



Millbrae and Burlingame Shoreline Resilience Project

Fall 2024 Update

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Agenda

Introduction to OneShoreline

**Project Area, Need,
Objectives, and Constraints**

Project Progress to Date

Updated Draft Alternatives

Updated Draft Criteria

Next Steps

Introduction to OneShoreline

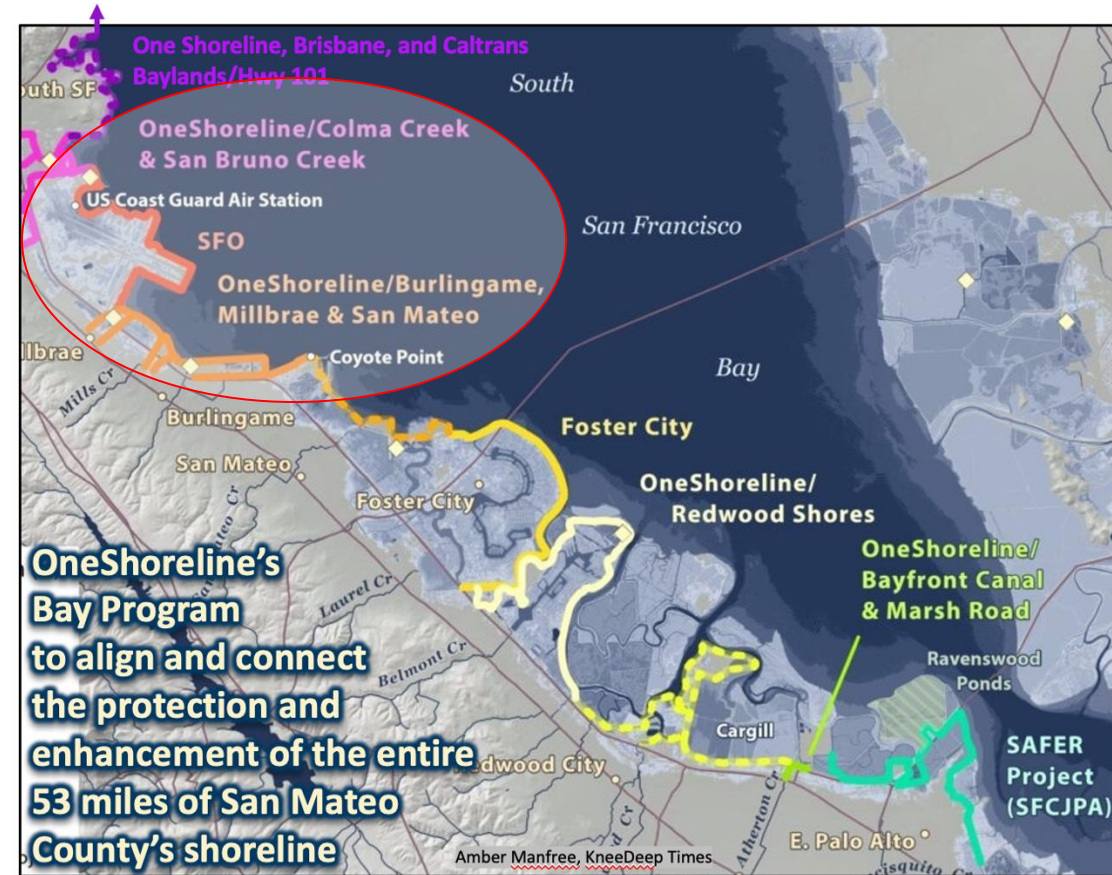


You can learn more about OneShoreline and its other projects on our website: [OneShoreline.org](https://www.oneshoreline.org)

- San Mateo County has more people and property threatened by sea level rise than any other CA county
- State law established the San Mateo County Flood & Sea Level Rise Resiliency District (OneShoreline) on January 1, 2020 as the first government agency to plan and build regional resilience to the water-related impacts of climate change: flooding, sea level rise, groundwater rise, coastal erosion, and drought

2024-25 Priorities

- Plan land use, private development, and public infrastructure for future climate-driven conditions and with regional resilience efforts
- Advance projects that align long-term resilience for developed, natural, and recreational areas across jurisdictions
- Provide early warning of, and reduce the impacts of, today's extreme storms made worse by rising tides
- Develop ongoing local funding streams to sustain these efforts long-term and leverage outside funding



OneShoreline and the Project Area

The Big Picture around SFO



Flood Protection Benefits of the Millbrae and Burlingame Shoreline Resilience Project to Landing Lane and other city streets



MBSRP will protect Millbrae's shoreline area against higher Bay water levels from storm surge, waves, and sea level rise.

