects of potential increase in turbidity to vegetation regeneration. Depending on the length of time it takes for habitat to develop and post-construction conditions, there are potentially significant impacts to species, habitats, and water quality due to a lag in development of habitats.

Recommendation:

The draft EIR should discuss the amount of time it will take for salt marsh and other habitats to reestablish on-site post construction, and evaluate the potential impacts to species, habitats, and water quality. The draft EIR should consider development of a revegetation plan depending on the evaluation of habitat impacts.

Response to Comment CDFW-3: The intent of the project is to salvage existing vegetation on site to be replanted in the appropriate habitat zones on the ecotone levee.

The project description in the Draft EIR includes a discussion of the construction and revegetation methods for the ecotone levee. Regarding salt marsh, the intent is to carefully strip off the existing vegetation (similar to sod) and protect it during construction in an existing nursery onsite maintained by Save the Bay, then reinstall it in the appropriate locations on the ecotone levee, so that the temporal impacts are minimized. Levees surrounding the marsh are often barren, or sparsely vegetated. The upland areas of the ecotone levee will be planted with a mix of species to improve habitat value. While it will take time to achieve final cover goals, the restored area will still function as upland habitat, albeit sparsely vegetated, and will not result in a significant temporal loss of habitat. A specific revegetation plan will be included in the permit applications and modified as necessary based on comments from the resource agencies issuing permits for the project (USACE, RWQCB). A Monitoring and Adaptive Management Plan will also be required for those permits and is recommended in Mitigation Measure BIO-3k. The levee would not be open to tidal action that could cause turbidity until it is stable. The final design approved under agency permits may include natural toe protection features depending on a site-specific wave run-up study.

Comment CDFW-4: California Ridgeway's Rail and California Black Rail

Issue: California black rail, a state fully protected species, has the potential to occur within the Project area. Both California black rail and California ridgeway rail (*Rallus longirostris obsoletus*) could be impacted by project activities. Complete avoidance measures should be incorporated into the Project to ensure full take avoidance of the species.

Evidence of Impacts: California black rail populations have been documented as declining in California in recent decades primarily as a result of habitat loss and degradation, (Evens et al.

1991, Conway and Sulzman 2007). Black rail populations and their required habitat features are vulnerable to both human-caused and natural stressors.

Grading, compacting, and filling aquatic habitat could cause direct habitat loss (Bauer et al. 2015). Construction near a wetland or water feature supporting these species would impact the quality of their habitat if dust, debris, petroleum, or other contaminants are discharged from the construction site into their habitat.

Vegetation clearing may impact rails where they require a dense cover of upland vegetation for protection from predators (Eddleman et al. 1994, Evens and Thorne 2015).

Disturbance to nesting rails, such as humans or pets intruding into the marsh, have been reported to cause rails to abandon nests or to try to defend nests, exposing eggs (Flores and Eddleman 1993). Intrusion can alter habitat and cause mortality through crushing of rails that generally freeze in place and are hesitant to flush (Evens and Thorne 2015).

Recommendation

To avoid impacts to California black rail and California ridgeway's rail, CDFW recommends that activities within or adjacent to tidal marsh or suitable rail habitat, be avoided during rail breeding season, January 15 – August 31 for Ridgway's rail and February 1 – August 31 for California black rail.

CDFW also recommends the in-water work period for the San Francisco Bay is June 1 – November 30; however, with the presence of ridgeway rails, the in-water work period should be reduced to September 1 – November 30 to avoid impacts.

If Project activities within 700 feet of habitat will be conducted during the nesting season (January 15 to August 31) multiple, pre-construction call back surveys should be required prior to initiation of Project activities. A minimum of 4 surveys should be conducted between January and April, a minimum of 2-3 weeks apart. The listening stations should be established at 150-meter intervals along roads, trails, and levees that will be affected by Project implementation.

If California black rail are detected through surveys, then Project activities should not occur within 700 feet of an identified calling center. If the activity occurs where the Project site is across a major channel or slough from the Project site greater than 700 feet in distance the activity may continue. If bird activity is surveyed or discovered within the buffer limits immediate consultation with CDFW should be required. If rails are observed within the Project area at any time work should be stopped immediately by a qualified biologist and the rail species allowed to leave the area on its own. If the rail species does not leave the area, then no work should commence until CDFW has made a determination on how to proceed with work activities.

Daily monitoring surveys of Project sites should occur until the Project is complete. If an injured or dead rail is discovered at the Project sites, it should be reported to CDFW immediately for consultation and all Project activities cease.

Response to Comment CDFW-4: Mitigation Measure BIO-4 has been modified in the Errata presented at the end of the responses to this letter to reflect information provided in this comment. The Errata is also presented in the Final EIR, Chapter 5 Errata and Revisions, as well as the Mitigation Monitoring and Reporting Program (MMRP):

The project requires authorization from the USACE under the Clean Water Act. The USACE will consult with the U.S. Fish and Wildlife Service (USFWS) (and National Oceanic Atmospheric Administration [NOAA] Fisheries) as required by the federal Endangered Species Act. Measures to protect Ridgway's rail will be incorporated into the USACE authorization and implemented by the project. Because the state cannot issue an ITP for Ridgway's rail, impacts that cause mortality must be avoided. It is anticipated that any take will be avoided with measures required for the project.

As noted in the Draft EIR project description, the ecotone levee construction area will be isolated from water with a sheet pile cofferdam that will be installed at low tide and in-water work is not proposed.

Comment CDFW-5: Salt Marsh Harvest Mouse

Issue: Impacts to salt marsh habitat, including vegetation removal/disturbance, could cause take of salt marsh harvest mouse if the species is present during Project activities; and such take should be considered a significant impact under CEQA. Salt marsh harvest mouse is a fully protected species under the Fish and Game Code section 4700; therefore, CDFW cannot issue a Project permit for their take. Complete avoidance measures must be incorporated into the Project to ensure full take avoidance of the species.

Salt marsh harvest mice are endemic to the San Francisco Bay in salt marsh and brackish wetland habitats. The species has lost a significant amount of tidal marsh habitat in the last century as a result of filling and diking, changes in water salinity, invasive plant species, and pollution (Zeiner et al. 1990, U.S. Fish and Wildlife Service 2010). The continued fragmentation and degradation of salt marsh and wetland habitat is also a concern for the species. As salt marsh harvest mice are restricted to salt marsh and wetland habitats, activities that compromise these habitats may negatively affect the species.

Vegetation removal may impact salt marsh harvest mice as they need non-submerged vegetation for cover from predators and utilize grasses, seeds, and other vegetation as a food source (Zeiner et al. 1990). Areas with non-submerged vegetation are particularly used during high tides (Smith et al. 2014). Additionally, vegetation clearing can cause fragmentation and create edge effects that permeate far beyond the Project site (Harris 1988, Murcia 1995).

Road construction and use can result in mortality for small mammals (Trombulak and Frissell 2000).

Artificial light has been shown to suppress the immune system of some mammals (Bedrosian et al. 2011), and it can cause disruption of normal circadian rhythms. Although it has not been studied in salt marsh harvest mice specifically, rodents often decrease foraging in higher light levels due to higher risk of predation (Clarke 1983, Daly et al. 1992, Bird et al. 2004).

Construction sites often have significant amounts of noise from generators and equipment. Rodents have been shown to increase their vigilance behavior when exposed to noise because they need to rely more on visual detection of predators when auditory cues are masked by noise (Rabin et al. 2006). This can result in unnecessary increased energy expenditure that may negatively impact survival.

Recommendation

In addition to the exclusion fencing, CDFW recommends that an approved qualified biologist, familiar with salt marsh harvest mouse walk through and inspect suitable habitat immediately prior to vegetation removal and search for signs of harvest mice or other sensitive wildlife and plants.

Prior to Project activities (e.g., vegetation removal, disturbance to vegetation) occurring in potential salt marsh harvest mouse habitat each day, an approved qualified biologist, familiar with salt marsh harvest mice, shall walk through and inspect suitable habitat and search for signs of harvest mice or other sensitive wildlife and plants. If a salt marsh harvest mouse is discovered, no work shall occur within 150 feet of that location.

Following inspection, personnel, under the supervision of the qualified biologist, will disturb (e.g., flush) vegetation to force movement of salt marsh harvest mice into adjacent marsh areas. Immediately following vegetation flushing, personnel, under the supervision of the qualified biologist, will remove vegetation with hand tools (e.g., weed- eater, hoe, rake, trowel, shovel, grazing) so that vegetation is no taller than two inches. If string trimmers (a.k.a. weed whackers) are used, they shall be used to the minimum extent necessary and shall be used to take down vegetation height a couple inches at a time so that the biological monitor can search for potential salt marsh harvest mouse nests. If a nest is discovered, all work shall stop immediately and CDFW shall be notified. Work shall not resume until CDFW provides written permission to do so. After vegetation removal, the mouse-proof barrier should be installed as described in the EIR. A qualified biologist should inspect the integrity of the exclusion fencing daily to ensure there are no gaps, tears, or damage. Vegetation removal shall include a two-foot-wide buffer from the edge of the Project site to ensure mice will not enter the Project site.

Large equipment shall not enter suitable salt marsh harvest mouse habitat until all vegetation has been taken down to ground level. If an injured or killed mouse is discovered at any time during Project activities, all work shall cease immediately and CDFW shall be contacted for further direction. A restoration ecologist with documented experience with salt marsh habitat restoration shall monitor the site to ensure that marsh habitat restores naturally to the same coverage rate prior to disturbance. If after three years, the site is not revegetated, the restoration ecologist shall develop a site restoration plan to revegetate all salt marsh habitat temporarily impacted by the Project. Restoration may include hand transplanting of marsh vegetation (e.g., pickleweed) from clean donor areas.

Response to Comment CDFW-5: The Draft EIR includes ten mitigation measures to protect Salt marsh harvest mouse. These are supplemented in the Errata presented at the end of this response to comments and in Final EIR Chapter 5 to reflect CDFW recommendations. See the response to Comment CDFW-2 regarding fully protected species and Comment CDFW-3 regarding regeneration of habitat.

In addition, the project requires authorization from the USACE under the Clean Water Act. The USACE will consult with the USFWS (and NOAA Fisheries) as required by the federal Endangered Species Act. Measures to protect Salt marsh harvest mouse will be incorporated into the USACE authorization.

Comment CDFW-6: Western Burrowing Owl (*Athene cunicularia*)

Issue: The Draft EIR acknowledges burrowing owls could be present on-site or in the surrounding area, and construction activities could cause loss of habitat or abandonment of active nests. The EIR identifies that burrowing owl, a California Species of Special Concern, has previously been documented on-site, and that suitable habitat exists on-site. The EIR notes that surveys will be completed in conformance with CDFW's 2012 guidelines, however, not all aspects of the guidelines are included in the mitigation measures for this species. The Project could result in burrowing owl nest abandonment, loss of young, reduced health and vigor of owlets, or injury or mortality of adults. Burrowing owls are a California Species of Special Concern due to population decline and breeding range retraction. Based on the above, the Project may potentially significantly impact burrowing owls.

Recommendation

Burrowing owl surveys should be conducted by a qualified CDFW- approved biologist. Since suitable burrowing owl habitat is present, CDFW recommends that surveys be conducted following the methodology described in Appendix D: Breeding and Non-breeding Season Surveys of the CDFW Staff Report on Burrowing Owl Mitigation (Staff Report), which is available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843. In accordance with the Staff Report, a minimum of four survey visits should be conducted within 500 feet of the Project Area during the owl breeding season which is typically between February 1 and August 31. A minimum of three survey visits, at least three weeks apart, should be conducted during the peak nesting period, which is between April 15 and July 15, with at least one visit after June 15. Pre-construction surveys should be conducted no-less- than 14 days prior to the start of construction activities with a final survey conducted within 24 hours prior to ground disturbance.

In accordance with CDFW's 2012 Staff Report, owls may be disturbed up to 1,640 feet (500 meters) from a project. Therefore, the buffer area surveyed should be increased commensurate with the type of disturbance anticipated as outlined in the CDFW 2012 Staff Report and include burrow surrogates such as culverts, piles of concrete or rubble, and other non-natural features. The CEQA document for the Project should also include measures to avoid or minimize loss of burrowing owl foraging habitat, and mitigation for loss of habitat that cannot be fully avoided.

Please be advised that CDFW does not consider exclusion of burrowing owls or "passive relocation" as a "take" avoidance, minimization, or mitigation method, and considers exclusion as a significant impact. The long-term demographic consequences of exclusion techniques have not been thoroughly evaluated, and the survival rate of evicted or excluded owls is unknown. Burrowing owls are dependent on burrows at all times of the year for survival or reproduction; therefore, eviction from nesting, roosting, overwintering, and satellite burrows or other sheltering features may lead to indirect impacts or "take" which is prohibited under Fish and Game Code section 3503.5. All possible avoidance and minimization measures should be considered before temporary or permanent exclusion and closure of burrows is implemented to avoid "take." Any passive relocation plan for non-nesting owls will be subject to CDFW review. If passive relocation is used, habitat compensation should be required, with the acreage amount identified in the eviction plan.

If the Project would impact an unoccupied active burrowing owl burrow or burrow surrogate (i.e., a burrow used in the past three years for nesting or a burrow where a non-nesting owl

would be evicted as described above), the following habitat preservation should be implemented prior to Project construction:

Impacts to each nesting site should be mitigated by permanent preservation of two occupied nesting sites with appropriate foraging habitat through a conservation easement and provision of an endowment for long-term management. Impacts to burrowing owl roosting, overwintering, and foraging habitat should be mitigated by permanent preservation of off-site habitat occupied by burrowing owl at a 2:1 mitigation to impact ratio, through a conservation easement and provision of an endowment for long term management. The CDFW 2012 Staff Report states, "current scientific literature supports the conclusion that mitigation for permanent habitat loss necessitates replacement with an equivalent or greater habitat area for breeding, foraging, wintering, dispersal…". The Project may implement alternative methods for preserving habitat with written acceptance from CDFW. Finding suitable habitat to preserve as described above may be infeasible, and in this case impacts to burrowing owl as described above will be fully avoided in order to avoid potentially significant impacts.

Response to Comment CDFW-6: Mitigation Measures BIO-5a through BIO 5c have been modified, and Mitigation Measure BIO-5d has been added in response to these comments (see Errata at the end of this response letter and in Final EIR Chapter 5).

Comment CDFW-7: Noise and Vibrations Impacts to Fish Species

Issue: Special-status fish species are likely to be present within the tidally influenced habitat within and adjacent to the Project area, including:

- Central California Coast steelhead (*Oncorhynchus mykiss*); FT
- Longfin smelt (*Spirinchus thaleichthys*); ST
- North American green sturgeon (*Acipenser medirostris*); FT, SSC
- FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered; SFP = State Fully Protected; SSC = California Species of Special Concern
- The Draft EIR does not provide any mitigation measures to protect special-status fish species from construction equipment noise and vibrations that could cause disruptions to special-status fish species. Additionally, fish could be crushed, injured, or killed if they are present when construction of the ecotone levee begins.

Recommendation:

To reduce the potential for noise and vibration impacts to special- status fish and to encourage fish to leave the area, CDFW recommends initiating a soft start to allow fish to leave the area prior to operating the vibratory hammer at full capacity. The hammer operator shall initiate noise from the hammer for 15 seconds at reduced energy followed by a one-minute waiting period. This procedure shall be repeated two additional times before commencing hammering at full capacity.

Additionally, depending on the specific pile-driving methods, ITP consultation with CDFW may be recommended.

Response to Comment CDFW-7: Please see the project description in the Draft EIR for an explanation of construction methods. The Draft EIR does not provide mitigation measures to protect fish from construction equipment noise and vibrations because all equipment will be on land above the high tide line, and equipment noise and vibrations are not expected to impact fish. The exception may be a sheet pile cofferdam that will be installed to isolate the ecotone levee work area. The cofferdam will be installed at low tide, when fish are not expected to be present. A measure to include the soft start recommended by CDFW is provided in the Errata presented at the end of this response letter and in Final EIR Chapter 5, as this is an additional best management practice that would minimize noise impacts.

The project does not require in-water work and is not expected to result in take of state listed fish species, so an ITP for this species is not expected to be required.

Comment CDFW-8: Dewatering Plan

Issue: The draft EIR states that a dewatering plan will be implemented if necessary but does not provide any information about the dewatering plan or how it will be decided whether a dewatering plan is necessary. It is also unclear whether sheet pile walls are required and whether it would be less impactful to dewater the Project area as a whole versus deterring fish from the area.

Recommendation

CDFW recommends that the EIR include additional information and a more detailed proposed dewatering plan to address the comments above. The dewatering plan should also include a figure showing where cofferdams and other structures or equipment will be placed for the diversion.

Response to Comment CDFW-8: As noted in the Draft EIR project description (page 2-19), dewatering is not required for project actions because there will be no in-water work. Dewatering of the slough is not proposed. The sheet pile cofferdam installed to protect the ecotone levee construction site will be installed at low tide. Any dewatering, if it becomes necessary (for groundwater intrusion, for example), would be subject to a dewatering plan approved under resource agency permits issued in compliance with the Clean Water Act. Similarly, the permit applications require a complete description of all activities within waters of the state or U.S. Please also see updates to Mitigation Measure BIO-2a regarding dewatering.

Comment CDFW-9: Special-Status Plants

Issue: The proposed Project may significantly impact multiple special-status plants due to disturbance or destruction of individuals and habitat, including:

- Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*); 1B.2
- Point Reyes bird's beak (*Chloropyron maritimum* ssp. *Palustre*); 1B.2
- Congdon's tarplant (*Centromadia parryi* ssp. *Congdonii*); 1B.1
- Saline clover (*Trifolium hydrophilum*); 1B.2

CNPS Plant Ranks

- 1B = Rare, Threatened, or Endangered in California and Elsewhere
- 2A = Presumed Extirpated in California, But Common Elsewhere
- 2B = Rare, Threatened, or Endangered in California, But More Common Elsewhere

CNPS Threat Ranks

- 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Recommendation

CDFW recommends that the Project area be surveyed for special- status plants by a qualified botanist following the "Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities," which can be found online at https://wildlife.ca.gov/Conservation/Survey- Protocols. This protocol, which is intended to maximize detectability, includes identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. In the absence of protocol-level surveys being performed, additional surveys may be necessary.

CDFW recommends impacts to special-status plants be avoided. If Project impacts to special-status plants cannot be completely avoided, consultation with CDFW is warranted and the Project should provide compensatory mitigation such as off-site habitat preservation or another method. If a state-listed or state Rare1 plant is identified during botanical surveys and take cannot be avoided, acquisition of take authorization through an Incidental Take Permit (ITP) issued by CDFW pursuant to Fish and Game Code Sections 2081(b) and/or Section 1900 et seq is necessary to comply with Fish and Game Code, CESA and the Native Plant Protection Act.

Response to Comment CDFW-9: No state-listed or state rare plants are expected in the project area. No CESA plants were detected during recent surveys in September 2019, February 2020, and May 2020. MIG biologists also conducted site visits in March 2017, October 2017, February 2018, and April 2018.

The Draft EIR includes mitigation measures BIO-1a and BIO-1b that include pre-construction surveys and establishment of buffers. The mitigation measure is revised in the Errata presented at the end of this response to CDFW comments and in Final EIR Chapter 5 to incorporate a reference to the survey protocol referenced in the CDFW recommendation.

Comment CDFW-10: **Nesting Birds.** The Draft EIR describes methods to reduce impacts to nesting birds. CDFW concurs that measures should be conducted to assist in the avoidance of native bird species. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA). Sections 3503, 3503.5, and 3513 of the Fish and Game Code prohibit take of birds and their active nests, including raptors and other

migratory nongame birds as listed under the MBTA. Additionally, many special-status bird species may be present and/or nesting at the site, including:

Alameda song sparrow (*Melospiza melodia pusillula*); SSC

American peregrine falcon (*Falco peregrinus anatum*); SFP

Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*); SSC

Black skimmer (*Rynchops niger*); SSC

California black rail (*Laterallus jamaicensis coturniculus*); ST, SFP

California brown pelican (*Pelecanus occidentalis californicus*); SFP

California least tern (*Sterna antillarum browni*); FE, SE

California Ridgeway's rail (*Rallus obsoletus obsoletus*); FE, SE

Loggerhead shrike (*Lanius ludovicianus*); SSC

Northern harrier (*Circus cyaneus*); SSC

San Francisco common yellowthroat (*Geothlypis trichas sinuosa*); SSC

Short-eared owl (*Asio flammeus*); SSC

Western burrowing owl (*Athene cunicularia*); SSC

Western snowy plover (*Charadrius nivosus nivosus*); FT, SSC

White-tailed kite (*Elanus leucurus*); SFP

FE = Federally Endangered; FT =Federally Threatened; SE = State Endangered; SFP= State Fully Protected; SSC = State Species of Special Concern

Issue: Mitigation Measure BIO-6b specifies up to a 250-foot construction buffer for nesting birds, and up to 1000 feet for and raptors. Depending on the species, nest stage, and site conditions, these distances may not be sufficient to prevent disturbance- related nest failure and subsequent take. The Project proponent is responsible for ensuring that the Project does not result in any violation of the MBTA or relevant Fish and Game Codes.

Recommendation

1. If work will occur during nesting bird season (January 15 through August 31) no more than five (5) days prior to work commencing, including staging, clearing and grubbing, a qualified biologist should survey a sufficient area around the Project site to identify any nests that are present and determine their status and an appropriate buffer. Once construction work begins, the survey effort should continue to identify any nest starts established after the work commences. 'Sufficient' in this context means any nest within an area that could potentially be affected by the Project. In addition to direct impacts, such as nest destruction, nesting birds might be affected by noise, vibration, odors, lighting, and movement of workers or equipment. Identified active nests should be surveyed for the first 24 hours prior to any construction-related activities to establish a behavioral baseline of the adults and any nestlings. Once work commences, all active nests should continue to be monitored by the qualified biologist to detect any signs of disturbance and behavioral changes as a result of the Project. If signs of disturbance and

behavioral changes are observed, the biologist should reassess the appropriate buffer to prevent disturbance-related nest failure and subsequent take.

2. A qualified biologist, experienced in raptor behavior, should be assigned to monitor the behavior of any raptors nesting within disturbance distance of Project activities. Even within species, disturbance distances can vary according to time of year or geographical location. The qualified biologist should have authority to order the cessation of all Project activities within disturbance distance of any raptor nest if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to: defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, interrupted feeding patterns, and flying away from the nest. Project activities within line of sight of the nest should not resume until the qualified biologist has consulted with CDFW and both the qualified biologist and CDFW confirm that the bird's behavior has normalized or the young have left the nest.

Response to Comment CDFW-10: Comment noted. There is no suitable nesting habitat for early nesting raptor species. As a result, the appropriate season for nesting bird surveys (except rails) was determined to be February 1 through September 15. Surveys for Ridgway's and black rail species will follow current protocol (Wood 2017), which requires that three surveys be completed one week apart between January 15 – April 15, with most of the surveys completed by March 25. Please see the Errata at the end of this response to comments letter and in Final EIR Chapter 5 for additional information included in Mitigation Measure BIO-6a, and Mitigation Measure BIO-4 for protection of rails.

Comment CDFW-11: Light Pollution

Issue: The Project would generate sources of light near sensitive natural vegetation communities, including permanent lighting from additional buildings and temporary lighting for proposed nighttime construction. The draft EIR does not discuss the type or color of lighting that will be used outdoor, i.e., bright security lighting along the perimeter, white light, blue light, etc.

Although the draft EIR does provide some discussion of the effects of increased lighting and glare over natural conditions it does not adequately analyze potentially significant impacts on rare, threatened, endangered, or nocturnal wildlife species, and migratory birds. Artificial lighting and light pollution are potential significant impacts to rare, threatened, endangered, and nocturnal wildlife and migratory birds because light pollution impacts can disrupt routine behavior of the species life cycle, degrade the quality of the environment utilized by said species and can substantially reduce the number of individuals.

Evidence of Impacts: Sensitive species, wildlife, and their habitats may be adversely affected by increased and artificial night lighting, even temporarily due to night construction activities. Light plays a vital role in ecosystems by functioning as both an energy and an information source (Gaston et al. 2012, 2013). The addition of artificial light into a landscape disrupts this role, altering the natural circadian, lunar, and seasonal cycles under which species have evolved. Artificial lights result in direct illumination, altering the natural patterns of light and dark, and sky glow (i.e., scattered light in the atmosphere), which can extend the ecological impacts of

light far beyond the light source (Longcore and Rich 2004). On cloudy nights in urban areas, for example, the sky glow effect can be of an equivalent or greater magnitude than high-elevation summer moonlight (Kyba et al. 2013). The addition of artificial light into a landscape can impact a broad range of system processes, including:

- Activity patterns
- Availability and detectability of food resources
- Movement, navigation and migration
- The timing of phenological events
- Physiological functions
- Foraging behavior and predator-prey interactions
- Phototaxis (attraction and movement towards light)
- Circadian rhythms (both physiological and behavioral)
- Causing disorientation, entrapment, and temporary blindness

Recommendation

CDFW recommends further discussion of the types of lighting that may be used at the site, and how this lighting may impact local species and the nearby sensitive natural vegetation communities. To mitigate the potentially negative impacts of artificial light, light structures can be shielded and downward facing so that trespass of light is minimized. In addition, lights can be motion-activated, or turned off or dimmed during critical times of the year (e.g., migration) or during times of night that have the most significant impact on wildlife (i.e., dawn and dusk) (Gaston et al., 2012, 2013).

Lights with wildlife-friendly spectral composition (i.e., minimize light avoidance/ attraction) can also be used (Sweeney et al. 2011; Gaston et al. 2012, 2013). LED lights are well suited for operating at variable brightness and being switched off or dimmed during certain times of the year or during times of low demand, as they operate at full efficiency and have no “warm-up” time (Gaston et al., 2012, 2013). Vegetation may also be used to shield sensitive areas against light, and light-absorbent surfaces can be used in in place of reflective surfaces (Gaston et al., 2012, 2013). In addition, all lights should be disposed of properly, as many contain mercury and other toxins.

Response to Comment CDFW-11: The Draft EIR identifies this potential impact and includes mitigation measures BIO-3d and BIO-3i to address lighting. The lighting recommendations provided in the comment are noted.

The project requires permits from the USACE (in consultation with USFWS). Lighting impacts will also be addressed during that process as they relate to federally listed species and measures will be incorporated into permits as necessary.

Comment CDFW-12: Fencing Hazards

Issue: The Project may result in the use of open pipes used as fence posts, property line stakes, signs, etc. Raptor's talons can become entrapped within the bolt holes of metal fence stakes resulting in mortality.

Recommendation

CDFW recommends that all hollow posts and pipes be capped to prevent wildlife entrapment and mortality because these structures mimic the natural cavities preferred by various bird species and other wildlife for shelter, nesting, and roosting. Metal fence stakes used on the Project site should be plugged with bolts or other plugging materials to avoid this hazard. Further information on this subject may be found at: https://ca.audubon.org/conservation/protect-birds-danger-open-pipes.

Response to Comment CDFW-12: Please see the Errata presented at the end of this response letter and in Final EIR Chapter 5 for additional Mitigation Measure 6d that addresses this issue. Contract documents (construction plans, specification etc.) will incorporate this mitigation measure.

Comment CDFW-13: Reporting to CNDDB. CEQA requires that information developed in draft environmental impact reports and negative declarations be incorporated into a data base which may be used to make subsequent or supplemental environmental determinations. [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form, online field survey form, and contact information for CNDDB staff can be found at the following link: https://wildlife.ca.gov/data/CNDDB/submitting-data. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plants- and-Animals.

Response to Comment CDFW-13: Comment noted. Please see the Errata presented at the end of this response to comments letter and Final EIR Chapter 5 for a CNDDB reporting requirement that has been added to measures BIO-1, BIO-2a, BIO-2b, BIO-4, and BIO-5a.

Comment CDFW-14: CEQA Filing Fees. The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs., tit. 14, § 753.5; Fish and Game Code, § 711.4; Pub. Resources Code, § 21089).

Response to Comment CDFW-14: Comment noted.

Draft EIR Errata and Revisions

This section includes the changes to the Draft EIR text needed to respond to the CDFW comments. The changes correct inaccuracies and clarify the analysis in the EIR. Text removed from the EIR is marked with ~~strike-out~~. New text is indicated by underline. This Errata is also presented in Final EIR Chapter 5.

S.6 Significant Impacts and Mitigation Measures, Table S-1 Summary of Project Impacts and Mitigation Measures, pages S-7 to S-18

BIOLOGICAL RESOURCES	
Impact BIO-1: The proposed project may result in significant impacts to special-status plants due to disturbance or destruction of individuals or suitable habitat. **Potentially Significant Impact**	**Mitigation Measure BIO-1a: Pre-Activity Surveys for Special-Status Plants**. Prior to initial ground disturbance in grassland and wetland habitats and during the appropriate blooming period (Coastal marsh milkvetch and Point Reyes bird's-beak, June–October; Congdon's tarplant, May–November; saline clover, April–June), a focused survey for these four potentially occurring special-status plant species will be conducted by a qualified botanist in accordance with the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* within suitable habitat in the project footprint and a 50-foot buffer around the project footprint~~, where feasible~~. The purpose of the survey is ~~will be~~ to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or the ~~identified~~ buffer, then no further mitigation is required ~~will be warranted~~. If Point Reyes bird's-beak, Coastal marsh milkvetch, Congdon's tarplant, or saline clover individuals are found in the impact area, then Mitigation Measure BIO-1b will be implemented. The results of the survey will be documented, and all rare plant discoveries shall be reported to CDFW's California Natural Diversity Database. **Mitigation Measure BIO-1b: Avoidance Buffers**. The project proponent, in consultation with a qualified plant ecologist, will take measures to protect all populations of special-status plant species found to occur within the project site or within 50 feet of the impact area~~ to the extent feasible~~. Avoided special-status plant populations will be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the ~~identified~~ buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the ~~identified~~ buffer around special-status plants to be avoided and will be flagged or

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	fenced. The flagging will be maintained intact and in good condition throughout project-related construction activities. If complete avoidance is not feasible, then the appropriate resource agencies will be consulted to determine the appropriate measures to take, which may include salvage of seeds and/or plants, relocation of individual plants, and/or off-site preservation, enhancement, and management of occupied habitat for the species. **Less than Significant with Mitigation Incorporated**
Impact BIO-2: The proposed project could harm special-status ~~fish~~ species, degrade surface or ground water quality, and will result in both permanent and temporary impacts to aquatic and marsh habitat during construction of the ecotone levee. **Potentially Significant Impact**	**Mitigation Measure BIO-2a: Biological Monitoring During Construction in the Marsh.** A qualified biological monitor will be present during all construction activities within the marsh or in vegetated areas within five (5) feet of the marsh to look for special-status animals that may be impacted by construction. For example, when construction personnel need to install the ecotone levee coffer dam and remove vegetation, the biological monitor will first inspect the vegetation to determine whether any salt marsh harvest mice, ~~or~~ salt marsh wandering shrews, or other special-status species are present. If any animals are present, they will be allowed to leave the area on their own, or the location of the in-marsh work will be adjusted to ensure that no impacts to special-status species ~~individual mice or shrew~~s occur ~~at that time~~. The biologist ~~individu~~shall~~will~~ have stop-work authority if any special-status ~~of a federally listed~~ species is detected in an area where it may be injured or killed by construction activities. In the event that special-status species are found within or directly adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The results of the monitoring will be documented. If ~~found necessary~~ directed by the agency approved biological monitor, ~~.~~ Mitigation Measure BIO-2b will be implemented. ~~to include an approved dewatering plan and relocate any stranded fish found within the ecotone levee construction site.~~ If directed~~recommended~~ by the approved biological monitor, Mitigation Measure BIO-3h (exclusion fencing) will be implemented ~~to include additional exclusion~~

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	~~fencing along the coffer dam during ecotone levee construction~~. The biological monitor will also ensure that Mitigation Measures BIO-3a through k~~h is~~are implemented as necessary to protect special-status species. Any discoveries of special-status species shall be reported to CDFW's California Natural Diversity Database. **Mitigation Measure BIO-2b: Installation of Sheet Piles, Dewatering Plan, and Relocation of Stranded Fish.** Sheet pile cofferdams to be installed prior to construction of the ecotone levee shall be installed at low tide when there is little or no water in the slough to avoid stranding fish. An agency approved dewatering plan shall be implemented if water deep enough to support fish remains within the ecotone levee work area once the sheet pile cofferdam is installed. ~~necessary, to complete the ecotone levee grading once the coffer dams are installed.~~ If necessary, as the cofferdams are being placed, a qualified biologist will relocate any stranded fish to ~~an area~~ suitable habitat outside of the work area. The method of relocation will be determined by the qualified biologist, in consultation with ~~NMFS~~NOAA Fisheries and/or CDFW (as appropriate), based on site conditions and species present. Implementation of this measure will avoid loss of fish due to stranding. The methods and results of fish relocation efforts will be documented. Discoveries of special-status fish species shall be reported to NOAA Fisheries and/or CDFW and entered into CDFW's California Natural Diversity Database (as appropriate). **Mitigation Measure BIO-2c: Measures to Protect Water Quality.** During all construction in and near tidal aquatic habitat, standard BMPs will be used to minimize erosion and impacts to water quality as well as direct impacts to special-status fish. These are reported in the EIR and will be included in the SWPPP prepared for the project. Compliance measures that protect water quality help reduce potential impacts to biological resources to less than significant. **Mitigation Measure BIO-2d: Noise Minimization.** As a Best Management Practice to minimize noise impacts, the sheet piles shall be installed using a soft-

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	start method by pausing after the first 15 seconds at a reduced energy twice before vibrating the sheet piles in at full capacity. **Less than Significant with Mitigation Incorporated**
Impact BIO-3: The proposed project could harm salt marsh harvest mouse and salt marsh wandering shrew, and will result in both permanent and temporary impacts to tidal and upland habitats during construction of the ecotone levee. Additionally, if the proposed project includes the installation of lighting that illuminates marsh habitat and the adjacent levees, such lighting could potentially have adverse effects on special-status species in the wetlands and adjacent levee refugia habitat. **Potentially Significant Impact**	**Mitigation Measure BIO-3a: Worker Environmental Awareness Training.** A resource agency approved biologist will prepare a worker environmental awareness fact sheet with 1) the description and status of the species; 2) the habitat of the species; 3) the legal ramifications of impacting the species; 4) a list of measures being taken to reduce impacts on these species during project construction (including preconstruction surveys, minimizing trash that attracts predators, and other measures); and 5) what to do if the species are encountered. All construction personnel working on the site and in the pipeline alignments and pump station areas adjacent to wetlands will participate in a worker environmental awareness training conducted by a resource agency approved biologist, and will sign an acknowledgment that they have participated in the worker environmental awareness training. **Mitigation Measure BIO-3b: No Pets.** No pets (e.g., dogs or cats) will be brought to the project site to avoid harassment, killing, or injuring of wildlife. **Mitigation Measure BIO-3c: Food Trash Removal**. To minimize attraction of predators such as racoons and feral cats all workers will be required to secure their food related trash and remove it daily. The site foreman shall assure that all food trash related to the construction work is secured and removed. **Mitigation Measure BIO-3d: Minimize Non-daylight Work; Prepare Lighting Plan.** Project lighting during construction activities shall be limited in consideration of the potential impacts to special status species. If early morning, early evening, or night lighting is necessary during construction, a lighting plan shall be prepared in consultation with an agency approved biologist. 24-hour work that requires night lighting shall only be conducted with approval from the

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	US Fish and Wildlife Service and the California Department of Fish and Wildlife due to potential impacts to species protected under FESA and CESA. See also Mitigation Measure BIO-3i Artificial Lighting regarding permanent site lighting. **Mitigation Measure BIO-3e: Work During Extreme High Tides.** To avoid the loss of individual salt marsh harvest mice- and salt marsh wandering shrew~~, California Ridgway's rail, and California black rail~~ that may shelter in the work area during extreme high tides, an agency approved biological monitor shall be present when work around the perimeter of the FERRF site occurs during extreme high tides, such as King Tides. The agency approved biological monitor shall complete a pre-construction survey prior to construction activities in these areas. ~~where extreme high tide has limited upland habitat limits available for refuge before approving construction to proceed~~. Areas within the cofferdam or wildlife exclusion fence are expected to exclude mice and shrews and would not require a pre-construction survey. Also see measure BIO-4 for California Ridgway's rail and California black rail measures at extreme high tide. **Mitigation Measure BIO-3f: Limit Vegetation Removal.** To avoid the loss of individual harvest mice and wandering shrews from any excavation, fill, or construction activities in suitable habitat, vegetation removal will be limited to the minimum amount necessary. **Mitigation Measure BIO-3g: Vegetation Removal Methods**. Vegetation removal will occur under the supervision of a qualified biologist as noted in Mitigation Measure BIO-2a. ~~The biologist will give consideration to requiring t~~The vegetation shall be removed with hand tools (e.g., weed-eater, hoe, rake, trowel, shovel) on a progressive basis, such that it allows species to find adjacent cover. The qualified biologist shall monitor the rate of vegetation removal to ~~would also make specific recommendations with respect to the rate of vegetation removal (to~~ ensure that any harvest mice or wandering shrews present are able to escape to cover that will not be impacted~~)~~, and will specify whether vegetation

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	needs to remain in a certain area temporarily to facilitate dispersal of mice/shrews into habitat outside of the impact area. **Mitigation Measure BIO-3h: Exclusion Fence**. Following the hand-removal of vegetation, exclusion fencing will be erected around the outer boundary of the work area that is adjacent to harvest mouse/wandering shrew habitat that is to remain intact, if the cofferdam design does not exclude species. If the cofferdam excludes the species additional exclusion fencing is not necessary. This will define and isolate protected harvest mouse habitat. The installation of the fence will be supervised by a qualified biologist. This fencing will consist of heavy plastic sheeting or metal material that cannot be climbed by harvest mice, buried at least 4 inches below the ground's surface, and with at least 1 foot (but no more than 4 feet) above the ground. All supports for the fencing will be placed on the inside of the work area. A 24-foot buffer will be maintained free of vegetation around the outside of the exclusion fencing. The fencing will be inspected daily during the project construction period, and any necessary repairs will be made within 24 hours of when they are found. If any breaks in the fencing are found, the qualified biologist will inspect the work area for salt marsh harvest mice and salt marsh wandering shrews. If any individuals are found, all work that could impact these individuals will cease until the individuals have left the impact area on their own. If an injured or killed mouse is discovered at any time during project activities, all work shall cease immediately and USACE/USFWS/CDFW shall be contacted for further direction. **Mitigation Measure BIO-3i: Artificial Lighting.** During and after project construction, the spillover of lighting into the salt marsh habitat and adjacent levees will be minimized using low-intensity lighting or other appropriate low-dispersion lighting technology; orientation of lights so that they are placed on the perimeter of the work area and directed inward (rather than directing any lighting toward the marsh) and downward toward the ground; and shielding of lights from behind. Low-intensity lighting, downcast lighting, or other appropriate lighting technology will be incorporated into the project design where permanent lighting

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	is to be placed within 200 feet of the salt marsh to reduce potential adverse effects on animals within this habitat. **Mitigation Measure BIO-3j: Prohibition of Plastic Monofilament Netting**. Monofilament plastic netting, including in temporary and permanent erosion control measures (such as straw wattles), shall not be used, regardless of whether the netting is biodegradable or not. Burlap or jute wrapped straw wattles are acceptable. **Mitigation Measure BIO-3k: Monitoring and Adaptive Management Plan**. The project shall include a plan to restore and monitor natural habitats impacted by the project, particularly the ecotone levee area. At a minimum the plan shall be submitted in the permit package to the U.S. Army Corps of Engineers required under Section 404 of the Clean Water Act and the permit package to the Regional Water Quality Control Board under Section 401 of the Clean Water Act for agency review. **Less than Significant with Mitigation Incorporated**
Impact BIO-4: The proposed project could harm California black rail and California Ridgway's rail, and will result in both permanent and temporary impacts to tidal and upland habitats during construction. **Potentially Significant Impact**	**Mitigation Measure BIO-4: Pre-Construction/Pre-Disturbance Survey for California Black Rail and California Ridgway's Rail.** Construction activities in and adjacent to the marsh habitat for rails shall occur outside of the breeding season (January 15-August 31), as a first measure. If construction activities are planned to occur within or adjacent to tidal marsh or suitable rail habitat during the breeding season ~~(February 1 through August 31)~~, a qualified biologist shall contact the Invasive Spartina Project to determine if protocol surveys are already being conducted in the area so that a) the data can be used, and b) rails are not adversely affected by repeated protocol surveys. If the Invasive Spartina Project is not conducting protocol surveys, then a qualified biologist shall conduct the USFWS-approved protocol level surveys for California black rail and Ridgway's rail before initiation of any ground disturbing activities within the salt marsh habitat and a 700-foot buffer (i.e., Wood 2017 "Site-specific Protocol for Monitoring Marsh Birds"). Protocol surveys are required to be completed over

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	several visits between January 15 and April 15 and may significantly impact the construction schedule if they have not been completed in time. The qualified biologist shall be approved to conduct ~~will be experienced with the various calls, estimating distances to calls under field conditions, and~~ the ~~USFWS Ridgway's rail~~ current USFWS-sanctioned survey methodology (~~USFWS 2015~~Wood 2017). The qualified biologist shall submit the proposed survey methods to CDFW and USFWS for review and approval prior to commencing the surveys. The results of the survey will be documented, and any detections will be reported to the California Natural Diversity Database. If an active nest is found within the survey area, the qualified biologist shall consult with CDFW and~~/or~~ USFWS to determine the appropriate construction-free buffer zone (typically 700 feet) and/or other mitigation measures to be implemented, such as daily monitoring. If no rail call centers or nests are found within 700 feet of project construction activities, work can proceed.~~, then further mitigation is not required.~~ If work extends into additional seasons, then additional protocol surveys shall be completed, particularly if work has paused. If California Ridgway's rail or black rail are present, the following measures also apply: • To avoid impacts to individual rails, activities within or adjacent to habitat will not occur within two hours before or after extreme high tides (6.5 feet or above as measured at the Golden Gate Bridge), when the marsh is inundated and rail movement may be altered. If the work area is protected by a cofferdam or wildlife exclusion fence and rails are not likely to be present within the buffer zone, the work can continue with a biological monitor present, but shall be halted if a rail is detected within the buffer zone.

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	• If a California Ridgway's rail or black rail nest or adult is encountered during any project-related activity, the observer(s) shall immediately move away from the nest/adult. ~~If Ridgway's rail is assumed present, then construction activities would need to avoid the breeding season each year (February 1 January 15 through August 31).~~ **Less than Significant with Mitigation Incorporated**
Impact BIO-5: The proposed project could harm burrowing owls, and ~~will result in both permanent and temporary~~ impact~~s to~~ potential nesting, roosting, and foraging habitats during construction. **Potentially Significant Impact**	**Mitigation Measure BIO-5a: Conduct Pre-construction Surveys for Burrowing Owls.** Pre-construction surveys for burrowing owls will be conducted prior to the initiation of all project activities within suitable burrowing owl nesting and roosting habitat (i.e., grassland habitat and levees with burrows of California ground squirrels). Pre-construction surveys will be completed in conformance with Appendix D: *Breeding and Non-breeding Season Surveys* of the CDFW Staff Report on Burrowing Owl Mitigation (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843) ~~the CDFW's 2012 guidelines~~ (CDFG 2012), which specify the timing, area, and number of surveys. ~~summarized as follows. An initial habitat assessment will be conducted by a qualified biologist to determine if suitable burrowing owl habitat is present. During the initial site visit, which will be conducted not less than 14 days prior to the onset of ground disturbing activities, a qualified biologist will survey the entire activity area and (to the extent that access allows) the area within 250 feet of the site for suitable burrows that could be used by burrowing owls for nesting or roosting. If no suitable burrowing owl habitat is present, no additional surveys will be required. If suitable burrows are determined to be present within 250 feet of work areas, a qualified biologist will conduct at least one additional survey to investigate each burrow within the survey area for signs of owl use and to determine whether owls are present in areas where they could be affected by proposed activities. The final survey will be conducted within the 24-hour period prior to the initiation of project activities in any given area.~~ The results of the

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	survey shall ~~will~~ be documented, and positive sightings submitted to the California Natural Diversity Database. **Mitigation Measure BIO-5b: Implement Buffer Zones for Burrowing Owls.** If burrowing owls are present on or near the construction site ~~during the nonbreeding season (generally September 1 to January 31),~~ a ~~150-foot~~ buffer zone will be maintained around the occupied burrow(s) in accordance with guidance provided in the CDFW Staff Report cited above. ~~if feasible. If maintaining such a buffer is not feasible, then the buffer must be~~ The buffer will be large enough to avoid injury or mortality of individual owls in compliance with Fish and Game Code section 3503.5. The recommended buffer zones range from 50 meters to 500 meters depending on the level of construction activity. The appropriate buffer zone will be determined by a qualified biologist. ~~During the breeding season (generally February 1 to August 31), a 250-foot buffer, within which no newly initiated project-related activities will be permissible, will be maintained between project activities and occupied burrows. Owls present between February 1 and August 31 will be assumed to be nesting, and the 250-foot protected area will remain in effect until August 31. If monitoring evidence indicates that the owls are no longer nesting or the young owls are foraging independently, the buffer may be reduced, or the owls may be relocated prior to August 31. If necessary, relocation of owls in any season will be completed by a qualified biologist in consultation with CDFW and likely by using one-way doors, which should be installed in all burrows within the impact area and left in-place for at least two nights. These one-way doors will then be removed and the burrows back-filled immediately prior to the initiation of grading.~~ **Mitigation Measure BIO-5c: Monitor Owls During Construction ~~to~~ Determine Feasibility of a Reduced Buffer.** ~~As an alternative to Mitigation Measure 5b, which requires a 250-foot buffer around owl nests (assuming they have not been relocated), this measure provides for monitoring of owl behavior to determine if the size of the buffer can be reduced.~~ Although ~~Any~~ owls occupying the study area are likely habituated to frequent human disturbance due to regular activity at the project site and in nearby Bedwell Bayfront Park, and~~.~~

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	~~As a result, they~~ may ~~exhibit a~~ tolera<u>te</u> ~~nce of~~ greater levels of human disturbance than owls in more natural settings, ~~and construction within the standard 250-foot buffer during the nesting season may be able to proceed without disturbing the owls. Therefore, if nesting owls are determined to be present on the site, and project activities cannot feasibly avoid disturbance of the area within 250 ft of the occupied burrow during the nesting season (i.e., February 1 through August 31), under this measure~~ a qualified biologist <u>shall monitor owl behavior during construction.</u> ~~will be present during all activities within 250 feet of the nest to monitor the owls' behavior~~. If in the opinion of the qualified biologist, the owls are disturbed to the point of harm or possible reduced reproductive success, all work within <u>at least 50 meters</u>~~250 feet~~ of the occupied burrow will cease until the <u>burrow</u> ~~nest~~ is determined by a qualified biologist to no longer be <u>in</u> active <u>use, or the biologist in consultation with resource agencies has determined what work can proceed without causing harm or reduced reproductive success to the owl(s)</u>. **<u>Mitigation Measure BIO-5d: Restoration of Burrowing Owl Habitat On Site.</u>** <u>If pre-construction surveys identify that burrowing owl actively nests in the project footprint, the burrow shall not be removed until nesting is completed for the season, the burrow is not occupied by owls, and artificial burrow(s) are provided within 100 meters of the original burrow.</u> **Less than Significant with Mitigation Incorporated**
Impact BIO-6: The proposed project could result in temporary and permanent impacts to Alameda song sparrow, American peregrine falcon, black skimmer, Bryant's savannah sparrow, California brown pelican, California least tern, loggerhead shrike, northern harrier, San Francisco common yellowthroat, short-eared owl, western snowy plover, white-tailed kite, and other nesting birds protected by the	**Mitigation Measure BIO-6a: Pre-Construction/Pre-Disturbance Surveys for Nesting Birds** <u>Avoidance.</u> To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Mateo County extends from February 1 through September 15.

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MBTA and California Fish and Game Code. Glass in new buildings could increase collision hazard causing injury or death for these species. Open topped posts with bolt holes could entangle raptor talons and result in mortality. **Potentially Significant Impact**	Pre-Construction Surveys. If it is not possible to schedule construction activities between September 15 and January 31, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than five days prior to the initiation of any site disturbance activities and equipment mobilization in the ~~BSA~~ project area as well as the right of ways for the distribution pipelines and the influent pump station. If project activities are delayed by more than five days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all potential nesting habitats (e.g., shrubs, developed areas, structures, etc.) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented. **Mitigation Measure BIO-6b: Nesting Bird Protection.** If an active nest is found sufficiently close to work areas to be disturbed by ~~these~~ project activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 1000 feet for raptors and up to 250 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. The qualified biologist shall be experienced in both songbird and raptor behavior. Identified active nests will be surveyed one day prior to any construction-related activities to establish a behavioral baseline for the adults and any nestlings. Once work commences, all active nests will continue to be monitored by the qualified biologist to detect any signs of disturbance and behavioral changes caused by project activities, and change the buffer as needed to prevent disturbance-related nest failure. The qualified biologist will have authority to order the cessation of all project activities within disturbance distance of any raptor nest if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation,

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	clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged. Monitoring will be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings will be documented. **Mitigation Measure BIO-6c: Reduce Collision Hazard.** The project design shall comply with measures such as those identified in Menlo Park Municipal Code Chapter 16.43.140 (6) to minimize the number of bird collisions with new buildings and reduce bird collision hazard to a less than significant impact. **Mitigation Measure BIO-6d: Cap Open-topped Posts/Fill Bolt Holes.** All fence posts, property line stakes, signs, etc. that are open topped and have bolt holes shall be capped and the bolt holes filled to prevent entanglement of birds of prey. This measure shall be included in project specifications. **Less than Significant with Mitigation Incorporated**
Impact BIO-7: The proposed project could result in the introduction or spread of invasive plants, which can displace native marsh vegetation and reduce habitat quality of the salt marsh by reducing refugia and foraging habitat for native species, including special-status species. **Potentially Significant Impact**	**Mitigation Measure BIO-7a: Integrate Invasive Plant Management into the Ecotone Levee Restoration Plan.** Prior to the start of construction activities, measures to control invasive plant species shall be specified and integrated with the Monitoring and Adaptive Management ~~Habitat Mitigation and Monitoring~~ Plan (Plan ~~HMMP~~) for the ecotone levee restoration, with the purpose of protecting restoration areas from being significantly impacted by invasive weeds. Invasive plant removal in the salt marsh and on the adjacent levees shall be limited to hand tools as specified in Measure BIO-3h and shall be removed before grading starts. If specified in the ~~HMMP~~ Plan for the restoration area, invasive species management will extend into developed areas of the parcel as needed to protect the restoration area. **Mitigation Measure BIO-7b: Construction Measures to Minimize Invasive Plant Infestations.** The following measures shall be taken during construction to minimize invasive plant infestation and potential impacts of invasive plants on adjacent natural habitats, particularly the wetlands:

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	• All ground disturbing equipment used adjacent to native habitats will be washed (including wheels, tracks, and undercarriages) both before and after being used at the site. Worker personal gear, including boots, should also be cleaned and clear of plant material prior to entering the work area. • All seeds and straw materials used on site shall be weed-free rice straw, and all gravel and fill material shall be certified weed free. • The project will follow a Stormwater Pollution Prevention Plan as per the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ), to reduce stormwater runoff which can carry the seed of invasive plants to other locations. • All disturbed soils within sensitive habitats and adjacent levee slopes will be stabilized and planted in accordance with a restoration plan prepared for the project as part of an approved ecotone levee project. • Soil and vegetation removed from weed-infested areas will not be used in general soil stockpiles and will not be redistributed as topsoil cover for the newly filled areas. All weed-infested soil will be disposed of off-site at a landfill or buried at least 2.5 feet below final grade. **Less than Significant with Mitigation Incorporated**
Impact BIO-8: The proposed project will result in both temporary and permanent impacts to jurisdictional waters and sensitive communities from the construction of the ecotone levee, installation of sheet piles along a section of existing levee, the discharge of stormwater runoff into an existing swale that discharges to the bay, and the disposal of the	**Mitigation Measure BIO-8: Water Quality Monitoring Plan**. The West Bay Sanitary District will develop a water quality monitoring plan in consultation with the EPA, which will consult with NMFS. The water plan will include an impact assessment, water quality standards and protections of those standards, monitoring methodology, and reporting requirements. The goal of the plan is to ensure that the discharge from the water recycling facility complies with the discharge requirements set by the regulatory agencies to protect Bay waters. Depending on the requirements of the regulatory agencies, the plan may include, for example, quarterly surface and effluent water monitoring for suspended

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remainder effluent from the RO process into the bay. **Potentially Significant Impact**	solids, settable solids, ammonia, pH, and temperature. If required, the water quality monitoring plan will be submitted as part of the NPDES permit package. **Less than Significant with Mitigation Incorporated**

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Page 5-34, new paragraph inserted after paragraph 2

5.3.7 Impacts to White-tailed Kite

The white-tailed kite is a year-round resident in the project region. The blue gum and Australian pine trees found along the southern edge of the project area as well as just outside of the project area in Bedwell Bayfront Park provide suitable nesting habitat for white-tailed kite. The entire project area provides suitable foraging habitat for white-tailed kite.

Fence Hazard

Hollow posts with bolt holes pose an entanglement hazard for birds of prey that could result in mortality. Mitigation Measure BIO-6d, Cap Fence Posts will reduce impacts to ***less than significant with mitigation incorporated***.

Construction Outside of the Nesting Season

Impacts outside of nesting season (September 16 to January 31) will be less than significant since any foraging white-tailed kites will disperse, in response to construction activities, before they could be killed or injured. As a result, no direct disturbance of these species will occur.

There would still be some potential for disturbance of foraging individuals in the adjacent areas as a result of construction noise and/or movement of construction equipment and personnel. However, such impacts would have minimal effects due to the presence of nearby suitable foraging habitat. Such effects would not result in substantial harassment or disturbance of individuals and would not result in a reduction in the populations of white-tailed kites. Therefore, impacts to foraging white-tailed kites will be ***less than significant***.

Construction During Nesting Season

Project activities during the nesting season (February 1 to September 15) that cause a substantial increase in noise, movement of equipment, or human presence near active nests could result in the abandonment of active white-tailed kite nests with eggs or nestlings. However, adult birds are not expected to be killed or injured, as they could easily fly from the work site. The project is not expected to result in the loss of nesting habitat for white-tailed kite. Implementation of Mitigation Measures BIO-6a, Pre-Construction/Pre-Disturbance Surveys for Nesting Birds and BIO-6b, Nesting Bird Protection would avoid impacts on active nests of white-tailed kite so that impacts would be to ***less than significant with mitigation incorporated***.

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5.3.8 Impacts to American Falcon, Black Skimmer, California Brown pelican, California Least Tern, and Western Snowy Plover

American peregrine falcon, black skimmer, California brown pelican, California least tern, and western snowy plover are seen regularly in the project region and may fly through or forage in the project site. However, these species are unlikely to nest in the project site or immediate area because of the lack of suitable nesting habitat. All four species will only be temporarily displaced by construction noise and can forage in areas surrounding the project. The project may result in the use of open pipes used as fence posts, property line stakes, signs, etc. Raptors (such as American peregrine falcon) talons can catch in bolt holes, entrapping the bird and resulting in mortality. Mitigation Measure BIO-6d is included to prevent this impact. Therefore, impacts to American peregrine falcon, black skimmer, California brown pelican, California least tern, and

western snowy plover will be less than significant. In the unlikely event that any of these species nest in the project site, compliance with Mitigation Measure BIO-6a, Pre-Construction/Pre-Disturbance Surveys for Nesting Birds, Mitigation Measure BIO-6b, Nesting Bird Protection, and Mitigation Measure BIO-6d Cap Fence Posts would reduce project impacts on these species to ***less than significant with mitigation incorporated***.

Page 5-35, Insert after Paragraph 2

5.3.9 Impacts to Alameda Song Sparrow, Bryant's Savannah Sparrow, Loggerhead Shrike, Northern Harrier, San Francisco Common Yellowthroat, and Short-eared owl

The Alameda Song Sparrow, Bryant's Savannah Sparrow, loggerhead Shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl (all California species of special concern) are associated with marsh habitats and are known to nest in or near the project area. These species are assessed together because the impacts of the proposed project on these nesting special-status bird species would be similar.

Fence Hazard

Hollow fence posts pose an entanglement hazard for birds of prey, such as the northern harrier. Mitigation Measure BIO-6d, Cap Open Posts/Fill Bolt Holes will reduce impacts to ***less than significant with mitigation incorporated***.

Construction Outside of the Nesting Season

Outside of the nesting season (September 16 to January 31), any foraging Alameda song sparrow, Bryant's savannah sparrow, loggerhead shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl present on site when construction commences are expected to disperse to adjacent marsh areas before they could be killed or injured. As a result, no direct disturbance of these species is expected to occur.

There would still be some potential for disturbance of foraging individuals of these species in the adjacent marsh as a result of construction noise and/or movement of construction equipment and personnel. However, such impacts would have minimal effects due to the presence of nearby suitable foraging habitat. Such effects would not result in substantial harassment or disturbance of individuals and would not result in a reduction in the populations of any of these species. Therefore, impacts to these special-status birds will be ***less than significant***.

Construction During the Nesting Season

Construction disturbance during the typical nesting season defined by CDFW (February 1 to September 15) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. In addition, noise and increased construction activity could temporarily impact foraging behavior, potentially resulting in the abandonment of nest sites. This would violate California Fish and Game Code.

Implementation of Mitigation Measures BIO-6a, Pre-Construction/Pre-Disturbance Surveys for Nesting Birds and BIO-6b, Nesting Bird Protection would avoid impacts on active nests of Alameda song sparrow, Bryant's savannah sparrow, loggerhead shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl and reduce impacts to ***less than significant with mitigation incorporated***.

Pages 5-44 through 5-53, edits to Mitigation Measures

Mitigation Measures

Because the project specifications are still in the design phase and subject to change, the following mitigation measures assume project development could occur in any portion of the FERFF and adjacent areas in Bedwell Bayfront Park, paved rights of ways for the influent and distribution pipelines, and the influent pump station. However, this analysis assumes that the proposed alignments for the pipelines and influent pump house will be constructed within the existing street rights-of-way and avoid sensitive wetland or aquatic habitat.

Impact BIO-1: The proposed project may result in significant impacts to special-status plants due to disturbance or destruction of individuals or suitable habitat.

Mitigation Measure BIO-1a: Pre-Activity Surveys for Special-Status Plants. Prior to initial ground disturbance in grassland and wetland habitats and during the appropriate blooming period (Coastal marsh milkvetch and Point Reyes bird's-beak, June–October; Congdon's tarplant, May–November; saline clover, April–June), a focused survey for these four potentially occurring special-status plant species will be conducted by a qualified botanist in accordance with the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* within suitable habitat in the project footprint and a 50-foot buffer around the project footprint~~, where feasible~~. The purpose of the survey is ~~will be~~ to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or the ~~identified~~ buffer, then no further mitigation is required ~~will be warranted~~. If Point Reyes bird's-beak, Coastal marsh milkvetch, Congdon's tarplant, or saline clover individuals are found in the impact area, then Mitigation Measure BIO-1b will be implemented. The results of the survey will be documented, and all rare plant discoveries shall be reported to CDFW's California Natural Diversity Database.

Mitigation Measure BIO-1b: Avoidance Buffers. The project proponent, in consultation with a qualified plant ecologist, will take measures to protect all populations of special-status plant species found to occur within the project site or within 50 feet of the impact area ~~to the extent feasible~~. Avoided special-status plant populations will be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the ~~identified~~ buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the ~~identified~~ buffer around special-status plants to be avoided will be flagged or fenced. The flagging will be maintained intact and in good condition throughout project-related construction activities.

If complete avoidance is not feasible, then the appropriate resource agencies will be consulted to determine the appropriate measures to take, which may include salvage of seeds and/or plants, relocation of individual plants, and/or off-site preservation, enhancement, and management of occupied habitat for the species.

***Effectiveness*:** These measures would avoid or minimize impacts to special-status plants.

***Implementation*:** Qualified biologist (Mitigation Measure BIO-1a) and construction workers under supervision of a qualified biologist (Mitigation Measure BIO-1b).

***Timing*:** Prior to start of construction activities during appropriate bloom periods.

Reporting/Monitoring: The qualified biologist shall prepare a memo or letter report documenting the methods and results of the special-status plant surveys to be submitted to the District. If Mitigation Measure BIO-1b is required, the District or its contractor will maintain the avoidance buffers under the supervision of a qualified biologist, and this complete measure shall be incorporated into the project specifications, bid, and contract documents. If avoidance is not feasible, the District will consult with CDFW to determine the appropriate mitigation measures.

Impact BIO-2: The proposed project could harm special-status ~~fish~~ species, degrade surface or ground water quality, and will result in both permanent and temporary impacts to aquatic and marsh habitat during construction of the ecotone levee.

Mitigation Measure BIO-2a: Biological Monitoring During Construction in the Marsh. A qualified biological monitor will be present during all construction activities within the marsh or in vegetated areas within five (5) feet of the marsh to look for special-status animals that may be impacted by construction. For example, when construction personnel need to install the ecotone levee coffer dam and remove vegetation, the biological monitor will first inspect the vegetation to determine whether any salt marsh harvest mice, ~~or~~ salt marsh wandering shrews, or other special-status species are present. If any animals are present, they will be allowed to leave the area on their own, or the location of the in-marsh work will be adjusted to ensure that no impacts to special-status species ~~individual mice or shrew~~s occur ~~at that time~~. The biologist ~~individu~~ shall ~~will~~ have stop-work authority if any special-status ~~al of a federally listed~~ species is detected in an area where it may be injured or killed by construction activities. In the event that special-status species are found within or directly adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The results of the monitoring will be documented. If ~~found necessary~~ directed by the agency approved biological monitor, ~~.~~ Mitigation Measure BIO-2b will be implemented. ~~to include an approved dewatering plan and relocate any stranded fish found within the ecotone levee construction site.~~ If directed ~~recommended~~ by the ~~approved~~ qualified biologist, Mitigation Measure BIO-3h (exclusion fencing) will be implemented ~~to include additional exclusion fencing along the coffer dam during ecotone levee construction~~. The biological monitor will also ensure that Mitigation Measures BIO-3a through k~~h is~~ are implemented as necessary to protect special-status species. Any discoveries of special-status species shall be reported to CDFW's California Natural Diversity Database.

In the event that special-status species are found within or adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The qualified biologist shall be on-site at appropriate times to ensure that special-status species are protected.

Mitigation Measure BIO-2b: Installation of Sheet Piles, Dewatering Plan, and Relocation of Stranded Fish. Sheet pile coffer dams to be installed prior to construction of the ecotone levee shall be installed at low tide when there is little water in the slough to avoid stranding fish, and using other methods, if available, to install them without stranding fish. An agency approved dewatering plan shall be implemented if water deep

enough to support fish remains within the ecotone levee work area once the sheet pile coffer dam is installed. ~~necessary, to complete the ecotone levee grading~~ once the coffer dams are installed. If necessary, as the coffer dams are being placed, a qualified biologist will relocate any stranded fish to ~~an area~~ suitable habitat outside of the work area. The method of relocation will be determined by the qualified biologist, in consultation with NMFS, based on site conditions and species present. Implementation of this measure will avoid loss of fish due to stranding. The methods and results of fish relocation efforts will be documented. Discoveries of special-status fish species shall be reported to NMFS immediately and entered into CDFW's California Natural Diversity Database.

Mitigation Measure BIO-2c: Measures to Protect Water Quality. During all construction in and near tidal aquatic habitat, standard BMPs will be used to minimize erosion and impacts to water quality as well as direct impacts to special-status fish. These are reported in the EIR and will be included in the SWPPP prepared for the project. Compliance measures that protect water quality help reduce potential impacts to biological resources to less than significant.

Mitigation Measure BIO-2d: Noise Minimization. As a Best Management Practice to minimize noise impacts, the sheet piles shall be installed using a soft-start method by pausing after the first 15 seconds at a reduced energy twice before vibrating the sheet piles in at full capacity.

Effectiveness: These measures required in a SWPPP would avoid or minimize potential impacts to special-status fish, and avoid and minimize erosion and impacts to water quality.

Implementation: Construction workers under the supervision of a qualified biologist (Mitigation Measure BIO-2a). A qualified biologist will relocate fish (Mitigation Measure BIO-2b). The District or its contractor will implement measures to protect water quality (Mitigation Measure BIO-2c).

Timing: Dewatering and relocation of fish will occur prior to construction activities in tidal aquatic habitat (Mitigation Measures BIO-2a and BIO-2b). Measures to protect water quality will occur for the duration of construction activities near tidal habitat (Mitigation Measure BIO-2c)

Reporting/Monitoring: A qualified biologist shall prepare a fish relocation plan to be submitted and approved by NMFS, and a separate memo or letter report documenting the results of fish relocation efforts to be submitted to the District and NMFS. The District or its contractor will maintain measures to protect water quality. The text of Impact BIO-2 and mitigation measures BIO-2a through BIO-2d shall be incorporated into the project specifications, bid and contract documents.

Impact BIO-3: The proposed project could harm salt marsh harvest mouse and salt marsh wandering shrew, and will result in both permanent and temporary impacts to tidal and upland habitats during construction of the ecotone levee. Additionally, if the proposed project includes the installation of lighting that illuminates marsh habitat and the adjacent levees, such lighting could potentially have adverse effects on special-status species in the wetlands and adjacent levee refugia habitat.

Mitigation Measure BIO-3a: Worker Environmental Awareness Training. A resource agency approved biologist will prepare a worker environmental awareness fact

sheet with 1) the description and status of the species; 2) the habitat of the species; 3) the legal ramifications of impacting the species; 4) a list of measures being taken to reduce impacts on these species during project construction (including preconstruction surveys, minimizing trash that attracts predators, and other measures); and 5) what to do if the species are encountered. All construction personnel working on the site and in the pipeline alignments and pump station areas adjacent to wetlands will participate in a worker environmental awareness training conducted by a resource agency approved biologist, and will sign an acknowledgment that they have participated in the worker environmental awareness training.

Mitigation Measure BIO-3b: No Pets. No pets (e.g., dogs or cats) can be brought to the project site to avoid harassment, killing, or injuring of wildlife.

Mitigation Measure BIO-3c: Food Trash Removal. To minimize attraction of predators such as racoons and feral cats, all workers will be required to secure their food related trash and remove it daily. The site foreman shall assure that all food trash related to the construction work is secured and removed.

Mitigation Measure BIO-3d: Minimize Non-daylight Work; Prepare Lighting Plan. Project lighting during construction activities shall be limited in consideration of the potential impacts to special status species. If early morning, early evening, or night lighting is necessary during construction, a lighting plan shall be prepared in consultation with an agency approved biologist. 24-hour work that requires night lighting shall only be conducted with approval from the US Fish and Wildlife Service and the California Department of Fish and Wildlife due to potential impacts to species protected under FESA and CESA. See also Mitigation Measure BIO-3i Artificial Lighting regarding permanent site lighting.

Mitigation Measure BIO-3e: Work During Extreme High Tides. To avoid the loss of individual salt marsh harvest mice- and salt marsh wandering shrew~~, California Ridgway's rail, and California black rail~~ that may shelter in the work area during extreme high tides, an agency approved biological monitor shall be present when work around the perimeter of the FERRF site occurs during extreme high tides, such as King Tides. The agency approved biological monitor shall complete a pre-construction survey prior to construction activities in these areas. ~~where extreme high tide has limited upland habitat limits available for refuge before approving construction to proceed~~. Areas within the cofferdam or wildlife exclusion fence are expected to exclude mice and shrews and would not require a pre-construction survey. Also see measure BIO-4 for California Ridgway's rail and California black rail measures at extreme high tide.

