

San Francisco Bay Conservation and Development Commission

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February 5, 2016

Application Summary

(For Commission consideration on February 18, 2016)

Number: BCDC Permit Application No. 2013.007.00
Date Filed: January 22, 2016
90th Day: April 21, 2016
Staff Assigned: Anniken Lydon (415/352-3624; anniken.lydon@bcdc.ca.gov)

Summary

Applicant: San Francisquito Creek Joint Powers Authority (JPA). The JPA is a regional government agency consisting of the City of Palo Alto, the City of Menlo Park, the City of East Palo Alto, the San Mateo County Flood Control District, and the Santa Clara Valley Water District.

Location: Within and adjacent to San Francisquito Creek and Faber Tract Marsh (part of the Don Edwards San Francisco Bay National Wildlife Refuge), located on the boundary between San Mateo and Santa Clara Counties (Exhibit A). The project is partially within the Commission's Bay and 100-foot shoreline band, and areas designated as wildlife refuge and waterfront park priority use areas in the *San Francisco Bay Plan* (Bay Plan) (Figure 1).



Figure 1. Project Location

Project: The “San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project” (project) is the first phase of a larger planned flood control project along the length of San Francisquito Creek. Approximately 13.6 acres of the 263.5 acres of the project is within the Commission’s Bay and 100-foot shoreline band jurisdiction. The proposed project would increase the San Francisquito Creek (SFC) channel floodwater capacity and conveyance by: (1) widening the creek to improve floodwater conveyance; (2) restoring in-stream marsh and enhancing existing habitats along the channel; and (3) enhancing and creating new marsh habitat in areas around the flood control channel project area.

The primary project purpose is to:

- Protect properties and infrastructure (in East Palo Alto and Palo Alto) between East Bayshore Road and the San Francisco Bay from SFC flows resulting from 100-year fluvial flood flows occurring simultaneously with a 100-year tide and 26 inches of projected sea level rise through 2067;
- Accommodate future flood protection measures that might be constructed upstream of the project;
- Enhance habitat along the project reach, particularly habitat for threatened and endangered species;
- Enhance recreational uses; and
- Minimize operational and maintenance requirements.

Levee

Stabilization: The project includes reinforcing existing levees along the north (SFC north levee) and south (SFC south levee) sides of the creek, constructing floodwalls in some locations, and realigning the SFC south levee to widen the channel near the Friendship Bridge into the adjacent Palo Alto Municipal Golf Course (golf course) to allow for increased floodwater capacity during high flows.

**Marsh
Enhancement
and Creation:**

Within the Commission's Bay and shoreline band jurisdictions, the project would result in about 2.19 acres of permanent and temporary impacts to tidal marsh habitats within San Francisquito Creek and the Faber Tract Marsh. The project would restore approximately 9.44 acres of tidal marsh and transition zone habitats within the creek and the adjacent Faber Tract Marsh, which would include: the creation of new tidal marsh terrace within the channel; restoration of high marsh and transition zone habitats within the San Francisquito Creek channel; creation of transition zones and high tide refugia along the levee banks and within Faber Tract Marsh; the lowering of an existing levee to high marsh elevations in Outer Faber Marsh; and the creation of high tide refugia islands within Outer Faber Marsh (Exhibit D).

Public Access: The project would provide a new approximately 202-foot boardwalk portion of the Bay Trail connecting Friendship Bridge and the newly realigned SFC south levee, creating trail continuity across the site. Additional public access trail improvements would be provided outside the Commission's jurisdiction, which would allow greater connectivity to this site from adjacent areas. These improvements include: realigning and resurfacing existing trails along the top of the SFC south levee in Palo Alto; establishing a new formal trail along the top of the SFC north levee near East Palo Alto residential areas; improving existing access points to the trails; constructing a new access point at East Bayshore Road; and providing interpretive signage near the newly constructed boardwalk across the creek (Exhibit G). All trails would have a minimum width of ten feet and portions of the trails would up to 16 feet wide in some locations.

Issues

Raised: The staff believes that the application raises **five** primary issues: (1) whether the project is consistent with the McAteer-Petris Act and the Bay Plan policies regarding fill; (2) whether the project is consistent with the McAteer-Petris Act and the Bay Plan policies on natural resources, including Fish, Wildlife and Other Aquatic Organisms; Tidal Marshes and Tidal Flats; Water Quality; and Mitigation; (3) whether

the project would provide the maximum feasible public access consistent with the project; (4) whether the project is consistent with the Bay Plan Priority Use Map 7 (including wildlife refuge and waterfront recreation areas); and (5) whether the proposed shoreline improvements are consistent with the Bay Plan policies on Protection of the Shoreline.

Background

San Francisquito Creek lies between San Mateo and Santa Clara counties in the creek's lower watershed. This urban creek system begins at the confluence of Corte Madera Creek and Bear Creek, just below Searsville Lake in Stanford University's Jasper Ridge Biological Preserve. The mouth of the Creek opens to the San Francisco Bay adjacent to Palo Alto Airport of Santa Clara County (Palo Alto Airport) to the south and the Faber Tract to the north (Exhibit A).

San Francisquito creek is a perennial stream that is tidally influenced by San Francisco Bay. The closest weather station, 4.5 miles to the northwest of the project site, records an annual average precipitation of 19.8 inches. The creek's annual flow is 21.4 cubic feet per second (cfs) on average, with the low flow (about 0-1.0 cfs) occurring in late summer and early fall. The creek can be a dry streambed for about 6 months of the year. However, flooding from the creek is a common occurrence. The most recent flood event occurred in December 2012, when the creek overtopped its banks in several areas. An even larger event occurred in February 1998, which the U.S. Army Corps of Engineers (USACE) estimated was a 45-year flood event. A 100-year flood event is anticipated to result in flows of 9,400 cfs at the mouth of the creek. According to the San Francisquito Creek JPA, these flows would exceed the existing capacity of the creek and result in damage to adjacent properties within East Palo Alto and Palo Alto. Consistent with its setting, much of the creek's length within the area has been straightened, channelized, or otherwise improved for flood protection, but the channel has not been lined with concrete.

The full project site (Exhibit D) supports diked marsh, freshwater marsh, tidal salt marsh, freshwater pond, tidal channel and bay waters, and tidal pan, as well as upland areas composed of annual grasslands, ruderal areas, turf, and urbanized areas. The Faber Tract Marsh contains very high quality tidal marsh habitat and is known to support one of the largest populations of the state and federally-endangered California Ridgway's rail region-wide. Faber Tract Marsh and adjacent areas also provide habitat for the endangered salt marsh harvest mouse. In addition, the San Francisquito Creek provides important migration, spawning, and rearing habitat for winter-run steelhead trout. State listed longfin smelt and federally listed green sturgeon are also known to inhabit tidally-influenced areas of the South Bay occurring near the project site.

The land surrounding the project site includes protected open space, residential, light industrial, and recreational uses. The north bank of the project reach (SFC north levee) is bordered by East Palo Alto residences and by tidal marsh areas of Faber Tract Marsh; the south bank of the project reach (SFC south levee) is bordered by businesses, including: the International School of the Peninsula, United States Postal Service (USPS) facility, the Baylands Athletic Center, the Palo Alto Municipal Golf Course, and Palo Alto Airport. Levees exist along both sides of San Francisquito Creek and along the western edge and interior of the Faber Tract. A footbridge (Friendship Bridge) crosses the creek just south of the Faber Tract. The San Francisco Bay Trail runs along the crown of the SFC south levee from Geng Road downstream to the mouth of the creek and also crosses Friendship Bridge and continues north along the western side of Faber Tract Marsh (Exhibit G).

Within the Commission's jurisdiction, the project includes: the realignment of the SFC south levee; installation of floodwalls in areas along the creek; temporary placement of a cofferdam and other necessary construction elements; reinforcement of degraded levee areas; restoration of marsh habitat along the channel edges; degrading of an existing levee to marsh plain elevations; and the placement of high tide refugia islands in Outer Faber Marsh (Exhibit D). Construction the proposed project within BCDC's jurisdiction would occur over two consecutive construction seasons with most of the work occurring between June and October of each year.

