



LEVEE PROTECTION PLANNING AND IMPROVEMENTS PROJECT

Improving Today and Preparing for Tomorrow

Foster City Planning Commission Meeting
May 3, 2018



Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

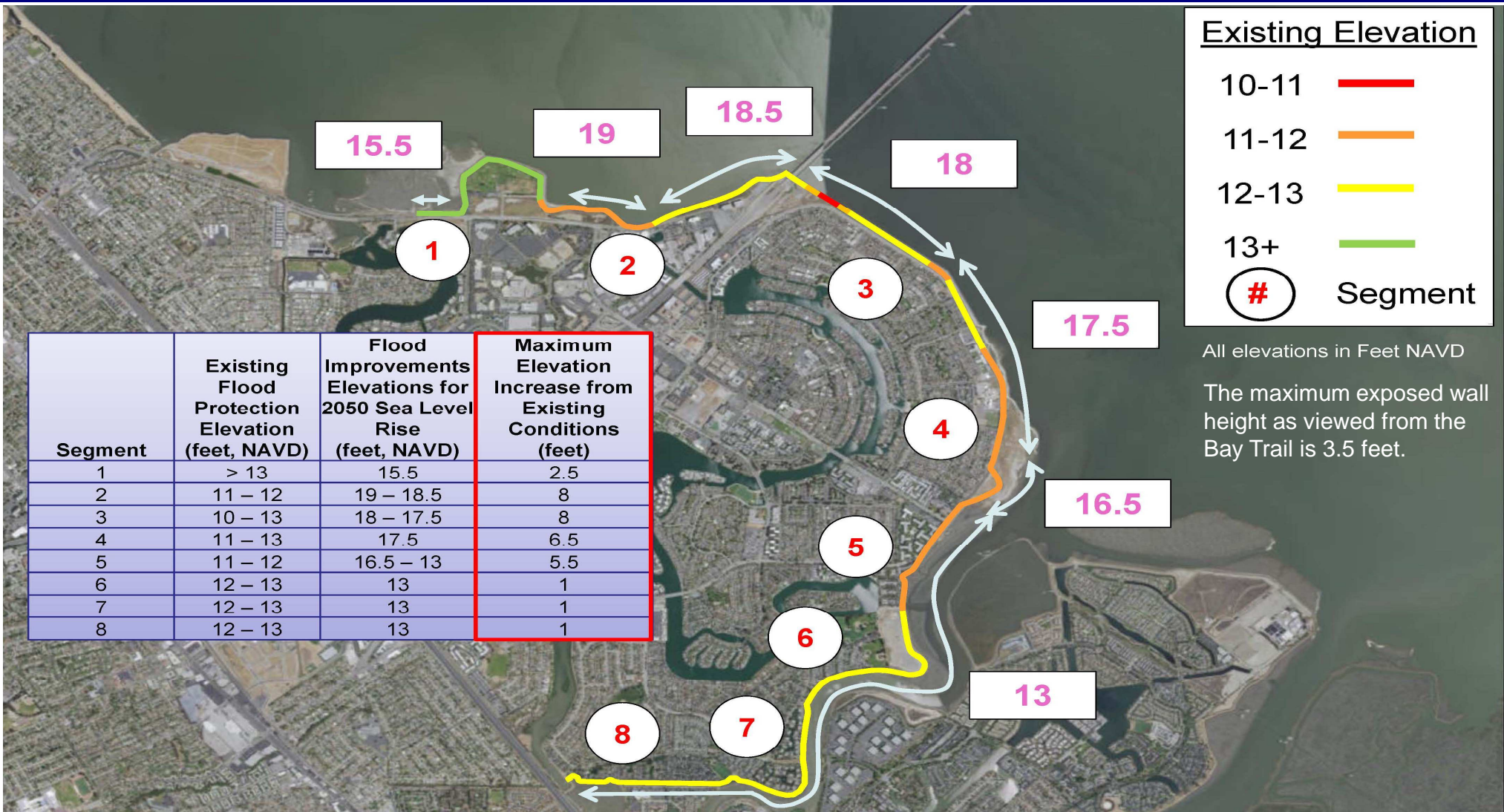


Presentation

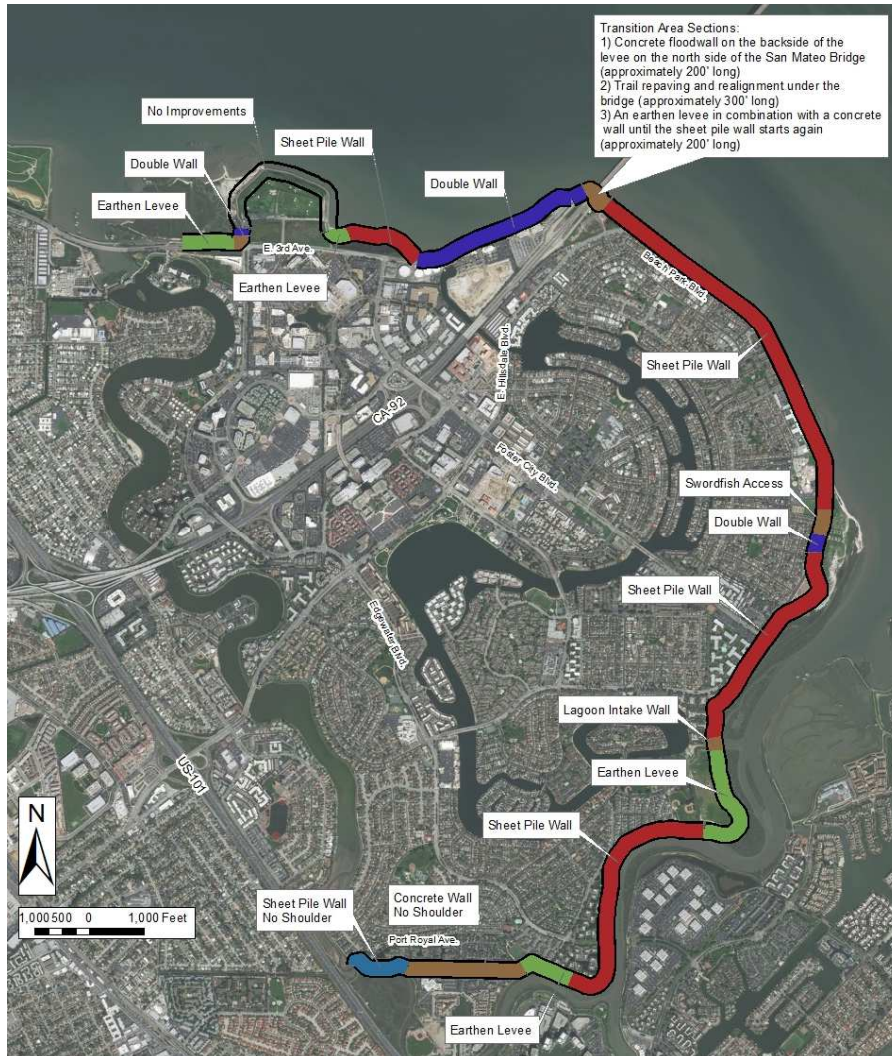
- ☐ Proposed Levee Elevations
- ☐ Levee and Trail Improvements
- ☐ Sheet Pile Wall Treatment Options
- ☐ Trail Renderings
- ☐ Planting Concept
- ☐ Access Point Improvements



Design Flood Protection Elevations (feet, NAVD)



