San Francisco Bay Conservation and Development Commission
375 Beale Street, Suite 510, San Francisco, California 94105 tel 415 352 3600 fax 888 348 5190
State of California | Gavin Newsom – Governor | info@bcdc.ca.gov | www.bcdc.ca.gov

Agenda Item #11

March 24, 2023

Application Summary

West Bay Sanitary District Flow Equalization and Resource Recovery Facility Levee Improvement Project

(For Commission consideration on April 6, 2023)

BCDC Permit Application Number: 2022.001.00

Applicant(s): West Bay Sanitary District

Project Description: Install approximately 3,700 linear feet of sheetpile walls to raise the western and northern perimeter levees around the wastewater treatment facility from approximately 10 feet NAVD88 to 15 feet NAVD88. The shoreline protection also includes approximately 598 linear feet of ecotone levee covering an approximately 48,835-square-foot area (1.12 acres) with a 20:1 slope, on the northern side of the treatment facility with the eastern portion of the ecotone levee setback into Basin 3 of the facility to create approximately 28,314 square feet (0.65 acres) of new marsh and transition zone habitat. Install low-relief, prefabricated oyster reef structures over approximately 4,792 square feet (0.11 acres; 836 linear feet) of mudflats on the northern portion of the site. Raise portions of existing roadways around the Flow Equalization and Resource Recovery Facility and install a public access viewing area at the northwestern corner of Bedwell Bayfront Park that includes a bench and interpretive sign.

Location: In the Bay and within the 100-foot shoreline band, at the West Bay Sanitary District Flow Equalization and Resource Recovery Facility located at 1700 Marsh Road adjacent to Bedwell Bayfront Park, in the City of Menlo Park, San Mateo County.

Application Filed Complete: March 24, 2023

Deadline for Commission Action: June 22, 2023

Staff Contact: Anniken Lydon (415/352-3624; anniken.lydon@bcdc.ca.gov)

Project Overview

Project Description

The West Bay Sanitary District proposes to construct and raise approximately 3,700 linear feet of shoreline protection around the existing Flow Equalization and Resource Recovery Facility (FERRF) from a current elevation of +10 feet NAVD88 to approximately +15 feet NAVD88 to remove the facility from the current FEMA 100-year flood zone and protect it against future sea level rise. The FERRF is a critical overflow storage facility for wastewater from 55,000 residents within the service area (including Menlo Park, Atherton, Portola Valley and portions of East Palo Alto, Woodside, and unincorporated areas of San Mateo and Santa Clara Counties) and includes three open basins that provide wastewater storage during periods of wet weather events or when the treatment plant is undergoing maintenance. When capacity at the Silicon Valley Clean Water Wastewater Treatment Plant in Redwood City is restored then the wastewater from the basins is sent back into the conveyance system to the treatment facility. The FERRF is currently surrounded by earthen berms and has a storage capacity of up to 23.6 million gallons of wastewater.

The proposed project involves work within the Commission's Bay and 100-foot shoreline band jurisdictions. Work in the Bay includes the placement of approximately 1.12 acres (48,835 square feet) of soil in the Bay to construct an ecotone levee slope along the northern levee of the facility, and also includes setting back a portion of the ecotone levee into Basin 3 to create approximately 0.65 acres (28,314 square feet) of new tidal marsh habitat. The project also includes placement of approximately 0.11 acres (4,792 square feet) of fill for a low relief, oyster reef framework along approximately 836 feet of mudflat near the northernmost point of the site to provide habitat for native oysters. Additionally, the work in the 100-foot shoreline band includes placement of sheetpile walls and soil to raise the grade of the perimeter berms to +15 feet NAVD88. This work will also raise a portion of the FERRF entrance on Marsh Road and two short segments of the Bay Trail.

The project is not located within any designated Priority Use Areas, but is located adjacent to Bedwell Bayfront Park, which is designated as a Waterfront Park, Beach Priority Use Area and is also located near Greco Island South, a portion of the Don Edwards National Wildlife Refuge, which is designated as a Wildlife Priority Use Area.

Figure 1. The proposed project site is approximately 30 acres in size and is located at 1700 Marsh Road in the City of Menlo Park in San Mateo County as shown below by the red line. The project site is bounded by Flood Slough to the west and a portion of Westpoint Slough to the north.