Mitigation Measure BIO-3f: Limit Vegetation Removal. To avoid the loss of individual harvest mice and wandering shrews from any excavation, fill, or construction activities in suitable habitat, vegetation removal will be limited to the minimum amount necessary.

Mitigation Measure BIO-3g: Vegetation Removal Methods. Vegetation removal will occur under the supervision of a qualified biologist as noted in Mitigation Measure BIO-2a. ~~The biologist will give consideration to requiring t~~The vegetation shall be removed on a progressive basis, with hand tools (e.g., weed-eater, hoe, rake, trowel, shovel) such that it allows species to find adjacent cover. The qualified biologist shall monitor the rate of

vegetation removal to ~~would also make specific recommendations with respect to the rate of vegetation removal (to~~ ensure that any harvest mice or wandering shrews present are able to escape to cover that will not be impacted~~)~~, and will specify whether vegetation needs to remain in a certain area temporarily to facilitate dispersal of mice/shrews into habitat outside of the impact area.

Mitigation Measure BIO-3h: Exclusion Fence. Following the hand-removal of vegetation, exclusion fencing will be erected around the outer boundary of the work area that is adjacent to harvest mouse/wandering shrew habitat that is to remain intact if the coffer dam design does not exclude species. If the cofferdam excludes the species, additional exclusion fencing is not necessary. This will define and isolate protected harvest mouse habitat. The installation of the fence will be supervised by a qualified biologist. This fencing will consist of heavy plastic sheeting or metal material that cannot be climbed by harvest mice, buried at least 4 inches below the ground's surface, and with at least 1 foot (but no more than 4 feet) above the ground. All supports for the fencing will be placed on the inside of the work area. A 2~~4~~-foot buffer will be maintained free of vegetation around the outside of the exclusion fencing. The fencing will be inspected daily during the project construction period, and any necessary repairs will be made within 24 hours of when they are found. If any breaks in the fencing are found, the qualified biologist will inspect the work area for salt marsh harvest mice and salt marsh wandering shrews. If any individuals are found, all work that could impact these individuals will cease until the individuals have left the impact area on their own. If an injured or killed mouse is discovered at any time during project activities, all work shall cease immediately and USACE, ~~/~~USFWS, ~~/~~ and CDFW shall be contacted for further direction.

Mitigation Measure BIO-3i: Artificial Lighting. During and after project construction, the spillover of lighting into the salt marsh habitat and adjacent levees will be minimized using low-intensity lighting or other appropriate low-dispersion lighting technology; orientation of lights so that they are placed on the perimeter of the work area and directed inward (rather than directing any lighting toward the marsh) and downward toward the ground; and shielding of lights from behind. Low-intensity lighting, downcast lighting, or other appropriate lighting technology will be incorporated into the project design where permanent lighting is to be placed within 200 feet of the salt marsh to reduce potential adverse effects on animals within this habitat.

Mitigation Measure BIO-3j: Prohibition of Plastic Monofilament Netting. Monofilament plastic netting, including in temporary and permanent erosion control measures (such as erosion control mat or straw wattles), shall not be used, regardless of whether the netting is biodegradable or not. Burlap or jute wrapped straw wattles are acceptable.

Mitigation Measure BIO-3k: ~~Habitat Restoration and~~ Monitoring and Adaptive Management Plan. The project shall include a plan to restore and monitor natural habitats impacted by the project, particularly the ecotone levee area. At a minimum the plan shall be submitted in the permit package to the U.S. Army Corps of Engineers required under Section 404 of the Clean Water Act and the permit package to the Regional Water Quality Control Board under Section 401 of the Clean Water Act for agency review.

Effectiveness: These measures would avoid or minimize impacts to salt marsh harvest mouse salt marsh wandering shrew, and other wildlife during construction of the ecotone levee, and restore impacted native marsh and upland habitats.

Implementation: Construction workers under the supervision of a qualified biologist (Mitigation Measures BIO-2a, BIO-3a, BIO-3e, BIO-3f, BIO-3g and BIO-3h. The District or its contractor (Mitigation Measures BIO-3b, BIO-3c, BIO-3d, BIO-3i, BIO-3j). The text of impact BIO-3 and the above listed mitigation measures (2a, 3a, 3 b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, and 3j) shall be incorporated into the project specifications and contract documents.

Timing: Prior, during, and after construction activities near tidal marsh and adjacent upland habitats.

Reporting/Monitoring: A qualified biologist will submit the signed acknowledgment forms from the worker environmental awareness program to the District (Mitigation Measure BIO-3a). The District or its contractor will maintain the exclusion fence (Mitigation Measure BIO-3h). The district will ensure that low-intensity lighting, downcast lighting, or other appropriate lighting technology will be incorporated into the project design and this shall be shown on construction drawings (Mitigation Measure 3i).

Impact BIO-4: The proposed project could harm California black rail and California Ridgway's rail, and will result in both permanent and temporary impacts to tidal and upland habitats during construction.

Mitigation Measure BIO-4: Pre-Construction/Pre-Disturbance Survey for California Black Rail and California Ridgway's Rail. Construction activities in and adjacent to the marsh habitat for rails shall occur outside of the breeding season (January 15-August 31), as a first measure. If construction activities are planned to occur within or adjacent to tidal marsh or suitable rail habitat during the breeding season ~~(February 1 through August 31)~~, a qualified biologist shall contact the Invasive Spartina Project to determine if protocol surveys are already being conducted in the area so that a) the data can be used, and b) rails are not adversely affected by repeated protocol surveys. If the Invasive Spartina Project is not conducting protocol surveys, then a qualified biologist shall conduct the USFWS-approved protocol level surveys for California black rail and Ridgway's rail before initiation of any ground disturbing activities within the salt marsh habitat and a 700-foot buffer (i.e., Wood 2017 "Site-specific Protocol for Monitoring Marsh Birds"). Protocol surveys are required to be completed over several visits between January 15 and April 15, and may significantly impact the construction schedule if they have not been completed in time. The qualified biologist shall be approved to conduct ~~will be experienced with the various calls, estimating distances to calls under field conditions, and~~ the ~~USFWS Ridgway's rail~~ current USFWS-sanctioned survey methodology (~~USFWS 2015~~Wood 2017). The qualified biologist shall submit the proposed survey methods to CDFW and USFWS for review and approval prior to commencing the surveys. The results of the survey will be documented, and any detections will be reported to the California Natural Diversity Database.

If an active nest is found within the survey area, the qualified biologist shall consult with CDFW and~~/or~~ USFWS to determine the appropriate construction-free buffer zone (typically 700 feet) and/or other mitigation measures to be implemented, such as daily

monitoring. If no rail call centers or nests are found within 700 feet of project construction activities, work can proceed.~~, then further mitigation is not required.~~ If work extends into additional seasons, then additional protocol surveys shall be completed, particularly if work has paused.

If California Ridgway's rail or black rail are present, the following measures apply:

- To avoid impacts to individual rails, activities within or adjacent to habitat will not occur within two hours before or after extreme high tides (6.5 feet or above as measured at the Golden Gate Bridge), when the marsh is inundated and rail movement may be altered. If the work area is protected by a cofferdam or wildlife exclusion fence and rails are not likely to be present within the buffer zone, the work can continue with a biological monitor present, but shall be halted if a rail is detected within the buffer zone.
- If a California Ridgway's rail or black rail nest or adult is encountered during any project-related activity, the observer(s) shall immediately move away from the nest/adult.

~~If Ridgway's rail is assumed present, then construction activities would need to avoid the breeding season each year (February 1~~ January 15 ~~through August 31).~~

Effectiveness: These measures would avoid or minimize impacts to California black rail and California Ridgway's rail during construction activities.

Implementation: A qualified biologist(s) will submit the proposed survey methods to CDFW and USFWS and perform the pre-construction surveys. Construction workers under the supervision of a qualified biologist will establish buffers, if needed.

Timing: Prior to construction activities and during construction activities if buffers are needed.

Reporting/Monitoring: A qualified biologist shall prepare a letter report documenting the results of the survey. The District or its contractor will maintain any needed avoidance buffers under the supervision of a qualified biologist. The text of Impact BIO-4 and Mitigation Measure BIO-4 shall be incorporated into the project specifications and contract documents.

Impact BIO-5: The proposed project could harm burrowing owls, and ~~will result in both permanent and temporary~~ impact~~s to~~ potential nesting, roosting, and foraging habitats during construction.

Mitigation Measure BIO-5a: Conduct Pre-construction Surveys for Burrowing Owls. Pre-construction surveys for burrowing owls will be conducted prior to the initiation of all project activities within suitable burrowing owl nesting and roosting habitat (i.e., grassland habitat and levees with burrows of California ground squirrels). Pre-construction surveys will be completed in conformance with Appendix D: *Breeding and Non-breeding Season Surveys* of the CDFW Staff Report on Burrowing Owl Mitigation (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843)~~ the CDFW's 2012 guidelines~~ (CDFG 2012), which specify the timing, area, and number of surveys. ~~summarized as follows. An initial habitat assessment will be conducted by a qualified~~

~~biologist to determine if suitable burrowing owl habitat is present. During the initial site visit, which will be conducted not less than 14 days prior to the onset of ground disturbing activities, a qualified biologist will survey the entire activity area and (to the extent that access allows) the area within 250 feet of the site for suitable burrows that could be used by burrowing owls for nesting or roosting. If no suitable burrowing owl habitat is present, no additional surveys will be required. If suitable burrows are determined to be present within 250 feet of work areas, a qualified biologist will conduct at least one additional survey to investigate each burrow within the survey area for signs of owl use and to determine whether owls are present in areas where they could be affected by proposed activities. The final survey will be conducted within the 24-hour period prior to the initiation of project activities in any given area.~~ The results of the survey shall ~~will~~ be documented, and positive sightings submitted to the California Natural Diversity Database.

Mitigation Measure BIO-5b: Implement Buffer Zones for Burrowing Owls. If burrowing owls are present on or near the construction site ~~during the nonbreeding season (generally September 1 to January 31),~~ a ~~150-foot~~ buffer zone will be maintained around the occupied burrow(s) in accordance with guidance provided in the CDFW Staff Report Appendix D cited above. ~~if feasible. If maintaining such a buffer is not feasible, then the buffer must be~~ The buffer will be large enough to avoid injury or mortality of individual owls in compliance with Fish and Game Code section 3503.5. The recommended buffer zones range from 50 meters to 500 meters depending on the level of construction activity.~~During the breeding season (generally February 1 to August 31), a 250-foot buffer , within which no newly initiated project-related activities will be permissible, will be maintained between project activities and occupied burrows. Owls present between February 1 and August 31 will be assumed to be nesting, and the 250-foot protected area will remain in effect until August 31. If monitoring evidence indicates that the owls are no longer nesting or the young owls are foraging independently, the buffer may be reduced, or the owls may be relocated prior to August 31. If necessary, relocation of owls in any season will be completed by a qualified biologist in consultation with CDFW and likely by using one-way doors, which should be installed in all burrows within the impact area and left in-place for at least two nights. These one-way doors will then be removed and the burrows back-filled immediately prior to the initiation of grading.~~

Mitigation Measure BIO-5c: Monitor Owls During Construction ~~to Determine Feasibility of a Reduced Buffer~~. ~~As an alternative to Mitigation Measure 5b, which requires a 250-foot buffer around owl nests (assuming they have not been relocated), this measure provides for monitoring of owl behavior to determine if the size of the buffer can be reduced.~~ Although ~~Any~~ owls occupying the study area are likely habituated to frequent human disturbance due to regular activity at the project site and in nearby Bedwell Bayfront Park, and~~. As a result, they~~ may ~~exhibit a~~ tolerate ~~nce of~~ greater levels of human disturbance than owls in more natural settings, ~~and construction within the standard 250-foot buffer during the nesting season may be able to proceed without disturbing the owls. Therefore, if nesting owls are determined to be present on the site, and project activities cannot feasibly avoid disturbance of the area within 250 ft of the occupied burrow during the nesting season (i.e., February 1 through August 31), under this measure~~ a qualified biologist shall monitor owl behavior during construction. ~~will be~~

~~present during all activities within 250 feet of the nest to monitor the owls' behavior~~. If in the opinion of the qualified biologist, the owls are disturbed to the point of harm or possible reduced reproductive success, all work within at least 50 meters~~250 feet~~ of the occupied burrow will cease until the ~~nest~~ burrow is determined by a qualified biologist to no longer be in active use, or the biologist in consultation with resource agencies has determined what work can proceed without causing harm or reduced reproductive success to the owl(s).

Mitigation Measure BIO-5d: Restoration of Burrowing Owl Habitat On Site. ~~The Monitoring and Adaptive Management restoration plan prepared for the site under Mitigation Measure BIO-3k shall include habitat suitable for burrowing owl forage and nesting.~~ If pre-construction surveys identify that burrowing owl actively nests in the project footprint, the burrow shall not be removed until nesting is completed for the season, the burrow is not occupied by owls, and artificial burrows are provided within 100 meters of the original burrow.

Effectiveness: These measures would avoid or minimize impacts to burrowing owls.

Implementation: A qualified biologist will perform the ~~pre-construction~~ surveys (Mitigation Measure BIO-5a, ~~and/or~~ BIO-5c). Construction workers under the supervision of a qualified biologist will establish buffers, if needed (Mitigation Measure BIO-5b).

Timing: Prior to construction activities and during construction if buffers and monitoring are needed.

Reporting/Monitoring: A qualified biologist shall prepare a memo or letter report documenting the results of the survey and monitor any nesting owls (Mitigation Measures BIO-5a and BIO-5c). The District or its contractor will maintain any needed avoidance buffers under the supervision of a qualified biologist (Mitigation Measure BIO-5b). The text of Impact BIO-5 and Mitigation Measures BIO-5a, 5b, and 5c shall be incorporated into the project specification and contract documents.

Impact BIO-6: The proposed project could result in temporary and permanent impacts to Alameda song sparrow, American peregrine falcon, black skimmer, Bryant's savannah sparrow, California brown pelican, California least tern, loggerhead shrike, northern harrier, San Francisco common yellowthroat, short-eared owl, western snowy plover, white-tailed kite, and other nesting birds protected by the MBTA and California Fish and Game Code. Glass in new buildings could increase collision hazard causing injury or death for these species. Open topped posts with bolt holes could entangle raptor talons and result in mortality.

Mitigation Measure BIO-6a: Pre-Construction/Pre-Disturbance Surveys for Nesting Birds.

Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California

Fish and Game Code would be avoided. The nesting season for most birds in San Mateo County extends from February 1 through September 15.

Pre-Construction Surveys. If it is not possible to schedule construction activities between September 15 and January 31, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than five days prior to the initiation of any site disturbance activities and equipment mobilization in the ~~BSA~~ project area as well as the right of ways for the distribution pipelines and the influent pump station. If project activities are delayed by more than five days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all potential nesting habitats (e.g., shrubs, developed areas, structures, etc.) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

Mitigation Measure BIO-6b: Nesting Bird Protection. If an active nest is found sufficiently close to work areas to be disturbed by ~~these~~ project activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 1000 feet for raptors and up to 250 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. The qualified biologist shall be experienced in both songbird and raptor behavior. Identified active nests will be surveyed one day prior to any construction-related activities to establish a behavioral baseline for the adults and any nestlings. Once work commences, all active nests will continue to be monitored by the qualified biologist to detect any signs of disturbance and behavioral changes caused by project activities, and change the buffer as needed to prevent disturbance-related nest failure. The qualified biologist will have authority to order the cessation of all project activities within disturbance distance of any raptor nest if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged. Monitoring will be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings will be documented.

Mitigation Measure BIO-6c: Reduce Collision Hazard. The project design shall comply with measures such as those identified in Menlo Park Municipal Code Chapter 16.43.140(6) to minimize the number of bird collisions with new buildings.

Mitigation Measure BIO-6d: Cap Open-topped Posts/Fill Bolt Holes. All fence posts, property line stakes, signs, etc. that are open topped and have bolt holes shall be capped and the bolt holes filled to prevent entanglement of birds of prey. This measure shall be included in project specifications.

Effectiveness: These measures would avoid or minimize adverse impacts to ~~nesting~~ birds.

Implementation: A qualified biologist will perform the pre-construction surveys and nest monitoring, if needed (Mitigation Measures BIO-6a and BIO-6b). Construction workers under the supervision of a qualified biologist will establish buffers, if needed (Mitigation Measure BIO-6b). The District will assure compliance with measures BIO-6c and BIO-6d.

Timing: Surveys for nesting birds will be conducted within 5 days prior to the start of construction.

Reporting/Monitoring: A qualified biologist shall prepare a memo or letter report documenting the results of the surveys and any needed nest monitoring (Mitigation Measures BIO-6a and BIO-6b). The District or its contractor will maintain any needed avoidance buffers under the supervision of a qualified biologist (Mitigation Measure BIO-6b). Project plans shall include specifications that require implementation of measures BIO-6c and BIO-6d.

Impact BIO-7: The proposed project could result in the introduction or spread of invasive plants, which can displace native marsh vegetation and reduce habitat quality of the salt marsh by reducing refugia and foraging habitat for native species, including special-status species.

Mitigation Measure BIO-7a: Integrate Invasive Plant Management into the Ecotone Levee Restoration Plan. Prior to the start of construction activities, measures to control invasive plant species shall be specified and integrated with the Monitoring and Adaptive Management Plan (Plan)~~Habitat Mitigation and Monitoring Plan (HMMP)~~ for the ecotone levee restoration, with the purpose of protecting restoration areas from being significantly impacted by invasive weeds. Invasive plant removal in the salt marsh and on the adjacent levees shall be limited to hand tools as specified in Measure BIO-3h, and shall be removed before grading starts. If specified in the Plan ~~HMMP~~ for the restoration area, invasive species management will extend into developed areas of the parcel as needed to protect the restoration area.

Mitigation Measure BIO-7b: Construction Measures to Minimize Invasive Plant Infestations. The following measures shall be taken during construction to minimize invasive plant infestation and potential impacts of invasive plants on adjacent natural habitats, particularly the wetlands:

- All ground disturbing equipment used adjacent to native habitats will be washed (including wheels, tracks, and undercarriages) both before and after being used at the site. Worker personal gear, including boots, should also be cleaned and clear of plant material prior to entering the work area.
- All seeds and straw materials used on site shall be weed-free rice straw, and all gravel and fill material shall be certified weed free.
- The project will follow a Stormwater Pollution Prevention Plan as per the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ), to reduce stormwater runoff which can carry the seed of invasive plants to other locations.

- All disturbed soils within sensitive habitats and adjacent levee slopes will be stabilized and planted in accordance with the restoration plan prepared for the project as part of an approved ecotone levee project.
- Soil and vegetation removed from weed-infested areas will not be used in general soil stockpiles and will not be redistributed as topsoil cover for the newly filled areas. All weed-infested soil will be disposed of off-site at a landfill or buried at least 2.5 feet below final grade.

Effectiveness: These measures would avoid or minimize impacts from the invasive plants.

Implementation: The District or its contractor, working with a qualified plant ecologist.

Timing: Prior to construction activities and during construction.

Reporting/Monitoring: Proof of invasive species removal in as-builts or a memo prepared by a biologist or restoration ecologist. Mitigation Measure BIO-7b shall be incorporated into project specifications and contract documents.

Impact BIO-8: The proposed project will result in both temporary and permanent impacts to jurisdictional waters and sensitive communities from the construction of the ecotone levee, installation of sheet piles along a section of existing levee, the discharge of stormwater runoff into an existing swale that discharges to the bay, and the disposal of the remainder effluent from the RO process into the bay.

Mitigation Measure BIO-8: Water Quality Monitoring Plan. The West Bay Sanitary District will develop a water quality monitoring plan in consultation with the EPA, which will consult with NMFS. The water plan will include an impact assessment, water quality standards and protections of those standards, monitoring methodology, and reporting requirements. The goal of the plan is to ensure that the discharge from the water recycling facility complies with the discharge requirements set by the regulatory agencies to protect Bay waters. Depending on the requirements of the regulatory agencies, the plan may include, for example, quarterly surface and effluent water monitoring for suspended solids, settable solids, ammonia, pH, and temperature. If required, the water quality monitoring plan will be submitted as part of the NPDES permit package.

Effectiveness: This measure would avoid or minimize impacts to jurisdictional waters from the discharge of treated RO effluent. The project will also comply with the requirements to control the discharge of stormwater pollutants under the NPDES Construction General Permit and Municipal Regional Stormwater NPDES Permit to minimize impacts to water quality during construction. In addition, the project would require permits from the USACE, RWQCB, and BCDC for impacts on tidal marsh and aquatic habitat, and must adhere to permit requirements.

Implementation: The District or its contractor will prepare a water quality monitoring plan in consultation with the U.S. EPA.

Timing: The District or its contractor will submit a water quality monitoring plan as part of the permit applications to the regulatory agencies prior to construction.

Reporting/Monitoring: The District or its contractor will implement the monitoring conditions in an agency-approved water quality monitoring plan.

Page 5-57, last reference entry

Wood, J.K., Nur, N., Salas, L. and O.M.W. Richmond. 2017. Site-specific Protocol for Monitoring Marsh Birds: Don Edwards San Francisco Bay and San Pablo Bay National Wildlife Refuges. Prepared for the U.S. Fish and Wildlife Service, Pacific Southwest Region Refuge Inventory and Monitoring Initiative. Point Blue Conservation Science. Petaluma, CA. https://ecos.fws.gov/ServCat/Reference/Profile/68062

4.2 RESPONSE TO COMMENTS FROM CALIFORNIA DEPARTMENT OF TRANSPORTATION

Comment Caltrans-1: With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide. This project appears to generate 24 trips per day given its autonomous nature, and therefore is below the City of Menlo Park's VMT screening threshold of 100 trips per day.

Response to Comment Caltrans-1: Comment noted.

Comment Caltrans-2: As the Lead Agency, the City of Menlo Park is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Response to Comment Caltrans-2: Comment noted. Please note that the Lead Agency is WBSD. The District is both the project proponent and CEQA Lead Agency for the project. The District's Board of Directors serves as the decision-making body for the District and is responsible for certifying the EIR and approving the FERRF Levee Improvements and Bayfront RWF Project.

As described on page 12-19 of the Draft EIR: The FERRF facility is autonomous and would generate two trips per day from the employee visiting the site for maintenance and operation. An additional 24 trips per year are anticipated for chemical deliveries. The two employee trips per day and 24-trips per year for chemical deliveries is below the 100 trips per day VMT screening criteria, and project impacts and cumulative impacts related to VMT would be less than significant. Thus, no improvements to the State Transportation Network would be necessary.

Comment Caltrans-3: Please be advised that any permanent work or temporary traffic control that encroaches onto the ROW requires a Caltrans-issued encroachment permit. If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application package, digital set of plans clearly delineating the State ROW, digital copy of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment

exception request, and/or airspace lease agreement. Your application package may be emailed to D4Permits@dot.ca.gov. To download the permit application and to obtain more information on all required documentation, visit https://dot.ca.gov/programs/traffic-

operations/ep/applications.

Response to Comment Caltrans-3: Comment noted. Table 2-5 Potential Project Permits and Approvals in the Draft EIR Project Description lists the requirement to obtain a Caltrans Encroachment Permit for certain project improvements. WBSD will apply for a Caltrans District 4 Encroachment Permit when the pump station and pipeline portions of the project are under design as these are the only project activities that could potentially affect State right-of-way.

4.3 RESPONSE TO COMMENTS FROM STATE LANDS COMMISSION

Comment SLC-1: The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306). All tidelands and submerged lands granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust Doctrine.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The state holds these lands for the benefit of all people of the state for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

Response to Comment SLC-1: Comment noted. The EIR identifies the State Lands Commission as a responsible agency on Page S-3, I-4, 2-3, 2-46 in Table 2-5, and Chapter 9 Land Use and Planning.

Comment SLC-2: Based on the information provided in the Draft EIR and a review of in-house records, the proposed Project would extend onto the bed of Westpoint Slough, which at this location is within Commission-managed lands conveyed to the State by Leslie Salt Co. According to the Project Description, the proposed ecotone levee on the northern perimeter of the site would recontour the existing levee with a 10:1 to 20:1 slope to the water line and would extend beyond Assessor Parcel Number 055-400-010 onto the bed of Westpoint Slough. Therefore, a lease from the Commission will be required. As more detailed plans are prepared, please submit them to Dobri Tutov in the Lands Management Division (contact information provided below) for further review.

Response to Comment SLC-2: Comment noted. The EIR currently states that a lease will be required (Section 2.5, Table 2-5, row 8, page 2-46, Section 9.2.1.1 paragraph 3 on page

9-3, Section 9.3.3, paragraph 3 page 9-28). As discussed at a consultation meeting with the Commission held on March 11, 2021, the District will provide plans to Dobri Tutov as requested upon completion of detailed designed drawings after certification of the EIR.

Cultural Resources – Tribal Outreach

Comment SLC-3: The Draft EIR (page 6-13) states that no Native American tribes contacted the District under AB 52; however, the Native American Heritage Commission's (NAHC's) Sacred Lands File search indicated positive results and the District conducted outreach to five Tribes recommended by the NAHC. The Draft EIR further states that responses to the outreach indicated that Native American burials were found in the area. From Commission staff's perspective, the Draft EIR could be more informative if it were to provide additional details about which Tribe or Tribes responded, whether there were any other concerns expressed about cultural sensitivity or heritage, whether the Tribes requested a site visit or Project monitoring, or whether they suggested measures to avoid or otherwise protect Tribal cultural resources. Importantly, in addition to its Consultation provisions, AB 52 requires that public agencies avoid, when feasible, damaging effects to Tribal Cultural Resources, and offers examples of mitigation measures that should be included in EIRs unless other measures are agreed to through Consultation (see Pub. Resources Code, § 21084.3). When it enacted AB 52, the Legislature expressed its preference for preservation in place of Tribal Cultural Resources (Assem. Bill No. 52 (2013-2014 Reg. Sess.) § 1). In order to make the Draft EIR more informative, Commission staff recommends that the District include additional information in a revised EIR that more comprehensively discusses the District's communication with the contacted Tribes and how the results of that outreach and coordination, including any requests or suggestions made by the Tribes, were incorporated into the EIR's mitigation measures or Project design decisions. Without such a record, Commission staff is unable to determine whether Tribal concerns have been fully addressed and resolved, and thus whether the significance determination is supported.

Response to Comment SLC-3: To address Comment SLC-3, the following text has been revised with underline (added) or ~~strikeout~~ (deleted) on Draft EIR (page 6-11) Section 6.1.11 Native American Heritage Commission Sacred Lands File Search, second paragraph:

"A second SLF search was requested to support this EIR effort which included both the FERRF site, all off-site areas, and the area within a ½ mile radius of the project. ~~Outreach was made to five tribes identified by the NAHC.~~ The NAHC replied with a letter dated September 1, 2020, which indicated that the Sacred Lands File had information about the presence of Native American cultural resources in the immediate project area. A list of additional contacts was provided. On October 3, 2020, certified letters were also sent to these contacts, consisting of the following groups:

- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Costanoan Rumsen Carmel Tribe
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- The Ohlone Indian Tribe

The Certified letters were followed-up with emails (October 16, 2020) and telephone calls to each of the tribes. No written responses from any of the tribes was received. Two tribal contacts were reached by phone.

Irene Zwierlein, Chairperson for the Amah Mutsun Tribal Band of Mission San Juan Bautista was reached via telephone on October 27, 2020. Ms. Zwierlein stated that she knew of four projects near the project's APE for the distribution pipelines which contained burials.

Andrew Galvan of The Ohlone Indian tribe was reached via telephone on October 27, 2020. Mr. Galvan stated that there were burials discovered during construction adjacent to the project's APE in the vicinity the recycled water distribution pipelines. Mr. Galvan suggested that archaeological and Native American monitors are present during ground-disturbing activities. He further stated that he wanted to be notified about the results of the cultural resources study as well as information about the project as it moves forward. Mr. Galvin was included on the noticing list for the project and received notice of the Draft EIR public comment period."

In response to the information provided in these phone calls, the Draft EIR includes Mitigation Measure CUL-1f: Construction Monitoring on Hamilton Avenue which requires Archaeological and Native American monitoring for all ground disturbing activities along the Hamilton Avenue section of the recycled water distribution pipeline.

Additionally, the Draft EIR provided Mitigation Measure CUL-1a Inadvertent Discovery that has been revised as follows in response to other comments received during the public comment period shown in ~~strike-out~~ and underlined text and will be reflected in Final EIR Chapter 5, Errata and Revisions and the Mitigation Monitoring and Reporting Program (MMRP):

"Mitigation Measure CUL-1a: Inadvertent Discovery. In the event archaeological resources are unearthed, all soil disturbing work shall be halted within 60 feet of any discovery. An archaeologist who meets the Secretary of the Interior's Standards for Archaeology and is familiar with Bay Area archaeology must be contacted and the requirements under 36 CFR 800.13 followed. Work shall not commence in the vicinity of the inadvertent discovery until a qualified archaeologist completes a significance evaluation of the find(s) pursuant to Section 106 of the National Historic Preservation Act (36 CFR 60.4). If artifacts are found during construction, construction worker training shall be provided to all crews doing earthwork/soil moving activities.

If a newly discovered resource is, or is suspected to be, Native American in origin, a geographically and culturally affiliated Native American cultural monitor will be retained, as directed by the Native American Heritage Commission (NAHC).

If archaeological resources are found on the north~~ern~~ western segment of the project site (pipeline alignments in Chilco Street, Constitution Drive, Bayfront Expressway crossing, Marsh Road, and IPS) archaeological monitoring will be instigated for those segments. No further ground disturbing work shall be allowed to continue until the archaeologist has fully evaluated the find and approves work to continue. Dependent on the evaluation by the archaeologist, archaeological excavation and recordation may be required before construction can continue. An Archaeological Resource Treatment Plan (ARTP) will be written in consultation with the District.

The District shall consult with the State Lands Commission Attorney should any cultural resources on State lands be discovered during the construction of the project. The final disposition of archaeological, historical, and paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission."

Finally, the EIR included Mitigation Measure CUL-1b which addresses Tribal Resources discovered during project ground disturbing activities. Based on responses received on the Draft EIR, Mitigation Measure CUL-1b is being clarified with the addition of underline text as follows. These edits will also be reflected in Final EIR, Chapter 5 Errata and Revisions, as well as the MMRP:

"Mitigation Measure CUL-1b: Tribal Resources. It is possible for a lead agency to determine that an artifact is considered significant to a local tribe, and thus considered a significant resource under CEQA, even if it would not otherwise be considered significant under CEQA. As such, all Native American artifacts (tribal finds) or other Tribal Cultural Resources shall be considered as a significant Tribal Cultural Resource, pursuant to PRC 21074 until the lead agency in consultation with the appropriate Tribe, has enough evidence to make a determination of significance. Unanticipated discoveries shall be reburied on site. If they cannot be reburied on site, they shall be returned to Tribal custody. Ownership/custody of Native American artifacts, materials, and resources collected from State-owned lands under the jurisdiction of the State Lands Commission shall be returned after evaluation to the culturally affiliated Tribe whenever possible, regardless of significance."

Comment SLC-4: MM CUL-1b states that "It is possible for a lead agency to determine that an artifact is considered significant to a local tribe...even if it would not otherwise be considered significant under CEQA." Commission staff appreciate that the District recognizes that significance determinations, in the Tribal Cultural Resource's context, must consider the importance or value beyond the commonly understood archaeological metrics. However, in most cases, it is appropriate to defer to a culturally affiliated Tribe for a final determination of the significance of Tribal Cultural Resources, which are not limited to "artifacts" as the measure suggests. As a result, Commission staff requests that MM CUL-1b be modified to state that "As such, all Native American artifacts (tribal finds) or other Tribal Cultural Resources shall be considered as a significant Tribal Cultural Resource, pursuant to Public Resources Code section 21074 until the lead agency in consultation with the appropriate Tribe has enough evidence to make a determination of significance." Commission staff further recommend, consistent with the above comment related to avoidance (preservation in place) and maintenance of cultural integrity, that the District expand the discussion of disposition and treatment of unanticipated discoveries, including measures providing for reburial of discovered materials or returning discovered materials to Tribal custody if they cannot be reburied on site. It is the Commission's policy that ownership/custody of Native American artifacts, materials, and resources collected from State-owned lands be returned after evaluation to the culturally affiliated Tribe whenever possible regardless of significance. This modification would allow for the protection of any Tribal Cultural Resources that may be identified during the ongoing regulatory process.

Response to Comment SLC-4: Comment noted. The suggested changes shall be made to Mitigation Measure CUL-1b. See Response to Comment SLC-3, above; and will be reflected in the Final EIR Chapter 5 Errata and Revisions, and in the MMRP.

Comment SLC-5: The Draft EIR should also mention that the title to all archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the California State Lands Commission (Pub. Resources Code, § 6313).

Response to Comment SLC-5: Comment noted. The following changes will be reflected in Final EIR Chapter 5 Errata and Revisions to amend the Draft EIR text, page 6-17, as follows:

"6.2.4.4 Section 6316

Section 6316 of the PRC states that title to all archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the California State Lands Commission."

Comment SLC-6: Commission staff requests that the District consult with Staff Attorney Jamie Garrett, should any cultural resources on State lands be discovered during construction of the proposed Project.

Response to Comment SLC-6: The text has been added to Mitigation Measure CUL-1a to note that the SLC Staff Attorney shall be notified should any cultural resources on State lands be discovered during construction. Please see Response to Comment SLC-3, above, for this text.

Comment SLC-7: In addition, Commission staff requests that the following statement be included in MM CUL-1a: "The final disposition of archaeological, historical, and paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission."

Response to Comment SLC-7: The text has been added to Mitigation Measure CUL-1a to note that the final disposition of archaeological, historical, and paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission. Please see Response to Comment SLC-3, above, for this text.

Comment SLC-8: Please send copies of future Project-related documents, including electronic copies of the certified EIR, approving resolution, Mitigation and Monitoring Program, Notice of Determination, CEQA Findings and, if applicable, Statement of Overriding Considerations when they become available. Please refer questions concerning environmental review to Cynthia Herzog, Senior Environmental Scientist, at (916) 574-1310 or cynthia.herzog@slc.ca.gov. For questions concerning archaeological or historic resources under Commission jurisdiction, please contact Staff Attorney Jamie Garrett, at (916) 574-0398 or jamie.garrett@slc.ca.gov. For questions concerning Commission leasing

jurisdiction, please contact Dobri Tutov, Public Land Management Specialist, at (916) 574-0722 or dobri.tutov@slc.ca.gov.

Response to Comment SCL-8: Comment noted. As directed during the consultation meeting held March 11, 2021, the District will post final CEQA documents on the WBSD website and send an email notification to the Commission.

4.4 RESPONSE TO COMMENTS FROM SAN MATEO LOCAL AGENCY FORMATION COMMISSION (LAFCO)

Comment LAFCO-1: As noted in the June 9, 2020 comment letter from LAFCo for the Notice of Prepetition [*sic*] for the Project, West Bay Sanitary District would be required to submit a resolution of application [to] San Mateo LAFCo to activate the power of recycled water in accordance with Government Code 56824 if additional areas, outside of the Sharon Heights Golf and Country Club and the Stanford Linear Accelerator Center [are] to receive recycled water.

The DEIR accurately describes LAFCo's authority regarding the activation of the recycled water power for the District. The DEIR also states that recycled water distribution pipelines would be located in the road right-of-way of Marsh Road, Bayfront Expressway, Constitution Drive, Chilco Street, and Hamilton Avenue. This pipeline is shown as Figure 2-9 The document notes that future distribution pipelines and a recycled water distribution tank would be subject to future CEQA review.

Response to Comment LAFCO-1: Comment noted.

Comment LAFCO-2: For the new recycled water distribution pipelines that are proposed to be constructed as part of the Project, the EIR should identify the service area and proposed customers of the recycled water.

Response to Comment LAFCO-2: The Draft EIR identifies the proposed service areas for recycled water supply in Figure 2-9. There are currently no identified customers of the recycled water at this time. The distribution pipeline is proposed to be constructed including "stub outs" within the road right-of-way so that future service connections can be made.

Service connections to existing or future developments are not part of this project. Service connections will be installed on a case-by-case basis as new developments are constructed. The service connections will be installed just like conventional water and sewer connections, the potential environmental impacts of which would be evaluated at the time the future development is planned and permitted.

Text has been added to section 2.2.6.4 Projects and Service Connections on page 2-35 of the Draft EIR. See Response to Comment LAFCO-3, below.

Comment LAFCO-3: Figure 2-9 illustrates the recycled water boundaries and the general location of the pipeline. However, the DEIR does not describe what the various phases shown on the figure mean, the service area for the recycled water that will be distributed via the proposed pipeline, or the location of customers.

Response to Comment LAFCO-3: The Bayfront Recycled Water facility is designed to be constructed in phases, similar to how the Sharon Heights Recycled Water Project was planned, designed, and is currently being constructed. The service areas for the proposed phases have been established and mapped as shown in the map provided in Figure 2-9. Text has been added to section 2.2.6.4 Projects and Service Connections on page 2-35 of the Draft EIR. See Response to Comment LAFCO-3, below. The inserted text is indicated with underline and shall be reflected in in the Final EIR Chapter 5, Errata and Revisions.

"**2.2.6.4 Future Projects and Service Connections**

Figure 2-9 shows the proposed project (Phase 1) as well as future phases (Phases 2 and 3). The phasing is as follows:

Phase 1 would serve new developments in the Connect Menlo area, and the triangularly shaped area of land bounded by US Highway 101 on the south, the railroad tracks on the north and Willow Road on the east. These Phase 1 areas are all within the boundaries of the Menlo Park Municipal Water District. The plant would be sized to meet those newly proposed developments that will be willing to finance the initial recycled water plant and distribution pipeline construction and pay to operate and maintain the system. Additional users within the Phase 1 area will be able to be added as supply is available and would be expected to pay for their share of both the capital and operating costs of providing the recycled water supply.

There are currently no identified customers of the recycled water at this time. The distribution pipeline in Phase 1 is proposed to be constructed including "stub outs" within the road right-of-way so that future service connections can be made.

Phase 2 would serve the area within the Menlo Park Municipal Water District south of 101 and north of Middlefield. It is not anticipated that this phase would be initiated until water users in this area, and the City of Menlo Park, expressed a strong desire to promote this phase given that the extension of service would require an extensive recycled water distribution system expansion. Figure 2-9 shows ~~a future~~ this Phase 2 section of the distribution pipeline on Hamilton Avenue after it crosses Willow Road (SR 114) as well as a potential future recycled water distribution tank. Other future projects along the proposed distribution route that would be connecting to the proposed distribution pipeline would require encroachment and/or street permits from the City as well as connection permits from the District.

Phase 3 would serve the area within the MPMWD south of Middlefield Road, including the City Hall complex and related municipal facilities. As with Phase 2, it is not anticipated that this phase would be initiated until the water users in this area, and the City of Menlo Park, expressed a strong desire to promote this phase given that the extension of service would require an additional extension of the recycled water distribution system.

Environmental analysis of Phases 2 and 3 would be addressed in subsequent environmental review documents.

There are currently no identified customers of the recycled water at this time. The distribution pipeline in Phase 1 is proposed to be constructed including "stub outs" within the road right-of-way so that future service connections can be made.

Service connections to existing or future developments are not part of this project. Service connections will be installed on a case-by-case basis as new developments are constructed. The service connections will be installed just like conventional water and sewer connections, the

potential environmental impacts of which would be evaluated at the time the future development is planned and permitted. These future connections would be subject to future CEQA review under the City's planning review process and are not considered as part of the environmental review for this project because the Bayfront RWF can operate in the absence of the potential future distribution pipeline and recycled water tank east of Willow Road."

Comment LAFCO-4: Will service connections to customers be part of the Project or will the pipeline be installed with no service connections?

Response to Comment LAFCO-4: As noted in Comments LAFCO-2 and LAFCO-3, above, service connections to existing or future developments are not part of this project. Service connections will be installed on a case-by-case basis as new developments are constructed. It is not known at this time who the future customers will be. The service connections will be installed just like new conventional water and sewer connections, the potential environmental impacts of which would be evaluated at the time the future development is planned and permitted.

Comment LAFCO-5: The DEIR should identify environmental impacts of any customer connections to the recycled water transmission line.

Response to Comment LAFCO-5: Please see responses to Comments LAFCO-2, LAFCO-3, and LAFCO-4, above.

4.5 RESPONSE TO COMMENTS FROM AMAH MUTSUN TRIBAL BAND

Comment Amah Mutsun-1: All crews are recommended to have Cultural Sensitivity Training.

Response to Comment Amah Mutsun-1: Mitigation Measure CUL-1a provides that construction workers shall be provided cultural resource sensitivity training if an inadvertent discovery is made. The following language shown in underline text has been added to Mitigation Measure CUL-1 and will be reflected in Final EIR, Chapter 5 Errata and Revisions, as well as the Mitigation Monitoring and Reporting Program (MMRP): "Mitigation Measure CUL-1g: Cultural Resource Sensitivity Training shall be provided to construction crews that disturb areas of native soil during construction."

As stated on Draft EIR page 6-25, monitoring required for Mitigation Measure CUL-1 includes that the District shall ensure this mitigation language is placed on all construction bid and construction specification documents.

Comment Amah Mutsun-2: The project is recommended to have California trained Archaeological Monitors.

Response to Comment Amah Mutsun-2: Mitigation Measures CUL-1a and CUL-1e have been revised as follows based on comments received on the Draft EIR and will be reflected in Final EIR, Chapter 5 Errata and Revisions, as well as the MMRP:

"Mitigation Measure CUL-1a: Inadvertent Discovery**.** In the event archaeological resources are unearthed, all soil disturbing work shall be halted within 60 feet of any discovery. An archaeologist who meets the Secretary of the Interior's Standards for Archaeology and is familiar with Bay Area archaeology must be contacted and the requirements under 36 CFR 800.13 followed. Work shall not commence in the vicinity of the inadvertent discovery until a qualified archaeologist completes a significance evaluation of the find(s) pursuant to Section 106 of the National Historic Preservation Act (36 CFR 60.4). If artifacts are found during construction, construction worker training shall be provided to all crews doing earthwork/soil moving activities.

If a newly discovered resource is, or is suspected to be, Native American in origin, a geographically and culturally affiliated Native American cultural monitor will be retained, as directed by the Native American Heritage Commission (NAHC).

If archaeological resources are found on the north~~ern~~ western segment of the project site (pipeline alignments in Chilco Street, Constitution Drive, Bayfront Expressway crossing, Marsh Road, and IPS) archaeological monitoring will be instigated for those segments. No further ground disturbing work shall be allowed to continue until the archaeologist has fully evaluated the find and approves work to continue. Dependent on the evaluation by the archaeologist, archaeological excavation and recordation may be required before construction can continue. An Archaeological Resource Treatment Plan (ARTP) will be written in consultation with the District.

The District shall consult with the State Lands Commission Attorney should any cultural resources on State lands be discovered during the construction of the project. The final disposition of archaeological, historical, and paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission."

"Mitigation Measure CUL-1e: Construction Monitoring on Hamilton Avenue**.** Archaeological and Native American monitoring shall be instigated for all ground disturbing activities along the Hamilton Avenue section of the recycled water distribution pipeline. An archaeologist who meets the Secretary of the Interior's Standards for Archaeology and is familiar with San Francisco Bay Area archaeology and a geographically and culturally affiliated Native American cultural monitor shall be present at the project site during ground disturbing activities, including machine or hand excavation. No ground disturbing activities, with the exception of road surface removal, shall be allowed to take place if the archaeologist and Native American monitor are ~~is~~ not present. An archaeological report meeting the Secretary of the Interior's Standards detailing the findings of the monitoring will be submitted to the Northwest Information Center after monitoring has ceased."

As stated on Draft EIR page 6-25, monitoring required for Mitigation Measure CUL-1 includes that the District shall ensure this mitigation language is placed on all construction bid and construction specification documents.

Comment Amah Mutsun-3: The project is recommended to have qualified Native American Monitors.

Response to Comment Amah Mutsun-3: Comment noted. Draft EIR Mitigation Measures CUL-1e: Construction Monitoring on Hamilton Avenue - requires Native American monitoring for ground disturbing activities along the Hamilton Avenue section of the pipeline installation. Additionally, Mitigation Measures CUL-1a and CUL-1e have been revised to indicate that Native American Monitoring shall be conducted by someone familiar with Bay Area Tribes and will be retained as directed by the Native American Heritage Commission (NAHC) in the event an inadvertent discovery is considered or suspected to be Native American in origin. Please see response to comment Amah Mutsun-2, above.

As stated on Draft EIR page 6-25, monitoring required for Mitigation Measure CUL-1 includes that the District shall ensure this mitigation language is placed on all construction bid and construction specification documents.

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CHAPTER 5 ERRATA AND REVISIONS

This chapter includes the changes to the Draft EIR needed to respond to comments and clarify or amplify the information provided in the Draft EIR. The changes correct inaccuracies and clarify the analysis in the EIR. Text removed from the EIR is marked with ~~strike-out~~. New text is indicated by <u>underline</u>.

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S.6 Significant Impacts and Mitigation Measures, Table S-1 Summary of Project Impacts and Mitigation Measures, pages S-7 to S-20

BIOLOGICAL RESOURCES	
Impact BIO-1: The proposed project may result in significant impacts to special-status plants due to disturbance or destruction of individuals or suitable habitat. **Potentially Significant Impact**	**Mitigation Measure BIO-1a: Pre-Activity Surveys for Special-Status Plants**. Prior to initial ground disturbance in grassland and wetland habitats and during the appropriate blooming period (Coastal marsh milkvetch and Point Reyes bird's-beak, June–October; Congdon's tarplant, May–November; saline clover, April–June), a focused survey for these four potentially occurring special-status plant species will be conducted by a qualified botanist in accordance with the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* within suitable habitat in the project footprint and a 50-foot buffer around the project footprint~~, where feasible~~. The purpose of the survey is ~~will be~~ to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or the ~~identified~~ buffer, then no further mitigation is required~~will be warranted~~. If Point Reyes bird's-beak, Coastal marsh milkvetch, Congdon's tarplant, or saline clover individuals are found in the impact area, then Mitigation Measure BIO-1b will be implemented. The results of the survey will be documented, and all rare plant discoveries shall be reported to CDFW's California Natural Diversity Database. **Mitigation Measure BIO-1b: Avoidance Buffers**. The project proponent, in consultation with a qualified plant ecologist, will take measures to protect all populations of special-status plant species found to occur within the project site or within 50 feet of the impact area~~ to the extent feasible~~. Avoided special-status plant populations will be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the ~~identified~~ buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the ~~identified~~ buffer around special-status plants to be avoided and will be flagged or

	fenced. The flagging will be maintained intact and in good condition throughout project-related construction activities. If complete avoidance is not feasible, then the appropriate resource agencies will be consulted to determine the appropriate measures to take, which may include salvage of seeds and/or plants, relocation of individual plants, and/or off-site preservation, enhancement, and management of occupied habitat for the species. **Less than Significant with Mitigation Incorporated**
Impact BIO-2: The proposed project could harm special-status ~~fish~~ species, degrade surface or ground water quality, and will result in both permanent and temporary impacts to aquatic and marsh habitat during construction of the ecotone levee. **Potentially Significant Impact**	**Mitigation Measure BIO-2a: Biological Monitoring During Construction in the Marsh.** A qualified biological monitor will be present during all construction activities within the marsh or in vegetated areas within five (5) feet of the marsh to look for special-status animals that may be impacted by construction. For example, when construction personnel need to install the ecotone levee coffer dam and remove vegetation, the biological monitor will first inspect the vegetation to determine whether any salt marsh harvest mice, ~~or~~ salt marsh wandering shrews, or other special-status species are present. If any animals are present, they will be allowed to leave the area on their own, or the location of the in-marsh work will be adjusted to ensure that no impacts to special-status species ~~individual mice or shrew~~s occur ~~at that time~~. The biologist ~~individu~~ shall ~~will~~ have stop-work authority if any special-status ~~of a federally listed~~ species is detected in an area where it may be injured or killed by construction activities. In the event that special-status species are found within or directly adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The results of the monitoring will be documented. If ~~found necessary~~ directed by the agency approved biological monitor, ~~.~~ Mitigation Measure BIO-2b will be implemented. ~~to include an approved dewatering plan and relocate any stranded fish found within the ecotone levee construction site.~~ If directed ~~recommended~~ by the approved biological monitor, Mitigation Measure BIO-3h (exclusion fencing) will be implemented ~~to include additional exclusion fencing along the coffer dam during ecotone levee construction~~. The biological monitor will also ensure that Mitigation Measures BIO-3a through k~~h is~~are

	implemented as necessary to protect special-status species. Any discoveries of special-status species shall be reported to CDFW's California Natural Diversity Database. **Mitigation Measure BIO-2b: Installation of Sheet Piles, Dewatering Plan, and Relocation of Stranded Fish.** Sheet pile cofferdams to be installed prior to construction of the ecotone levee shall be installed at low tide when there is little or no water in the slough to avoid stranding fish. An agency approved dewatering plan shall be implemented if water deep enough to support fish remains within the ecotone levee work area once the sheet pile cofferdam is installed. ~~necessary, to complete the ecotone levee grading once the coffer dams are installed.~~ If necessary, as the cofferdams are being placed, a qualified biologist will relocate any stranded fish to ~~an area~~ suitable habitat outside of the work area. The method of relocation will be determined by the qualified biologist, in consultation with ~~NMFS~~NOAA Fisheries and/or CDFW (as appropriate), based on site conditions and species present. Implementation of this measure will avoid loss of fish due to stranding. The methods and results of fish relocation efforts will be documented. Discoveries of special-status fish species shall be reported to NOAA Fisheries and/or CDFW and entered into CDFW's California Natural Diversity Database (as appropriate). **Mitigation Measure BIO-2c: Measures to Protect Water Quality.** During all construction in and near tidal aquatic habitat, standard BMPs will be used to minimize erosion and impacts to water quality as well as direct impacts to special-status fish. These are reported in the EIR and will be included in the SWPPP prepared for the project. Compliance measures that protect water quality help reduce potential impacts to biological resources to less than significant. **Mitigation Measure BIO-2d: Noise Minimization.** As a Best Management Practice to minimize noise impacts, the sheet piles shall be installed using a soft-start method by pausing after the first 15 seconds at a reduced energy twice before vibrating the sheet piles in at full capacity.

	Less than Significant with Mitigation Incorporated
Impact BIO-3: The proposed project could harm salt marsh harvest mouse and salt marsh wandering shrew, and will result in both permanent and temporary impacts to tidal and upland habitats during construction of the ecotone levee. Additionally, if the proposed project includes the installation of lighting that illuminates marsh habitat and the adjacent levees, such lighting could potentially have adverse effects on special-status species in the wetlands and adjacent levee refugia habitat. **Potentially Significant Impact**	**Mitigation Measure BIO-3a: Worker Environmental Awareness Training.** A resource agency approved biologist will prepare a worker environmental awareness fact sheet with 1) the description and status of the species; 2) the habitat of the species; 3) the legal ramifications of impacting the species; 4) a list of measures being taken to reduce impacts on these species during project construction (including preconstruction surveys, minimizing trash that attracts predators, and other measures); and 5) what to do if the species are encountered. All construction personnel working on the site and in the pipeline alignments and pump station areas adjacent to wetlands will participate in a worker environmental awareness training conducted by a resource agency approved biologist, and will sign an acknowledgment that they have participated in the worker environmental awareness training. **Mitigation Measure BIO-3b: No Pets.** No pets (e.g., dogs or cats) will be brought to the project site to avoid harassment, killing, or injuring of wildlife. **Mitigation Measure BIO-3c: Food Trash Removal**. To minimize attraction of predators such as racoons and feral cats all workers will be required to secure their food related trash and remove it daily. The site foreman shall assure that all food trash related to the construction work is secured and removed. **Mitigation Measure BIO-3d: Minimize Non-daylight Work; Prepare Lighting Plan.** Project lighting during construction activities shall be limited in consideration of the potential impacts to special status species. If early morning, early evening, or night lighting is necessary during construction, a lighting plan shall be prepared in consultation with an agency approved biologist. 24-hour work that requires night lighting shall only be conducted with approval from the US Fish and Wildlife Service and the California Department of Fish and Wildlife due to potential impacts to species protected under FESA and CESA. See also Mitigation Measure BIO-3i Artificial Lighting regarding permanent site lighting. **Mitigation Measure BIO-3e: Work During Extreme High Tides.** To avoid the loss of individual salt marsh harvest mice- and salt marsh wandering shrew~~,~~ ~~California Ridgway's rail, and California black rail~~ that may shelter in the work

	area during extreme high tides, an agency approved biological monitor shall be present when work around the perimeter of the FERRF site occurs during extreme high tides, such as King Tides. The agency approved biological monitor shall complete a pre-construction survey prior to construction activities in these areas. ~~where extreme high tide has limited upland habitat limits available for refuge before approving construction to proceed~~. Areas within the cofferdam or wildlife exclusion fence are expected to exclude mice and shrews and would not require a pre-construction survey. Also see measure BIO-4 for California Ridgway's rail and California black rail measures at extreme high tide. **Mitigation Measure BIO-3f: Limit Vegetation Removal.** To avoid the loss of individual harvest mice and wandering shrews from any excavation, fill, or construction activities in suitable habitat, vegetation removal will be limited to the minimum amount necessary. **Mitigation Measure BIO-3g: Vegetation Removal Methods**. Vegetation removal will occur under the supervision of a qualified biologist as noted in Mitigation Measure BIO-2a. ~~The biologist will give consideration to requiring t~~ The vegetation shall be removed with hand tools (e.g., weed-eater, hoe, rake, trowel, shovel) on a progressive basis, such that it allows species to find adjacent cover. The qualified biologist shall monitor the rate of vegetation removal to ~~would also make specific recommendations with respect to the rate of vegetation removal (to~~ ensure that any harvest mice or wandering shrews present are able to escape to cover that will not be impacted~~)~~, and will specify whether vegetation needs to remain in a certain area temporarily to facilitate dispersal of mice/shrews into habitat outside of the impact area. **Mitigation Measure BIO-3h: Exclusion Fence**. Following the hand-removal of vegetation, exclusion fencing will be erected around the outer boundary of the work area that is adjacent to harvest mouse/wandering shrew habitat that is to remain intact, if the cofferdam design does not exclude species. If the cofferdam excludes the species additional exclusion fencing is not necessary. This will define and isolate protected harvest mouse habitat. The installation of the fence

	will be supervised by a qualified biologist. This fencing will consist of heavy plastic sheeting or metal material that cannot be climbed by harvest mice, buried at least 4 inches below the ground's surface, and with at least 1 foot (but no more than 4 feet) above the ground. All supports for the fencing will be placed on the inside of the work area. A 24-foot buffer will be maintained free of vegetation around the outside of the exclusion fencing. The fencing will be inspected daily during the project construction period, and any necessary repairs will be made within 24 hours of when they are found. If any breaks in the fencing are found, the qualified biologist will inspect the work area for salt marsh harvest mice and salt marsh wandering shrews. If any individuals are found, all work that could impact these individuals will cease until the individuals have left the impact area on their own. If an injured or killed mouse is discovered at any time during project activities, all work shall cease immediately and USACE/USFWS/CDFW shall be contacted for further direction. **Mitigation Measure BIO-3i: Artificial Lighting.** During and after project construction, the spillover of lighting into the salt marsh habitat and adjacent levees will be minimized using low-intensity lighting or other appropriate low-dispersion lighting technology; orientation of lights so that they are placed on the perimeter of the work area and directed inward (rather than directing any lighting toward the marsh) and downward toward the ground; and shielding of lights from behind. Low-intensity lighting, downcast lighting, or other appropriate lighting technology will be incorporated into the project design where permanent lighting is to be placed within 200 feet of the salt marsh to reduce potential adverse effects on animals within this habitat. **Mitigation Measure BIO-3j: Prohibition of Plastic Monofilament Netting**. Monofilament plastic netting, including in temporary and permanent erosion control measures (such as straw wattles), shall not be used, regardless of whether the netting is biodegradable or not. Burlap or jute wrapped straw wattles are acceptable. **Mitigation Measure BIO-3k: Monitoring and Adaptive Management Plan**. The project shall include a plan to restore and monitor natural habitats impacted by the project, particularly the ecotone levee area. At a minimum the plan shall

	be submitted in the permit package to the U.S. Army Corps of Engineers required under Section 404 of the Clean Water Act and the permit package to the Regional Water Quality Control Board under Section 401 of the Clean Water Act for agency review. **Less than Significant with Mitigation Incorporated**
Impact BIO-4: The proposed project could harm California black rail and California Ridgway's rail, and will result in both permanent and temporary impacts to tidal and upland habitats during construction. **Potentially Significant Impact**	**Mitigation Measure BIO-4: Pre-Construction/Pre-Disturbance Survey for California Black Rail and California Ridgway's Rail.** Construction activities in and adjacent to the marsh habitat for rails shall occur outside of the breeding season (January 15-August 31), as a first measure. If construction activities are planned to occur within or adjacent to tidal marsh or suitable rail habitat during the breeding season ~~(February 1 through August 31)~~, a qualified biologist shall contact the Invasive Spartina Project to determine if protocol surveys are already being conducted in the area so that a) the data can be used, and b) rails are not adversely affected by repeated protocol surveys. If the Invasive Spartina Project is not conducting protocol surveys, then a qualified biologist shall conduct the USFWS-approved protocol level surveys for California black rail and Ridgway's rail before initiation of any ground disturbing activities within the salt marsh habitat and a 700-foot buffer (i.e., Wood 2017 "Site-specific Protocol for Monitoring Marsh Birds"). Protocol surveys are required to be completed over several visits between January 15 and April 15, and may significantly impact the construction schedule if they have not been completed in time. The qualified biologist shall be approved to conduct ~~will be experienced with the various calls, estimating distances to calls under field conditions, and~~ the ~~USFWS Ridgway's rail~~ current USFWS-sanctioned survey methodology (~~USFWS 2015~~Wood 2017). The qualified biologist shall submit the proposed survey methods to CDFW and USFWS for review and approval prior to commencing the surveys. The results of the survey will be documented, and any detections will be reported to the California Natural Diversity Database. If an active nest is found within the survey area, the qualified biologist shall consult with CDFW and~~/or~~ USFWS to determine the appropriate construction-free buffer zone (typically 700 feet) and/or other mitigation measures to be

	implemented, such as daily monitoring. If no rail call centers or nests are found within 700 feet of project construction activities, work can proceed.~~, then further mitigation is not required.~~ If work extends into additional seasons, then additional protocol surveys shall be completed, particularly if work has paused. If California Ridgway's rail or black rail are present, the following measures also apply: • To avoid impacts to individual rails, activities within or adjacent to habitat will not occur within two hours before or after extreme high tides (6.5 feet or above as measured at the Golden Gate Bridge), when the marsh is inundated, and rail movement may be altered. If the work area is protected by a cofferdam or wildlife exclusion fence and rails are not likely to be present within the buffer zone, the work can continue with a biological monitor present, but shall be halted if a rail is detected within the buffer zone. • If a California Ridgway's rail or black rail nest or adult is encountered during any project-related activity, the observer(s) shall immediately move away from the nest/adult. ~~If Ridgway's rail is assumed present, then construction activities would need to avoid the breeding season each year (February 1 January 15 through August 31).~~ **Less than Significant with Mitigation Incorporated**
Impact BIO-5: The proposed project could harm burrowing owls, and ~~will result in both permanent and temporary~~ impact~~s to~~ potential nesting, roosting, and foraging habitats during construction. **Potentially Significant Impact**	**Mitigation Measure BIO-5a: Conduct Pre-construction Surveys for Burrowing Owls.** Pre-construction surveys for burrowing owls will be conducted prior to the initiation of all project activities within suitable burrowing owl nesting and roosting habitat (i.e., grassland habitat and levees with burrows of California ground squirrels). Pre-construction surveys will be completed in conformance with Appendix D: *Breeding and Non-breeding Season Surveys* of the CDFW Staff Report on Burrowing Owl Mitigation (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843)~~ the CDFW's 2012 guidelines~~ (CDFG 2012), which specify the timing, area, and number of

	surveys. ~~summarized as follows. An initial habitat assessment will be conducted by a qualified biologist to determine if suitable burrowing owl habitat is present. During the initial site visit, which will be conducted not less than 14 days prior to the onset of ground disturbing activities, a qualified biologist will survey the entire activity area and (to the extent that access allows) the area within 250 feet of the site for suitable burrows that could be used by burrowing owls for nesting or roosting. If no suitable burrowing owl habitat is present, no additional surveys will be required. If suitable burrows are determined to be present within 250 feet of work areas, a qualified biologist will conduct at least one additional survey to investigate each burrow within the survey area for signs of owl use and to determine whether owls are present in areas where they could be affected by proposed activities. The final survey will be conducted within the 24-hour period prior to the initiation of project activities in any given area.~~ The results of the survey shall ~~will~~ be documented, and positive sightings submitted to the California Natural Diversity Database. **Mitigation Measure BIO-5b: Implement Buffer Zones for Burrowing Owls.** If burrowing owls are present on or near the construction site ~~during the nonbreeding season (generally September 1 to January 31),~~ a ~~150-foot~~ buffer zone will be maintained around the occupied burrow(s) in accordance with guidance provided in the CDFW Staff Report cited above. ~~if feasible. If maintaining such a buffer is not feasible, then the buffer must be~~ The buffer will be large enough to avoid injury or mortality of individual owls in compliance with Fish and Game Code section 3503.5. The recommended buffer zones range from 50 meters to 500 meters depending on the level of construction activity. The appropriate buffer zone will be determined by a qualified biologist. ~~During the breeding season (generally February 1 to August 31), a 250-foot buffer , within which no newly initiated project-related activities will be permissible, will be maintained between project activities and occupied burrows. Owls present between February 1 and August 31 will be assumed to be nesting, and the 250-foot protected area will remain in effect until August 31. If monitoring evidence indicates that the owls are no longer nesting or the young owls are foraging independently, the buffer may be reduced, or the owls may be relocated prior to August 31. If necessary, relocation of owls in any season will be completed by a~~

	~~qualified biologist in consultation with CDFW and likely by using one-way doors, which should be installed in all burrows within the impact area and left in-place for at least two nights. These one-way doors will then be removed and the burrows back-filled immediately prior to the initiation of grading.~~ **Mitigation Measure BIO-5c: Monitor Owls During Construction ~~to Determine Feasibility of a Reduced Buffer.~~** ~~As an alternative to Mitigation Measure 5b, which requires a 250-foot buffer around owl nests (assuming they have not been relocated), this measure provides for monitoring of owl behavior to determine if the size of the buffer can be reduced.~~ Although ~~Any~~ owls occupying the study area are likely habituated to frequent human disturbance due to regular activity at the project site and in nearby Bedwell Bayfront Park, and~~.~~ ~~As a result, they~~ may ~~exhibit a~~ tolerate ~~nce of~~ greater levels of human disturbance than owls in more natural settings, ~~and construction within the standard 250-foot buffer during the nesting season may be able to proceed without disturbing the owls. Therefore, if nesting owls are determined to be present on the site, and project activities cannot feasibly avoid disturbance of the area within 250 ft of the occupied burrow during the nesting season (i.e., February 1 through August 31), under this measure~~ a qualified biologist shall monitor owl behavior during construction. ~~will be present during all activities within 250 feet of the nest to monitor the owls' behavior~~. If in the opinion of the qualified biologist, the owls are disturbed to the point of harm or possible reduced reproductive success, all work within at least 50 meters~~250 feet~~ of the occupied burrow will cease until the burrow ~~nest~~ is determined by a qualified biologist to no longer be in active use, or the biologist in consultation with resource agencies has determined what work can proceed without causing harm or reduced reproductive success to the owl(s). **Mitigation Measure BIO-5d: Restoration of Burrowing Owl Habitat On Site.** If pre-construction surveys identify that burrowing owl actively nests in the project footprint, the burrow shall not be removed until nesting is completed for the season, the burrow is not occupied by owls, and artificial burrow(s) are provided within 100 meters of the original burrow. **Less than Significant with Mitigation Incorporated**

Impact BIO-6: The proposed project could result in temporary and permanent impacts to Alameda song sparrow, American peregrine falcon, black skimmer, Bryant's savannah sparrow, California brown pelican, California least tern, loggerhead shrike, northern harrier, San Francisco common yellowthroat, short-eared owl, western snowy plover, white-tailed kite, and other nesting birds protected by the MBTA and California Fish and Game Code. Glass in new buildings could increase collision hazard causing injury or death for these species. Open topped posts with bolt holes could entangle raptor talons and result in mortality. **Potentially Significant Impact**	**Mitigation Measure BIO-6a: Pre-Construction/Pre-Disturbance Surveys for Nesting Birds** Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Mateo County extends from February 1 through September 15. Pre-Construction Surveys. If it is not possible to schedule construction activities between September 15 and January 31, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than five days prior to the initiation of any site disturbance activities and equipment mobilization in the ~~BSA~~ project area as well as the right of ways for the distribution pipelines and the influent pump station. If project activities are delayed by more than five days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all potential nesting habitats (e.g., shrubs, developed areas, structures, etc.) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented. **Mitigation Measure BIO-6b: Nesting Bird Protection.** If an active nest is found sufficiently close to work areas to be disturbed by ~~these~~ project activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 1000 feet for raptors and up to 250 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. The qualified biologist shall be experienced in both songbird and raptor behavior. Identified active nests will be surveyed one day prior to any construction-related activities to establish a behavioral baseline for the adults and any nestlings. Once work commences, all active nests will continue to be

	monitored by the qualified biologist to detect any signs of disturbance and behavioral changes caused by project activities, and change the buffer as needed to prevent disturbance-related nest failure. The qualified biologist will have authority to order the cessation of all project activities within disturbance distance of any raptor nest if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged. Monitoring will be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings will be documented. **Mitigation Measure BIO-6c: Reduce Collision Hazard.** The project design shall comply with measures such as those identified in Menlo Park Municipal Code Chapter 16.43.140 (6) to minimize the number of bird collisions with new buildings and reduce bird collision hazard to a less than significant impact. **Mitigation Measure BIO-6d: Cap Open-topped Posts/Fill Bolt Holes.** All fence posts, property line stakes, signs, etc. that are open topped and have bolt holes shall be capped and the bolt holes filled to prevent entanglement of birds of prey. This measure shall be included in project specifications. **Less than Significant with Mitigation Incorporated**
Impact BIO-7: The proposed project could result in the introduction or spread of invasive plants, which can displace native marsh vegetation and reduce habitat quality of the salt marsh by reducing refugia and foraging habitat for native species, including special-status species. **Potentially Significant Impact**	**Mitigation Measure BIO-7a: Integrate Invasive Plant Management into the Ecotone Levee Restoration Plan.** Prior to the start of construction activities, measures to control invasive plant species shall be specified and integrated with the Monitoring and Adaptive Management ~~Habitat Mitigation and Monitoring~~ Plan (Plan ~~HMMP~~) for the ecotone levee restoration, with the purpose of protecting restoration areas from being significantly impacted by invasive weeds. Invasive plant removal in the salt marsh and on the adjacent levees shall be limited to hand tools as specified in Measure BIO-3h and shall be removed before grading starts. If specified in the ~~HMMP~~ Plan for the restoration area,

	invasive species management will extend into developed areas of the parcel as needed to protect the restoration area. **Mitigation Measure BIO-7b: Construction Measures to Minimize Invasive Plant Infestations.** The following measures shall be taken during construction to minimize invasive plant infestation and potential impacts of invasive plants on adjacent natural habitats, particularly the wetlands: • All ground disturbing equipment used adjacent to native habitats will be washed (including wheels, tracks, and undercarriages) both before and after being used at the site. Worker personal gear, including boots, should also be cleaned and clear of plant material prior to entering the work area. • All seeds and straw materials used on site shall be weed-free rice straw, and all gravel and fill material shall be certified weed free. • The project will follow a Stormwater Pollution Prevention Plan as per the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ), to reduce stormwater runoff which can carry the seed of invasive plants to other locations. • All disturbed soils within sensitive habitats and adjacent levee slopes will be stabilized and planted in accordance with a restoration plan prepared for the project as part of an approved ecotone levee project. • Soil and vegetation removed from weed-infested areas will not be used in general soil stockpiles and will not be redistributed as topsoil cover for the newly filled areas. All weed-infested soil will be disposed of off-site at a landfill or buried at least 2.5 feet below final grade. **Less than Significant with Mitigation Incorporated**
Impact BIO-8: The proposed project will result in both temporary and permanent impacts to jurisdictional waters and sensitive communities from the construction of the	**Mitigation Measure BIO-8: Water Quality Monitoring Plan**. The West Bay Sanitary District will develop a water quality monitoring plan in consultation with the EPA, which will consult with NMFS. The water plan will include an impact assessment, water quality standards and protections of those standards,

ecotone levee, installation of sheet piles along a section of existing levee, the discharge of stormwater runoff into an existing swale that discharges to the bay, and the disposal of the remainder effluent from the RO process into the bay. **Potentially Significant Impact**	monitoring methodology, and reporting requirements. The goal of the plan is to ensure that the discharge from the water recycling facility complies with the discharge requirements set by the regulatory agencies to protect Bay waters. Depending on the requirements of the regulatory agencies, the plan may include, for example, quarterly surface and effluent water monitoring for suspended solids, settable solids, ammonia, pH, and temperature. If required, the water quality monitoring plan will be submitted as part of the NPDES permit package. **Less than Significant with Mitigation Incorporated**
CULTURAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES	
CULTURAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES **Impact CUL-1:** Project construction could cause potential disturbance of previously unknown prehistoric, archaeological, or tribal cultural resources, or human remains, during project construction. **Potentially Significant Impact**	**Mitigation Measure CUL-1a: Inadvertent Discovery.** In the event archaeological resources are unearthed, all soil disturbing work shall be halted within 60 feet of any discovery. An archaeologist who meets the Secretary of the Interior's Standards for Archaeology and is familiar with Bay Area archaeology must be contacted and the requirements under 36 CFR 800.13 followed. Work shall not commence in the vicinity of the inadvertent discovery until a qualified archaeologist completes a significance evaluation of the find(s) pursuant to Section 106 of the National Historic Preservation Act (36 CFR 60.4). If artifacts are found during construction, construction worker training shall be provided to all crews doing earthwork/soil moving activities. If a newly discovered resource is, or is suspected to be, Native American in origin, a geographically and culturally affiliated Native American cultural monitor will be retained, as directed by the Native American Heritage Commission (NAHC). If archaeological resources are found on the northern western segment of the project site (pipeline alignments in Chilco Street, Constitution Drive, Bayfront Expressway crossing, Marsh Road, and IPS) archaeological monitoring will be instigated for those segments. No further ground disturbing work shall be

	allowed to continue until the archaeologist has fully evaluated the find and approves work to continue. Dependent on the evaluation by the archaeologist, archaeological excavation and recordation may be required before construction can continue. An Archaeological Resource Treatment Plan (ARTP) will be written in consultation with the District. The District shall consult with the State Lands Commission Attorney should any cultural resources on State lands be discovered during the construction of the project. The final disposition of archaeological, historical, and paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission. **Mitigation Measure CUL-1b: Tribal Resources**. It is possible for a lead agency to determine that an artifact is considered significant to a local tribe, and thus considered a significant resource under CEQA, even if it would not otherwise be considered significant under CEQA. As such, all Native American artifacts (tribal finds) or other Tribal Cultural Resources shall be considered as a significant Tribal Cultural Resource, pursuant to PRC 21074 until the lead agency in consultation with the appropriate Tribe has enough evidence to make a determination of significance. Unanticipated discoveries shall be reburied on site. If they cannot be reburied on site, they shall be returned to Tribal custody. Ownership/custody of Native American artifacts, materials, and resources collected from State-owned lands under the jurisdiction of the State Lands Commission shall be returned after evaluation to the culturally affiliated Tribe whenever possible, regardless of significance. **Mitigation Measure CUL-1c: Human Remains**. The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are unearthed during construction, the County Coroner will be notified immediately, and no further disturbance shall occur until the County Coroner has made the necessary findings

	as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). All applicable laws pertaining to the discovery of human remains will be followed. **Mitigation Measure CUL-1d: Plan Details**. All project plans shall clearly state that ground disturbing activities have the potential for the discovery of human remains. **Mitigation Measure CUL-1e: Construction Monitoring on Hamilton Avenue.** Archaeological and Native American monitoring shall be instigated for all ground disturbing activities along the Hamilton Avenue section of the recycled water distribution pipeline. An archaeologist who meets the Secretary of the Interior's Standards for Archaeology and familiar with San Francisco Bay Area archaeology and a geographically and culturally affiliated Native American cultural monitor shall be present at the project site during ground disturbing activities, including machine or hand excavation. No ground disturbing activities, with the exception of road surface removal, shall be allowed to take place if the archaeologist and Native American monitor are ~~is~~ not present. An archaeological report meeting the Secretary of the Interior's Standards detailing the findings of the monitoring will be submitted to the Northwest Information Center after monitoring has ceased. **Mitigation Measure CUL-1f: Toothless Buckets**. All excavator machinery on Hamilton Avenue shall use toothless buckets during ground disturbing activity to allow the monitoring archaeologist to more clearly identify archaeological features, if present.

