

# San Francisco Bay Conservation and Development Commission

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**TO:** Design Review Board Members

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**SUBJECT: Foster City Levee Protection Planning and Improvement Project; Second Review**  
(For Design Review Board consideration August 5, 2019)

## Project Summary

**Project Proponents & Property Owners.** City of Foster City (“City”)

**Project Representatives.** Mr. Jeff Moneda, City of Foster City (City Manager/Project Manager); Charles D. Anderson, Schaaf and Wheeler Consulting Civil Engineers (Principal Engineer/Project Designer); Terry Huffman & Robert Perrera, Huffman-Broadway Group, Inc. (Environmental Consultants)

**Project Site (Exhibit 2).** The project site comprises approximately 31,300 linear feet (about 6 miles) of the 34,300 linear feet (about 6.5 miles) of existing levees that surround the City along the bayfront. The project site starts at the San Mateo city limit in the north and follows the shoreline to Belmont Slough to the east and southeast, and ends adjacent to U.S. Highway 101 (US 101) in the south at the San Mateo/Belmont city limit. The project site as shown in Figure 1, is bordered by San Francisco Bay to the north and east, Belmont Slough to the southeast and south, and O’Neill Slough to the south. The Marina Lagoon (Lagoon) is situated to the west of the two opposite ends of the Project site.

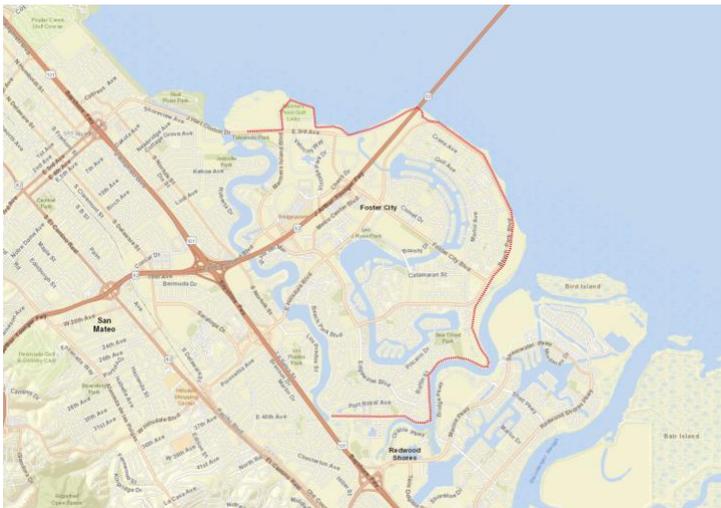


Figure 1: Project Area Map

**Existing Conditions (Exhibits 3, 5, 11).** The project site consists of parcels owned by the City, State Lands, and private ownership totaling approximately 52-acres along 31,300 linear feet of the levee. The entire project site is open to the public via the levee pathway and is part of the San Francisco Bay Trail (Bay Trail) which connects under the San Mateo-Hayward Bridge at its western touchdown. The trail provides both recreational opportunities and pedestrian/bicycle travel routes for the community. A water trail access site is located at Baywinds Park.

The existing levee consists of both raised earthen levees and berms with concrete floodwalls. The existing elevation of levee berms and concrete walls ranges from approximately 10 to 13 feet above the North American Vertical Datum of 1988 (NAVD88).

Land uses on the landward side of the levee system consist of streets, residential uses, office and commercial uses, landscaped open space and recreational uses, unimproved lots, muted tidal wetlands, and seasonal wetlands. The San Francisco Bay side of the City levee system consists mostly of fully tidal open water, slough channels, wetlands, and mud flats.

Approximately 9,000 individual properties in the City rely on the existing levee system for flood protection. An additional 8,000 individual properties within the City of San Mateo are also protected, in part, by the City levee system (i.e., if the City levee was not in place, San Francisco Bay could flow overland through the City, reaching San Mateo from the east and southeast). Similarly, properties in the City receive flood protection benefit from San Mateo's levee and floodwall systems south of San Mateo Creek.