Project Description

Project

Details: The applicant, the San Francisquito Creek Joint Powers Authority (JPA), describes the project as follows:

In the Bay:

1. Construct up to five, high tide refugia islands in Outer Faber Marsh by placing approximately 1,250 square feet (250 square feet per island; 0.006 acres) of imported solid fill in the Marsh. Each island would be approximately 10 feet by 30 feet in size and constructed to an initial elevation of approximately 8.8 feet (NAVD88), planted with native marsh gumplant and other tall stature wetland vegetation (Exhibit L);
2. Excavate approximately 1,470 cubic yards (cy) of sediment from an approximately 23,600-square-foot area of the creek channel and dispose of material at an upland disposal location (Exhibit H);
3. Remove 390 feet of abandoned sanitary sewer line within BCDC's Bay jurisdiction located near Friendship Bridge and install 810 feet of new sewer line embedded at least 6.0 feet or deeper below the channel mudline;

4. Construct an approximately 2,062-square-foot, wooden, pile-supported boardwalk (approximately 202 feet long and 10 feet wide) over the newly created marsh plain terrace to connect the abutment of the left side of Friendship Island to the newly realigned SFC south levee within the Commission's future Bay jurisdiction;
5. Construct one "steelhead passage feature" in the creek, including a permanent rock spur (partial weir), consisting of approximately 1,710 square feet of large rock and other solid fill in the channel; and
6. Place approximately 12,860 square feet of temporary solid fill during in-channel construction occurring over a two-year period, which includes:
 - a. installing an approximately 1,850-foot-long, 36-inch diameter HDPE diversion pipe along the outboard side of the SFC north levee;
 - b. constructing a temporary, steel sheet pile, cofferdam, approximately 12 feet tall and 160 feet long, spanning the width of the channel (Exhibit P);
 - c. placing gravel-filled bags around the connection between the pipe and the cofferdam walls;
 - d. placing approximately 7,256 square feet of rock within the channel as an energy dissipater for the water outflow diversion pipe;
 - e. dewatering the channel and creek for in-channel construction activities from June through October during each year of the two-year construction (2016-2017); and
 - f. removing all temporary fill (water diversion pipes, rock and cofferdam, etc.) following the closure of the in-channel work window.

Partially Within the Bay and 100-foot Shoreline Band:

1. Place approximately 26,400 square feet of riprap around the eastern footings of Friendship Bridge (future Friendship Island);
2. Place approximately 28,500 square feet of riprap along the inboard side of the SFC north levee, along Faber Tract Marsh near Friendship Bridge, and along the inboard side of the SFC southern levee to stabilize shoreline features during increased flood flows within the creek (Exhibit I);
3. Place approximately 11,150 square feet of clean fill along the outboard side of the SFC north levee, in the Faber Tract Marsh to stabilize and restore low portions of the levee from 11 feet (NAVD88) to approximately 13 feet (NAVD88). Extend the outboard side of the SFC north levee at a 6:1 slope into Faber Tract Marsh to protect the toe of the existing levee from failure during high flow events; and

4. Restore 1.74 acres of high marsh and transitional habitat along and within San Francisquito Creek, and the north and south levees as part of the total 15.14-acre high marsh/transition zone restoration effort. This would include 0.88 acres of newly created high marsh plain terrace in the Commission's future Bay jurisdiction and restoration of 0.86 acres of high marsh/transition zone along the edges of the creek.

Within the 100-foot Shoreline Band:

1. Degrade approximately 600 feet (37,670 square feet) of an unmaintained section of the existing SFC north levee that runs between the Outer Faber Marsh and the terminus of San Francisquito Creek (Exhibit I) from 10-12 foot elevation (NAVD88) to approximately 8 feet (NAVD 88) to create a connection between the creek and the Outer Faber Marsh during high flow periods. Use approximately 4,000 cy of excavated soils for levee fill if it is suitable for this use;
2. Degrade portions of the existing paved SFC south levee (approximately 700 feet, 60,400 square feet) to an elevation of 7 feet (NAVD 88) and widen the existing channel, and setback portions of the existing SFC south levee into the golf course, outside the Commission's current jurisdiction. Setting the levee back would expand the Commission's Bay and shoreline band jurisdictions beyond their current boundary (Exhibits E and F);
3. Place approximately 56,500 square feet of new fill for a portion of the newly aligned SFC south levee, within the Commission's existing and future shoreline band jurisdiction and realign 600 feet of the public access along the new SFC south levee top. The new SFC south levee along the golf course would be approximately 80 feet wide at the base and 14 feet tall;
4. Pave and maintain a 600 feet of the newly realigned public access trail running along the crown of the realigned SFC south levee and restore access to the Bay Trail;
5. Temporarily close existing public access trails on the south side of the San Francisquito Creek near Friendship Bridge during construction operations;
6. Leave portions of the existing SFC south levee connection with Friendship Bridge to create an island (Friendship Island) in the middle of the newly widened channel;
7. Stockpile topsoil removed during excavation and reuse stockpiled soil to repair areas disturbed during construction;
8. Install and maintain at least one interpretive sign related to Faber Tract Marsh at an approved location near Friendship Bridge or the newly constructed boardwalk;

9. Install and maintain at least seven BCDC public shoreline way-finding signs at approved locations to notify the public of where to access the shoreline;
10. Remove old PG&E gas utility lines and install a new 24-inch gas line upstream of Friendship Bridge using horizontal directional drilling;
11. Construct a steel sheet pile floodwall up to four feet above (18.40 NAVD 88) the existing SFC north levee top of bank and along approximately 500 feet of shoreline near the O'Connor Way Pump Station and Friendship Bridge (between about STA 28+00 to STA 33+00) to connect the outfall structure to the adjacent levees, a portion of which is within the Commission's jurisdiction;
12. Plant native high marsh vegetation on approximately 5,120 feet (6 acres) along the levees on the north, east, and south sides of Faber Tract Marsh to improve high tide refuge areas;
13. Utilize certain areas for the staging of construction equipment or materials (Exhibit O); and
14. Install, use and maintain an eight foot-high fence to exclude predators from entering the Faber Tract Marsh on the northern side of the San Francisquito Creek via the SFC north levee.

Bay Fill: The proposed project would result in the net placement of approximately 24,000 square feet of new fill within the Bay to reinforce degraded levee areas, create high-tide refugia islands, and protect footings/shoreline areas that would provide public access. Approximately 2,062 square feet of the fill would be pile-supported fill for a boardwalk over the newly widened section of San Francisquito Creek. Approximately 54,790 square feet of rock riprap would be placed within the Commission's Bay and shoreline band jurisdiction for shoreline protection of along levee slopes.

Table 1. Fill Areas for the Proposed Project (in square feet).

Description	Type of Fill	Bay Jurisdiction (sf)		Shoreline Band Jurisdiction (sf)		Total Net Fill Area (sf)
		To Be Removed	To Be Placed	To Be Removed	To Be Placed	
SFC north and south levee riprap	Solid	0	7,125	0	21,341	28,466
Friendship Island Riprap	Solid	0	2,642	0	23,682	26,324
SFC north levee outboard side	Solid	0	8,455	0	2,678	11,133
Fish passage structures (rock)	Solid	0	1710	0	0	1,710

Description	Type of Fill	Bay Jurisdiction (sf)		Shoreline Band Jurisdiction (sf)		Total Net Fill Area (sf)
		To Be Removed	To Be Placed	To Be Removed	To Be Placed	
SFC south levee fill	Solid	0	3,525	-60,378	52,943	-3,910
Outer Faber Marsh levee degrade	Solid	-2,806	0	-34,864	0	-37,670
Earth fill for Faber Marsh levees and high tide refugia	Solid	0	1,250	0	539	1,789
Temporary Cofferdam and other construction structures	Temporary	-12,806	12,806	0	0	0
Total Solid Fill		21,901		5,941		27,842
Boardwalk	Pile-Supported	0	2,062	0	0	2,062
Total Pile-Supported Fill		2,062				2,062
TOTAL BAY FILL (sf)						23,963

Mitigation: The flood reduction project would result in impacts to the Bay environment. The full project, including areas outside the Commission's jurisdiction, would impact about approximately 10.64 acres of habitat. The proposal for compensatory mitigation includes restoring 15.14 acres of tidal marsh within the channel (7.51 acres of high marsh planting area and 7.63 acres of high marsh transition zone). Approximately 1.15 acres of the impacts would occur within the Commission's jurisdiction in the creek and the applicant has proposed to restore 1.74 acres of tidal marsh and transition zone habitats within BCDC's jurisdiction. Additionally, the project would impact approximately 1.04 acres of habitat in Faber Tract Marsh within the Commission's jurisdiction, for which the applicant has proposed 7.7 acres of habitat restoration and enhancements. Habitat restoration features include, removing invasive vegetation along the levees around the Faber Tract Marsh, restoring native vegetation, providing high tide refugia islands for Ridgway's Rail and salt marsh harvest mouse in the Outer Faber Marsh, restoring tidal marsh areas within the San Francisquito Creek, and creating a new tidal marsh terrace. Additionally, the project proponent may mitigate for impacts to ground fish habitat within the channel resulting from construction of the project. This mitigation may include either: (1) funding for an existing restoration project; (2) purchasing credits from a mitigation bank; or (3) implementing a new restoration project.