	Mitigation Measure CUL-1g: Cultural Resource Sensitivity Training shall be provided to construction crews that disturb areas of native soil during construction. **Less than Significant with Mitigation Incorporated**

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Page 2-35, Paragraph 4:

2.2.6.4 Future Projects and Service Connections

Figure 2-9 shows the proposed project (Phase 1) as well as future phases (Phases 2 and 3). The phasing is as follows:

Phase 1 would serve new developments in the Connect Menlo area, and the triangularly shaped area of land bounded by US Highway 101 on the south, the railroad tracks on the north and Willow Road on the east. These Phase 1 areas are all within the boundaries of the Menlo Park Municipal Water District. The plant would be sized to meet those newly proposed developments that will be willing to finance the initial recycled water plant and distribution pipeline construction and pay to operate and maintain the system. Additional users within the Phase 1 area will be able to be added as supply is available and would be expected to pay for their share of both the capital and operating costs of providing the recycled water supply.

There are currently no identified customers of the recycled water at this time. The distribution pipeline in Phase 1 is proposed to be constructed including "stub outs" within the road right-of-way so that future service connections can be made.

Phase 2 would serve the area within the Menlo Park Municipal Water District (MPMWD) south of 101 and north of Middlefield. It is not anticipated that this phase would be initiated until water users in this area, and the City of Menlo Park, expressed a strong desire to promote this phase given that the extension of service would require an extensive recycled water distribution system expansion. Figure 2-9 shows ~~a future~~ this Phase 2 section of the distribution pipeline on Hamilton Avenue after it crosses Willow Road (SR 114) as well as a potential future recycled water distribution tank. Other future projects along the proposed distribution route that would be connecting to the proposed distribution pipeline would require encroachment and/or street permits from the City as well as connection permits from the District.

Phase 3 would serve the area within the MPMWD south of Middlefield Road, including the City Hall complex and related municipal facilities. As with Phase 2, it is not anticipated that this phase would be initiated until the water users in this area, and the City of Menlo Park, expressed a strong desire to promote this phase given that the extension of service would require an additional extension of the recycled water distribution system.

Environmental analysis of Phases 2 and 3 would be addressed in subsequent environmental review documents.

There are currently no identified customers of the recycled water at this time. The distribution pipeline in Phase 1 is proposed to be constructed including "stub outs" within the road right-of-way so that future service connections can be made.

Service connections to existing or future developments are not part of this project. Service connections will be installed on a case-by-case basis as new developments are constructed. The service connections will be installed just like conventional water and sewer connections, the potential environmental impacts of which would be evaluated at the time the future development is planned and permitted. These future connections would be subject to future CEQA review under the City's planning review process and are not considered as part of the environmental review for this project because the Bayfront RWF can operate in the absence of the potential future distribution pipeline and recycled water tank east of Willow Road."

Page 5-34, New Paragraph Inserted After Paragraph 2

5.3.7 Impacts to White-tailed Kite

The white-tailed kite is a year-round resident in the project region. The blue gum and Australian pine trees found along the southern edge of the project area as well as just outside of the project area in Bedwell Bayfront Park provide suitable nesting habitat for white-tailed kite. The entire project area provides suitable foraging habitat for white-tailed kite.

Fence Hazard

Hollow posts with bolt holes pose an entanglement hazard for birds of prey that could result in mortality. Mitigation Measure BIO-6d, Cap Fence Posts will reduce impacts to ***less than significant with mitigation incorporated***.

Construction Outside of the Nesting Season

Impacts outside of nesting season (September 16 to January 31) will be less than significant since any foraging white-tailed kites will disperse, in response to construction activities, before they could be killed or injured. As a result, no direct disturbance of these species will occur.

There would still be some potential for disturbance of foraging individuals in the adjacent areas as a result of construction noise and/or movement of construction equipment and personnel. However, such impacts would have minimal effects due to the presence of nearby suitable foraging habitat. Such effects would not result in substantial harassment or disturbance of individuals and would not result in a reduction in the populations of white-tailed kites. Therefore, impacts to foraging white-tailed kites will be ***less than significant***.

Construction During Nesting Season

Project activities during the nesting season (February 1 to September 15) that cause a substantial increase in noise, movement of equipment, or human presence near active nests could result in the abandonment of active white-tailed kite nests with eggs or nestlings. However, adult birds are not expected to be killed or injured, as they could easily fly from the work site. The project is not expected to result in the loss of nesting habitat for white-tailed kite. Implementation of Mitigation Measures BIO-6a, Pre-Construction/Pre-Disturbance Surveys for Nesting Birds and BIO-6b, Nesting Bird Protection would avoid impacts on active nests of white-tailed kite so that impacts would be to ***less than significant with mitigation incorporated***.

Page 5-35, Paragraph 1

5.3.8 Impacts to American Falcon, Black Skimmer, California Brown pelican, California Least Tern, and Western Snowy Plover

American peregrine falcon, black skimmer, California brown pelican, California least tern, and western snowy plover are seen regularly in the project region and may fly through or forage in the project site. However, these species are unlikely to nest in the project site or immediate area because of the lack of suitable nesting habitat. All four species will only be temporarily displaced by construction noise and can forage in areas surrounding the project. The project may result in the use of open pipes used as fence posts, property line stakes, signs, etc. Raptors (such as

American peregrine falcon) talons can catch in bolt holes, entrapping the bird and resulting in mortality. Mitigation Measure BIO-6d is included to prevent this impact. Therefore, impacts to American peregrine falcon, black skimmer, California brown pelican, California least tern, and western snowy plover will be less than significant. In the unlikely event that any of these species nest in the project site, compliance with Mitigation Measure BIO-6a, Pre-Construction/Pre-Disturbance Surveys for Nesting Birds, Mitigation Measure BIO-6b, Nesting Bird Protection, and Mitigation Measure BIO-6d Cap Fence Posts would reduce project impacts on these species to ***less than significant with mitigation incorporated***.

Page 5-35, Insert After Paragraph 2

5.3.9 Impacts to Alameda Song Sparrow, Bryant's Savannah Sparrow, Loggerhead Shrike, Northern Harrier, San Francisco Common Yellowthroat, and Short-eared owl

The Alameda Song Sparrow, Bryant's Savannah Sparrow, loggerhead Shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl (all California species of special concern) are associated with marsh habitats and are known to nest in or near the project area. These species are assessed together because the impacts of the proposed project on these nesting special-status bird species would be similar.

Fence Hazard

Hollow fence posts pose an entanglement hazard for birds of prey, such as the northern harrier. Mitigation Measure BIO-6d, Cap Open Posts/Fill Bolt Holes will reduce impacts to ***less than significant with mitigation incorporated***.

Construction Outside of the Nesting Season

Outside of the nesting season (September 16 to January 31), any foraging Alameda song sparrow, Bryant's savannah sparrow, loggerhead shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl present on site when construction commences are expected to disperse to adjacent marsh areas before they could be killed or injured. As a result, no direct disturbance of these species is expected to occur.

There would still be some potential for disturbance of foraging individuals of these species in the adjacent marsh as a result of construction noise and/or movement of construction equipment and personnel. However, such impacts would have minimal effects due to the presence of nearby suitable foraging habitat. Such effects would not result in substantial harassment or disturbance of individuals and would not result in a reduction in the populations of any of these species. Therefore, impacts to these special-status birds will be ***less than significant***.

Construction During the Nesting Season

Construction disturbance during the typical nesting season defined by CDFW (February 1 to September 15) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. In addition, noise and increased construction activity could temporarily impact foraging behavior, potentially resulting in the abandonment of nest sites. This would violate California Fish and Game Code.

Implementation of Mitigation Measures BIO-6a, Pre-Construction/Pre-Disturbance Surveys for Nesting Birds and BIO-6b, Nesting Bird Protection would avoid impacts on active nests of Alameda song sparrow, Bryant's savannah sparrow, loggerhead shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl and reduce impacts to ***less than significant with mitigation incorporated***.

Pages 5-44 through 5-53, Edits to Mitigation Measures

Mitigation Measures

Because the project specifications are still in the design phase and subject to change, the following mitigation measures assume project development could occur in any portion of the FERFF and adjacent areas in Bedwell Bayfront Park, paved rights of ways for the influent and distribution pipelines, and the influent pump station. However, this analysis assumes that the proposed alignments for the pipelines and influent pump house will be constructed within the existing street rights-of-way and avoid sensitive wetland or aquatic habitat.

Impact BIO-1: The proposed project may result in significant impacts to special-status plants due to disturbance or destruction of individuals or suitable habitat.

Mitigation Measure BIO-1a: Pre-Activity Surveys for Special-Status Plants. Prior to initial ground disturbance in grassland and wetland habitats and during the appropriate blooming period (Coastal marsh milkvetch and Point Reyes bird's-beak, June–October; Congdon's tarplant, May–November; saline clover, April–June), a focused survey for these four potentially occurring special-status plant species will be conducted by a qualified botanist in accordance with the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* within suitable habitat in the project footprint and a 50-foot buffer around the project footprint~~, where feasible~~. The purpose of the survey is ~~will be~~ to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or the ~~identified~~ buffer, then no further mitigation is required ~~will be warranted~~. If Point Reyes bird's-beak, Coastal marsh milkvetch, Congdon's tarplant, or saline clover individuals are found in the impact area, then Mitigation Measure BIO-1b will be implemented. The results of the survey will be documented, and all rare plant discoveries shall be reported to CDFW's California Natural Diversity Database.

Mitigation Measure BIO-1b: Avoidance Buffers. The project proponent, in consultation with a qualified plant ecologist, will take measures to protect all populations of special-status plant species found to occur within the project site or within 50 feet of the impact area~~ to the extent feasible~~. Avoided special-status plant populations will be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the ~~identified~~ buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the ~~identified~~ buffer around special-status plants to be avoided will be flagged or fenced. The flagging will be maintained intact and in good condition throughout project-related construction activities.

If complete avoidance is not feasible, then the appropriate resource agencies will be consulted to determine the appropriate measures to take, which may include salvage of seeds and/or plants, relocation of individual plants, and/or off-site preservation, enhancement, and management of occupied habitat for the species.

***Effectiveness*:** These measures would avoid or minimize impacts to special-status plants.

***Implementation*:** Qualified biologist (Mitigation Measure BIO-1a) and construction workers under supervision of a qualified biologist (Mitigation Measure BIO-1b).

***Timing*:** Prior to start of construction activities during appropriate bloom periods.

Reporting/Monitoring: The qualified biologist shall prepare a memo or letter report documenting the methods and results of the special-status plant surveys to be submitted to the District. If Mitigation Measure BIO-1b is required, the District or its contractor will maintain the avoidance buffers under the supervision of a qualified biologist, and this complete measure shall be incorporated into the project specifications, bid, and contract documents. If avoidance is not feasible, the District will consult with CDFW to determine the appropriate mitigation measures.

Impact BIO-2: The proposed project could harm special-status ~~fish~~ species, degrade surface or ground water quality, and will result in both permanent and temporary impacts to aquatic and marsh habitat during construction of the ecotone levee.

Mitigation Measure BIO-2a: Biological Monitoring During Construction in the Marsh. A qualified biological monitor will be present during all construction activities within the marsh or in vegetated areas within five (5) feet of the marsh to look for special-status animals that may be impacted by construction. For example, when construction personnel need to install the ecotone levee coffer dam and remove vegetation, the biological monitor will first inspect the vegetation to determine whether any salt marsh harvest mice, ~~or~~ salt marsh wandering shrews, or other special-status species are present. If any animals are present, they will be allowed to leave the area on their own, or the location of the in-marsh work will be adjusted to ensure that no impacts to special-status species ~~individual mice or shrew~~s occur ~~at that time~~. The biologist ~~individu~~ shall ~~will~~ have stop-work authority if any special-status ~~al of a federally listed~~ species is detected in an area where it may be injured or killed by construction activities. In the event that special-status species are found within or directly adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The results of the monitoring will be documented. If ~~found necessary~~ directed by the agency approved biological monitor, ~~.~~ Mitigation Measure BIO-2b will be implemented. ~~to include an approved dewatering plan and relocate any stranded fish found within the ecotone levee construction site.~~ If directed ~~recommended~~ by the ~~approved~~ qualified biologist, Mitigation Measure BIO-3h (exclusion fencing) will be implemented ~~to include additional exclusion fencing along the coffer dam during ecotone levee construction~~. The biological monitor will also ensure that Mitigation Measures BIO-3a through k~~h is~~ are implemented as necessary to protect special-status species. Any discoveries of special-status species shall be reported to CDFW's California Natural Diversity Database.

In the event that special-status species are found within or adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The qualified biologist shall be on-site at appropriate times to ensure that special-status species are protected.

Mitigation Measure BIO-2b: Installation of Sheet Piles, Dewatering Plan, and Relocation of Stranded Fish. Sheet pile coffer dams to be installed prior to construction of the ecotone levee shall be installed at low tide when there is little water in the slough to avoid stranding fish, and using other methods, if available, to install them without stranding fish. An agency approved dewatering plan shall be implemented if water deep enough to support fish remains within the ecotone levee work area once the sheet pile coffer dam is installed. ~~necessary, to complete the ecotone levee grading~~ once the coffer dams are installed. If necessary, as the coffer dams are being placed, a qualified biologist will relocate any stranded fish to ~~an area~~ suitable habitat outside of the work area. The method of relocation will be determined by the qualified biologist, in consultation with NMFS, based on site conditions and species present. Implementation of this measure will avoid loss of fish due to stranding. The methods and results of fish relocation efforts will be documented. Discoveries of special-status fish species shall be reported to NMFS immediately and entered into CDFW's California Natural Diversity Database.

Mitigation Measure BIO-2c: Measures to Protect Water Quality. During all construction in and near tidal aquatic habitat, standard BMPs will be used to minimize erosion and impacts to water quality as well as direct impacts to special-status fish. These are reported in the EIR and will be included in the SWPPP prepared for the project. Compliance measures that protect water quality help reduce potential impacts to biological resources to less than significant.

Mitigation Measure BIO-2d: Noise Minimization. As a Best Management Practice to minimize noise impacts, the sheet piles shall be installed using a soft-start method by pausing after the first 15 seconds at a reduced energy twice before vibrating the sheet piles in at full capacity.

Effectiveness: These measures required in a SWPPP would avoid or minimize potential impacts to special-status fish, and avoid and minimize erosion and impacts to water quality.

Implementation: Construction workers under the supervision of a qualified biologist (Mitigation Measure BIO-2a). A qualified biologist will relocate fish (Mitigation Measure BIO-2b). The District or its contractor will implement measures to protect water quality (Mitigation Measure BIO-2c).

Timing: Dewatering and relocation of fish will occur prior to construction activities in tidal aquatic habitat (Mitigation Measures BIO-2a and BIO-2b). Measures to protect water quality will occur for the duration of construction activities near tidal habitat (Mitigation Measure BIO-2c)

Reporting/Monitoring: A qualified biologist shall prepare a fish relocation plan to be submitted and approved by NMFS, and a separate memo or letter report documenting the results of fish relocation efforts to be submitted to the District and NMFS. The District or its contractor will maintain measures to protect water quality. The text of Impact BIO-2

and mitigation measures BIO-2a through BIO-2d shall be incorporated into the project specifications, bid and contract documents.

Impact BIO-3: The proposed project could harm salt marsh harvest mouse and salt marsh wandering shrew, and will result in both permanent and temporary impacts to tidal and upland habitats during construction of the ecotone levee. Additionally, if the proposed project includes the installation of lighting that illuminates marsh habitat and the adjacent levees, such lighting could potentially have adverse effects on special-status species in the wetlands and adjacent levee refugia habitat.

Mitigation Measure BIO-3a: Worker Environmental Awareness Training. A resource agency approved biologist will prepare a worker environmental awareness fact sheet with 1) the description and status of the species; 2) the habitat of the species; 3) the legal ramifications of impacting the species; 4) a list of measures being taken to reduce impacts on these species during project construction (including preconstruction surveys, minimizing trash that attracts predators, and other measures); and 5) what to do if the species are encountered. All construction personnel working on the site and in the pipeline alignments and pump station areas adjacent to wetlands will participate in a worker environmental awareness training conducted by a resource agency approved biologist, and will sign an acknowledgment that they have participated in the worker environmental awareness training.

Mitigation Measure BIO-3b: No Pets. No pets (e.g., dogs or cats) can be brought to the project site to avoid harassment, killing, or injuring of wildlife.

Mitigation Measure BIO-3c: Food Trash Removal. To minimize attraction of predators such as racoons and feral cats, all workers will be required to secure their food related trash and remove it daily. The site foreman shall assure that all food trash related to the construction work is secured and removed.

Mitigation Measure BIO-3d: Minimize Non-daylight Work; Prepare Lighting Plan. Project lighting during construction activities shall be limited in consideration of the potential impacts to special status species. If early morning, early evening, or night lighting is necessary during construction, a lighting plan shall be prepared in consultation with an agency approved biologist. 24-hour work that requires night lighting shall only be conducted with approval from the US Fish and Wildlife Service and the California Department of Fish and Wildlife due to potential impacts to species protected under FESA and CESA. See also Mitigation Measure BIO-3i Artificial Lighting regarding permanent site lighting.

Mitigation Measure BIO-3e: Work During Extreme High Tides. To avoid the loss of individual salt marsh harvest mice- and salt marsh wandering shrew~~, California Ridgway's rail, and California black rail~~ that may shelter in the work area during extreme high tides, an agency approved biological monitor shall be present when work around the perimeter of the FERRF site occurs during extreme high tides, such as King Tides. The agency approved biological monitor shall complete a pre-construction survey prior to construction activities in these areas. ~~where extreme high tide has limited upland habitat limits available for refuge before approving construction to proceed~~. Areas within the cofferdam or wildlife exclusion fence are expected to exclude mice and shrews and

would not require a pre-construction survey. Also see measure BIO-4 for California Ridgway's rail and California black rail measures at extreme high tide.

Mitigation Measure BIO-3f: Limit Vegetation Removal. To avoid the loss of individual harvest mice and wandering shrews from any excavation, fill, or construction activities in suitable habitat, vegetation removal will be limited to the minimum amount necessary.

Mitigation Measure BIO-3g: Vegetation Removal Methods. Vegetation removal will occur under the supervision of a qualified biologist as noted in Mitigation Measure BIO-2a. ~~The biologist will give consideration to requiring t~~ The vegetation shall be removed on a progressive basis, with hand tools (e.g., weed-eater, hoe, rake, trowel, shovel) such that it allows species to find adjacent cover. The qualified biologist shall monitor the rate of vegetation removal to ~~would also make specific recommendations with respect to the rate of vegetation removal (to~~ ensure that any harvest mice or wandering shrews present are able to escape to cover that will not be impacted~~)~~, and will specify whether vegetation needs to remain in a certain area temporarily to facilitate dispersal of mice/shrews into habitat outside of the impact area.

Mitigation Measure BIO-3h: Exclusion Fence. Following the hand-removal of vegetation, exclusion fencing will be erected around the outer boundary of the work area that is adjacent to harvest mouse/wandering shrew habitat that is to remain intact if the coffer dam design does not exclude species. If the cofferdam excludes the species, additional exclusion fencing is not necessary. This will define and isolate protected harvest mouse habitat. The installation of the fence will be supervised by a qualified biologist. This fencing will consist of heavy plastic sheeting or metal material that cannot be climbed by harvest mice, buried at least 4 inches below the ground's surface, and with at least 1 foot (but no more than 4 feet) above the ground. All supports for the fencing will be placed on the inside of the work area. A 2~~4~~-foot buffer will be maintained free of vegetation around the outside of the exclusion fencing. The fencing will be inspected daily during the project construction period, and any necessary repairs will be made within 24 hours of when they are found. If any breaks in the fencing are found, the qualified biologist will inspect the work area for salt marsh harvest mice and salt marsh wandering shrews. If any individuals are found, all work that could impact these individuals will cease until the individuals have left the impact area on their own. If an injured or killed mouse is discovered at any time during project activities, all work shall cease immediately and USACE, ~~/~~USFWS, ~~/~~ and CDFW shall be contacted for further direction.

Mitigation Measure BIO-3i: Artificial Lighting. During and after project construction, the spillover of lighting into the salt marsh habitat and adjacent levees will be minimized using low-intensity lighting or other appropriate low-dispersion lighting technology; orientation of lights so that they are placed on the perimeter of the work area and directed inward (rather than directing any lighting toward the marsh) and downward toward the ground; and shielding of lights from behind. Low-intensity lighting, downcast lighting, or other appropriate lighting technology will be incorporated into the project design where permanent lighting is to be placed within 200 feet of the salt marsh to reduce potential adverse effects on animals within this habitat.

Mitigation Measure BIO-3j: Prohibition of Plastic Monofilament Netting. Monofilament plastic netting, including in temporary and permanent erosion control measures (such as erosion control mat or straw wattles), shall not be used, regardless of whether the netting is biodegradable or not. Burlap or jute wrapped straw wattles are acceptable.

Mitigation Measure BIO-3k: ~~Habitat Restoration and~~ Monitoring and Adaptive Management Plan. The project shall include a plan to restore and monitor natural habitats impacted by the project, particularly the ecotone levee area. At a minimum the plan shall be submitted in the permit package to the U.S. Army Corps of Engineers required under Section 404 of the Clean Water Act and the permit package to the Regional Water Quality Control Board under Section 401 of the Clean Water Act for agency review.

Effectiveness: These measures would avoid or minimize impacts to salt marsh harvest mouse salt marsh wandering shrew, and other wildlife during construction of the ecotone levee, and restore impacted native marsh and upland habitats.

Implementation: Construction workers under the supervision of a qualified biologist (Mitigation Measures BIO-2a, BIO-3a, BIO-3e, BIO-3f, BIO-3g and BIO-3h. The District or its contractor (Mitigation Measures BIO-3b, BIO-3c, BIO-3d, BIO-3i, BIO-3j). The text of impact BIO-3 and the above listed mitigation measures (2a, 3a, 3 b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, and 3j) shall be incorporated into the project specifications and contract documents.

Timing: Prior, during, and after construction activities near tidal marsh and adjacent upland habitats.

Reporting/Monitoring: A qualified biologist will submit the signed acknowledgment forms from the worker environmental awareness program to the District (Mitigation Measure BIO-3a). The District or its contractor will maintain the exclusion fence (Mitigation Measure BIO-3h). The district will ensure that low-intensity lighting, downcast lighting, or other appropriate lighting technology will be incorporated into the project design and this shall be shown on construction drawings (Mitigation Measure 3i).

Impact BIO-4: The proposed project could harm California black rail and California Ridgway's rail, and will result in both permanent and temporary impacts to tidal and upland habitats during construction.

Mitigation Measure BIO-4: Pre-Construction/Pre-Disturbance Survey for California Black Rail and California Ridgway's Rail. Construction activities in and adjacent to the marsh habitat for rails shall occur outside of the breeding season (January 15-August 31), as a first measure. If construction activities are planned to occur within or adjacent to tidal marsh or suitable rail habitat during the breeding season ~~(February 1 through August 31)~~, a qualified biologist shall contact the Invasive Spartina Project to determine if protocol surveys are already being conducted in the area so that a) the data can be used, and b) rails are not adversely affected by repeated protocol surveys. If the Invasive Spartina Project is not conducting protocol surveys, then a qualified biologist shall conduct the USFWS-approved protocol level surveys for California black rail and Ridgway's rail before initiation of any ground disturbing activities within the salt marsh

habitat and a 700-foot buffer (i.e., Wood 2017 "Site-specific Protocol for Monitoring Marsh Birds"). Protocol surveys are required to be completed over several visits between January 15 and April 15, and may significantly impact the construction schedule if they have not been completed in time. The qualified biologist shall be approved to conduct ~~will be experienced with the various calls, estimating distances to calls under field conditions, and~~ the ~~USFWS Ridgway's rail~~ current USFWS-sanctioned survey methodology (~~USFWS 2015~~Wood 2017). The qualified biologist shall submit the proposed survey methods to CDFW and USFWS for review and approval prior to commencing the surveys. The results of the survey will be documented, and any detections will be reported to the California Natural Diversity Database.

If an active nest is found within the survey area, the qualified biologist shall consult with CDFW and~~/or~~ USFWS to determine the appropriate construction-free buffer zone (typically 700 feet) and/or other mitigation measures to be implemented, such as daily monitoring. If no rail call centers or nests are found within 700 feet of project construction activities, work can proceed.~~, then further mitigation is not required.~~ If work extends into additional seasons, then additional protocol surveys shall be completed, particularly if work has paused.

If California Ridgway's rail or black rail are present, the following measures apply:

- To avoid impacts to individual rails, activities within or adjacent to habitat will not occur within two hours before or after extreme high tides (6.5 feet or above as measured at the Golden Gate Bridge), when the marsh is inundated and rail movement may be altered. If the work area is protected by a cofferdam or wildlife exclusion fence and rails are not likely to be present within the buffer zone, the work can continue with a biological monitor present, but shall be halted if a rail is detected within the buffer zone.
- If a California Ridgway's rail or black rail nest or adult is encountered during any project-related activity, the observer(s) shall immediately move away from the nest/adult.

~~If Ridgway's rail is assumed present, then construction activities would need to avoid the breeding season each year (February 1 January 15 through August 31).~~

Effectiveness: These measures would avoid or minimize impacts to California black rail and California Ridgway's rail during construction activities.

Implementation: A qualified biologist(s) will submit the proposed survey methods to CDFW and USFWS and perform the pre-construction surveys. Construction workers under the supervision of a qualified biologist will establish buffers, if needed.

Timing: Prior to construction activities and during construction activities if buffers are needed.

Reporting/Monitoring: A qualified biologist shall prepare a letter report documenting the results of the survey. The District or its contractor will maintain any needed avoidance buffers under the supervision of a qualified biologist. The text of Impact BIO-4 and Mitigation Measure BIO-4 shall be incorporated into the project specifications and contract documents.

Impact BIO-5: The proposed project could harm burrowing owls, and ~~will result in both permanent and temporary~~ impact~~s to~~ potential nesting, roosting, and foraging habitats during construction.

Mitigation Measure BIO-5a: Conduct Pre-construction Surveys for Burrowing Owls. Pre-construction surveys for burrowing owls will be conducted prior to the initiation of all project activities within suitable burrowing owl nesting and roosting habitat (i.e., grassland habitat and levees with burrows of California ground squirrels). Pre-construction surveys will be completed in conformance with Appendix D: *Breeding and Non-breeding Season Surveys* of the CDFW Staff Report on Burrowing Owl Mitigation (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843) ~~the CDFW's 2012 guidelines~~ (CDFG 2012), which specify the timing, area, and number of surveys. ~~summarized as follows. An initial habitat assessment will be conducted by a qualified biologist to determine if suitable burrowing owl habitat is present. During the initial site visit, which will be conducted not less than 14 days prior to the onset of ground disturbing activities, a qualified biologist will survey the entire activity area and (to the extent that access allows) the area within 250 feet of the site for suitable burrows that could be used by burrowing owls for nesting or roosting. If no suitable burrowing owl habitat is present, no additional surveys will be required. If suitable burrows are determined to be present within 250 feet of work areas, a qualified biologist will conduct at least one additional survey to investigate each burrow within the survey area for signs of owl use and to determine whether owls are present in areas where they could be affected by proposed activities. The final survey will be conducted within the 24-hour period prior to the initiation of project activities in any given area.~~ The results of the survey shall ~~will~~ be documented, and positive sightings submitted to the California Natural Diversity Database.

Mitigation Measure BIO-5b: Implement Buffer Zones for Burrowing Owls. If burrowing owls are present on or near the construction site ~~during the nonbreeding season (generally September 1 to January 31),~~ a ~~150-foot~~ buffer zone will be maintained around the occupied burrow(s) in accordance with guidance provided in the CDFW Staff Report Appendix D cited above. ~~if feasible. If maintaining such a buffer is not feasible, then the buffer must be~~ The buffer will be large enough to avoid injury or mortality of individual owls in compliance with Fish and Game Code section 3503.5. The recommended buffer zones range from 50 meters to 500 meters depending on the level of construction activity. ~~During the breeding season (generally February 1 to August 31), a 250-foot buffer , within which no newly initiated project-related activities will be permissible, will be maintained between project activities and occupied burrows. Owls present between February 1 and August 31 will be assumed to be nesting, and the 250-foot protected area will remain in effect until August 31. If monitoring evidence indicates that the owls are no longer nesting or the young owls are foraging independently, the buffer may be reduced, or the owls may be relocated prior to August 31. If necessary, relocation of owls in any season will be completed by a qualified biologist in consultation with CDFW and likely by using one-way doors, which should be installed in all burrows within the impact area and left in-place for at least two nights. These one-way doors will then be removed and the burrows back-filled immediately prior to the initiation of grading.~~

Mitigation Measure BIO-5c: Monitor Owls During Construction ~~to Determine Feasibility of a Reduced Buffer.~~ ~~As an alternative to Mitigation Measure 5b, which requires a 250-foot buffer around owl nests (assuming they have not been relocated), this measure provides for monitoring of owl behavior to determine if the size of the buffer can be reduced.~~ Although ~~Any~~ owls occupying the study area are likely habituated to frequent human disturbance due to regular activity at the project site and in nearby Bedwell Bayfront Park, and~~. As a result, they~~ may ~~exhibit a~~ tolerate ~~nce of~~ greater levels of human disturbance than owls in more natural settings, ~~and construction within the standard 250-foot buffer during the nesting season may be able to proceed without disturbing the owls. Therefore, if nesting owls are determined to be present on the site, and project activities cannot feasibly avoid disturbance of the area within 250 ft of the occupied burrow during the nesting season (i.e., February 1 through August 31), under this measure~~ a qualified biologist shall monitor owl behavior during construction. ~~will be present during all activities within 250 feet of the nest to monitor the owls' behavior~~. If in the opinion of the qualified biologist, the owls are disturbed to the point of harm or possible reduced reproductive success, all work within at least 50 meters~~250 feet~~ of the occupied burrow will cease until the ~~nest~~ burrow is determined by a qualified biologist to no longer be in active use, or the biologist in consultation with resource agencies has determined what work can proceed without causing harm or reduced reproductive success to the owl(s).

Mitigation Measure BIO-5d: Restoration of Burrowing Owl Habitat On Site. ~~The Monitoring and Adaptive Management restoration plan prepared for the site under Mitigation Measure BIO-3k shall include habitat suitable for burrowing owl forage and nesting.~~ If pre-construction surveys identify that burrowing owl actively nests in the project footprint, the burrow shall not be removed until nesting is completed for the season, the burrow is not occupied by owls, and artificial burrows are provided within 100 meters of the original burrow.

Effectiveness: These measures would avoid or minimize impacts to burrowing owls.

Implementation: A qualified biologist will perform the ~~pre-construction~~ surveys (Mitigation Measure BIO-5a, ~~and/or~~ BIO-5c). Construction workers under the supervision of a qualified biologist will establish buffers, if needed (Mitigation Measure BIO-5b).

Timing: Prior to construction activities and during construction if buffers and monitoring are needed.

Reporting/Monitoring: A qualified biologist shall prepare a memo or letter report documenting the results of the survey and monitor any nesting owls (Mitigation Measures BIO-5a and BIO-5c). The District or its contractor will maintain any needed avoidance buffers under the supervision of a qualified biologist (Mitigation Measure BIO-5b). The text of Impact BIO-5 and Mitigation Measures BIO-5a, 5b, and 5c shall be incorporated into the project specification and contract documents.

Impact BIO-6: The proposed project could result in temporary and permanent impacts to Alameda song sparrow, American peregrine falcon, black skimmer, Bryant's savannah sparrow, California brown pelican, California least tern, loggerhead shrike, northern harrier, San Francisco common yellowthroat, short-eared owl, western snowy plover,

white-tailed kite, and other nesting birds protected by the MBTA and California Fish and Game Code. Glass in new buildings could increase collision hazard causing injury or death for these species. Open topped posts with bolt holes could entangle raptor talons and result in mortality.

Mitigation Measure BIO-6a: Pre-Construction/Pre-Disturbance Surveys for Nesting Birds.

Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Mateo County extends from February 1 through September 15.

Pre-Construction Surveys. If it is not possible to schedule construction activities between September 15 and January 31, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than five days prior to the initiation of any site disturbance activities and equipment mobilization in the ~~BSA~~ project area as well as the right of ways for the distribution pipelines and the influent pump station. If project activities are delayed by more than five days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all potential nesting habitats (e.g., shrubs, developed areas, structures, etc.) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

Mitigation Measure BIO-6b: Nesting Bird Protection. If an active nest is found sufficiently close to work areas to be disturbed by ~~these~~ project activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 1000 feet for raptors and up to 250 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project implementation. The qualified biologist shall be experienced in both songbird and raptor behavior. Identified active nests will be surveyed one day prior to any construction-related activities to establish a behavioral baseline for the adults and any nestlings. Once work commences, all active nests will continue to be monitored by the qualified biologist to detect any signs of disturbance and behavioral changes caused by project activities, and change the buffer as needed to prevent disturbance-related nest failure. The qualified biologist will have authority to order the cessation of all project activities within disturbance distance of any raptor nest if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged. Monitoring will be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings will be documented.

Mitigation Measure BIO-6c: Reduce Collision Hazard. The project design shall comply with measures such as those identified in Menlo Park Municipal Code Chapter 16.43.140(6) to minimize the number of bird collisions with new buildings.

Mitigation Measure BIO-6d: Cap Open-topped Posts/Fill Bolt Holes. All fence posts, property line stakes, signs, etc. that are open topped and have bolt holes shall be capped and the bolt holes filled to prevent entanglement of birds of prey. This measure shall be included in project specifications.

Effectiveness: These measures would avoid or minimize adverse impacts to ~~nesting~~ birds.

Implementation: A qualified biologist will perform the pre-construction surveys and nest monitoring, if needed (Mitigation Measures BIO-6a and BIO-6b). Construction workers under the supervision of a qualified biologist will establish buffers, if needed (Mitigation Measure BIO-6b). The District will assure compliance with measures BIO-6c and BIO-6d.

Timing: Surveys for nesting birds will be conducted within 5 days prior to the start of construction.

Reporting/Monitoring: A qualified biologist shall prepare a memo or letter report documenting the results of the surveys and any needed nest monitoring (Mitigation Measures BIO-6a and BIO-6b). The District or its contractor will maintain any needed avoidance buffers under the supervision of a qualified biologist (Mitigation Measure BIO-6b). Project plans shall include specifications that require implementation of measures BIO-6c and BIO-6d.

Impact BIO-7: The proposed project could result in the introduction or spread of invasive plants, which can displace native marsh vegetation and reduce habitat quality of the salt marsh by reducing refugia and foraging habitat for native species, including special-status species.

Mitigation Measure BIO-7a: Integrate Invasive Plant Management into the Ecotone Levee Restoration Plan. Prior to the start of construction activities, measures to control invasive plant species shall be specified and integrated with the Monitoring and Adaptive Management Plan (Plan)~~Habitat Mitigation and Monitoring Plan (HMMP)~~ for the ecotone levee restoration, with the purpose of protecting restoration areas from being significantly impacted by invasive weeds. Invasive plant removal in the salt marsh and on the adjacent levees shall be limited to hand tools as specified in Measure BIO-3h, and shall be removed before grading starts. If specified in the Plan ~~HMMP~~ for the restoration area, invasive species management will extend into developed areas of the parcel as needed to protect the restoration area.

Mitigation Measure BIO-7b: Construction Measures to Minimize Invasive Plant Infestations. The following measures shall be taken during construction to minimize invasive plant infestation and potential impacts of invasive plants on adjacent natural habitats, particularly the wetlands:

- All ground disturbing equipment used adjacent to native habitats will be washed (including wheels, tracks, and undercarriages) both before and after being used at

the site. Worker personal gear, including boots, should also be cleaned and clear of plant material prior to entering the work area.

- All seeds and straw materials used on site shall be weed-free rice straw, and all gravel and fill material shall be certified weed free.
- The project will follow a Stormwater Pollution Prevention Plan as per the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ), to reduce stormwater runoff which can carry the seed of invasive plants to other locations.
- All disturbed soils within sensitive habitats and adjacent levee slopes will be stabilized and planted in accordance with the restoration plan prepared for the project as part of an approved ecotone levee project.
- Soil and vegetation removed from weed-infested areas will not be used in general soil stockpiles and will not be redistributed as topsoil cover for the newly filled areas. All weed-infested soil will be disposed of off-site at a landfill or buried at least 2.5 feet below final grade.

Effectiveness: These measures would avoid or minimize impacts from the invasive plants.

Implementation: The District or its contractor, working with a qualified plant ecologist.

Timing: Prior to construction activities and during construction.

Reporting/Monitoring: Proof of invasive species removal in as-builts or a memo prepared by a biologist or restoration ecologist. Mitigation Measure BIO-7b shall be incorporated into project specifications and contract documents.

Impact BIO-8: The proposed project will result in both temporary and permanent impacts to jurisdictional waters and sensitive communities from the construction of the ecotone levee, installation of sheet piles along a section of existing levee, the discharge of stormwater runoff into an existing swale that discharges to the bay, and the disposal of the remainder effluent from the RO process into the bay.

Mitigation Measure BIO-8: Water Quality Monitoring Plan. The West Bay Sanitary District will develop a water quality monitoring plan in consultation with the EPA, which will consult with NMFS. The water plan will include an impact assessment, water quality standards and protections of those standards, monitoring methodology, and reporting requirements. The goal of the plan is to ensure that the discharge from the water recycling facility complies with the discharge requirements set by the regulatory agencies to protect Bay waters. Depending on the requirements of the regulatory agencies, the plan may include, for example, quarterly surface and effluent water monitoring for suspended solids, settable solids, ammonia, pH, and temperature. If required, the water quality monitoring plan will be submitted as part of the NPDES permit package.

Effectiveness: This measure would avoid or minimize impacts to jurisdictional waters from the discharge of treated RO effluent. The project will also comply with the requirements to control the discharge of stormwater pollutants under the NPDES

Construction General Permit and Municipal Regional Stormwater NPDES Permit to minimize impacts to water quality during construction. In addition, the project would require permits from the USACE, RWQCB, and BCDC for impacts on tidal marsh and aquatic habitat, and must adhere to permit requirements.

Implementation: The District or its contractor will prepare a water quality monitoring plan in consultation with the U.S. EPA.

Timing: The District or its contractor will submit a water quality monitoring plan as part of the permit applications to the regulatory agencies prior to construction.

Reporting/Monitoring: The District or its contractor will implement the monitoring conditions in an agency-approved water quality monitoring plan.

Page 5-57, Last Reference Entry

Wood, J.K., Nur, N., Salas, L. and O.M.W. Richmond. 2017. Site-specific Protocol for Monitoring Marsh Birds: Don Edwards San Francisco Bay and San Pablo Bay National Wildlife Refuges. Prepared for the U.S. Fish and Wildlife Service, Pacific Southwest Region Refuge Inventory and Monitoring Initiative. Point Blue Conservation Science. Petaluma, CA. https://ecos.fws.gov/ServCat/Reference/Profile/68062

Page 6-11, Section 6.1.11 Native American Heritage Commission Sacred Lands File Search, Paragraph 2:

A second SLF search was requested to support this EIR effort which included both the FERRF site, all off-site areas, and the area within a ½ mile radius of the project. ~~Outreach was made to five tribes identified by the NAHC.~~ The NAHC replied with a letter dated September 1, 2020, which indicated that the Sacred Lands File had information about the presence of Native American cultural resources in the immediate project area. A list of additional contacts was provided. On October 3, 2020, certified letters were also sent to these contacts, consisting of the following groups:

- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Costanoan Rumsen Carmel Tribe
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
- The Ohlone Indian Tribe

The Certified letters were followed-up with emails (October 16, 2020) and telephone calls to each of the tribes. No written responses from any of the tribes was received. Two tribal contacts were reached by phone.

Irene Zwierlein, Chairperson for the Amah Mutsun Tribal Band of Mission San Juan Bautista was reached via telephone on October 27, 2020. Ms. Zwierlein stated that she knew of four projects near the project's APE for the distribution pipelines which contained burials.

Andrew Galvan of The Ohlone Indian tribe was reached via telephone on October 27, 2020. Mr. Galvan stated that there were burials discovered during construction adjacent to the project's APE in the vicinity the recycled water distribution pipelines. Mr. Galvan suggested that archaeological and Native American monitor are present during ground-disturbing activities. He further stated that he wanted to be notified about the results of the cultural resources study as well as information about the project as it moves forward. Mr. Galvin was included on the noticing list for the project and received notice of the Draft EIR public comment period.

Page 6-17, New Section After Section 6.2.4.3:

6.2.4.4 Section 6316

Section 6316 of the PRC states that title to all archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the California State Lands Commission.

Page 6-22, Paragraph 4:

The Tom Origer & Associates report concluded that there are no known archaeological resources within the APE.

Page 6-23, Paragraph 3:

Because of the project's proximity to known Native American burial sites, Mitigation Measure CUL-1~~f~~e is recommended to provide cultural resource training to construction crews and archaeological and Native American monitoring for all ground disturbing activities along the Hamilton Avenue section of the recycled water distribution pipeline~~,~~. With implementation these ~~two~~ mitigation measures, the project impact to Tribal Cultural Resources would be less than significant with mitigation incorporated.

Page 6-23, Last Paragraph:

> **Mitigation Measure CUL-1a: Inadvertent Discovery.** In the event archaeological resources are unearthed, all soil disturbing work shall be halted within 60 feet of any discovery. An archaeologist who meets the Secretary of the Interior's Standards for Archaeology and is familiar with Bay Area archaeology must be contacted and the requirements under 36 CFR 800.13 followed. Work shall not commence in the vicinity of the inadvertent discovery until a qualified archaeologist completes a significance evaluation of the find(s) pursuant to Section 106 of the National Historic Preservation Act (36 CFR 60.4). If artifacts are found during construction, construction worker training shall be provided to all crews doing earthwork/soil moving activities.
>
> If a newly discovered resource is, or is suspected to be, Native American in origin, a geographically and culturally affiliated Native American cultural monitor will be retained, as directed by the Native American Heritage Commission (NAHC).

If archaeological resources are found on the north~~ern~~ western segment of the project site (pipeline alignments in Chilco Street, Constitution Drive, Bayfront Expressway crossing, Marsh Road, and IPS) archaeological monitoring will be instigated for those segments. No further ground disturbing work shall be allowed to continue until the archaeologist has fully evaluated the find and approves work to continue. Dependent on the evaluation by the archaeologist, archaeological excavation and recordation may be required before construction can continue. An Archaeological Resource Treatment Plan (ARTP) will be written in consultation with the District.

The District shall consult with the State Lands Commission Attorney should any cultural resources on State lands be discovered during the construction of the project. The final disposition of archaeological, historical, and paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission.

Mitigation Measure CUL-1b: Tribal Resources. It is possible for a lead agency to determine that an artifact is considered significant to a local tribe, and thus considered a significant resource under CEQA, even if it would not otherwise be considered significant under CEQA. As such, all Native American artifacts (tribal finds) or other Tribal Cultural Resources shall be considered as a significant Tribal Cultural Resource, pursuant to PRC 21074 until the lead agency in consultation with the appropriate Tribe has enough evidence to make a determination of significance. Unanticipated discoveries shall be reburied on site. If they cannot be reburied on site, they shall be returned to Tribal custody. Ownership/custody of Native American artifacts, materials, and resources collected from State-owned lands under the jurisdiction of the State Lands Commission shall be returned after evaluation to the culturally affiliated Tribe whenever possible, regardless of significance.

Mitigation Measure CUL-1c: Human Remains. The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are unearthed during construction, the County Coroner will be notified immediately, and no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). All applicable laws pertaining to the discovery of human remains will be followed.

Mitigation Measure CUL-1d: Plan Details. All project plans shall clearly state that ground disturbing activities have the potential for the discovery of human remains.

Mitigation Measure CUL-1e: Construction Monitoring on Hamilton Avenue. Archaeological and Native American monitoring shall be instigated for all ground disturbing activities along the Hamilton Avenue section of the recycled water distribution pipeline. An archaeologist who meets the Secretary of the Interior's Standards for Archaeology and familiar with San Francisco Bay Area archaeology and a geographically and culturally affiliated Native American cultural monitor shall be present at the project site during ground disturbing activities, including machine or hand excavation. No ground disturbing activities, with the exception of road surface removal, shall be allowed

to take place if the archaeologist and Native American monitor are ~~is~~ not present. An archaeological report meeting the Secretary of the Interior's Standards detailing the findings of the monitoring will be submitted to the Northwest Information Center after monitoring has ceased.

Mitigation Measure CUL-1f: Toothless Buckets. All excavator machinery on Hamilton Avenue shall use toothless buckets during ground disturbing activity to allow the monitoring archaeologist to more clearly identify archaeological features, if present.

Mitigation Measure CUL-1g: Cultural Resource Sensitivity Training shall be provided to construction crews that disturb areas of native soil during construction.

Page 13-2, Paragraph 4 of Section 13.4:

As described in ~~**Error! Reference source not found.**~~ Chapter 6, Cultural, Historic, and Tribal Cultural Resources, of this EIR, a Cultural Resources Report (Appendix E) and Historic Resource Evaluation Report (Appendix F) have been prepared for the proposed project.

Page 13-2, Last Paragraph of Section 13.4:

With the implementation of mitigation measures CUL-1 ~~and CUL-2~~ requiring construction monitoring of pipeline construction in Hamilton Avenue and for procedures to be followed if any archaeological or Native American resources are detected during construction, cultural resource sensitivity training, the project would not cause the irreparable loss or damage to a significant archaeological or historic resource or data through construction or operation of the project.

Page 13-11, Last Paragraph of Section 13.5:

A Historical Resource Evaluation Report has been prepared for the project and is presented in

Appendix F and summarized in ~~**Error! Reference source not found.**~~ Chapter 6, Cultural, Historic, and Tribal Cultural Resources, of this EIR.

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Flow Equalization & Resource Recovery Facility Levee Improvements & Bayfront Recycled Water Facility Project

VOL. II - FINAL EIR APPENDICES
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MAY 2021



WEST BAY
SANITARY DISTRICT

West Bay Sanitary District
500 Laurel Street | Menlo Park, CA 94025

West Bay Sanitary District
Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project

Biological Resources Report

Prepared for:
West Bay Sanitary District
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December 2020, Revised April 2021

Table of Contents

List of Abbreviated Terms

AMM	Avoidance and Minimization Measures
BMP	Best Management Practice
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CSSC	California Species of Special Concern
CWA	Clean Water Act
EFH	Essential Fish Habitat
FERRF	Flow Equalization and Resource Recovery Facility
FESA	Federal Endangered Species Act
GPS	Global Positioning System
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NCCP	Natural Community Conservation Plan
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
RWF	Recycled Water Facility
RWQCB	Regional Water Quality Control Board
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WBSD	West Bay Sanitary District

1 Introduction

This report provides an evaluation of biological resources that may be impacted by the proposed West Bay Sanitary District (WBSD) Flow Equalization and Resource Recovery Facility (FERRF) Levee Improvements and Bayfront Recycled Water Facility (RWF) Project (project) in Menlo Park, San Mateo County, California. It identifies sensitive biological resources with potential to occur at the project site, potential impacts to those resources resulting from the project, and recommended measures to avoid significant impacts defined by the California Environmental Quality Act (CEQA).

The report will be used during project planning, environmental review, and in support of applications for resource agency permits. The report includes the following sections:

- Section 2 Project Location and Description: provides an overview of the project
- Section 3 Regulatory Setting: provides a list of the federal, state, and local regulations that pertain to the project
- Section 4 Methods: includes the approach used for the evaluation, including field work and literature review
- Section 5 Environmental Setting: provides a description of the environmental conditions at the project site, including vegetation communities and associated wildlife habitats present, and a discussion of special-status plant and animal species and sensitive communities that are known to occur or that could potentially occur in the project area
- Section 7 Biological Impact Assessment and Avoidance Measures: provides an evaluation of the potential impacts to biological resources that may occur as a result of the project; and responses to the CEQA Guidelines Appendix G questions related to biological resources; and provides recommendations to avoid or minimize impacts to biological resources, as needed, to ensure that the project remains in compliance with all applicable federal, state, and local regulatory requirements and avoids significant impacts under CEQA

2 Project Location and Description

The proposed project is located at the West Bay Sanitary District's 20-acre Menlo Park Flow Equalization and Resource Recovery Facility (FERRF) site, at 1700 Marsh Road (APN 055-400-101), adjacent to Bedwell Bayfront Park in Menlo Park, San Mateo County, California in the *Palo Alto*, California U.S. Geological Survey (USGS) 7.5-minute quadrangle (Appendix A, Figures 1 and 2). The FERRF contains three open basins (also referred to as ponds in this report) that provide a combined 23.5 million gallons of wastewater storage for District flows when the conveyance system to the plant is at capacity, most likely during wet weather events, or when the conveyance system to the plant is undergoing maintenance or repairs.

The FERRF site also contains the decommissioned Menlo Park Wastewater Treatment Plant (WWTP, in service 1952-1980). WBSD currently also uses the FERRF site as extra office space and an auxiliary corporation yard for equipment and material storage, training exercises, pump repair workshop, Capital Improvement Project staging area, and salt marsh plant propagation area.

The existing levees surrounding the site were built in the late 1950's and are not currently certified by the Federal Emergency Management Agency to protect the site from the 100-year flood event. Therefore, the levees require improvement and/or repairs to ensure that both the facility and San Francisco Bay remain protected from raw wastewater cross contamination, including during flood events and the projected 50-year sea level rise elevations.

To receive FEMA certification, WBSD proposes to protect the site from flooding and sea level rise by installing sheet pile walls around the northern and western perimeters of the facility, raising the grades of the perimeter access road within the property, and building an ecotone levee[1] on the north side to promote shoreline resiliency. These are described in more detail below.

In addition to flood improvements, the project includes the proposed Bayfront Recycled Water Facility adjacent to the existing decommissioned water treatment plant. The Bayfront RWF would occupy approximately 12,000 square feet of the study area and be sized to produce up to 1.0 million gallons of recycled water per day. It includes equipment and storage tanks, as described in more detail later in this report. Remnant structures of the decommissioned wastewater treatment plant would remain unaffected by the proposed project facilities except that the project will cap the existing drainage system of the decommissioned wastewater treatment plant at the discharge point to Westpoint Slough and reroute it to discharge into one of the existing storage ponds. No new impervious surfaces created by the project would discharge stormwater off-site.

An existing swale along the eastern boundary of the site will be improved. Improvements include installing an outfall with two short sections of pipe fitted with one-way check valves to

[1] Ecotone levees are a structural, natural, and nature-based adaptation measure comprising gentle slopes or ramps that provide a gradual transition zone between tidal marshes and flood risk management levees. They stretch from the levee crest to the marsh surface and can provide wetland-upland transition zone habitat when properly vegetated with native grasses, rushes, and sedges. They can attenuate waves, provide high-tide refuge for marsh wildlife, and allow room for marshes to migrate upslope with sea level rise.

allow stormwater to drain into the Bay without allowing seawater to backup into the swale. The improvements to the swale are described in some detail later.

The Bayfront RWF system would require new influent and effluent piping and a pump station to connect the facility with customers (end users) for the recycled water. An influent pump station will be constructed the site of the District's existing pump station at the west side of Marsh Road at the entrance to Bedwell Bayfront Park (Appendix A, Figure 3). It consists of a 12-foot diameter wet well with a few associated above ground control cabinets placed on concrete footings. The wet well is a cylindrical mostly underground structure with an influent pipe at the bottom, discharge pipe at the top, and two submersible pumps (approximately 10-20 horsepower each) to move influent from SVCW to the Bayfront RWF. Only one pump is needed; however, two are provided for redundancy in the event a pump breaks down. Construction of the wet well is expected to require excavation of an approximately 15-foot deep hole.

The new influent pump station and piping would transport the recycled water to customers (end users) in the Menlo Park Bayshore area. Proposed influent and distribution pipeline alignments would be in existing street rights-of-way except for various utility crossings including a high-pressure gas line and railroad properties.

The Bayfront RWF includes two alternatives for disposal of reverse osmosis (RO) concentrate (effluent) including discharging into the existing basins on site and a bayside outfall in the northwest corner of the site. This is described in more detail below.

The FERRF site is largely unpaved. The only impervious areas at the site are the remnant WTTP facilities and a portion of the entrance driveway into the site. Northern coastal salt marsh and tidal slough are located along the western and northern shorelines, and developed and annual grassland border the eastern and southern boundaries of the FERRF property.

The District's objectives for the proposed project are to:

- Provide FEMA certified levee improvements to the FERRF to protect the facility and San Francisco Bay water quality in a 100-year flood event and guard against projected 50-year sea level rise estimates.
- Maintain the FERRF site's existing function and preserve maximum flow equalization storage at the site.
- Incorporate an ecotone levee (living shoreline) on a portion of the site to promote shoreline resiliency and avoid the loss of wetlands and upland habitat caused by climate change.
- Provide a 1.0 MGD capacity Bayfront RWF to provide recycled water to address demand and provide an additional revenue stream to the District.

- Improve the existing ditch that serves as storm drainage along the eastern portion of the parcel to allow storm water to drain to the slough while not allowing bay water to infiltrate the property.
- Decommission the existing outfall/drainage system for the retired treatment plant at the discharge point and reconfigure onsite stormwater drainage to drain to the on-site ponds.

2.1 Sheet Pile Installation

Sheet pile walls are interlocking steel metal plates (3/8-inch thick, 12-inches wide, 35 feet tall/long) that will be driven or vibrated into the existing earthen levees. The proposed thickness of the piles is based on predicted erosion rates and the minimum service life of the material. Approximately 3,400 linear feet of sheet piles would be placed at the top of the bank along the western and northern portions of the FERRF site, with a short, approximately 200-foot section extending onto Menlo Park land at the site entrance. A double wall (two walls in parallel) is planned on the north side of the site to improve seismic stability of the existing northern levee.

The sheet piles would be driven or vibrated into the ground approximately 30 feet deep, while leaving the top of the pile at a height of 15 feet (North American Vertical Datum of 1988, or NAVD 88) in elevation. This height was selected to account for the FEMA flood height as well as the projected 50-year sea level rise height. The 50-year sea level rise projection used to establish the proposed sheet pile height is the San Mateo County Sea Level Rise and Overtopping Analysis for San Mateo County's Bayshore, developed using the BCDC's Adapting to Rising Tides Methodology (May 2016).

Early conversations with the sheet pile contractor indicated that a potential method could be use of a single directional drill rig with a vibrational hammer. A key step in this process is to predrill through existing fill with an auger to make installation easier and reduce vibration. Spoils would not need to be extracted since the goal is just to break up the compacted levee soil for easier installation of the sheet piles.

The western perimeter levee varies in elevation from 10- to 12-foot elevation; therefore, approximately three to five (3-5) feet of sheet pile would remain visible above ground. The double pile wall along the north of the site would not be visible above ground because the ecotone levee on the north side of the wall and the northern perimeter levee/roadway to the south of the wall would both be brought up to the same 15-foot elevation with fill.

The outboard face of the exposed areas of sheet pile wall will include modular unit wall enhancements that attach to the wall structure to provide physical habitat for sessile (immobile) organisms, such as mussels and algae, and refuge and forage for fish species. The modular units are made from a bio-enhanced concrete mix with surface complexity and physical design that provides suitable environmental conditions for marine flora and fauna. The wall

enhancements can increase the habitat value of the vertical wall by providing habitat that would not otherwise be provided. The modular units target the recruitment of native fish and invertebrates once sea level rise inundates the exposed sheet pile.

2.2 Recycled Water Facility and Treated RO Effluent

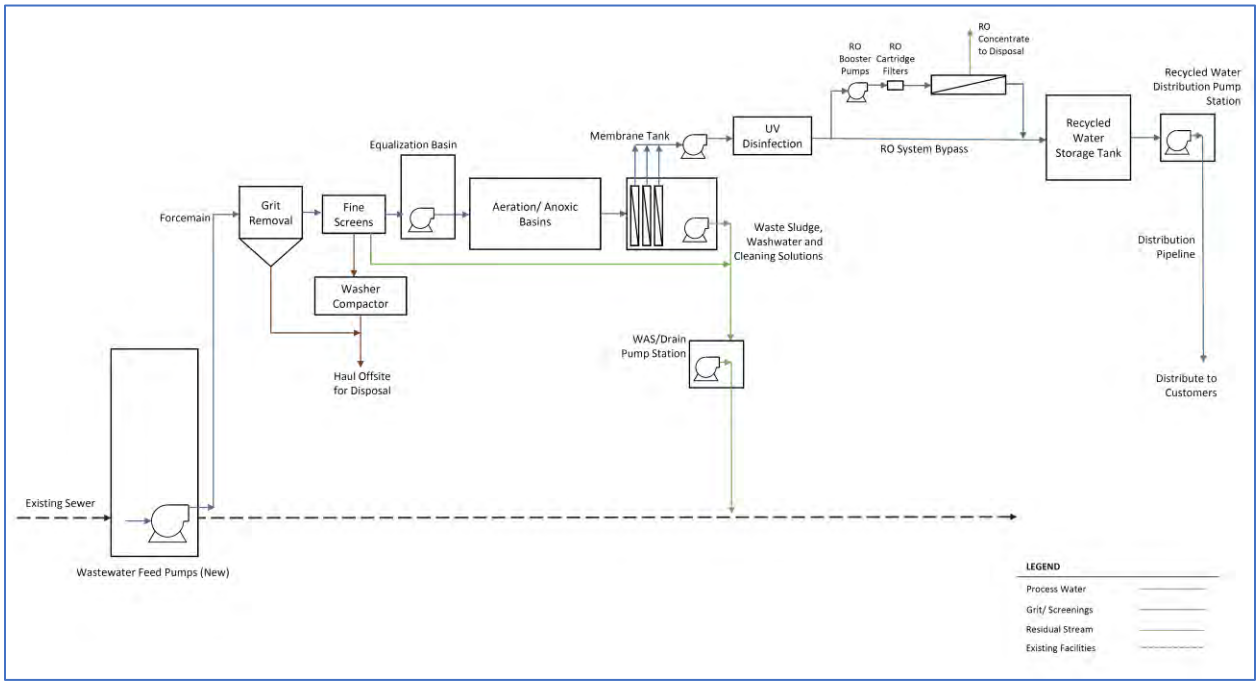
As described in the project EIR, in 2014 the WBSD completed a Recycled Water Market Survey, including a preliminary market and recycled water supply assessment and evaluation of three conceptual alternatives to provide recycled water to customers and assess overall feasibility of adding recycled water to the available water supply portfolio. As a result of the market survey, the District proceeded with design and construction of a satellite treatment plant at Sharon Heights Golf Course & Country Club in Menlo Park to provide recycled water for irrigation at the golf course, Stanford Linear Accelerator Center (SLAC), and other customers in the area. The facility began operations in March 2020.

The District also prepared a Bayfront Recycled Water Facilities Plan (Woodard & Curran 2019) to evaluate implementation of a recycled water facility project in the Bayfront area. The proposed Bayfront RWF is a result of these initial planning efforts. Title 22 of the California Code of Regulations (Title 22) specifies the allowable uses of recycled water based on the target level of treatment. The proposed Bayfront RWF would produce disinfected tertiary recycled water, commonly referred to as “purple pipe” water. Potential uses in WBSD’s service area are categorized as irrigation, commercial cooling tower and other industrial uses, fire-fighting, public fill stations, or for flushing toilets. The service areas for recycled water for the Sharon Heights and proposed Bayfront RWF do not overlap.

The proposed Bayfront RWF would operate year-round and occupy an approximately 12,000 square foot area just west of the decommissioned WWTP and would be sized to produce up to 1.0 MGD of recycled water (approximately 550 acre-feet per year).

The major components of the Bayfront RWF include an influent flow diversion structure, submersible influent pumps, influent force main, grit removal and screen fines that would be off hauled, dual fine screen, equalization basin, equalization return pumps, anoxic basin with mixers and feed forward pumps, aerobic basin with mixer and feed forward pumps and diffusers, membrane basins with membrane cassettes, permeate pumps, reverse osmosis (RO) system, chemical system for membrane cleaning, recycled water tank and distribution pumps, distribution pipeline, odor control system, electrical and supervisory control and data acquisition (SCADA) system, standby generator, sampling system and laboratory testing areas. The Bayfront RWF process flow schematic is shown below.

WATER RECYCLING FACILITY PROCESS FLOW SCHEMATIC



Source: Woodard & Curran 2020. [2020.04.06 Process Schematic_MBR+RO_Rev.pdf]

The Bayfront RWF processes listed above and shown in the process flow schematic would be housed in structures at the FERRF site including:

- A concrete masonry unit (CMU) headworks building approximately 25 feet wide by 50 feet wide and 18 feet high);
- Below grade concrete basins consisting of equalization, anoxic, aerobic, and membrane basins approximately 50 feet wide by 90 feet long and 15 feet deep);
- CMU reverse osmosis (RO) facility approximately 25 feet wide by 20 feet long and 18 feet high;
- CMU operations and laboratory building approximately 25 feet wide by 20 feet long and 13 feet high;
- Below grade recycled water holding tank approximately 15 feet wide by 15 feet long and 10 feet deep;
- Pad for odor control system approximately 30 feet wide by 20 feet long;
- Electrical service transformer pad located separate from the treatment facility approximately 6 feet wide by 6 feet long;
- Reverse osmosis (RO) concentrate discharge storage tank (one (1) tank, 25,000-gallon size or 2 (two) 12,500-gallon tanks) and RO concentrate discharge pipeline (to Pond 3 or outfall to slough);

- Two (2) steel, 0.5 MG recycled water storage tanks (55 feet diameter, 30 feet high); and
- Distribution pump station building approximately 25 feet long by 13 feet wide and 10-foot-high building to house two pumps (between 30 to 100 hp each) and their controls.

As noted above, building materials are primarily CMU block construction. None of the above listed features would utilize large windows or highly reflective materials. The Bayfront RWF would be constructed on imported fill to achieve a finished floor elevation of 12 feet, which is 12 inches above the FEMA flood elevation.

