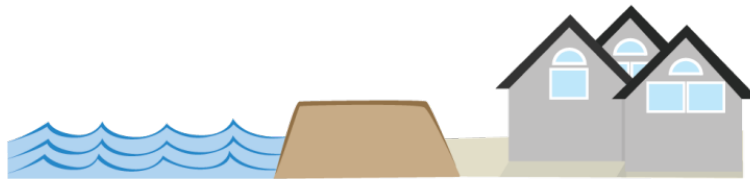




City of Foster City  
Department of Public Works



## **LEVEE PROTECTION PLANNING AND IMPROVEMENTS PROJECT**

Improving Today and Preparing for Tomorrow

CIP 301-657

# **Planning Commission Narrative**

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May 3, 2018

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## Introduction

This narrative provides additional data and is intended to supplement the City of Foster City Planning Commission submittal for the Foster City Levee Improvements Project (CIP 301-657) on May 3, 2018.

### 1.1. Planning Commission Submittal

Descriptions of the work products for this submittal are described below.

#### 1.1.1. Foster City Design Flood Protection Elevations (Sheet 2)

This figure shows the top of flood control improvement elevations compared to existing grades. The elevation either depicts the top of wall or the top of earthen levee per the design requirements to meet the FEMA-required 100 year (1-percent annual chance) flood elevation with freeboard, and provide resilience to the estimated 2050 sea-level-rise with 99.5 percent confidence.

#### 1.1.2. Project Typical Sections and Key Map showing locations of typical sections used (Sheets 3-4)

These figures show the locations of the types of typical levee improvements proposed and the cross sections that correspond to those typical improvements. These typical sections are consistent with the levee types shown in the EIR. Each of these sections has been chosen based on site constraints such as the location of wetland areas and available rights-of-way.

#### 1.1.3. Trail Improvements Key Map (Sheet 5)

This figure shows the types of improvements proposed to the Bay Trail. The paving and striping of the Bay Trail will be as follows:

- STA. 0+00 to 14+00: a 10 feet wide asphalt path that matches the existing paved width. There will be a 4-foot shoulder on either side of the paved path, for a total trail width of 18 feet. (The existing trail is 10 feet wide and there are no shoulders.) Since this stretch of trail is about a quarter mile long, the existing width of the asphalt trail was maintained, but the shoulder was added to keep the trail consistent with the recommendations of the Bay Trail. The additional shoulder width is also part of the future sea level rise adaptation plan.
- STA. 14+00 to 45+00: no levee or Bay Trail improvements. There is existing high ground along this stretch of the trail.
- STA. 45+00 to 311+00: A 12 feet wide asphalt path, with 8 feet designated for a two-way bike lane and 4 feet reserved as a dedicated two-way pedestrian path. Both sides of the asphalt pavement will have 3-foot wide decomposed granite (DG) shoulders. This entire stretch of improved trail will follow the San Francisco Bay Trail Design Guidelines and Toolkit published by California Coastal Conservancy.
- 311+00 to 342+93: a 12 feet wide asphalt path, with 8 feet designated for a two-way bike path and 4 feet designated for a two-way pedestrian path. Only the Bay side will have a 3-foot DG shoulder because there is not enough room within the levee right-of-way to have a 3-ft wide shoulder on both sides.

#### **1.1.4. Potential Sheet Pile Wall Treatment Options (Sheet 6)**

This figure shows a typical cross section of the levee with the four wall treatment options that could be applied within limited reaches or for the entire wall length. The composite cost for each option is listed below and the option components are more fully described in the sections below, noting that their aesthetic value is subjective.

- Option 1 - Painted steel sheet pile on both sides with manufactured steel cap (\$3 million)
- Option 2 - Painted steel sheet pile on both sides with concrete cap (\$3.5 million)
- Option 3 - Painted steel sheet pile on the Bay side and concrete fascia on the Trail side, with concrete cap (\$5 million)
- Option 4 - Painted steel sheet pile on the Bay side and precast concrete panel fascia on the Trail side, with concrete cap (\$5 million)

##### **1.1.4.1. Top of Wall**

Two options are considered for the top of the sheet pile wall: a steel cap and a concrete cap. Leaving the sheet pile plain with no cap is not considered a viable option due to potential safety concerns and it is not considered visually appealing.

###### **1.1.4.1.1. Steel Cap**

A steel cap is considered as the least expensive option for the top of the wall.

###### **1.1.4.1.2. Concrete Cap**

A concrete cap is considered as the upgraded option from the steel cap.