Public

Access: The project would increase overall public access around the project site from approximately 161,622 square feet (15,206 linear feet) to approximately 209,118 square feet (15,193 linear feet). Within the Commission’s jurisdiction, the public access would be increased from the currently available 11,162 square feet (1,082 linear feet) to approximately 16,522 square feet (1,192 linear feet). In order to realign the levee and improve the public access, the project would include removal of approximately 700 linear feet of existing SFC south levee public access trail, provide approximately 800 linear feet (11,650 square feet) of new public access trail along the newly realigned SFC south levee top and along the newly constructed boardwalk, enhance existing public access areas inside and outside the Commission’s jurisdiction, and incorporate interpretive signage. More specifically, the proposed public access improvements include:

1. Installation of educational signage related to Faber Tract Marsh and an overlook area located near the Friendship Bridge;
2. A 202-linear-foot, wooden, pile-supported boardwalk across the newly widened San Francisquito Creek, connecting sections of the Bay Trail on the north and south sides of the project area;
3. At least seven new “public shore” signs at approved locations outside the Commission’s jurisdiction that notify the public of shoreline access points;
4. Place aggregate base on the East Palo Alto SFC north levee and widen portions of the trail to enhance the existing trail;
5. Paving, widening and/or improving portions of the trail on the Palo Alto SFC south levee;
6. All trails would be a minimum of 10 feet wide, but portions of the SFC north levee and SFC south levee may be widened to up to 16 feet;
7. Improvements to the O’Connor Way Pump House, Daphne Way, Verbena Drive, access points on the East Palo Alto SFC north levee, including bollards or other vehicle exclusion elements, or additional improvements necessary to enhance public access; and
8. A new formal trail access point at East Bayshore Road on the SFC north levee, which would include bollards, signage or other additional improvements necessary to enhance public access.

Priority

Use: The proposed project includes elements within a wildlife refuge priority use area at Faber Tract Marsh and elements within a waterfront park priority use areas along the golf course and levees adjacent to Faber Tract Marsh.

Schedule

and Cost: The applicant proposed to begin construction on April 1, 2016 and completing construction by November 11, 2017. The total cost of the project is approximately \$24,407,000.00.

Staff Analysis

A. **Issues Raised:** The staff believes that the application raises five primary issues: (1) whether the project is consistent with the McAteer-Petris Act and the Bay Plan policies regarding fill; (2) whether the project is consistent with the McAteer-Petris Act and the Bay Plan policies on natural resources, including Fish, Wildlife and Other Aquatic Organisms; Tidal Marshes and Tidal Flats; Water Quality; and Mitigation; (3) whether the project would provide the maximum feasible public access consistent with the project; (4) whether the project is consistent with the Bay Plan Priority Use Map 7 (including wildlife refuge and waterfront recreation areas); and (5) whether the proposed shoreline improvements are consistent with the Bay Plan policies on Protection of the Shoreline.

1. **Bay Fill.** The Commission may allow fill only when it meets the requirements identified in the McAteer-Petris Act Section 66605, which states, in part, that: “[a] the public benefits from fill in the Bay should be authorized when public benefits from fill clearly exceed public detriment from the loss of water areas, fill should be limited to water-oriented uses or minor fill for improving shoreline appearance and public access; (b) there is no alternative upland location; (c) the fill is the minimum amount necessary; (d) the fill is designed to minimize harmful effects to the Bay Area, including reducing impacts to water circulation, water quality, marshes and wildlife, and other conditions of the environment; (e) that the fill should be constructed in accordance with sound safety standards, which offer protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters; (f) authorized fill should establish a permanent shoreline; and (g) the fill should be authorized only when the applicant has valid title.”

The project would result in the net placement of approximately 24,000 square feet of new permanent fill in the Bay for a variety of uses, including those related to stabilization and protection of existing levees along the creek, construction of a floodwall (part of which is in the Commission’s jurisdiction), replacement of utility lines, creation of high tide refugia islands in the Outer Faber Marsh, placement of in-stream fish migration structures (steelhead passage features), and protection of bridge footings/abutments located within the streambed. Solid fill placed on the outboard side of the SFC north levee in Outer Faber Tract would be primarily for the creation of high tide refugia. Fill for public access would include approximately 2,062 square feet of the fill for a new wooden, pile-supported boardwalk over newly created open-water area and tidal marsh plain within the Commission’s future Bay jurisdiction, which would be created by the project.

Temporary fill would include the placement of cofferdams, water diversion pipes, and energy dissipaters during in-channel construction, occurring from June through October.

During construction, stream flows from upstream of the site would need to bypass the construction site. In order to accomplish this, approximately 12,806 square feet of temporary fill for a temporary cofferdam and other necessary water diversion structures would be placed within the creek. Sheet piles would be embedded approximately 20 feet deep into the channel. A 36-inch HDPE diversion pipe would run along the surface

of the Faber Tract marsh (1,850 feet long, 1,940 cy of fill) temporarily covering about 5,550 square feet of the marsh. At the end of the diversion pipe, a rock energy dissipater would be constructed within the channel, resulting in approximately 540 cy of temporary solid fill (7,256 square feet). The pipes and the rock energy dissipater would be removed after each construction season in the creek and stored outside BCDC's jurisdiction.

- a. **Public Benefit.** The existing shoreline and creek consists of an undersized flood protection channel, flood protection levees in need of repair, an existing marsh that lacks connection to the creek and has limited existing high tide refugia. In addition, levees on one side of the creek are lower than the other side creating a greater flood risk for East Palo Alto, and an inadequate level of flood protection exists for the current and future conditions as evidenced by recent flood events. Currently, the lower portion of the creek is constrained, and partially filled with sediment, reducing flood capacity. Additionally, the levee degrade proposed along the Outer Faber Marsh would reduce the constriction point near the Bay and reduce flood elevations further upstream during high flows.

The Faber Tract Marsh is bordered on four sides by levees or earthen berms that restrict fluvial and tidal exchange of sediment into the marsh. In addition, the marsh has limited transition zones or high tide refugia, so the highest tides fully inundate the marsh. During high tides, wildlife, including two federally and state listed species, must move to the edges of the marsh where predation rates can be high. The fill proposed within the marsh to create high tide refugia islands and along the edges to provide additional transition space at the toe of the levee would provide much needed opportunities for species to reach higher elevations during high tides. Therefore this fill would provide a significant public benefit in that it supports native Bay species, especially those with critical population issues associated with habitat loss.

- b. **Water Oriented Use.** Within the Commission's jurisdiction, approximately 30,000 square feet of fill is proposed within the Commission's Bay and 100-foot shoreline band jurisdictions for the purpose of flood protection. While not explicitly described as a "water oriented use" by the McAteer-Petris Act, shoreline protection systems, have been authorized in numerous locations around the Bay by the Commission, and have been found to be a water-oriented use. The Bay Plan has an entire section with findings and policies on Shoreline Projection in the Bay. Finding (b) of the Commission's Shoreline Protection policies recognizes that, "[m]ost structural shoreline protection projects involve some fill...." The primary purpose of much of the proposed project elements is to provide upstream flood protection for residents within the City of East Palo Alto and to provide protection to property owners on the Palo Alto side of the creek by reinforcing or enhancing currently existing levees.