The paved levee-top trail measures approximately 10-feet-wide with varied with unpaved shoulders. In addition to the trail, there are 39 benches, 20 paths to the water and approximately 90 formal and informal paths from adjacent streets to the trail, and 11 picnic areas adjacent to the trail (see Table 1, as follows). Several public parks with bathrooms and a variety of public parking areas are located next to the trail. The informal trails appear to have been formed at locations that connect intersections and parking areas with trail-top benches and/or water access sites. Elevations of the existing Bay Trail along the levee are illustrated in Exhibit 6. Locations of existing formal and informal landside and waterside access points, as well as amenities provided, are detailed in Exhibit 5 and Exhibits 37-72. There are predominantly unobstructed views of the San Francisco Bay from the entire levee trail.

**Levee Construction History.** Construction of the levee was initially authorized by the U.S. Army Corps of Engineers (USACE) in February 1976 to protect properties interior of the levee from flooding and BCDC issued a permit to the Estero Municipal Improvement District at that time for a portion of the levee from the San Mateo-Hayward Bridge to the terminus at US 101, which included an authorization for a bicycle/pedestrian pathway. The City has continued to improve the levee over time to maintain Federal Emergency Management Agency (FEMA) levee accreditation. This included a number of smaller projects along various segments of the levee, as well as a significant project along the entire levee for which BCDC issued a permit in November 1991 (No. 1991.016) to the City, the Estero Municipal Improvement District, and the California Department of Transportation, to raise the elevation of the levee for flood protection and included extensive public access improvements.

Table 1: Amenity Types

Amenity Type	Pre-Project	Post-Project
Bench	27	23
Bench (Donor)	12	12
Bicycle Rack	10	7
Bicycle Repair Station	0	4
Information Kiosk	5	5
Pet Litter Station	6	12
Picnic Table	15	16
Recycle Bin	11	19
Trail Identity Sign	22	23
Shore Access Sign	12	17
Trash Receptacle	35	19

The current levee system was recertified and accredited by FEMA in 2007 designating land within the City as “Zone X low-risk area”. FEMA conducted a coastal flood hazard study in 2014, which determined that roughly 85% of the City’s levee system does not meet FEMA requirements. FEMA granted the City a temporary “seclusion mapping” designation in 2015 to remain classified as Zone X low-risk area, so long as progress was made to address the deficiencies of the levee.

To satisfy current FEMA requirements, the required freeboard elevation of the levee needs to be raised. Freeboard is additional height above the 100-year flood elevation that tends to compensate for the factors that could contribute to greater flood heights caused by factors such as wave action and the hydrological effect of urbanization of the watershed.

**Proposed Project (Exhibits 4-72).** The overall project purpose is to rehabilitate approximately 31,300 linear feet of the 34,300 linear feet (about 6.5 miles) of existing levees that surround the City to retain FEMA accreditation and account for sea level rise to 2050 with an adaptation strategy beyond 2050. The freeboard elevation required to meet current FEMA standards is between 12.2 – 16.5 feet NAVD88. The freeboard elevation to account for sea level rise to 2050 ranges between 13 – 19 feet NAVD88. To accomplish this the levee is proposed to be raised utilizing a combination of three different construction approaches, depending on the location along the existing levee and the adjacent site constraints including: (1) Sheet Pile Floodwall; (2) Earthen Levee; and (3) Conventional Floodwall.

The hybrid approach (combining improvement types 1, 2 and 3) provides the most flexibility to meet current FEMA standards and would also achieve the following: (a) maintain public access and recreational opportunities; (b) provide safe access for emergency personnel; (c) avoid and/or minimize impacts to waters of the State as required by EPA’s 404(b)(1) guidelines; (d) avoid and/or minimize impacts to habitats occupied by special-status species; (e) meet

American Disability Act requirements for trail access; and (f) meet 2050 sea level rise predictions.

Specific project elements are as follows<sup>1</sup>:

1. **Levee Rehabilitation Types (Exhibits 4 and 7-10).** A “Sheet Pile Floodwall” would be used along approximately 22,100 linear feet of the levee, an “Earthen Levee” along approximately 5,100 linear feet of the levee, and a “Conventional Floodwall” along 4,100 linear feet of the levee. In certain sections where land area is constrained, a secondary retaining wall would be constructed on the landside of the trail to transition the elevated levee grade down to the existing grade.