##### **1.1.4.2. Bay Side of Wall**

Two options are considered for the bay side of the sheet pile wall: leaving the epoxy coating (corrosion resistance) exposed to sunlight or painting the epoxy-coated sheet pile with a topcoat for ultra-violet exposure resistance. Additional wall treatment options are not considered because of the additional cost and the coverings would not be of visual benefit to Bay Trail users.

###### **1.1.4.2.1. Leave epoxy coating exposed**

Leaving the epoxy coating exposed is the least expensive option for the bay side of the wall. There is no additional cost on top of the material required. Over time, UV exposure will cause the epoxy coating to chalk and it may become unsightly.

###### **1.1.4.2.2. Paint Steel Sheet Pile with Topcoat**

Top-coating the steel sheet pile is considered as the upgraded option from leaving the epoxy coating exposed. A urethane topcoat will provide UV protection and help extend the life of the underlying epoxy coating, which provides a measure of corrosion resistance.

##### **1.1.4.3. Trail Side of Wall**

Three options are considered for this exposure of the wall: painted steel sheet pile, a poured in-place concrete fascia, and a precast concrete panel fascia. Leaving the sheet pile exposed to naturally weather over time is not considered a viable option due to the concern for graffiti removal.

#### **1.1.4.3.1. Painted Steel Sheet Pile Wall**

Painting the sheet pile wall for is considered as the least expensive option for the land side of the sheet pile wall.

#### **1.1.4.3.2. Cast-in-place Concrete Fascia**

Another option is to fill the sheet pile wall corrugations with cast-in-place concrete, probably using the shotcrete process. The concrete would act as a smooth fascia, and while it may stiffen the sheet pile wall somewhat, is not considered to have any particular structural benefit. If this option is selected, a concrete cap is required to complete the installation; a steel cap would not be recommended.

#### **1.1.4.3.3. Precast Concrete Panel Fascia**

A precast concrete panel fascia is considered as an alternate upgraded option from the painted sheet pile wall. The cost of precast concrete panels rather than cast-in-place concrete fascia is likely to be similar. If this option is selected, a concrete cap is required to complete the installation; a steel cap would not be recommended.

#### **1.1.5. Typical View between Mariner's Point and San Mateo Bridge (Sheet 7)**

This view shows the view of the levee trail from E. 3<sup>rd</sup> Avenue. The levee improvement section at this is a sheet pile all on the bay side of the trail and a mechanically stabilized earth (MSE) block wall on the land side. The wall is used on the land side in this location due to the location of wetland areas and available right-of-way. The MSE walls are less expensive than a concrete wall. There will be a hand rail mounted on top of the MSE wall to conform to ADA requirements.

#### **1.1.6. Levee Access at Beach Park Boulevard and Swordfish Street (Sheet 7)**

This view shows the access point at Beach Park Boulevard and Swordfish Street. The Bay Trail comes down to street level at Beach Park Boulevard for vehicular access to the Bay Trail. Pedestrian access will be maintained to the existing cross walk across Beach Park Boulevard. Behind the trail will be a concrete seating area with the covered sheet pile wall behind. The option shown is a precast panel-covered feature wall where the wall is the tallest with a cast-in-place concrete covering the sheet pile wall for the length of the slope down to the access point on both the north and south side of Swordfish Street. This design was chosen due to right-of-way constraints along the existing trail alignment.

#### **1.1.7. Transition at Floodbreak adjacent to San Mateo Bridge (Sheet 8)**

This rendering shows the transition from a sheet pile wall on the bay side of the levee and an MSE wall on the land side of the levee. At the transition to the trail under the San Mateo Bridge, a Floodbreak flood gate will be placed at top of the improved Bay Trail to provide continuous flood protection. The trail will then slope down to existing grade, where a concrete wall to a concrete wall on the land side of the levee will tie into the San Mateo Bridge. The sheet pile wall will follow the trail down to retain the fill on the slope down and will end once the trail ties into the existing grade. The wall on the back side of the levee will be approximately 5.5 feet tall where it ties into the San Mateo Bridge.

#### **1.1.8. Typical View of Access along Beach Park Boulevard (Sheet 9)**

This view shows an access along Beach Park Boulevard where there is enough room for a wheelchair ramp and access stairs. Per the suggestion of a Foster City resident, we have incorporated strategically placed glass walls to serve as viewing areas of San Francisco Bay for those who remain seated or cannot look out across the top of the floodwall. The two options shown are for the sheet pile wall to be painted or covered with cast-in-place concrete. There is space designated at this access point for an ADA accessible bench, trash and recycling, an information kiosk and a new cross walk will be added across Beach Park Boulevard. There will be fill placed to bring the Bay Trail height to no more than 3.5 feet lower than the top of wall.