- c. **Alternative Upland Location.** The proposed flood control project is designed to protect residents in the floodplain from flooding. There is no alternative upland location for the fill proposed in the channel because shoreline protection features are necessary for the basic project purpose and need. In addition to flood protection, the project has other goals, including habitat enhancement, restoration, and creating upland refugia. Faber Tract Marsh would be subject to more frequent flooding events after the lowering of the levee between the San Francisquito Creek and the Outer Faber Marsh, and therefore, the proposed fill is necessary to provide higher elevation refugia for Ridgway's Rail and salt marsh harvest mice that live there (Exhibit I).
- d. **Minimum Amount Necessary.** The project would involve a net placement of approximately 24,000 square feet of new fill in the Commission's current and future Bay jurisdiction (Table 1). The project proponent has stated that this is the minimum amount of fill necessary to construct project elements and achieve the flood protection and habitat restoration goals of the project. Approximately 1,250 square feet (110 cy) of this fill would be for the creation of five high tide refugia islands in the Outer Faber Marsh (Exhibit L). The project proponents have stated that the fill is the minimum amount necessary to achieve the desired habitat features with minimal reduction in existing marsh habitat and mitigate for temporary or permanent loss of habitat resulting from the project.

In addition, placement of approximately 18,200 square feet of solid fill, consisting of riprap and earthen fill, in the Bay is necessary for protecting sections of the SFC north levee near Friendship Bridge and the O'Connor Pump Station, reinforcing low sections of the outboard side of the SFC north levee, and protection of areas of Friendship Island from erosion (Exhibit I). The riprap feature would be carefully engineered and additionally be fronted by ten feet of vegetation to protect the stability of the levee. Due to the velocity of the water flowing through the channel during high flows, rock and concrete are needed to maintain the levees in the channel as softer sediments would likely be washed out or eroded. The project would also involve minor amounts of solid fill consisting of mainly rock within the flood control channel to create one of six high velocity refuge areas for steelhead migrating in the creek. Five other fish passage features would be provided upstream and outside the Commission's jurisdiction. The velocity reduction area would allow for individual steelhead and others species living within and traveling through the channel to have an area of respite. If the fish passage features were not created, steelhead migrating in the channel would not have the necessary quiet waters to rest and feed during migration. This could lead to the species abandoning this creek run over time. Because these features are specifically designed for this purpose, the applicant has stated it is the minimum amount of fill necessary.

- e. **Permanent Shoreline.** The fill placed along the levees as part of this project and within the Commission's Bay and shoreline band jurisdiction would bolster existing levees, increase channel flood capacity and protect the adjacent communities along the San Francisquito Creek from flood damage by protecting residents and the

surrounding land from flooding that would occur during a 100-year storm event occurring at a time when the Bay experiences 26 inches of sea level rise in the future. In addition, the proposed project would result in a net increase in the Commission's Bay jurisdiction after the widening of the San Francisquito Creek is completed. The proposed design is anticipated to be a long-term solution that would establish a permanent shoreline until at least 2067. Beyond that date, project modifications and adaptations may be needed to further protect residents and adjacent properties from future conditions.

- f. **Valid Title.** All work for the proposed project, within BCDC's jurisdiction, would be conducted on property owned by the City of Palo Alto. The City of Palo Alto granted an easement for work on the proposed project to the Santa Clara Valley Water District, which is a member of the JPA.

The Commission should determine whether the project is consistent with the McAteer-Petris Act and the Bay Plan policies regarding fill.

- 2. **Natural Resources.** Within the Commission's jurisdiction, the project would impact approximately 2.19 acres of tidal marsh habitat and proposes to restore 9.44 acres of tidal marsh, transition zone, and high tide refuge habitats. The project would: (1) widen the tidal creek by realigning an adjacent levee; (2) excavate upland habitat that has developed within the creek channel and restore tidal marsh along the edges of the channel; (3) fill small amounts of tidal marsh in the Faber Tract Marsh to create high-tide refugia islands and transitional habitat to improve refuge habitat for the salt marsh harvest mouse and the California Ridgway's Rail; (4) install fish velocity refuge features within creek using solid fill, such as large rock; and (5) place fill on the outboard side of the SFC north levee to reduce erosion of the levee toe during overtopping.
 - a. **Fish, Wildlife and Tidal Marsh Habitat.** The Bay Plan policies on Fish, Other Aquatic Organisms, and Wildlife state, in part, that "[t]o assure the benefits to fish, other aquatic organisms and wildlife for future generations... the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored, and increased." Similarly, the Bay Plan policies on Tidal Marshes and Tidal flats state, in part, "[t]idal marshes and tidal flats should be conserved to the fullest possible extent. Filling, diking, and dredging projects that would substantially harm tidal marshes or tidal flats should be allowed only for purposes that provide substantial public benefits and only if there is no feasible alternative." These policies further state that any proposed projects in these areas, "[s]hould be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects," and that "[p]rojects should be sited and designed to avoid, or if avoidance is infeasible, minimize adverse impacts on any transition zone present..." The policies encourage that "shoreline projects should be designed to provide a transition zone between tidal and upland habitats."

Fish, Other Aquatic Organisms and Wildlife Policy 4 states that “[t]he Commission should consult with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service whenever a proposed project may adversely affect an endangered or threatened plant, fish, other aquatic organisms or wildlife species...and give appropriate consideration of (their) recommendations in order to avoid possible adverse impacts of a proposed project on fish, other aquatic organisms and wildlife habitat.”

Tidal Marsh Policy 6 states, in part, that, “[a]ny ecosystem restoration project should include clear and specific long-term and short-term biological and physical goals, and success criteria, and a monitoring program to assess the sustainability of the project. Design and evaluation of the project should include analysis of: (a) how the system’s adaptive capacity can be enhanced so that it is resilient to sea level rise and climate change; (b) the impact of the project on the Bay’s sediment budget; ... (e) potential invasive species introduction, spread, and their control; (f) rates of colonization by vegetation; (g) the expected use of the site by fish, wildlife and other aquatic organisms and wildlife; ... and (i) site characterization. If success criteria are not met, appropriate adaptive measures should be taken.”

Finally, Fish, Other Aquatic Organisms and Wildlife Policy 5 states that “[t]he Commission may permit a minor amount of fill or dredging in wildlife refuges, shown on the Plan Maps, necessary to enhance fish, other aquatic organisms and wildlife habitat or to provide public facilities for wildlife observation, interpretation and education.” Tidal Marsh Policy 8 further states that “[b]ased upon scientific ecological analysis and consultation with the relevant federal and state resource agencies, a minor amount of fill may be authorized to enhance or restore fish, other aquatic organisms or wildlife habitat if the Commission finds that no other method of enhancement or restoration except filling is feasible....”

To assess the impacts to these species and habitats, the project underwent a California Environmental Quality Act (CEQA) review (Exhibit N), as well as review by the State and Federal Resource Agencies, resulting in the issuance of two biological opinions. A streambed alteration agreement from CDFW for the project is currently in draft form.

(1) **Creek Alteration.** As proposed, the project would alter the existing tidal creek habitat within the Commission’s Bay and shoreline band jurisdictions by widening areas to increase flood flows. In the process, both tidal and riparian habitat would be removed through excavation of upland areas within the lower reach of the creek. The realignment of the channel would impact 1.15 acres of tidal marsh habitat within BCDC’s jurisdiction. The proposed excavation activities within the channel would temporarily impact approximately 1,470 cubic yards (cy) and 16,120 square feet of ruderal and high-marsh habitat within the channel, but would restore elevations in the creek to approximately mean higher

high water (6.0-8.0 ft NAVD88, graded at approximately 30:1) and allow for passive revegetation of high-marsh habitat along the channel edges. The newly created high tide marsh terrace area within the widened creek would be planted with high-marsh plants including alkali weed, saltgrass, alkali heath, marsh jaumea, and perennial pickleweed. Additionally, transitional habitat would be constructed along the levee slopes within BCDC's jurisdiction and throughout the project area. Post construction, the project would provide a total of 15.14 acres of tidal marsh habitat over the full length of the lower reach of the creek, 1.74 acres of which are within the Commission's new and existing jurisdiction.