Typical Sections Key



- Typical sections are consistent with the levee improvement types described in the EIR.
- Sections have been selected based on the location of wetlands and available right-of-way.
- The exposed wall height as viewed from street level is no greater than 3.5 feet except for sections indicated as “Double Wall”.

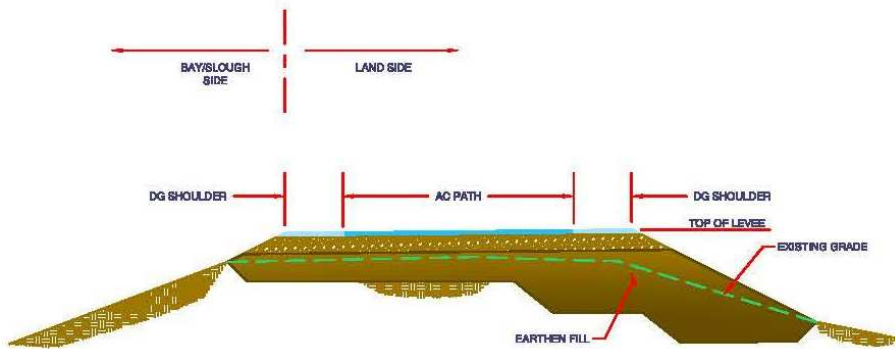
Legend

Section

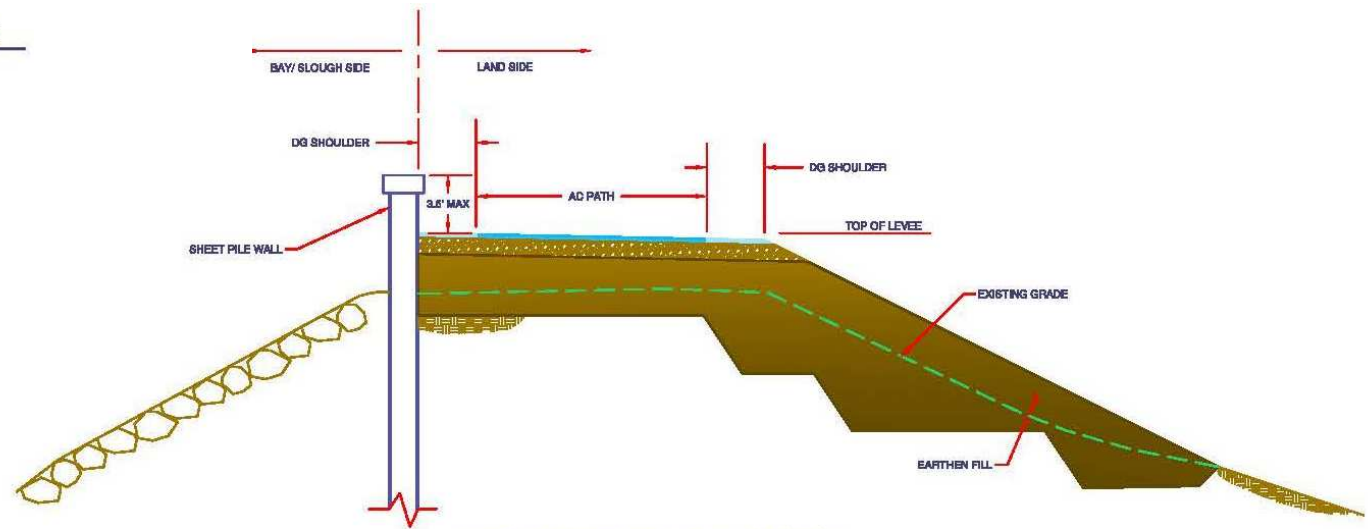
- Earthen Levee
- Double Wall
- Sheet Pile Wall
- Sheet Pile Wall - No Shoulder
- Other
- No Improvements