The improvement type(s) for each levee segment, and the current and proposed levee heights, are illustrated in Exhibits 7-10. Refer to Exhibits 36-72 for detailed plans and cross section views with elevations, BCDC jurisdiction lines, station locations, and proposed amenities, access points, and plantings.

Since the February 11, 2019, Design Review Board meeting (February 2019 DRB Meeting), the project sponsor has proposed replacing the originally proposed sheet pile wall along Beach Park Boulevard adjacent to State Lands property with an earthen levee between roughly Station 188+00 and Station 202+00.

Construction of each levee type is described below along with the changes to the existing conditions.

- a. **Sheet Pile Flood Wall (Exhibits 7-10, 22).** The sheet pile floodwall proposes to use sheet pile as a permanent flood protection structure where there is insufficient right-of-way width or where encroachment may occur into wetland areas with an earthen levee. The sheet pile floodwall would be 12–20 inches wide, and would create a wall along the bayside edge of the trail. The wall would measure 2 to 7 feet in height above the existing grade at the top of bank, and 3.5 feet above the improved trail, creating a linear site wall along the shoreline, thus altering visual and physical access to the bay.
- b. **Earthen Levee (Exhibits 7-10).** The earthen levee is designed to account for future settlement and would provide trail users with a similar experience to existing conditions albeit at a higher elevation. No guardrails or floodwalls are required in these segments allowing for expansive bay views.
- c. **Conventional Flood Wall (Exhibits 7-10).** The conventional floodwall design would be composed of an 8 to 14-inch-wide vertical concrete wall running along the bayside edge of the improved trail. Along the shore, the wall would vary in height from 4.5 to 10 feet above the existing grade at top of bank, and 3.5 feet above the improved trail. Where the trail crosses under the San Mateo Bridge, the wall would be taller and would transition to the landside of the trail. The wall is proposed for the landside of the trail to address safety and visibility concerns; however, this means the trail segment will be subject to intermittent flooding with future sea level rise.

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<sup>1</sup> Project changes that the project sponsor has made in response to the comments received at the February 11, 2018, Design Review Board meeting are noted where applicable.

- d. **Low Wall West of San Mateo Bridge (Exhibit 9).** Since the February 2019 DRB Meeting, based on discussions with staff, the project sponsor has proposed adding a low wall on water side of trail in the unprotected section where it passes under the San Mateo Bridge to mitigate near term flooding of the Bay Trail.
- e. **FloodBreak® Devices.** On the east side of the San Mateo Bridge (adjacent to Bridgeview Park) and adjacent to O’Neill Slough (at the proposed new bridge) automatic closure devices are proposed. The devices use hydrostatic force from flood waters to raise (close) a grade-flush gate to prevent water from entering certain areas as demonstrated in Figure 2.



Figure 2: (left to right); (a) Engineering drawing with notes for FloodBreak® device; (b) Before and (c) after pictures from Kensington Gate Garage in Great Neck, NY. (source for 2a <https://floodbreak.com/about/how-it-works/> ; source for 2b and 2c: <https://floodbreak.com/about/flood-saves-before-and-after/> )

**Public Access (Exhibits 12-72).** The proposed project would widen the majority of the levee-top Bay Trail and replace and/or add various public access amenities along the trail. Proposed amenities along the levee trail are detailed in Exhibits 33-72 and summarized above in Table 1. Public parking along the street exists along most of the trail, with additional parking at connected public parks, however no new parking is proposed. Planting areas that will be impacted by the improved levee work will be replanted with native species or replaced in-kind. In response to the comments received at the February 2019 DRB Meeting, the project sponsor has proposed including decorative paving treatment at access points along the levee wall and Bay Trail (Exhibits 28-30).

Existing required public access areas that currently connect to the levee-top trail will need to be adjusted to maintain the required connections subject to other permits. See **Appendix A** for an overview of the existing permits and public access areas.