Bay Fill

The proposed project would result in approximately 1.12 acres of solid Bay fill (onsite soils and sediment) constituting approximately 3,250 cubic yards of new Bay fill for the construction of an ecotone levee along the northern perimeter levee, and approximately 0.11 acres of cantilevered fill from the placement of less than 14 cubic yards of Bay fill for the oyster reef structures that are to be placed in the mudflats offshore of the northernmost point of the project site. The fill placed for the ecotone levee is intended to provide additional area for marsh habitats to migrate as sea level rises. Additionally, the setback portion of the northern perimeter levee into Basin 3 would open up the area to the Bay and create approximately 0.65 acres of new tidal marsh habitat.

The project would temporarily impact an additional approximately 0.71 acres of tidal marsh habitat area during the installation of the temporary cofferdam that will be needed during construction activities. The cofferdam would be removed following the completion of construction.

Public Access

The proposed project would place new shoreline protection along approximately 3,700 linear feet of the shoreline along the existing perimeter levees of the FERRF. The current storage basins at the FERRF are necessary as overflow capacity for holding raw wastewater when the Menlo Park Treatment Facility does not have capacity to treat the water and until such time that the capacity is restored for treatment. The site is currently fenced off and there is no public access to the site and associated shoreline. However, the project site is located directly adjacent to the well-used, 160-acre Bedwell Bayfront Park that includes a segment of the Bay Trail, other small trails, and opportunities for general recreational use of the park and shoreline near the project area.

During the project some temporary closures and detours may be needed along some portions of the Bay Trail in Bedwell Bayfront Park during some construction activities over the two-year construction period. The proposed public access improvements would include the applicant providing additional public access amenities at the northern corner of Bedwell Bayfront Park near the project site to provide a viewpoint area with a minimum of one interpretive sign and bench, and that provides views of the Bay and nearby Greco Island.

Bay Resources and Potential Impacts

The project site currently contains coastal salt marsh habitat, tidal sloughs, mudflats, open water areas and upland habitats at the project site. The ecotone levee would result in the placement of approximately 1.12 acres of fill in the Bay on tidal marsh, tidal slough, and upland vegetation habitat. More specifically, the project would place approximately 3,250 cubic yards of solid fill (soil/sediment) over approximately 0.06 acres of tidal slough/mudflat, 0.91 acres of salt marsh habitat, and 0.15 acres of upland/developed habitat to build an ecotone levee as part of the flood protection around the wastewater overflow facility. Of the impacts to current habitats, much of the tidal marsh are expected to rapidly revegetate on the lower portion of the ecotone levee after being planted and 0.65 acres of new tidal wetlands would be created in

the setback levee area. However, approximately 0.11 acres of the ecotone impacts are considered a semi-permanent loss or conversion of habitat (0.05 acres of salt marsh converted to uplands and 0.06 acres of tidal slough/mudflat converted to salt marsh) because the habitat function and benefits of those areas would take many years to re-establish on the ecotone levee and would occur as sea level begin to rise (Figures 2-4).

Although there would be current impacts to habitat, the goal of the project is to plant the ecotone slope with native species, including some reused marsh sod from the impact area, to ensure that vegetation establishes quickly and that the tidal marsh can provide habitat and migrate as sea level rises. Without the project, habitat evolution modeling indicate that the existing tidal marsh is likely to be lost within 30 years due to sea level rise, if additional sediment does not accrete on the marsh plain naturally or some sort of other management actions like construction of an ecotone transition zone occurs. Raising the perimeter levees and constructing the ecotone levee at a 20:1 (Horizontal:Vertical) slope, is anticipated to allow for tidal marsh habitats to migrate up slope as sea level rises over the next 50 years and provide high tide refugia and habitat corridor area. After that time, additional measures may need to be taken if the habitats are to persist over the longer term.

Figure 2. Map of modeled habitat areas post project construction and revegetation. Tidal marsh habitat is shown in green, upland habitat is shown in beige, and mudflats are shown in gray.

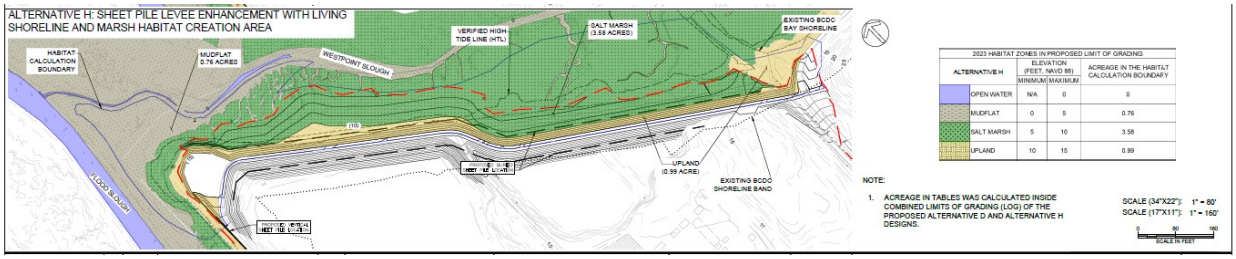


Figure 3. Map of modeled habitat areas in 2050 with sea level rise. Tidal marsh habitat is shown in green, upland habitat is shown in beige, and mudflats are shown in gray.