MBSRP keeps higher Bay water levels out of creeks and canals, and enables these channels to drain efficiently to the Bay. As a result, MBSRP will help drain areas that empty into these channels, including Landing Lane.

Project Area



Project Need, Objectives, and Constraints

**Current FEMA
100-year
floodplain**



You can view this data directly on
OneShoreline's [Map of Future Conditions](#)

Project Need, Objectives, and Constraints

**Current FEMA
100-year
floodplain
+ Sea Level Rise**



**Estimated value of
properties impacted:
\$2.4 billion**

SEA LEVEL RISE
ADAPTATION
ASSESSMENT

City of Millbrae, CA

Supported by Climate Ready SMC,
an initiative of the County of
San Mateo Office of Sustainability

CLIMATE
READY
SAN MATEO COUNTY

MILLBRAE

Sea Change Burlingame
Proposed Sea Level Rise Adaptation Strategies
Update to City Council

December 2nd, 2019



You can view this data directly on
OneShoreline's [Map of Future Conditions](#)

Project Need, Objectives, and Constraints

**Current FEMA
100-year
floodplain**

+ Sea Level Rise

**+ Shallow
Groundwater Rise**



You can view this data directly on
OneShoreline's [Map of Future Conditions](#)

Project Need, Objectives, and Constraints

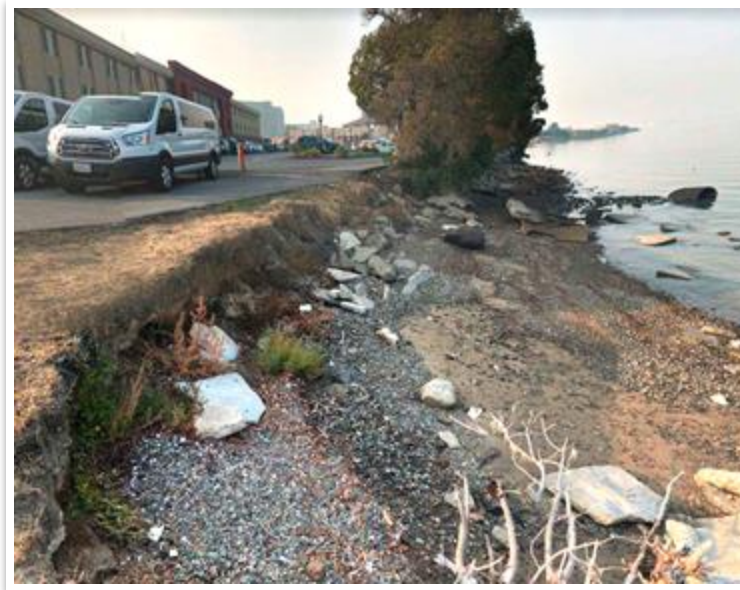
Overall Project Goal: Long-term climate resilience against sea level rise and extreme storms for developed, natural, and public access areas