1. **Bay Trail.** The Bay Trail is proposed to increase approximately from 10 feet to 12 feet wide with unpaved shoulders for a total width of 15-18 feet. Widths and elevations of the proposed new Bay Trail along the levee are illustrated in Exhibit 5 and detailed in Table 2, below, with the proposed configuration of the trail shoulders.

Table 2: Improved Trail Widths and Locations

Start Station	End Station	Bay/Slough Side Shoulder Width (feet)	Paved Path Width (feet)	Opposite Shoulder Width (feet)	Total Trail Width (feet)	Segment Length (feet)
0+00	13+17	4	10	4	18	1,317
13+17	45+75	No Trail Improvements				3,258
45+75	311+00	3	12	3	18	26,525
311+00	342+20	3	12	0	15	3,120

2. **Waterside Access.** Access to the majority of the existing access pathways from the Bay Trail to the shoreline, both formal and informal, would be maintained by creating breaks at various locations in the proposed flood wall. These breaks would provide access to the margin of the existing levee-top between the new flood protection and the existing riprap (or other shoreline types). In addition to these breaks 5-foot-wide staircases are proposed to be built at three locations within the concrete flood walls to provide access from the new levee-top to the shoreline and five of the existing access ramps leading to the bay are proposed to be widened and the slopes modified to allow for ADA compliance. Locations of proposed and existing waterside access locations are shown in Exhibits 13-19 and 33-72.

Since the February 2019 DRB Meeting, following discussions with staff and the boardsailing community, the project sponsor has proposed adding a wall opening with wave barrier and stairs for access to the “last chance” ramp near Station 63+00 and redesigning the scheme for ADA water and beach access ramps at Baywinds Park.

In response to the comments received at the February 2019 DRB Meeting, the project sponsor has also proposed providing trail access to the shell beach where rights to provide access have been secured from roughly Station 157+00 to Station 177+00, and providing public access from the levee adjacent to Shorebird Park to an existing trail on State Lands property which also leads to the Shell Beach.

3. **Landside Access.** Since the levee height is proposed to be raised several feet, new landside access ramps and stairs are proposed to be constructed at the locations shown in Exhibits 5. Most landside access exists in formal or informal access, but the proposed improvements would provide improved, ADA compliant access points with crosswalks at the intersections to facilitate access from the adjacent community to the public access. Since the February 2019 DRB Meeting, the project sponsor has changed the design in order to provide the required ADA-compliant path to the Bay Trail from the shoreline parking area at Bayside Towers (generally between Station 94+00 and Station 96+00).

4. **Viewing Platforms (Exhibits 14,15,18, 19).** Since the February 2019 DRB Meeting, the project sponsor has proposed removing the originally proposed windows in the levee wall from the design due to concerns related to their maintenance and effectiveness. To increase viewing opportunities, they are now considering adding railed overlooks with viewing platforms at locations where they are feasible.
5. **Raised Area (Exhibit 17).** In response to the comments received at the February 2019 DRB Meeting and discussions with staff, the project sponsor has proposed providing a trail-elevation recreational area between the floodwall and shoreline, generally from Station 135+00 to Station 141+00. This would provide unfettered access to the shoreline at a commanding viewpoint. The recreation area would be large enough to support shade structures and a boardwalk at trail elevation outside of the wall.
6. **Other Project Components**
  - a. **Lagoon Intake/outfall (Exhibits 44 and 60).** The proposed project would also modify the Lagoon intake (Station 229+50) and outfall (Station 69+50) structures to accommodate the levee rehabilitation and would include guardrails and fencing. These areas serve as informal overlooks.
  - b. **Bridges.** The proposed project would also involve the construction of two free-spanning bridges at Stations 306+00 and 331+00 to improve emergency access between Redwood City and Foster City, increase the hydrological connection between Belmont Slough and O'Neil Slough, and provide improved public access along the Oneill Slough channel.