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Typical Sections

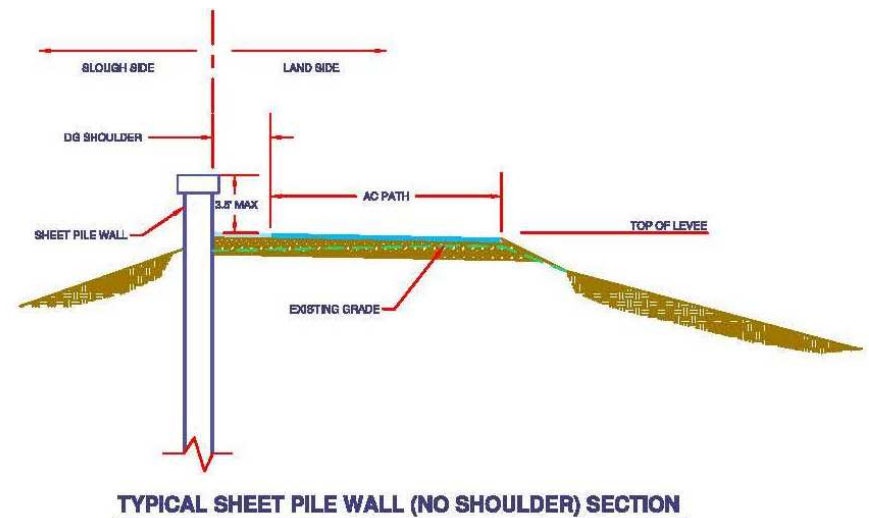
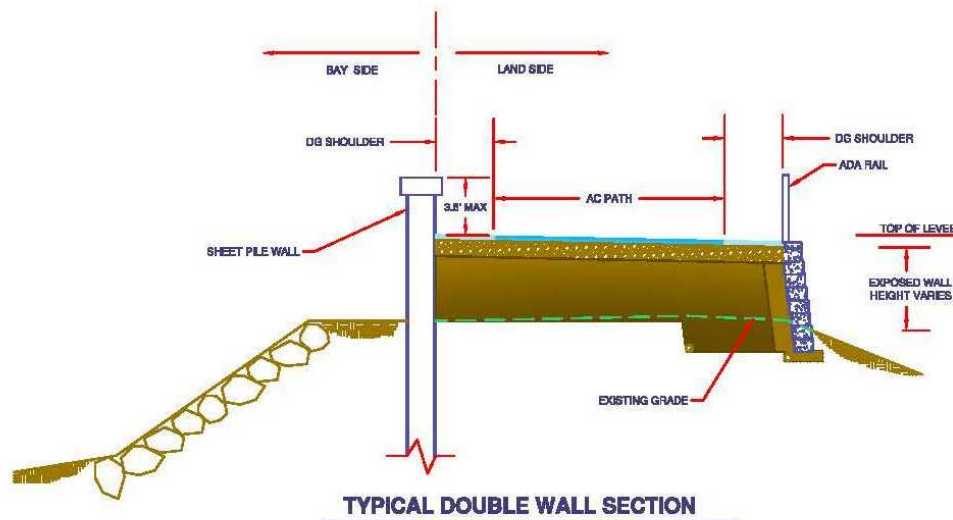