Once the channel is realigned and widened the new channel would be at appropriate elevations for creek and flood flows, and would include a low flow channel and a wider high flow channel. The project would develop in-channel tidal marsh habitat to allow improved habitat connectivity between the creek and surrounding baylands, enhancing ecosystem functionality.

Caltrans work upstream of the project site will widen the bridge over San Francisquito Creek, which will allow additional flows to get to the project reach. This could potentially increase velocities within the channel and have the potential to impact steelhead. As discussed in more detail below, six "Steelhead Passage Features" would be installed along the lower reach of San Francisquito creek and consist mainly of rock and root wad materials (Exhibit D; velocity refuge locations). Of the six steelhead passage features, one high velocity refuge area would be located within the Commission's jurisdiction. This would provide desirable habitat features within the channel, which is expected to have long-term benefits for fish and wildlife species within the project area.

While the channel could accommodate greater flood flows, the channel widening portion of the project would not be expected to significantly impact the tidal hydrology of the Bay and sediment movement within the Bay and would reduce upstream flood elevations.

Between June 15th through October 15th, in 2016 and 2017, the project would have temporary impacts to the channel and tidal hydrology during the in-channel construction window. During this period, temporary fill for construction, including placement of a cofferdam at the Bayward end of the channel and one upstream would be necessary to dewater the creek and perform work. The construction would also require temporary use of a 36-inch HDPE water diversion pipe that would be routed along the outboard bank of the Faber Tract marsh levee to an energy dissipater (mostly consisting of rock) just downstream from the cofferdam. The energy dissipater would help prevent the erosion of channel banks due to outflow from the diversion pipe.

- (2) **Faber Tract Marsh.** The Faber Tract Marsh is a 95-acre tidal salt marsh situated along the north side of San Francisquito Creek, and supports one of the largest populations of California Ridgway's rail in the region. It is also part of the USFWS' designated Central/South San Francisco Bay Recovery Unit for the California

Ridgway's rail, and therefore is considered an important and sensitive area. It also supports a significant population of salt marsh harvest mouse, black rails and other marsh dependent species. Currently, Faber Tract Marsh contains little elevation diversity and is primarily low tidal salt marsh with a few salt pannes.

To restore flood protection along the creek, low spots on the SFC north levee adjacent to the marsh would be repaired. In reinforcing the SFC north levee, the toe of the levee would be widened into the marsh to create a new gentler slope at a 6H:1V ratio to reduce erosion of the levee and adjacent marsh during levee overtopping. The widening of the toe of the levee would provide transitional habitat between the marsh and levee, thereby providing an ecosystem enhancement that will support mid and high marsh habitats. The project would also degrade an unmaintained levee between San Francisquito Creek and Outer Faber Marsh (final elevation would be 8 feet NAVD88) to allow floodwater to flow into the marsh to further reduce upstream flood elevations and provide greater habitat connectivity. The proposed project would impact approximately 1.04 acres of tidal marsh habitats within Faber Tract Marsh.

As part of a mitigation package proposed by the applicants and agreed to by the resource agencies, to restore and create approximately 1.7 acres of tidal marsh and high tide refuge habitats within and around Faber Tract Marsh. The project would include the creation of up to five marsh mounds in the Outer Faber Tract to provide high tide refugia for special status species. These mounds would provide relief from high tide and increased inundation due to flooding and sea level rise over time. The marsh mounds would require approximately 1,250 square feet of total fill (0.006 acres footprint for each of the five islands) and be constructed using imported fill material free from vegetation or plant material. The constructed elevation of the refugia islands would be approximately 8.8 feet (NAVD88) and would be planted with marsh vegetation that would allow California Ridgway's rails and salt marsh harvest mice to escape king tides. The islands are anticipated to settle to a final elevation of about 8.4 feet (NAVD88) at five years post construction. The proposed fill volume for each island is similar to volumes that the Commission approved for the California State Coastal Conservancy to build high tide refugia habitat in other marsh locations around San Francisco Bay (BCDC Permit No. M2014.025.00).

Additionally, the applicant proposes approximately 6.0 acres of berm enhancements and revegetation of the levees surrounding Faber Tract Marsh (levees to the north, south and east of the marsh) (Exhibit K) to further provide high tide refuge areas for California Ridgway's rail and salt marsh harvest mouse. Berm enhancements would include removal of invasive species, planting of high marsh and transitional upland habitat necessary for these species, and monitoring of the success of revegetation along these levees, as discussed below.

The levees surrounding Faber Tract Marsh and the high tide refugia islands would be planted with high marsh and transitional vegetation consistent with the levee locations and adjacent baylands. Planting vegetation is an important aspect of the proposal because the levees and boardwalks around the project site provide potential access for mammalian predators of the California Ridgway's rail and the salt marsh harvest mouse. Additionally, utility transmission towers and lines located within and adjacent to the marsh provide artificial perches and nesting platforms for raptors and other avian predators that may prey upon the Ridgway's rail and salt marsh harvest mouse. Predation rates are known to increase during extreme high tide events when appropriate cover is not available. The vegetation will provide an additional protective measure for these species during high tide. Lastly, to further enhance the existing marsh habitat, the project would remove invasive vegetation on the north, south, and east levees surrounding Faber Tract Marsh and plant them with native high marsh and transition zone species.

Together, this portion of the project would enhance approximately 7.7 acres of high marsh, transitional and high tide refugia habitat in and around Faber Tract Marsh.

- (3) **Wildlife.** Within the full project area, there are several state and federally listed species, or species of special concern that could be affected by the project, including Central California Coast steelhead, longfin smelt, California red-legged frog, green sturgeon, western snowy plover, black rail, salt marsh harvest mouse, California Ridgway's rail, San Francisco garter snake, California least tern, white-tailed kite, western pond turtle, western burrowing owl, northern harrier, San Francisco common yellowthroat, and Alameda song sparrow; other native and non-native fish species, and nesting birds. Within the Commission's jurisdiction, the species of concern excludes the fresh water species, such as the pond turtle and red-legged frog.

On December 30, 2015 the National Marine Fisheries Service (NMFS) issued a Biological Opinion (BO) that determined that the proposed project is "not likely to jeopardize the continued existence of the threatened [Central California Coast] CCC steelhead (*Oncorhynchus mykiss*) or southern distinct population of green sturgeon, nor is it likely to adversely modify their critical habitat." However, NMFS determined that incidental take of CCC steelhead would occur during project construction as juvenile steelhead are likely to be present during the dewatering of the site for construction. NMFS provided reasonable and prudent measures and conditions to minimize impacts steelhead in the channel, which included measures to reduce harm during dewatering of the channel, building steelhead habitat complexity features (steelhead passage features) such as rock weirs or debris jams, monitoring and reporting of steelhead "take" during construction activities, and annual inspections of fish habitat features. Additionally, NMFS concluded that the proposed project "would adversely affect EFH [Essential Fish Habitat] for species managed within the Pacific Coast

Groundfish and Coastal Pelagic Species Fishery Management Plans,” specifically impacting Pacific Groundfish and Coastal Pelagic species that use the creek and adjacent subtidal areas. NMFS found that prey items within the project area for these coastal pelagic and groundfish species would likely take at least one year to re-establish in the area after construction activities have finished. NMFS provided conservation recommendations in the BO, which would avoid, minimize, or otherwise offset potential adverse effects on EFH. NMFS recommend in-kind compensatory mitigation at a ratio of 1:1 on-site or at a ratio of 3:1 if off-site to compensate for temporal impacts to an estimated 6.9 acres of channel habitat resulting from all construction activities during the proposed project.

The USFWS issued a Biological Opinion on January 15, 2016 and found that, while the project occurred in an area known to be habitat for a number of federally-listed species and that many of these species may be affected by the project, the project was “not likely to adversely” affect those species. In the BO, USFWS did provide general conservation measures for protected species in the project area, including general site construction, water quality, use of pesticides, operations and maintenance of levees and vegetation management. The USFWS determined the project as proposed would result in potential impacts to the California Ridgway’s rail and salt marsh harvest mouse in the form of increased likelihood of predation from increased habitat inundation in Outer Faber Marsh and removal of the upland refugia along the Outer Faber levee. During the consultation phase, the applicants and the USFWS entered into negotiations to reduce impacts to listed species, particularly in regards to the marsh habitat in Faber Tract. In the BO, the USFWS provided conservation measures specific to California Ridgway’s rail and salt marsh harvest mouse, which it determined when implemented would ensure that the proposed project would not be likely to jeopardize the continued existence of these species. The project would minimize impacts to these species through implementation of the conservation measures related to predator management, vegetation removal, creation and restoration of high tide refuge, and other measures. The BO also requires conditions related to construction of specific habitat features, monitoring of these features, and inclusion of methods of predator management.