The water recycling process results in three waste streams: grit (solids), RO concentrate, and a mix of waste sludge, wash water and cleaning solutions. The grit is collected and disposed of at a sanitary landfill. The waste sludge, wash water and cleaning solutions are disposed of in the sanitary sewer. The RO concentrate will be disposed of in a basin on site, or through an outfall into the adjacent slough. The RO concentrate is the focus of this discussion because it may impact biological resources.

The RO concentrate is remainder fluids from the RO process that are not suitable for irrigation use due to the amount of total dissolved solids (TDA). In general, water recycling involves processing treated domestic wastewater with a membrane bioreactor (MBR) and reverse osmosis (RO) to further purify secondarily treated wastewater to tertiary treated (recycled water) standards. All of the typical constituents found in treated wastewater will be present in the remainder fluids. The flow from the proposed 1 MGD plant is expected to average 0.025 MGD or 25,000 gallons/day, but could be a maximum of 50,000 gallons/day. For comparison, the nearby Palo Alto Wastewater Treatment and Silicon Valley Clean Water Facilities discharge up to 39 MGD and 29 MGD of effluent, respectively (San Francisco Regional Water Quality Control Board Order No. R2-2017-0041 and National Pollutant Discharge Elimination System No. CA0038849).

Concentrations of the constituents will depend on wastewater levels and the efficiency of the wastewater treatment process. Further analysis will be needed for certain metals such as arsenic, copper, lead, nickel, mercury, selenium, and zinc, which are likely to be present at detectable levels. Other constituents potentially present at detectable levels may include antimony, chromium, acrolein, chlorobenzene, chloromethane, toluene, bis(2-ethylhexyl) phthalate, and ammonia. If improperly treated, the wastewater effluent can also include:

- Fine solids
- Excessive organic material
- Excessive nutrients (mainly nitrogen and phosphorus)
- Human pathogens
- Toxic organic chemicals
- Metals

It is proposed that the RO concentrate will be discharged into a pond onsite (e.g., Pond 3) and left to evaporate by 50 percent at which time it can be off-hauled to a landfill. When the pond is filled and there is no capacity for the RO concentrate, the RO concentrate would be discharged to the slough continuously at an average temperature of 25 degrees Celsius (77 degrees Fahrenheit). The proposed outfall is located at the northwestern corner of the site where tidal action and water depth can provide the greatest dilution. Based on influent wastewater from SVCW, the RO concentrate that would be generated as part of the second waste stream is expected to exhibit the pollutant concentrations listed in the table below.

REVERSE OSMOSIS CONCENTRATE CONCENTRATIONS

Pollutant	# of Samples	SVCW Effluent Concentration (assumed RO influent)		Projected RO Concentrate Concentration	
		95th Percentile (ug/L)	Average (ug/L)	Estimated 95th Percentile (ug/L)	Estimated Average Concentration (ug/L)
Arsenic, Total	60	1.4	1.00	7.0	5.0
Copper, Total	60	11	7.41	55	37
Lead, Total	60	0.28	0.19	1.4	0.93
Nickel, Total	60	5.3	3.97	27	20
Mercury, Total	60	0.0082	0.0050	0.041	0.025
Selenium, Total	60	0.79	0.48	4.0	2.4
Zinc, Total	60	19	14.40	95.3	72
Cyanide, Total (as CN)	60	4.3	2.84	22	14

Source: Woodard & Curran (W&C) 2020. SVCW effluent data for the period June 2015 – May 2020 was used for all pollutants analyzed. All available data was used, without removing any potential outliers. W&C assumed the water quality of the SVCW effluent would be similar to the influent RO water quality for WBSD. W&C assumed 80% RO flow recovery and RO rejection of 100% for all pollutants.

2.3 Ecotone Levee

An ecotone is a transition zone between natural communities. A community is composed of plant and animal species occupying a given area. Because the transition zone includes elements from adjacent communities, its structure and composition results in a unique ecosystem called an ecotone. The ecotone is the transition zone that supports plant and animal

species from all adjacent communities, as well as those species adapted to the environment in the ecotone itself. An ecotone is often populated by a rich diversity of life. In general, the greater the contrast between adjoining communities, the greater diversity of species present (Cadenasso et al. 2003; Lindenmayer and Fischer 2006).

Between 70% and 93% of historic wetlands within San Francisco Bay Estuary have been lost due to agriculture, salt production, and urbanization. Conservation of existing wetlands is critical to preserving habitats for special-status species, fish, migratory birds, and protecting the seashore from erosion and flooding. Furthermore, there is increasing awareness of the important link between tidal wetlands, ecotones, and upland habitats. Ecotones and upland habitats play an important role in food web dynamics in tidal wetlands, provide important buffers to reduce human effects from adjacent urban and residential areas that commonly border wetlands around the Bay, and they provide refuge for wetland animals during extreme high tides. Over the long term, ecotones and upland habitats could also provide substantial benefits because they could serve as critical areas for upland migration of wetlands, when considering predicted increases in rates of sea-level rise (Callaway et al. 2011).

Within the San Francisco Bay estuary, tidal wetlands with intact, undeveloped upland habitats contain the largest remaining populations of special-status species, including Salt marsh harvest mouse (*Reithrodontomys raviventris*) and California Ridgway's rail (*Rallus longirostris obsoletus*) (Sustaita et al. 2011; Whitcraft et al. 2011; Overton and Wood 2015), underlying the importance of natural ecotones in the persistence of these species. In addition, the San Francisco Bay estuary is one of the most important staging and wintering areas for migratory waterfowl and shorebirds in the Pacific Flyway (Harvey et al. 1992).

Currently, there is a very narrow transition zone between the top of the levee and the salt marsh on the north side of the project (Figure 3). While the salt marsh is a natural community, the man-made levee is dominated by sparse, non-native vegetation and subject to regular human disturbance, which diminishes the habitat value of the levee (see Section 5.2). The project will create a wider upland transition zone, planted with native vegetation, between the existing salt marsh habitat and levee on the north side of the project site. The proposed approximately 3.1-acre ecotone levee will provide higher quality native upland refugia habitat as well as a natural wildlife corridor. With a projected sea level rise of up to 1.9 feet by 2050 under a high emissions scenario, the majority of the existing salt marsh habitat on the north side of the Biological Study Area (BSA) will be permanently inundated (completely under water), resulting in a permanent loss of wetlands in just 30 years. Construction of an ecotone levee would mitigate for the permanent loss of wetlands from projected sea level rise.

The use of ecotone levees has also been proposed as one of several natural measures to protect coastlines from the coastal flood hazard associated with climate change (Point Blue Conservation Science, et al. 2019). Global sea levels are rising as a result of climate change.

With sea levels projected to rise up to 6.9 feet by 2100 under a high emissions scenario for greenhouse gases, vital infrastructure along the coast is at risk from tidal inundation as well as an increase in the frequency and magnitude of storm surges (Chen et al. 2017; Rahmstorf 2017; OPC 2018).

The proposed ecotone levee is a sea level rise adaptation specifically identified in the San Francisco Estuary Institute Adaptation Atlas. It provides resiliency against sea level rise by maintaining upland habitat for special status species that would otherwise eventually be wholly under water. (Appendix A, Figure 3).

The District participated in two Interagency Meetings (August 2018 and July 2019), and two site visits (one with RWQCB staff and one with USFWS staff) to solicit early comments on the project. At the first Interagency Meeting in 2018 the agencies recommended that the project incorporate an ecotone levee into project design.

At the second Interagency Meeting on July 11, 2019, the District introduced the ecotone levee, and identified that the existing facilities would be used for a recycled water facility. The meeting was attended by staff from the USACE, National Marines Fisheries Service (NMNFS), the USFWS, RWQCB, and SLC.

The San Francisco Bay Shoreline Adaptation Atlas defines an ecotone levee as a gentle slope or ramp (with a length to height ratio of 20:1 or gentler) bayward of a flood risk management levee and landward of a tidal marsh (SFEI and SPUR 2019). Ecotone levees can attenuate waves, provide high-tide refuge for marsh wildlife, and allow room for marshes to migrate upslope with sea level rise. In addition, levees wider than 80 feet, planted with dense vegetation between 1.6 and 3.3 feet tall, can provide measurable benefits to tidal marsh dependent birds, both in the short- and long-term (Wasson et al. 2013; SFEI and SPUR 2019).

The use of ecotone levees to mitigate for sea level rise is also consistent with the goals and objectives of the 2016 Comprehensive Conservation and Management Plan (CCMP) for the San Francisco Estuary (Estuary Blueprint) (San Francisco Estuary Partnership 2016). The CCMP was the result of a collaborative effort among 70 Bay and Delta agencies and organizations. One of the goals of the CCMP is to "*Bolster the resilience of Estuary ecosystems, shorelines, and communities to climate change"* and one of the action items of the CCMP is to:

> *"Protect areas between estuarine and terrestrial ecosystems (transition zones), and their ecosystem services, to help the Estuary adapt to rising sea levels. Integrate transition zones into baylands restoration and enhancement projects to provide both migration space and high water refugia."*

Within the San Francisco Bay estuary, ecotone levees may provide higher quality native upland refugia habitat for special-status species and migratory birds; and can increase the resilience of

tidal habitat to climate change by allowing for sea level rise. An ecotone levee may also protect existing infrastructure adjacent to the Bay from future flooding caused by sea level rise.

The San Francisco Estuary Institute (SFEI) and San Francisco Bay Area Planning and Urban Research Association (SPUR) published the San Francisco Bay Shoreline Adaptation Atlas, which identifies effective shoreline adaptation strategies that are appropriate for specific settings and take advantage of natural processes (SFEI and SPUR 2019). The report divides the San Francisco Bay shoreline into 30 operational landscape units (OLUs) which are connected geographic areas that share common physical characteristics that would benefit from being managed as individual units. The report identifies the shoreline along the northern levee of the FERRF site as potentially suitable for an ecotone levee that can address coastal risks including storm surge, erosion, and short-term and long-term sea level rise.

The proposed ecotone levee would be located along the northern perimeter of the FERRF site, extend to a height of 15 feet (NAVD 88), and utilize slopes ranging from 20:1 (horizontal to vertical) to 10:1, to maintain some of the existing channel characteristics of Westpoint Slough in the area (see Figure 3 in Appendix A).

The ecotone levee would be built by first installing coffer dams at low tide to isolate the area from tidal action. The coffer dams are expected to be sheet piles that would be vibrated into bay mud using a vibratory hammer (or similar machinery) staged on the top of the existing levee. Dewatering is not expected to be necessary (Freyer & Laureta, pers. comm. December 2020).

Once the construction area is isolated from tidal action the existing marsh vegetation would be mechanically stripped from the area after pre-construction surveys for special-status species are completed. The vegetation would be preserved onsite, watered, and protected so it can be used to revegetate the ecotone levee.

Locally sourced, imported fill would be used to raise the existing northern levee and ecotone levee to an elevation of 15 feet NAV88. The fill used would be specifically sourced from locations supplying appropriate material to support the proposed ecotone levee plantings and shoreline location. Placement of imported fill would be done from the landside, above the mean high tide water line (approximately 6.8 feet elevation; existing levee is between 10 to 12 feet) with the use of loaders, backhoes, and excavators. Dewatering for activities that require work below the mean high tide water line are not expected. If necessary, they would require a site-specific dewatering plan prepared and reviewed as part of project regulatory permit applications. A dewatering plan is also included, if necessary, as a mitigation measure in this report.

Construction activities would take place land side and no activities are planned by boat or barge.

Once grading is complete, the area would be inspected for stability and prepared for planting. Plants from salvaged marsh sod, seeds, and container plants would be installed as determined

by a site planting plan approved by the resource agencies. Temporary irrigation woud be provided during the plant establishment period.

Once all revegetation is installed and inspected by a restoration ecologist the coffer dam would be removed to re-open the area to tidal action. Pending results of a wave run up analysis, the design reviewed and ultimately approved by state and federal resource agencies may include living shoreline elements at the toe of slope of the ecotone levee (e.g., oysters, eel grass). In addition, notches or knick points at the edge adjacent to West Point Slough may be included in the design to encourage dendritic channels to develop.

2.3.1 On-Site Storm Water Improvements

The FERRF has an existing 30-inch pipe, located approximately 20 feet east of the old WWTP, that extends from the WWTP north to an outfall to Westpoint Slough. Since the plant is no longer operational, wastewater is no longer discharged. The proposed project includes capping of this line and rerouting any drainage collected in this line to the existing flow equalization basins.

2.3.2 Storm Ditch Improvements and Grading

There is an existing ditch in Bedwell Bayfront Park, along the south and eastern portion of the FERRF site, that conveys stormwater from Bedwell Bayfront Park and discharges it to Westpoint Slough. The proposed levee improvements on the FERRF site require that the adjacent existing ditch be improved with one-way check valves to allow water to drain off the site, but not allow bay waters to infiltrate back into the drainage ditch. Approximately 460 CY of imported fill would be used to raise the grades in and around the area, including a section of the Bay Trail to 15 feet NAVD 88. The outfall would be sized and designed to ensure slope protection and adequate capacity to prevent flooding, erosion, and siltation.

2.3.3 Entrance Roadway Grading

The entrance to the FERRF site from Marsh Road within Bedwell Bayfront Park would be graded with imported fill to bring the entrance roadway and immediate surrounding areas, including a short segment of the Bay Trail, up to 15 feet NAVD 88. Approximately 2,700 cubic yards of fill is anticipated. A short (less than 5 feet) retaining wall is planned just inside the entrance at the southwest corner of the pond closest to the entrance (Pond 1). Existing paved portions of Marsh Road and the FERRF entrance roadway affected by project activities would be repaved (returned to original condition) and unpaved areas would remain unpaved.

2.3.4 Project Construction Sequence and Schedule

The District intends to build the levee improvements first, followed by the Bayfront RWF. Construction would most likely start with the installation of the sheet piles along the western

portion of the property. Once those sheet piles are in place, the construction would move on to the northern levee and ecotone levee construction phase. This includes salvaging existing site vegetation on the outboard side of the northern levee, raising the existing levee to an elevation of 15 NAV88, and construction of the ecotone levee as well as the storm ditch outfall improvements. The installation of utilities and the raising of the grade on Marsh road would follow. The final phase would consist of the construction of the recycled water treatment plant, the RO concentrate disposal pipeline, the new onsite drainage system, and off-site influent pump station, influent and discharge pipelines.

The proposed project would increase the impervious area at the site by a total of approximately 14,113 square feet (approximately 13,620 square feet for the FERRF and approximately 493 square feet for the influent wastewater pump station).

Construction of the levee improvements is anticipated to begin in early 2022, pending receipt of all required permits. The target date for construction of the Bayfront RWF is in early 2023; however, the proposed project's construction schedule may change depending on the timing and availability of future funding.

The anticipated construction phases, duration, typical equipment used, and number of anticipated workers during construction of the project are summarized below. Construction staging for project activities other than the influent pump station would occur at the project site. Construction staging for the influent pump station would occur at the influent pump station site.

SUMMARY OF PROJECT CONSTRUCTION PHASES, DURATION, AND EQUIPMENT

Construction Activity	Months	Typical Equipment[A]	Workers[B]
1. Sheet Pile Installation	1	Excavator (1), Loader (1), Dozer (1), Water Truck (1), Auger Rig (1), Vibrational Hammer / Pile Driver (1)	10
2. Levee/Ecotone Levee and storm drain improvements	1 to 2	Excavator (1), Loader (1), Dozer (1), Water Truck (1), Roller (1), Backhoe (1), Vibrational Hammer / Pile Driver (1)	8
3. FERRF entrance/Marsh Road grade and utilities installation	3 to 6	Excavator (1), Loader (1), Dozer (1), Water Truck (1), Roller (1)	8
4. Recycled Water Treatment Plant	18	Excavator (2), Loader (2), Dozer (2), Water Truck (1), Roller (1), Mobile Crane (1), Impact or Vibrational Hammer / Pile Driver (1)	60[C]

(A) The typical equipment list does not reflect all equipment that would be used during the construction phase.
(B) Worker numbers are approximate.
(C) Reflects the number of workers present during the peak construction period of this activity.

2.3.5 Estimated Fill Quantities

The District estimates the project would require the import of approximately 32,250 cubic yards (CY) of fill for the levee improvements and raising grades in and around the site. These numbers are expected to be refined once the ecotone levee design is approved by the resource agencies. These estimates are based on an ecotone levee size of about 3.46 acres, including upland and marsh.

FILL QUANTITIES

Location	Cut/Fill/Off-Haul Amount (CY)
Levee Fill	10,350 CY
Ecotone Fill	17,900 CY
Bayfront RWF Fill	840 CY
Entrance Driveway Fill	2,700 CY
Storm Ditch/Bedwell Bayfront Park Fill	460 CY
Total Fill	**32,250 CY**

3 Regulatory Setting

Biological resources in California are protected under federal, state, and local laws. The laws that may pertain to the biological resources found on the project site are described in this section.

3.1 Federal

3.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under FESA. FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the United States (U.S.) Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), (3) prohibitions against "taking" (i.e., harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take". FESA also discusses recovery plans and the designation of critical habitat for listed species.

Both the USFWS and NOAA Fisheries share the responsibility for administration of FESA. Section 7 requires federal agencies, in consultation with, and with the assistance of the USFWS or NOAA Fisheries, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Non-federal agencies and private entities can seek authorization for take of federally listed species under Section 10 of FESA, which requires the preparation of a Habitat Conservation Plan.

3.1.2 U.S. Migratory Bird Treaty Act

The U.S. Migratory Bird Treaty Act (MBTA; 16 USC §§ 703 et seq., Title 50 Code of Federal Regulations [CFR] Part 10) states it is "unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest or egg thereof…" In short, under MBTA it is illegal to disturb a nest that is in active use,

since this could result in killing a bird, destroying a nest, or destroying an egg. The USFWS enforces MBTA. The MBTA does not protect some birds that are non-native or human-introduced or that belong to families that are not covered by any of the conventions implemented by MBTA. In 2017, the USFWS issued a memorandum stating that the MBTA does not prohibit incidental take; this was followed in 2020 with an Environmental Impact Statement and a proposed rule to formalize this change to the MBTA. Incidental take refers to impacts to migratory birds incidental to an otherwise lawful activity, as opposed to purposefully destroying migratory birds. The MBTA is limited to purposeful actions, such as directly and knowingly removing a nest to construct a project, hunting, and poaching.

3.1.3 Marine Mammal Protection Act

The Marine Mammal Protection Act prohibits the take of marine mammals, with certain exceptions, in waters under the jurisdiction of the U.S. or by citizens of the U.S. on the high seas, as well as the importation of marine mammals and marine mammal products into the U.S. Take is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.” Harassment is defined as “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”

3.1.4 Clean Water Act

The Clean Water Act (CWA) is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (EPA). However, the EPA depends on other agencies, such as the individual states and the U.S. Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 404 and 401 of the CWA apply to activities that would impact waters of the U.S. The USACE enforces Section 404 of the CWA and the California State Water Resources Control Board enforces Section 401.

Section 404

As part of its mandate under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into “waters of the U.S.”. “Waters of the U.S.” include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high-water marks. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in

saturated soil conditions" (33 CFR 328.3(b)). The discharge of dredged or fill material into waters of the U.S. is prohibited under the CWA except when it is in compliance with Section 404 of the CWA. Enforcement authority for Section 404 was given to the USACE, which it accomplishes under its regulatory branch. The EPA has veto authority over the USACE's administration of the Section 404 program and may override a USACE decision with respect to permitting.

In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line (HTL) (see 33 CFR, Part 328.4). The HTL is defined in 33 CFR, Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The HTL may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gauges, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other tides that occur with periodic frequency, but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm."

Substantial impacts to waters of the U.S. may require an Individual Permit. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits, provided that such permits' other respective conditions are satisfied. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions (see below).

Section 401

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to the USACE a certification or waiver from the State of California. The "401 Certification" is provided by the State Water Resources Control Board through the local Regional Water Quality Control Board (RWQCB).

The RWQCB issues and enforces permits for discharge of treated water, landfills, storm-water runoff, filling of any surface waters or wetlands, dredging, agricultural activities and wastewater recycling. The RWQCB recommends the "401 Certification" application be made at the same time that any applications are provided to other agencies, such as the USACE, USFWS, or NOAA Fisheries. The application is not final until completion of environmental review under the CEQA. The application to the RWQCB is similar to the pre-construction notification that is required by the USACE. It must include a description of the habitat that is being impacted, a description of how the impact is proposed to be minimized and proposed mitigation measures with goals, schedules, and performance standards. Mitigation must include a replacement of

functions and values, and replacement of wetland at a minimum ratio of 2:1, or twice as many acres of wetlands provided as are removed. The RWQCB looks for mitigation that is on site and in-kind, with functions and values as good as or better than the water-based habitat that is being removed.

Section 402

Section 402 of the Clean Water Act requires that all construction sites on an acre or greater of land (see Section 3.4.4 below), as well as municipal, industrial and commercial facilities discharging wastewater or stormwater directly from a point source (a confined and discrete conveyance, such as a pipe, ditch, channel, tunnel, conduit, discrete fissure, or container) into a surface water of the United States (a lake, river, and/or ocean) must obtain permission under the National Pollutant Discharge Elimination System (NPDES) permit. The EPA issues NPDES permits to ensure the receiving waters of the U.S. will achieve specified Water Quality Standards (WQS). The EPA has fully authorized certain states to issue NPDES permits, including the State of California. However, the EPA retains the authority to consider effects on federally listed species and critical habitat, through Section 7 of the FESA, in its approval and oversight of state-run NPDES programs.

All point discharges in the California require a NPDES permit from the RWQCB. In California, NPDES permits are also referred to as waste discharge requirements (WDRs). California Water Code Section 13260 states that persons discharging or proposing to discharge waste that could affect the quality of the waters of the State, other than into a community sewer system, shall file an Application/Report of Waste Discharge (ROWD).

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the RWQCB's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes implementation programs to achieve water quality objectives. All point discharges into the Bay will be evaluated against the objectives set forth in the Basin Plan, covering over 126 priority pollutants.

3.1.5 Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 prohibits the creation of any obstruction to the navigable capacity of waters of the U.S., including discharge of fill and the building of any wharfs, piers, jetties, and other structures without Congressional approval or authorization by the Chief of Engineers and Secretary of the Army (33 U.S. Code 403). Navigable waters of the U.S., which are defined in 33 CFR, Part 329.4, include all waters subject to the ebb and flow of the tide, and/or those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as “the line on the shore reached by the plane of the mean (average) high water (MHW).” Where

precise definition of the actual location of the MHW line becomes necessary, it must be established by survey with reference to the available tidal datum. The USACE does not regulate wetlands under Section 10, only the open waters component of tidal habitat (under the Rivers and Harbors Appropriation Act of 1899), and there is overlap between Section 10 jurisdiction, which extends landward to the MHW and Section 404 jurisdiction, which extends landward to the HTL.

As mentioned above, Section 404 of the CWA authorizes the USACE to issue permits to regulate the discharge of dredged or fill material into waters of the U.S. If a project also proposes to discharge dredged or fill material and/or introduce other potential obstructions in navigable waters of the U.S., a Letter of Permission authorizing these impacts must be obtained from the USACE under Section 10 of the Rivers and Harbors Act.

3.1.6 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from the NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Additionally, along the West Coast, NOAA Fisheries relies on Fishery Management Councils to identify habitats that fall within Habitat Areas of Particular Concern (HAPC). These areas provide important ecological functions and/or are especially vulnerable to degradation. HAPCs are discreet subsets of Essential Fish Habitat that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPC are not afforded any additional regulatory protection under the Magnuson-Stevens Act; however, federal projects with potential adverse impacts on HAPC are more carefully scrutinized during the consultation process. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH and respond in writing to recommendations by the NMFS.

3.2 State

3.2.1 California Environmental Quality Act

The CEQA (Public Resources Code Sections 21000 et. seq.) requires public agencies to review activities which may affect the quality of the environment so that consideration is given to preventing damage to the environment. When a lead agency issues a permit for development that could affect the environment, it must disclose the potential environmental effects of the project. This is done with an "Initial Study and Negative Declaration" (or Mitigated Negative

Declaration) or with an “Environmental Impact Report”. Certain classes of projects are exempt from detailed analysis under CEQA.

CEQA Guidelines Section 15380 defines endangered, threatened, and rare species for purposes of CEQA and clarifies that CEQA review extends to other species that are not formally listed under the state or federal Endangered Species Acts but that meet specified criteria. The state maintains a list of sensitive, or “special-status”, biological resources, including those listed by the state or federal government or the California Native Plant Society (CNPS) as endangered, threatened, rare or of special concern due to declining populations. During CEQA analysis for a proposed project, the California Natural Diversity Data Base (CNDDB) is usually consulted. CNDDB relies on information provided by the California Department of Fish and Wildlife (CDFW), USFWS, and CNPS, among others. Under CEQA, the lists kept by these and any other widely recognized organizations are considered when determining the impact of a project. CDFW is a trustee agency under CEQA and, as a trustee agency, will review any CEQA document prepared for a project.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA; Fish and Game Code 2050 et seq.) generally parallels the FESA. It establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or by the regulations. “Take” is defined in Section 86 of the California Fish and Game Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” This definition differs from the definition of “take” under FESA. CESA is administered by CDFW. CESA allows for take incidental to otherwise lawful projects but mandates that State lead agencies consult with the CDFW to ensure that a project would not jeopardize the continued existence of threatened or endangered species.

3.2.3 California Fish and Game Code Sections 1600-1607

Sections 1600-1607 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement (LSAA) application be submitted to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions in the application and, if necessary, prepares a LSAA that includes measures to protect affected fish and wildlife resources, including mitigation for impacts to bats and bat habitat. These code sections apply to freshwater rivers, streams and lakes, and do not apply to tidal waters. While CDFW may comment on the project as a Trustee Agency under CEQA, a Lake or Streambed Alteration Agreement would not apply to this project.

3.2.4 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was created in 1977 with the intent to preserve, protect, and enhance rare and endangered plants in California (California Fish and Game Code sections 1900 to 1913). The NPPA is administered by CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take." CDFW maintains a list of plant species that have been officially classified as endangered, threatened or rare. These special-status plants have special protection under California law and projects that directly impact them may not qualify for a categorical exemption under CEQA guidelines.

3.2.5 Fully Protected Species and Species of Special Concern

The classification of California fully protected (CFP) species was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (§5515 for fish, §5050 for amphibian and reptiles, §3511 for birds, §4700 for mammals) deal with CFP species and state that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species" (CDFW Fish and Game Commission 1998). "Take" of these species may be authorized for necessary scientific research. This language makes the CFP designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with CFP species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

California species of special concern (CSSC) are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under CEQA during project review.

3.2.6 California Migratory Bird Protection Act

Fish & Game Code section 3513 states that Federal authorization of take or possession is no longer lawful under the state Fish & Game Code if the Federal rules or regulations are

inconsistent with state law. The California Migratory Bird Protection Act (MBPA) was passed in September 2019 to provide a level of protection to migratory birds in California consistent with the U.S. MBTA prior to the 2017 rule change limiting protection of migratory birds under the U.S. MBTA to purposeful actions (i.e., directly and knowingly removing a nest to construct a project, hunting, and poaching). Thus, under the MBPA protections for migratory birds in California are consistent with rules and regulations adopted by the United States Secretary of the Interior under the U.S. MBTA before January 1, 2017. The MBPA reverts to existing provisions of the U.S. MBTA on January 20, 2025.

3.2.7 Nesting Birds

Nesting birds, including raptors, are protected under California Fish and Game Code Section 3503, which reads, “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” In addition, under California Fish and Game Code Section 3503.5, “it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto”. Passerines and non-passerine land birds are further protected under California Fish and Game Code 3513. As such, CDFW typically recommends surveys for nesting birds that could potentially be directly (e.g., actual removal of trees/vegetation) or indirectly (e.g., noise disturbance) impacted by project-related activities. Disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by CDFW.

3.2.8 Non-Game Mammals

Sections 4150-4155 of the California Fish and Game Code protects non-game mammals, including bats. Section 4150 states “A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A non-game mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission”. The non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. Bats are classified as a non-game mammal and are protected under California Fish and Game Code.

3.2.9 Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW (i.e., CNDDB) or the USFWS. The CNDDB identifies a number of

natural communities as rare, which are given the highest inventory priority (Holland 1986; CDFW 2016). Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

3.2.10 Porter-Cologne Water Quality Control Act

The intent of the Porter-Cologne Water Quality Control Act (Porter-Cologne) is to protect water quality and the beneficial uses of water, and it applies to both surface and ground water. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans, which identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne, referred to as “waters of the State,” include isolated waters that are not regulated by the USACE. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, any person discharging, or proposing to discharge, waste (e.g. dirt) to waters of the State must file a Report of Waste Discharge and receive either waste discharge requirements (WDRs) or a waiver to WDRs before beginning the discharge.

3.2.11 California State Lands Commission

The California State Lands Commission has jurisdiction and management over sovereign state-owned lands, lands sold directly to settlers from the federal government, lands granted to the state for sale or use, and lands granted by a prior sovereign (i.e., rancho and pueblo lands). Sovereign lands include approximately four million acres of land underlying the State’s navigable and tidal waterways, including the beds of California’s navigable rivers, lakes and streams, as well as the state’s tide and submerged lands along the State’s approximately1,100 miles of coastline and offshore islands.

The Commission holds its sovereign lands for the benefit of all the people of the State, subject to the Public Trust for water related commerce, navigation, fisheries, recreation, open space and other recognized Public Trust uses. Authorization from the Commission is required if there are plans to build upon or otherwise occupy any lands described above, such activity may be within the Commission’s jurisdiction. The Commission also monitors sovereign land granted in trust by the California Legislature to approximately 70 local jurisdictions that generally consist of prime waterfront lands and coastal waters. The Commission protects and enhances these lands and natural resources by issuing leases for use or development, providing public access, resolving boundaries between public and private lands, and implementing regulatory programs to protect state waters from oil spills and invasive species introductions.

The Commission's jurisdiction for tidal lands extends from the mean high tide line to three nautical miles offshore. Except for those locations where the boundary has been permanently fixed by either a court or an agreement with the Commission, the boundary of tidal lands is classified as an ambulatory boundary because it is based on the location of the water. The ambulatory boundary is determined from the mean high tide, which can be determined by either the published MHW elevation from the closest NOAA tide station to the project or a linear interpolation between two adjacent tide stations, depending on tidal regime characteristics. The current tidal datum and epoch should be used (presently NAVD88 and 1983-2001, respectively). Local, published control benchmarks should be used in determining elevations at the survey site. Control benchmarks are the monuments on the ground that have been precisely located and referenced to the local tide stations and vertical datum used to calculate the mean high tide elevation and the elevation datum must match that of the tidal datum.

3.2.12 The McAteer-Petris Act and the Bay Conservation and Development Commission

In response to uncoordinated and indiscriminate filling of the Bay, the California legislature passed the McAteer-Petris Act in 1965, establishing the San Francisco Bay Conservation and Development Commission (BCDC) as the management and regulatory agency for the San Francisco Bay and Delta. A permit must be obtained from the BCDC for shoreline projects; dredge and fill activities in the Bay or certain tributaries, salt ponds, or managed wetlands; and Suisun Marsh projects. The limits of BCDC jurisdiction are defined in the Bay Plan (BCDC 2012) and include a 100-foot-wide band along the shoreline of the Bay. The "shoreline" is defined as all areas that are subject to tidal action from the south end of the Bay to the Golden Gate (Point Bonita-Point Lobos), and to the Sacramento River line (a line between Stake Point and Simmons Point, extended northeasterly to the mouth of Marshall Cut). In addition, the BCDC will take jurisdiction over the marshlands lying between mean high tide and up to 5 feet above mean sea level (MSL), where marsh vegetation is present; tidelands (land lying between mean high tide and mean low tide); and submerged lands (land lying below mean low tide). In relation to salt ponds, the BCDC will claim "salt ponds consisting of all areas which have been diked off from the Bay and have been used during the three years immediately preceding 1969 for the solar evaporation of Bay water in the course of salt production" (BCDC 2020).

The BCDC may claim jurisdiction over the tidal marsh in the study area. Additionally, a 100-foot area extending laterally landward of the Bay Shoreline, located at 5 feet above MSL would be jurisdictional as Shoreline Band. A total of 11.75 acres of the study area is potentially subject to BCDC jurisdiction (Appendix A, Figure 8). Any impacts to tidal marsh and the Shoreline Band lands will require a permit from the BCDC.

3.2.13 State and Local Requirements to Control Construction-Phase and Post-Construction Water Quality Impacts

Construction Phase. The CWA has nationally regulated the discharge of pollutants to the waters of the U.S. from any point source since 1972. In 1987, amendments to the CWA added Section 402(p), which established a framework for regulating nonpoint source storm water discharges under the National Pollutant Discharge Elimination System (NPDES). The NPDES is a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the U.S. In California, this permit program is administered by the RWQCBs. The NPDES General Construction Permit requirements apply to clearing, grading, and disturbances to the ground such as excavation. Construction activities on one or more acres are subject to a series of permitting requirements contained in the NPDES General Construction Permit. This permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to be implemented during project construction. The project sponsor is also required to submit a Notice of Intent (NOI) with the State Water Resources Control Board Division of Water Quality. The NOI includes general information on the types of construction activities that would occur on the site.

Post-Construction Phase. In many Bay Area counties, including San Mateo County, projects must also comply with the *California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit* (MRP) (Water Board Order No. R2-2009-0074). This MRP requires that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevents stormwater runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

3.3 Local

3.3.1 City of Menlo Park ConnectMenlo General Plan

The following goals, policies, and programs from the City of Menlo Park's General Plan Open Space/, Noise, and Safety Elements are relevant to the environmental factors potentially affected by the proposed project because adjacent land uses include open space and tidal habitat. However, the flow equalization facility is not classified into a zoning district and therefore is not specifically designated in the City's General Plan Land Use Element.

- *Goal LU-4*: Promote the development and retention of business uses that provide goods or services needed by the community that generate benefits to the City and avoid or minimize potential environmental and traffic impacts.

  - *Policy LU-4.5: Business Uses and Environmental Impacts*. Allow modifications to business operations and structures that promote revenue-generating uses for which potential environmental impacts can be mitigated.

- *Goal LU-6*: Preserve open-space lands for recreation; protect natural resources and air and water quality; and protect and enhance scenic qualities.
  - *Policy LU-6.5: Open Space Retention*. Maximize the retention of open space on larger tracts (e.g., portions of the St. Patrick's Seminary site) through means such as rezoning consistent with existing uses, clustered development, acquisition of a permanent open space easement, and/or transfer of development rights.
  - *Policy LU 6.6: Public Bay Access*. Protect and support public access to the Bay for the scenic enjoyment of open water, sloughs, and marshes, including restoration efforts, and completion of the Bay Trail.
  - *Policy LU-6.7: Habitat Preservation*. Collaborate with neighboring jurisdictions to preserve and enhance the Bay, shoreline, San Francisquito Creek, and other wildlife habitat and ecologically fragile areas to the maximum extent possible.
  - *Policy LU-6.8*: *Landscaping in Development.* Encourage extensive and appropriate landscaping in public and private development to maintain the City's tree canopy and to promote sustainability and healthy living, particularly through increased trees and water-efficient landscaping in large parking areas and in the public right-of-way.
  - *Policy LU-6.1: Baylands Preservation*. Allow development near the Bay only in already developed areas.
  - *Program LU-6.D*: *Design for Birds*. Require new buildings to employ facade, window, and lighting design features that make them visible to birds as physical barriers and eliminate conditions that create confusing reflections to birds.
  - *Program LU-6.E: Don Edwards National Wildlife Refuge*. Consider the most appropriate zoning designation for the Don Edwards San Francisco National Wildlife Refuge to achieve the preservation and protection of wildlife habitat and ecological values associated with the marshlands and former salt ponds bordering the San Francisco Bay.

- *Goal OSC1*: Maintain, Protect, and Enhance Open Space and Natural Resources.
  - *Policy OSC1.1: Natural Resources Integration with Other Uses.* Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.
  - *Policy OSC1.2: Habitat for Open Space and Conservation Purposes.* Preserve, protect, maintain, and enhance water, water-related areas, plant and wildlife habitat for open space and conservation purposes.

- *Policy OSC1.3: Sensitive Habitats*. Require new development on or near sensitive habitats to provide baseline assessments prepared by qualified biologists and specify requirements relative to the baseline assessments.
- *Policy OSC1.4: Habitat Enhancement*. Require new development to minimize the disturbance of natural habitats and vegetation and require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.
- *Policy OSC1.5: Invasive, Non-Native Plant Species*. Avoid the use of invasive, non-native species, as identified on the lists of invasive plants maintained at the California Invasive Plant Inventory and United States Department of Agriculture invasive and noxious weeds database, or other authoritative sources, in landscaping on public property.
- *Policy OSC1.15: Heritage Trees*. Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code – see below).

3.3.2 Bedwell Bayfront Park Master Plan

The Bedwell Bayfront Park Master Plan establishes goals to guide the future development and feature recommendations for additional access and expanded recreational uses (City of Menlo Park 2018). The Master Plan supports Goal LU-6 and OSC1 from the City of Menlo Park General Plan and Goal 4 of the Master Plan is to protect existing sensitive habitats and landfills systems.

3.3.3 City of Menlo Park Municipal Code

The City of Menlo Park Municipal Code contains all ordinances for Menlo Park. Title 16, Zoning, includes regulations relevant to biological resources in the study area as discussed below.

Bird-Friendly Design. Chapter 16.43.140 (6) requires all new construction, regardless of size, to implement the following bird-friendly design measures:

- No more than 10% of facade surface area shall have non-bird-friendly glazing.
- Placement of buildings shall avoid the potential funneling of flight paths towards a building facade.
- Bird-friendly glazing includes, but is not limited to opaque glass, covering of clear glass surface with patterns, paned glass with fenestration patterns, and external screens over non-reflective glass.
- Glass skyways or walkways, freestanding glass walls, and transparent building corners shall not be allowed.
- Transparent glass shall not be allowed at the rooflines of buildings, including in conjunction with green roofs.

- Use of rodenticides shall not be allowed.
- A project may receive a waiver from one (1) or more of the items listed in subsections (6)(A) to (F) of this section, subject to the submittal of a site-specific evaluation from a qualified biologist and review and approval by the planning commission. (Ord. 1024 § 3 (part), 2016).

Landscape Design Plan. Chapter 12.44.090(1)(G) states that the use of invasive and/or noxious plant species is strongly discouraged. Invasive species are defined as those plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. A noxious weed refers to any weed designated by the weed control regulations in the Weed Control Act and identified on a regional district noxious weed control list.

Heritage Trees. Chapter 13.24, Heritage Trees, establishes regulations for the preservation of heritage trees, defined as:

- Trees of historical significance, special character or community benefit, specifically designated by resolution of the City Council,
- An oak tree (*Quercus* sp.), which is native to California and has a trunk with a circumference of 31.4 inches (diameter of 10 inches) or more, measured at 54 inches above natural grade, and
- All trees other than oaks, which have a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more, measured 54 inches above natural grade, with the exception of trees that are less than 12 feet in height, which will be exempt from this section.

To protect heritage trees, Section 13.24.025 requires that a tree protection plan prepared by a certified arborist be submitted for any work performed within a tree protection zone, which is an area ten times the diameter of the tree. Furthermore, all tree protection plans should be reviewed and approved by the Director of Community Development or his or her designee prior to issuance of any permit for grading or construction.

The removal of heritage trees or pruning of more than one-fourth of the branches or roots within a 12-month period requires a permit from the City's Director of Public Works or his or her designee and payment of a fee. The Director of Public Works may issue a permit when the removal or major pruning of a heritage tree is reasonable based on a number of criteria, including condition of the tree, need for removal to accommodate proposed improvements, the ecological and long-term value of the tree, and feasible alternatives that would allow for tree preservation.

4 Methods

This section describes the methods used to complete the general biological resources assessment. Methods include a database and literature review, field survey, an assessment of plant communities and wildlife habitats and corridors, an assessment of sensitive habitats and aquatic features, and a habitat evaluation for special-status species.

4.1 Background Review

Available background information pertaining to the biological resources on and near the project was reviewed prior to conducting field surveys. Information was compiled and subsequently compared against site conditions during field surveys. The following sources were consulted:

- CNDDB record search for 9-quadrangles including: Palo Alto, Mountain View, Newark, Redwood Point, San Mateo, Woodside, La Honda, Mindego Hill, and Cupertino (CNDDB 2020),
- CNPS Rare Plant Program *Inventory of Rare and Endangered Plants of California* record 9-quadrangle search, including: Palo Alto, Mountain View, Newark, Redwood Point, San Mateo, Woodside, La Honda, Mindego Hill, and Cupertino (CNPS 2020) Quadrangle-level results are not maintained for California Rare Plant Rank (CRPR) 3 and 4 species, so we also conducted a search of the CNPS Inventory records for these species occurring in San Mateo County (CNPS 2020),
- CDFW CNDDB for natural communities of special concern that occur within the project region (CNDDB 2020),
- NMFS Fisheries Essential Fish Habitat Mapper was reviewed to determine the locations of designated, mapped EFH and Habitat Areas of Particular Concern (HAPC) (http://www.habitat.noaa.gov/protection/efh/efhmapper/index.html),
- USFWS Information for Planning and Consultation (IPaC) tool, using default parameters set within the search tool (USFWS 2020),
- USFWS National Wetland Inventory (NWI 2020),
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2020), and
- Other relevant scientific literature, technical databases, resource agency reports, and Federal Register notices and other information published by USFWS and NMFS; in order to assess the current distribution of special-status plants and animals in the project vicinity.

An Environmental Constraints Analysis Report was prepared for the project by MIG in January 2018. The 2018 report and its findings were used as reference material for this General Biological Resources Report. However, this report represents current conditions within the BSA,

as of May 2020. The purpose of the environmental constraints analysis was to inform the District of potential environmental constraints as it deliberated the pros and cons of the project alternatives. The environmental constraints analysis describes:

- The sensitive resources that could be affected by the construction of the project alternatives;
- the potential regulatory requirements triggered by each alternative;
- the avoidance, minimization, and mitigation measures each alternative may require; and
- what additional technical studies were needed.

The environmental constraints analysis considered the potential impacts of each of four alternatives in terms of the CEQA checklist that is provided in the CEQA Guidelines, including all CEQA disciplines. With regard to biological resources it identified potential project impacts to several special-status species and permits that would be required.

4.2 Field Surveys

Field surveys were conducted to (1) assess existing biotic habitats and plant and animal communities in the parcel, (2) assess the BSA for its potential to support special-status species and their habitats, and (3) conduct a U.S. Army Corps of Engineers delineation of wetlands and waters (see Section 6.3). Reconnaissance-level field surveys of the 31.18-acre biological survey area (BSA) were conducted by MIG senior biologist David Gallagher, M.S. on September 30, 2019 and May 4, 2020 (Figure 2). The purpose of these surveys was to provide a project-specific impact assessment for the development of the site as described above. A site survey to complete the wetland delineation was completed in February 2020. Prior to this, MIG biologists visited the site in March 2017, October 2017, February 2018 and March 2018.

4.2.1 Sensitive Habitats and Aquatic Features

All plant communities observed in the BSA were evaluated to determine if they are considered sensitive. Sensitive natural communities are communities that are especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies. Elimination or substantial degradation of these communities would constitute a significant impact under CEQA.

The BSA was also inspected for the presence of wetlands, drainages, streams, coastal waterways, and other aquatic features, including those that support stream-dependent (i.e., riparian) plant species that could be subject to jurisdiction by the USACE, RWQCB, and/or CDFW. Wetlands are defined for regulatory purposes in the 33 CFR 328.3 and 40 CFR 230.3 as “areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” To be considered subject to federal

jurisdiction, a wetland must be located within the study area and normally exhibit positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology.

4.2.2 Wetland Delineation

MIG surveyed the West Bay Sanitary District Flow Equalization and Resource Recovery Facility (FERRF) Flood Protection Project study area located in the City of Menlo Park in San Mateo County, California for wetlands and other waters potentially subject to regulation under Section 404 of the Clean Water Act as administered by the United States Army Corps of Engineers (USACE). The survey also delineated the extent of waters of the state that may be subject to regulation by the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act and under the Porter Cologne Water Quality Control Act. Lastly, the extent of waters that are likely subject to regulation under the McAteer-Petris Act of 1965, which is administered by the San Francisco Bay Conservation and Development Commission (BCDC), are included in this delineation.

Before the delineation survey was conducted, topographic maps and aerial photos of the study area were obtained and reviewed from several sources, such as the USGS, NRCS, NWI, Google Earth software (Google Inc. 2019), and UC Santa Barbara Library's collection of aerial photography (UCSB 2019).

On September 30, 2019, MIG senior biologist David Gallagher performed a technical delineation of wetlands and other waters in the study area, in accordance with the Corps of Engineers 1987 Wetlands Delineation Manual (Corps Manual; Environmental Laboratory 1987). Additionally, the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0) (Regional Supplement) (USACE 2008a) and A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b) were followed to document site conditions relative to hydrophytic vegetation, hydric soils, and wetland hydrology. Mr. Gallagher performed preliminary mapping of the extent and distribution of wetlands and other waters of the U.S. that may be subject to regulation under Section 404 of the Clean Water Act (CWA), waters of the state that may be subject to regulation under the Porter Cologne Water Quality Control Act, which is administered by the RWQCB, and waters that may be subject to regulation under the McAteer-Petris Act of 1965, which is administered by BCDC. Mr. Gallagher also surveyed for aquatic and riparian habitat that may be subject to regulation under Sections 1600-1607 of the California Fish and Game Code, which is administered by California Department of Fish and Wildlife (CDFW).

The jurisdictional delineation was approved by the USACE in November 2020. A copy of the delineation is attached in Appendix E.

4.2.3 Special-Status Species Habitat Evaluation

During the 2020 field survey, Mr. Gallagher evaluated the suitability of the habitat to support special-status species documented within the BSA and within the vicinity of the study area. For the purposes of this assessment, special-status species include those plant and animals listed, proposed for listing or candidates for listing as threatened or endangered by the USFWS or NOAA Fisheries under the FESA, those listed or proposed for listing as rare, threatened or endangered by the CDFW under the CESA, animals designated as CFP or CSSC by the CDFW, birds protected by the USFWS under the MTBA and/or by the CDFW under Fish and Game Code Sections 3503 and 3513, and plants listed as Rank 1A, 1B, 2, 3 and 4 of the CNPS Inventory.

The potential occurrence of special-status plant and animal species in the BSA was initially evaluated by developing a list of special-status species that are known to or have the potential to occur in the vicinity of the study area based on a 9-quad search of current database records (e.g., CNDDB and CNPS Electronic Inventory records) and review of the USFWS list of federal endangered and threatened species (i.e., IPaC). The potential for occurrence of those species included on the 9-quad list was then evaluated based on the habitat requirements of each species relative to the habitat conditions documented in the study area. If there are no documented occurrences within five miles of the BSA, if there is clearly no suitable habitat present, and if the study area is clearly outside of the expected range of the species, these species were eliminated from consideration and are not discussed further. All remaining species were then evaluated for the potential to occur on or in the immediate vicinity of the study area according to the following criteria:

> *Not Expected:* CNDDB or other documents do not record the occurrence of the species within or reasonably near the study area and within the last 10 years, and/or no components of suitable habitat are present within or adjacent to the study area.
>
> *Low Potential:* The CNDDB or other documents may or may not record the occurrence of the species within a 5-mile radius of the study area. However, few components of suitable habitat are present within or adjacent to the study area.
>
> *Moderate Potential*. Species does not meet all terms of High or Low category. For example: CNDDB or other reputable documents may record the occurrence of the species near but beyond a 5-mile radius of the study area, or some of the components representing suitable habitat are present within or adjacent to the study area, but the habitat is substantially degraded or fragmented.
>
> *High Potential:* The CNDDB or other reputable documents record the occurrence of the species off-site, but within a 5-mile radius of the study area and within the last 10 years.

All or most of the components representing suitable habitat are present within the study area.

Present or Assumed Present. Species was observed on the study area, or recent species records (within five years) from literature are known within the study area.

5 Existing Land Uses, Natural Communities, and Habitats

5.1 General Study Area Description

The BSA includes the operational flow equalization facility, three operational wastewater detention ponds used for wet weather flow storage, remnants of a decommissioned wastewater treatment plant, existing street rights-of-way for the proposed recycled water pipeline alignments, and the location for the new influent pump station located at Marsh Road. The BSA also extends into the surrounding baylands and Bedwell Bayfront Park (Appendix A, Figure 2). The BSA is bordered by the Don Edwards National Wildlife Refuge to the north, Bedwell Bayfront Park to the east, and Flood Slough and salt evaporation ponds to the west. The study area elevation ranges from approximately 0 to 40 feet North American Vertical Datum of 1988 (NAVD88) (Google Inc. 2020). Bedwell Bayfront Park is the former site of a landfill closed in 1984. The 160-acre park is owned by the City of Menlo Park and includes an extensive bike/pedestrian trail system. The Don Edwards National Wildlife Refuge spans 30,000 acres of open bay, salt pond, salt marsh, mudflat, upland and vernal pool habitats located throughout south San Francisco Bay, provides critical habitat for several special-status species, and is a major stopover for migrating birds along the Pacific Flyway.

The climate at the study area is coastal Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Climate conditions in the study area include a 30-year average of approximately 17.6 inches of annual precipitation with an average temperature range from 48ºF to 71ºF (PRISM Climate Group 2020). Relative to the 30-year climate normal, the study area experienced wetter than normal conditions during the 2018/2019 wet season prior to the September 2019 survey. From November 2018 through April 2019, the area received 20.4 inches of precipitation, which is approximately 128% of the 30-year average for this same period (PRISM Climate Group 2020).

One soil unit is mapped by the National Resource Conservation Service (NRCS) in the BSA: 125 – Pits and Dumps, which consists of gravel pits, refuse dumps, and rock quarries (Appendix A, Figure 4) (NRCS 2020a). This soil series is not listed as hydric in San Mateo County on the National Hydric Soils List (NRCS 2020b).

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) map of the study area is depicted in Figure 5 in Appendix A. The NWI identified the stormwater retention ponds within

the BSA as artificially flooded freshwater ponds (PUSK) (NWI 2020). Also, the NWI identified intertidal estuarine and marine wetland and open water habitat within the study area (E2USN and E2EM1N) (NWI 2020). NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. (1979). These data are available for general reference purposes and do not necessarily correspond to the presence or absence of jurisdictional waters.

5.2 Existing Land Uses, Vegetation Communities, and Habitats

The BSA is located within the San Francisco Bay Area Subregion of the Central Western Californian Region, both of which are contained within the larger California Floristic Province (Baldwin et al. 2012). Where applicable, vegetation communities were mapped using CDFW's Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2020). The reconnaissance-level field survey identified five general vegetation communities, habitats, and land cover types in the BSA: (1) developed, (2) wastewater detention pond, (3) northern coastal salt marsh (*Sarcocornia pacifica* Alliance – Pickleweed Mats), (4) tidal slough, and (5) California annual grassland (*Avena barbata* Alliance – Wild Oats Grassland).

The area of the existing land uses, vegetation communities, and habitats in the BSA is summarized below, and their distribution is depicted in Appendix A, Figure 6.

SUMMARY OF EXISTING LAND COVER TYPES, NATURAL COMMUNITIES, AND HABITATS IN THE BSA

Land Cover Types, Natural Communities, and Habitats	Area (acres)
Wastewater Detention Pond	11.33
Developed[1]	13.19
Northern Coastal Salt Marsh	4.85
California Annual Grassland	3.07
Tidal Slough	1.15
Study Area Total	**33.59**

[1]Does not include areas within road rights-of-way for the influent or distribution pipeline alignments beyond the BSA identified in Figure 6.

Wastewater Detention Ponds. Two of the basins are used for flow equalization and one basin is used for emergency storage of wastewater (Appendix B, Photo 1). The flow equalization basins provide storage for combined stormwater and sewer wastewater flows during peak flow events or during conveyance system maintenance or repairs to prevent sanitary sewer overflows (SSOs) until such times the flows can be routed to the regional treatment plant in Redwood City. These ponds are mainly used during the rainy season, or for system

maintenance and reparis and therefore are empty when not in use. All retained wastewater is rerouted to the Silicon Valley Clean Water Wastewater Treatment Plant in Redwood City for treatment.

Wildlife. Because these ponds do not have a permanent pool of water, are hydrologically isolated from the Bay, and are devoid of vegetation, they do not provide breeding habitat for fish, amphibians, or reptiles. However, the ponds provide foraging habitat for species that routinely forage in the adjacent salt marsh (see Northern Coastal Salt Marsh section below) due to presence of algae and brine shrimp (Order Decapoda) when the ponds are in use. Algae and brine shrimp are assumed present based on aerial imagery of the ponds (Goggle Inc. 2020). Algae appears as green and red, and brine shrimp create an orange cast in aerial photographs. During the May 2020 site visit, American avocet (*Recurvirostra americana*) was observed foraging in the ponds; and cliff swallow (*Petrochelidon pyrrhonota*) and barn swallow (*Hirundo rustica*) were observed foraging over the ponds.

Developed. Developed land cover includes areas with permanent structures, impervious surfaces, unpaved high-use areas, or areas regularly disturbed by human activities. Generally, these areas are devoid of substantial vegetation cover but may contain areas of ruderal and landscaped vegetation. Within the study area, developed land cover includes the levees, hardpack dirt roads, buildings, staging and storage areas, and the decommissioned water treatment facility (Appendix B, Photo 2). Within the developed land cover, there are scattered areas of ruderal (disturbed) vegetation, mostly along the levee roads and perimeter of the site and landscaped trees adjacent to the buildings. The developed habitat is frequently utilized by humans, and both paved and gravel portions of this habitat are well-maintained. Non-native species are strongly dominant, generally outcompeting other forb and native grass species that may otherwise be present. Herbaceous species observed included slender oat (*Avena* barbata), black mustard (*Brassica nigra*), fennel (*Foeniculum vulgare*), bull mallow (*Malva nicaeensis*), wild radish (*Raphanus sativus*), red stemmed filaree (*Erodium cicutarium*), Jersey cudweed (*Pseudognaphalium luteoalbum*), fumitory (*Fumaria* sp.), and smilo grass (*Stipa miliacea* var. *miliacea*). Wild oat, black mustard, and fennel are ranked as a moderately invasive species by the California Invasive Plant Council (Cal-IPC). Trees observed included Lollypop tree (*Myoporum laetum*), olive (*Olea europaea*), and Mexican fan palm (*Washingtonia robusta*). The lollypop tree and Mexican fan palm are ranked as a moderately invasive species by Cal-IPC.

Wildlife. California ground squirrels (*Spermophilus beecheyi*) occur on the levee slopes within and adjacent to the study area. Their burrows provide nesting habitat for western burrowing owl (*Athene cunicularia*). Also, many of the wildlife species that use the adjacent marsh habitat may move through the developed portions of the study area when traveling between more natural habitats. In addition, the levees in the study area are important to tidal marsh species during very high tides, such as king tides. During such events, the majority of the salt marsh habitat is inundated, and animals such as California Ridgway's rails (*Rallus obsoletus obsoletus*),

California black rails (*Laterallus jamaicensis coturniculus*), and salt marsh harvest mice (*Reithrodontomys raviventris*) may take refuge in the vegetation along the slopes of the levees.

During the May 2020 site visit, several nesting birds were observed in the dilapidated structures of the decommissioned water treatment plant and a colony of cliff swallows were nesting under the eaves of the Fortistar Mitigation Group Building, adjacent to the flare for the gas collection system for the landfill. In addition, a nesting pair of killdeers (*Charadrius vociferous*) were observed in the dry area of a wastewater detention pond. Also, small fish were observed in the aeration/clarifier tanks of the decommissioned wastewater treatment facility and a striped skink (*Mephitis mephitis*) was observed exiting from under the existing decommissioned building.

Northern Coastal Salt Marsh (*Sarcocornia pacifica* Alliance – Pickleweed Mats). The northern coastal salt marsh habitat extends contiguously along the western and northern edges of the BSA (Appendix B, Photo 3). This tidal salt marsh habitat is inundated with water, is subject to tidal ebbs and flows, and is heavily dominated by pickleweed with patches of California cordgrass (*Spartina foliosa)* growing in wetter areas. Along the upper margins of the salt marsh, saltgrass (*Distichlis spicata*), marsh gumplant (*Grindelia stricta*), alkali heath (*Frankenia salina*) were common.

Wildlife. Northern coastal salt marsh supports some of the rarest wildlife species in the San Francisco Bay. The California Ridgway's rail nests in cordgrass, dense stands of pickleweed, and marsh gumplant in tidal marsh habitats in and around the BSA. This species is found in the lower marsh zone where numerous small tidal channels are present. California black rails are known to occur in northern coastal salt marsh as winter residents.

The salt marsh harvest mouse occurs in the upper zone of the salt marsh where pickleweed is the dominant plant. Alameda song sparrows (*Melospiza melodia pusillula*) and Bryant's savannah sparrows (*Passerculus sandwichensis alaudinus*) also nest in salt marshes.

Alameda song sparrows prefer dense herbaceous vegetation wherever it occurs throughout the marsh, while savannah sparrows nest in shorter vegetation such as pickleweed and high transitional marshes in upland ecotones (see Section 6.2 below for detailed information on special-status species).

Shorebirds, swallows, herons, egrets, blackbirds, and other avian species roost and forage, often in large numbers, in tidal salt marsh habitats in the study area, but most do not breed in these areas. Common species that forage in salt marsh habitat include the black-necked stilt (*Himantopus mexicanus*), American avocet, and willet (*Tringa semipalmata*).

Bair Island, approximately three miles north of the BSA is a known harbor seal (*Phoca vitulina*) haul-out. Therefore, harbor seals may haul out on the mudflats, rocky outcroppings exposed at low tide, and anywhere in the salt marsh within the BSA (see Section 6.2.5 below).

California Annual Grassland (*Avena barbata* Alliance – Wild Oats Grassland). California annual grassland is an herbaceous plant community that is typically dominated by non-native annual grasses. In the BSA, this vegetation type is found in Bedwell Bayfront Park. The dominant grass observed was slender oats. Other grasses observed included foxtail barley (*Hordeum murinum*) and Harding grass (*Phalaris aquatica*). Herbaceous species observed included fennel, purple salsify (*Tragopogon porrifolius*), rose clover (*Trifolium hirtum*), bristly ox-tongue (*Helminthotheca echioides*), and smilo grass. Small stands of trees were also observed in the grassland, including Australian pine (*Casuarina equisetifolia*) and blue gum (*Eucalyptus globulus*).

Wildlife. In addition to the levees, California ground squirrels occur in the grassland areas. Other rodent species that occur in the ruderal habitat in the study area include the California vole, Botta's pocket gopher (*Thomomys bottae),* and deer mouse (*Peromyscus maniculatus*). Diurnal raptors such as red-tailed hawks (*Buteo jamaicensis*) forage for these small mammals in ruderal lands during the day, and at night nocturnal raptors, such as barn owls (*Tyto alba*), will forage for nocturnal rodents. Mammals such as the raccoon and striped skunk utilize the grassland habitat in the study area for foraging. Reptiles such as western fence lizards (*Sceloporus occidentalis*), western terrestrial garter snakes (*Thamnophis elegans*), and southern alligator lizards (*Elgaria multicarinata*) may occur in small numbers within the California annual grassland in the study area.

Tidal Slough. Tidal slough habitat includes open water and mudflat portions of the study area, including open water in Flood and Westpoint sloughs and the smaller channels interspersed with the salt marsh along the northern edge of the study area (Appendix B, Photo 4). The open water habitat is devoid of vegetation with beds of viscous bay mud, and algal growth exposed at low tide.

Wildlife. Because the open water channels are interspersed throughout the northern coastal salt marsh, the animal species that occur in this habitat are similar to those described above for the salt marsh habitat. A variety of fish also occur in the open water on the Bay and small fish are expected to occur in the smaller open water channels to some extent as well, although the limited extent, depth, and width of these channels limits the number and size of fish that may occur in these sloughs.

At low tide, mudflats are exposed along the tidal sloughs. Mudflats are formed when mud is deposited by the tides and contain high densities of invertebrate animals such as insects, bivalves, crustaceans, and polychaete worms that are food for many bird species. A variety of shorebirds, including the western sandpiper (*Calidris mauri*), least sandpiper (*Calidris minutilla*), dunlin (*Calidris alpina*), willet, marbled godwit (*Limosa fedora*), short-billed dowitcher (*Limnodromus griseus*), and black-bellied plover (*Pluvialis squatarola*), forage on these mudflats

when they are exposed. Such shorebirds are most abundant during fall and spring migration and during the winter non-breeding season.

In addition, a list of species observed within the study area is included in Appendix C**.**

6 Special-Status Species and Sensitive Habitats

CEQA requires assessment of the effects of a project on species that are "threatened, rare, or endangered"; such species are typically described as "special-status species". In order to assess the impacts of the proposed project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described under Regulatory Setting above.

6.1 Special-Status Plants

The CNPS (2020) and CNDDB (2020) identify 70 special-status plant species as potentially occurring in the nine 7.5-minute quadrangles containing and/or surrounding the BSA. Sixty-five of those potentially occurring special-status plant species were determined to be absent from the study area for at least one of the following reasons: (1) a lack of specific habitat (e.g., freshwater marsh) and/or edaphic requirements (e.g., serpentine soils) for the species in question, (2) the elevation range of the species is outside of the range on the project site, and (3) the species is known to be extirpated from the site vicinity. Appendix D lists these plants along with the basis for the determination of absence.

Suitable habitat, edaphic requirements, and elevation range were determined to be present in the study area for five plant species: California seablite (*Suaeda californica*), coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*), Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustre*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), and saline clover (*Trifolium hydrophilum*). These species are discussed in more detail below.

California seablite. Federal Listing Status: Endangered; State Listing Status: None; CNPS List: 1B.1. California seablite is a succulent, evergreen shrub in the goosefoot (Chenopodiaceae) family that occurs in coastal salt marshes along a narrow zone at the upper edge of tidal marsh (USFWS 2013). The blooming period for this species extends from July through October. It is listed as endangered under FESA and has a CRPR of 1B.1 (i.e., rare, threatened, or endangered in California and elsewhere; seriously endangered in California) (CNPS 2020). It requires well-drained marsh substrates, primarily sandy wave-built berms or ridges along marsh banks, and estuarine beaches. Because its habitat is naturally prone to destruction by wave erosion, it requires widespread populations in diverse environments over large areas to enable it to recolonize by seed after populations are destroyed by storms. It was historically known to occur throughout margins of coastal salt marshes surrounding the San Francisco Bay, but may be extirpated because of development, recreational activities, erosion,

non-native plants, and habitat alteration. A review of occurrences within the San Francisco Bay estuary by the USFWS concluded that all known naturally occurring populations of California seablite are "likely extirpated" (USFWS 2010). However, this species has been successfully re-introduced in a small number of populations around the Bay in San Francisco and Alameda Counties, approximately 20 miles north of the BSA (USFWS 2013).

Within the study area, northern coastal salt marsh provides suitable habitat for California seablite. However, based on the conclusion by the USFWS in 2010 and the closest known extant occurrences are over 20 miles north of the BSA, California seablite is unlikely to be present. Additionally, this species was not detected during the reconnaissance site visit when it would have been in bloom. Therefore, California seablite is not expected to occur in the BSA.

Coastal marsh milkvetch. Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Coastal marsh milkvetch is a perennial herb in the legume (Fabaceae) family, with a CRPR of 1B.2, which occurs in mesic, typically sandy sites in coastal dune habitat, in coastal scrub habitat, coastal salt marsh, and freshwater marshes at elevations from 0 to 100 feet above sea level. The blooming period for this species extends from June through October, although it has been observed in flower as early as April (CNPS 2020). The only nearby occurrence is located approximately 2.5 miles southeast of the study area at Ravenswood Open Space Preserve and was observed in 2015. The next closest occurrence is located approximately 10 miles from the study area at Upper Crystal Springs Reservoir, and seven other occurrences in San Mateo County are located on the opposite side of the peninsula along the Pacific Ocean (CNDDB 2020). This perennial herb was not detected within any of the suitable habitat within the study area during the reconnaissance site visit in September, when it would have been in bloom, but a focused survey has not been completed. Due to the presence of suitable habitat in the study area and a known occurrence in the local area, there is a high potential for coastal marsh milkvetch to be present within the northern coastal salt marsh in the BSA, based on the definitions provided earlier.

Congdon's tarplant. Federal Listing Status: None; State Listing Status: None; CRPR: 1B.1. Congdon's tarplant is an annual herb in the composite family (Asteraceae) that is endemic to California. It has a variable blooming period extending from May through November. Congdon's tarplant occurs in valley and foothill grassland habitat, floodplains, and swales, particularly those with alkaline substrates; and in disturbed areas with non-native grasses such as wild oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), and seaside barley (*Hordeum marinum*) (CNDDB 2020, CNPS 2020, Baldwin et al. 2012). The closest extant populations of Congdon's tarplant are documented from Ravenswood Open Space Preserve, approximately 2.5 miles southeast of the study area, and Mountain View Shoreline Park, approximately 5.5 miles south of the study area. Additionally, Congdon's tarplant has been documented at Don Edwards National Wildlife Refuge on the east side of the Bay in 2018, about five miles from the project site. This annual herb was not detected within any

of the suitable habitat within the study area during the reconnaissance site visit in September, when it would have been in bloom. Due to the presence of suitable habitat in the study area and known occurrences in the region, there is a high potential for Congdon's tarplant to be present in the California annual grassland within the BSA; including the swale on the east side of the project site where project activities are proposed. The majority of the project site does not contain grassland habitat suitable for this species.

Point Reyes bird's beak. Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Point Reyes bird's beak is an annual, hemiparasitic herb in the figwort family (Orobanchaceae) that blooms from June through October. This subspecies occurs only in coastal salt marshes and swamps at elevations from 0 to 34 feet above sea level (CNPS 2020). Three occurrences of Point Reyes bird's beak are documented in the project vicinity. However, none of these populations have been observed since 1915 and all are listed by the CNDDB as "possibly extirpated" as site conditions have changed dramatically due to increased development and degradation of water quality since their original documentation (CNDDB 2020). However, Point Reyes bird's beak was documented at Don Edwards National Wildlife Refuge on the east side of the Bay in 2018, about five miles from the project site. This annual was not detected within any of the suitable habitat within the study area during the reconnaissance site visit in September when it would have been in bloom, but a species-specific survey was not completed. Due to the presence of suitable habitat, a recent occurrence in the Don Edwards Refuge, and the possibility of extant, remnant populations in coastal salt marshes surrounding the Bay, there is a moderate potential for this species to be present within the northern coastal salt marsh in the BSA.

Saline clover. Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Saline clover is an annual herb in the legume (Fabaceae) family that occurs in mesic, alkaline, or saline sites in valley and foothill grassland habitat, in vernal pool habitat, and in marshes and swamps at elevations from 0 to 984 feet above sea level. The blooming period extends from April through June, although in salt marshes the species may flower slightly later than in alkaline grassland areas. Many sites where this species historically occurred have been altered through development, trampling, road construction, and vehicular use, and thus no longer contain suitable habitat (CNPS 2020). The CNPS notes that there is a current need for information on the rarity and endangerment of this species (CNPS 2020). The only nearby occurrence of saline clover is from the Don Edwards National Wildlife Refuge on the east side of the Bay from 2004 (CNDDB 2020). This plant would not have been detected during the reconnaissance site visit is September since the site visit was outside of the bloom period. However, due to the presence of suitable habitat in the study area and a known occurrence in the region, saline clover has a moderate potential to be present within and around the margins of the northern coastal salt marsh in the BSA.