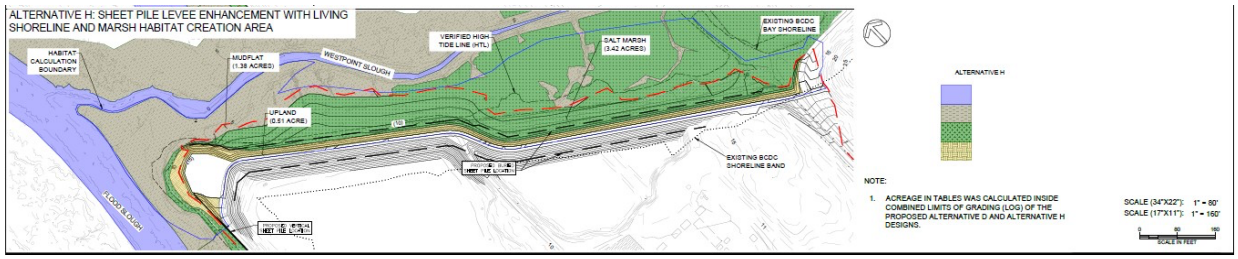
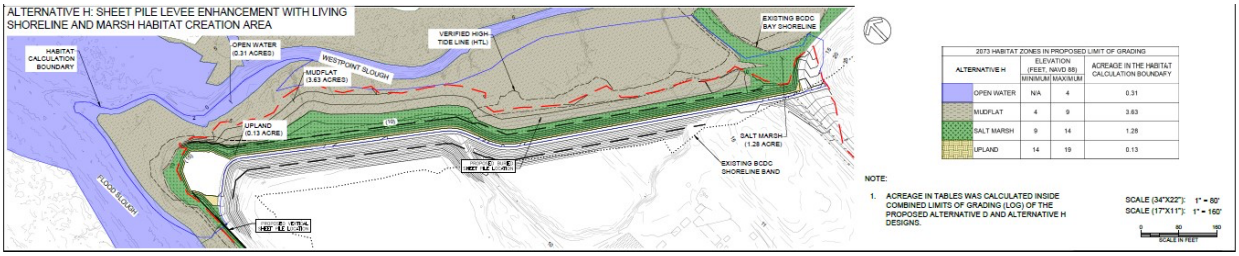


Figure 4. Map of modeled habitat areas in 2073 with sea level rise. Tidal marsh habitat is shown in green, upland habitat is shown in beige, and mudflats are shown in gray.



Flooding and Sea Level Rise

The applicant states that the anticipated life of the project is 50 years. Based upon the current elevations of the shoreline protection around the perimeter of the site, the FERRF is vulnerabale to overtopping at a current 50-year storm with no sea level rise . As sea level rises, the degree of potential flooding increases significantly. The project's primary approach to addressing rising sea levels involves raising the existing shoreline protection perimeter levees around the FERRF from +10-12 feet NAVD88 to +15 feet NAVD88 and includes raising some portions of adjacent roadway and trails to the same elevation. Protecting the FERRF from shoreline erosion and flooding is important for the water quality and habitat health of the Bay by ensuring that no raw wastewater is released into the Bay from the facility.

Using the methodology outlined in the 2018 California Sea Level Rise Guidance from the Ocean Protection Council and Natural Resources Agency ("2018 State Guidance"), the applicant used the medium-high risk aversion and high emissions planning scenario and designed the project to be resilient to 1.9 feet of projected sea level rise at 2050 and to 3.5 feet of sea level rise at 2070. To initially understand the potential overtopping risk at the project site, the applicant used the "Sea Level Rise & Overtopping Analysis for San Mateo County's Bayshore" Final Report dated May 2016, which was developed using BCDC's Adapting to Rising Tides methodology. As part of the application, the permittee also developed a basis of design report that helped to inform the project design, which included an assessment of the resilience of the project design to flooding and sea level rise, including wave run-up on the ecotone levee. Additionally, the design of the project also appears to be resilient to stillwater elevations through 2070 based upon sea level rise predictions plus a 100-year storm event. Beyond 2070, additonal adaptation measures would be needed.