Coastal Flood Protection



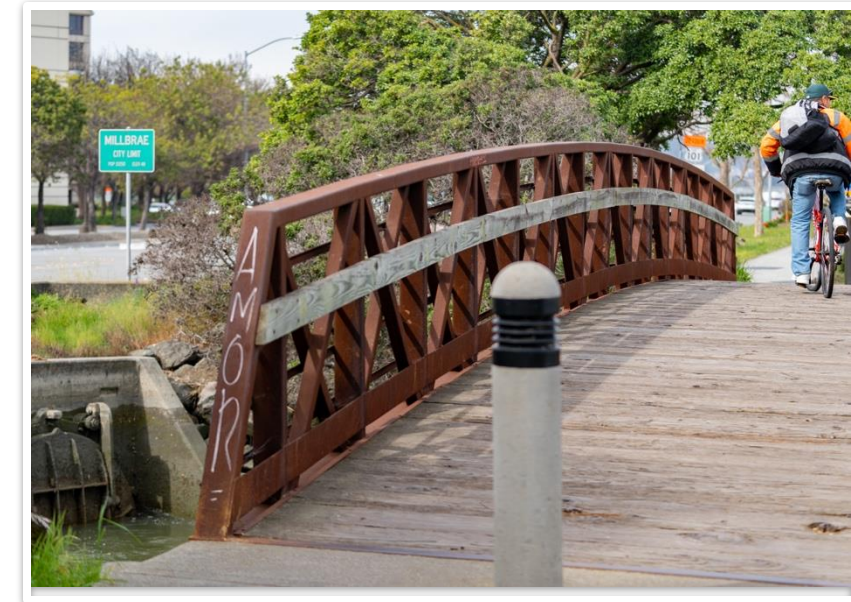
Protect shoreline area against current and future hazards

Functioning Habitat



Facilitate healthy and sustainable ecosystems

Public Access + Recreation



Enhance the shoreline area experience today and in the future



You can find more details on project background, need, objectives, and constraints on our project website: oneshoreline.org/MBSRP

Project Need, Objectives, and Constraints

- Area is heavily urbanized
- Six creeks and/or lagoons
- FEMA accreditation
- Don't attract flying birds

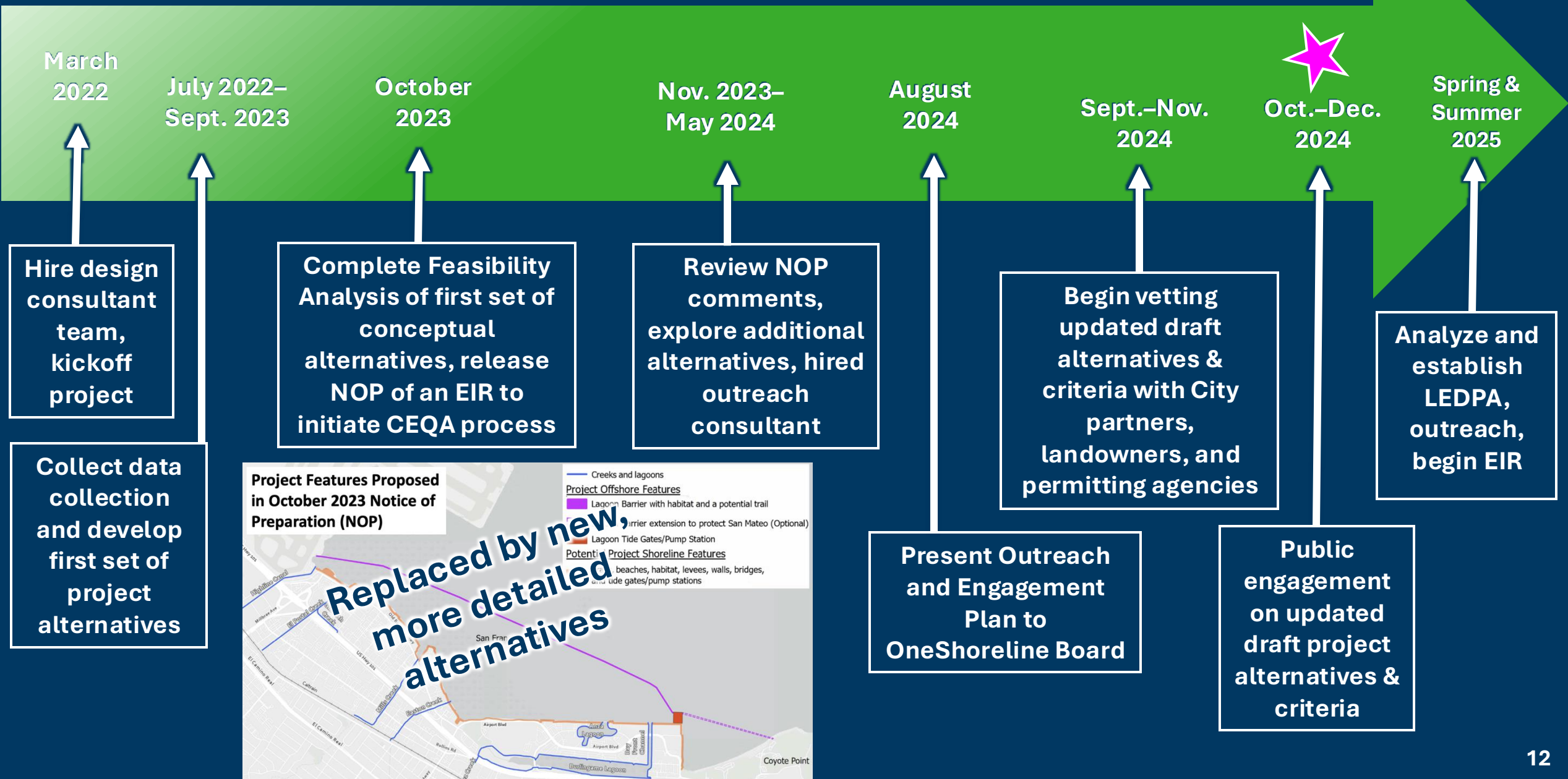
Existing and recently permitted developments along water reduce opportunities to incorporate nature into shoreline and creek resilience projects.