6.2 Special-Status Animals

Based on a review of the USFWS and CNDDB databases, the biologist's knowledge of sensitive species, and an assessment of the types of habitats within the project site, it was determined that 20 wildlife species could potentially occur within or near the study area. This determination was made due to the presence of essential habitat requirements for the species, the presence of known occurrences within five miles of the study area, and/or the study area's location within the species' known range of distribution. The legal status and likelihood of occurrence of the 20 wildlife species is summarized below and discussed in greater detail in this section.

Special-status species that are not expected to occur in the study area because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat were excluded from the analysis. Animal species not expected to occur in the study area for these reasons include the bay checkerspot butterfly (*Euphydryas editha bayensis*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), western pond turtle (*Actinemys marmorata*), and western red bat (*Lasiurus blossevillii*).

SPECIAL-STATUS ANIMAL SPECIES WITH POTENTIAL TO OCCUR IN THE BSA

Common Name	Regulatory Status	Detected in the BSA	Likelihood of Occurrence in the BSA
Fish			
Central California Coast steelhead (*Oncorhynchus mykiss*)	FT	No	High (non-breeding)
Longfin smelt (*Spirinchus thaleichthys*)	ST	No	High (non-breeding)
North American green sturgeon (*Acipenser medirostris*)	FT, CSSC	No	High (non-breeding)
Mammals			
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, FP	No	High
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	CSSC	No	High
Birds			
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	No	High (breeding)
American peregrine falcon (*Falco peregrinus anatum*)	FP	No	High (non-breeding); Not Expected (breeding)
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	CSSC	No	High (breeding)
Black skimmer (*Rynchops niger*)	CSSC (nesting)	No	High (non-breeding); Not Expected (breeding)
California black rail (*Laterallus jamaicensis coturniculus*)	ST, FP	No	High (non-breeding); Not Expected (breeding)
California brown pelican (*Pelecanus occidentalis californicus*)	FP	No	High (non-breeding); Not Expected (breeding)
California Least Tern (*Sterna antillarum browni*)	FE, SE	Yes	High (non-breeding); Not Expected (breeding)
California Ridgway's Rail (*Rallus obsoletus obsoletus*)	FE, SE, SP	Yes	Present (breeding)
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)		High (breeding)
Northern harrier (*Circus cyaneus*)	CSSC (nesting)	No	High (breeding)
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	No	High (breeding)
Short-eared owl (Asio flammeus)	CSSC (nesting)	No	High (non-breeding); Low (breeding)
Western burrowing owl (*Athene cunicularia*)	CSSC	Yes	Present (breeding)
Western snowy plover (*Charadrius nivosus nivosus*)	FT, CSSC	No	High (non-breeding); Not Expected (breeding)
White-tailed kite (*Elanus leucurus*)	FP	No	High (breeding)

Key to Status Abbreviations: Federally Listed as Endangered (FE); Federally Listed as Threatened (FT); Federal Candidate for Listing (FC), Federal Species of Concern (FSC), State Listed as Endangered (SE); State Listed as Threatened (ST); State Candidate for Listing (SC); State Fully Protected (FP); California Species of Special Concern (CSSC)

Other special-status species have some potential to occur on the project site only as visitors, migrants, or transients, but are not expected to reside or breed on the site, occur in large numbers, or otherwise make substantial use of the site. These include Bald eagle (*Haliaeetus leucocephalus*), listed as state endangered and state fully protected; Golden eagle (*Aquila chrysaetos*), listed as state fully protected; and pallid bat (*Antrozous pallidus*), a California species of special concern.

6.2.1 Special-Status Fish

Central California Coast Steelhead. Federal Listing Status: Threatened; State Listing Status: None. The Central California Coast (CCC) steelhead DPS was listed as a threatened species on August 18, 1997 (NMFS 1997), and the threatened status was reaffirmed on January 5, 2006 (NMFS 2006a). Critical habitat for the Central California Coast steelhead DPS was designated on September 2, 2005 and includes all river reaches and estuarine areas accessible to listed steelhead in coastal river basins from the Russian River to Aptos Creek, California (inclusive), and the drainages of San Francisco and San Pablo Bays (NMFS 2000, 2005, 2006). A final recovery plan was published in October 2016. Thus, Flood Slough and all other tidally influenced portions of the study area are included within designated critical habitat. (Appendix A, Figure 7).

Similar to CCC coho salmon, steelhead populations in many areas have declined due to degradation of spawning habitat, introduction of barriers to upstream migration, over-harvesting by recreational fisheries, and reduction in winter flows due to damming and spring flows due to water diversions (NMFS 1997). In addition, non-native fish species, such as striped bass (*Morone saxatilis*), common carp (*Cyprinus carpio*), and white catfish (*Ameiurus catus*), may pose risks to native steelhead populations through predation, competition, and habitat modification. Increasing predation pressure at river mouths and in the ocean from the growing California sea lion population is also posing significant risk to CCC steelhead.

Steelhead are found along the entire Pacific Coast of the United States. The CCC steelhead DPS includes all naturally spawned populations of steelhead in coastal streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers; and tributary streams to Suisun Marsh including Suisun Creek, Green Valley Creek, and an unnamed tributary to Cordelia Slough (commonly referred to as Red Top Creek), exclusive of the Sacramento-San Joaquin River Basin of the California Central Valley.

Steelhead in the CCC DPS are winter-spawning steelhead, maturing in the ocean and spawning shortly after entering freshwater. Winter steelhead enter rivers and streams in the late fall and winter months when higher flows and associated lower water temperatures occur. Adult female steelhead will prepare a redd (or nest) in a gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Preferred streams typically support dense canopy cover that provides shade,

woody debris, and organic matter, and are usually free of rooted or aquatic vegetation. The length of the incubation period is dependent on water temperature. Fry emerge from the gravel, and rear along the stream margins, moving gradually into pools and riffles as they grow larger. Young juveniles feed primarily on aquatic invertebrate drift.

In California, juveniles usually live in freshwater for one to three years (Shapovalov and Taft 1954; Barnhart 1986; Busby et al. 1996) then smolt and migrate to the sea; because of this multi-year rearing time period, steelhead can only spawn in tributaries that maintain suitable temperature and other water quality parameters year-round. Most downstream smolt migration takes place between February and June, with peak timing of steelhead smolt outmigration in Central California occurring from March to May (Barnhart 1986; Fukushima and Lesh 1998).

Steelhead are known to occur in several stream systems in the south San Francisco Bay, and could potentially spawn in virtually any stream reach with suitable spawning habitat that lacks downstream barriers to dispersal. CCC steelhead are known to occur in, and suitable spawning habitat is present in, San Francisquito Creek, Los Trancos Creek, Stevens Creek, Guadalupe River, Los Gatos Creek, Guadalupe Creek, Alamitos Creek, Calero Creek, Coyote Creek, Upper Penitencia Creek, and Arroyo Aguague (Leidy et al. 2005, NMFS 2005). Little is known about how juvenile steelhead use San Francisco Bay and its estuarine habitats; however, studies of juvenile salmon and steelhead estuary use suggest that in general, juvenile steelhead are more likely to use surface current flow, move through estuarine habitats rapidly (thereby having low residence times), and are more likely to occur in deeper channels (Truelove 2005, Melnychuck et al. 2007, Lower Columbia River Estuary Partnership 2007).

Small numbers of steelhead migrate late fall into spring through open waters of the bay between marine foraging areas and riverine spawning habitat in South San Francisco Bay, including San Francisquito Creek, Los Trancos Creek, Stevens Creek, Guadalupe River, and Los Gatos Creek, (Leidy et al. 2005, NMFS 2005). Therefore, there is some potential for occasional foraging individuals to occur within the tidal sloughs within the study area.

Longfin Smelt. Federal Listing Status: None; State Listing Status: Threatened. This southernmost population of longfin smelt is found as far north as Prince William Sound, Alaska, and occurs in the San Francisco Bay. The longfin smelt was declared a threatened species under the CESA in March 2009 and has been petitioned for listing as endangered under the FESA (USFWS 2008).

Longfin smelt are anadromous fish that spawn in fresher waters and disperse to more saline estuarine and marine waters to mature (Moyle 2002). Although little is known about the breeding biology of longfin smelt in the San Francisco Bay, the species is thought to spawn at the interface between fresh and brackish water in tidal portions of San Francisco Bay tributaries (Robinson and Greenfield 2011). Spawning in the Bay is thought to occur mainly below Medford Island in the San Joaquin River and below Rio Vista on the Sacramento River, while the lower

end of spawning habitat seems to be upper Suisun Bay around Pittsburg and Montezuma Slough, in Suisun Marsh (Larson et al. 1983, Wang 1986). Winter sampling conducted in 2010 found high numbers of longfin smelt in Coyote Creek and Alviso Slough in the South Bay, and study data from 1982 and 1983 show use of Coyote Creek by spawning adults and larvae (Robinson and Greenfield 2011). The distribution of larvae is strongly influenced by freshwater outflow to the Delta (Baxter 1999, Dege and Brown 2004). In dry years, larvae are concentrated primarily in the West Delta and Suisun Bay, and in wet years, larvae are found throughout the San Francisco Estuary, including the South Bay, with the greatest concentrations in San Pablo and Suisun Bay early in the season and into the Central Bay later in the season (Rosenfield 2009). Within these areas, spawning may occur from November to June, with the peak of spawning activity likely occurring from February to April (Moyle 2002).

Fish surveys conducted for the South Bay Salt Ponds Restoration Project by Hobbs et al. (2012), which included otter trawls in sloughs and Bay waters around the Bair Island, Eden Landing, Ravenswood, and Alviso pond complexes, detected a single longfin smelt in the Bair Island marsh in January 2010. Elsewhere in the South Bay sampling areas, longfin smelt were captured in December 2010, February 2011, and from October 2011 to March 2012. The species was not detected during other surveys, which were conducted at least monthly from 2010 through 2012, indicating absence between the months of May and October, inclusively. However, sampling in the wet winter of 2016-2017 detected gravid adults and larvae in the Alviso area, suggesting that the species may spawn in the South Bay at least in wetter years.

Nonbreeding longfin smelt can potentially be present in any fully tidal waters in the South Bay as long as water temperatures do not exceed 22 °C. Thus, occasional individuals may forage in the open waters on and adjacent to the BSA. Based on this species' life history and habitat use, as well as the results of recent sampling in the Bair Island area by Hobbs et al. (2012), there is a high potential for longfin smelt to occur in the BSA from late fall to early spring (i.e., November to April). However, due to the absence of suitable brackish/fresh spawning habitat in the study area, this species is not expected to spawn there, and thus they are not expected to be present from late spring to mid-fall.

North American Green Sturgeon. Southern Distinct Population Segment. **Federal Listing Status: Threatened; State Listing Status: Species of Special Concern.** The Southern Distinct Population Segment (DPS) of the North American green sturgeon was federally listed as threatened on April 7, 2006 (NMFS 2006b). Critical habitat for the Southern green sturgeon was designated on October 9, 2009 and includes all tidally influenced waters of the San Francisco Bay and coastal waters of Northern California, south to Monterey Bay to a depth of 360 feet (NMFS 2009) (Appendix A, Figure 7).

Green sturgeon are the most broadly distributed and wide-ranging species of the sturgeon family, occurring in ocean waters from Ensenada, Mexico to the Bering Sea, and commonly

occur in coastal waters from San Francisco Bay to Canada (Erickson and Hightower 2007). The historical and current distribution of where this species spawns is unclear because the original spawning distribution may have been reduced due to harvest and other anthropogenic effects and because they make non-spawning movements into estuaries during summer and fall (Lindley et al. 2008). Spawning has been documented in the Rogue (Erickson et al. 2002), Klamath (Scheiff et al. 2001), Trinity (Scheiff et al. 2001), Sacramento, and Eel rivers (Lindley et al. 2008).

Green sturgeon are long-lived, slow-growing fish and the most marine-oriented of the sturgeon species. Green sturgeon exhibit delayed sexual maturity, somewhere between 13 and 20 years, and spawn every 2 to 5 years (Moyle 2002). They live to a maximum age of 60 to 70 years (Moyle 2002).

Juveniles reside in fresh water, with adults returning to freshwater to spawn when they are more than 15 years of age and more than 4 feet in size. Spawning is believed to occur every 2 to 5 years (Moyle 2002). In the Sacramento River, green sturgeon spawn in late spring and early summer (NMFS 2003). Adults typically migrate into fresh water beginning in late February; spawning occurs March-July, with peak activity in April-June (Moyle et al. 1995). Juveniles spend 1 to 4 years in fresh and estuarine waters before migrating to the ocean (Beamesderfer and Webb 2002).

Green sturgeon spend the majority of their lives in nearshore oceanic waters, bays, and estuaries. In summer and fall, they commonly occur in estuaries where there has been no known spawning activity and where there are no records of their occurrence farther up the river system (Adams et al. 2007), suggesting that the species may wander widely in accessible estuarine habitat. Studies in the Sacramento-San Joaquin Delta found that juveniles feed on opossum shrimp (Mysidacea) and amphipods (Radtke 1966) and adults feed on benthic invertebrates and even small fish (Moyle et al. 1995).

Green sturgeon spawn in deep pools or “holes” in large, turbulent, freshwater rivers (Moyle et al. 1995). Specific spawning habitat preferences are unclear, but it is likely that cold, clean water and suitable substrate (large cobble, but also clean sand and bedrock) are important for spawning and embryonic development (Moyle et al. 1995).

There is a high potential for Southern green sturgeon to be present year-round as non-breeders in the tidal sloughs within the study area. However, there is no suitable breeding habitat within or nearby the BSA.

Essential Fish Habitat. All subtidal and intertidal habitats adjacent to the project site are designated as EFH (Appendix A, Figure 7) for species federally managed under the following three fisheries management plans (FMPs) (Pacific Fisheries Management Council 1998, 2011, 2012):

- Coastal Pelagic FMP – including Pacific sardine (*Sardinops sagax caerulea*), Pacific mackerel (*Scomber japonicus*), and jack mackeral (*Trachurus symmetricus)*, and market squid (Doryteuthis opalescens); and
- Pacific Groundfish FMP – various rockfish, flatfish, roundfish, sharks, and skates; and
- Pacific Salmon FMP – Chinook salmon (*Oncorhynchus tshawytscha*).

A number of fish species regulated by these FMPs, such as the leopard shark (*Triakis semifasciata*), English sole (*Parophrys vetulus*), starry flounder (*Platichthys stellatus*), and big skate (*Raja binoculata*), occur in the tidal habitats of South San Francisco Bay and are expected to occasionally disperse upstream into the tidal sloughs in the BSA, such as Flood Slough. Species such as the northern anchovy, Pacific sardine, and jack mackerel (*Trachurus symmetricus*) also occur in the South Bay. These species are less likely to occur in the study area, but small numbers could potentially occur there.

Chinook salmon are not expected to spawn near or in the BSA due to the lack of suitable spawning substrate and lack of direct connectivity between tidal channels in the BSA and any suitable freshwater spawning habitat. It is possible that occasional strays from Central Valley streams, Guadalupe River, and Coyote Creek may wander up Flood, but their presence in Flood Slough would be rare and in small numbers lack due to lack of freshwater outflow into Flood Slough.

6.2.2 Special-Status Mammals

Salt Marsh Harvest Mouse. Federal Listing Status: Endangered; State Listing Status: Endangered and Fully Protected. The salt marsh harvest mouse is found only in saline wetlands of the San Francisco Bay and its tributaries. There are two subspecies: the southern (*Reithrodontomys raviventris raviventris*), which occurs in salt marshes around San Francisco Bay, and the northern (*Reithrodontomys raviventris halicoetes*), which occurs in brackish marshes around Suisun Bay and San Pablo Bay (Fisler 1965, Shellhammer 1982). The southern subspecies raviventris is restricted to an area along both sides of San Francisco Bay, from San Mateo County and Alameda County south to Santa Clara County. The optimal habitat for salt marsh harvest mouse habitat is generally considered tidal marsh dominated by pickleweed (*Salicornia* spp.; Shellhammer et al. 1982; Shellhammer 1989; USFWS 2010). However, habitats not dominated by pickleweed, within both tidal and diked marshes, are also known to support long term populations (Sustaita et al. 2011). The salt marsh harvest mouse occurs with the closely related, ubiquitous, and abundant western harvest mouse (*Reithrodontomys megalotis*) at upper edges of marshes and in marginal areas. Both animals occur in pickleweed, but the salt marsh harvest mouse replaces the western harvest mouse in denser areas of pickleweed.

The salt marsh harvest mouse has declined substantially in recent decades. This decline is due primarily to diking and filling of marshes, subsidence, and changes in salinity brought about by

increasing volumes of freshwater discharge into the Bay. In response to habitat loss and population declines, the salt marsh harvest mouse was listed as endangered by the USFWS in 1970 (USFWS 1970) and is a fully protected species under California law (See California Fish and Game Code Section 4700). Critical habitat has not been designated for this species.

Salt marsh harvest mice are known to occur in salt marsh habitats north of the study area in the Don Edwards National Wildlife Refuge, and suitable breeding and foraging habitat for the salt marsh harvest mouse is located in the salt marsh habitat within the BSA. This habitat is part of a larger tidal salt marsh to the north of the BSA that likely supports this species. Therefore, salt marsh harvest mouse has a high potential to be present in the salt marsh in the BSA.

Salt Marsh Wandering Shrew. Federal Listing Status: None; State Listing Status: Species of Special Concern. The salt marsh wandering shrew occurs primarily in medium-high, wet tidal marsh (six to eight feet above mean sea level) with abundant driftwood and other debris for cover (Shellhammer 2000). This species also has been recorded in diked marsh habitat. Within these habitats, individuals typically prefer patches of tall pickleweed, in which they build nests. Salt marsh wandering shrew breed and give birth during the spring; however, very little is known about the natural history of this species.

The salt marsh wandering shrew historically was more widely distributed in the San Francisco Bay, but it is currently confined to salt marshes in the South Bay (Findley 1955). The salt marsh wandering shrew occasionally is captured during salt marsh harvest mouse trapping studies, but the difficulty in identifying it to species has precluded a better understanding of its current distribution in the South Bay. The shrew was formerly recorded from marshes of San Pablo and San Francisco Bays in Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara Counties, but captures in recent decades have been very infrequent in these areas. However, salt marsh wandering shrew are known to share many of the same habitats as the salt marsh harvest mouse; therefore, there is a high potential for salt marsh wandering shrew to occur in the BSA.

6.2.3 Special-Status Birds

Alameda Song Sparrow. Federal Listing Status: None; State Listing Status: Species of Special Concern. The Alameda song sparrow is one of three subspecies of song sparrows that nest only in salt marsh habitats in the San Francisco Bay area (Chan and Spautz 2008). Prime habitat for Alameda song sparrows consists of large areas of tidally influenced salt marsh dominated by cordgrass and gumplant and intersected by tidal sloughs, offering dense vegetative cover and singing perches. Although this subspecies is occasionally found in brackish marshes dominated by bulrushes, it is apparently very sedentary and is not known to disperse upstream into freshwater habitats (Basham and Mewaldt 1987). While the range of the Alameda song sparrow has remained relatively unchanged over time, populations have been reduced substantially and are continually threatened by the loss and fragmentation of salt

marshes around the Bay (Nur et al. 1997, Chan and Spautz 2008). Alameda song sparrow nest as early as March, but peak nesting activity probably occurs in May and June. Early nesting is apparently an adaptation to breeding in a tidal environment, as high tides in late spring and early summer may destroy large numbers of nests.

In the northern portion of the study area, the taller vegetation within and adjacent to the northern coastal salt marsh provides suitable breeding and foraging habitat for this species. Based on suitable breeding habitat in the study area and known nearby occurrences (Cornell Lab of Ornithology 2020), there is a high potential for Alameda song sparrow to breed within the BSA.

American Peregrine Falcon. Federal Listing Status: None; State Listing Status: Fully Protected. The American peregrine falcon occurs throughout much of the world and is known as one of the fastest flying birds of prey. Peregrine falcons prey almost entirely on birds, which they kill while in flight. Peregrine falcon nest on ledges and caves on steep cliffs, as well as on human-made structures such as buildings, bridges, and electrical transmission towers. In California, they are known to nest along the entire coastline, the northern Coast, and the Cascade Ranges and Sierra Nevada.

A severe decline in populations of the widespread North American subspecies *anatum* began in the late 1940s. This decline was attributed to the accumulation of dichlorodiphenyldichloroethylene (DDE), a metabolite of the organochlorine pesticide dichlorodiphenyltrichloroethane (DDT), in aquatic food chains. When concentrated in the bodies of predatory birds such as the peregrine falcon, this contaminant led to reproductive effects, such as the thinning of eggshells. The American peregrine falcon was listed as endangered by the USFWS in 1970 (USFWS 1970) and by the State of California in 1971. Recovery efforts included the banning of DDT in North America, and captive breeding programs to help bolster populations. The USFWS removed the American peregrine falcon from the endangered species list in 1999 (USFWS 1999), and from the state endangered species list in 2009.

The only locations within the project region where peregrines have been detected nesting are in old common raven and hawk nests on electrical transmission towers within the salt ponds in the Don Edwards National Wildlife Refuge northeast of the study area. Peregrine falcons have been observed at Bedwell Bayfront Park, but the species is not expected to nest in the BSA or in the Park due to the lack of suitable nesting habitat. However, peregrine falcon may forage occasionally in the BSA.

Black Skimmer. Federal status: None; State status: Species of Special Concern (nesting). The black skimmer is found along shorelines and is commonly observed around sheltered bays, inlets, and lagoons where it can forage for small fish and crustaceans in calm, shallow waters (Sibley 2000). Feeding is done primarily during dawn and dusk by skimming the top of the water with their bills to catch their prey (Terres 1980). Black skimmers primarily nest on gravel bars, low islands, or sandy beaches in colonies (Harrison 1978). In the Bay, black skimmers nest on

abandoned levees and islands in saline managed ponds and marshes. Nationally, black skimmer populations have declined due to breeding habitat disturbance from humans, predation by introduced species and fish population declines (Holt and Leasure 1998).

There is no suitable nesting habitat within the study area, but black skimmers may forage in the open water habitat in the study area, particularly Flood Slough where they have been regularly observed (Cornell Lab of Ornithology 2020). There are also several documented occurrences of black skimmer from nearby Don Edwards National Wildlife Refuge. Black skimmer is not expected to nest in the study area, but there is high potential for this species to forage in the study area.

Bryant's Savannah Sparrow. Federal status: None; State status: Species of Special Concern. The Bryant's savannah sparrow is one of four subspecies of savannah sparrow that breed in California. This subspecies occurs primarily in coastal and bayshore areas, from Humboldt Bay to Morro Bay, and is found year-round in low-elevation, tidally influenced habitat, specifically pickleweed-dominated salt marshes, and in grasslands and ruderal areas. Along the edge of the Bay, levee tops with short vegetative growth and levee banks with high pickleweed are the preferred nesting habitat of this sparrow (Fitton 2008).

In the northern and western portion of the study area, the northern coastal salt marsh and the levee banks with short ruderal vegetation provide suitable breeding and foraging habitat for the species. There are numerous documented occurrences of Bryant's savannah sparrow from Bedwell Bayfront Park and Ravenswood Open Space Preserve (Cornell Lab of Ornithology 2020). Based on suitable breeding habitat in the study area and documented nearby occurrences, there is a high potential for Bryant's savannah sparrow to breed in the BSA.

California Black Rail. Federal Listing Status: None; State Listing Status: Threatened and Fully Protected. The California black rail was listed as threatened by the State of California in 1971 and is fully protected under the California Fish and Game Code (Section 3511). The California black rail is a small rail that inhabits a variety of marsh types. California black rails are most abundant in extensive tidal marshes with some freshwater input (Evens et al. 1991). They nest primarily in pickleweed-dominated marshes with patches or borders of bulrushes, often near the mouths of creeks. Black rails build nests in tall grasses or marsh vegetation during spring and lay about six eggs. Nests are usually constructed of pickleweed and are placed directly on the ground or slightly above ground in vegetation. Black rails feed on terrestrial insects, aquatic invertebrates, and possibly seeds (Trulio and Evens 2000).

The California black rail reportedly nested in the South Bay in the early 1900s (Wheelock 1916), but until recently it was known to occur in the South Bay primarily as a non-breeder. The distribution of nonbreeding black rails in the South Bay is poorly understood, as they are extremely difficult to detect during the winter. However, recent records of black rails calling in south bay marshes suggest that small numbers of black rails could be breeding.

California black rails are known to be a regular winter visitor in the tidal marsh at the Palo Alto Baylands and Ravenswood Open Space Preserve in small numbers, typically being observed only during king tides, when this secretive species may be forced to find cover along the edge of the tidal marsh. However, there are no nesting records for black rails in the Baylands and surrounding areas. However, suitable nesting habitat is present in the study area, and, with this species' apparent expansion in other South Bay marshes during the breeding season, their presence as breeders during the spring and summer cannot be ruled out. If present as a non-breeder during the winter, this species may forage along sloughs and anywhere in the salt marsh within the study area. Based on suitable habitat, but lack of specific nesting records in the project region, black rail has a low potential to breed in the BSA. However, black rail has a high potential to be present as a non-breeder during the winter months.

California Brown Pelican. Federal Listing Status: None; State Listing Status: Fully Protected. The California brown pelican is a permanent resident of the coastal marine environment on the Pacific Coast and the range extends from British Columbia, Canada, south to Nayarit, Mexico. The bulk of the population (about 90%) nests in Mexico. The only long-term breeding colonies of California brown pelicans in the United States are on Anacapa and Santa Barbara Islands.

California brown pelicans are aquatic birds and are typically found on rocky, sandy or vegetated offshore islands, beaches, open sea (for feeding), harbors, marinas, estuaries, and breakwaters. Nesting colonies are established on islands without mammalian predators and permanent human habitation. Forages close to shore usually within five miles of land. There are numerous documented occurrences of brown pelican from Bedwell Bayfront Park, Don Edwards National Wildlife Refuge adjacent to the study area, and Ravenswood Open Space Preserve (Cornell Lab of Ornithology 2020). There is no suitable nesting habitat for this species in the project area, but there is a high potential for California brown pelican to forage in the BSA.

California Least Tern. Federal Listing Status: Endangered; State Listing Status: Endangered and Fully Protected. The California least tern was designated as federally endangered in 1970 (USFWS 1970). Critical habitat has not been designated for this species. California least terns forage, roost, nest, and migrate in colonies. In California, nesting occurs from April to September (Baron and Takekawa 1994; Rigney and Granholm 1990) with a typical colony size of 25 pairs (USFWS 2006). Nesting habitat consists of large tracts of undisturbed beaches kept free of vegetation by natural scouring, with shallow nests scraped in the sand or shell fragments (Baron and Takekawa 1994, USFWS 2006a, Marschalek 2008). Both adults incubate and care for the young. Least terns typically leave California breeding sites by September for wintering locations along Baja California, mainland Mexico, and Central and South America.

Least terns search for prey by hovering over shallow to deep waters in bays, lagoons, estuaries, river and creek mouths, marshes, lakes, and offshore areas and diving to the surface. They feed primarily on small surface-swimming, non-spiny fish. During the breeding season, most foraging occurs within two miles of the nest site because it reduces the energy cost of flying to feeding locations and the time needed to bring a load of fish back to the nest (Atwood and Minsky 1983). After breeding, least terns gather to roost and forage in "staging areas" from about late June through late August, prior to their southward migration. Both adult and juvenile least terns roost on salt pond levees (both outboard levees and interior levees between ponds) posts, and boardwalks, and forage both in the salt ponds and over the open waters of the San Francisco Bay.

They nest in small colonies and, due to their endangered status, nesting locations are closely monitored and well known. In recent decades, the closest least tern colony site is in the Eden Landing Ecological Preserve, just south of Highway 92 in Fremont, Alameda County. Least tern formerly nested on Bair island in the Don Edwards National Wildlife Refuge approximately three miles north of the study area. Therefore, California least terns are not expected to nest in or adjacent to the Project site.

However, the South Bay is an important post-breeding staging area for least terns to gather before migration, and this species forages in late summer and early fall in saline managed ponds and over the open waters of the Bay from Redwood City through Sunnyvale into the Alviso area. However, there are no documented occurrences of least tern from the salt marshes or tidal sloughs adjacent to the study area (Cornell Lab of Ornithology 2020). Based on the lack of suitable breeding and forging habitat as well as the lack of documented occurrences in and near the study area, least tern is not expected to breed or forage within the BSA.

California Ridgway's Rail. Federal Listing Status: Endangered; State Listing Status: Endangered and Fully Protected. The California Ridgway's rail, formerly the California clapper rail, was federally listed as endangered in 1970 (USFWS 1970) and was listed as endangered by the State of California in 1971. This species is fully protected under the California Fish and Game Code (Section 3511). The USFWS approved a joint recovery plan for the salt marsh harvest mouse and the Ridgway's rail in 1984 (USFWS 1984), and an updated Tidal Marsh Species Recovery Plan was completed in 2013 (USFWS 2013). Critical habitat for this species has not been proposed or designated.

The California Ridgway's rail is a secretive marsh bird that is currently endemic to marshes of the San Francisco Bay. The species is typically found in the intertidal zone and sloughs of salt and brackish marshes dominated by pickleweed, Pacific cordgrass, marsh gumplant, saltgrass, jaumea, and contain a complex network of tidal channels. It generally nests in taller vegetation, often along tidal channels. Upland transitional areas adjacent to or within these marshes are also important for predator avoidance at high tides. Ridgway's rails do not occur in muted tidal

or diked salt marshes but have been documented in brackish marshes in the South Bay. Ridgway's rails formerly nested at Humboldt Bay (Humboldt County), Elkhorn Slough (Monterey County), and Morro Bay (San Luis Obispo County), but are now extirpated from all sites outside of the San Francisco Bay (Harding-Smith 1993).

Ridgway's rail is well documented from the project region. Annual surveys for Ridgway's rails have been conducted during the breeding season in marshes in the South San Francisco Bay (south of the Dumbarton Bridge) as part of the Invasive Spartina Project since 2006 (McBroom 2016). These surveys have found that large, intact marshes such as Laumeister Marsh, Faber Marsh, the Palo Alto Baylands, and Palo Alto Harbor have the highest densities of Ridgway's rails in the San Francisco Bay. Additionally, there are numerous documented occurrences of Ridgway's rail at Greco Island in the Don Edwards National Wildlife Refuge and Flood Slough, both of which are contiguous with the salt marsh in the study area (Cornell Lab of Ornithology 2020). During a reconnaissance site visit in 2017, Ridgway's rails were heard calling from the salt marsh in the study area. Based on suitable nesting habitat and documented occurrences of Ridgway's rail in the BSA, this species is assumed to be present in the salt marsh within the BSA as a breeder.

Loggerhead Shrike. Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The loggerhead shrike is a predatory songbird associated with open habitats interspersed with shrubs, trees, poles, fences, or other perches from which it can hunt (Yosef 1996). Nests are built in densely foliated shrubs or trees, often containing thorns, which offer protection from predators and upon which prey items are impaled. The breeding season for loggerhead shrikes may begin as early as mid-February and lasts through July (Yosef 1996). Nationwide, loggerhead shrike populations have declined significantly over the last 20 years. Loggerhead shrikes are still fairly common in parts of the San Francisco Bay area, but urbanization has reduced available habitat, and local populations are likely declining (Cade and Woods 1997, Humple 2008).

Loggerhead shrike nest in a number of locations in the project region where open grassland, ruderal, or agricultural habitat with scattered brush, chaparral, or trees that provide perches and nesting sites occurs (Bousman 2007). This species occurs slightly more widely (i.e., in smaller patches of open areas providing foraging habitat) during the nonbreeding season. Dense stands of coyote brush and other woody vegetation found just outside of the study area in Bedwell Bayfront Park as well as stands of dense vegetation around the northern coastal salt marsh within the study area provide suitable nesting habitat for the loggerhead shrike and the species may forage in the grassland and marsh habitats in and adjacent to the study area. Loggerhead shrike have been observed at Bedwell Bayfront Park (Cornell Lab of Ornithology 2020). Based on known nearby occurrences and suitable nesting habitat in the study area, loggerhead shrike has a high potential to breed in the BSA.

Northern Harrier (*Circus cyaneus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The northern harrier nests in marshes and grasslands with tall vegetation and sufficient moisture to inhibit accessibility of nest sites to predators. This species forages primarily on small mammals and birds in a variety of open grassland, ruderal, and agricultural habitats. The species is widespread as a forager in grasslands and other open areas in the project region, especially during migration and winter (Davis and Niemela 2008; Cornell Lab of Ornithology 2020). During the breeding season, the northern harrier occurs primarily along the coast, where it nests in extensive marshes and grasslands, and in tidal marsh along South San Francisco Bay (Cornell Lab of Ornithology 2020). Suitable nesting and foraging habitat for the northern harrier is present in the extensive tidal salt marsh located partially within the northern portion of the study area. This species is unlikely the nest close to the levees due to proximity to upland habitat accessible to mammalian predators. However, it is expected to forage in the upland area. Based on suitable habitat in the study area and known nearby occurrences, Northern harrier has a high potential to nest and forage in the BSA.

San Francisco Common Yellowthroat. Federal Listing Status: None; State Listing Status: Species of Special Concern. The San Francisco common yellowthroat inhabits emergent vegetation and constructs nests in fresh and brackish marshes and moist floodplain vegetation around the San Francisco Bay. Common yellowthroats will use small and isolated patches of habitat if groundwater is close enough to the surface to encourage the establishment of dense stands of rushes (*Scirpus* and *Juncus* spp.), cattails, willows, and other emergent vegetation (Nur et al. 1997, Gardali and Evens 2008). Ideal habitat, however, is comprised of extensive, thick riparian, marsh, or herbaceous floodplain vegetation in perpetually moist areas, where populations of brown-headed cowbirds are low (Menges 1998). San Francisco common yellowthroats nest primarily in fresh and brackish marshes, although they nest in salt marsh habitats that support tall vegetation (Guzy and Ritchison 1999). This subspecies builds open-cup nests low in the vegetation, and nests from mid-March through late July (Guzy and Ritchison 1999, Gardali and Evens 2008).

In the nearby Don Edwards National Wildlife Refuge, north of the study area, the San Francisco common yellowthroat is a common breeder in fresh and brackish marshes. It also breeds in the nearby Palo Alto Bayland marshes and the Ravenswood Open Space Preserve (Cornell Lab of Ornithology 2020). Within the northern portion of the study area, the northern coastal salt marsh provides suitable breeding and foraging habitat for the species. Based on suitable habitat in the study area and known nearby occurrences, San Francisco yellowthroat has a high potential to breed in the BSA.

Short-eared Owl. Federal Listing Status: None; State Listing Status: Species of Special Concern (nesting). The short-eared owl is found in perennial grasslands, prairies, dunes, meadows and both fresh and saline water wetlands (Sibley 2000). The short-eared owl primarily feeds on small mammals, including mice and voles but is known to also feed on reptiles and

birds in some regions (Holt 1992). The short-eared owl nests on the ground in marshes and moist fields, and usually choose dry sites, often on small knolls, ridges, or hummocks, with dense vegetation to conceal the nest. Nationally, short-eared owl's populations have been declining due to habitat loss and fragmentation, increased grazing, and increased predation from non-native predators (Holt and Leasure 1993).

The short-eared owl has been recorded nesting in the project region only in the Palo Alto Flood Control Basin, though it has not been confirmed nesting there since the 1970s. They are known to be primarily winter residents in the South Bay and have been observed periodically in Bedwell Bay Park and Don Edwards National Wildlife Refuge (Cornell Lab of Ornithology 2020). However, when food is plentiful winter areas often become breeding areas.

Suitable nesting habitat is present in the salt marsh within the study area and short-eared owls may forage in the developed portions of the study area but are expected to do so infrequently and in low numbers. Based on the presence of suitable habitat and lack of breeding records for the project area there is a low potential for short-eared owl to nest in the area, but a high potential for this species to forage in the study area, particularly in the non-breeding season.

Western Burrowing Owl. Federal Listing Status: None; State Listing Status: Species of Special Concern. Burrowing owls occur year-round in the San Mateo County, using open, agricultural or grassland areas with active small mammal burrows, which they use for nesting and roosting. Typical burrowing owl habitat is treeless (because tall trees provide perches for raptors that can easily prey on burrowing owls), with minimal shrub cover and woody plant encroachment, and low density and foliage height diversity, which allows the owls to observe approaches to their nest or roost burrows. In the San Francisco Bay Area, burrowing owls are chiefly associated with burrows of California ground squirrels, which, in addition to providing nesting, roosting, and escape burrows, improve habitat for burrowing owls in other ways. For example, burrowing owls are known to favor areas with short, sparse vegetation (Coulombe 1971, Haug and Oliphant 1990, Plumpton and Lutz 1993a), which provides visual protection from avian predators and foraging habitat, and ground squirrel colonies maintain short vegetation height. In the absence of ground squirrel populations, habitats soon become unsuitable for occupancy by owls.

Burrowing owls are diet generalists. Insects, small mammals, birds, and occasionally amphibians and reptiles may be eaten (Errington and Bennett 1935, Thomsen 1971, Green et al. 1993, Plumpton and Lutz 1993b). The burrowing owl nesting season as recognized by the CDFW runs from February 1 through August 31. In nearby Santa Clara County, burrowing owl families with non-flying young have been found as early as March 30, suggesting egg-laying dates in mid to late February, and fledged young still dependent on adults have been found into late August (Trulio 2007). After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate and over-winter elsewhere (Gorman et al.

2003). Young birds disperse across the landscape from 0.1 mile to 35 miles from their natal burrows (Rosier et al. 2006). Philopatry (the tendency for individuals to breed at or near their place of birth), site tenacity (the tendency for individuals to breed at or near their prior nest location), and nest burrow reuse have been well documented for burrowing owls (Martin 1973, Rich 1984, Plumpton and Lutz 1993a), and burrowing owls may return to a nesting site and attempt to nest even after the site has been developed. Further, past reproductive success may influence future site reoccupancy. Female burrowing owls with large broods tend to return to previously occupied nest sites, while females that fail to breed, or which produce small broods, may change nest territories in subsequent years (Lutz and Plumpton 1999).

Within the BSA, burrowing owl have been observed near a burrow on the levee in March 2017. However, burrowing owl were not observed during the September 2019 site visit. Also, there is one documented occurrence of burrowing owl from Bedwell Bayfront Park in 2003 (Cornell Lab of Ornithology 2020). Additionally, numerous burrows of California ground squirrel were observed during the reconnaissance site visit in September 2019 and May 2020. Based on suitable nesting habitat and documented occurrence within the BSA, nesting burrowing owl are assumed to be present.

Western Snowy Plover. Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. Snowy plover is a resident along the Pacific Coast from British Columbia to Mexico and along the Gulf Coast from Texas to the Florida Panhandle. It also breeds locally in the interior from California and Nevada east to Oklahoma and Texas. The Pacific Coast population of the snowy plover is defined as those individuals that nest adjacent to tidal waters of the Pacific Ocean, and includes all nesting birds on the mainland coast, peninsulas, offshore islands, adjacent bays, estuaries, and coastal rivers (USFWS 2004). The current known breeding range of this population extends from Damon Point, Washington, to Bahia Magdelena, Baja California, Mexico (USFWS 2006b).

Snowy plover winter and breed in the same habitats, consisting of mostly sandy, ocean fronting beaches, dry salt flats, and gravel bars (Page et al. 1995; Colwell et al. 2005; Brinfock and Colwell 2011). Many beaches that support snowy plover nesting, foraging, and wintering, are bordered to the east by dense stands of European beachgrass, which often form an abrupt boundary that defines unsuitable habitat for snowy plover (Patrick and Colwell 2014). Snowy plover typically nests, forage, and winter on flat to gently sloping, wide beaches with plentiful food sources and sparse vegetation (Page et al. 1995; Colwell et al. 2005), (MacDonald et al. 2010; Muir and Colwell 2010; Brinfock and Colwell 2011). Selecting habitats that are open (or wide) and have less vegetative cover can facilitate early detection of predators and reduce predation risk (Muir and Colwell 2010; Brinfock and Colwell 2011; Patrick and Colwell 2014). Snowy plover nests have been found adjacent to small clumps of vegetation or other beach debris that likely provides additional cover making it more difficult for predators to spot (Page, Stenzel, & Ribic 1985; Powell 2001). In addition, snowy plover broods have been observed

hiding in vegetation clumps in response to adult alarm calls (Webber et al. 2013). In general, SNPL nests are most often located within 328 feet of water, or at least within sight of it (Stenzel et al. 1981) (USFWS 2007). Shortly after hatching, chicks move into areas where there is at least some vegetation or beach debris, which provides cover from the heat of the sun, inclement weather, and predators.

On March 5, 1993, the Pacific coast population of the western snowy plover was listed as threatened under the federal Endangered Species Act. On June 19, 2012, a final rule of critical habitat for western snowy plovers along the coasts of California, Oregon, and Washington was published (*Federal Register* 77 FR 36728). There is designated critical habitat (Ravenswood Unit) for western snowy plover approximately two miles southeast of the BSA (Appendix A, Figure 7).

Although western snowy plover is known to nest in salt panne habitat located two miles to the southeast of the study area in the Don Edwards National Wildlife Refuge Ravenswood complex (CNDDB 2020), no suitable nesting is present in the study area. However, there are numerous documented occurrences of snowy plover foraging along Flood Slough at Bedwell Bayfront Park (Cornell Lab of Ornithology 2020). Based on documented nearby occurrences and suitable foraging habitat in the tidal slough habitat in the study area, snowy plover has a high potential to forage within the salt marsh habitat in the BSA.

White-tailed Kite. Federal Listing Status: None; State Listing Status: Fully Protected. In California, white-tailed kites can be found in the Central Valley and along the coast, in grasslands, agricultural fields, cismontane woodlands, and other open habitats (Zeiner et al. 1990b, Dunk 1995, Erichsen et al. 1996). White-tailed kites are year-round residents of the state, establishing nesting territories that encompass open areas with healthy prey populations, and snags, shrubs, trees, or other nesting substrates (Dunk 1995). Nonbreeding birds typically remain in the same area over the winter, although some movements do occur (Polite 1990). The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997). Although the species recovered after population declines during the early 20th century, its populations may be exhibiting new declines as a result of recent increases in habitat loss and disturbance (Dunk 1995, Erichsen et al. 1996).

White-tailed kites are known to nest in the project vicinity, along the eastern edge of San Mateo County throughout the open areas edging the San Francisco Bay (Cornell Lab of Ornithology 2020). The blue gum and Australian pine trees found along the southern edge of the BSA as well as just outside of the BSA in Bedwell Bayfront Park provide suitable nesting habitat for white-tailed kite. Based on suitable nesting habitat and documented nearby occurrences, there is a high potential for white-tailed to nest and forage in the BSA.

6.2.4 Nesting Birds

Nesting birds may nest within vegetation, shallow scrapes on bare ground, and buildings in and around the study area. Several bird species were noted during the field survey (see Section 5.2). All bird species are protected under California Fish and Game code.

6.2.5 Marine Mammals

All marine mammals are protected by the Marine Mammal Protection Act of 1972.

Harbor Seal (*Phoca vitulina*). Harbor seals are widely distributed in the coastal areas of the northern Pacific and northern Atlantic. Harbor seals in the eastern Pacific range from the Pribilof Islands in Alaska to Isla San Martin off Baja (CDFG 2007a; Greig and Allen 2015).

The highest concentrations of harbor seals outside of the southern Channel Islands occur at Point Reyes and at several other locations, including Tomales Bay, Tomales Point, Drakes Estero-Estero de Limantour, Double Point, and Bolinas Lagoon. Estuaries provide habitat for large numbers of harbor seals, and Drakes Estero is the largest colony in the region and one of the largest in the state. Harbor seals are also abundant south of the Golden Gate and haul out at several locations, including Fitzgerald State Marine Park (NCCOS 2007). Additionally, harbor seals are the only marine mammal present in San Francisco Bay year-round where they rest ashore on islands, tidal rocks, mudflats, and sand bars. Individual seals may frequent multiple haul outs within the Bay, and also move outside of the bay to coastal sites to the north and south. Harbor seals eat a wide variety of pelagic and benthic prey, including small schooling fishes such as northern anchovy, many species of flatfishes, bivalves, and cephalopods (Greig and Allen 2015).

The seals are year-round residents at the haul out sites but are seasonally abundant with the highest numbers of seals present during the breeding season (March-June) and the molt (June-July). There are 13 known haul-out sites in the South Bay (south of San Mateo Bridge), of which six are located on the west side of the South Bay. Sites near the BSA include Bair Island, Greco Island, and Ravenswood Point. Based on the presence of nearby haul-out sites, harbor seals could be present year-round in the open water habitat as well as areas exposed by low tides (Fox 2008).

6.3 Sensitive and Regulated Plant Communities and Habitats

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types; and tracks sensitive communities in its Rarefind database (CNDDB 2020). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings reflect the

condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (CDFG 2007):

- G1/S1: Less than 6 viable occurrences or less than 2,000 acres
- G2/S2: Between 6 and 20 occurrences or 2,000 to 10,000 acres
- G3/S3: Between 21 and 100 occurrences or 10,000 to 50,000 acres
- G4/S4: The community is apparently secure, but factors and threats exist to cause some concern
- G5/S4: The community is demonstrably secure to ineradicable due to being common throughout the world (for global rank) or the state of California (for state rank)

State rankings are further described by the following threat code extensions:

- S1.1: Very threatened
- S1.2: Threatened
- S1.3: No current threats known

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 1995). If an alliance is marked G1-G3, all the vegetation associations within it will also be of high priority (CDFG 2007). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2020).

Natural Communities of Special Concern. There is one CDFW classified sensitive natural communities within the study area.

- Northern coastal salt marsh. Northern coastal saltmarsh is a wetland plant community found in tidal areas and is dominated by salt-tolerant hydrophytic vegetation that typically forms a dense mat of vegetation. This plant community occurs along the California coast from Oregon to near Point Conception and is especially extensive around San Francisco Bay. Typical species include pickleweed, California cordgrass, alkali heath, salt grass, saltmarsh dodder (*Cuscuta pacifica*), jaumea (*Jaumea carnosa*), sea lavender (*Limonium californicum*), and marsh gumplant (*Grindelia stricta*).

Sensitive Vegetation Alliances. Sensitive plant communities identified by CDFW within the study area include *Sarcocornia pacifica* Alliance – Pickleweed Mats, which is the dominant vegetation alliance in the northern coastal salt marsh habitat in the BSA (Appendix A, Figure 6). This plant community has been identified by CDFW as "G4 S3", which means that it is rare and threatened throughout its range in California.

CDFW Stream/Riparian Habitat. There is no stream or riparian habitat within the project site.

Critical Habitat/EFH/Habitat Areas of Special Concern (HAPC). All tidally influenced areas of the BSA have been designated as critical habitat for the Southern DPS of green sturgeon. San Francisquito Creek, approximately five miles to the south of the BSA, is designated critical habitat for CCC Steelhead. In addition, there is designated critical habitat (Ravenswood Unit) for western snowy plover approximately two miles southeast of the BSA (Appendix A, Figure 7).

All tidal waters within the BSA are designated EFH (Pacific Fisheries Management Council. 1998, 2012) (Appendix A, Figure 7). In addition, all tidal waters in the BSA occur within areas designated as HAPC for various federally managed fish species within the Pacific Groundfish FMP (Pacific Fisheries Management Council 2011).

Waters of the U.S./State. A Preliminary Delineation of Wetlands and Waters report was prepared for the BSA in February 2020. Approximately 6.46 aces of the northern coastal salt marsh and tidal open water habitat (tidal sloughs) in the study area meet the definition of waters of the U.S./State (Appendix A, Figure 8). Any impacts on verified waters of the U.S./state within the project site would require a Section 404 permit and a Section 401 Water Quality Certification from the San Francisco Bay RWQCB.

6.4 Wildlife Corridors

Wildlife corridors are segments of land that provide a link between different habitats while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity).

The study area is centered on an existing developed facility, including three active wastewater detention ponds and a maintained levee surrounding the facility. The study area is surrounded by Flood Slough, Westpoint Slough, salt ponds to the west; and Bedwell Bayfront Park and salt ponds to the east and south. There are expansive tidal marshes in Don Edwards National Wildlife Refuge to the north and east. Dense urban development occurs to the west, preventing substantive movement of terrestrial wildlife to or from open space and habitat in the foothills of the Santa Cruz Mountains, approximately six miles away. Although there may be a connection via Atherton Channel, the channel is intermittent, empties into Flood Slough via a tide gate (0.6 miles upstream of the study area), and is a highly engineered linear channel with long culverted sections for most of its length. Although California red-legged frog and San Francisco garter snake are found at the headwaters of Atherton Channel, these species are not expected to disperse down the channel and into the bay due to its engineered design, underground sections, and low quality habitat for dispersal. Likewise, extensive salt ponds and urban development to the west and east prevent movement of terrestrial species between the study area and Bair Island State Marine Park and Ecological Preserve, three miles to the northwest,

and Ravenswood Open Space Preserve, 2.5 miles to the southeast. Therefore, the site is isolated as a dispersal stepping-stone for many terrestrial species.

The project site is locally connected to open, upland wildlife habitat in Bedwell Bayfront Park and salt marsh habitat in the Don Edwards National Wildlife Refuge. The upland habitat areas of Bedwell Bayfront Park are limited in size and isolated from extensive open space habitat by urban development and salt ponds as discussed above. As a result, any movement by mammals, reptiles, and amphibians through the study area would facilitate exchange of individuals or genes only very locally, along the immediate edge of the Bay in the project area. Although connectivity to adjacent open space is important, the project site is not part of a regional wildlife corridor for terrestrial species.

Even though developed portions of the site generally have low habitat connectivity value for native species, the levees within the study area provide important connectivity between the salt marsh and upland areas. Upland areas are likely important refugia habitat for native salt marsh species during high tides as well as extreme tide events. The study area supports important aquatic habitats and tidal marsh habitats, including Flood Slough. These habitats are directly connected to Bay waters and the tidal marshes in Don Edwards National Wildlife Refuge and provide important habitat for fish, species endemic to salt marsh habitat, and birds migrating through the area as part of the Pacific flyway.

7 Biological Impact Assessment and Mitigation Measures

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and waters of the U.S. and the state—that may occur in or near the project site. Each impact discussion includes measures to minimize or mitigate impacts. These measures should be implemented during the project to avoid significant biological impacts. With the implementation of the mitigation measures below, all impacts to biological resources are anticipated to be less than significant under CEQA.

The CEQA Guidelines define which impacts are considered significant. The Act defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Potential impacts to biological resources were determined in accordance with Appendix G of the CEQA Guidelines. Impacts would be considered potentially significant if the proposed project will:

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

B. "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"
C. "have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means"
D. "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"
E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"
F. "conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan"

Direct take of a federally or state listed species is considered a significant impact. Temporary and/or permanent habitat loss is not considered a significant impact to sensitive species (other than for listed or candidate species under the FESA and CESA), unless a significant percentage of total suitable habitat throughout the species' range is degraded or somehow made unsuitable, or areas supporting a large proportion of the species' population are substantially and adversely impacted. Potential impacts to nesting bird species would be considered significant due to their protection under California Fish and Game Code.

Approach to Analysis. Because aspects of the project are still in the design phase and subject to change, the following impact analysis was prepared assuming project development could occur in any portion of the BSA as well as developed, paved rights of ways for the influent and distribution pipelines outside of the BSA. However, this analysis assumes that all of the proposed pipeline alignments and the influent pump house will be built within the existing street rights-of-way and will avoid sensitive wetland and aquatic habitat.

7.1 Impacts to Special-Status Plant Species – Less than Significant Impact with Mitigation

Four plant species, Coastal marsh milkvetch, Congdon's tarplant, Point Reyes bird's-beak, and saline clover, categorized by the CNPS as CRPR 1 or 2 have the potential to occur within the California annual grassland and northern coastal salt marsh habitats in the BSA. If present, project development may affect special-status plants due to disturbance or destruction of individuals or suitable habitat. Direct impacts could include grading or filling areas supporting these species, trampling or crushing of plants, and soil compaction. Indirect impacts could include increased mobilization of dust onto plants, which can affect their photosynthesis and

respiration, or changes to hydrology supporting these plants within adjacent wetlands due to grading or construction in nearby habitats.

Conservation of CRPR 1 and 2 species is important because their populations contribute to preserving the genetic resources for the species ensuring persistence of these rare species. For these four species, extirpation of any population in the San Francisco Bay region could negatively impact the species' genetic resources, and in the case of Point Reyes bird's-beak and saline clover, could represent a reduction in range. These impacts would be considered significant under CEQA (Criterion E). Implementation of the following mitigation measures will avoid and reduce impacts on special-status plants to a less than significant level. Suitable habitat for these species is limited to the perimeter of the FERRF site, including the stormwater swale and the area planned for the ecotone levee. The proposed RWF is internal to the project site which is highly disturbed and does not provide habitat for these rare plant species. The following measures are necessary to assure that project actions in the perimeter areas will not significantly impact rare plants.

Mitigation Measure BIO-1a. Pre-Activity Surveys for Special-Status Plants. Prior to initial ground disturbance in grassland and wetland habitats, and during the appropriate blooming period (Coastal marsh milkvetch and Point Reyes bird's-beak, June–October; Congdon's tarplant, May–November; saline clover, April–June), a focused survey for these four potentially occurring special-status plant species will be conducted by a qualified plant ecologist in accordance with the *Protocols for surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities* within suitable habitat in the project footprint and a 50-foot buffer around the project footprint. The purpose of the survey is to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or the identified buffer, then no further mitigation is required. If Point Reyes bird's-beak, Coastal marsh milkvetch, Congdon's tarplant, or saline clover individuals are found in the impact area, then Mitigation Measures BIO-1b will be implemented. The results of the survey will be documented, and all rare plant discoveries shall be reported to CDFW's California Natural Diversity Database.

Mitigation Measure BIO-1b. Avoidance Buffers. The project proponent, in consultation with a qualified plant ecologist, will take measures to protect all populations of special-status plant species found to occur within the project site or within 50 feet of the impact area. Avoided special-status plant populations will be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around special-status plants to be avoided will be flagged or fenced. The flagging will be maintained intact and in good condition throughout project-related construction activities.

If avoidance is not feasible, then the appropriate resource agencies will be consulted to determine the appropriate measures to take, which may include salvage of seeds and/or plants, relocation of individual plants, and/or off-site preservation, enhancement, and management of occupied habitat for the species.

7.2 Impacts to Special-Status Fish and EFH – Less than Significant Impact with Mitigation

Green sturgeon, longfin smelt, and steelhead may be present in tidally influenced habitat within and adjacent to the study area, particularly Flood Slough. Even though fish are expected to occur in the smaller tidal sloughs in the study area, the extent, depth, and width of these channels likely limits the number and size of fish that may occur in these sloughs. Because project activities are proposed to take place below the HTL during construction of the ecotone levee, the project may indirectly impact special-status fish and EFH through the degradation of surface or ground water quality due to erosion and transport of fine sediments, unintentional release of contaminants, and soil compaction from access and equipment in tidal areas.

During the construction of the ecotone levee, individuals of these species may also be directly impacted if they are present in the tidal sloughs during construction activities because they could be crushed or injured by personnel or equipment working in water. Based on the current conceptual design, approximately 0.13 acres of tidal sloughs will be impacted during construction of the ecotone levee. The acreage is based on the conceptual design for the ecotone levee and final acreages for temporary and permanent impacts will be finalized when the final design for the ecotone levee is completed. Permanent impacts will result in the loss of EFH as well as the loss of critical habitat for green sturgeon and steelhead.

Additionally, the project proposes installing sheet piles with a vibratory or impact hammer along Flood Slough, which is along the western edge of the study area. The sheet piles will be installed above the HTL in terrestrial habitat; therefore, it is not expected that fish will be exposed to elevated levels of underwater sound produced during pile driving, and therefore will not be adversely impacted.

Physical characteristics of the RO effluent that could adversely affect marine organisms include pH, salinity, and temperature, all of which may alter water chemistry (NRC 1993; Judd 2010; Naidoo and Olaniran 2014).

Discharge of excessive levels of nutrients into the Bay generally have not resulted in harmful effects since the San Francisco Bay has long been recognized as a nutrient-enriched estuary, that has exhibited resistance to some of the symptoms of nutrient over enrichment, such as high phytoplankton biomass and low dissolved oxygen. The Bay’s resistance to high nutrient loads results from its high turbidity, strong tidal mixing, and large filter-feeding clam populations, all of which limit the efficiency with which abundant nitrogen and phosphorous are converted into

phytoplankton biomass. However, recent observations indicate that the Bay's resistance to high nutrient loads is weakening, and that conditions are trending toward increased productivity and potential impairment (Senn and Novick 2014).

When treating secondary treated wastewater, MBR and RO processes can produce effluent of high enough quality to be discharged to coastal, surface, or brackish waterways or to be reclaimed for urban irrigation. The capabilities of MBR processes include efficient reduction of BOD, nitrification of ammonia (removal of ammonia), removal of solids, and de-nitrification (removal of nutrients) through microbial action and filtration. The capabilities of the RO process include removal of pathogens (viruses and bacteria), dissolved solids, organic pollutants, and metal ions (e.g., sodium).

Discharge of treated RO effluent is considered a point source discharge that requires a National Pollutant Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board (RWQCB) and the Environmental Protection Agency (EPA). In California, NPDES permits are also referred to as waste discharge requirements (WDRs). The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the RWQCB's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes implementation programs to achieve water quality objectives. Any treated RO effluent discharge will be evaluated against the objectives set forth in the Basin Plan for over 126 priority pollutants and must meet water quality criteria set forth in any NPDES permits issued by the Regional Water Quality Control Board. The permits may also include criteria for nutrients, particularly nitrogen, and salinity levels. In this case, the water quality criteria may be determined in collaboration with wildlife agencies in addition to the RWQCB.

Project-related impacts on EFH or individual green sturgeon, longfin smelt, and steelhead would be significant under CEQA (Criteria A and B). However, implementation of Mitigation Measures BIO-2a, BIO-2b, and BIO-2c will protect water quality and reduce impacts to these special-status fish species and EFH to less than significant levels. Discharge of any treated RO effluent will require agency review and permits and must meet certain standards before discharge would be allowed.

Mitigation Measure BIO-2a. Biological Monitoring During Construction in the Marsh. A qualified biological monitor will be present during all construction activities within the marsh or in vegetated areas within five (5) feet of the marsh to look for special-status animals that may be impacted by construction. For example, when construction personnel need to install the ecotone levee coffer dam and remove vegetation, the biological monitor will first inspect the vegetation to determine whether any salt marsh harvest mice, salt marsh wandering shrews, or other special-status species are present. If any animals are present, they will be allowed to leave the area on their own, or the location of the in-marsh work will be adjusted to ensure that no impacts to

special-status species occur at that time. The biologist shall have stop-work authority if any special-status species is detected in an area where it may be injured or killed by construction activities. In the event that special-status species are found within or directly adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The results of the monitoring will be documented. If directed by the agency approved biological monitor, Mitigation Measure BIO-2b will be implemented. If directed by the agency approved biologist, Mitigation Measure BIO-3h (exclusion fencing) will be implemented. The biological monitor will also ensure that Mitigation Measures BIO-3a through kare implemented as necessary to protect special-status species. Any discoveries of special-status species shall be reported to CDFW's California Natural Diversity Database.

In the event that special-status species are found within or adjacent to the project site, a qualified biologist shall identify an appropriate no-disturbance buffer to be implemented. The qualified biologist shall be on-site at appropriate times to ensure that special-status species are protected.

Mitigation Measure BIO-2b. Installation of Sheet Piles, Dewatering Plan and Relocation of Stranded Fish. Sheet pile coffer dams to be installed prior to constructurion of the ecotone levee shall be installed at low tide, when there is little water in the slough, to avoid stranding fish. An agency approved dewatering plan shall be implemented if water deep enough to support fish remains within the ecotone levee work area once the sheet pile coffer dam is installed. If necessary, as the coffer dams are being placed, a qualified biologist will relocate any stranded fish to suitable habitat outside of the work area. The method of relocation will be determined by the qualified biologist, in consultation with NOAA Fisheries and/or CDFW (as appropriate), based on site conditions and species present. Implementation of this measure will avoid loss of fish due to stranding. The methods and results of fish relocation efforts will be documented. Discoveries of special-status fish species shall be reported to NOAA Fisheries and/or CDFW, and entered into CDFW's California Natural Diversity Database.

Mitigation Measure BIO-2c. Measures to Protect Water Quality. During all construction in and near tidal aquatic habitat, standard BMPs will be used to minimize erosion and impacts to water quality as well as direct impacts to special-status fish. These are reported in the EIR and will be included in the SWPPP prepared for the project. Compliance measures that protect water quality help reduce potential impacts to biological resources to less than significant.

Mitigation Measure BIO-2d: Noise Minimization. As a Best Management Practice to minimize noise impacts, the sheet piles shall be installed using a soft-start method by pausing after the first 15 seconds at a reduced energy twice before vibrating the sheet piles in at full capacity.

7.3 Impacts to Salt Marsh Habitat Supporting Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew – Less than Significant Impact with Mitigation and Permit Compliance

Small numbers of salt marsh harvest mice and salt marsh wandering shrews may occur in pickleweed-dominated habitats in the northern portion of the study area and on the levee slopes, particularly during high tide events. In the absence of protective measures, direct impacts to salt marsh harvest mouse and salt marsh wandering shrew could potentially occur as a result of installing sheet pile walls around the perimeter of the levees and construction of an ecotone levee in the northern portion of the study area. Indirect impacts may be caused by artificial lighting if it disrupts animal behavior, adversely impacts breeding and foraging activities, or exposes animals to predation.

Project activities may result in the injury or mortality of salt marsh harvest mice and salt marsh wandering shrews as a result of crushing by equipment, vehicle traffic, grading, removal of vegetation, and worker foot traffic. Individuals that vacate the area because of increased levels of noise and disturbance may be exposed to increased competition from conspecifics already occupying the area to which they were displaced and increased levels of predation because of unfamiliarity with the new area or lack of sufficient cover. Project construction and the removal of salt marsh vegetation may expose individual mice and shrews to predation, particularly if construction activities occur during high or king tides, when cover for these species is very limited. Due to the rarity of these species, any of these project-related impacts on individual salt marsh harvest mice or salt marsh wandering shrews is assumed to be significant under CEQA. I

Based on the conceptual design the ecotone levee will impact approximately 3.1 acres of tidal salt marsh that is primary habitat for salt marsh harvest mouse and salt marsh wandering shrew. Final acreages will be determined once the design is completed and reviewed by several state and federal agencies during the permit process. Impacts to salt marsh habitat containing pickleweed would be considered significant due to the importance of pickleweed to these two rare mammals. However, the ecotone levee will immediately provide upland habitat and refugia for these species and fits within the framework for resiliency in San Francisco Bay that protects salt marsh in the face of sea level rise. Therefore, the ecotone levee will not significantly impact salt marsh harvest mouse or salt marsh wandering shrew. Protection measures are necessary during construction to avoid impacts to these species.

Even though there will be a net loss of salt marsh habitat, the newly created upland areas above the HTL will be restored with native plantings and salt marsh habitat, including tidal sloughs, will remain in the tidal zone at the base of the levee slope and will include plantings of native marsh vegetation salvaged prior to construction activities. The restoration design will create conditions conducive to supporting diverse habitats, including tidal aquatic, estuarine wetland, bayside mesic scrub, and upland xeric scrub. The diverse habitats will provide higher quality native upland refugia habitat for salt marsh harvest mouse, salt marsh wandering shrew, California

Ridgway's rail, and California black rail; and increased resilience of the tidal habitat to climate change by allowing for sea level rise while maintaining upland habitat and tidal sloughs (see Section 2.1).

The project is subject to permits from the USACE (in consultation with USFWS and NMFS), RWQCB, and BCDC. While the ecotone levee fulfills the goals of the Adaptation Atlas and will restore saltmarsh in the long term and protect salt marsh values from sea level rise, it results in near-term (e.g., 30 year) loss of salt marsh. However, a benefit of the ecotone levee is it expands the area of transitional habitat available to salt marsh species in this location in the immediate term, providing important refuge during high tide and sea level rise. It counteracts the loss of salt marsh habitat in the near term with the creation of salt marsh that would otherwise be lost to sea level rise (a project benefit).

The agencies that will review this project and issue permits for it will make the final determination of the mitigation value of the ecotone levee. The permits will require an approved mitigation and monitoring plan that would contain the following basic components:

- Description of the Impact and Mitigation;
- Responsible parties;
- Goals;
- A detailed implementation plan, including, if appropriate, a schedule, financial assurances, construction drawings for a planting/restoration plan, soil amendments and other site preparation elements as appropriate; an irrigation plan; and maintenance requirements including weed control;
- Monitoring requirements and a minimum monitoring period, with annual reports; and
- Contingency and adaptive management measures if restoration is not meeting performance standards.

Implementation of Mitigation Measures BIO-3a through BIO-3j, below, will ensure avoidance of impacts to salt marsh harvest mice and salt marsh wandering shrews, and will reduce impacts to these special-status mammal species to less than significant.

Mitigation Measure BIO-3a. Worker Environmental Awareness Training. A resource agency approved biologist will prepare a worker environmental awareness fact sheet with 1) the description and status of the species; 2) the habitat of the species; 3) the legal ramifications of impacting the species; 4) a list of measures being taken to reduce impacts on these species during project construction (including preconstruction surveys, minimizing trash that attracts predators, and other measures); and 5) what to do if the species are encountered. All construction personnel working on the site and in the pipeline alignments and pump station areas adjacent to wetlands will participate in a worker environmental awareness training conducted by a resource agency approved biologist, and will sign an acknowledgment that they have participated in the worker environmental awareness training.

Mitigation Measure BIO-3b. No Pets. No pets (e.g., dogs or cats) will be brought to the project site to avoid harassment, killing or injuring of wildlife.

Mitigation Measure BIO-3c. Food Trash Removal. To minimize attraction of predators such as racoons and feral cats all workers will be required to secure their food related trash and remove it daily. The site foreman shall assure that all food trash related to the construction work is secured and removed.

Mitigation Measure BIO-3d. Minimize Non-daylight Work; Prepare Lighting Plan. Project lighting during construction activities shall be limited in consideration of the potential impacts to special status species. If early morning, early evening, or night lighting is necessary during construction, a lighting plan shall be prepared in consultation with an agency approved biologist. 24-hour work that requires night lighting shall only be conducted with approval from the US Fish and Wildlife Service and the California Department of Fish and Wildlife due to potential impacts to species protected under FESA and CESA. See also Mitigation Measure BIO-3i Artificial Lighting regarding permanent site lighting.

Mitigation Measure BIO-3e. Work During Extreme High Tides. To avoid the loss of individual salt marsh harvest mice and salt marsh wandering shrew that may shelter in the work area during extreme high tides, an agency approved biological monitor shall be present when work around the perimeter of the FERRF site occurs during extreme high tides, such as King Tides. The agency approved biological monitor shall complete a pre-construction survey prior to construction activities in these areas. Areas within the cofferdam or wildlife exclusion fence are expected to exclude mice and shrews and would not require a pre-construction survey. Also see Measure BIO-4 for California Ridgway's rail and California black rail measures during extreme high tides.

Mitigation Measure BIO-3f. Limit Vegetation Removal. To avoid the loss of individual harvest mice and wandering shrews from any excavation, fill, or construction activities in suitable habitat, vegetation removal will be limited to the minimum amount necessary.