**Public Outreach.** The City held three Community Informational meetings about the project between April and October 2016, and a Business Community Forum in February 2018. Additionally, the City has held over twenty City Council and Planning Commission meetings related to the project since the summer of 2015. In 2018, the City's voters approved a 90 million dollar bond to finance the levee improvement project. Since the February 2019 DRB Meeting, the project proponents have discussed the project design with the boardsailing community and have proposed design changes in the area from Baywinds Park to the San Mateo Bridge based on their input.

**Existing Approvals, Proposed Construction Timeline & Maintenance.** On May 8, 2017, the City certified the Final Environmental Impact Report for the project. The City has applied for a major permit to BCDC, which is currently pending. Construction is anticipated to occur from 2020 and 2022 in one phase. The City will be in charge of maintenance of the levee trail and public access amenities associated with the project.

The project proponents originally proposed the project would occur in three general phases but after completing a study of phasing alternatives, they now propose to complete the project in a single phase which is the shortest and therefore the most cost-effective alternative. They believe it would also be the safest and least disruptive to the community because it would set the detour routes for the term of the project and re-open the entire length of the trail in just one year and nine months. This is only 5 months longer than the estimated time the longest segment would be closed under the original plan with three phases that would take an entire year longer in total.

**Resilience and Adaptation to Rising Sea Level .** While the project would be designed to tolerate periodic flooding, occasional inundation is anticipated on parts of the project site as sea levels rise. Based on Sea Level Rise (SLR) projections for medium-to-high risk aversion scenarios from the Ocean Protection Council (OPC) State Guidance, the levee trail (except under the San Mateo Bridge, Exhibit 24) and public access areas landward of the levee would be resilient to a 100-year flood event in the year 2050 (SLR projection of 1.9 feet). The elevations necessary to provide flood protection proposed by the project design (Exhibit 6) are higher along the open water portions of the levee than the areas along Belmont Slough due to larger wave fetches along the northern areas of the project site than the sheltered areas along the southern reaches of the levee.

Some of the existing waterside shoreline access that is not being elevated, would be inundated by the 100-year flood event in the year 2050. Additionally, the segment of the Bay Trail under the San Mateo Bridge would be inundated under those conditions. The flood wall was chosen to be constructed on the landside of that portion of trail to preserve views from the Bay Trail and reduce public safety concerns that could arise from locating the flood wall on the waterside and creating a “tunneling effect”, but a low wall on the water side of the trail has been added at that location to minimize flooding under 100-year stillwater conditions until after 2060 .

At 2100 with a projected 6.9 feet of sea level rise (based on OPC Guidance medium-to-high risk aversion and high emissions), the levee trail, under stillwater conditions, would potentially experience inundation during a 25-year storm at the section along Belmont Slough, but would be resilient to a 100-year storm along the open-water northern reaches of the levee. However, accounting for waves in a 100-year storm, the open-water section of the levee would begin experiencing inundation as soon as 2060 with 2.6 feet of sea level rise. The relatively soft foundational soil characteristics make the levee improvements built for the projected 2050 sea level rise scenario near the limit of safe engineering standards for the amount of soil retention along the shoreline. Therefore, building higher walls is not a practical adaptation measure for the end of the century. The OPC Guidance recommends a medium-to-high risk aversion for projects with limited future flexibility to adapt the infrastructure, such as this project given the engineering limitations of the levee. As noted in the existing conditions, the proposed levee improvement project represents the third time the levees would be raised in the past forty years.

Since the February 2019 DRB meeting, the project proponents have provided a risk assessment and adaptive management plan for future sea level rise that includes an analysis of the expected feasibility of different types of adaptive measures for SLR through the end of century, including a combination of landward expansion, natural shorelines, further increasing floodwall heights, or bay fill options, along different stretches of levee. The project proponents now propose preserving the option of future post-2050 expansion of public access areas within a roadway lane along Beach Park Boulevard. The project proponents anticipate that, given the already constrained rights-of-way, at certain sections along Belmont Slough, some narrowing of the Bay Trail corridor would likely prove necessary. Also, at some point regional solutions may be more prevalent than having individual jurisdictions provide separate adaptation measures.