TYPICAL EARTHEN LEVEE SECTION

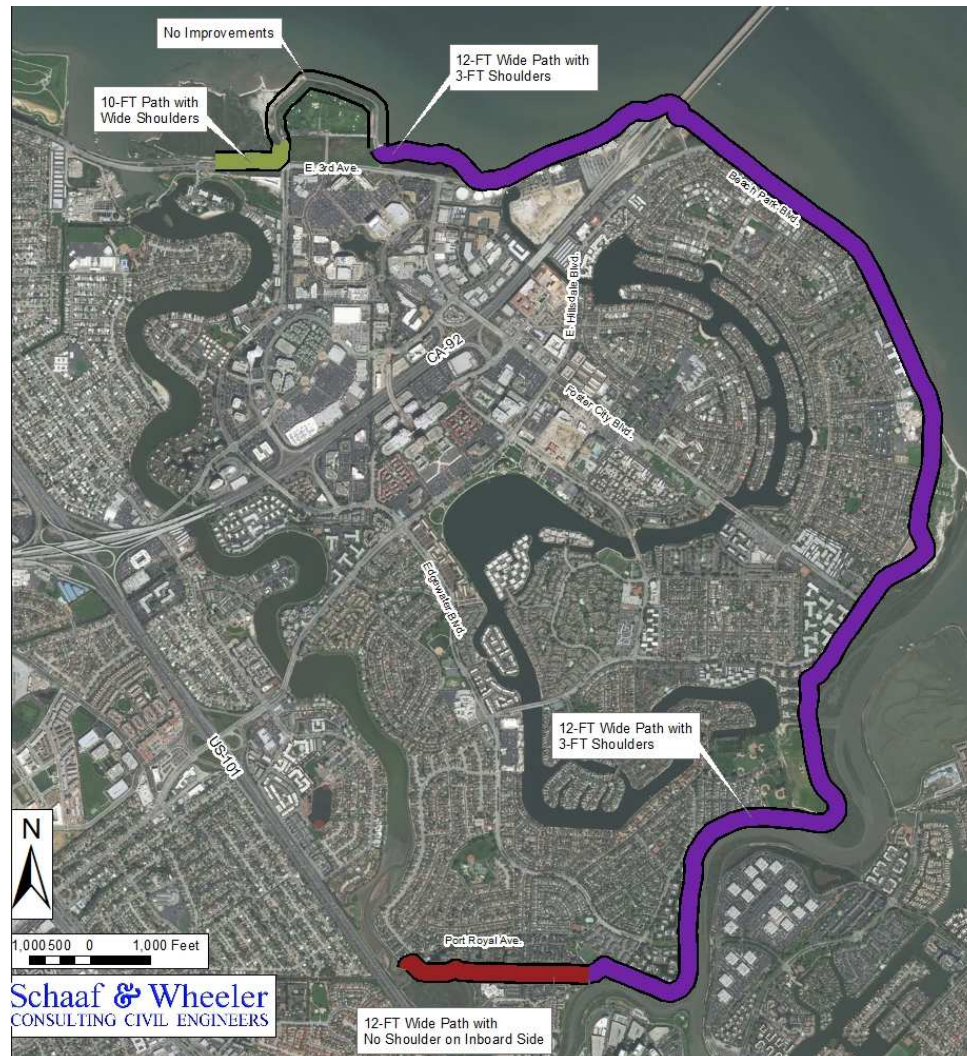


TYPICAL SHEET PILE WALL SECTION

Typical Sections







Bay Trail Improvement Key



Legend

Type

-  10-FT AC Path with 4-FT DG Shoulder (18-FT Total)
 12-FT AC Path with 3-FT DG Shoulder (18-FT Total)
 12-FT Path, No DG Shoulder Inboard Side (15-FT Total)
 No Improvements

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Sheet Pile Wall Upgraded Treatment Options and Cost

Bay/Slough Side Wall Treatment Options:

1. Painted steel and cap
2. Painted steel and concrete cap



1.

~\$3 Million

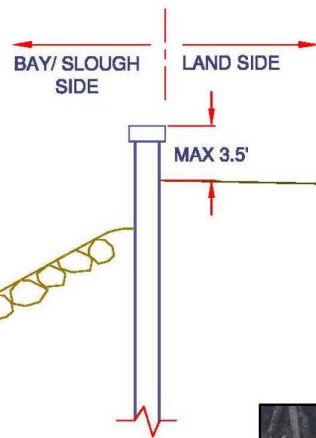


2.

~\$3.5 Million

Trail Side Wall Treatment Options:

1. Painted steel and cap
2. Painted steel and concrete cap
3. Concrete fascia with concrete cap



3.