Mitigation Measure BIO-3g. Vegetation Removal Methods. Vegetation removal will occur under the supervision of a qualified biologist as noted in Mitigation Measure BIO-2a. The vegetation shall be removed with hand tools (e.g., weed-eater, hoe, rake, trowel, shovel) on a progressive basis, such that it allows species to find adjacent cover. The qualified biologist shall monitor the rate of vegetation removal to ensure that any harvest mice or wandering shrews present are able to escape to cover that will not be impacted, and will specify whether vegetation needs to remain in a certain area temporarily to facilitate dispersal of mice/shrews into habitat outside of the impact area.

Mitigation Measure BIO-3h. Exclusion Fence. Following the hand-removal of vegetation, exclusion fencing will be erected around the outer boundary of the work area that is adjacent to

harvest mouse/wandering shrew habitat that is to remain intact, if the coffer dam design does not exclude species. If the cofferdam excludes the species additional exclusion fencing is not necessary. This will define and isolate protected harvest mouse habitat. The installation of the fence will be supervised by a qualified biologist. This fencing will consist of heavy plastic sheeting or metal material that cannot be climbed by harvest mice, buried at least 4 inches below the ground's surface, and with at least 1 foot (but no more than 4 feet) above the ground. All supports for the fencing will be placed on the inside of the work area. A 2-foot buffer will be maintained free of vegetation around the outside of the exclusion fencing. The fencing will be inspected daily during the project construction period, and any necessary repairs will be made within 24 hours of when they are found. If any breaks in the fencing are found, the qualified biologist will inspect the work area for salt marsh harvest mice and salt marsh wandering shrews. If any individuals are found, all work that could impact these individuals will cease until the individuals have left the impact area on their own. If an injured or killed mouse is discovered at any time during project activities, all work shall cease immediately and USACE/USFWS shall be contacted for further direction.

Mitigation Measure BIO-3i. Artificial Lighting. During and after project construction, the spillover of lighting into the salt marsh habitat and adjacent levees will be minimized using low-intensity lighting or other appropriate low-dispersion lighting technology; orientation of lights so that they are placed on the perimeter of the work area and directed inward (rather than directing any lighting toward the marsh) and downward toward the ground; and shielding of lights from behind. Low-intensity lighting, downcast lighting, or other appropriate lighting technology will be incorporated into the project design where permanent lighting is to be placed within 200 feet of the salt marsh to reduce potential adverse effects on animals within this habitat.

Mitigation Measure BIO-3j. Prohibition of Plastic Mono-filament Netting. Monofilament plastic netting, including in temporary and permanent erosion control measures (such as straw wattles), shall not be used, regardless of whether the plastic netting is biodegradable or not. Burlap or coir wrapped sterile straw wattles shall be specified in construction documents.

Mitigation Measure BIO-3k: Monitoring and Adaptive Management Plan. The project shall include a plan to restore and monitor natural habitats impacted by the project, particularly the ecotone levee area. At a minimum the plan shall be submitted in the permit package to the U.S. Army Corps of Engineers required under section 404 of the Clean Water Act, and in the permit package to the Regional Water Quality Control Board under section 401 of the Clean Water Act for agency review.

7.4 Impacts to Black Rail and Ridgway's Rail – Less than Significant Impact with Mitigation

The California Ridgway's rail is a year-round resident in the salt marsh and the open water channels in the study area. The status of the California black rail in the study area is less well

understood, but this species has been known to occur in nearby marshes during the non-breeding season, and its presence during the breeding season cannot be ruled out. As a result, there is the potential for the project to result in direct and indirect impacts to California Ridgway's rail and California black rail. If individuals or nests of these species are present during construction activities in salt marsh habitat, individuals or nests may be crushed or injured by personnel or equipment. The project will result in the direct removal of tidal marsh nesting and foraging habitat for California black rail and Ridgway's rail. Construction activities may also result in the indirect disturbance of nesting and foraging California Ridgway's rails and California black rails due to the noise and activity of workers and equipment during project activities. The USFWS and CDFW recommend a buffer of 700 feet around rail nesting areas, and thus, the area in which potential disturbance of rails may occur includes all vegetated tidal marsh within 700 feet of the project footprint.

Noise may alter rail behavior in ways that result in injury, mortality, or reduced nesting success. Noise and other human disturbance could be disruptive to rail breeding efforts if they occur in or near occupied habitat during the breeding season. Disturbance could cause short-term effects such as failure to breed, nest abandonment, lower numbers of eggs, juvenile abandonment, and overall lower juvenile survivorship. If disturbed during the breeding season, rails could disperse, but may not successfully establish new breeding territories and breed. Loss of any female rails from a breeding site would be compounded by the loss of potential future progeny. Disturbance could also result in a reduction in foraging efficiency in foraging areas, increased movement or flushing from cover, or altered activity patterns that reduce energy reserves and increase predation risk. Rails could be forced to adjust the boundaries of their territories or to disperse to other habitat areas. Potential impacts of the project on even one nest of either species would be significant under CEQA due to these species' rarity.

Construction Outside of the Nesting Season

The nesting season for these rails generally extends from February 1 through August 31. Outside of the nesting season (September 1 to January 31), Mitigation Measure BIO-2a (see Section 7.2 above) is required to ensure that any foraging California Ridgway's rails or California black rails that are present on site when construction commences will be allowed to disperse before they could be killed or injured. Therefore, foraging individuals will not be directly lost due to construction activities. There would still be some potential for disturbance of foraging individuals of these species in the adjacent marsh as a result of noise or movement of humans during project construction. However, such impacts would have minimal direct effects due to habituation to the existing human activity in the vicinity (at the project site and at Bedwell Bayfront Park) and the large contiguous high-quality marsh habitat adjacent to the project area available foraging rails. Such effects would not result in substantial harassment or disturbance

of individuals and would not result in a reduction in the populations of any of these species. However, sudden disturbance could cause rails to flush, making them more susceptible to predation, or could preclude them from using high-quality cover that might otherwise conceal them from predators. In particular, if construction were to occur during king tides, when concealing cover is limited, rails that are flushed due to project disturbance would be susceptible to predation.

In addition to Implementation of Mitigation Measure BIO-2a, the implementation of Mitigation Measures BIO-3a (worker training), BIO-3b (no pets), BIO-3c (remove food trash), BIO-3d (minimize lighting impacts), BIO-3e (work during extreme high tides), BIO-3f (limit vegetation removal), BIO-3g (vegetation removal methods), BIO-3i (artificial lighting) and BIO-3j (prohibit plastic monofilament netting) would reduce impacts on foraging California black rail and California Ridgway's rail to less than significant levels.

Construction During the Nesting Season

Construction disturbance during the nesting season (February 1 through August 31) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. In addition, noise and increased construction activity could temporarily affect foraging behavior, potentially resulting in the abandonment of nest sites.

Implementation of Mitigation Measure BIO-4a would avoid impacts on active nests of California black rail and Ridgway's rail and reduce impacts to nesting rails to less than a significant level.

Mitigation Measure BIO-4a. Pre-Construction/Pre-Disturbance Survey for California Black Rail and California Ridgway's Rail. Construction activities in and adjacent to the marsh habitat for rails shall occur outside of the breeding season (January 15-August 31), as a first measure. If construction activities are planned to occur within or adjacent to tidal marsh or suitable rail habitat during the breeding season, a qualified biologist shall contact the Invasive Spartina Project to determine if protocol surveys are already being conducted in the area so that a) the data can be used, and b) rails are not adversely affected by repeated protocol surveys. If the Invasive Spartina Project is not conducting protocol surveys, then a qualified biologist shall conduct the USFWS-approved protocol level surveys for California black rail and Ridgway's rail before initiation of any ground disturbing activities within the salt marsh habitat and a 700-foot buffer (i.e., Wood 2017 "Site-specific Protocol for Monitoring Marsh Birds"). Protocol surveys are required to be completed over several visits between January 15 and April 15**,** and may significantly impact the construction schedule if they have not been completed in time. The qualified biologist shall be approved to conduct the current USFWS-sanctioned Ridgway's rail survey methodology (Wood 2017). The qualified biologist shall submit the proposed survey methods to CDFW and USFWS for review and approval prior to commencing the surveys. The

results of the survey will be documented, and any detections will be reported to the California Natural Diversity Database

If an active nest is found within the survey area, the qualified biologist shall consult with CDFW and/or USFWS to determine the appropriate construction-free buffer zone (typically 700 feet) and/or other mitigation measures to be implemented, such as daily monitoring. If no rail call centers or nests are found within 700 feet of the construction activities, work can proceed. If work extends into additional seasons, then additional protocol surveys shall be completed, particularly if work has paused.

If California Ridgway's rail or black rail are present and will be impacted by the project, the following measures apply:

- To avoid impacts to individual rails, activities within or adjacent to habitat will not occur within two hours before or after extreme high tides (6.5 feet or above as measured at the Golden Gate Bridge), when the marsh is inundated and rail movement may be altered. If the work area is protected by a cofferdam or wildlife exclusion fence and rails are not likely to be present within the buffer zone, the work can continue with a biological monitor present, but shall be halted if a rail is detected within the buffer zone.
- If a California Ridgway's rail or black rail nest or adult is encountered during any project-related activity, the observer(s) shall immediately move away from the nest/adult.

Loss of Habitat

Installation of the sheet piles to protect the FERFF will not result in a permanent loss of habitat for rails. Under the current concept plan the construction of the proposed ecotone levee will impact approximately 3.1 acres of tidal salt marsh habitat of the 6.0 acres of tidal salt marsh habitat in the project area. The acreage is based on the conceptual design for the ecotone levee and final impact acreages will be determined when the design for the ecotone levee has undergone resource agency review. The finished ecotone levee will retain about 0.77 acre of tidal salt marsh and add about 2.33 acres of native upland scrub habitat. The net loss of salt marsh habitat in the near term will be offset when new salt marsh habitat is created under sea level rise conditions. Also, the loss of 2.33 acres of existing tidal salt marsh habitat is a small portion of the adjacent 500-acre Greco island tidal marsh complex.

The proposed ecotone levee will provide higher quality native upland refugia habitat for special-status species and migratory birds; and increase the resilience of tidal habitat in the project area to climate change by allowing for sea level rise. Even though there will be an immediate loss of salt marsh habitat, the ecotone levee will allow upland areas to become inundated as water levels rise and transform back into marsh habitat, while still maintaining vital upland habitat. The ecotone levee will also protect the existing flow equalization facility and the proposed water

recycling facility from future flooding caused by sea level rise, which are essential for protecting water quality in the Bay. The change in habitat for rails is less than significant.

7.5 Impacts to Western Burrowing Owl – Less than Significant with Mitigation

A burrowing owl was observed near a burrow during a March 2017 site visit and there is a documented occurrence from 2003 of burrowing owl from Bedwell Bayfront Park. No burrowing owls were observed during several subsequent site visits in 2018, 2019, and 2020. However, the levees within the study area contain ground squirrel burrows that provide potential nesting, wintering, and foraging habitat for burrowing owls. If active burrowing owl nests are present on the project site at the time of construction, construction-related disturbance could result in injury or mortality of an owl. In addition, construction-related disturbance could lead to the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Even if burrowing owls are not breeding on the site, construction could result in injury or mortality of an owl if an occupied burrow is filled or compacted during construction. The project will temporarily impact the levees during construction, mainly from the movement of construction equipment and personnel and the installation of sheet piles. The installation of the sheet piles is not expected to remove or affect the existing burrows on the project site. While burrowing owls may be disturbed during construction the project does not remove burrowing owl breeding habitat. The ecotone levee may increase the area available to burrowing owls for forage, cover, and breeding in the short term until the ecotone levee reverts to marsh due to sea level rise.

Mitigation Measure BIO-5a: Conduct Pre-construction Surveys for Burrowing Owls. Pre-construction surveys for burrowing owls will be conducted prior to the initiation of all project activities within suitable burrowing owl nesting and roosting habitat (i.e., grassland habitat and levees with burrows of California ground squirrels). Pre-construction surveys will be completed in conformance with Appendix D: *Breeding and Non-breeding Season Surveys* of the CDFW Staff Report on Burrowing Owl Mitigation (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843) (CDFG 2012), which specify the timing, area, and number of surveys. The results of the survey shall be documented, and positive sightings submitted to the California Natural Diversity Database.

Mitigation Measure BIO-5b: Implement Buffer Zones for Burrowing Owls. If burrowing owls are present on or near the construction site a buffer zone will be maintained around the occupied burrow(s), in accordance with guidance provided in the CDFW Staff Report Appendix D cited above. The buffer will be large enough to avoid injury or mortality of individual owls in compliance with Fish and Game Code section 3503.5. The recommended buffer zones range from 50 meters to 500 meters depending on the level of construction activity. The appropriate buffer zone will be determined by a qualified biologist.

Mitigation Measure BIO-5c: Monitor Owls During Construction Although owls occupying the study area are likely habituated to frequent human disturbance due to regular activity at the project site and in nearby Bedwell Bayfront Park, and may tolerate greater levels of human disturbance than owls in more natural settings, a qualified biologist shall monitor owl behavior during construction. If in the opinion of the qualified biologist, the owls are disturbed to the point of harm or possible reduced reproductive success, all work within at least 50 meters of the occupied burrow will cease until the nest is determined by a qualified biologist to no longer be in active use, or the biologist in consultation with resource agencies has determined what work can proceed without causing harm or reduced reproductive success to the owl(s).

Mitigation Measure BIO-5d: Restoration of Burrowing Owl Habitat On Site. The Monitoring and Adaptive Management Plan prepared for the site under Mitigation Measure BIO-3k shall include habitat suitable for burrowing owl forage and nesting. If pre-construction surveys identify that burrowing owl actively nests in the project footprint, the burrow shall not be removed until nesting is completed for the season, the burrow is not occupied by any owls, and artificial burrow(s) are provided within 100 meters of the original burrow.

7.6 Impacts to White-tailed Kite – Less than Significant with Mitigation

The white-tailed kite is a year-round resident in the project region. The blue gum and Australian pine trees found along the southern edge of the study area as well as just outside of the study area in Bedwell Bayfront Park provide suitable nesting habitat for white-tailed kite. The entire study area provides suitable foraging habitat for white-tailed kite.

Fence Hazard

Hollow posts with bolt holes pose an entanglement hazard for birds of prey that could result in mortality. Mitigation Measure BIO-6d, Cap Fence Posts, will reduce impacts to less than significant with mitigation.

Construction Outside of the Nesting Season

Impacts outside of nesting season (September 16 to January 31) will be less than significant since any foraging white-tailed kites will disperse in response to construction activities before they could be killed or injured. As a result, no direct disturbance of these species will occur.

There would still be some potential for disturbance of foraging individuals in the adjacent areas as a result of construction noise and/or movement of construction equipment and personnel. However, such impacts would have minimal effects due to the presence of nearby suitable foraging habitat. Such effects would not result in substantial harassment or disturbance of individuals and would not result in a reduction in the populations of white-tailed kites. Therefore, impacts to foraging white-tailed kites will be less than significant.

Construction During Nesting Season

Project activities during the nesting season (February 1 to September 15) that cause a substantial increase in noise, movement of equipment, or human presence near active nests could result in the abandonment of active white-tailed kite nests with eggs or nestlings. However, adult birds are not expected to be killed or injured, as they could easily fly from the work site, and the project will not result in the loss of nesting habitat for white-tailed kite.

Implementation of Mitigation Measures BIO-6a and BIO-6b would avoid impacts on active nests of white-tailed kite so that impacts would be less than significant.

7.7 Impacts to American Peregrine Falcon, Black Skimmer, California Brown Pelican, California Least Tern, and Western Snowy Plover – Less than Significant Impact

American peregrine falcon, Black skimmer, California brown pelican, California least tern, and Western snowy plover are seen regularly in the project region and may fly through or forage in the project site. However, these species are unlikely to nest in the project site or immediate area because of the lack of suitable nesting habitat. All five species will only be temporarily displaced by construction noise and can forage in areas surrounding the project. The project may result in the use of open pipes used as fence posts, property line stakes, signs, etc. Raptors (such as American peregrine falcon) talons can catch in bolt holes, entrapping the bird and resulting in mortality. Mitigation Measure BIO-6d is included to prevent this impact. Therefore, impacts to American peregrine falcon, black skimmer, California brown pelican, California least tern, and western snowy plover will be less than significant. In the unlikely event that any of these species nest in the project site, compliance with Mitigation Measure BIO-6a Pre-construction Survey for Nesting Birds, Mitigation Measure BIO-6b, Nesting Bird Protection, and Mitigation Measure BIO-6d Cap Fence Posts would reduce project impacts on these species to less than significant.

7.8 Impacts on the Alameda Song Sparrow, Bryant's Savannah Sparrow, Loggerhead Shrike, Northern Harrier, San Francisco Common Yellowthroat, and Short-eared owl – Less than Significant with Mitigation

The Alameda Song Sparrow, Bryant's Savannah Sparrow, Loggerhead Shrike, Northern Harrier, San Francisco Common Yellowthroat, and Short-eared owl (all California species of special concern) are associated with marsh habitats and are known to nest in or near the study area. These species are assessed together because the impacts of the proposed project on these nesting special-status bird species would be similar.

Fence Hazard

Hollow fence or other posts may pose an entanglement hazard for birds of prey, such as the northern harrier. Mitigation Measure BIO-6d, Cap Open Posts/Fill Bolt Holes will reduce impacts to less than significant.

Construction Outside of the Nesting Season

Outside of the nesting season (September 16 to January 31), any foraging Alameda song sparrow, Bryant's savannah sparrow, loggerhead shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl present on site when construction commences are expected to disperse to adjacent marsh areas before they could be killed or injured. As a result, no direct disturbance of these species is expected to occur.

There would still be some potential for disturbance of foraging individuals of these species in the adjacent marsh as a result of construction noise and/or movement of construction equipment and personnel. However, such impacts would have minimal effects due to the presence of nearby suitable foraging habitat. Such effects would not result in substantial harassment or disturbance of individuals and would not result in a reduction in the populations of any of these species. Therefore, impacts to these special-status birds will be less than significant.

Construction During the Nesting Season

Construction disturbance during the typical nesting season defined by CDFW (February 1 to September 15) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. In addition, noise and increased construction activity could temporarily foraging behavior, potentially resulting in the abandonment of nest sites. This would violate California Fish and Game Code.

Implementation of Mitigation Measures BIO-6a (preconstruction survey for nesting birds) and BIO-6b (nesting bird protection) would avoid impacts on active nests of Alameda song sparrow, Bryant's savannah sparrow, loggerhead shrike, northern harrier, San Francisco common yellowthroat, and short-eared owl and reduce impacts to less than a significant level.

Loss of Habitat

The Installation of the sheet piles to protect the FERFF will not result in a permanent loss of habitat for birds. Based on the conceptual design the construction of the proposed ecotone levee will impact approximately 3.1 acres of tidal salt marsh habitat of the 6.0 acres of tidal salt marsh habitat in the project area. The acreage is based on the conceptual design for the ecotone levee and final impact acreages will be determined when the design for the ecotone

levee has undergone resource agency review. The finished ecotone levee will retain 0.77 acre of tidal salt marsh and add 2.33 acres of native upland scrub habitat. The loss of salt marsh habitat in the near term will be offset when new salt marsh habitat is created under sea level rise conditions. Also, the loss of 2.33 acres of existing tidal salt marsh habitat is a small portion of the adjacent 500-acre Greco island tidal marsh complex.

The proposed ecotone levee will provide higher quality native upland refugia habitat for special-status species and migratory birds; and increase the resilience of tidal habitat in the project area to climate change by allowing for sea level rise. Even though there will be an immediate loss of salt marsh habitat, the ecotone levee will allow upland areas to become inundated as water levels rise and transform back into marsh habitat, while still maintaining vital upland habitat. The ecotone levee will also protect the existing flow equalization facility and the proposed water recycling facility from future flooding caused by sea level rise, which are essential for protecting water quality in the Bay. The loss of habitat is less than significant, and the project includes measures to mitigate habitat loss.

Collision with Building Glass

Development of the proposed project involves the construction of new buildings. Glass windows and building facades can result in injury or mortality of birds due to collisions with these surfaces. Because birds do not perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in glass (e.g., they see the glass as sky or vegetated areas) or when transparent windows allow birds to perceive an unobstructed flight route through the glass (such as at corners). The majority of avian collisions with buildings occur within the first 60 feet of the ground (City of San Francisco 2011), where birds spend the majority of their time engaged in foraging, territorial defense, nesting, and roosting activities, and where vegetation is most likely to be reflected in glazed surfaces.

Even though the construction of buildings will occur in the developed portions of the study area, the adjacent marsh and open water habitats in the study area can potentially attract large numbers of birds, especially since the site is contiguous with the Don Edwards National Wildlife Refuge, a major stopover point along the Pacific Flyway. In addition, the wastewater detention ponds provide suitable foraging habitat and could attract large numbers of birds. Birds using these habitats to forage could fly over the study area at altitudes low enough for bird-strike mortality to occur.

Compliance with the bird-friendly design requirements such as those in Menlo Park Municipal Code Chapter 16.43.140 (6) will minimize the number of bird collisions with the new buildings and result in a less than significant impact. Mitigation measure BIO-6c is included to assure compliance with the measures to reduce bird collision hazard.

7.9 Impacts to Nesting Birds – Less than Significant Impact with Mitigation

All migratory bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Project activities must comply with the provisions of the MBTA and California Fish and Game Code (i.e., avoid take of protected nesting birds).

Construction disturbance during the avian breeding season (February 1 through September 15, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. In addition, noise and increased construction activity could temporarily foraging behavior, potentially resulting in the abandonment of nest sites. Thus project-related impacts to nesting birds would be considered significant under CEQA (Criterion A). However, implementation of Mitigation Measures BIO-6a and BIO-6b would avoid impacts on active nests of birds protected by the MBTA or California Fish and Game Code and Mitigation Measure BIO-6c would minimize bird collision hazards with new buildings. These measures would reduce impacts to a less than significant level.

Mitigation Measure BIO-6a. Pre-Construction/Pre-Disturbance Surveys for Nesting Birds

Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Mateo County extends from February 1 through September 15.

Pre-Construction Surveys. If it is not possible to schedule construction activities between September 15 and January 31, then preconstruction surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests would be disturbed during project implementation. These surveys will be conducted no more than five days prior to the initiation of any site disturbance activities and equipment mobilization in the BSA as well as the right of ways for the distribution pipelines and the influent pump station. If project activities are delayed by more than five days, an additional nesting bird survey will be performed. During this survey, the biologist will inspect all potential nesting habitats (e.g., shrubs, developed areas, structures, etc.) in and immediately adjacent to the impact area for nests. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented.

Mitigation Measure BIO-6b. Nesting Bird Protection. If an active nest is found sufficiently close to work areas to be disturbed by project activities, the qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest (typically up to 1000 feet for raptors and up to 250 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during project

implementation. The qualified biologist shall be experienced in both songbird and raptor behavior. Identified active nests will be surveyed one day prior to any construction-related activities to establish a behavioral baseline for the adults and any nestlings. Once work commences, all active nests will continue to be monitored by the qualified biologist to detect any signs of diaturbance and behavioral changes caused by project activities, and change the buffer as needed to prevent disturbance-related nest failure. The qualified biologist will have authority to order the cessation of all project activities within disturbance distance of any raptor nest if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Within the buffer zone, no site disturbance and mobilization of heavy equipment, including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, demolition, and grading will be permitted until the chicks have fledged. Monitoring will be required to ensure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings will be documented.

Mitigation Measure BIO-6c. Reduce Collision Hazard. The project design shall comply with measures such as those identified in Menlo Park Municipal Code Chapter 16.43.140 (6) to minimize the number of bird collisions with new buildings and reduce bird collision hazard to a less than significant impact.

Mitigation Measure BIO-6d. Cap Open-topped Posts/Fill Bolt Holes. All fence posts, property line stakes, signs, etc. that are open topped and have bolt holes shall be capped and the holes filled to prevent entanglement of birds of prey. This measure shall be included in project specifications.

7.10 Impacts to Harbor Seals – Less than Significant Impact

There are known haul out sites or rookery sites for harbor seals near the project site and harbor seals are seen regularly in the project region. Therefore, harbor seals can forage or haul out within the study area at any time of the year. Harbor seals will only be temporarily displaced by construction activities and can forage or haul out in areas surrounding the study area. Also, harbor seals are not expected to be killed or injured, as they could easily move from the work site. In addition, the proposed project would not result in permanent substantial changes to the availability of foraging or haul out habitat after construction is completed. Therefore, impacts to foraging or resting harbor seals will be less than significant.

7.11 Impacts on Wildlife from Artificial Lighting – Less than Significant with Mitigation

Many animals, including special-status species, are extremely sensitive to light cues, which influence their physiology and influence their behaviors, particularly during the breeding season (de Molenaar et al. 2006). It is known that photoperiod (the relative amount of light and dark in a 24-hour period), is an essential cue triggering physiological processes such as growth,

metabolism, development, breeding behavior, and molting in birds, mammals, and many other taxa, suggesting that increases in ambient light may interfere with these processes across a wide range of species and result in impacts on wildlife populations (Beier 2006; de Molenaar et al. 2006).

Artificial lighting may also indirectly affect mammals and birds by increasing the nocturnal activity of predators like owls, hawks, and mammals (Negro et al 2000, Longcore and Rich 2004, DeCandido and Allen 2006, Beier 2006). The presence of artificial light may influence habitat use by rodents and by breeding birds (Beier 2006; de Molenaar et al. 2006) by causing avoidance of well-lit areas, resulting in a net loss of habitat availability and quality.

The proposed project includes and a recycled water facility. Both facilities include the construction of buildings and installation of influent and effluent piping in existing street rights-of-way and the pump station located at Marsh Road, and both the existing rights-of-way and pump station are adjacent to marsh habitat in Flood Slough.

If the proposed project includes the installation of lighting that illuminates marsh habitat and the adjacent levees, such lighting could potentially have adverse effects on special-status species in the wetlands and adjacent levee refugia habitat. However, implementation of Mitigation Measure BIO-3i would reduce artificial lighting impacts on wildlife to a less than significant level.

7.12 Impacts on Native Species and Communities from Introduction or Spread of Invasive Species – Less than Significant Impact with Mitigation

Invasive plants degrade habitat quality for native plants and animals by altering vegetative structure and often reducing specific food and structural resources required by native animals. As a result, invasion of native habitats by non-natives results in adverse effects on both the native plants being displaced and native animals that would otherwise use those habitats. Because many invasive plants are able to easily colonize recently disturbed areas and/or tolerate repeated disturbance better than many natives, Project construction activities, such as clearing and grading, could create conditions suitable for spreading of invasive plant species. In addition, bare upland soils left after construction of temporary staging areas could encourage growth of weedy species; and mulching or erosion control mixes could include and thus introduce invasive, non-native plant species.

In salt marsh habitat, invasive weeds, such as perennial pepperweed (*Lepidium latifolium*) or non-native cordgrass (*Spartina* sp.) could spread into marsh habitats when seeds are attached to vehicles, equipment, and clothing. The spread of pepperweed and other invasive plants can displace native marsh vegetation and reduce habitat quality of the salt marsh by reducing refugia and foraging habitat for native species.

The study area contains alkali Russian thistle (*Salsola soda*) and stinkwort (*Dittrichia graveolens)*, both moderately invasive species (Cal-IPC 2020). Even though alkali Russian thistle is already present along the fringes of the salt marsh in the study area and stinkwort is present along the levees, project activities could cause both species to spread further into previously unoccupied areas within the salt marsh and the upland areas of the proposed native ecotone, respectively. Thus project-related impacts to natural habitats would be considered significant under CEQA (Criteria A, B, and C). However, implementation of Mitigation Measures BIO-7a and BIO-7b will reduce potential invasive species-related impacts on sensitive habitats and the species they support to a less than significant level. Further, the project would comply with the City of Menlo Park Municipal Code, Chapter 12.44.090(1)(G), which discourages the use of invasive and/or noxious plant species for landscaping.

Mitigation Measure BIO-7a. Integrate Invasive Plant Management into the Ecotone Levee Restoration Plan. Prior to the start of construction activities, measures to control invasive plant species shall be specified and integrated with the Monitoring and Adaptive Management Plan (Plan) for the ecotone levee restoration, with the purpose of protecting restoration areas from being significantly impacted by invasive weeds. Invasive plant removal in the salt marsh and on the adjacent levees shall be limited to hand tools as specified in Measure BIO-3h and shall be removed before grading starts. If specified in the Plan for the restoration area, invasive species management will extend into developed areas of the parcel as needed to protect the restoration area.

Mitigation Measure BIO-7b. Construction Measures to Minimize Invasive Plant Infestations. The following measures shall be taken during construction to minimize invasive plant infestation and potential impacts of invasive plants on adjacent natural habitats, particularly the wetlands:

- All ground disturbing equipment used adjacent to native habitats will be washed (including wheels, tracks, and undercarriages) both before and after being used at the site. Worker personal gear, including boots, should also be cleaned and clear of plant material prior to entering the work area.
- All seeds and straw materials used on site shall be weed-free rice straw, and all gravel and fill material shall be certified weed free.
- The project will follow a Stormwater Pollution Prevention Plan as per the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ), to reduce stormwater runoff which can carry the seed of invasive plants to other locations.
- All disturbed soils within sensitive habitats and adjacent levee slopes will be stabilized and planted in accordance with a restoration plan prepared for the project as part of an approved ecotone levee project.

- Soil and vegetation removed from weed-infested areas will not be used in general soil stockpiles and will not be redistributed as topsoil cover for the newly filled areas. All weed-infested soil will be disposed of off-site at a landfill or buried at least 2.5 feet below final grade.

7.13 Impacts to Sensitive Communities – Less than Significant with Mitigation

Sensitive natural communities on the project site include the *Sarcocornia pacifica* Alliance – Pickleweed Mats, which is found in the northern coastal salt marsh habitat within the study area. Impacts to pickleweed mats are discussed in Section 7.14 below.

7.14 Impacts to Jurisdictional Waters – Less than Significant with Mitigation

The northern coastal salt marsh habitat present within the study area is subject to the regulatory jurisdiction of the USACE and RWQCB and will require CWA 401/404 permits, if impacted. The project proposes to install an ecotone levee to protect the wastewater treatment ponds from flooding under current conditions and due to sea level rise in the future. The ecotone levee would convert existing salt marsh habitat into native upland habitat at present, but over time would revert to salt marsh as water levels rise. The project also includes the installation of sheet piles along a section of existing levee (above the top of bank), and stormwater runoff will be discharged to an existing swale on the east property boundary that discharges to the bay. The recycled water facility includes an outfall in the bay to dispose of the remainder effluent from the RO process. Therefore, salt marsh habitat will be directly impacted by project activities, including trampling and removal of vegetation and placement of soil fill. Also, construction activities could cause the degradation of surface or ground water quality in bay waters due to erosion and transport of fine sediments or unintentional release of contaminants. Project-related impacts to tidal habitat would be considered significant under CEQA (Criteria A, B, and C).

Construction projects in California causing land disturbances that are equal to 1.0 acre or greater must comply with State requirements to control the discharge of stormwater pollutants under National Pollutant Discharge Elimination System (NPDES)/Construction General Permit. Prior to the start of construction/demolition, a Notice of Intent must be filed with the State Water Board describing the project. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the NPDES/Construction General Permit require that the applicant utilize various measures including on-site sediment control best management practices, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors.

A stormwater management plan will be developed to ensure that, during rain events, construction activities do not increase the levels of erosion and sedimentation. This plan will include the use of erosion-control materials (e.g., baffles, fiber rolls, or hay bales; temporary

containment berms) and erosion-control measures such as straw application or hydroseeding with native grasses on disturbed slopes; and floating sediment booms and/or curtains to minimize any impacts that may occur due to increased mobilization of sediments. Suitable erosion control, sediment control, source control, treatment control, material management, and non-stormwater management best management practices will be implemented.

Accidental spills during construction could affect surface water quality. An accidental spill plan will be developed prior to construction as part of the SWPPP and implemented as part of Mitigation Measure BIO-2c. The plan will describe what actions will be taken in the event of a spill. The plan will also incorporate preventative measures to be implemented, such as vehicle and equipment staging, cleaning, maintenance, and refueling; and contaminant (including fuel) management and storage. In the event of a contaminant spill, work at the site will immediately cease until the contractor has contained and mitigated the spill. The contractor will immediately prevent further contamination and notify appropriate authorities and mitigate damage as appropriate. Adequate spill containment materials, such as oil diapers and hydrocarbon cleanup kits, shall always be available on site. Containers for storage, transportation, and disposal of contaminated absorbent materials will be provided in the project site.

Also, in many Bay Area counties, including San Mateo County, projects must also comply with the RWQCB, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (Water Board Order No. R2-2009-0074). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevents stormwater runoff pollution, promotes infiltration, and holds/slows down the volume of water coming from a site. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

During the construction phase, compliance with the requirements to control the discharge of stormwater pollutants under the NPDES Construction General Permit and Municipal Regional Stormwater NPDES Permit will reduce impacts to tidal habitat to a less than significant level. In addition, the project would require permits from the USACE, RWQCB, and BCDC for impacts on tidal habitat during construction.

The construction of the proposed ecotone levee will impact approximately 3.1 acres of tidal salt marsh habitat of the 6.0 acres of tidal salt marsh habitat in the project area. The finished ecotone will retain 0.77 acre of tidal salt marsh and add 2.33 acres of native upland scrub habitat. The loss of salt marsh habitat in the near term will allow new salt marsh habitat to be created under sea level rise conditions. Also, the loss of 2.33 acres of existing tidal salt marsh habitat is a small portion of the adjacent 500-acre Greco island tidal marsh complex. The impact acreages are based on the conceptual design for the ecotone levee and final acreages for

temporary and permanent impacts will be determined when the design for the ecotone levee is completed, prior to obtaining permit applications from the resource agencies.

The proposed ecotone levee will provide higher quality native upland refugia habitat for special-status species and migratory birds; and increase the resilience of tidal habitat in the project area to climate change by allowing for sea level rise. Even though there will be an immediate loss of salt marsh habitat, the ecotone levee will allow upland areas to become inundated as water levels rise and transform back into marsh habitat, while still maintaining important upland habitat and refugia. The ecotone levee will also protect the existing flow equalization facility and the proposed water recycling facility from future flooding caused by sea level rise, which are essential for protecting water quality in the Bay.

The operation of the new water recycling facility will require a separate NPDES permit from the RWQCB and EPA for the discharge of effluent into jurisdictional waters (San Francisco Bay). In addition to compliance with the requirements of the NPDES permit, the project will also implement Mitigation Measure BIO-8a to reduce impacts on water quality from the discharge of treated RO effluent in Bay tidal waters and wetlands, and essential fish habitat to less than significant levels.

Mitigation Measure BIO-8a. Water Quality Monitoring Plan. The West Bay Sanitary District will develop a water quality monitoring plan in consultation with the EPA, which will consult with NMFS. The water plan will include an impact assessment, water quality standards and protections of those standards, monitoring methodology, and reporting requirements. The goal of the plan is to ensure that the discharge from the water recycling facility complies with the discharge requirements set by the regulatory agencies to protect Bay waters. Depending on the requirements of the regulatory agencies, the plan may include, for example, quarterly surface and effluent water monitoring for suspended solids, settable solids, ammonia, pH, and temperature. If required, the water quality monitoring plan will be submitted as part of the NPDES permit package.

7.15 Impacts to Wildlife Movement– Less than Significant

Because the site is isolated and surrounded by land uses that limit wildlife movement, construction-related activities in the study area will not have a significant impact on the movement of terrestrial wildlife regionally. It is also not expected to significantly affect wildlife movement around or through the site.

The salt marsh and levees in the study area function as a wildlife corridor, allowing species to move from the salt marsh into upland areas during high tide events. connecting natural areas along the coast. Other natural habitats (e.g., tidal sloughs) function as pathways for fish and bird species to move throughout the salt marsh within the study area. Grading and excavation activities as well as removal of vegetation in the salt marsh during the construction of the

ecotone levee could restrict some wildlife species, particularly salt marsh harvest mouse and Ridgway's rail from moving between suitable habitat patches during construction. This will be a temporary impact to local wildlife movement. Salt marsh harvest mouse, Ridgway's rail, and other species will be able to access upland areas immediately adjacent to the study area at Bedwell Bayfront Park and along Flood Slough.

Once construction activities are complete, wildlife movement conditions in the developed areas of the site would be similar to pre-project conditions, and wildlife dispersal through the site is expected to return to existing conditions. The ecotone levee will include diverse native habitats, including tidal aquatic, estuarine wetland, bayside mesic scrub, and upland xeric scrub. The diverse habitats will provide higher quality native upland refugia habitat and increase the quality of habitat of the salt marsh-levee wildlife corridor for several special-status species, including salt marsh harvest mouse, salt marsh wandering shrew, California Ridgway's rail, and California black rail. The ecotone levee will also increase resilience of the tidal habitat to climate change by allowing for sea level rise while maintaining an intact salt marsh-levee wildlife corridor.

7.16 Impacts due to Conflicts with Local Policies – Less than Significant

Compliance with Municipal Code Chapter 13.24, Heritage Trees (Less than Significant). Per City of Menlo Park Municipal Code Chapter 13.24, Heritage Trees, permits from the City's Director of Public Works or his or her designee and payment of a fee are required for the removal of any trees which meet the definition of heritage tree, as defined in Section 3.3.3 above. The proposed plan does not currently identify any heritage trees to be removed. However, if the project requires the removal or pruning of trees protected by the City of Menlo Park municipal code, such impacts are considered potentially significant under CEQA, and the project would be required to would comply with the City's heritage tree ordinance, including obtaining a permit from the City to remove protected trees and paying any applicable fee. Since it is expected that the project will comply with the local tree ordinance, impacts related to conflict with local policies or ordinances protecting heritage trees would be less than significant.

7.17 Impact due to Conflicts with an Adopted Habitat Conservation Plan – No Impact

The proposed project does not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

8 References

Literature Cited

Adams, P.B., C. Grimes, J.E. Hightower, S.T. Lindley, M.L. Moser, and M.J. Parsley. 2007. Population status of North American green sturgeon, *Acipenser medirostris*. Environmental Biology of Fishes 79:339-356.

Atwood, J.L. and D.E. Minsky. 1983. Least tern foraging ecology at three major California breeding colonies. Western Birds 14:57-72.

Baldwin, B.G., D.H. Goldman, D. J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson Manual: Vascular plants of California, second edition. University of California Press, Berkeley.

Barnhart, R.A. 1986. Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Pacific Southwest) - Steelhead. U.S. Fish and Wildlife Service Biol. Rep. 82(11.60). U.S. Army Corps of Engineers TR EL-82-4.

Baron, T. and J. Takekawa. 1994. California least tern *Sterna antillarum browni*. Pages 184-187 In C.G. Thelander, D.C. Pearson, and G.E. Olson, editors. Life on the Edge: A Guide to California's Endangered Natural Resources.

Basham, M. P. and L. R. Mewaldt. 1987. Saltwater tolerance and the distribution of South San Francisco Bay song sparrows. Condor 89:697–709.

Baxter, R. D. 1999. Osmeridae. Page 501 in J. J. Orsi, editor, Report on the 1980–1995 Fish, Shrimp, and Crab Sampling in the San Francisco Estuary, California. The Interagency Ecological Program for the Sacramento-San Joaquin Estuary (IEP), Sacramento, California.

Beier, P. 2006. Effects of artificial night lighting on mammals in Rich, C., and T. Longcore, editors. Ecological Consequences of Artificial Night Lighting. Covelo, CA: Island Press, pp 19-42.

[BCDC] Bay Conservation and Development Commission. 2020. San Francisco Bay Plan. Accessed April 2020 from https://bcdc.ca.gov/plans/sfbay_plan.html.

Beamesderfer, R.C.P. and M.A.H. Webb. 2002. Green Sturgeon Status Review Information. S. P. Cramer and Associates, Gresham, Oregon.

Bousman, W. G. 2007. Loggerhead shrike *Lanius ludovicianus*. Pages 288-289 in W. G. Bousman, editor. Breeding bird atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California.

Brinfock, K. M., and M.A. Colwell. 2011. Habitat Selection by Western Snowy Plovers During the Nonbreeding Season. The Journal of Wildlife Mangement, 75(4), 786-793.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. National Marine Fisheries Service. NOAA Tech. Memo. NMFS-NWFSC-27.

Cade, T. J., and C. P. Woods. 1997. Changes in distribution and abundance of the loggerhead shrike. Conservation Biology 11:21-31.

Cadenasso, M.L., Pickett, S.T A, Weathers, K.E., and C.D. Jones. 2003. A Framework for a Theory of Ecological Boundaries, BioScience, Volume 53, Issue 8, August 2003, Pages 750–758.

[Cal-IPC] California Invasive Plant Council. 2020. The Cal-IPC Inventory. Accessed April 2020 from https://www.cal-ipc.org/plants/inventory/.

Callaway, J. C., V. T. Parker, M.C. Vasey, L. M. Schile, and E.R. Herbert. 2011. Tidal Wetland Restoration in San Francisco Bay: History and Current Issues. San Francisco Estuary and Watershed Science. Volume 9, Issue 3.

[CDFG] California Department of Fish and Game. 2007. Vegetation Classification and Mapping Program List of California Vegetation Alliances and Rarity Ranking.

[CDFG] California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. March 7, 2012.

[CDFW] California Department of Fish and Wildlife. 2020. VegCAMP Natural Communities Lists. Accessed April 2020 from https://www.wildlife.ca.gov/data/vegcamp/natural-communities.

Chan, Y., and H. Spautz. 2008. Alameda song sparrow (*Melospiza melodia pusillula*) in W. D. Shuford and T. Gardali, editors, California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Western Field Ornithologists and California Department of Fish and Game, Camarillo and Sacramento, California.

Chen, X., Zhang, X., Church, J.A., Watson, C.S., King, M.A., Monselesan, D., Legresy, B., and C.H. Harig. 2017. The increasing rate of global mean sea-level rise during 1993–2014. Nature Climate Change 7:492–495.

City of San Francisco. 2011. Standards for Bird-Safe Buildings. San Francisco Planning Department. Adopted 14 July 2011.

[CNDDB] California Natural Diversity Data Base. 2020. Results of electronic records search. Rarefind 5. California Department of Fish and Wildlife, Biogeographic Data Branch. Accessed April 2020 from http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp.

[CNPS] California Native Plant Society. 2020. Inventory of Rare, Threatened, and Endangered Plants of California. Version 8-02. Accessed April 2020 from http://www.rareplants.cnps.org/advanced.html.

Coulombe, H. N. 1971. Behavior and population ecology of the burrowing owl, *Speotyto cunicularia*, in the Imperial Valley of California. Condor 73:162-176.

Colwell, M. A., Millett, C. B., Meyer, J. J., Hall, J. N., Hurley, S. J., McAllister, S. E., . . . R.R. LeValley. 2005.. Snowy Plover Reproductive Success in Beach and River Habitats. Journal of Field Ornithology, 76, 373-382.

Cornell Lab of Ornithology. 2020. eBird. http://www.ebird.org/. Accessed April 2020.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, DC and Northern Prairie Wildlife Research Center, Jamestown, ND. Accessed 4 September 2012. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm.

Davis J.N. and C.A. Niemela. 2008. Northern Harrier (*Circus cyaneus*) in Shuford W.D. and T. Gardali (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.

DeCandido R. and D. Allen. 2006. Nocturnal hunting by peregrine falcons at the Empire State Building, New York City. Wilson Journal of Ornithology 118(1): 53-58.

de Molenaar, J. G., M. E. Sanders, and D. A. Jonkers. 2006. Road lighting and grassland birds: local influence of road lighting on a black-tailed godwit population in Rich, C., and T.

Longcore, editors. Ecological Consequences of Artificial Night Lighting. Covelo, CA: Island Press, pp 114-136.

Dege, M., and L. R. Brown. 2004. Effect of outflow on spring and summertime distribution and abundance of larval and juvenile fishes in the upper San Francisco Estuary. Pages 49–65 in L. R. B. Feyrer, R. L. Brown, and J. J. Orsi, editors, Early Life History of Fishes in the San Francisco Estuary and Watershed. American Fisheries Society, Bethesda, Maryland.

Dunk, J.R. 1995. White-tailed Kite (*Elanus leucurus),* The Birds of North America Online. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/178.

Dunk, J.R., and R.J. Cooper. 1994. Territory-size regulation in black-shouldered kites. Auk 111:588-595.

Erichsen, E.L., K.S. Smallwood, A.M. Commandatore, B.W. Wilson, and M.D. Fry. 1996. White-tailed kite movement and nesting patterns in an agricultural landscape. Raptors in Human Landscapes. Academic Press, San Diego, California.

Erickson, D.L., J.A. North, J.E. Hightower, J. Weber, and L. Lauck. 2002. Movement and habitat use of green sturgeon *Acipenser medirostris* in the Rogue River, Oregon, USA. Journal of Applied Ichthyology 18:565-569.

Erickson, D.L., and J.E. Hightower. 2007. Oceanic distribution and behavior of green sturgeon. American Fisheries Society Symposium 56:197-211.

Errington, P. L., and L. J. Bennett. 1935. Food habits of burrowing owls in northwestern Iowa. Wilson Bulletin 47:125-128.

Fisler, G. F. 1965. Adaptations and speciation in harvest mice of the San Francisco Bay. University of California Publication in Zoology 77:1–108.

Findley, J. S. 1955. Speciation of the wandering shrew. Occasional Papers of the Museum of Natural History 9:1–68.

Fitton, S. D. 2008. Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) in W. D. Shuford and T. Gardali, editors, California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Western Field Ornithologists and California Department of Fish and Game, Camarillo and Sacramento, California.

Fox, K. S. 2008. Harbor seal behavioral response to boaters at Bair Island refuge. Master's Theses. 3591. Accessed April 2020 from https://scholarworks.sjsu.edu/etd_theses/3591.

Fukushima, L. and E.W. Lesh. 1998. Adult and juvenile anadromous salmonid migration timing in California streams. California Fish and Game 84:133-145.

Gardali, T., and J. G. Evens. 2008. San Francisco common yellowthroat (*Geothlypis trichas sinuosa*) in W. D. Shuford and T. Gardali, editors, California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Western Field Ornithologists and California Department of Fish and Game, Camarillo and Sacramento, California.

Google Inc. 2020. Google Earth Pro (Version 7.1.5.1557) [Software]. Available from earth.google.com.

Gorman, L. R., D. K. Rosenberg, N. A. Ronan, K. L. Haley, J. A. Gervais, and V. Franke. 2003. Estimation of reproductive rates of burrowing owls. Journal of Wildlife Management 67:493-500.

Green, G. A., R. E. Fitzner, R. G. Anthony, and L. E. Rogers. 1993. Comparative diets of burrowing owls in Oregon and Washington. Northwest Science 67:88-93.

Greig, D.J. and S.G. Allen. 2015. Science Foundation Chapter 5 Appendix 5.1 – Case Study Harbor Seal (*Phoca vitulina*) in Letitia Grenier and Andrew Gunther (lead authors). 2015. The Baylands and Climate Change, What Can We Do, Baylands Ecosystem Habitat Goals Science Update 2015.

Guzy, M. J., and G. Ritchison. 1999. Common yellowthroat (*Geothlypis trichas*) in A. Poole and F. Gill, editors, The Birds of North America. The Birds of North America, Inc., Philadelphia, Pennsylvania.

Harding-Smith, E.K. 1993. Summary of California Clapper Rail Winter Populations in the San Francisco Bay, 1989 to 1993. U.S. Fish and Wildlife Service.

Harrison, C. 1978. A field guide to the nests, eggs and nestlings of North American birds. W. Collins Sons and Co., Cleveland, OH. 416pp.

Harvey, T. E., Miller, K.J., Hothem, R.L., Rauzon, M.J., Page, G.W., and R. A. Keck. 1992. Status and trends report on the wildlife of the San Francisco Bay estuary. EPA Coop. agreement CE-009519-01-0 Final Report, U.S. Fish and Wildlife Service, Sacramento, CA: 283 pp.

Haug, E. A., and L. W. Oliphant. 1990. Movements, activity patterns, and habitat use of burrowing owls in Saskatchewan. Journal of Wildlife Management 54:27-35.

Hobbs, J. A., P. Moyle, and N. Buckmaster. 2012. Monitoring the Response of Fish Communities to Salt Pond Restoration. Final report. University of California, Davis. Prepared for South Bay Salt Pond Restoration Program and Resource Legacy Fund.

Holt, D. W. 1992. Notes on short-eared owl (*Asio flammeus*) nest sites, reproduction, and territory size in coastal Massachusetts. The Canadian Field-Naturalist 106: 352-356.

Holt, D. W., and S. M. Leasure. 1996. Short-eared owl (*Asio flammeus*). The birds of North America, No. 62 (A. Poole and F. Gill, eds.) Acad. Nat. Sci., Philadelphia, PA, Am. Ornithol. Union, Washington D.C.

Humple, D. 2008. Loggerhead shrike (*Lanius ludovicianus*) (mainland populations) in W. D. Shuford and T. Gardali, editors. California bird species of special concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Western Field Ornithologists and California Department of Fish and Game, Camarillo and Sacramento, California.

Judd, S. 2010.The MBR Book, Principles and Applications of Membrane Bioreactors for Water and Wastewater Treatment, 2nd Edition. Butterworth-Heinemann, Oxford.

Leidy, R. A., G. Becker, and B.N. Harvey. 2005. Historical status of coho salmon in streams of the urbanized San Francisco Estuary, California. Calif. Fish Game 91: 219-254.

Lindenmayer, D.B. and J. Fischer. 2006. Habitat fragmentation and landscape change: An ecological and conservation synthesis. Washington D.C: Island Press.

Lindley, S.T., M.L. Moser, D.L. Erickson, M. Belchik, D.W. Welch, E. Rechisky, J.T. Kelly, J. Heublein, and A.P. Klimley. 2008. Marine migration of North American green sturgeon. Transactions of the American Fisheries Society 137:182-194.

Longcore, T. and C. Rich. 2004. Ecological light pollution. Frontiers in Ecology and the Environment 2(4): 191-198.

Lower Columbia River Estuary Partnership. 2007. Columbia River Estuary ESA Recovery Plan Module for Salmon and Steelhead - Proposed Plan. National Marine Fisheries Service.

MacDonald, B., Longcore, T., and S. Dark. 2010. Habitat Suitability Modeling for Western Snowy Plover in Central California, 129. Los Angeles, California: The Urban Wildlands Group.

Melnychuck, M.C., D.W. Welch, C.J. Walters, and V. Christensen. 2007. Riverine and early ocean migration and mortality patterns of juvenile steelhead trout (Oncorhynchus mykiss) from the Cheakamus River, British Columbia. Hydrobiologia 582:55-65.

Marschalek, D.A. 2008. California least tern breeding survey, 2007 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report 2008-01.

Martin, D. J. 1973. Selected aspects of burrowing owl ecology and behavior. Condor 75:446-456.

McBroom, J. 2016. California Ridgway's Rail Surveys for the San Francisco Estuary Invasive Spartina Project 2016. November.

Menges, T. 1998. Common yellowthroat (*Geothlypis trichas*) in The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-Associated Birds in California. California Partners in Flight.

Moyle, P. 2002. Inland Fishes of California, 2nd Edition, Berkeley, University of California Press.

Moyle, P.B., R.M. Yoshiyama, J.E. Williams, and E.D. Wikramanayake. 1995. Fish Species of Special Concern in California. 2nd ed. California Department of Fish and Game, Rancho Cordova, California. Final Report for Contract No. 21281F.

Muir, J. J., & Colwell, M. A. 2010. Snowy Plover Select Open Habitats for Courtship Scrapes and Nests. The Condor, 112, 507-510.

Naidoo, S. and A.O. Olaniran. 2014. Treated Wastewater Effluent as a Source of Microbial Pollution of Surface Water Resources. International Journal of Environmental Research and Public Health 11: 249-270.

Negro, J. J., J. Bustamante, C. Melguizo, J. L. Ruiz, and J. M. Grande. 2000. Nocturnal activity of lesser kestrels under artificial lighting conditions in Seville, Spain. Journal of Raptor Research 34(4): 327-329.

[NMFS] National Marine Fisheries Service. 1997. Endangered and Threatened Species: Listing of several Evolutionary Significant Units (ESUs) of West Coast Steelhead. Final rule. Federal Register 62:43937-43954.

[NMFS] National Marine Fisheries Service. 2000. Designated Critical Habitat: Critical Habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho, and California. Final rule. Federal Register 65:7764-7787.

[NMFS] National Marine Fisheries Service. 2003. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List North American Green Sturgeon as a Threatened or Endangered Species. Federal Register 68:4433-4441.

[NMFS] National Marine Fisheries Service. 2005. Endangered and Threatened species: Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Steelhead and Salmon in California. Final rule. Federal Register 70:52488-52626.

[NMFS] National Marine Fisheries Service. 2006a. Endangered and Threatened Species: Final listing determination for 10 Distinct Population Segments of West Coast Steelhead. Federal Register 71:834-862.

[NMFS] National Marine Fisheries Service. 2006b. Endangered and Threatened Wildlife and Plants; Threatened status for Southern Distinct Population Segment of North American Green Sturgeon. Federal Register 67:17757-17766.

[NMFS] National Marine Fisheries Service. 2009. Endangered and threatened wildlife and plants: final rulemaking to designate critical habitat for the threatened southern distinct population segment of North American green sturgeon: Final Rule. Federal Register 74:52300-52351.

[NRC] National Research Council. 1993. Managing Wastewater in Coastal Urban Areas. Washington, DC: The National Academies Press. https://doi.org/10.17226/2049.

[NRCS] Natural Resources Conservation Service. 2020a. Web Soil Survey. U.S. Department of Agriculture. Accessed April 2020 from http://websoilsurvey.nrcs.usda.gov.

[NRCS] National Resource Conservation Service. 2020b. National Hydric Soils List. Accessed April 2020 from http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/.

[NWI] National Wetlands Inventory. 2020. Wetlands Mapper. U.S. Fish and Wildlife Service Accessed April 2020 from http://www.fws.gov/wetlands/Wetlands-Mapper.html.

Nur, N., S. Zack, J. Evans, and T. Gardali. 1997. Tidal Marsh Birds of the San Francisco Bay Region: Status Distribution, and Conservation of Five Category 2 Taxa. Final draft report. PRBO Conservation Science. Report to U.S. Geological Survey.

[OPC] California Ocean Protection Council. 2018. State of California Sea-Level Rise Guidance 2018 Update. California Ocean Protection Council, California Natural Resources Agency.

Overton, C. and J. Wood. 2015. Science Foundation Chapter 5, Appendix 5.1 – Case Study California Ridgway's Rail (*Rallus obseoletus obsoletus*) from Baylands Ecosystem Habitat Goals Science Update (2015).

Pacific Fisheries Management Council. 1998. Essential Fish Habitat Coastal Pelagic Species. Amendment 8. Pacific Fisheries Management Council, Portland, Oregon.

Pacific Fisheries Management Council. 2011. Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery.

Pacific Fisheries Management Council. 2012. Essential Fish Habitat for Krill. Amendment 12. Pacific Fisheries Management Council, Portland, Oregon.

Page, G. W., Stenzel, L. E., & Ribic, C. A. 1985. Nest Site Selection and Clutch Predation in the Snowy Plover. The Auk*, 102*, 347-353.

Page, G. W., Warriner, J. S., Warriner, J. C., and P.C. Paton. 1995. Snowy Plover (Charadrius alexandrinus). The Birds of North America, 154, 1-24. (A. Poole, & F. Gill, Eds.) The Academy of Natural Sciences, Philadelphia, Pennsylvania and The American Ornithologists' Union, Washington, D. C.

Patrick, A. M., and M.A. Colwell. 2014. Snowy Plovers Select Wide Beaches for Nesting. Wader Study Group Bulletin, 121(2*)*, 17-20.

Plumpton, D. L., and R. S. Lutz. 1993a. Nesting habitat use by burrowing owls in Colorado. Journal of Raptor Research 27:175-179.

Plumpton, D. L., and R. S. Lutz. 1993b. Prey selection and food habits of burrowing owls in Colorado. Great Basin Naturalist 53:299-304.

Point Blue Conservation Science, San Francisco Estuary Institute, and County of Marin. 2019. Sea Level Rise Adaptation Framework - A user guide to planning with nature as demonstrated in Marin County. Point Blue Conservation Science (Contribution #2239), Petaluma, CA. San Francisco Estuary Institute (Publication #946), Richmond, CA. Version: 1.0, August 2019.

Polite, C. 1990. Black-shouldered Kite *Elanus caeruleus*. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System. California's Wildlife, Vol II: Birds. Pp 120-121.

Powell, A. N. 2001. Habitat Characteristics and Nest Success of Snowy Plovers Associated with California Least Tern Colonies. Condor 103, 785-792.

PRISM Climate Group. 2020. Online PRISM Data Explorer. Oregon State University, Corvallis, Oregon. Accessed April 2020 from http://www.prism.oregonstate.edu/.

Radtke, L.C. 1966. Distribution of smelt, juvenile sturgeon and starry flounder in the Sacramento – San Joaquin Delta. In S.L. Turner and D.W. Kelley, editors. Ecological studies of the Sacramento - San Joaquin Delta, Part II. p 115-119. California Department of Fish and Game, Fish Bulletin 136.

Rahmstorf, S. 2017. Rising hazard of storm-surge flooding. Proceedings of the National Academy of Sciences 114 (45): 11806-11808.

Rich, T. 1984. Monitoring burrowing owl populations: implications of burrow re-use. Wildlife Society Bulletin 12:178-180.

Rigney, M., and S. L. Granholm. 1990. Least tern *Sterna antillarum* in D. C. Zeiner, W. F. Laudenslayer Jr., K. E. Mayer, and M. White, editors. California's wildlife. Vol. II: Birds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

Robinson, A., and B. K. Greenfield. 2011. LTMS Longfin Smelt Literature Review and Study Plan. San Francisco Estuary Institute, Richmond, California. Prepared for Long-Term Management Strategy for Dredged Materials in San Francisco Bay.

Rosenfield, J. A. 2009. Distribution and Abundance Trends of Longfin Smelt in the San Francisco Estuary. Green Sturgeon, Longfin Smelt, and Dredging Operations Symposium. San Francisco Estuary Institute, Oakland, California.

Rosier, J. R., N. A. Ronan, and D. K. Rosenberg. 2006. Post-breeding dispersal of burrowing owls in an extensive California grassland. American Midland Naturalist 155:162-167.

San Francisco Estuary Partnership. 2016 Comprehensive Conservation and Management Plan for the San Francisco Estuary (Estuary Blueprint).

San Francisco Regional Water Quality Control Board Order No. R2-2017-0041 and National Pollutant Discharge Elimination System No. CA0038849

Senn D.B, and E. Novick. 2014. Scientific Foundation for the San Francisco Bay Nutrient Management Strategy. San Francisco Estuary Institute Contribution #979. Accessed September 2020 from https://sfbaynutrients.sfei.org/sites/default/files/2014_scientificfoundation_sfb_nms.pdf

[SCCWRP] Southern California Coastal Water Research Project. 2012. Management of Brine Discharges to Coastal Waters Recommendations of a Science Advisory Panel; Panel Members Scott Jenkins, Jeffrey Paduan, Philip Roberts (Chair), Daniel Schlenk, and Judith Weis. Submitted at the request of the California Water Resources Control Board. Technical Report 694

Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society. Sacramento, CA.

Scheiff, A.J., J.S. Lang, and W.D. Pinnix. 2001. Juvenile salmonid monitoring on the mainstem Klamath River at Big Bar and mainstem Trinity River at Willow Creek, 1997-2000. U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata, California.

[SFEI and SPUR] San Francisco Estuary Institute and San Francisco Bay Area Planning and Urban Research Association. 2019. San Francisco Bay Shoreline Adaptation Atlas: Working with Nature to Plan for Sea Level Rise Using Operational Landscape Units. Publication #915, San Francisco Estuary Institute, Richmond, CA.

Shellhammer, H. S., R. Duke, H. T. Harvey, V. Jennings, V. Johnson, and M. Newcomer. 1988. Salt marsh harvest mice in the diked marshes of southern San Francisco Bay. Wasmann Journal of Biology 46:89–103.

Shellhammer, H. S., R. Jackson, W. DaVilla, A. M. Gilroy, H. T. Harvey, and L. Simons. 1982. Habitat preference of salt marsh harvest mice (*Reithrodontomys raviventris*). Wasmann Journal of Biology 40:102–114.

Shellhammer, H. S. 2000. Salt marsh wandering shrew, *Sorex vagrans halicoetes*. Pages 109–113 in P. R. Olofson, editor, Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

Sibley, D.A. 2000. The Sibley Guide to Birds. New York: Chanticleer Press, Inc.

Sustaita, D., P. F. Quickert, L. Patterson, L. Barthman-Thompson, and S. Estrella. 2011. Salt Marsh Harvest Mouse Demography and Habitat Use in the Suisun Marsh, California. The Journal of Wildlife Management 75(6): 1498-1507.

Shapovalov, L., and A.C. Taft. 1954. The life histories of the steelhead rainbow trout (*Salmo gairdneri gairdneri*) and silver salmon (*Oncorhynchus kisutch*) with special reference to Waddell Creek, California, and recommendations regarding their management. DFG Bulletin No. 98.

Skonieczny, M.F., and J.R. Dunk. 1997. Hunting synchrony in white-tailed kites. Journal of Raptor.

Stenzel, L., Peaslee, S., and G. Page. 1981. The Breeding Status of the Snowy Plover in California. II(12), 6-16. Mainland Coast.

Terres, J. K. 1980. The Audubon Society encyclopedia of North American birds. A. Knopf, New York. 1100pp.

Thomsen, L. 1971. Behavior and ecology of burrowing owls on the Oakland Municipal Airport. Condor 73:177-192.

Truelove, N.K. 2005. Effects of Estuarine Circulation Patterns and Stress on Migratory Behavior of Juvenile Salmonids (*Oncorhynchus* sp.). Master's thesis. Oregon State University. Corvallis, Oregon.

Trulio, L. A. 2007. Burrowing owl *Athene cunicularia hypugaea*. Pages 236-237 in W. G. Bousman, editor. Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society, Cupertino, California.

Trulio, L. A., and J. G. Evens. 2000. California black rail. Pages 342–345 in P. R. Olofson, editor, Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

[USFWS] U.S. Fish and Wildlife Service. 1970. Conservation of endangered species and other fish or wildlife: Appendix D. United States list of endangered native fish and wildlife. Federal Register 35:16047-16048.

[USFWS] U.S. Fish and Wildlife Service. 1984. Salt Marsh Harvest Mouse and California Clapper Rail Recovery Plan. U.S. Fish and Wildlife Service. Portland, Oregon.

[USFWS] U.S. Fish and Wildlife Service. 1999. Endangered and threatened wildlife and plants: Final rule to remove the American peregrine falcon from the federal list of endangered and threatened wildlife, and to remove the similarity of appearance provision for free-flying peregrines in the conterminous United States; Final rule. Federal Register 64:46542-46558.

[USFWS] U.S. Fish and Wildlife Service. 2004. Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the Pacific Coast Population of the Western snowy plover. 69 Federal Register, 75608-75771.

[USFWS] U.S. Fish and Wildlife Service. 2006a. California least tern (*Sternula antillarum browni*) 5-year review summary and evaluation. Carlsbad Fish and Wildlife Office, Carlsbad, California.

[USFWS] U.S. Fish and Wildlife Service. 2006b. Pacific Coast Breeding Window Survey for Snowy Plover.

[USFWS] U.S. Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius nivosus nivosus*). I & II, xiv + 751 pp. Sacramento, CA.

[USFWS] U.S. Fish and Wildlife Service. 2008. Endangered and threatened wildlife and plants; petition to list the San Francisco-Bay Delta population of the longfin smelt (*Spirinchus thaleichthys*) as endangered; notice of 90-day petition finding and initiation of status review. Federal Register 73:24911–24915.

[USFWS] U.S. Fish and Wildlife Service. 2010. Draft Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California. Federal Register 75:6696-6697.

[USFWS] U.S. Fish and Wildlife Service. 2013. Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California. Sacramento, California.

[USFWS] U.S. Fish and Wildlife Service. 2020. IPaC Information for Planning and Conservation. Accessed April 2020 from https://ecos.fws.gov/ipac/t69.

Wasson, K., Woolfolk, A., and C. Fresquez. Ecotones as Indicators of Changing Environmental Conditions: Rapid Migration of Salt Marsh–Upland Boundaries. Estuaries and Coasts 36, 654–664 (2013).

Webber, A., Heath, J., and R. Fischer. 2013. Human Disturbance and Stage-specific Habitat Requirements Influence Snowy Plover Site Occupancy During the Breeding Season. *Ecology and Evolution*(3), 853-863.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, and M. White, editors. 1990a. California's Wildlife. Volume III: Mammals. California Department of Fish and Game, Sacramento, California.

Wheelock, I. G. 1916. Birds of California. A. C. McClurg & Co., Chicago, Illinois.

Whitcraft, C.R., B.J. Grewell, and R.P. Baye. 2011. Estuarine Vegetation at Rush Ranch Open Space Preserve, San Francisco Bay National Estuarine Research Reserve, California. San Francisco Estuary and Watershed Science 9(3).

Wood, J.K., Nur, N., Salas, L. and O.M.W. Richmond. 2017. Site-specific Protocol for Monitoring Marsh Birds: Don Edwards San Francisco Bay and San Pablo Bay National Wildlife Refuges. Prepared for the U.S. Fish and Wildlife Service, Pacific Southwest Region Refuge Inventory and Monitoring Initiative. Point Blue Conservation Science. Petaluma, CA. https://ecos.fws.gov/ServCat/Reference/Profile/68062

Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/231.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, and M. White, editors. 1990b. California's Wildlife. Volume II: Birds. California Department of Fish and Game, Sacramento, California.