The project proponents acknowledge that, in many respects, the adjacent communities face the same need for adaptive management, on roughly the same timeframe and that adaptive measures for Foster City will need to be coordinated with and integrated into whatever adaptive measures are taken by San Mateo, Belmont, and Redwood City. The Foster City Council recently voted to participate in the San Mateo County Flood and Sea Level Rise Resiliency Agency formed for this very reason.

**Landward Expansion Analysis.** At the February 2019 DRB Meeting, the Design Review Board requested more information regarding the feasibility of expanding landward into publicly owned lands in areas such as along Beach Park Boulevard. The project proponents have provided the following analysis:

“The current project design utilizes available landward rights-of-way to the extent feasible. The City acknowledges that further expansion landward could be an option to adapt to sea level rise past mid-century predictions and this option will be further detailed in [their] Adaptive Management Plan .... However... the City has determined that further expansion landward is generally not feasible or desirable at this time for the reasons explained below segment by segment:

1. The landward area adjacent to the segment between Station 56+00 to Station 64+00 is owned by the State and controlled by Caltrans. This area is a mitigation site for one of their projects. Encroaching into this land would require approval from Caltrans which is unlikely given the area is a mitigation site for one of their projects.
2. The landward area adjacent to the segment between Station 64+00 and Station 70+00 is within City right-of-way and is currently occupied by East Third Avenue. Expanding landward at this segment would involve reduction of traffic lanes which the City does not desire at this time because it would require relocation of the sanitary sewer main serving several other cities, as well as for the reasons stated in number 5, below.
3. Additional fill encroachment between Station 70+00 and the San Mateo Bridge (Station 96+00) would be on private property and is therefore not considered a viable option at this time. This property is also non-tidal wetland and therefore landward expansion here would require filling these non-tidal wetlands which the City has sought to avoid to the maximum extent feasible with this project.
4. The design already contemplates land side encroachment at the segment between Station 96+00 and Station 105+00.
5. Beach Park Boulevard which is within the City’s right-of-way, is adjacent to the project from Station 105+00 to Station 206+00 at Foster City Boulevard. As proposed, the project limits land side encroachments to the back of existing curb. The City has directed the design team to minimize encroachment into the street right of way, and preserve the existing four-lane road and parking area within this right-of-way for the following reasons:
  - a. Relocation of existing underground utilities, including the City’s water main, sanitary sewage force main, gas lines, storm drains, and various communication infrastructure would be required which would involve significant costs and delays and require further environmental analysis under CEQA.

- b. Adjacent residences would be more significantly impacted as the levee improvements would be brought closer to their front doors.
  - c. Traffic would be impacted by reducing lane configuration from 2 lanes in each direction to one lane in each direction. The impact of this reduction would require further environmental analysis under CEQA.
  - d. Existing parking areas would need to be eliminated to accommodate the landlord expansion; the associated reduction in parking would have a negative impact on public access to the levee and Bay Trail.
6. From Station 206+00 to the end of the project, the majority of adjacent landward right-of-way is privately held.”

### Commission Findings, Policies & Guidelines

**Physical and Visual Access.** The San Francisco Bay Plan (Bay Plan) policies on Public Access state, in part, that “maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline...” Bay Plan policies on Appearance, Design, and Scenic Views state, in part: “All bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay...” The Commission’s Public Access Design Guidelines state, in part: “View opportunities, shoreline configuration and access points are factors that determine a site’s inherent public access opportunities.” The guidelines also state that viewing the Bay is the “most widely enjoyed ‘use’ and projects should be designed to “enhance and dramatize views of the Bay.”

The Bay Plan Recreation policies state, in part, that “[d]iverse and accessible water-oriented recreational facilities...should be provided,” and that waterfront parks “should emphasize hiking, bicycling, riding trails, picnic facilities, swimming, environmental, historical and cultural education and interpretation, viewpoints, beaches, and fishing facilities.” Where practicable, the policies state that “access facilities for non-motorized small boats should be incorporated into waterfront parks.” Additionally, parking that accommodates expected use should be provided, as well as “launching facilities, restrooms, rigging areas, equipment storage” and should be accessible to ensure boaters can easily launch their watercraft.