Legend

- Shoreline Barrier Back Boundary
- Area Available For Shoreline Barrier Outside The Bay Water
- BCDC Bay Jurisdiction

Project Progress to Date



What we heard in many NOP comments

- A large offshore lagoon can impact water quality, including changing circulation, increasing pollutants, turbidity, temperature, and salinity, and increasing the risk of algal blooms.
- A large offshore lagoon can impact specific bird, plant, and aquatic species and their habitats. Nature-based solutions are a top priority.
- A large offshore lagoon could attract wildlife, including birds of concern to SFO.
- A large offshore lagoon, particularly one that extends to Coyote Point, limits wind sport access.
- A large offshore lagoon would impact views, habitat, and the overall public experience of the Bay at Millbrae's Bayfront Park.

How we responded to these comments

- OneShoreline does not plan to carry the large offshore lagoon alternative forward for further analysis. Updated draft alternatives include shoreline features and a nearshore waterway.
- Early modeling indicates a smaller nearshore footprint results in maximum tidal exchange. Further studies on water quality impacts will be completed with a more detailed design.
- Features that incorporate natural infrastructure and minimize attracting high-flying birds are incorporated into all draft alternatives.
- Updated draft alternatives no longer include an optional extension to Coyote Point.
- Two alternatives (A & B) were developed to have little visual impact and enhance public access along Millbrae's shoreline.

Our vision is this

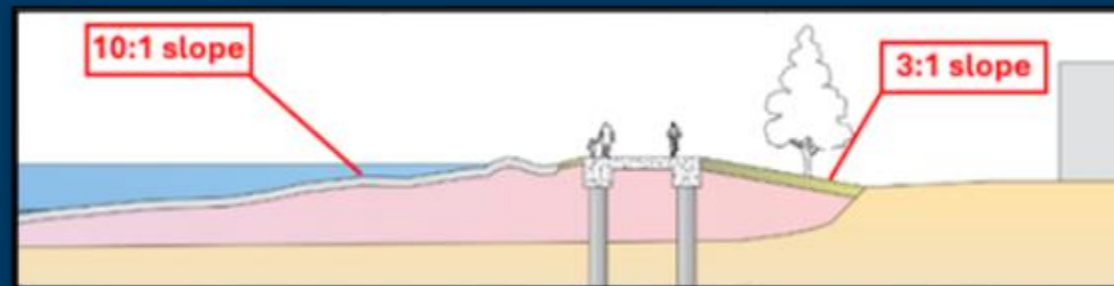


Rather than this



A gradually-sloped living shoreline provides two key benefits:

- Shoreline elevations can be lower
- Less abrupt transition from land to Bay for people and wildlife





SFO

**Highline
Canal**

**El Portal
Creek**

**Mills
Creek**

**Easton
Creek**

**Burlingame
Lagoon**

**Anza
Lagoon**

**The difference between the
3 draft alternatives lies in
this area of the project**

S McDonnell Rd

Millbrae Ave

Old Bayshore Hwy

Adrian Rd

Rollins Rd

Bayshore Hwy

North Burlingame-
Rollins Road

Davis Dr

Ray Dr

Airport Blvd

Airport Blvd

Burlingame
Gardens

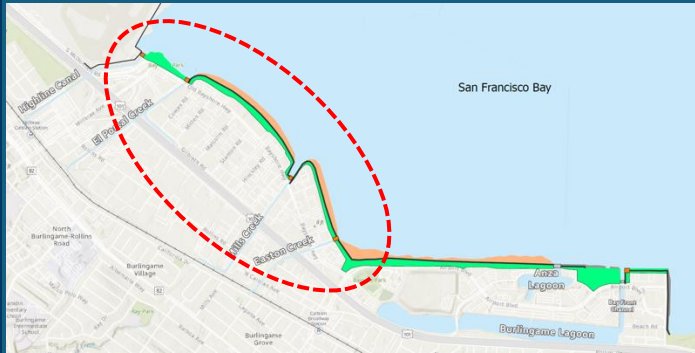
Rollins Rd

Updated Draft Alternatives

OneShoreline does not have a preferred alternative at this time. Feedback this fall will directly inform changes to these draft alternatives and the process to ultimately identify a preferred alternative.

A

Remain on Shoreline



Coastal Flood Protection

Manage creek water at each creek mouth (5 pump stations)



Habitat Functionality

Living shoreline

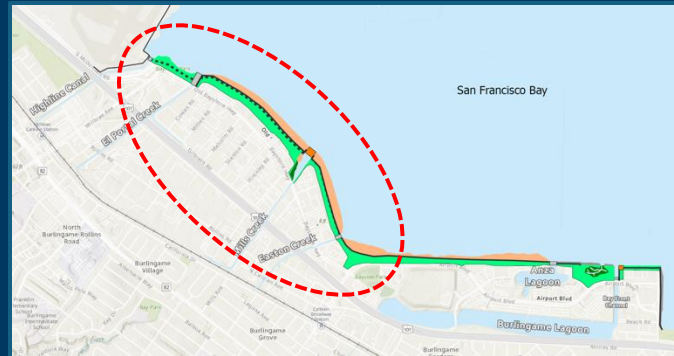


Public Access + Recreation

Bay Trail improvements, 2 new or improved shoreline parks

B

Park Tunnels



Coastal Flood Protection

Manage creek water through tunnels (2 pump stations)



Habitat Functionality

Living shoreline

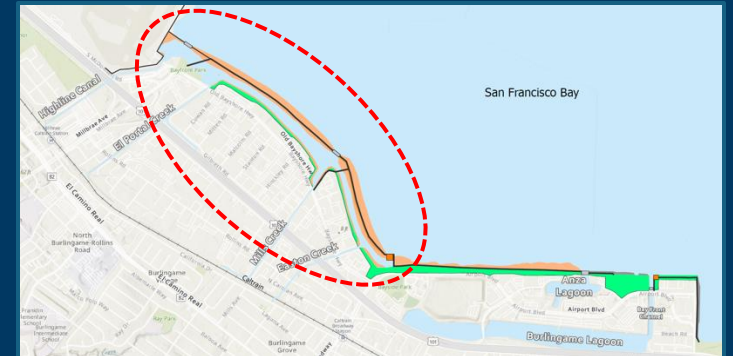


Public Access + Recreation

Bay Trail improvements, 3 new or improved shoreline parks

C

Nearshore Waterway



Coastal Flood Protection

Manage creek water through waterway (2 pump stations)