\$5 Million or More

Typical View between Mariner's Point and San Mateo Bridge



Improved



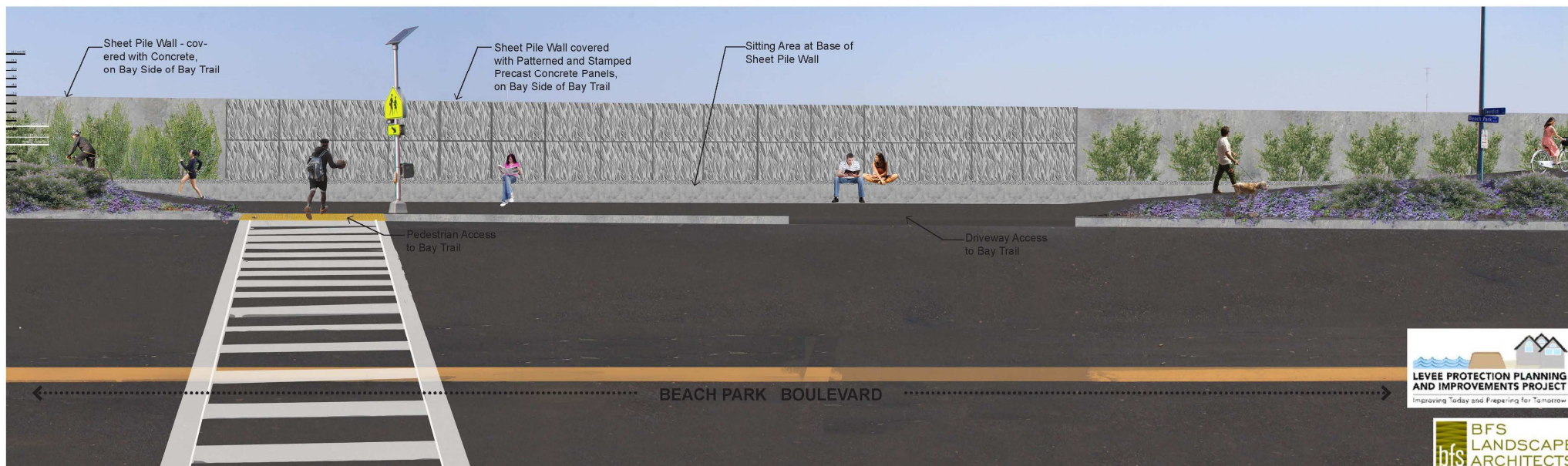
Existing

bfs BFS
LANDSCAPE
ARCHITECTS

**LEVEE PROTECTION PLANNING
AND IMPROVEMENTS PROJECT**
Improving Today and Preparing for Tomorrow



Levee Access at Beach Park Blvd. and Swordfish St.

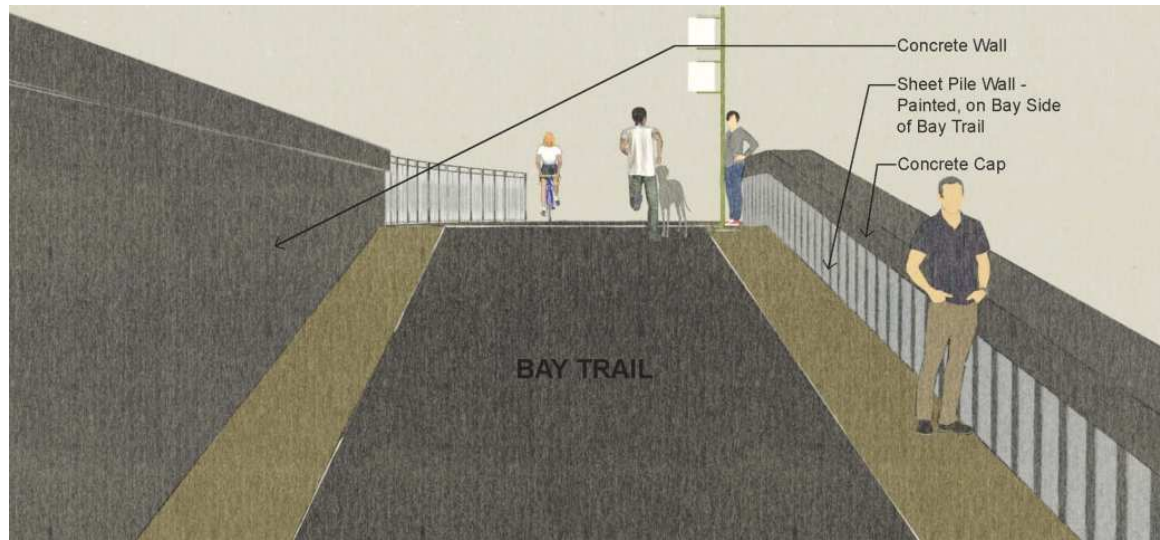


Improved



Existing

Typical View between Mariner's Point and San Mateo Bridge



- Flood protection wall transitions from Bay side to land side of Trail.
- Unobstructed views to Bay from Trail at San Mateo Bridge.



BFS
LANDSCAPE
ARCHITECTS

**LEVEE PROTECTION PLANNING
AND IMPROVEMENTS PROJECT**
Improving Today and Preparing for Tomorrow



Typical View of Access along Beach Park Blvd.



Typical View of Access along Beachpark Boulevard
Levee Wall - Concrete Wall with Concrete Cap and 10'-0" Wide Glass Openings at Access Points



Typical View of Access along Beachpark Boulevard
Levee Wall - Grey Sheetpile Wall with Steel Cap and 10'-0" Wide Glass Openings at Access Points

View from Port Royal Park



View from Port Royal Park

Planting Concept Plant Types



Bolboschoenus maritimus
(Alkali Bulrush)



Sisyrinchium bellum
(Blue-eyed Grass)



Solidago californica
(California Goldenrod)



Stipa lepida
(foothill needle grass)



Achillea millefolium
(Common Yarrow)



Ambrosia psilostachya
(Western Ragweed)



Artemisia californica
(California Sagebrush)



Artemisia douglasiana
(Mugwort)



Aster chilensis
(California Aster)



Baccharis pilularis
(Coyote Brush)



Deschampsia caespitosa
'Holciformis'
(Pacific hairgrass)



Stipa pulchra
(Purple Needle Grass)



Vulpia microstachys
(Small Fescue)



Wyethia angustifolia
(Mule's Ears)



Carex praegracilis
(Meadow Sedge)