The proposed project would raise the levee and Bay Trail and provide flood protection for the City with a combination of infrastructure types. While physical access will be maintained through formalized access paths from the landside and to the shoreline, the quantity and distribution of access locations will be limited from the existing network of formal and informal access paths. Additionally, walls and guardrails proposed along stretches of the trail and will affect views. Views from Beach Park Boulevard and East 3<sup>rd</sup> Avenue and some parks and other publicly accessible areas landward of the levee would also be impacted. Proposed modifications to public access amenities are detailed in Table 1, above, as well as new design changes proposed following the February 2019 DRB Meeting.

**Circulation.** The Bay Plan policies on Public Access state, in part that “[i]mprovements should be designed and built to encourage...movement to and along the shoreline...” and that “[a]ccess to and along the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available. Diverse and interesting public access experiences should be

provided....” The Commission’s Public Access Design Guidelines state, in part, that a shoreline development should “...provide a clear and continuous transition to adjacent developments,” “use local public street networks to inform shoreline site design and to extend the public realm to the Bay,” and “provide connections perpendicular to the shoreline.”

The proposed project features a wide variety of improved access points and connections with roads, parks, and residential areas along the shoreline. Beach Park Boulevard parallels the Bay Trail for a long stretch of the levee and includes shoulder parking that will be maintained, although the informal access points from the road will not be part of this project and would take time to be re-established by incidental pedestrian traffic through landscaped areas. Each roadway intersection along Beach Park Boulevard will include an access point to the trail. Other significant thoroughfares that intersect with the Bay Trail include East 3<sup>rd</sup> Avenue and Foster City Boulevard. Additionally, there are Bay Trail connections to Redwood City to the south.

**Sea Level Rise.** The Bay Plan policies on Public Access state, in part, that “...public access should be sited, designed, managed, and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding,” and that “[a]ny 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 Bay Plan policies on Safety of Fills state, in part, that “Rights-of-way for levees or other structures protecting inland areas from tidal flooding should be sufficiently wide on the upland side to allow for future levee widening to support additional levee height so that no fill for levee widening is placed in the Bay”

As discussed above, the proposed project would elevate the majority of the Bay Trail to be resilient to SLR of 1.9 feet including storm events. Some existing shoreline public access areas could already be inundated during storm events with wave action during present conditions but one picnic area is now proposed to be raised. A low wall has been added to the design on the water side of the portion of the Bay Trail below the San Mateo Bridge to protect from present day flooding, but could still be inundated during storm events before 2050, creating gaps in Bay Trail connectivity. The project site is proposed to be adaptable to SLR past 2050 using a combination of various adaptive strategies along different stretches of levee.

### Board Questions

**Public Access Design Guidelines.** The seven public access objectives are:

1. Make public access **public**.
2. Make public access **usable**.
3. Provide, maintain and enhance **visual access** to the Bay and the shoreline.
4. Maintain and enhance **visual quality** of the Bay, shoreline and adjacent developments.
5. Provide **connections** to and **continuity** along the shoreline.
6. Take advantage of the **Bay setting**.
7. Ensure that public access is **compatible with wildlife** through siting, design and management strategies.

**Considering these Objectives, the Board's Advice and Recommendations are Sought on the Following Issues Regarding the Design of the Proposed Public Access:**

1. Visual access to the Bay and view impacts from the proposed levee raising project
2. Physical shoreline access
  - a. Low-lying public access areas on the water side of the floodwall
  - b. Access during construction
3. Trail configuration for public's enjoyment of the Bay setting, visual access, and visual quality
  - a. Railings and floodwalls
  - b. Wayfinding and Interpretive Elements
4. Trail access points
  - a. Formal access
  - b. Informal access
5. Appropriateness of site amenities, signage, planting, railings, interpretive elements, and lighting such that the public spaces are inviting and enjoyable to the greatest amount of the public
6. Public Access impacts during construction
  - a. Detour signage and wayfinding for impacted activities

***Sea Level Rise:***

7. Resilient design and signage strategies for public access areas subject to storm-based flooding