Environmental Justice and Social Equity

The primary purpose of the project is for shoreline protection around the existing overflow facility in the wastewater conveyance system that serves many of the surrounding areas, including communities such as East Palo Alto. The project site is located about 0.8 miles away from the nearest residences. According to the Commission's Community Vulnerability Mapping Tool's 2020 census data, the project is not located within an area that is idenfitied as having high or moderate social or contamination vulnerability. However, many of the surrounding areas and areas serviced by the FERRF are identified as areas that have moderate to high social vulnerability and also moderate to high contamination vulnerability. In the surrounding areas,

the most significant indicators of social vulnerability are residents with the following general characteristics: renters, single parent homes, person of color, having very low income, being over 65 and living alone, having no high school diploma, having limited English proficiency, and others. In addition, one of the adjacent census blocks that also encompasses the Cargill Redwood City salt ponds indicates that residents of that census block also have a rating of highest contamination vulnerability. However, a majority of the other census blocks around the project site appear to have low contamination vulnerability.

Planning for the project began in 2017. During the planning process and environmental review, the applicant conducted outreach and engagement about the project. This included tribal consultation and discussions, social media outreach targeted to local, vulnerable communities, and a stakeholder meeting about the Environmental Impact Report and project details. In person meetings were limited due to the COVID-19 pandemic.

Schedule and Cost

Construction would begin as early as summer 2023 and occur over two years. By this schedule, the project may be built out as early as February 2025. The estimated total project cost is approximately $10.9 million dollars, and the applicant has secured approximately $5 million dollars in National Fish and Wildlife Foundation funding for the inclusion of the habitat improvements associated with the project, including the ecotone levee and oyster reef framework.

Issues Raised

The staff believes the primary issues raised by the proposed project are:

(1) Whether to amount of fill for the project constitutes the minimum fill necessary for the shoreline protection project.

(2) Whether the impacts from the construction of the shoreline protection, which includes Bay fill for the creation of ecotone levee transition zone on top of existing tidal marsh habitat, and placement of oyster reef habitats over existing mudflat habitat are appropriate for the site.

(3) Whether any near-term impacts are fully mitigated by the creation of new tidal marsh habitat in the setback levee area and by the creation of transition zone space that will allow for habitat migration as sea level rises over the life of the project.

(4) Whether the project it is consistent with the Commission's fill policies, including those related to water quality, safety of fills, natural resources, and sea level rise; and

(5) Whether the proposed public access is the maximum feasible consistent with the project, and otherwise consistent with the Commission's policies related to public access, recreation, and scenic views.

Staff Notes

The staff notes the following considerations for the Commission:

- **Review Boards.** The proposed project was not reviewed by the Design Review Board or the Engineering Criteria Review Board, as the project did not raise significant public access design issues and the project did not involve significant safety of fills concerns.
- **Nature-based Shoreline Protection.** This is one of the first projects that the Commission is evaluating that specifically uses nature-based shoreline protection in an area that is constrained in the upland area and that includes construction of an ecotone levee out into the Bay to protect an existing component of a wastewater treatment system. At the request of reviewing regulatory agencies, the applicant did identify that nature-based solutions were feasible along the shoreline and also identified space to move a portion of the levee back into the site to provide some space to offset near-term impacts of placing the fill on existing healthy marsh habitat. The Commission needs to consider how the near-term impacts of the shoreline protection may be balanced with the long-term gains and habitat resilience at the site. More of these types of projects are likely to come before the Commission in the near future.

Applicable Laws and Policies

The following laws and policies are applicable in the Commission's review of the proposed project:

- McAteer-Petris Act: Sections 66602 (Water-Oriented Land Uses and Public Access), 66605 (Allowable Bay Fill) and 66632.4 (Maximum Feasible Public Access)
- San Francisco Bay Plan policies on: Fish, Other Aquatic Organisms, and Wildlife; Water Quality; Tidal Marshes and Tidal Flats; Environmental Justice and Social Equity; Climate Change; Safety of Fills; Shoreline Protection; Recreation; Public Access; Appearance, Design, and Scenic Views; Mitigation; Public Trust

Exhibits

1. Vicinity Map
2. Proposed Site Plan
3. BCDC Jurisdiction
4. Public Access Detour Plan
5. Public Access Plan
6. Habitat Post Project