Personal Communication

Lorraine Htoo, Freyer and Laureta email correspondence date of 12/13/2020

Laura Moran, SWCA Consultants, teleconference regarding the ecotone levee preliminary design considerations, 12/09/2020

Appendix A Figures

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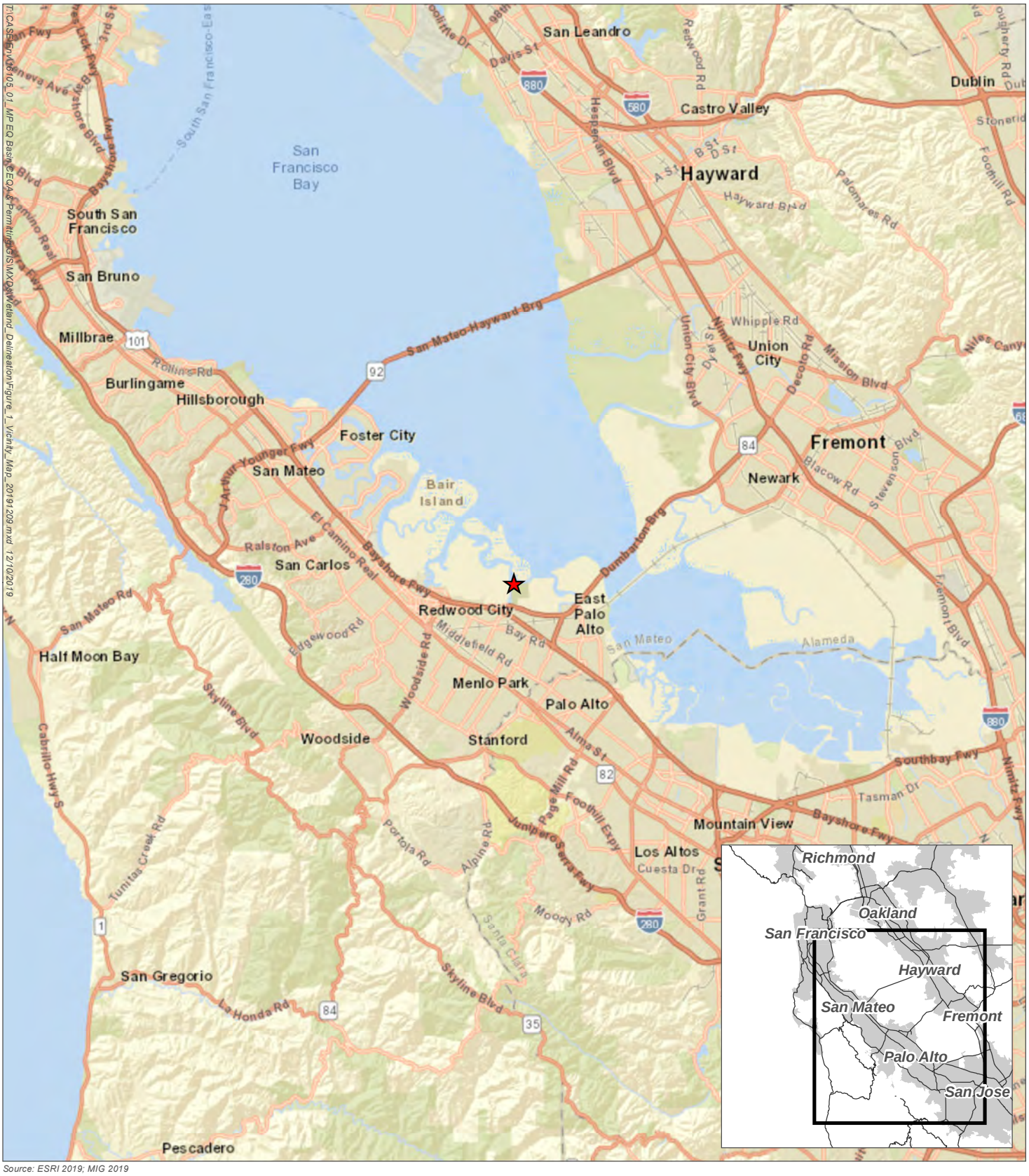


Source: ESRI 2019; MIG 2019

Figure 1 Vicinity Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project

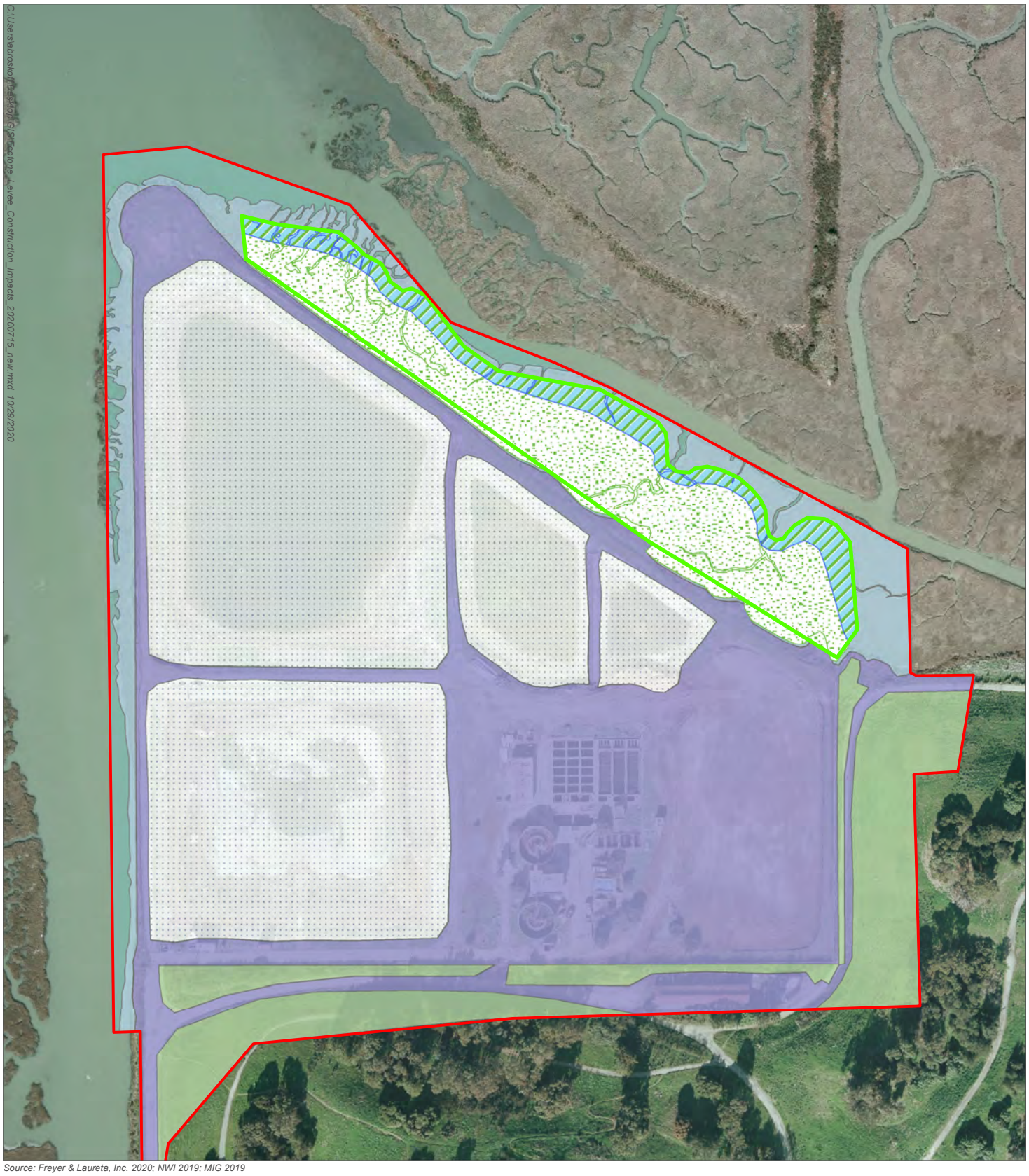
Source: ESRI 2020; Google Earth 2020; MIG 2020

0 355 710 1,420 Feet

Biological Study Area (33.59 acres)

Figure 2 Project Area Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project



Source: Freyer & Laureta, Inc. 2020; NWI 2019; MIG 2019

Vegetation Community

- Northern Coastal Salt Marsh
- Tidal Slough
- California Annual Grassland
- Wastewater Detention Pond
- Developed

Base Map Features

- Study Area (33.59 acres)
- Ecotone Levee Boundary

Ecotone Levee

- Bayside Scrub (2.33 acres)
- Estuarine Wetland (0.77 acres)

0 125 250 500 Feet

N

Figure 3 Proposed Ecotone Levee

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project

Source: ESRI 2020 Google Earth 2020; NRCS 2019; MIG 2020

Base Map Features

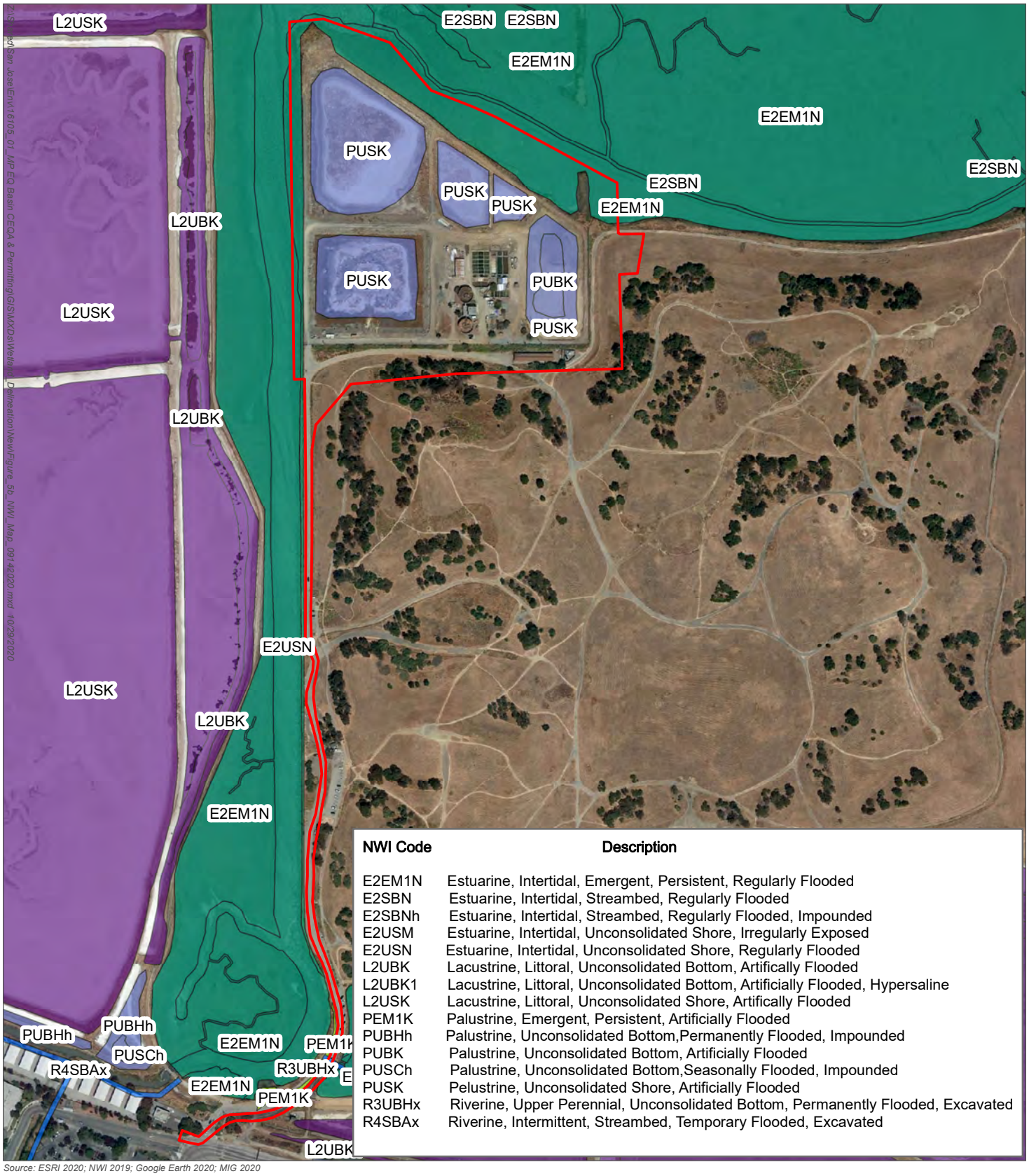
Biological Study Area (33.59 acres)

0 290 580 Feet 1,160

N

Figure 4 NRCS Soils Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility
Levee Improvements and Bayfront Recycled Water Facility Project



NWI Code	Description
E2EM1N	Estuarine, Intertidal, Emergent, Persistent, Regularly Flooded
E2SBN	Estuarine, Intertidal, Streambed, Regularly Flooded
E2SBNh	Estuarine, Intertidal, Streambed, Regularly Flooded, Impounded
E2USM	Estuarine, Intertidal, Unconsolidated Shore, Irregularly Exposed
E2USN	Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded
L2UBK	Lacustrine, Littoral, Unconsolidated Bottom, Artifically Flooded
L2UBK1	Lacustrine, Littoral, Unconsolidated Bottom, Artificially Flooded, Hypersaline
L2USK	Lacustrine, Littoral, Unconsolidated Shore, Artifically Flooded
PEM1K	Palustrine, Emergent, Persistent, Artificially Flooded
PUBHh	Palustrine, Unconsolidated Bottom,Permanently Flooded, Impounded
PUBK	Palustrine, Unconsolidated Bottom, Artificially Flooded
PUSCh	Palustrine, Unconsolidated Bottom,Seasonally Flooded, Impounded
PUSK	Pelustrine, Unconsolidated Shore, Artificially Flooded
R3UBHx	Riverine, Upper Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated
R4SBAx	Riverine, Intermittent, Streambed, Temporary Flooded, Excavated

Source: ESRI 2020; NWI 2019; Google Earth 2020; MIG 2020

NWI Wetland Type

- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Lake
- Riverine

Base Map Features

- Study Area (33.59 acres)

0 290 580 1,160 Feet

N

Figure 5 NWI Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility
Levee Improvements and Bayfront Recycled Water Facility Project

Source: ESRI 2020; Google Earth 2020; NWI 2019; MIG 2020

Vegetation Communities

- California Annual Grassland (3.07 acres)
- Northern Coastal Salt Marsh (4.85 acres)
- Wastewater Detention Pond (11.33 acres)
- Tidal Slough (1.15 acres)
- Developed (13.19 acres)

Base Map Features

- Biological Study Area (33.59 acres)

0 290 580 1,160 Feet

N

Figure 6a Vegetation Communities

West Bay Sanitary District Flow Equalization and Resource Recovery Facility
Levee Improvements and Bayfront Recycled Water Facility Project

Source: Freyer & Laureta, Inc. 2020; NWI 2019; MIG 2019

Vegetation Communities

- California Annual Grassland (3.07 acres)
- Northern Coastal Salt Marsh (4.85 acres)
- Wastewater Detention Pond (11.33 acres)
- Tidal Slough (1.15 acres)
- Developed (13.19 acres)

Base Map Features

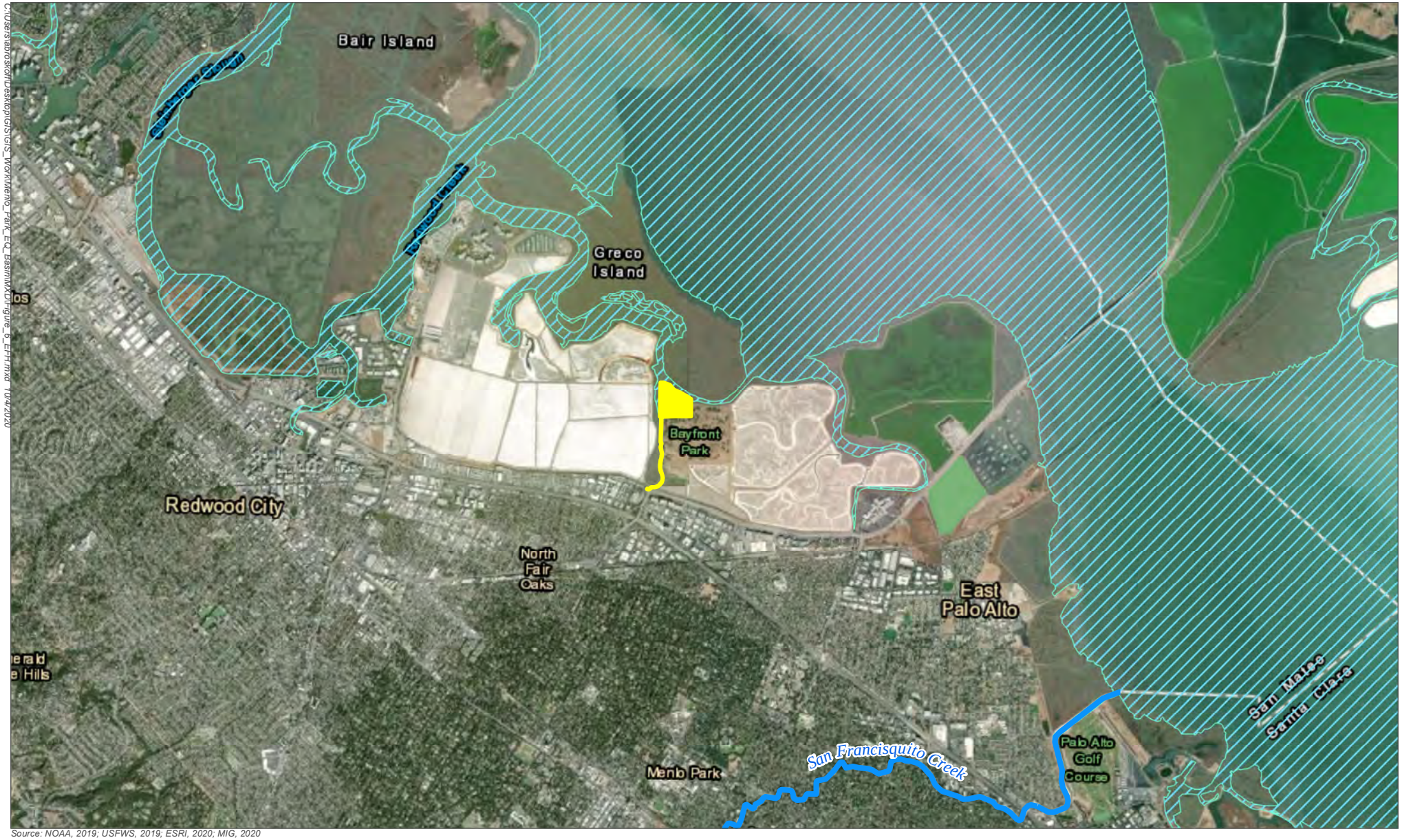
- Biological Study Area (33.59 acres)

0 115 230 460 Feet

N

Figure 6b Vegetation Communities

West Bay Sanitary District Flow Equalization and Resource Recovery Facility
Levee Improvements and Bayfront Recycled Water Facility Project



Source: NOAA, 2019; USFWS, 2019; ESRI, 2020; MIG, 2020

Essential Fish Habitat (EFH)

Coastal Pelagic Species; Finfish and Market Squid; Groundfish; Southern DPS Green Sturgeon

Crittical Habitat

Central California Coast Steelhead

Western Snowy Plover

Base Map Features

Biological Study Area

0 0.5 1 2 Miles

N

Figure 7 Critical Habitat and Essential Fish Habitat

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Levee Improvements and Bayfront Recycled Water Facility Project

MIG

Z:\Shared\San Jose\Env\16105_01_MPFQ Basin CEQA & Permitting\GIS\MXDs\Wetland_Delineation\New\Figure_8b_Preliminary_Identification_of_Waters_of_the_US_10012020.mxd 11/6/2020

Source: ESRI 2020; Google Earth 2020; NWI 2019; MIG 2020

Base Map Features
- Study Area (33.59 acres)
- Mean High Water
- High Tide Line
- Top of Bank

Vegetation Communities
- California Annual Grassland (3.07 acres)
- Northern Coastal Salt Marsh (4.85 acres)
- Wastewater Detention Pond (11.33 acres)
- Tidal Slough (1.15 acres)
- Developed (13.19 acres)

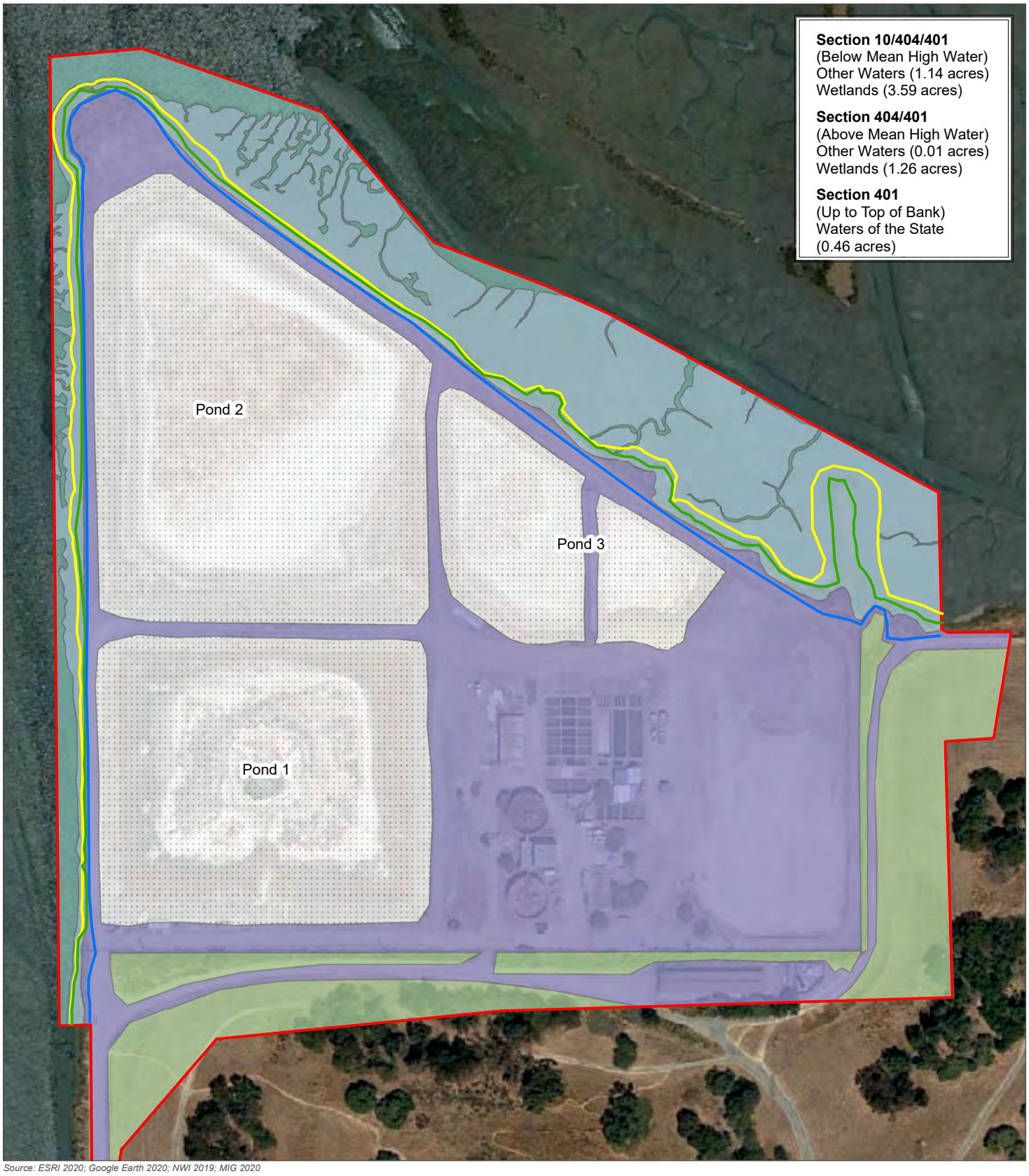
0 295 590 1,180 Feet

N

Figure 8a Preliminary Identification of Waters of the U.S./State

West Bay Sanitary District Flow Equalization and Resource Recovery Facility
Levee Improvements and Bayfront Recycled Water Facility Project

MIG



Source: ESRI 2020; Google Earth 2020; NWI 2019; MIG 2020

Base Map Features

- Study Area (33.59 acres)
- Mean High Water
- High Tide Line
- Top of Bank

Vegetation Communities

- California Annual Grassland (3.07 acres)
- Northern Coastal Salt Marsh (4.85 acres)
- Wastewater Detention Pond (11.33 acres)
- Tidal Slough (1.15 acres)
- Developed (13.19 acres)

0 105 210 420 Feet

N

Figure 8b Preliminary Identification of Waters of the U.S./State

West Bay Sanitary District Flow Equalization and Resource Recovery Facility
Levee Improvements and Bayfront Recycled Water Facility Project

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Appendix B Photographs

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Photo 1. Wastewater detention pond within the study area.

Photo 2. Developed land cover within the study area.

Photo 3. Northern coastal salt marsh habitat along the northern edge of the study area.

Photo 4. Tidal slough (open water habitat) along the northern edge of the study area.

Appendix C Species Observed in the Study Area

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Common Name	Scientific Name	In Flow Equalization Facility	In Adjacent Slough/ Salt Marsh
Birds			
American avocet	*Recurvirostra americana*		X
American coot	*Fulica americana*		X
American crow	*Corvus brachyrhynchos*	X	
American wigeon	*Anas americana*		X
Barn swallow	*Hirundo rustica*		X
Bewick's wren	*Thryomanes bewickii*	X	
Black-necked stilt	*Himantopus mexicanus*	X	X
Black phoebe	*Sayornis nigricans*	X	
Brewer's blackbird	*Euphagus cyanocephalus*	X	X
California Ridgway's rail	*Rallus obsoletus obsoletus*		X
California towhee	*Melozone crissalis*		X
Canada goose	*Branta canadensis*	X	X
Canvasback	*Aythya valisineria*		X
Cliff swallow	*Petrochelidon pyrrhonota*	X	
European starling	*Sturnus vulgaris*	X	
Golden-crowned sparrow	*Zonotrichia atricapilla*		X
Greater or lesser scaup	*Athya marila* or *A. affinis*		X
Green-winged teal	*Anas crecca*		X
House finch	*Haemorhous mexicanus*	X	
Killdeer	*Charadrius vociferus*	X	
Northern shoveler	*Anas clypeata*		X
Northern mockingbird	*Mimus polyglottos*	X	
Marbled godwit	*Limosa fedoa*		X
Ring-billed gull	*Larus delawarensis*	X	X
Rock pigeon	*Columba livia*	X	
Song sparrow	*Melospiza melodia*		X
Snowy egret	*Egretta thula*		X
Western burrowing owl	*Athene cunicularia*	X	
Western meadowlark	*Sturnella neglecta*	X	X
Western sandpiper	*Calidris mauri*		X
White-crowned sparrow	*Zonotrichia leucophrys*	X	X
Whimbrel	*Numenius phaeopus*		X
Willet	*Tringa semipalmata*		X
Mammals			
Black-tailed jackrabbit	*Lepus californicus*	X	
California ground squirrel	*Spermophilus beecheyi*	X	
Cat	*Felis catus*	X	
Striped skunk	*Mephitis mephitis*	X	

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Appendix D Special-status Species Evaluated for Potential to Occur

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SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
San Mateo thorn-mint (*Acanthomintha duttonii*)	FE, SE, CRPR1B.1	Endemic to San Mateo County.	Chaparral, valley and foothill grassland, or coastal scrub. Locally occurs in serpentine bunchgrass grassland; 50-300 m.	Annual herb, April - June	**Not Expected.** There is no suitable habitat in the Study area. No serpentine soils to support this endemic.
Franciscan onion (*Allium peninsulare var. franciscanum*)	CRPR 1B.2	Coastal mid California, from Monterey to Mendocino Counties.	Cismontane woodland, valley and foothill grasslands. Often on dry hillsides and in serpentine bunchgrass grasslands; 52-300 m.	Perennial bulbiferous herb, May - June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B.2	Mid California, including Monterey, Santa Cruz, San Mateo, Marin, Alameda, Contra Costa, Napa, Lake and Colusa counties.	Coastal bluff scrub, cismontane woodland or valley and foothill grassland; 3-500 m.	Annual herb, March - June	**Not Expected.** There is no suitable habitat in the Study area.
California androsae (*Androsace elongata* ssp. *acuta*)	CRPR 4.2	Various counties throughout the entirety of California.	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland, 150-1305 m.	Annual herb, March – June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Anderson's manzanita (*Arctostaphylos andersonii*)	CRPR 1B.2	Mid California including Monterey, Santa Cruz, San Mateo, Santa Clara, and Alameda counties.	Broadleaved upland forest, mixed evergreen forest, North coast coniferous forest including open sites in redwood forest, chaparral; 60-760 m.	Perennial evergreen shrub, November - May	**Not Expected.** There is no suitable habitat in the Study area and the study area is below the required elevation for this species.
Montara manzanita (*Arctostaphylos montaraensis*)	CRPR 1B.2	Endemic to San Mateo County.	Maritime chaparral or coastal; 150-500 m.	Perennial evergreen shrub, January - March	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Kings Mountain manzanita (*Arctostaphylos regismontana*)	CRPR 1B.2	Mid California including Santa Cruz, San Mateo, and Santa Clara counties.	Granite or sandstone outcrops in chaparral, coniferous, broadleaved upland and evergreen forests; 305-730 m.	Perennial evergreen shrub, January – April	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*)	CRPR 1B.2	Endemic to Humboldt, Marin and San Mateo Counties.	Coastal dunes (mesic), coastal scrub or marshes and swamps (coastal salt, streamside); 0-30 m.	Perennial herb, April-October	**High.** There is plenty of suitable habitat in the Study area and the known distribution of this species is within the region.
Alkali milk-vetch (*Astragalus tener* var. *tener*)	CRPR 1B.2	Endemic to the San Francisco Bay Area and surrounding counties.	Playas, valley and foothill grassland (adobe clay) or vernal pools on alkaline soils; 1-60 m.	Annual herb, March-June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Brewer's calandrinia (*Calandrinia breweri*)	CRPR 4.2	Scattered along the California coast, occasional in the northern central valley.	Sandy or loamy soils, disturbed sites and burns, chaparral, coastal scrub, 10-1220m.	Annual herb, (January) March-June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Oakland star-tulip (*Calochortus umbellatus*)	CRPR 4.2	Only within the San Francisco Bay Area.	Often in serpentinite soils, broadleafed and upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, 100-700m.	Perennial bulbiferous herb, March-May	**Not Expected.** There is no suitable habitat in the Study area and the study area is below the typical elevation requirements for this species.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Johnny-nip (*Castilleja ambigua* ssp. *ambigua*)	CRPR 4.2	Northern coastal California until just south of the San Francisco Bay Area.	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pool margins, 0-435m.	Annual herb, March-August.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	CRPR 1B.1	Throughout western California from San Luis Obispo to Solano County.	Valley and foothill grasslands with alkaline or clay soils; 0-230 m.	Annual herb, May - November	**High.** There is suitable habitat in the Study area and there is a known distribution of this species within the region.
San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*)	CRPR 1B.2	Endemic to Marin, San Francisco, San Mateo and possibly Sonoma Counties.	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub on sandy soils; 3-215 m.	Annual herb, April-August	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustre*)	CRPR 1B.2	Extant occurrences in Humboldt, Marin, San Francisco, Alameda, and Sonoma Counties.	Marshes and swamps (coastal salt); 0-10 m.	Annual herb (hemiparasitic), June-October	**Moderate.** There is suitable habitat in the Study area, and the species was found in the Don Edwards Preserve approximately five miles from the site in 2018.t .
Crystal Springs fountain thistle (*Cirsium fontinale* var. *fontinale*)	FE, SE, CRPR 1B.1	Found exclusively in San Mateo county.	Valley and foothill grasslands and chaparral including serpentine seeps and grassland; 45-175 m.	Perennial herb, May - October	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
lost thistle (*Cirsium praeteriens*)	CRPR 1A	Endemic to Santa Clara County but extirpated from the County.	Unknown habitat; 0-100 m.	Perennial herb, June-July	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*)	CRPR 4.3	Southeast of the San Francisco Bay Area.	Chaparral and cismontane woodland, 90-1500m.	Annual herb, (April) May-June (July).	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Round-headed Chinese-houses (*Collinsia corymbosa*)	CRPR 1B.2	In very limited regions in the San Francisco Bay Area and very northern California coast.	Coastal dunes, 0-20m.	Annual herb, April-June.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area, the nearest occurrence of this species is 4.5 miles southeast of the study area.
San Francisco collinsia (*Collinsia multicolor*)	CRPR 1B.2	Mid-coastal California from Monterey to Marin county including Santa Clara county.	Moist shady woodland, closed-cone coniferous forests and coastal scrub. Occasionally found in serpentine; 30-250 m.	Annual herb, March – May	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area, the nearest occurrence of this species is 4.5 miles south of the study area.
Clustered lady's-slipper (*Cypripedium fasciculatum*)	CRPR 4.2	Throughout the mountainous regions of northern California.	Usually serpentinite seeps and streambanks, lower montane coniferous forest, north coast coniferous forest, 100-2435m.	Perennial rhizomatous herb, March-August.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Mountain's lady's-slipper (*Cypripedium montanum*)	CRPR 4.2	In the very mountainous regions of Northern California.	Broadleafed upland forest, cismontane woodland, lower montane coniferous forest, north coast coniferous forest, 185-2225m.	Perennial rhizomatous herb, March-August.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
western leatherwood (*Dirca occidentalis*)	CRPR 1B.2	San Francisco Bay area including Santa Clara to Marin county and east to Alameda county.	Cool, moist slopes in foothill woodland and riparian forests. Mesic environments in broadleaved upland forests, chaparral and coniferous woodlands and mixed evergreen and oak woodlands; 25-425 m.	Perennial deciduous shrub, January – April.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area, the nearest occurrences are approximately 5 miles south of the study area.
California bottle-brush grass (*Elymus californicus*)	CRPR 4.3	To the north, west, and south of the San Francisco Bay.	Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland, 15-470m.	Perennial herb, May-August (November)	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Ben Lomond buckwheat (*Eriogonum nudum* var. *decurrens*)	CRPR 1B.1	Endemic to Alameda, Santa Clara and Santa Cruz Counties.	Chaparral, cismontane woodland, lower montane coniferous forest (maritime ponderosa pine sandhills); 50-800 m.	Perennial herb, June-October	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
San Mateo woolly sunflower (*Eriophyllum latilobum*)	FE, SE, CRPR 1B.1	San Mateo and Napa counties.	Cismontane and oak woodland, often on roadcuts; found on and off of serpentine and on grassy hillsides; 45-150m.	Perennial herb, April – June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area, the nearest occurrence of this species is approximately 4.5 mile south of the study area.
Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)	CRPR 1B.1	Endemic to Alameda, San Benito, Santa Clara, San Diego and San Luis Obispo Counties.	Vernal pools; 3-45 m.	Annual/perennial herb, July-August	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area, the nearest occurrence is approximately 4.5 miles southeast of the study area.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Jepson's coyote thistle (*Eryngium jepsonii*)	CRPR 1B.2	Scattered throughout northern California.	Clay soils, valley and foothill grassland, vernal pools, 3-300m.	Perennial herb, April-August.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area, the nearest occurrence of this species is approximately 6.5 miles southwest of the study area.
San Francisco wallflower (*Erysimum franciscanum*)	CRPR 4.2	In very limited areas to the north and west of the San Francisco Bay.	Often in serpentinite or granitic soils, sometimes on roadsides, chaparral, coastal dunes, coastal scrub, valley and foothill grassland, 0-550m.	Perennial herb, March-June.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
San Joaquin spearscale (*Extriplex joaquinana*)	CRPR 1B.2	Endemic to the Coast Ranges and Central Valley of central California.	Chenopod scrub, meadows and seeps, playas and valley and foothill grassland in alkaline soils; 1-835 m.	Annual herb, April-October	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
minute pocket moss (*Fissidens pauperculus*)	CRPR 1B.2	Along the coast from Santa Cruz to the northern border of California.	North Coast coniferous forest on damp soil along the coast, in dry streambeds and on stream banks; 10-1000 m.	Moss	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*)	CRPR 1B.1	Endemic to San Mateo County.	Cismontane woodland or valley and foothill grasslands on serpentine soils.	Perennial herb, March – April	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

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Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B.2	Found throughout northern and central California wherever there is suitable habitat.	Cismontane woodland and coastal scrub and prairie, in valley and foothill grasslands (often serpentine bunchgrass grassland); 3-410 m.	Perennial bulbiferous herb, February – April	**Not Expected.** There is no suitable habitat in the Study area and nearby documented occurrences have likely been extirpated within the heavily urbanized general vicinity of the study area. The nearest extant occurrences are approximately 6 miles west of the study area in hilly, more rural habitat.
short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*)	CRPR 1B.2	Occurs along the coast from the Oregon border to near Santa Cruz.	Coastal bluff scrub (sandy), coastal dunes or coastal prairie; 0-215 m.	Annual herb, March-June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Marin western flax (*Hesperolinon congestum*)	FT, ST, CRPR 1B.1	Known only from San Mateo and Marin Counties.	Chaparral, valley and foothill grassland, especially in serpentine bunchgrass grassland and serpentine barrens; 5-370 m.	Annual herb, April – July	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Coast iris (*Iris longipetala*)	CRPR 4.2	Scattered throughout northwest California.	Mesic, coastal prairie, lower montane coniferous forest, meadows and seeps, 0-600m.	Perennial rhizomatous herb, March-May.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Contra Costa goldfields (*Lasthenia conjugens*)	FE, CRPR 1B.1	Endemic to western California from Santa Rosa to Monterey.	Cismontane woodland, playas (alkaline), valley and foothill grassland and vernal pools; 0-470 m. elevation.	Annual herb, March-June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
legenere (*Legenere limosa*)	CRPR 1B.1	Endemic to the Central Valley and Inner Coast Ranges from Redding to Salinas.	Vernal pools; 0-880 m.	Annual herb, April-June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

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Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Serpentine leptosiphon (*Leptosiphon ambiguus*)	CRPR 4.2	Within rural regions around the San Jose area.	Usually in serpentinite soil, cismontane woodland, coastal scrub, valley and foothill grassland, 120-1130m.	Annual herb, March-June.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Crystal Springs lessingia (*Lessingia arachnoidea*)	CRPR 1B.2	Endemic to San Mateo county and Sonoma Counties.	Cismontane woodland, coastal scrub or valley and foothill grassland on serpentine soils, often on roadsides; 60 – 200m.	Annual herb, July – October	**Not Expected.** There is no suitable habitat in the Study area and the nearest documented occurrence is approximately 7 miles west of the study area.
Woolly-headed lessingia (*Lessingia hololeuca*)	CRPR 3	Scattered throughout northwest California.	Clay, serpentinite soils, broadleafed upland forests, coastal scrub, lower montane coniferous forests, valley and foothill grassland, 15-305m.	Annual herb, June-October.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
coast lily (*Lilium maritimum*)	CRPR 1B.1	California endemic; extant occurrences in Mendocino, Marin, and Sonoma Counties.	Broad-leafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes, and swamps (freshwater) or North Coast coniferous forest, sometimes on roadsides; 5-475 m.	Perennial bulbiferous herb, May-August	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
San Mateo tree lupine (*Lupinus eximus*)	CRPR 3.2	Limited populations southwest and north of the San Francisco Bay area.	Chaparral and coastal scrub, 90-550m.	Perennial evergreen shrub, April-July.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
arcuate bush mallow (*Malacothamnus arcuatus*)	CRPR 1B.2	Known from San Mateo, Santa Clara, and Merced counties.	Ultramafic chaparral, gravelly alluvium. Locally, in openings in mixed evergreen forests; 15-355 m.	Perennial evergreen shrub, April – September	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Davidson's bush mallow (*Malacothamnus davidsonii*)	CRPR 1B.2	Throughout California, found in San Mateo, Monterey, San Luis Obispo, and Los Angeles counties.	Sandy washes within coastal scrub, chaparral, and riparian woodland, at elevations 185 – 855m.	Perennial deciduous shrub, June – January	**Not Expected.** There is no suitable habitat in the Study area and the nearest documented occurrence is approximately 4.5 miles south of the study area.
Hall's bush-mallow (*Malacothamnus hallii*)	CRPR 1B.2	Occurs to the west, east, and south of the San Francisco Bay.	Chaparral, coastal scrub, 10-760m.	Perennial evergreen shrub, (April) May-September (October).	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Mt. Diablo cottonweed (*Micropus amphibolus*)	CRPR 3.2	Scattered throughout northwest California.	Rocky soils, broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland, 45-825m.	Annual herb, March-May.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
San Antonio Hills monardella (*Monardella antonina* ssp. *antonina*)	CRPR 3	**None.** There is no potential habitat in the Study area	Chaparral and cistmontane woodland, 320-1000m.	Perennial rhizomatous herb, June-August.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
woodland woolythreads (*Monolopia gracilens*)	CRPR 1B.2	Through central California from San Mateo and Contra Costa counties south to San Luis Obispo county.	Grassy openings in chaparral, valley and foothill grasslands (serpentine), cismontane woodland, broadleafed upland forests, North coast coniferous forest. Sandy to rocky soils; 100-1200 m.	Annual herb, February – July	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
pincushion navarettia (*Navarretia myersii* ssp. *myersii*)	CRPR 1B.1	Mainly central part of Central Valley and one location on the San Francisco Peninsula.	Vernal pools, often acidic; 20-330 m.	Annual herb, April – May	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

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Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Patterson's navarretia (*Navarretia paradoxiclara*)	CRPR 1B.3	One extant population north of San Jose, other populations southeast of Sacramento near Stanislaus National Forest.	Serpentinite soils, openings, vernally mesic, often in drainages, meadows, and seeps, 150-430m.	Annual herb, May-June (July)	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Dudley's lousewort (*Pedicularis dudleyi*)	SR, CRPR 1B.2	Throughout central coastal California from San Mateo county south to San Luis Obispo county.	Chaparral, valley and foothill grassland and North coast coniferous forest, particularly deep shady woods and steep cut banks in older coast redwood forests and maritime chaparral; 60-900 m.	Perennial herb, April – June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
white-rayed pentachaeta (*Pentachaeta bellidiflora*)	FE, SE, CRPR 1B.1	California endemic; extant occurrences in San Mateo County.	Cismontane woodland or valley and foothills grassland (often serpentinite); 35-620 m.	Annual herb, March – May	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
white-flowered rein orchid (*Piperia candida*)	CRPR 1B.2	Through northern coastal California from Del Norte county south to Santa Cruz county.	Broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest. Often on mossy banks and rock outcrops or in the forest duff; 30-1310 m.	Perennial herb, May - September	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Choris' popcornflower (*Plagiobothrys chorisianus* var. *chorisianus*)	CRPR 1B.2	Endemic to coastal central California including Santa Cruz, San Francisco, and San Mateo Counties.	Chaparral, coastal prairie or coastal scrub on mesic sites; 15-160 m.	Annual herb, March – June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
hairless popcornflower (*Plagiobothrys glaber*)	CRPR 1A	Endemic to Alameda, Marin, San Benito, and Santa Clara Counties.	Meadows and seeps (alkaline) and marshes and swamps (coastal salt); 15-180 m. elevation.	Annual herb, March-May	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
Oregnon polemonium (*Polemonium carneum*)	CRPR 2B.2	Occurs in northern California and in the San Francisco Bay Area.	Coastal prairie, coastal scrub or lower montane coniferous forest; 0-1830 m.	Perennial herb, April-September	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Lobb's aquatic buttercup (*Ranunculus lobbii*)	CRPR 4.2	Mostly in the north San Francisco Bay/Sonoma/Napa region, few populations east and south of the San Francisco Bay.	Mesic, cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools, 15-470m.	Annual herb (aquatic), February-May	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
chaparral ragwort (*Senecio aphanactis*)	CRPR 2B.2	Occurs in western California from Concord to the Mexican border.	Chaparral, cismontane woodland and coastal scrub, sometimes in serpentine soils; 15-800 m.	Annual herb, January-April	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Scouler's catchfly (*Silene scouleri* ssp. *scouleri*)	CRPR 2B.2	Occurs throughout California, Oregon, Washington, Idaho, and Montana.	Coastal bluff scrub, coastal prairie, valley and foothill grassland, 0-600m.	Perennial herb, (March-May) June-August (September)	**Not Expected.** There is no suitable habitat in the Study area in the Study area and there are no CNDDB occurrences within 5 miles.
San Francisco campion (*Silene verecunda* ssp. *verecunda*)	CRPR 1B.2	Endemic to Santa Cruz, San Francisco, San Mateo, and Sutter Counties.	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub or valley and foothills grassland on sandy soils; 30-645 m.	Perennial herb, March – August	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*)	CRPR 1B.2	Only in Alameda, Contra Costa, Napa, and Solano Counties in the San Francisco Bay-Delta region.	Alkaline soils, meadows and seeps, marshes and swamps, 0-255 m.	Perennial herb, February – May.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*)	CRPR 2B.2	Occurs in Northern California in the Inner Coast Ranges and Sierra Nevadas from east of Redding to near San Jose.	Marshes and swamps (assorted shallow freshwater); 300-2150 m.	Perennial rhizomatous herb, May-July	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
California seablite (*Suaeda californica*)	FE, CRPR 1B.1	Endemic to coastal California in the San Francisco Bay Area and near San Luis Obispo.	Marshes and swamps (coastal salt); 0-15 m.	Perennial evergreen shrub, July-October	**Low.** There is potential suitable habitat in the Study area. However, the known distribution of this species does not overlap the study area
showy rancheria clover (*Trifolium amoenum*)	FE, CRPR 1B.1	Marin, Sonoma, Napa Solano, and San Mateo counties.	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine), often open sunny sites; 5-415 m.	Annual herb, April – June	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Santa Cruz clover (*Trifolium buckwestiorum*)	CRPR 1B.1	Scattered throughout northwest California.	Gravelly soils, and occurring on margins, broadleafed upland forest, cismontane woodland, coastal prairie, 105-610m.	Annual herb, April-October.	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
saline clover (*Trifolium hydrophilum*)	CRPR 1B.2	Endemic to San Francisco Bay Area and surrounding counties.	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools; 0-300 m.	Annual herb, April – June	**Moderate.** There is some suitable habitat in the Study area and the known distribution of this species is within the region of the study area.
San Francisco owl's clover (*Triphysaria floribunda*)	CRPR 1B.2	Endemic to Marin, San Francisco and San Mateo Counties.	Coastal prairie, coastal scrub or valley and foothill grassland, usually serpentinite; 10-160 m.	Annual herb, April-June	**Not Expected.** There is no suitable habitat in the Study area and the nearest documented occurrence is approximately 6.75 miles northwest from the study area.

SPECIAL-STATUS PLANTS WITH DOCUMENTED OCCURRENCES WITHIN A CNDDB SEARCH OF THE U.S. GEOLOGICAL SURVEY (USGS) 7.5-MINUTE QUADRANGLES: NEWARK, MOUNTAIN VIEW, PALO ALTO, REDWOOD POINT, SAN MATEO, WOODSIDE, LA HONDA, MINDEGO HILL, AND CUPERTINO

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Life Form, Blooming Period	Potential Occurrence in the Study Area[b]
caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	CRPR 1B.1	California endemic; extant occurrences in Fresno, Monterey, and San Luis Obispo Counties.	Valley and foothill grassland (alkaline hills); 1-455 m.	Annual herb, March-May	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.
Methuselah's beard lichen (*Usnea longissima*)	CRPR 4.2	Throughout the northern California coast.	On tree branches, usually on old growth hardwoods and conifers, broadleafed upland forest, north coast coniferous forest, 50-1460m.	Fructicose lichen (epiphytic)	**Not Expected.** There is no suitable habitat in the Study area and the known distribution of this species does not overlap the study area.

[a] Status explanations:

Federal:

FE = Listed as endangered under the Federal Endangered Species Act.

FT = Listed as threatened under the Federal Endangered Species Act.

State:

SE= Listed as endangered under the California Endangered Species Act. **None.** There is no potential habitat in the Study area and there are no known occurrences within 5 miles.jmn

ST= Listed as threatened under the California Endangered Species Act.

SR= Listed as rare under the California Endangered Species Act.

Calfornia Rare Plant Rank:

1B**=** Plants Rare, Threatened, or Endangered in California and Elsewhere

2B= Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3 = Knowledge on plant lacking, unable to determine accurate population numbers

4 = Plants have a limited distribution or are infrequent through California and their status should be monitored regularly

[b] Potential Occurrence explanations:

Present: Species was observed on the project site, or recent species records (within five years) from literature are known within the study area.

High: The CNDDB or other reputable documents record the occurrence of the species off-site, but within a 10-mile radius of the study area and within the last 10 years. High-quality suitable habitat is present within the study area.

Moderate: Species does not meet all terms of High or Low category. For example: CNDDB or other reputable documents may record the occurrence of the species near but beyond a 10-mile radius of the study area, or some of the components representing suitable habitat are present within or adjacent to the study area, but the habitat is substantially degraded or fragmented.

Low: The CNDDB or other documents may or may not record the occurrence of the species within a 10-mile radius of the study area. However, few components of suitable habitat are present within or adjacent to the study area.

Not Expected: CNDDB or other documents do not record the occurrence of the species within or reasonably near the study area and within the last 10 years, and no or extremely few components of suitable habitat are present within or adjacent to the study area.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Potential Occurrence in the Study Area[b]
Invertebrates				
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay.	*Plantago erecta* is the primary host plant, *Castilleja densiflorus* and *C. purpurscens* are secondary host plants.	**Not Expected.** There is no serpentine soil or otherwise suitable habitat in the Study area and there are no CNDDB occurrences within 5 miles.
Mrytle's silverspot (*Speyeria zerene myrtleae*)	FE	Restricted to foggy coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County.	Larval foodplant thought to be *Viola adunca.*	**Not Expected.** There is no suitable habitat in the Study area and there are no CNDDB occurrences within 5 miles.
Fish				
longfin smelt (*Spirinchus thaleichthys*)	FC, ST, CSSC	Slightly upstream from Rio Vista and Medford Island through Suisun Bay and Suisun Marsh; San Pablo Bay; San Francisco Bay; Gulf of the Farallones; Humboldt Bay and Eel River estuary	Found in open water of estuaries, mostly in the middle or bottom of water columns, prefer salinities of 15-30 ppt. but can be found in completely fresh water to almost pure sea water.	**Moderate.** There is no suitable habitat in the Study area, and no known occurrences within 5 miles, however there is potential habitat directly adjacent to the study area.
steelhead- Central California Coast DPS (*Oncorhynchus mykiss irideus*)	FT	This distinct population segment (DPS) includes all anadromous *O. mykiss* (steelhead) populations from the Russian River south to Soquel Creek and to, but not including, the Pajaro River. Populations in the San Francisco and San Pablo Basins are also included.	Adults migrate from a marine environment into the freshwater streams and rivers of their birth in order to mate (called anadromy). Unlike other Pacific salmonids, they can spawn more than one time (called iteroparity). Migrations can be hundreds of miles (USFWS 2017).	**Moderate.** There is no suitable habitat in the Study area, and no known occurrences within 5 miles, however there is potential habitat directly adjacent to the study area.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
North American Green Sturgeon. Southern DSP (*Acipenser medirostris*)	FT, CSSC	Anadromous fish found in tidally influenced water in the San Francisco Bay, coastal waters of North America and down to the coast of Monterey to depth of 360 feet. Non-spawning individuals are found in estuaries during summer and fall while spawning has been observed in the Klamath, Rogue, Trinity, Sacramento, and Eel rivers.	Sturgeon spend a majority of their lives in nearshore oceanic waters, bays, and estuaries Juveniles reside in freshwater while more mature individuals and adults spend most of their time in saltwater until they are mature enough to spawn in a freshwater system. Deep pools or "holes" with turbulence is required for spawning.	**High.** There is a high potential for non-breeding individuals of this species to be present within the tidal sloughs year-round. However, there no suitable breeding habitat within or nearby the study area.
Amphibians and Reptiles				
Alameda whipsnake (*Masticophis lateralis euryxanthus*)	FE, SE	Are found in the inner coast range of California, most Alameda whipsnakes area in Contra Costa and Alameda counties. Some have been found in San Joaquin and Santa Clara counties (USFWS 2017).	Typically found in chaparral — northern coastal sage scrub and coastal sage. Rock outcrops, rock crevices and mammal burrows are important features of their habitat.	**Not Expected.** There is no suitable habitat in the Study area and the study area is not near any known extant populations.
California giant salamander (*Dicamptodon ensatus*)	CSSC	Found in two, possibly three isolated regions, from Mendocino County near Point Arena east into the coast rages into Lake and Glenn counties, south to Sonoma and Marin Counties, continuing south of the San Francisco Bay from San Mateo County to southern Santa Cruz County. Does not occur east of the SF Bay (CalHerps 2018).	Occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages (CalHerps 2018).	**Not Expected.** There is no suitable habitat in the Study area, and no known occurrences within 5 miles.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
California red-legged frog (*Rana draytonii*)	FT	Endemic to California and northern Baja California.	Inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Not Expected.** There is no suitable habitat in the Study area, however there are several documented occurrences approximately 5 miles southwest of the study area. Heavy urbanization and major freeways likely preclude this species from the study area.
California tiger salamander (*Ambystoma californiense*)	FT, ST, CSSC	Endemic to California, found in isolated populations the Central Valley and Central Coast ranges.	This species needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal wetlands for breeding.	**Not Expected.** There is no suitable habitat in the study area and the only documented occurrence within 5 miles is listed as “extirpated” from the region.
foothill yellow-legged frog (*Rana boylii*)	CSSC	Occurs in the foothills of the western side of the Sierra Nevada mountains from the northern border of the state to the Tehachapi mountains.	Inhabits partly shaded, shallow streams and rifles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg laying, need at least 15 weeks for metamorphosis.	**Not Expected.** There is no suitable habitat in the study area and there are no CNDDB occurrences within 5 miles.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
Red-bellied newt (*Taricha rivularisi*)	CSSC	Endemic to California. Occurs along the coast from near Bodega, Sonoma county, to near Honeydew, Humboldt county, and inland to Lower lake and Kelsey Creek, Lake County. A small isolated population known in the Stevens Creek watershed of Santa Clara County. (CalHerps 2018).	A stream or river dweller. Found in coastal woodlands and redwood forest along the coast of northern California (CalHerps 2018).	**Not Expected.** There is no suitable habitat in the study area and there are no CNDDB occurrences within 5 miles.
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE, SE	Occurs in the vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County.	Prefers dense cover and water depths of at least 1 foot, and upland areas near water are also very important.	**Not Expected.** There is no suitable habitat in the study area and heavy urbanization and major freeways near the study area likely preclude this species.
Santa Cruz black salamander (*Aneides flavipunctatus niger*)	CSSC	This subspecies is endemic to California, with a limited range west of the San Francisco Bay and south of the San Francisco Peninsula from Santa Cruz County and western Santa Clara County, north to southern San Mateo County. The species also occurs from Sonoma county north along the coast and coast ranges to southwest Oregon in Jackson and Josephine Counties, and east to near Mt. Shasta (CalHerps 2018).	Occurs in mixed deciduous woodland, coniferous forests, coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects (CalHerps 2018d.	**Not Expected.** There is no suitable habitat in the study area and there are no CNDDB occurrences within 5 miles.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
Western pond turtle (*Emys marmorata*)	CSSC	Occurs from Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley and on western slope of Sierra Nevada.	Inhabits ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests.	**Not Expected.** There are two documented occurrences approximately 4.5 miles south of the study area, however the study area does not provide any suitable habitat for this species and is not interconnected with occupied waterbodies.
Birds				
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	This California endemic subspecies of song sparrow (*Melospiza melodia*) is a resident of salt marshes bordering south arm of San Francisco Bay.	Inhabits *Salicornia* marshes, nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia.*	**Low.** There is marginal foraging habitat for this species within the study area, but no nesting habitat; there are several documented occurrences within 1 mile of both the eastern and western segments of the study area.
American peregrine falcon (*Falco peregrine anatus*)	CFP	Occurs throughout the Central Valley, coastal areas and northern mountains of California.	Riparian areas, wetlands, lakes and other aquatic features provide important breeding and foraging habitat for this species. Nests on cliffs or man-made structures such as buildings and bridges; feeds on birds.	**Not Expected.** The study area does not provide suitable habitat for this species and there are no CNDDB occurrences within 5 miles.
Bald eagle (*Haliaeetus leucocephalus*)	SE, CFP	Throughout North America.	Typically nest in forested areas adjacent to large bodies of water, staying away from heavily developed areas when possible (Cornell Lab 2017).	**Not Expected.** There is no suitable habitat in the study area and there are no known occurrences within 5 miles.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
bank swallow (*Riparia riparia*)	ST	Occurs primarily around the remaining natural river banks of the Sacramento and Feather Rivers in the Sacramento Valley.	Colonial nester, nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine textured/sandy soils near streams, rivers, lakes or ocean to dig nesting hole.	**Not Expected.** There is no suitable habitat in the study area and there are no known occurrences within 5 miles.
Black skimmer (*Rynchops niger*)	CSSC	Occurs on most oceanic coasts throughout North America.	On open sandy beaches, on gravel or shell bars with sparse vegetation, or on mats of sea wrack (tide-stranded debris) in saltmarsh (Cornell Lab 2017).	**Moderate.** There is semi-suitable habitat for this species within the study area and one documented occurrence approximately 5.5 miles southeast of the study area.
burrowing owl (*Athene cunicularia*)	CSSC	Year-round resident throughout much of the State, except the coastal counties north of Marin and mountainous areas.	Occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. Nests in small mammal burrows, particularly those of the California ground squirrel.	**Present.** This species was repeatedly observed by MIG biologists within the study area.
California black rail (*Laterallus jamaicensis* ssp. *coturniculus*)	ST	This California endemic subspecies of the black rail (*Laterallus jamaicensis*) occurs in the San Francisco Bay region, parts of the Central Valley and at the southeastern border of the State.	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. It needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**Low.** The study area does not provide the taller marsh vegetation required by this cryptic species, however there is suitable habitat directly adjacent to the study area to the north and several documented occurrences within 5 miles of the study area.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
California least tern (*Sternula antillarum browni*)	FE, SE	Nests along the coast from San Francisco Bay south to Northern Baja California.	Colonial breeder on bare or sparsely vegetated flat substrates, sandy beaches, alkali flats, landfills, or paved areas.	**Not Expected.** There is no suitable habitat in the Study area and a nearby documented occurrence is listed as "extirpated." The study area does not lie within and of the well-known nesting colonies of this species.
long-eared owl (*Asio otus*)	CSSC	Occurs throughout the state except in the Central Valley, in pockets along the coast and in the far central south.	Inhabits riparian bottomlands grown to tall willows and cottonwoods and belts of live oak parallel to streams. Require adjacent open land productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	**Not Expected.** There is no suitable habitat in the study area and there are no known occurrences within 5 miles.
marbled murrelet (*Brachyramphus marmoratus*)	FT, SE	Feeds near-shore; nests inland along coast from Eureka to Oregon border & from Half Moon Bay to Santa Cruz.	Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	**Not Expected.** There is no suitable habitat in the study area and there are no known occurrences within 5 miles.
northern harrier (*Circus cyaneus*)	CSSC	Occurs throughout lowland California; has been recorded in fall at high elevations	Inhabits grasslands, meadows, marshes, and seasonal and agricultural wetlands	**Low.** There is suitable habitat for this species directly adjacent to the north of the study area, however there is no suitable foraging no nesting habitat for this species within the study area and no CNDDB occurrences within 5 miles of the study area.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
Ridgeway (California clapper) rail (*Rallus obsoletus* spp. *obsoletus*)	FE, SE	This California endemic inhabits salt water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay.	Associated with abundant growths of pickleweed. Also, feeds away from cover on invertebrates from mud-bottomed sloughs.	**Low.** The study area does not provide the taller marsh vegetation required by this cryptic species, however there is suitable habitat directly adjacent to the study area to the north and several documented occurrences within the general vicinity of the study area.
saltmarsh common yellow throat (*Geothlypis trichas sinuosa*)	CSSC	This supspecies of the common yellow throat (*Geothlypis trichas*) is endemic to the fresh and saltwater marshes of the San Francisco Bay region.	Requires thick, continuous cover down to water surface for foraging; and tall grasses, tule patches and willows for nesting.	**Low.** There is suitable habitat for this species directly adjacent to the north of the study area, however there is no suitable foraging no nesting habitat for this species within the study area and no CNDDB occurrences within 5 miles of the study area.
short-eared owl (*Asio flammeus*)	CSSC	Year-round resident in certain parts of California; breeds regularly in the Great Basin region and locally in the Sacramento-San Joaquin River Delta, breeds periodically in the Central Coast and San Joaquin Delta.	Found in swamp lands, both fresh and salt, lowland meadows, and agricultural fields. Tule patches or tall grass are needed for nesting and daytime seclusion; nests on dry ground in depression concealed in vegetation.	**Not Expected.** There is no suitable habitat in the study area, although there is one documented occurrence approximately 3.2 miles northwest of the study area.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Potential Occurrence in the Study Area[b]
Tricolored blackbird (*Agelaius tricolor*)	CSSC (nesting colony)	Permanent resident in Central Valley from Butte to Kern Counties; breeds at scattered coastal locations from Marin to San Diego Counties and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony.	**Not Expected.** There is no suitable habitat in the study area and there are no known occurrences within 5 miles.
western snowy plover (*Charadrius alexandrinuss nivosus*- Pacific population)	FT, CSSC	The Pacific population of western snowy plover occurs along the entire coastline of California.	Occurs on sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	**Low.** There is marginally suitable habitat within the study area and 6 documented occurrences within 5 miles of the study area. This species is unlikely to nest in the heavily trafficked study area habitat.
white-tailed kite (*Elanus lecurus*)	CFP	Year-round resident in lowland areas west of Sierra Nevada from head of Sacramento Valley south, including coastal valleys and foothills, to western San Diego County at Mexico border.	Inhabits low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands that are used for foraging	**Low.** There is marginally suitable habitat for this species within the Study area and 3 documented occurrences within 5 miles on Bair Island.
Yellow rail (*Coturnicops noveboracensis*)	CSSC	Mostly through Canada, the Midwest, and southeast US. Small wintering population in the San Francisco Bay Area. Small breeding population on the California-Oregon border.	Shallow marshes, and wet meadows; in winter, drier freshwater and brackish marshes, as well as dense, deep grass, and rice fields (Cornell Lab 2017).	**Low.** The study area does not provide the taller marsh vegetation preferred by this species, however there is suitable habitat directly adjacent to the study area to the north and 2 documented occurrences within the general vicinity of the study area.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA

Common Name (*Scientific Name*)	Listing Status[a]	Geographic Distribution in California	Habitat Requirements	Potential Occurrence in the Study Area[b]
Mammals				
pallid bat (*Antrozous pallidus*)	CSSC	Throughout California except high Sierra from Shasta to Kern Counties and northwest coast, primarily at lower and mid-elevations	Inhabits deserts, grasslands, shrublands, woodlands, and forests. This species is most common in open dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures, very sensitive to disturbance of roosting sites.	**Not Expected.** There is 1 documented occurrence of this species approximately 4.5 miles south of the study area, however there is no roosting habitat for this species within the study area.
Townsend's big-eared bat (*Corynorthinus townsendii*)	SC, CSSC	Throughout California in a wide variety of habitats; most common in mesic sites.	Requires caves, mines, tunnels, buildings, or other human-made structures for roosting, extremely sensitive to human disturbance.	**Not Expected.** There is no suitable roosting habitat within the study area and no documented occurrences within 5 miles of the study area.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	This California endemic is found throughout the San Francisco Bay area in grasslands, scrub and wooded areas.	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded leaves, grass, and other material. May be limited by availability of nest-building materials.	**Not Expected.** There is no suitable habitat in the Study area and there are no CNDDB occurrences within 5 miles of the alignment.
saltmarsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, CFP	This California endemic occurs only in the saline emergent wetlands of the San Francisco Bay and its tributaries.	Pickleweed is the primary habitat of this non-burrowing mammal. It builds loosely organized nests and requires higher areas to escape flooding.	**Moderate.** There is a very thin strip of pickleweed habitat along the eastern and northern portion of the study area, and there are several documented occurrences within 5 miles of the study area.

SPECIAL-STATUS ANIMALS POTENTIALLY OCCURRING IN THE STUDY AREA				
Common Name (*Scientific Name*)	**Listing Status[a]**	**Geographic Distribution in California**	**Habitat Requirements**	**Potential Occurrence in the Study Area[b]**
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	CSSC	Endemic to the salt marshes of the south arm of the San Francisco Bay.	Inhabits medium-high marsh 6-8 feet above sea level where abundant driftwood is scattered among *Salicornia.*	**Moderate.** There is a very thin strip of pickleweed habitat along the eastern and northern portion of the study area, and there is one documented occurrence of this species approximately 1.5 miles east of the study area.
American badger (*Taxidea taxus*)	CSSC	Occurs throughout California and the western United States and Canada.	Inhabits a variety of open habitats with friable soils.	**Not Expected.** There is no suitable habitat in the study area, however there is 1 documented occurrence approximately 3 miles south of the study area. The heavy traffic and urbanization surrounding the study area likely precludes this species.

[a] Status explanations:

Federal:

FE = Listed as endangered under the Federal Endangered Species Act.

FT = Listed as threatened under the Federal Endangered Species Act.

FC = Candidate for listing under the federal Endangered Species Act

State:

SE= Listed as endangered under the California Endangered Species Act.

ST= Listed as threatened under the California Endangered Species Act.

SC= Candidate for listing under the California Endangered Species Act.

CSSC = Species of Special Concern designated by California Department of Fish and Game

CFP = Fully Protected Species under California Fish and Game Code.

[b] Potential Occurrence explanations:

Present: Species was observed on the project site, or recent species records (within five years) from literature are known within the study area.

High: The CNDDB or other reputable documents record the occurrence of the species off-site, but within a 10-mile radius of the study area and within the last 10 years. High-quality suitable habitat is present within the study area.

Moderate: Species does not meet all terms of High or Low category. For example: CNDDB or other reputable documents may record the occurrence of the species near but beyond a 10-mile radius of the study area, or some of the components representing suitable habitat are present within or adjacent to the study area, but the habitat is substantially degraded or fragmented.

Low: The CNDDB or other documents may or may not record the occurrence of the species within a 10-mile radius of the study area. However, few components of suitable habitat are present within or adjacent to the study area.

Not Expected: CNDDB or other documents do not record the occurrence of the species within or reasonably near the study area and within the last 10 years, and no or extremely few components of suitable habitat are present within or adjacent to the study area.

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Appendix E Wetland Delineation Report

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DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102

June 18, 2020

Regulatory Division

Subject: File Number SPN-2018-00371

Mr. David Gallagher
MIG
2055 Junction Avenue, Suite 205
San Jose, CA 95134
dgallagher@migcom.com

Dear Mr. Gallagher:

This correspondence is in response to your submittal of April 23, 2020, on behalf of the West Bay Sanitary District, requesting an approved jurisdictional determination of the extent of waters of the United States occurring on a 29.43-acre site in the City of Menlo Park, San Mateo County, California (Lat: 37.496°, Long: -122.176°).

All proposed discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the United States; or below the high tide line in tidal waters of the United States; or within the lateral extent of wetlands adjacent to these waters, typically require Department of the Army authorization and the issuance of a permit under Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq*.). Waters of the United States generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the United States may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary; and certain ephemeral streams in the arid West.

All proposed structures and work, including excavation, dredging, and discharges of dredged or fill material, occurring below the plane of mean high water in tidal waters of the United States; in former diked baylands currently below mean high water; outside the limits of mean high water but affecting the navigable capacity of tidal waters; or below the plane of ordinary high water in non-tidal waters designated as navigable waters of the United States, typically require Department of the Army authorization and the issuance of a permit under Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq*.). Navigable waters of the United States generally include all waters subject to the ebb and flow of the tide; and/or all

waters presently used, or have been used in the past, or may be susceptible for future use to transport interstate or foreign commerce.

The enclosed delineation maps titled “Approved Jurisdictional Determination, pursuant to Section 10 Rivers and Harbors Act, and Section 404 Clean Water Act, West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project, Menlo Park, San Mateo County (Lat: 37.496°, Long: -122.176°),” in two sheets, date certified June 18, 2020, accurately depicts the extent and location of wetlands, other waters of the United States, and navigable waters of the United States within the study area of the site that are subject to U.S. Army Corps of Engineers' regulatory authority under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. This approved jurisdictional determination is based on the current conditions of the site, as verified during a field investigation of August 6, 2019, a review of available digital photographic imagery, and a review of other data included in your submittal. This approved jurisdictional determination will expire in three years from the date of this letter unless new information or a change in field conditions warrants a revision to the delineation map prior to the expiration date. The basis for this approved jurisdictional determination is explained in the enclosed *Approved Jurisdictional Determination Form*. This approved jurisdictional determination is presumed to be consistent with the official interagency guidance of June 5, 2007, interpreting the Supreme Court decision *Rapanos v. United States*, 126 S. Ct. 2208 (2006).