As of February 5, 2016, BCDC has received a draft Streambed Alteration Agreement (SAA) from the California Department of Fish and Wildlife (CDFW), in which CDFW determined that the proposed project “could substantially adversely affect existing fish or wildlife resources.” CDFW prepared the draft SAA for the proposed project, which includes measures to protect fish and wildlife species within the project area. Without implementation of protection measures identified in the SAA, CDFW believes that the project would result in permanent loss of natural bed or bank; channel profile widening; loss of bank stability during construction; increased bank erosion; accelerated channel scour; increased turbidity; changes in pH; short-term release of contaminants; short-term

changes in dissolved oxygen, water temperature, and stream flow; dryback of stream channels; permanent loss of wetland vegetation; permanent decline in vegetative diversity; colonization by exotic plant species; change in stream flow; temporary impacts to stream due to dewatering activities; direct take of aquatic species from pumps; construction of trenches that can capture terrestrial and semi-aquatic organisms; temporary loss of wildlife connectivity to water source; temporary loss of terrestrial animal species' travel routes due to construction; disturbance or mortality of terrestrial, aquatic, and semi-aquatic fish and wildlife species; and disturbance to nesting birds. However, the SAA includes avoidance and minimization measures to reduce impacts to state-listed species by requiring a number of construction best management practices, on site monitoring by a CDFW approved biologist, training for all project workers regarding avoidance of impacts to special status species and their habitats, and a number of other minimization measures. Additionally, the SAA also requires mitigation for both temporary and permanent impacts to habitat as a result of the project. The SAA also includes a requirement for a finalized, approved Mitigation and Monitoring Plan for all habitat mitigation work (habitat restoration, enhancement, creation).

- b. **Water Quality.** The Bay Plan policies on Water Quality state, in part that "Bay water pollution should be prevented to the greatest extent feasible. The Bay's tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality." They further state that the Commission should consider the recommendations, decisions, and advice and authority of the ...the Regional Board," and that the Board's recommendations and decisions should be the basis for carrying out the Commission's water quality responsibilities. The policies also state that "New projects should be sited, designed, constructed and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay...."

The project includes grading and the excavation of upland sediments within the channel to enhance flood capacity, restore marsh elevations and habitat functionality and connectivity in and around the project site. Through restoration and expansion of the lower reach of San Francisquito Creek channel, the project would result in a net increase in the surface area and volume of the Commission's Bay jurisdiction and improve the quality of tidal marsh habitat. The proposed project includes enhancement of local ecosystems, and an enlarged bay/creek interface, which will improve the passage for steelhead migrating from the Bay into the creek and upper watershed.

As is typical of construction projects, potential sources of water pollution include the use of small amounts of hazardous materials such as fuels, oils, concrete and asphalt in the construction of the proposed project elements. The applicant has stated that they would work with the selected construction contractor to prepare a Storm Water Pollution Prevention Plan (SWPPP) and would provide it to the Commission when

available. This plan would include construction best management practices to minimize construction related discharges into the creek, including construction debris, no use of chemically-treated wood in the channel, minimizing disturbance and removal of vegetation, and minimizing disturbance to the creek where possible.

Adjacent to the project site, a former landfill is located near the Palo Alto Baylands Athletic Center. In addition, a few underground storage tanks that may have contained petroleum hydrocarbons are located along the creek. Currently an automotive repair business is located along the left bank of the creek. The Final EIR found that the project is not likely to encounter any of the above-mentioned potential sources of contamination because they are located outside of the construction footprint and therefore, the project would not result in soil and groundwater contamination.

On April 7, 2015, the San Francisco Regional Water Quality Control Board (Water Board) issued a conditional Water Quality Certification for the project. The Water Quality Certification requires the applicant to provide a revised dewatering plan to address both surface water and groundwater management to ensure the proposed discharges would meet applicable water quality objectives and to further reduce potential for pollutants to enter the Bay. In addition, it requires the applicant to test any imported soil that would be placed below top of bank, on levees and at any other locations where it has the potential to discharge to the creek or other waters of the State to ensure it does not have elevated levels of contaminants.

Regarding the discharge of storm waters through the channel, the applicant is required to obtain coverage under the NPDES General Permit for the Discharges of Stormwater Associated with Construction Activity (Water Board Order No. DWQ-2009-0009 as amended by Orders Nos. 2010-0014-DWQ and 2012-006-DWQ).

- c. **Mitigation.** The Bay Plan policies on mitigation state that “[p]rojects should be designed to avoid adverse environmental impacts to Bay natural resources....Whenever adverse impacts cannot be avoided, they should be minimized to the greatest extent practicable... and when unavoidable adverse impacts occur, mitigation should be required.” The mitigation policies also state, in part, that “Individual compensatory mitigation projects should be sited and designed within a Bay-wide ecological context, as close to the impact site as practicable to: (1) compensate for the adverse impacts; (2) ensure a high likelihood of long-term ecological success; and (3) support the improved health of the Bay ecological system....” Additionally, these policies state, “[t]he amount and type of compensatory mitigation should be determined for each mitigation project based on a clearly identified rationale and analysis of a number of metrics. Further, the mitigation should, be provided prior to, or concurrently with the occurrence of project impacts.” The Commission’s policies allow for compensatory mitigation when necessary, as part of a mitigation program and further describe the components of a proposed mitigation and monitoring plan necessary to ensure success.

The applicant describes the proposed project's impacts within the Commission's jurisdictions as occurring in tidal portions of San Francisquito Creek and Faber Tract Marsh and seeks to mitigate for these impacts through a combination of habitat enhancements and restoration. As proposed, the project would impact a total of 2.19 acres of existing habitats, including: 1.15 acres of tidal marsh habitat impacts from the excavation of sediment and vegetation within the creek, and approximately 1.04 acres of both temporary and permanent impacts to tidal marsh within Faber Tract Marsh during the creation of the wider levee toe slope on the SFC north levee and within the marsh. In impacting these habitats, wildlife species that are dependent on these habitats are also impacted as described in the fish and wildlife section above.

(1) **Proposed Mitigation.** Mitigation for these impacts is both proposed by the applicant in the draft *Mitigation and Monitoring Plan* (December 2015) and required by the resource agencies and the Water Board. To compensate for the impacts to the tidal creek and in Faber Tract Marsh, the applicant has proposed to create (1.68 acres) of new marsh habitat within the Commission's jurisdiction and restore 1.76 acres of tidal marsh habitat; for a total of 3.44 acres of tidal marsh and transition zone habitat restoration. In widening the channel, the applicant has provided a low flow channel with adjacent marsh plain benches that can accommodate flood flows, much like a natural creek would. This would improve the existing habitat and increase available low, medium and high marsh within the channel. This proposal is consistent with the requirements of the Water Board, USFWS and CDFW for mitigation of impacts to this portion of the project and is also subject to final approval and agreement by all the Agencies.

NMFS and CDFW identified potential impacts to native steelhead that migrate up San Francisquito Creek annually to spawning grounds higher in the watershed. The agencies found that increased water flow and reduced resting areas (high flow refugia) could impact this listed species as well as other native species that use the creek. To mitigate for this impact, the project includes the placement of high velocity refuge areas (steelhead passage features) within the creek, using large rock and root wads to create areas of calm water for resting and foraging fish. Of these, one is located within the Commission's jurisdiction. Additionally, the project would include the enhancement (active and passive re-establishment) of about 1.74 acres of tidal marsh habitats within and adjacent to the creek, within BCDC's jurisdiction, to support fish and other wildlife utilizing the creek and adjacent habitats. The in-channel restoration work would be performed at a 1:1 ratio for temporary project impacts, and a 2:1 ratio for permanent habitat loss/impacts, as agreed upon by CDFW and the Water Board. Additionally, NMFS has recommended mitigation for in-stream impacts to essential fish habitat by suggesting in-kind mitigation be provided at a ratio of 1:1 onsite or a ration of 3:1 if offsite, or that funding be provided for out-of-kind mitigation.