#### **1.1.9. View from Port Royal Park (Sheet 10)**

This rendering shows the concrete floodwall along the bay side between Port Royal Park and Belmont Slough. The proximity to homes and the lack of adequate space for pile driving equipment necessitated the use of a concrete floodwall in this location. The wall height will be approximately 2-ft higher than existing grade and minimal fill will be placed to widen the Bay Trail.

#### **1.1.10. Landscape Planting Narrative and Planting Types (from BFS Architects) (Sheets 11-12)**

The conceptual approach to planting over six miles of trail edge and berm at the Foster City Levee Improvement Project is driven by a combination of environmental, aesthetic, and practical considerations. Environmental aspects include the protection of existing ecologically sensitive areas from invasive plant species and adaptability of native plant species to the specific coastal conditions along this trail. Aesthetic aspects include the visibility of different areas to residential homes and frequently used roads. Practical aspects include the logistics and costs of planting miles of trail, and maintaining these areas including associated irrigation into the future with limited resources and budgets.

##### **1.1.10.1. Environmental**

Two areas with ecological sensitivity exist north of the San Mateo Bridge along East 3rd Avenue and one just south of the bridge. The levee slopes adjacent to these areas will be planted with a combination of perennials, grasses, and annuals, all of them California natives, and most of them native to the Bay Area ecotype. To partially screen the vertical levee wall, larger native woody shrubs and large groundcovers will be planted along its base. These areas will change appearance over the seasons as do California native landscapes, and several proposed species support birds and butterflies.

##### **1.1.10.2. Aesthetics**

The stretch of trail along Beach Park Boulevard from the bridge to just south of Foster City Boulevard is the portion with the highest visibility to community residents. Historically the slopes along the trail have been planted with ice plant, a plant imported to the state by Caltrans to stabilize road and railroad slopes in the early 20th century. It is an extremely robust groundcover, requiring minimal maintenance and no watering leading to low long term maintenance costs. Flowering in the spring, it also has aesthetic acceptability to the residents of the City – similar to the famous ice plant covered slopes along Pacific Grove on the Monterey Peninsula. Ice plant is known to spread to adjacent natural areas, but can also be contained if surrounded by hardscape and roads which is the case here. The planting approach therefore proposes to replant ice plant along sections of the trail in between the trail access points.

### **1.1.10.3. Practical**

The access points to the trail, with steps and ramps including about twenty feet on either side, will be planted with flowering perennials, all California / Bay Area natives. This planting approach will highlight the access points and provide seasonal color where it's most visible. Included in these areas will be a planting buffer of robust and dense native woody groundcovers adjacent to ice plant areas that will remain. The buffer, with a narrow concrete mow band along its outer edge will allow maintenance staff to monitor the edges of the ice plant and contain it when needed.

South of Beach Park Boulevard will be minor areas of trail edge restoration with the exception of the J-site whose extents will be modified by the new trail alignment. Both the slough side and inland side of these areas will be replanted with California / Bay Area native grasses and perennials. The slough side which will be partially inundated on a regular basis will be specifically planted with the same species of the local ecotype that currently exists in this area.

### **1.1.11. Proposed Signage and Amenities Rendering (Sheet 13)**

This figure shows proposed general layouts for the amenities to be provided on the trail, which are located on subsequent drawings. The amenities may include:

- Information kiosk
- Bench with room for wheelchair access
- Pet litter station
- Trash bin and recycling bin
- Bike rack with room for 2 bikes
- Square post informational signs
- Pole-mounted informational signs

### **1.1.12. Levee Access Points and Amenities Location Map (sheets 14-19)**

Location map showing the amenities provided at each access point. There will be a total of 49 access points, with nine access points from the Bay Trail to the Bay and 40 access points from the street or adjacent properties to the Bay Trail. The signage and amenities proposed are based on those already provided at existing trail access points, space available to add amenities, and the relative positioning of amenities along the entire levee/trail reach within Foster City. All public access points will have an ADA access ramp, a stairway with hand rails, or both a stairway and an access ramp. These determinations have been made based on the space available to provide a ramp or stairway, and if the access point is located within public right-of-way. The project will maintain access points to private property; however not every access point to private property will be ADA accessible due to the space available for construction within the public right-of-way.