Carpobrotus edulis
(Ice Plant)



Ceanothus gloriosus
(Ceanothus)



Ceanothus griseus 'Horizontalis'
(Yankee Point Ceanothus)



Ceanothus thyrsiflorus
(Creeping Blue Blossom)



Clarkia rubicunda
(Farwell to Spring)



Eriogonum latifolium
(Coastal Eriogonum)



Eriogonum nudum
(Naked Buckwheat)



Eschscholzia californica 'Maritima'
(California Coastal Poppy)



Festuca idahoensis
(Fescue Bunchgrass)



Festuca rubra 'Molate'
(Molate Red Fescue)



Frankenia salina
(Alkali Heath)



Grindelia stricta 'Angustifolia'
(Pacific Gumpiant)



Hordeum brachyantherum
(Salt Meadow Barley)



Juncus patens
(Wire Grass)



Limonium californicum
(Marsh Rosemary)



Mimulus aurantiacus
(Sticky Monkey Flower)



Penstemon centranthifolius
(Scarlet Bugler)



Ranunculus californicus
(California Buttercup)



Salvia mellifera 'Repens'
(Creeping Black Sage)



Salvia spathacea
(Hummingbird Sage)



Sarcocoma pacifica
(Pickleweed)



Schoenoplectus californicus
(California Bulrush)



Sidalcea malviflora
(Checkerbloom)

Planting types chosen based on considerations for:

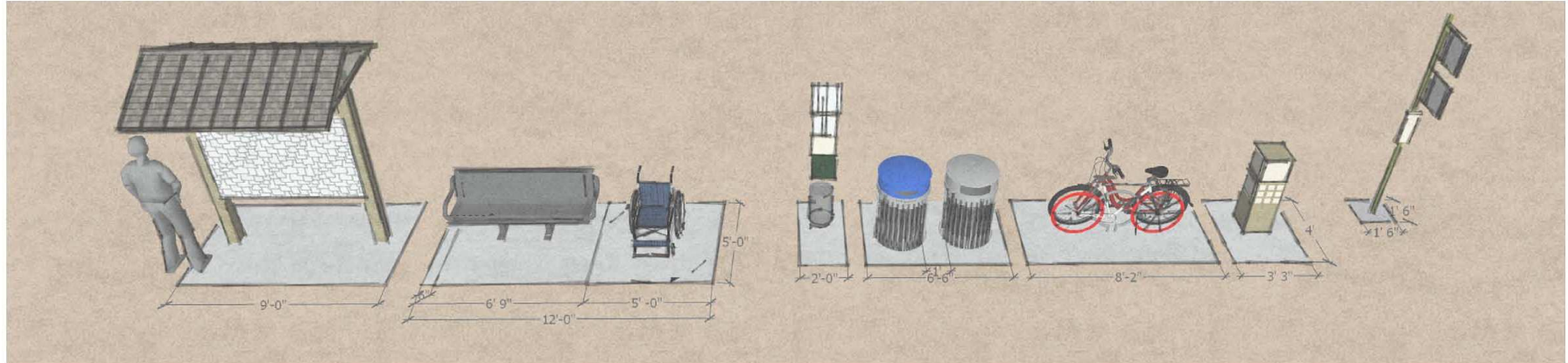
1. Drought tolerance
2. Aesthetic appeal
3. Practical maintenance and cost