The enclosed delineation map further depicts the extent and location of wastewater detention ponds within the study area of the site that are **not** subject to U.S. Army Corps of Engineers' regulatory authority under Section 404 of the Clean Water Act. Waters of the United States do not generally include non-tidal drainage and irrigation ditches excavated on dry land; artificially irrigated areas which would revert to upland if the irrigation ceased; artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing; artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons; and water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel, unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of a waters of the United States (51 Fed. Reg. 41,217; Nov. 13, 1986). Based on a case-by-case analysis, the U.S. Army Corps of Engineers may elect to not exert jurisdiction over these categories of water bodies. These delineated water bodies, however, may be considered as "waters of the State" and, therefore, subject to regulation by the California Regional Water Quality Control Board, San Francisco Bay Region, under the Porter-Cologne Water Quality Control Act, as amended (California Water Code § 1300 *et seq*.).

You are advised that the approved jurisdictional determination may be appealed through the U.S. Army Corps of Engineers' *Administrative Appeal Process*, as described in 33 C.F.R. § 331 (65 Fed. Reg. 16,486; Mar. 28, 2000) and outlined in the enclosed flowchart and *Notification of Administrative Appeal Options, Process, and Request for Appeal* (NAO-RFA) Form. If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to this office for reconsideration of this decision. If you do not provide new information to this office, you may elect to submit a completed NAO-RFA Form to the Division Engineer to initiate the appeal process; the completed NAO-RFA Form must be submitted directly to the Appeal Review Officer at the address specified on the NAO-RFA Form. You will relinquish all rights to a review or an appeal unless this office or the Division Engineer receives new information or a completed NAO-RFA Form within 60 days of the date on the NAO-RFA Form. If you intend to accept the approved jurisdictional determination, you do not need to take any further action associated with the Administrative Appeal Process.

You may refer any questions on this matter to Bryan Matsumoto by telephone at 415-503-6786 or by e-mail at Bryan.T.Matsumoto@usace.army.mil. All correspondence should be addressed to the Regulatory Division, South Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. The Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website: https://www.spn.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Digitally signed by MATSUMOTO.BRYAN.T.1258523683
Date: 2020.06.18 18:25:29 -07'00'

Bryan Matsumoto
Senior Project Manager
Regulatory Division

Enclosures

cc:
RWQCB, Tahsa Sturgis, Tahsa.Sturgis@Waterboards.ca.gov
West Bay Sanitary District, Bill Kitajima, bkitajima@westbaysanitary.org
West Bay Sanitary District, Phil Scott, PScott@westbaysanitary.org

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project

Preliminary Delineation of Wetlands and Other Waters

Prepared for:
West Bay Sanitary District
500 Laurel Street
Menlo Park, CA 94025

Prepared by:
MIG
2055 Junction Avenue, Suite 205
San José, CA 95134
(650) 400-5767

February 2020

Executive Summary

MIG surveyed the West Bay Sanitary District Flow Equalization and Resource Recovery Facility (FERRF) Flood Protection Project study area located in the City of Menlo Park in San Mateo County, California for wetlands and other waters potentially subject to regulation under Section 404 of the Clean Water Act as administered by the United States Army Corps of Engineers (USACE). The survey also delineated the extent of waters of the state that may be subject to regulation by the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act and under the Porter Cologne Water Quality Control Act. Lastly, the extent of waters that are likely subject to regulation under the McAteer-Petris Act of 1965, which is administered by the San Francisco Bay Conservation and Development Commission (BCDC), are included in this delineation.

In total, approximately 6.46 acres of potentially USACE and RWQCB jurisdictional features were identified in the study area (not including historic Section 10 waters). These include approximately 4.73 acres of Section 404, Section 10, and Section 401 waters situated below the mean high water (MHW) line of the San Francisco Bay. Jurisdictional waters and wetlands that are subject only to Sections 404 and 401 occur above the MHW line and comprise 1.27 acres of the study area. Section 401 waters of the state extend farther up to the top of the levees for an additional 0.46 acres. In addition, approximately 2.89 acres of the wastewater detention ponds meet the definition of Historic Section 10 waters. Also, BCDC jurisdictional areas are present and encompass 11.75 acres of the study area. Potentially jurisdictional habitats are summarized in the table below.

Summary of Jurisdictional Waters and Habitats within the Study Area

Potentially Jurisdictional Waters	Acres[1]
USACE Jurisdictional Total (not including historic Section 10)	**6.00**
Section 10/Section 404 (below MHW)	
Tidal sloughs (open water habitat)	1.14
Northern coastal salt marsh	3.59
Section 404 Other Waters and Wetlands (above MHW)	
Tidal sloughs (open water habitat)	0.01
Northern coastal salt marsh	1.26
Historic Section 10 Total	**2.89**
Wastewater detention ponds	2.89
RWQCB Jurisdiction Total	**6.46**
Section 401 Waters of the State (Up to Top of Bank)	
Developed (levee slopes)	0.46
Northern coastal salt marsh	4.85
Tidal sloughs (open water habitat)	1.15
BCDC Jurisdiction Total	**11.75**
Bay shoreline	5.66
Shoreline band	6.09

[1]Note: Values are approximate due to rounding.

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Appendices

1. Introduction

1.1 Project Study Area Description

The West Bay Sanitary District (WBSD) owns and operates a flow equalization facility located in the City of Menlo Park (Figure 1). The facility currently operates to store wastewater during high flow events to prevent overflow at District facilities and the Silicon Valley Clean Water Wastewater Treatment Plant in Redwood City. The site is surrounded on the north east and west sides by San Francisco Bay and Bedwell Bayfront Park abuts the site's southern boundary. The 29.43-acre study area for the delineation extends into the Bay and Bedwell Bayfront Park (Figure 2). The site contains the remnants of a decommissioned wastewater treatment plant (WWTP) which operated from 1952-1980. The site also contains three wastewater detention ponds on the west and north side of the study area which are used for wet weather flow storage (Figure 2). The study area is situated in the *Palo Alto* U.S. Geological Survey (USGS) 7.5-minute quadrangle (Figure 3). Elevation of the study area is approximately 0 to 40 feet North American Vertical Datum of 1988 (NAVD88) (Google Inc. 2019).

The climate at the study area is coastal Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Climate conditions in the study area include a 30-year average of approximately 17.6 inches of annual precipitation with an average temperature range from 48ºF to 71ºF (PRISM Climate Group 2019). Relative to the 30-year climate normal, the study area experienced wetter than normal conditions during the 2018/2019 wet season prior to the September 2019 survey. From November 2018 through April 2019, the area received 20.4 inches of precipitation, which is approximately 128% of the 30-year average for this same period (PRISM Climate Group 2019).

Figure 4 shows the one soil unit mapped by the National Resource Conservation Service (NRCS) in the study area, and Table 1 summarizes the associated texture, drainage classification, and hydric soil status (NRCS 2019a). The study area includes the following soil unit: 125 – Pits and Dumps, which consists of gravel pits, refuse dumps, and rock quarries. This soil series is not listed as hydric in San Mateo County on the National Hydric Soils List (NRCS 2019b). A detailed description of this soil type is provided in Appendix A.

Table 1. Soil Type, Texture, Drainage Classification, and Hydric Status for Soils Occurring in the Study Area

Soil Symbol	Soil Name	Soil Texture	Drainage Classification	Hydric Status
125	Pits and Dumps	N/A	N/A	No

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) map of the study area is depicted in Figure 5. The NWI identified the wastewater detention ponds within the study area as artificially flooded freshwater ponds (PUSK) (NWI 2019). Also, the NWI identified intertidal estuarine and marine wetland and open water habitat within the study area (E2USN and E2EM1N) (NWI 2019). NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. (1979). These data are available for general reference purposes and do not necessarily correspond to the presence or absence of jurisdictional waters.

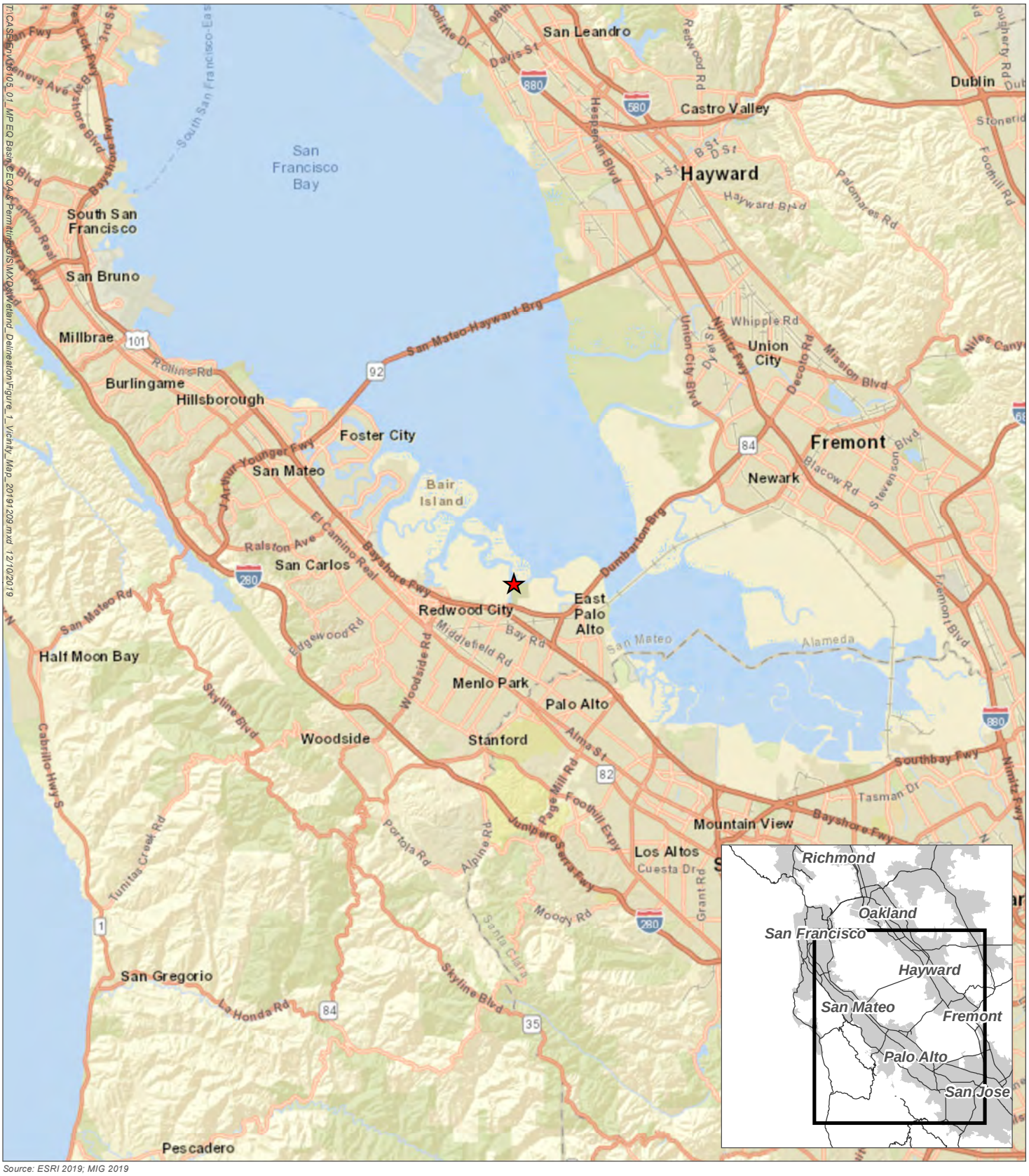
1.2 Proposed Project

The flow equalization facility is in a FEMA 100-year flood zone. The District is proposing to improve the site and bring it out of the FEMA flood zone and plan for 50-year sea level rise projections. The existing facility is surrounded by earthen levees that are not FEMA certified, and therefore require improvement/repairs to ensure the facility remains separated from adjacent Bay/tidal waters. In order to receive FEMA certification, the project proposes to protect the site from flooding and sea level rise by installing sheet pile walls on the west side of the site, an ecotone levee on the north side, and fill on the east and south sides. The ecotone levee would provide additional habitat for special status species and is incorporated as part of the project for sea level rise and climate change adaptations. Project construction is anticipated to begin in 2021.

In addition to flood improvements, the project would also install a new water recycling facility (WRF) at the site, adjacent to the existing decommissioned water treatment plant. The WRF would occupy approximately 10,000 square feet of the study area and sized to produce up to 1.0 million gallons of recycled water per day. Remnant structures of the decommissioned water treatment plant would remain unaffected by the proposed project facilities. Other than the WRF itself, the system would require new influent and effluent piping to connect the facility with customers (end users) for the recycled water. Preliminary pipeline alignments would primarily be installed in existing street rights-of-way.

1.3 Survey Purpose

The purpose of the field survey was to identify the extent and distribution of potentially jurisdictional waters, such as wetlands and other waters, and other jurisdictional habitats occurring within the study area under conditions existing at the time of the September 30, 2019 survey. The results of the field survey in combination with aerial imagery and topographic data were used to map potential jurisdictional features in the study area.



Source: ESRI 2019; MIG 2019

Figure 1 Vicinity Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project

Source: Freyer & Laureta, Inc. 2020; MIG 2019

Base Map Features

Study Area (29.43 acres)

0 200 400 800 Feet

N

MIG

Figure 2 Project Site Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project

Source: ESRI 2019; MIG 2019

Base Map Features

Study Area (29.43 acres)

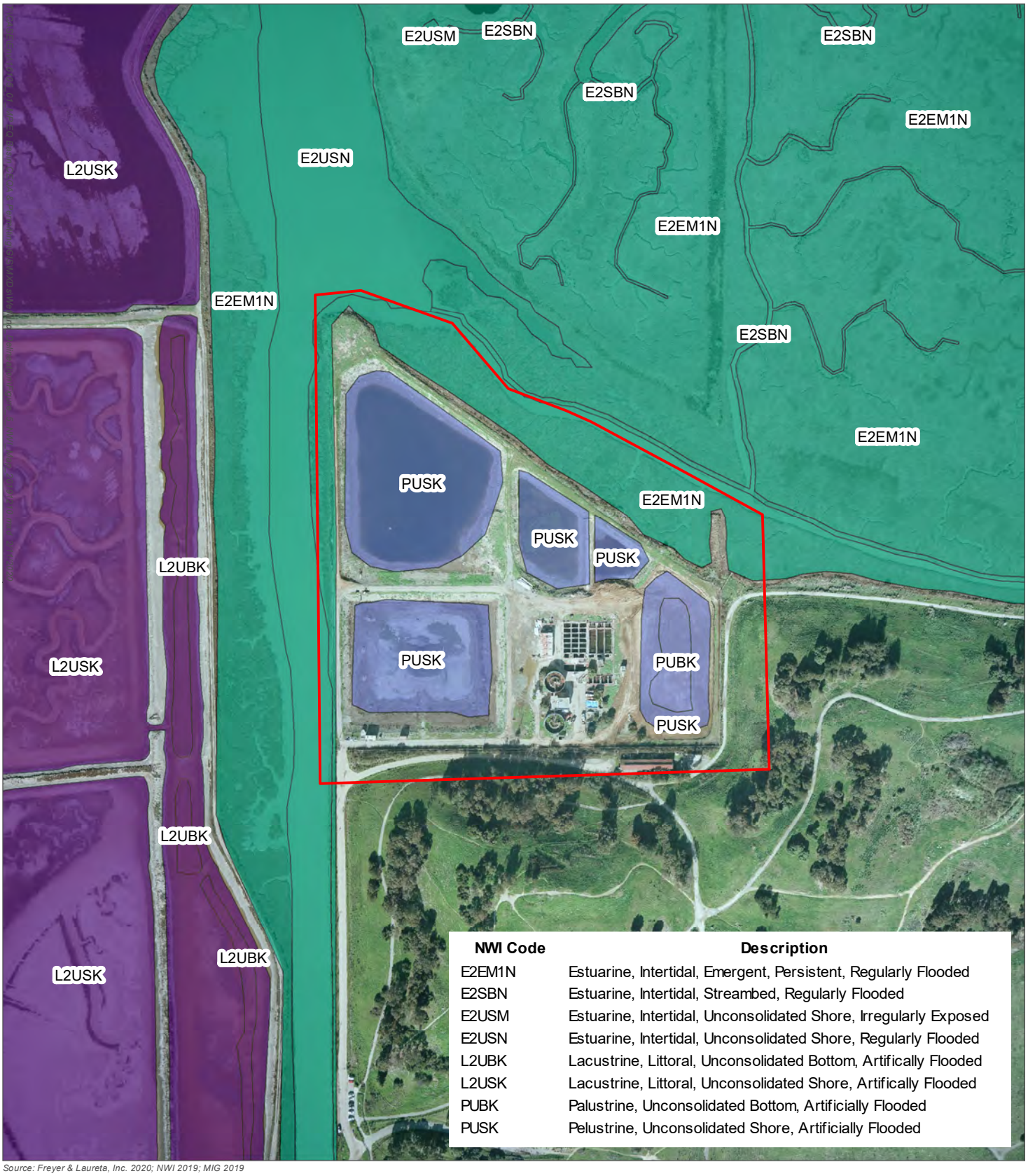
Miles
0 0.2 0.4 0.8

Figure 3 USGS Topographic Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project

Figure 4 NRCS Soils Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project



NWI Code	Description
E2EM1N	Estuarine, Intertidal, Emergent, Persistent, Regularly Flooded
E2SBN	Estuarine, Intertidal, Streambed, Regularly Flooded
E2USM	Estuarine, Intertidal, Unconsolidated Shore, Irregularly Exposed
E2USN	Estuarine, Intertidal, Unconsolidated Shore, Regularly Flooded
L2UBK	Lacustrine, Littoral, Unconsolidated Bottom, Artifically Flooded
L2USK	Lacustrine, Littoral, Unconsolidated Shore, Artifically Flooded
PUBK	Palustrine, Unconsolidated Bottom, Artificially Flooded
PUSK	Pelustrine, Unconsolidated Shore, Artificially Flooded

Source: Freyer & Laureta, Inc. 2020; NWI 2019; MIG 2019

NWI Wetland Type

- Estuarine and Marine Wetland
- Freshwater Pond
- Lake

Base Map Features

- Study Area (29.43 acres)

0 212.5 425 850 Feet

N

Figure 5 NWI Map

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project

2. Survey Methods

Before the delineation survey was conducted, topographic maps and aerial photos of the study area were obtained and reviewed from several sources, such as the USGS (Figure 3), NRCS (Figure 4), NWI (Figure 5), and Google Earth software (Google Inc. 2019), and UC Santa Barbara Library's collection of aerial photography (UCSB 2019).

On September 30, 2019, MIG senior biologist David Gallagher performed a technical delineation of wetlands and other waters in the study area, in accordance with the *Corps of Engineers 1987 Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987). Additionally, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0)* (Regional Supplement) (USACE 2008a) and *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b) were followed to document site conditions relative to hydrophytic vegetation, hydric soils, and wetland hydrology. Mr. Gallagher performed preliminary mapping of the extent and distribution of wetlands and other waters of the U.S. that may be subject to regulation under Section 404 of the Clean Water Act (CWA), waters of the state that may be subject to regulation under the Porter Cologne Water Quality Control Act, which is administered by the RWQCB, and waters that may be subject to regulation under the McAteer-Petris Act of 1965, which is administered by BCDC. Mr. Gallagher also surveyed for aquatic and riparian habitat that may be subject to regulation under Sections 1600-1607 of the California Fish and Game Code, which is administered by California Department of Fish and Wildlife (CDFW).

2.1 Identification of Jurisdictional Waters

The “Routine Determination Method, On-Study area Inspection Necessary (Section D)” outlined in the Corps Manual (Environmental Laboratory 1987), and the updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Regional Supplement (USACE 2010) were used to examine the vegetation, soils, and hydrology in the study area. This three-parameter approach to identifying wetlands is based on the presence of a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

In addition to applying these survey methods, Mr. Gallagher compiled this report in accordance with guidance provided in *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016a) and *Information Requested for Verification of Corps Jurisdiction* (USACE 2016b). These documents list the information that must be submitted as part of a request for a jurisdictional determination, including:

- Vicinity map (Figure 1)
- Project area map (Figure 2)
- USGS quadrangle sheet (Figure 3)
- Soils map (Figure 4)

- National Wetlands Inventory map (Figure 5)
- Vegetation communities map (Figure 6)
- Delineation map (Figure 7)
- Current soil survey report (Appendix A)
- Plant species observed (Appendix B)
- Arid West Wetland Determination Data Forms (Appendix C)
- Written rationale for sample point choice (Section 3.1, “Observations, Rationales, and Assumptions”)
- Color photos (Appendix D)
- Aquatic resources table (Appendix E)

During the survey, the study area was examined for topographic features, drainages, alterations to hydrology or vegetation, and recent significant disturbance. A determination was then made as to whether normal environmental conditions were present at the time of the field survey. In the field, the techniques used to identify wetlands included observing the vegetation growing near the soil sample points and characterizing the current surface and subsurface hydrologic features present near the sample points through both observation of indicators and direct observation of hydrology. Features meeting wetland vegetation, soil, and hydrology criteria were then mapped in the field. Geospatial data were collected using a tablet with an Arrow 100 sub-meter GPS receiver and a geo-spatial mobile-device application.

2.2 Identification of Section 404 Jurisdictional Wetlands (Special Aquatic Study areas)

Where wetland field characteristics were present, Mr. Gallagher examined vegetation, soils, and hydrology using the Routine Determination Method outlined in the Corps Manual (Environmental Laboratory 1987) and the updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Regional Supplement (USACE 2010).

Hydrophytic Vegetation. Plants that can grow in soils that are saturated or inundated for long periods of time, which contain little or no oxygen when wetted, are considered adapted to those soils and are called hydrophytic. There are different levels of adaptation, as summarized in Table 2. Some plants can only grow in soils saturated with water (and depleted of oxygen), some are mostly found in this condition, and some are found equally in wet soils and in dry soils. Plants observed at each of the sample study areas were identified to species, where possible, using *The Jepson Manual, Vascular Plans of California, Second Edition* (Baldwin et al. 2012). The wetland indicator status of each species was obtained from the *Arid West 2016 Regional Wetland Plant List* (Lichvar et al. 2016). Wetland indicator species are designated

according to their frequency of occurrence in wetlands. For instance, a species with a presumed frequency of occurrence of 67 to 99 percent in wetlands is designated a facultative wetland indicator species. The wetland indicator groups, indicator symbol, and the frequency of occurrence of species, provided as a percentage, within wetlands are shown in Table 2.

Table 2. Wetland Indicator Status Categories for Vascular Plants

Indicator Category	Symbol	Frequency (Percent) of Occurrence in Wetlands[1]
Obligate	OBL	>99 (Almost always is a hydrophyte, rarely in uplands)
Facultative wetland	FACW	67 – 99 (Usually a hydrophyte but occasionally found in uplands)
Facultative	FAC	34 – 66 (Commonly occurs as either a hydrophyte or non-hydrophyte)
Facultative upland	FACU	1 – 33 (Occasionally is a hydrophyte, but usually occurs in uplands)
Upland[2]	UPL	<1% (Rarely is a hydrophyte, almost always in uplands)
Not listed[2]	NI	Considered to be an upland species

Obligate and facultative wetland indicator species are hydrophytes that occur “in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicators when found growing in hydric soils that experience periodic saturation. Plant species that are not on the regional list of wetland indicator species are considered upland species. A complete list of the vascular plants observed in the project study area, including their current indicator statuses, is provided in Appendix B.

Hydric Soils. Up to 12 inches of the soil profile were examined for hydric soil indicators. The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as one formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper 12 inches of soil (NRCS 2010). Hydric soils include soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. In general, evidence of a hydric soil includes characteristics such as organic soils (histosols), reducing soil conditions, gleyed soils, soils with bright mottles and/or low matrix chroma, soils listed as hydric by the U.S. Department of Agriculture (USDA) on the National Hydric Soils List (NRCS 2018b), and iron and manganese concretions. Reducing soil conditions can also include circumstances where there is evidence of frequent ponding for long or very long duration. A long duration is defined as a period of inundation for a single event that ranges from 7 days to a month and very long is greater than one month (Environmental Laboratory 1987).

Munsell Soil Notations (Munsell 2009) were recorded for the soil matrix of each soil sample. The Munsell color system is based on three color properties: hue, value, and chroma. A brief description of each component of the system is described below, in the order they are used in describing soil color (i.e., hue/value/chroma):

[1] Based on information contained in the Corps Manual.
[2] Plant species that are not listed in the *Arid West 2016 Regional Wetland Plant List* (Lichvar et al. 2016) are considered UPL species

1. **Hue.** The Munsell Soil Color Chart is divided into five principal hues: yellow (Y), green (G), purple (P), blue (B), and red (R), along with intermediate hues such as yellow-red (YR) and green-yellow (GY). Example of commonly encountered hue numbers include 2.5YR, 10YR, and 5Y.
2. **Value.** *Value* refers to lightness, ranging from white to grey to black. Common numerical values for value in the Munsell Soil Color Chart range from 2 for saturated soils to 8 for faded or light colors. Hydric soils often show low-value colors when soils have accumulated sufficient organic material to indicate development under wetland conditions but can show high-value colors when iron depletion has occurred, removing color value from the soil matrix. Value numbers are commonly reported as 8/, 2.5/, and 6/.
3. **Chroma.** *Chroma* describes the purity of the color, from "true" or "pure" colors to "pastel" or "washed out" colors. Chromas commonly range from 1 to 8 but can be higher for gleys. Soil matrix chroma values that are 1 or less, or 2 or less when mottling is present, are typical of soils that have developed under anaerobic conditions. Chroma numbers are listed, for example, as /1, /5, and /8.

The NRCS Web Soil Survey (NRCS 2018a) was consulted to determine which soil types have been mapped in the project study area (Table 1, Figure 4). Detailed descriptions of these soil types are provided in Appendix A.

Wetland Hydrology. Wetland hydrology is defined as an area that is inundated either permanently or periodically at mean water depths less than 6.6 feet, or where the soil is saturated at the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations.

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology indicators provide evidence that the study area has a continuing wetland hydrologic regime. Primary indicators might include visual observation of surface water (A1), high water table (A2), soil saturation (B1), water-stained leaves (B9), and hydrogen sulfide odor (C1). Secondary indicators might include riverine drift deposits (B3), drainage patterns (B10), and passing score for the FAC-neutral test (D5). Each of the sample points was examined for positive field indicators (primary and secondary) of wetland hydrology, following the guidance provided in the Regional Supplement. Potential jurisdictional wetlands were identified within the project study area.

2.3 Identification of Section 404 Jurisdictional Other Waters

"Other waters" includes lakes, slough channels, seasonal ponds, tributary waters, non-wetland linear drainages, and salt ponds. Such areas are identified by the (seasonal or perennial) presence of standing or running water and generally lack hydrophytic vegetation. In non-tidal or muted tidal waters USACE jurisdiction extends to the OHWM which is defined in 33 CFR Part 328.3 as "the line on the shore established by the fluctuations of water and indicated by physical

characteristics, such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris." In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line (HTL) (see 33 CFR, Part 328.4). The HTL is defined in 33 CFR, Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The HTL may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gauges, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other tides that occur with periodic frequency, but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm."

Identification of Section 10 Waters

Due to the study area's proximity to the Bay, background review and study area surveys were conducted to determine if current and/or Historical Section 10 waters occur within the study area. Section 10 of the Rivers and Harbors Appropriation Act of 1899 applies to "navigable waters of the U.S.", which is defined in 33 CFR, Part 329.4 to include all waters subject to the ebb and flow of the tide, and/or those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as "the line on the shore reached by the plane of the MHW. Where precise definition of the actual location of the MHW line becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years."

2.4 Current Section 10 Waters

Navigable waters of the U.S., which are defined in 33 CFR, Part 329.4, include all waters subject to the ebb and flow of the tide, and/or those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as "the line on the shore reached by the plane of the mean (average) high water." According to 33 CFR, Part 329.9, a waterbody that was once navigable in its natural or improved state retains its character as "navigable in law" even though it is not presently used for commerce as a result of changed conditions and/or the presence of obstructions. The height of the MHW was obtained from long-term monitoring records (i.e., average over 18.6-year tidal epoch) maintained by the National Oceanic and Atmospheric Administration (NOAA). Based on the benchmark datum for the station nearest the study area with data reported relative to NAVD88 (Dumbarton Bridge Station 9414509), the MHW is calculated to be 6.8 feet NAVD88 (NOAA 2013). Current Section 10 waters were identified within the study area.

2.5 Historic Section 10 Waters

According to 33 CFR, Part 329.9, a waterbody that was once navigable in its natural or improved state retains its character as "navigable in law" even though it is not presently used for commerce as a result of changed conditions and/or the presence of obstructions. Historical Section 10 waters may occur behind levees, are not currently exposed to tidal or muted-tidal influence, and meet the following criteria: (1) the area is presently at or below the MHW; (2) the area was historically at or below MHW in its "unobstructed, natural state"; and (3) there is no evidence that the area was ever above MHW. In the Bay region, historical Section 10 waters will typically occur within the extent of historical sloughs that once drained into the Bay and have now been filled or diked. The United States Coast Survey (USCS; later US Coast and Geodetic Survey) is a federal agency renowned for the accuracy and detail of its 19th-century maps of America's shoreline. In most parts of the country, these maps provide the best early pictures of coastal and estuarine habitats prior to substantial Euro-American modification. The San Francisco Estuary Institute (SFEI) has assembled a Geographic Information System (GIS) dataset that uses USCS historical maps as the primary source to depict the extent of historical sloughs in the Bay region. Historic Section 10 waters were identified within the study area.

2.6 Identification of Waters of the State

The Porter-Cologne Water Quality Control Act (PWQCA) broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because PWQCA applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Where forested habitat occurs, the outer canopy of any riparian trees rooted within top of bank may be considered jurisdictional as these trees can provide allochthonous[3] input to the channel below. Waters of the state were identified within the study area.

2.7 Identification of CDFW Jurisdiction

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A stream is defined in Title 14, California Code of Regulations §1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. Jurisdiction does not include tidal areas such as tidal sloughs unless there is freshwater input. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW

[3] Allochthonous is a term used describe nutrients and carbon that come from outside the aquatic system.

extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code §2786 defines riparian habitat as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source."

The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At a minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats. CDFW jurisdictional habitats were not identified within the study area.

2.8 Identification of BCDC Jurisdiction

In response to uncoordinated and indiscriminate filling of the Bay, the California legislature passed the McAteer-Petris Act in 1965, establishing the BCDC as the management and regulatory agency for the San Francisco Bay and Delta. The limits of BCDC jurisdiction are defined in the Bay Plan (BCDC 2012) and include a 100-ft wide band along the shoreline of the Bay. The "Bay Shoreline" is defined as line below which all areas are subject to tidal action from the south end of the Bay to the Golden Gate (Point Bonita-Point Lobos), and to the Sacramento River line (a line between Stake Point and Simmons Point, extended northeasterly to the mouth of Marshall Cut). The Bay Shoreline includes the upper extent of marshlands lying between mean high tide and up to 5 feet above mean sea level (MSL), and at a minimum where marshlands are not present, the mean tide line elevation. BCDC Bay jurisdiction includes all areas subject to tidal action bayward of the Bay Shoreline. In relation to salt ponds, the BCDC will claim "salt ponds consisting of all areas which have been diked off from the Bay and have been used during the three years immediately preceding 1969 for the solar evaporation of Bay water in the course of salt production" (BCDC 2012). BCDC Salt Pond jurisdiction extends to include levees for the salt ponds, and even when historical salt ponds are restored, the areas still retain this Salt Pond jurisdiction under BCDC. Finally, BCDC exerts Managed Wetland jurisdiction over bayside wetlands and impoundments managed with tide gates or other structures. Features meeting BCDC criteria were identified in the study area.

3. Survey Results and Discussion

The following vegetation/land use communities were mapped in the study area: (1) developed, (2) wastewater detention ponds (3) northern coastal salt marsh, (4) tidal slough, and (5) California annual grassland (Figure 6). A total of five sample points (SP1 to SP5) were examined to identify jurisdictional features (Appendix C; Figure 7). In the study area, 6.46 acres of potentially jurisdictional waters regulated by USACE and RWQCB (does not include historic Section 10 waters) were identified. Also, 11.75 acres within BCDC jurisdiction were also identified throughout the study area (Table 3). The results of the September 2019 delineation are described below.

Table 3. Summary of Jurisdictional Waters and Habitats within the Study Area

Potentially Jurisdictional Waters	Acres[1]
USACE Jurisdictional Total (not including historic Section 10)	**6.00**
Section 10/Section 404 (below MHW)	
Tidal sloughs (open water habitat)	1.14
Northern coastal salt marsh	3.59
Section 404 Other Waters and Wetlands (above MHW)	
Tidal sloughs (open water habitat)	0.01
Northern coastal salt marsh	1.26
Historic Section 10 Total	**2.89**
Wastewater detention ponds	2.89
RWQCB Jurisdiction Total	**6.46**
Section 401 Waters of the State (Up to Top of Bank)	
Developed (levee slopes)	0.46
Northern coastal salt marsh	4.85
Tidal sloughs (open water habitat)	1.15
BCDC Jurisdiction Total	**11.75**
Bay shoreline	5.66
Shoreline band	6.09

[1]Note: Values are approximate due to rounding.

Information assembled during this investigation and pertinent to the identification of jurisdictional wetlands and other waters is presented in the six appendices of this report.

- Appendix A—Soil Reports for the Study Area
- Appendix B—Plants Observed in the Study Area
- Appendix C—USACE Western Mountains, Valley and Coast Wetland Data Forms
- Appendix D—Photographic Documentation of the Study Area
- Appendix E—Aquatic Resources Table

3.1 Precipitation Data

The survey took place at the end of the 2019 dry season. Relative to the 30-year climate normal, precipitation in the study area was wetter than average for the 2018-2019 wet season prior to the delineation. Total precipitation recorded in the area from November 2018 through April 2019 was 20.4 inches, which is approximately 128% of the 30-year average (1989-2018) (PRISM Climate Group 2019). The wetter than average conditions were taken into account

when assessing the biotic habitats present on the study area. The boundaries of waters remained clear owing to the presence of hydrology indicators and hydrophytic vegetation.

3.2 Study Area Conditions and Observations

- This preliminary delineation assumes that normal circumstances prevailed at the time of the September 2019 delineation, and results are based upon the conditions present. The survey was performed using the "Routine Method of Determination" using three parameters, as outlined in the Regional Supplement.
- The study area is within the San Francisco Bay Sub Region (18050004) of the California Water Resources Region hydrologic unit (USGS 2019).
- Flood Slough is a tidal channel that is located along the western edge of the site and receives freshwater runoff from Atherton Channel and the Bayfront Canal.
- There are three detention ponds within the study area, and all were dry at the time of the delineation. The slopes of the ponds were sparsely vegetated with upland forbs (Appendix D, Photo 3). Based on aerial imagery, there were four detention ponds prior to April 2018 (Google Inc. 2019). The detention ponds along the eastern boundary of the project site was completely filled in at the time of the site visit.
- Elevation data for the study area were obtained from the topographic line data provided by Light Detection and Ranging (LIDAR) data. The LIDAR data were acquired via drone flyover in 2019 and provided by Freyer & Laureta, Inc.
- The HTL within the Bay marshland habitat was demarcated in the field by the wrack line, change in plant community, elevation, and bank slope. The upper levee slopes were characterized by upland ruderal vegetation that show no indications of experiencing tidal hydrology.
- The northern coastal salt marsh sampled in the study area exhibited surface water, a high water table, saturation, hydric soil, and hydrophytic vegetation. Dominant vegetation included pickleweed (OBL, *Salicornia pacifica*), which grows in dense mats that are nearly ubiquitous on and around the study area. California cord grass (OBL, *Spartina foliosa*), alkali heath (FACW, *Frankenia salina*), fat-hen (FACW, *Atriplex prostrata*), gumweed (FACW, *Grindelia stricta*), and Alkali russian thistle (FACW, *Salsola soda*) were also found in small quantities in the northern coastal salt marsh habitat in the study area.
- Along the upper slopes of the levee banks throughout the study area, the vegetation is dominated by upland nonnative forbs and grasses. This ruderal upland vegetation is characterized by black mustard (*Brassica nigra*), wild oat (*Avena fatua*), fennel (*Foeniculum vulgare*), stinkwort (*Dittrichia graveolens*), and smilo grass (*Stipa miliacea*).
- Though not relevant to delineation of waters of the U.S., the top of the banks are mapped for clarity and shown on Figure 7 as Section 401 waters of the State. The

current practice of California Regional Water Quality Control Boards is to claim all areas up to the top of bank.

3.3 Rationale for Sample Point Choice

- SP1 was selected to examine the tidal coastal salt marsh along the northern edge of the study area (Figure 7, Appendix C). Vegetation present was comprised of OBL species (pickleweed) and the soil exhibited a depleted matrix. Hydrological indicators, such as high water table and saturation were also observed.
- SP2 was chosen to examine a raised section of coastal salt marsh above the HTL in the study area. Based on aerial imagery, the raised section is likely the remnants of an abandoned levee road (Google Inc. 2019) (Figure 7, Appendix C). It is located immediately adjacent to SP1 and the area is densely vegetated with OBL (pickleweed) and FAC (salt grass) species. Hydrological indicators included soils with a depleted dark surface and high water table.
- SP3 was selected to investigate uplands along the northern edge of the study area (Figure 7, Appendix C). It is located on the upper slope of a levee and is near SP1 and SP2. This area was dominated by upland forbs and grasses.
- SP4 was chosen to represent uplands along the northern edge of the study area (Figure 7, Appendix C). It is located on the top of a levee and is adjacent to SP5 in an area sparsely vegetated with upland forbs that is likely mowed regularly.
- SP5 was selected to represent the tidal salt marsh community below the MHW in the study area (Figure 7, Appendix C). This area was dominated by pickleweed and the soil exhibited a loamy gleyed matrix. Hydrological indicators, such as surface water and saturation were observed.

3.4 Photo Points

Photo point labels, coordinates, and rationale for the photos are include in Table 4. Photos are included in Appendix D.

Table 4. Coordinates and Rationale for Photo Points

Label	Latitude	Longitude	Rationale
Photo 1	37.497401º	-122.176498º	Northern coastal salt marsh
Photo 2	37.497919º	-122.177228º	Tidal slough
Photo 3	37.494992º	-122.177516º	Wastewater Detention pond
Photo 4	37.494767º	-122.175895º	Developed

3.5 Identification of Section 10/Section 404 Potentially Jurisdictional Waters

The tidal waters of the Bay occur throughout the northern and western portions of the study area. As such, tidal waters in the study area are subject to regulation under both Section 404 of the CWA, and below the MHW elevation as defined by Section 10 of the River and Harbors Act. The jurisdictional limits of Section 404 other waters in the study area are broader than Section 10.

Areas Considered Current Section 10 Waters

Approximately 4.73 acres of current Section 10 waters were mapped up to the MHW line elevation in the study area (Figure 7; Appendix D, Photos 1 and 2). For this site, the MHW elevation (approximately 6.8 feet NAVD88) was obtained from the long-term average over the most recent tidal epoch (1983 – 2001) based on the benchmark datum for the nearest tidal NOAA station to the site (Dumbarton Bridge Station 9414509) (NOAA 2013). Benchmark MHW line data is relative to the mean lower low water (MLLW) at the monitoring station. Differences between MLLW and the National Geodetic Survey NAVD88 datum were calculated using the guidance provided by Foxgrover et al. (2005).

Areas Considered Section 404 Other Waters (includes current Section 10 Waters)

Approximately 1.15 acres of Section 404 other waters (tidal sloughs) were mapped within the study area (includes current Section 10 waters) (Figure 7). Tidal sloughs are channels within tidal wetlands that are characterized by open water habitat.

Historic Section 10 Waters

The entire study area was once part of the historical baylands as mapped by SFEI (2017), which included tidal sloughs and Northern coastal salt marsh (Figure 8). However, sections of the wastewater detention ponds still occur below the MHW elevation of 6.3 feet NAVD88 and are isolated from Bay waters. Therefore, approximately 2.89 acres of the wastewater detention ponds that are mapped as historical tidal sloughs by SFEI were mapped as historic Section 10 waters (Figure 8).

3.6 Identification of Section 404 Potentially Jurisdictional Wetlands (Special Aquatic Sites)

Approximately 4.85 acres of Section 404 wetlands (northern coastal salt marsh) were mapped in the study area (includes current Section 10 waters) (Figure 7). A summary of the wetland data form results is presented in Table 5. The data are also presented on the complete forms in Appendix C. Northern coastal salt marsh wetlands dominated by pickleweed, occurs on the northern and western edges of the study area.

Three of the five sample point locations (Figure 7, SP1, SP2, and SP5; Appendix C) had sufficient three-parameter characteristics to meet the definition of a jurisdictional wetland. These sample sites represent the coastal salt marsh conditions throughout the study area.

Northern coastal salt marsh. Northern coastal salt marsh is a wetland plant community found tidal areas and is dominated by salt-tolerant hydrophytic vegetation that typically forms a dense mat of vegetation. This plant community occurs along the California coast from Oregon to near Point Conception and is especially extensive around San Francisco Bay. Typical species include pickleweed, California cordgrass, alkali heath, salt grass, dodder, jaumea (*Jaumea carnosa*), sea lavender (*Limonium californicum*), and marsh gumplant.

Table 5. Summary of Wetland Data Forms

Name	Sampling Rationale	Hydrophytic Vegetation?	Hydric Soil?	Wetland Hydrology?	Overall Wetland Assessment
SP1	Salt marsh community along northern edge of study area	Yes	Yes	Yes	A 3-parameter wetland
SP2	Salt march community on abandoned levee above the HTL	Yes	Yes	Yes	A 3-parameter wetland
SP5	Salt marsh community adjacent to Flood Slough below the MHW	Yes	Yes	Yes	A 3-parameter wetland

3.7 Identification of Section 401 Potentially Jurisdictional Waters of the State

The extent of Section 401 waters of the state (RWQCB jurisdiction) in the study area includes a total of 6.46 acres including areas within Section 404 jurisdiction as described above, in addition to areas up to the top of the levee banks. In the field, the top of bank was determined by mapping the first significant topographic break in levee slope. Waters of the state jurisdiction include all waters of the U.S. and cover approximately 1.15 acres of tidal sloughs, 4.85 acres of northern coastal salt marsh, 0.46 acres of developed areas (levee slopes). Characteristics of waters of the U.S. including wetlands are described above in Sections 3.2 and 3.3.

Throughout the study area, the upper slope of the levee banks above the wetland vegetation is dominated by upland nonnative species including invasive forbs and grasses. This ruderal upland vegetation is characterized by wild oat, black mustard, fennel, and smilo grass.

3.8 Identification of CDFW Potentially Jurisdictional Habitats

The open water habitat and associated wetlands in the study area are not the downstream continuation of streams conveying waters from the uplands to the San Francisco Bay (Bay), but are tidal channels fed entirely by Bay waters with no connection within the study area to upland sources of freshwater. As such, these features are not expected to be considered rivers or streams or be regulated by the California Department of Fish and Wildlife under California Fish and Game Code Section 1603.

3.9 Identification of BCDC Potentially Jurisdictional Areas

Because tidal marshlands occur in the study area, the Bay Shoreline would be located at 5 feet above MSL, and this elevation line would be used to demarcate the limit of BCDC Bay jurisdiction. Additionally, a 100-ft area extending laterally landward of the Bay Shoreline would be jurisdictional as Shoreline Band. A MSL elevation of 3.48 feet NAVD88 was obtained from the nearest NOAA tidal benchmark station at Dumbarton Bridge (Station 9414509)[4], thus the Bay Shoreline and the shoreward limit of BCDC Bay jurisdiction is approximately 8.48 feet NAVD88. As such, approximately 11.75 acres of the study area fall within BCDC jurisdiction, including 5.66 acres of areas within Section 404 jurisdiction as described above and an additional 6.09 acres within the Shoreline Band, which includes 2.28 acres of developed land cover, 3.23 acres of wastewater detention ponds, 0.34 acres of northern coastal salt marsh, and 0.24 acres of California annual grassland (Figure 9).

3.10 Areas Not Meeting the Regulatory Definition of Section 404/401 Wetlands and Waters

In general, areas that were not considered to be Waters of the U.S./state were not dominated by hydrophytic vegetation and did not exhibit hydrology indicators. Approximately 23.43 acres of the study area met none of the regulatory definitions of jurisdictional waters or jurisdictional habitats, including the developed land cover, the detention ponds, and California annual grassland (Appendix D, Photo 4; Figure 6).

Wastewater Detention Ponds. Two of the ponds are used for flow equalization (Ponds 1 and 2) and one pond is used for emergency storage (Pond 3) (Figure 7)**.** All retained wastewater is rerouted back to the Silicon Valley Clean Water Wastewater Treatment Plant in Redwood City

[4] Benchmark MSL data for the Dumbarton Bridge (NOAA 2013) is relative to the mean lower low water (MLLW) at the monitoring station. The difference between MLLW and the NAVD88 datum were calculated using the guidanceprovided by Foxgrover et al. (2005). An orthometric height conversion was then performed to calculate the datum shift from the local datum to NAVD88. Finally, the MSL elevation was determined to be approximately 3.48 feet.

prior to discharge into the Bay. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA are not waters of the U.S. 33 CFR § 328.3(a); 40 CFR § 230.3(s).

Developed. Developed land cover includes areas with permanent structures, impervious surfaces, unpaved high-use areas, or areas regularly disturbed by human activities. Generally, these areas are devoid of substantial vegetation cover but may contain areas of ruderal vegetation. Within the study area, developed land cover includes the levees, hardpack dirt roads, buildings, staging and storage areas, and the water treatment facility. Within the developed land cover, there are scattered areas of ruderal (disturbed) vegetation, mostly along the levee roads and perimeter of the site.

California Annual Grassland. California annual grassland is an herbaceous plant community that is typically dominated by non-native annual grasses. In the study area, this vegetation type is found in Bedwell Bayfront Park.

Source: Freyer & Laureta, Inc. 2020; NWI 2019; MIG 2019

Vegetation Communities

- California Annual Grassland (2.40 acres)
- Developed (9.70 acres)
- Northern Coastal Salt Marsh (4.85 acres)
- Wastewater Detention Pond (11.33 acres)
- Tidal Slough (1.15 acres)

Base Map Features

- Study Area (29.43 acres)

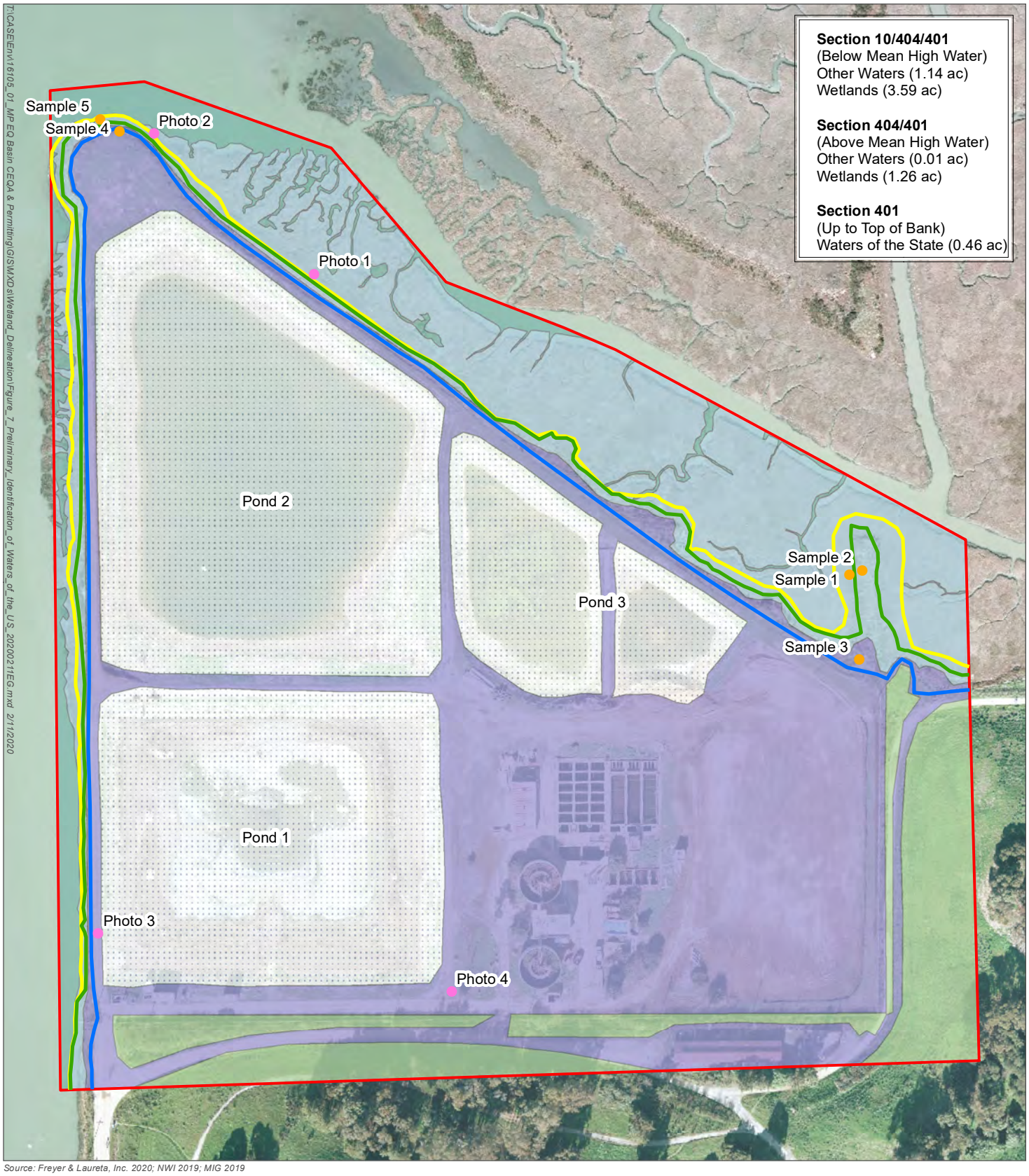
0 100 200 400 Feet

N

MIG

Figure 6 Vegetation Communities

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project



Source: Freyer & Laureta, Inc. 2020; NWI 2019; MIG 2019

Base Map Features

- Study Area (29.43 acres)
- Sample Point
- Photo Point
- Mean High Water
- High Tide Line
- Top of Bank

Vegetation Communities

- California Annual Grassland (2.40 acres)
- Developed (9.70 acres)
- Northern Coastal Salt Marsh (4.85 acres)
- Wastewater Detention Pond (11.33 acres)
- Tidal Slough (1.15 acres)

0 100 200 400 Feet

N

MIG

Figure 7 Preliminary Identification of Waters of the U.S./State

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project

Source: Freyer & Laureta, Inc. 2020; NWI 2019; EcoAtlas 2020; MIG 2020

Vegetation Communities

- California Annual Grassland (2.40 ac)
- Developed (9.70 ac)
- Northern Coastal Salt Marsh (4.85 ac)
- Wastewater Detention Pond (11.33 ac)
- Tidal Slough (1.15 ac)

Base Map Features

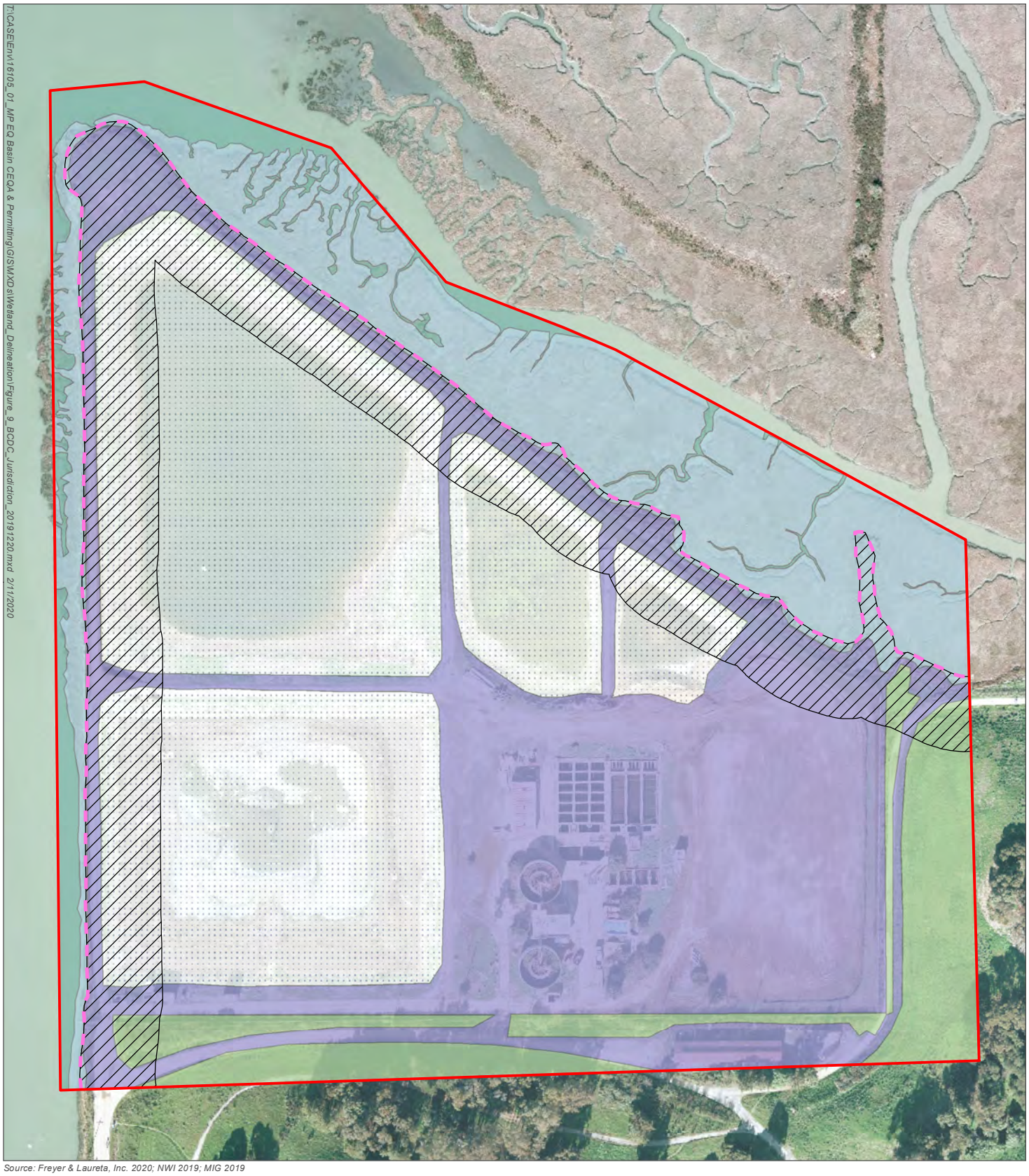
- Study Area (29.43 ac)
- Historic Section 10 Waters (2.89 ac)

0 100 200 400 Feet

N

Figure 8 Historic Section 10 Waters

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project



Source: Freyer & Laureta, Inc. 2020; NWI 2019; MIG 2019

Vegetation Communities

- California Annual Grassland (2.40 acres)
- Developed (9.70 acres)
- Northern Coastal Salt Marsh (4.85 acres)
- Wastewater Detention Pond (11.33 acres)
- Tidal Slough (1.15 acres)

Base Map Features

- Study Area (29.43 acres)
- Bay Shoreline (5.66 acres)
- Shoreline Band (6.09 acres)

0 100 200 400 Feet

N

MIG

Figure 9 BCDC Jurisdiction

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Flood Protection Project

4. Literature Cited

Baldwin, Goldman, Keil, Patterson, Ronatti, and Wilkin (eds.) 2012. The Jepson Manual: Vascular Plants of California. 2nd Edition. University of California Press, Berkeley, California.

[BCDC] Bay Conservation and Development Commission. 2012. San Francisco Bay Plan. Accessed November 2019 from http://www.bcdc.ca.gov/pdf/bayplan/bayplan.pdf.

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. (Version 04DEC98).

Environmental Laboratory. 1987. U.S. Corps of Engineers Wetlands Delineation Manual. Department of the Army.

Foxgrover, A.C., B.E. Jaffe. G.T. Hovis, C.A. Martin, J.R. Hubbard, M.R. Samant, and S.M. Sullivan. 2005. Hydrographic Survey of South San Francisco Bay, California. U.S. Geological Survey Open File Report 2007-1169.

Google Inc. 2019. Google Earth Pro (Version 7.1.5.1557) [Software]. Available from earth.google.com.

Lichvar, R. W., D. L. Banks, W. N. Kirchner, and N. C. Melvin. 2016. Western Mountains, Valleys, and Coast 2016 Regional Plant List. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Prepared for the U.S. Army Corps of Engineers.

Munsell. 2009. Soil Color Charts, Munsell Color X-rite. Grand Rapids, Michigan.

[NOAA] National Oceanic and Atmospheric Administration. 2013. Tidal Benchmark Datum for the Dumbarton Bridge (Station ID: 9414509). Accessed November 2019 from https://tidesandcurrents.noaa.gov/datums.html?id=9414509.

[NRCS] Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the U.S.: A Guide for Identifying and Delineating Hydric Soils (Version 7.0). U.S. Department of Agriculture. Prepared with the National Technical Committee for Hydric Soils.

[NRCS] Natural Resources Conservation Service. 2019a. Web Soil Survey. U.S. Department of Agriculture. Accessed November 2019 from http://websoilsurvey.nrcs.usda.gov.

[NRCS] National Resource Conservation Service. 2019b. National Hydric Soils List. Accessed November 2019 from http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/.

[NWI] National Wetlands Inventory. 2019. Wetlands Mapper. U.S. Fish and Wildlife Service Accessed November 2019 from http://www.fws.gov/wetlands/Wetlands-Mapper.html.

PRISM Climate Group. 2019. Online PRISM Data Explorer. Oregon State University, Corvallis, Oregon. Accessed November 2019 from http://www.prism.oregonstate.edu/.

[SFEI] San Francisco Estuary Institute and Aquatic Science Center. 2017. Data Center. Accessed December 2019 from http://www.sfei.org/sfeidata.htm#

[UCSB] University of California Santa Barbara Library. 2019. Digital Aerial Photography Collections. Accessed November 2019 from https://www.library.ucsb.edu/src/airphotos

[USACE] U.S. Army Corps of Engineers. 2004. Review of Ordinary High Water Mark Indicators for Delineating Arid Streams in the Southwestern United States. January 2004.

[USACE] U.S. Army Corps of Engineers. 2007. Review and Synopsis of Natural and Human Controls on Fluvial Channel Processes in the Arid West. September 2007.

[USACE] U.S. Army Corps of Engineers. 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region. May 2010. U.S. Army Engineer Research and Development Center.

[USACE] U.S. Army Corps of Engineers. 2008b. A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States. August 2008. U.S. Army Engineer Research and Development Center.

[USACE] U.S. Army Corps of Engineers. 2016a. Updated Map and Drawing Standards for the South Pacific Division Regulatory Program.

[USACE] U.S. Army Corps of Engineers. 2016b. Information Needed for Verification of Corps Jurisdiction, San Francisco District. Revised April 2016. https://www.spn.usace.army.mil/Portals/68/docs/regulatory/2%20-%20Info%20Req.pdf

[USGS] U.S. Geological Survey. 2019. Water Resources of the United States. Accessed November 2019 from https://water.usgs.gov/GIS/huc_name.html#Region18

Appendix A. Soils Report for the Study Area

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 San Mateo County, Eastern Part, and San Francisco County, California

December 4, 2019

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.

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Contents

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.

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,890 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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: San Mateo County, Eastern Part, and San Francisco County, California
Survey Area Data: Version 15, 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: Apr 12, 2019—Apr 24, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
125	Pits and Dumps	24.7	84.0%
W	Water	4.7	16.0%
Totals for Area of Interest		**29.4**	**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.

San Mateo County, Eastern Part, and San Francisco County, California

125—Pits and Dumps

Map Unit Composition

Pits: 50 percent
Dumps: 50 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Dumps

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix B. Plants Observed in the Study Area

Common Name	Scientific Name	Wetland Indicator Status[1]
Alkali heath	*Frankenia salina*	FACW
Alkali Russian thistle	*Salsola soda*	FACW
Big saltbrush	*Atriplex lentiformis*	FAC
Black mustard	*Brassica nigra*	NI
Bull thistle	*Cirsium vulgare*	FACU
California cord grass	*Spartina foliosa*	OBL
Canada horseweed	*Erigeron canadensis*	NI
Coyote brush	*Baacharis pilularis*	NI
Curly dock	*Rumex crispus*	FAC
Dodder	*Cuscuta* sp.	NI
Fat-hen	*Atriplex prostrata*	FACW
Fennel	*Foeniculum vulgare*	NI
Gumweed	*Grindelia stricta*	FACW
Italian rye grass	*Festuca perennis*	FAC
Ngaio tree	*Myoporum laetum*	FACU
Pickleweed	*Salicornia pacifica*	OBL
Prostrate knotweed	*Polygonum aviculare*	FAC
Smilo grass	*Stipa miliacea*	NI
Stinkwort	*Dittrichia graveolens*	NI
Virginia glasswort	*Salicornia depressa*	OBL
Wild oat	*Avena fatua*	NI

Notes:

[1]Wetland Indicator Status obtained from Lichvar et al. (2016)

Wetland Indicator Status Key:

OBL = Obligate wetland species, occur almost always in wetlands (>99% probability).

FACW = Facultative Wetland species, usually occur in wetlands (67 to 99% probability), but occasionally found in non-wetlands.

FAC = Facultative species, equally likely to occur in wetlands or non-wetlands (34 to 66% probability).

FACU = Facultative Upland, usually occur in non-wetlands (67% to 99%), but occasionally found in wetlands.

UPL = Obligate Upland species, occur almost always in non-wetlands (>99% probability).

NI = Non-Indicator, not present on list. Considered to be an upland species.

Appendix C. USACE Western Mountains, Valley, and Coast Wetland Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: FERRF Project | City/County: Menlo Park | Sampling Date: 09/30/2019
Applicant/Owner: Freyer and Laureta, Inc. | State: CA | Sampling Point: SP1
Investigator(s): DWG | Section, Township, Range:
Landform (hillslope, terrace, etc): Basin | Local relief (concave, convex, none): Concave | Slope (%): 2
Subregion (LRR): LRR C | Lat: 37.49628 | Long: -122.174051 | Datum: WGS84
Soil Map Unit Name: Water | NWI classification: E2EM1N
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes X No

Is the Sampled Area within a Wetland? Yes X No

Remarks:
Tidal marsh

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft x 5 ft)			
1. *Salicornia* / Pickleweed	80	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	80	(A)	80	(B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 to 6	10YR 3/2	85	5YR 5/8	15	D	PL	Silty clay	
6 to 14	10GY 4/1	85	5YR 6/8	15	C	M	Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- X Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Gleyed Matrix

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: FERRF Project | City/County: Menlo Park | Sampling Date: 09/30/2019
Applicant/Owner: Freyer and Laureta, Inc. | State: CA | Sampling Point: SP2
Investigator(s): DWG | Section, Township, Range:
Landform (hillslope, terrace, etc): Bench | Local relief (concave, convex, none): Convex | Slope (%): 2%
Subregion (LRR): LRR C | Lat: 37.496297 | Long: -122.17399 | Datum: WGS84
Soil Map Unit Name: Water | NWI classification: E2EM1P
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
On bench above HTL

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft x 5 ft)			
1. *Distichlis spicata* / Salt grass	40	Yes	FAC
2. *Salicornia* / Pickleweed	20	Yes	OBL
3. *Frankenia salina* / Yerba reuma, Alkali heath	15	No	FACW
4. *Bromus diandrus* / Ripgut brome, Ripgut grass	5	No	UPL
5.			
6.			
7.			
8.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	15	x 2 =	30
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	80 (A)		195 (B)

Prevalence Index = B/A = 2.44

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 to 18	10YR 3/1	90	5YR 5/8	10	C	M	Silty clay loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Above HTL

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soil moisture at 18 inches. Likely water table present due to location in tidal marsh. Site Visit during the dry season/draw down of soil moisture.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: FERRF Project | City/County: Menlo Park | Sampling Date: 09/30/2019
Applicant/Owner: Freyer and Laureta, Inc. | State: CA | Sampling Point: SP3
Investigator(s): DWG | Section, Township, Range:
Landform (hillslope, terrace, etc): Shoulder slope | Local relief (concave, convex, none): Convex | Slope (%): 3%
Subregion (LRR): LRR C | Lat: 37.495973 | Long: -122.173985 | Datum: WGS84
Soil Map Unit Name: 125-Pits and Dumps | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	____	No	X	
Hydric Soil Present?	Yes	____	No	X	**Is the Sampled Area**
Wetland Hydrology Present?	Yes	____	No	X	**within a Wetland?** Yes ____ No X

Remarks:
Upland/levee

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft x 5 ft)			
1. *Avena* / Oat	50	Yes	UPL
2. *Foeniculum vulgare* / Fennel	25	Yes	UPL
3. *Raphanus sativus* / Jointed charlock, Radish	15	No	UPL
4.			
5.			
6.			
7.			
8.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	90	x 5 =	450
Column Totals:	90 (A)		450 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: SP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 to 8	10 YR 3/2	100					Silty clay loam	No redox observed

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland adjacent to tidal marsh.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: FERRF Project | City/County: Menlo Park | Sampling Date: 09/30/2019
Applicant/Owner: Freyer and Laureta, Inc. | State: CA | Sampling Point: SP4
Investigator(s): DWG | Section, Township, Range:
Landform (hillslope, terrace, etc): Levee | Local relief (concave, convex, none): Convex | Slope (%): 2
Subregion (LRR): LRR C | Lat: 37.497927 | Long: -122.177383 | Datum: WGS84
Soil Map Unit Name: Water | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:
Levee was mowed.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Herb Stratum (Plot size: 5 ft x 5 ft)			
1. *Foeniculum vulgare* / Fennel	5	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	5 (A)		25 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
Thatch present from mowing; mostly bare ground; upland area

SOIL

Sampling Point: SP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 to 6 inches	10YR 4/3	100					Silty clay loam	Very rocky with pebbles, dry, no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Rocky. Hard to dig.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland area on levee

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: FERRF Project | City/County: Menlo Park | Sampling Date: 09/30/2019
Applicant/Owner: Freyer and Laureta, Inc. | State: CA | Sampling Point: SP5
Investigator(s): DWG | Section, Township, Range:
Landform (hillslope, terrace, etc): Terrace | Local relief (concave, convex, none): Convex | Slope (%): 2
Subregion (LRR): LRR C | Lat: 37.497974 | Long: -122.177476 | Datum: WGS84
Soil Map Unit Name: Water | NWI classification: E2EM1N
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
Tidal marsh below the HTL

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft x 5 ft)			
1. *Salicornia* / Pickleweed	60	Yes	OBL
2. *Spartina foliosa* / Pacific cordgrass, California cord grass	20	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	80	(A)	80	(B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 to 18	10GY 4/1	95	5YR 5/6	5	D	M	Silty clay	Organic matter throughout matrix

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Gleyed matrix

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Surface Soil Cracks (B6)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photo of SP1

Photo of SP2

Photo of SP3

Photo of SP4

Photo of SP5

Appendix D. Photographic Documentation of the Study Area

Photo 1. Northern coastal salt marsh habitat along the northern edge of the study area.

Photo 2. Tidal slough (open water habitat) along the northern edge of the study area.

Photo 3. Detention pond within the study area.

Photo 4. Developed land cover within the study area.

Appendix E. Aquatic Resources Table

Waters Name	State	Cowardin Code	HGM Code	Measurement Type	Amount	Units	Water Type	Latitude	Longitude	Local Waterway
Northern Coastal Salt Marsh	CA	E2EM1N	ESTUARINEF	Area	4.85	Acres	TNWW	37.496994º	-122.175525º	San Francisco Bay
Tidal Slough	CA	E2US3N	ESTUARINEF	Area	1.15	Acres	TNW	37.496994º	-122.175525º	San Francisco Bay