To additionally compensate for the impacts of the project on Faber Tract Marsh, the applicant has proposed, with which the USFWS, CDFW and Water Board have agreed, to provide habitat enhancement within the Faber Tract Marsh. These enhancements include: construction of up to five high tide refugia islands; enhancing approximately 6.0 acres of transition zone and high tide refugia habitat along the levees surrounding the marsh; removal of invasive species along the levees; and planting native mid and high marsh species on the high tide refugia islands. Together, all habitat creation, restoration and enhancement features provide 21.17 acres of enhanced marsh habitat and transition zone habitat, of which 9.44 acres would be within the Commission's jurisdiction. These habitat enhancements would likely result in improved species survival over time due to increased vegetation coverage in refuge areas during inundation periods to reduce predation.

In reviewing the Water Board's mitigation requirements, they appear to be consistent with the proposed mitigation package required by other agencies and for the project areas within the Commission's jurisdiction. However, the RWQCB included a requirement that increases mitigation requirements if the initially required mitigation is not completed within 12 months of when the associated impact first occurred. If mitigation construction does not occur within a year of the impacts, then the applicant would be responsible for an additional ten percent mitigation per year, as appropriate, on or adjacent to the project site, for the portion of the mitigation not completed within 12 months of the impact occurrence. Further, if onsite mitigation is not available, the Water Board has required mitigation at an alternate site at higher ratios than currently proposed.

- (2) **Monitoring.** The applicant submitted a draft *Mitigation and Monitoring Plan* (December 2015) and a draft *High Tide Refuge Habitat Enhancement Plan* (H.T. Harvey & Associates 2015), which identifies several elements that will be monitored for success of the habitat restoration and enhancement portions of the project. The applicant is proposing annual monitoring of restoration areas over at least a five-year period with monitoring be overseen and conducted by a qualified biologist. The applicant is proposing to continue monitoring until defined and agreed upon success criteria are met. The applicant is proposing success criteria for the channel be 60% restored vegetative cover, which the applicant believes is reasonable given that the project site is in a tidal channel that experiences both erosional and depositional forces.

Monitoring of the marsh plain enhancement and restoration efforts within Faber Tract would proceed once construction is complete and continue over five years, or until the success criteria has been met. In the area of the lowered outer Faber Tract levee, the applicant is proposing 60% vegetative cover success criteria with not more than 5% invasive species. For the transitional habitat along the San Francisquito Creek levee transitional slope and high tide refuge islands, the applicant is proposing the success criteria of 70% vegetative cover with not more than 5% invasive species. In the past, the Commission has required 90% vegetative cover as the success

criteria for similar projects. The Monitoring and Management Plan is currently in a draft form, so the Commission may want to consider different success criteria, or require certain elements be included in the final monitoring and management plan as part of the permit requirements.

The Commission should determine whether the project is consistent with the McAteer-Petris Act and the Bay Plan policies on natural resources, including Fish, Wildlife and Other Aquatic Organisms; Tidal Marshes and Tidal Flats; Water Quality; and Mitigation;

3. **Public Access and Scenic Views.** The McAteer-Petris Act and the Bay Plan policies require that projects provide the maximum feasible public access consistent with the project, that proposed public access be compatible with wildlife, that projects be designed to preserve views to the Bay, and that any public access provided as part of the project remain viable as sea level rises.
 - a. **Maximum Feasible Public Access.** Section 66602 of the McAteer-Petris Act states that, "...water-oriented land uses along the bay shoreline are essential to the public welfare of the bay area...that existing public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access consistent with a proposed project, should be provided." The Bay Plan Public Access Policy 1 states, "[a] proposed fill project should increase public access to the Bay to the maximum extent feasible...."

In the project vicinity, the Bay Trail runs along Geng Road from Embarcadero Road to San Francisquito Creek (Exhibit G), continues along the southern bank of the project site to Friendship Bridge, and then north along the levee adjacent to East Palo Alto residences and the Palo Alto Baylands Nature Preserve. There are three existing access points to the Bay Trail located at Geng Road, the Lucy Evans trail east of the Palo Alto Airport in Palo Alto, and the O'Connor Pump Station via Friendship Bridge in East Palo Alto. Additionally there are three other access points along the levees (located at Verbena Drive, Daphne Way, and on the SFC south levee near East Bayshore Road), which are currently utilized by the public to access the trails along the levee that connect to the Bay Trail. The project is also proposing to add a new trail access point located on the SFC north levee near East Bayshore Road.

In realigning the southern levee and widening the creek, an approximately one-mile stretch of Bay Trail (600 feet of the realigned trail would be within the Commission's shoreline band jurisdiction) would also be realigned adjacent to the creek and paved consistent with the existing trail in this area. To bridge the newly widened creek, the applicant would add a connecting boardwalk spanning from the abutment of Friendship Bridge (Friendship Island) to the newly realigned levee along the golf course. In accordance with the Bay Trail Design Guidelines, the new boardwalk would match the width and design of the existing Friendship Bridge. The boardwalk would include a viewing platform with interpretive signage.

In 2016 and 2017, from May through October the portion of the Bay Trail located along the crown of levee between the Palo Alto Golf Course and San Francisquito Creek will be temporarily closed. After construction is complete, all recreational facilities would be available for full use by the public.

To provide additional public access and recreational opportunities, the applicant is proposing public access improvements outside of BCDC's jurisdiction (Exhibit G). These include widening of East Palo Alto levee portion of the public access trail from 10 feet to 12-16 feet from, placing an aggregate base along the trail to improve the surface. The applicants would also provide an additional trail access point and connection located along East Bayshore Road. Lastly, new signage and gate improvements would be located at the O'Connor Way Pump Station, limiting recreational motor vehicle traffic and protecting pedestrian and wildlife in this area.

- b. **Minimize Impacts to Wildlife.** The Bay Plan Public Access policy 2 states, in part that "...public access to the Bay...should be provided in and through every new development in the Bay or on the shoreline...except in cases where public access would be clearly inconsistent with the project because of public safety considerations or significant use conflicts, including unavoidable, significant adverse effect on Bay natural resources. In these cases, in lieu access at another location preferably near the project should be provided." Additionally, Public Access policy 3 states in part, "...projects in [natural areas with sensitive wildlife] should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided." Public Access policy 4 states, in part, that "[p]ublic access should be sited, designed and managed to prevent significant adverse effects on wildlife...."

The project proposal includes limiting public access to the levees surrounding sensitive habitat found at Faber Tract Marsh. Limiting public access to this area is protective of the state and federally listed California Ridgway's rail and salt marsh harvest mouse. As a requirement of the USFWS biological opinion, and to further protect these and other species, the applicant proposes to install a predator exclusion fence (Exhibit D) along the SFC north levee near the connection point to the Bay Trail and Friendship Bridge. This fencing is intended to keep out mammalian predators and prevent humans from entering the area.

- c. **Viable Public Access and Maintenance.** Bay Plan policies on public access state that "[p]ublic access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding." The project would provide public access along the crown of the levees on either side of the San Francisquito Creek. Bay Plan Public Access policy 6 states, "[w]henver public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed...any public access provided as a condition of development should either be required to remain viable in the event of future sea level rise or flooding, or equivalent access consistent with the project should be provided nearby."

The public access proposed by the applicant is located primarily on levee tops, on and adjacent to a bridge crossing the creek, and a boardwalk over newly created marsh (Exhibit G). The flood protection levees and bridge are designed to the 100-year flood level, with a 100-year tide and sea level rise (26 inches) for the life of the project (2060). Beyond 2060, the applicant has stated that earthen levees included in the project have the potential to be raised further by adding earthen baskets or additional floodwalls of synthetic piling and that existing steel sheet pile floodwalls could be raised by welding additional steel sheets to the existing structure. The applicant used the Our Coast Our Future (OCOF) projections (Exhibit M) to illustrate that even with about five feet of sea level rise at 2100, which is the best available data at this time, flooding would likely occur within the Faber Tract Marsh and the golf course to the north and south of the creek, but that the levees are mostly not overtopped based upon the current design. Therefore, the public access would remain viable through the life of the project.