Planting Concept Key



| Genus | Species | Common Name | BCDC Page | BCDC Native | Plant Type | Planting Method* | PCS Seed Source** |
|---|----------------------------|------------------------|-----------|-------------|-------------|------------------------------|-----------------------|
| Areas along E 3rd Ave: Non-irrigated Levee Slopes | | | | | | | |
| Achillea | millefolium | Common Yarrow | 18 | BAY | Perennial | Hydroseed | San Mateo |
| Deschampsia | cespitosa ssp. Holciformis | Pacific Hairgrass | 22 | BAY | Grass | | Monterey |
| Eschscholzia | californica 'Maritima' | California Poppy | 25 | BAY | Annual | | Monterey |
| Mimulus | aurantiacus | Sticky Monkey Flower | 28 | BAY | Perennial | | Santa Clara |
| Sisyrinchium | bellum | Blue-eyed Grass | 32 | BAY | Perennial | | San Mateo |
| Stipa | lepidota | Foothill Needle Grass | 29 | BAY | Grass | | San Mateo |
| Stipa | pulchra | Purple Needle Grass | 29 | BAY | Grass | | San Mateo |
| Vulpia | microstachys | small fescue | n/a | | Annual | | Santa Clara |
| Environmental Areas along E 3rd Ave: Irrigated Levee Slope Base | | | | | | | |
| Baccharis | pilularis | Coyote Brush | 20 | CA | Shrub | Container w/ Drip Irrigation | n/a |
| Ceanothus | gloriosus | Ceanothus | 21 | CA | Groundcover | | |
| Ceanothus | griseus var. horizontalis | Ceanothus Yankee Point | 21 | CA | Groundcover | | |
| Ceanothus | thyrsiflorus | Blue Blossom | 22 | BAY | Shrub | | |
| Salvia | mellifera var. Repens | Creeping Black Sage | 31 | CA | Groundcover | | |
| Beach Park Boulevard: Non-irrigated Levee Slopes | | | | | | | |
| Carpobrotus | edulis | Ice Plant | N/A | | Perennial | Cuttings | N/A |
| Beach Park Boulevard & Other Locations - Access Points: Irrigated Levee Slopes | | | | | | | |
| Aster | chilensis | California Aster | 20 | BAY | Perennial | Hand seeding or plugs | n/a |
| Eriogonum | nudum | Naked Buckwheat | 24 | BAY | Perennial | | |
| Penstemon | centranthifolius | Scarlet Bugler | | CA | Perennial | | |
| Ranunculus | californicus | California Buttercup | 30 | BAY | Perennial | | |
| Salvia | spathacea | Hummingbird Sage | | CA | Perennial | | |
| Solidago | californica | California Goldenrod | 32 | BAY | Perennial | | |
| Sidalcea | malviflora | Checkerbloom | 32 | BAY | Perennial | | |
| Ceanothus | griseus var. horizontalis | Ceanothus Yankee Point | 21 | CA | Groundcover | | |
| J-Site: Non-irrigated Inland Side (Dry) Slopes | | | | | | | |
| Artemisia | californica | California Sagebrush | 19 | BAY | Shrub | Hydroseed | Alameda |
| Artemisia | douglasiana | Mugwort | 20 | BAY | Perennial | Hydroseed | TBD |
| Eriogonum | latifolium | Coastal Eriogonum | 24 | BAY | Perennial | Hydroseed | San Mateo |
| Hordeum | brachyantherum | Salt Meadow Barley | 26 | BAY | Grass | Hydroseed | Napa / Sonoma |
| J-Site: Non-irrigated Slough Side (Seasonally wet) Slopes | | | | | | | |
| Ambrosia | psilostachya | Western Ragweed | | n/a | Perennial | Hydroseed | Santa Clara |
| Bolboschoenus | maritimus | Alkali Bulrush | 20 | BAY | Perennial | Hydroseed | Alameda |
| Frankenia | salina | Alkali Heath | 25 | BAY | Perennial | Hydroseed | San Mateo |
| Grindelia | stricta var. angustifolia | Pacific Gumplant | 26 | BAY | | | Alameda / Santa Clara |
| Hordeum | brachyantherum | Salt Meadow Barley | 26 | BAY | Grass | Hydroseed | Napa / Sonoma |
| Juncus | patens | Wire Grass | 27 | BAY | Perennial | Hydroseed | TBD |
| Limonium | californicum | Marsh Rosemary | 27 | BAY | Perennial | Hydroseed | San Mateo |
| Sarcocornia | pacifica | Pickleweed | 31 | BAY | Perennial | Hydroseed | Alameda |
| Schoenoplectus | californicus | California Bulrush | 31 | BAY | Perennial | Hydroseed | Alameda |
| Slough-edge Terrace: Non-irrigated | | | | | | | |
| Deschampsia | cespitosa ssp. Holciformis | Pacific Hairgrass | 22 | BAY | Grass | Hydroseed | Monterey |
| Hordeum | brachyantherum | Salt Meadow Barley | 26 | BAY | Grass | Hydroseed | Napa / Sonoma |
| Bay Winds Park: Synthetic Turf | | | | | | | |
| LEGEND | | | | | | | |
| BCDC = Shoreline Plants - A Landscape Guide for the San Francisco Bay, published by the San Francisco Bay Conservation and Development Commission, March 2007 | | | | | | | |
| PCS = Pacific Coast Seed, Livermore CA: seed suppliers for Northern California | | | | | | | |
| DW = Driveway, Santa Rosa CA: manufacturers of time released watering gel packs | | | | | | | |
| * Planting method to be finalized after further discussions with native grass specialists, parks and rec staff, and seed / plant suppliers | | | | | | | |
| ** Seed sources, seed availability, and seed viability vary from year to year | | | | | | | |

Signage and Amenities



- Information Kiosk
- Bench & wheelchair pad
- Pet litter station
- Trash & recycling bin
- Bike rack for 2 bikes
- Informational signs



Access Points and Amenities



- Forty-nine improved access points:
 - Nine from Trail to Bay
 - Forty from street level to Trail
- Public access will be ADA-compliant:
 - Ramps; and/or
 - Stairs with handrail

Legend

| | |
|--|---------------------|
| | ADA Accessible Ramp |
| | Stairs |
| | Bench |
| | Bike Rack |
| | Pet Litter Station |
| | Picnic Table |
| | Trash Recpticle |
| | Boat Access Ramp |
| | Public Parking |
| | Trail Access Point |
| | Bay Access Point |

Access Points and Amenities



Access Points and Amenities



Access Points and Amenities



Access Points and Amenities



Access Points and Amenities



Next Step

Planning Commission comments and feedback will be relayed to City Council, who will provide direction regarding final levee design features.