Habitat Functionality







Living shoreline & fish passage

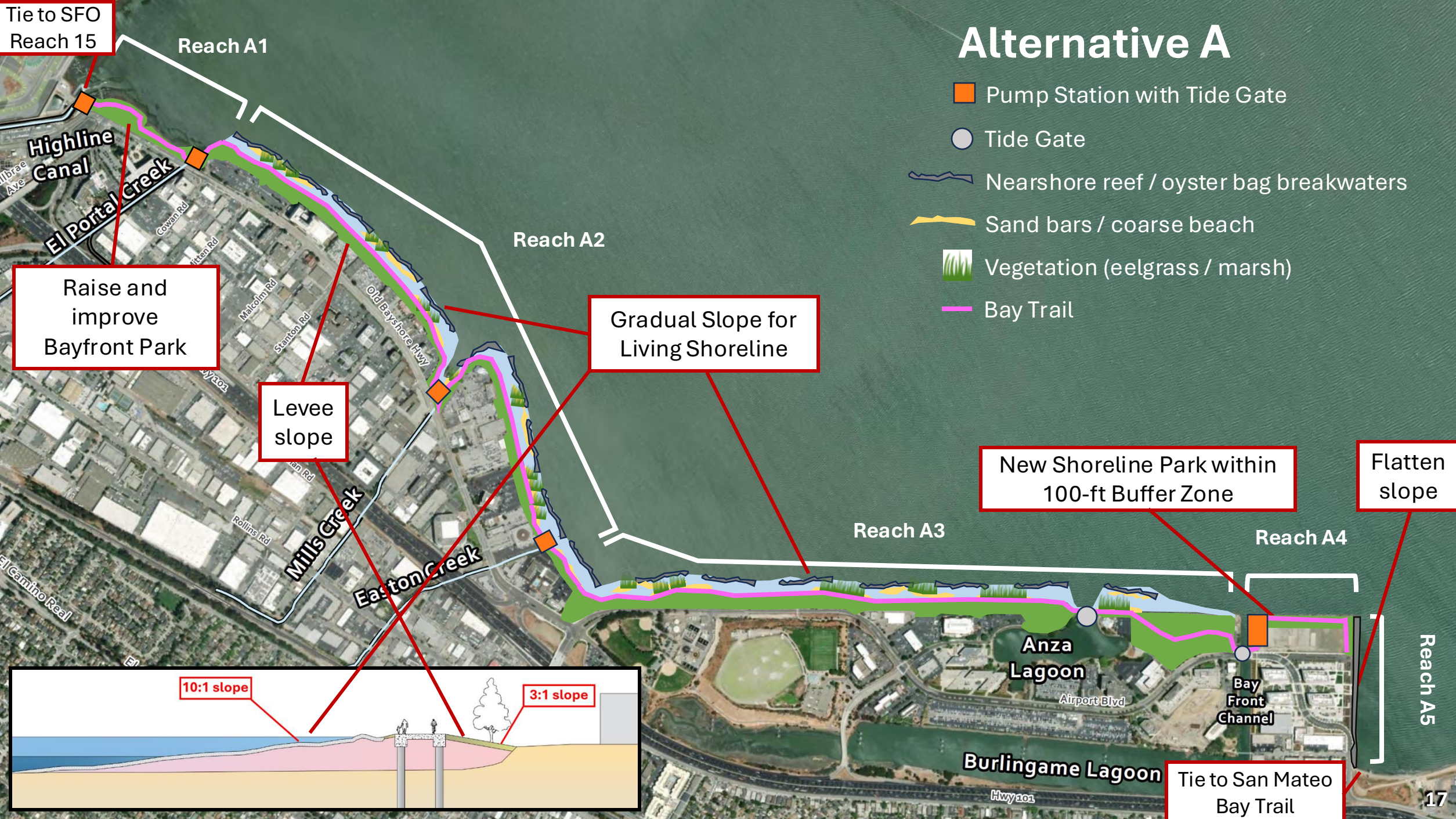


Public Access + Recreation

Bay Trail improvements, new Bay Trail, 1 new shoreline park

Alternative A

-  Pump Station with Tide Gate
-  Tide Gate
-  Nearshore reef / oyster bag breakwaters
-  Sand bars / coarse beach
-  Vegetation (eelgrass / marsh)
-  Bay Trail