The Commission should decide whether the proposed public access improvements are consistent with the Commission's laws and policies on Public Access.

4. **Bay Plan Priority Use Areas.** Portions of the project are located within two priority use areas designated in the Bay Plan as shown in Bay Plan Map 7: the northern levee adjacent to Faber Tract is designated as a Waterfront Park Priority Use Area and Faber Tract is designate as a Wildlife Refuge Priority Use Area. The Refuge has closed the public access along these levees to protect Ridgway's rail and salt marsh harvest mouse inhabiting Faber Tract Marsh, thereby limiting the use as a Waterfront Park. The project would provide interpretive signage near Friendship Bridge to provide information related to Faber Tract Marsh and the wildlife within the area, supporting the Waterfront Park use in the adjacent area, while protecting sensitive species and their habitat.

In addition, the Palo Alto golf course is designated as a waterfront park priority use area. The project would permanently impact a small portion (8.6 acres) of this use by decreasing the size of the golf course to widen the creek, providing additional flow capacity and creating new tidal marsh. Access to the golf course would be temporarily closed during the project and while the City of Palo Alto works on a planned reconfiguration of the golf course. In approximately two years, recreational opportunities at the golf course would be fully restored.

The Wildlife Priority Use area would be impacted during the construction of the high tide refugia, transitional slopes and levee repair. While there will be some disruption to wildlife use, the construction will occur during environmental work windows from June 15th to October 15th as described in the biological opinion. The work on the toe of the levees is limited to a few small areas, and care will be taken to avoid harm to listed species through best management practices. Work within the marsh is expected by be conducted by hand operated tools, and therefore will limit impacts on wildlife use of the area.

The Commission should determine whether the project is consistent with the site's Waterfront Park and Wildlife Refuge Priority Use designations.

5. **Protection of Shoreline.** Bay Plan policies on Shoreline Protection Policy 1, states, in part, “[n]ew shoreline protection projects and maintenance or reconstruction of existing projects and uses should be authorized if: (a) the project is necessary to provide flood or erosion protection for (i) existing development, use or infrastructure, or (ii) proposed development, use or infrastructure that is consistent with other Bay Plan policies...(c) the project is properly engineered to provide erosion control and flood protection for the expected life of the project based on a 100-year flood event that takes future sea level rise into account... [and] (e) the protection is integrated with current or planned adjacent shoreline protection measures....”

Bay Plan Policy 3 requires that authorized shoreline protection projects be regularly maintained according to a long-term maintenance program and assure protection from tidal erosion and flooding and minimize impacts to natural resources during the life of the project. Shoreline Protection Policy 4 requires that whenever feasible, shoreline protection projects should include nonstructural elements that include elements for Bay ecosystem enhancement and that in shoreline areas that support marsh vegetation, the Commission should require the inclusion of project provisions for establishing marsh and transitional habitats as part of shoreline protection measures. Shoreline Protection Policy 5 requires that impacts to natural resources and public access from new shoreline protection projects be avoided, mitigated or alternative public access should be provided.

In order to improve shoreline protection, the project would construct a steel sheet pile floodwall along approximately 500 linear feet near the O'Connor Way pump station and Friendship Bridge to connect the outfall structure at the pump station to the adjacent upstream and downstream levees for shoreline protection. Approximately 200 linear feet of the floodwall would be within the Commission's shoreline band jurisdiction, with portions of the floodwall embedded within the levee on the southern edge of Faber Tract Marsh (Exhibit I). The sheet pile floodwall would provide continuous shoreline protection and strengthen the levee against higher volumes of flow that the project would accommodate.

To restore flood protection along the creek, low spots on the unmaintained levee north of San Francisquito Creek would be repaired with engineered soils to strengthen the levee and accommodate anticipated future high flow events. The final height of the levee would be a maximum of 13 feet (NAVD88). In reinforcing the levee, the toe of the levee within Faber Tract would be widened and a new slope at six horizontal to one vertical feet would be created to protect levee erosion due to flow overtopping, and reduce potential impacts to the adjacent marsh. The widening of the toe of the levee will provide transitional habitat between the marsh and levee at a gentler slope, thereby providing an ecosystem enhancement that will support mid and high marsh habitats and preventing the need to use riprap within the marsh to stabilize the levee toe. The applicant anticipates that tidal marsh vegetation and transition zone habitats would

migrate up the levee slopes adjusting to the changing hydrology and would remain present with two feet of predicted sea level rise and an increase in open channel and low tide mud flat habitats with sea level rise. However, future sedimentation rates are difficult to predict. There would be potential for substantial loss of tidal marsh habitat within the project area with predicted sea level rise of about five feet in 2100, but these impacts would be beyond the current planned life of the project.

The project would also degrade an unmaintained levee to a final elevation of 8 feet (NAVD88) between San Francisquito Creek and Outer Faber marsh to allow floodwater to flow from the creek into the Outer Faber marsh area during high flows, reducing water surface elevation pressure against the Faber Tract Marsh levee upstream.

Regarding Shoreline Protection Policy 5, the project would have potential impacts to habitat and wildlife, which it is addressing through mitigation measures discussed under the mitigation section above.

The Commission should decide whether the proposed project is consistent with its laws and policies regarding shoreline protection.

B. Review Boards

1. **Engineering Criteria Review Board.** The Engineering Criteria Review Board did not evaluate the proposed project.
2. **Design Review Board.** Given the nature of the proposed improvements, the Design Review Board did not evaluate the proposed project.

- C. **Environmental Review.** In accordance with the California Environmental Quality Act (CEQA) requirements, the SFCJPA certified the Final Environmental Impact Report (FEIR) for the project on October 25, 2012 (JPA Resolution Number 12-10-25A). The FEIR found that the project would have significant impacts to some special status species and their habitat areas, air quality, and recreation, of which most impacts could be reduced to a less-than-significant levels through minimization and mitigation measures. However, the CEQA review found that would likely result in significant and unavoidable effects on air quality associated with construction of various project elements during all project phases and significant and unavoidable effects due to reduced availability of existing recreational facilities due to realignment of the creek, reducing the size of the Golf Course by 7.4 acres. The SFCJPA has committed to all feasible mitigation to reduce impacts on air quality, but the residual effect is still likely to be significant. The proposed mitigation measure for recreation impacts is outside SFCJPA's jurisdiction and therefore cannot be guaranteed. No additional feasible mitigation for recreational impacts is available.

The JPA adopted a Statement of Overriding Considerations that in consideration of the existing flood risks along San Francisquito Creek associated with lack of adequate capacity in the creek, and the analysis of project outcomes, JPA finds that the economic,

social, and environmental benefits of meeting the project's flood protection goals outweigh the significant and unavoidable air and recreation impacts associated with the project's construction and operation. The Water Board agreed on April 7, 2015 that the FEIR appropriately addressed the foreseeable potential environmental impacts from the project.

D. Relevant Portions of the McAteer-Petris Act

1. Section 66602
2. Section 66605

E. Relevant Portions of the San Francisco Bay Plan

1. Bay Plan Policies on Fish, Other Aquatic Organisms and Wildlife
2. Bay Plan Policies on Water Quality
3. Bay Plan Policies on Water Surface Area and Volume
4. Bay Plan Policies on Tidal Marshes and Tidal Flats
5. Bay Plan Policies on Protection of the Shoreline
6. Bay Plan Policies on Dredging
7. Bay Plan Policies on Recreation
8. Bay Plan Policies on Public Access
9. Bay Plan Policies on Mitigation

Exhibits

- A. **Vicinity Map**
- B. **General Site Plan**
- C. **Typical Cross Section**
- D. **Full Project Plan**
- E. **BCDC existing jurisdictional Map**
- F. **BCDC post project jurisdictional Map**
- G. **Public Access**
- H. **Dredging Footprint**
- I. **Construction Map**
- J. **Tidal Marsh Impacts/Restoration**
- K. **Faber Marsh Berm Enhancement/Revegetation Map**
- L. **High Tide Refuge Islands**
- M. **Inundation Map**
- N. **EIR Summary**
- O. **Construction Staging Areas Map**
- P. **Water Diversion Structure Map**