LEVEE PROTECTION PLANNING AND IMPROVEMENTS PROJECT

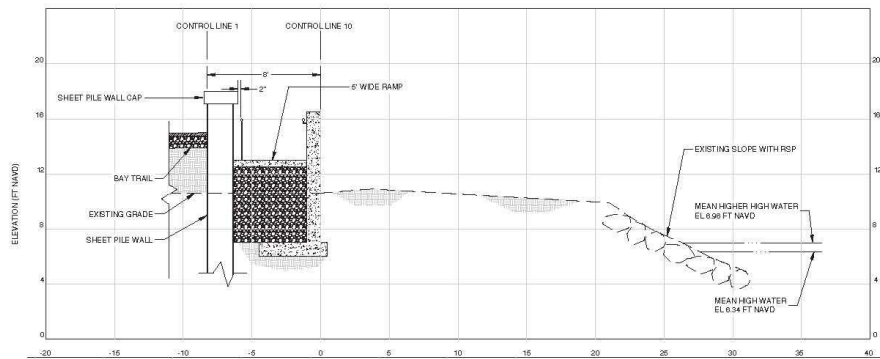
Improving Today and Preparing for Tomorrow

Foster City Planning Commission Meeting
May 3, 2018



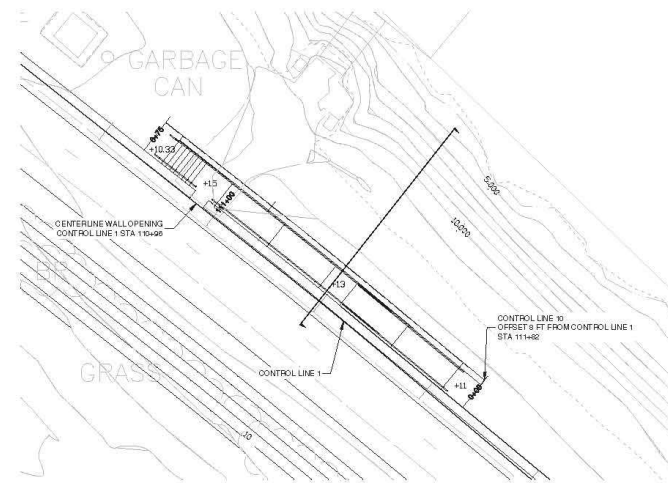
Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS





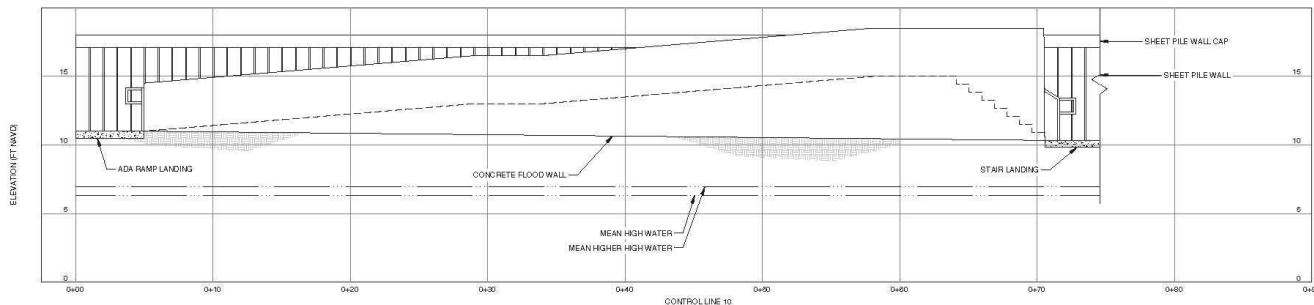
CROSS SECTION

OFFSET AT CONTROL LINE 10 STA 0+32
HOR SCALE: 1" = 4'
VERT SCALE: 1" = 4'



PLAN

SCALE: 1" = 10'



PROFILE

HOR SCALE: 1" = 4'
VERT SCALE: 1" = 4'

BAY ACCESS

CONTROL LINE 1 STA 111+82

SCALE VERIFICATION

THE BAR BELOW IS 1" ON THE ORIGINAL DRAWING. IF THIS DRAWING SCALES OTHERWISE, ADJUST THE SCALE ACCORDINGLY.

0 1"

DATE: 08/10/2012
SCALE: AS SHOWN
DRAWN BY: MER
DESIGNED BY: MER
CHECKED BY: CDS
SURVEYED BY: _____
APPROVED: _____
JEFF C. MONEDA, PUBLIC WORKS DIRECTOR/CITY ENGINEER
CITY OF FOSTER CITY
DATE: 12/13/2016
R.O.C. # 60444
EXPIRES

| NO. | BY | DATE | REVISIONS |
|-----|----|------|-----------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |



CITY OF FOSTER CITY
PUBLIC WORKS DEPARTMENT
610 FOSTER CITY BOULEVARD, FOSTER CITY, CA 94404
PHONE (415) 898-3870 FAX (415) 845-4603



Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS
1171 HOMESTEAD ROAD, STE 255
SANTA CLARA, CA 95050
(408) 246-4846

FOSTER CITY LEVEE IMPROVEMENTS
CIP 301-657
ACCESS POINT DETAILS
STA 111+82

SHEET XXX OF XXX
PROJ. NUMBER
FOST.12.16

60% PROGRESS SET - NOT FOR CONSTRUCTION