Tie to SFO Reach 15

Reach A1

Highline Canal
El Portal Creek

Raise and improve Bayfront Park

Levee slope

Reach A2

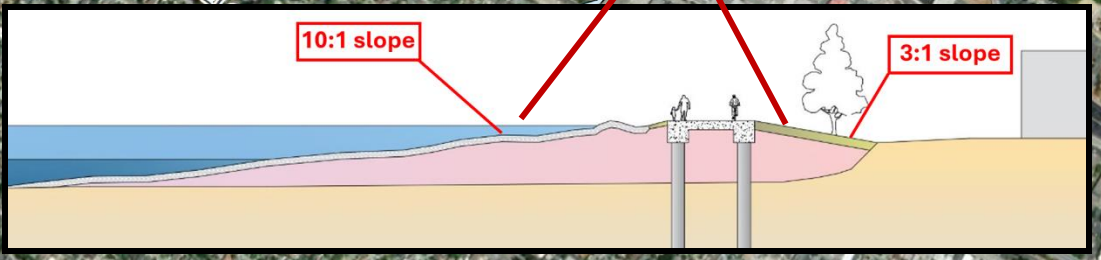
Gradual Slope for Living Shoreline

Reach A3

New Shoreline Park within 100-ft Buffer Zone

Reach A4

Flatten slope



Anza Lagoon

Bay Front Channel

Burlingame Lagoon

Tie to San Mateo Bay Trail

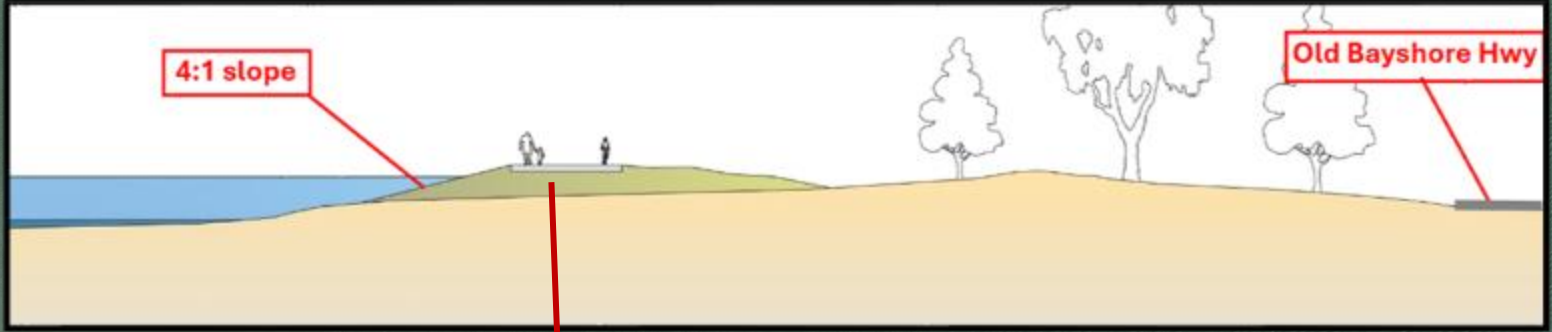
Reach A5

Alternative A | Reach 1

-  Pump Station
-  Bay Trail

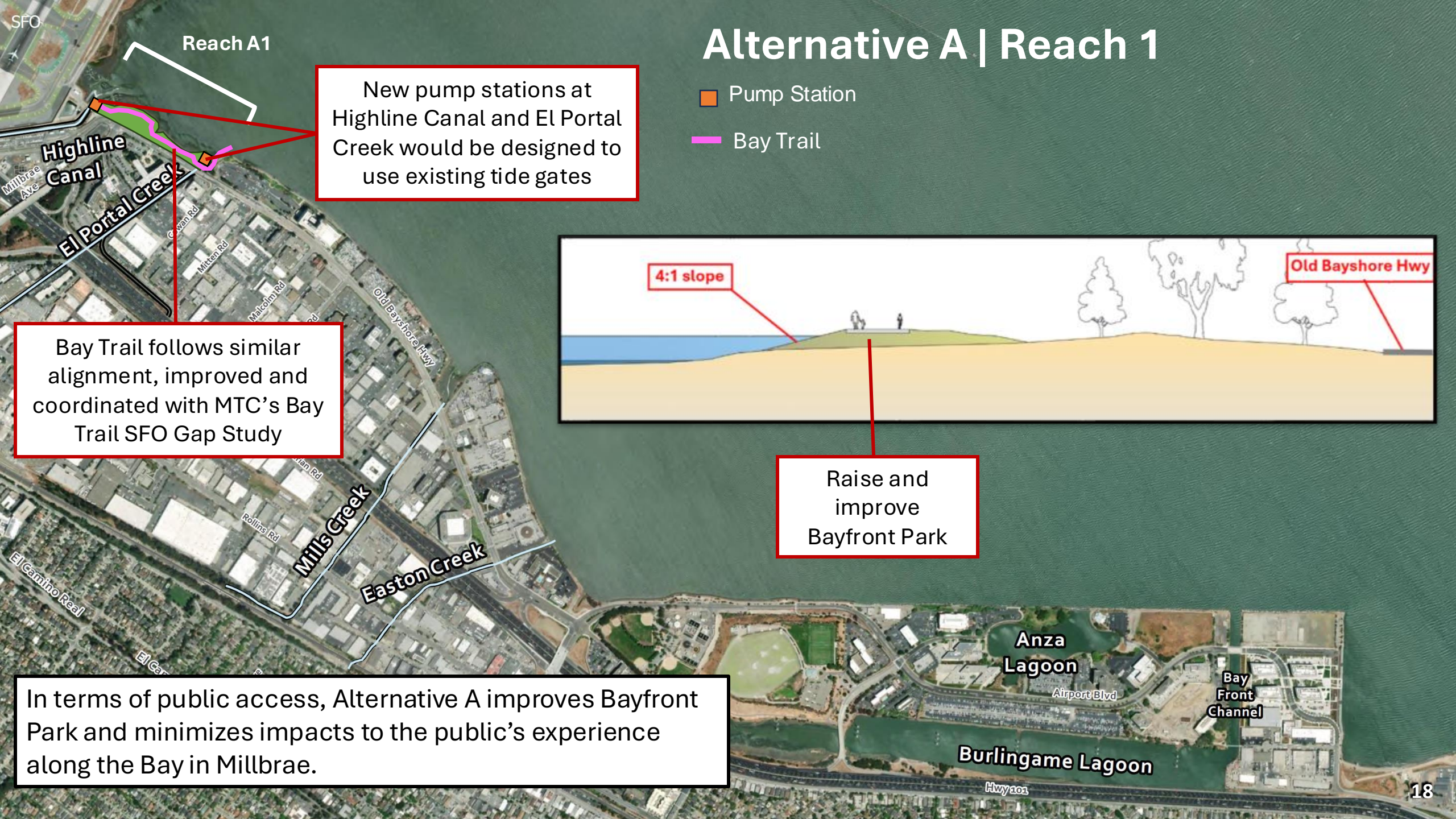
New pump stations at Highline Canal and El Portal Creek would be designed to use existing tide gates

Bay Trail follows similar alignment, improved and coordinated with MTC's Bay Trail SFO Gap Study



Raise and improve Bayfront Park

In terms of public access, Alternative A improves Bayfront Park and minimizes impacts to the public's experience along the Bay in Millbrae.



Alternative B

- Pump Station with Tide Gate
- Tide Gate
- Nearshore reef / oyster bag breakwaters
- Sand bars / coarse beach
- Vegetation (eelgrass / marsh)
- Underground Tunnel (Bypass)
- Structure to Divert Water from Creek
- Bay Trail



Tie to SFO Reach 15

Reach B1

Reach B2

Reach B3

Reach B4

Reach B5

Raise, improve, and extend Bayfront Park

Build a tunnel under a linear park

Gradual Slope for Living Shoreline

New Shoreline Park within 100-ft Buffer Zone

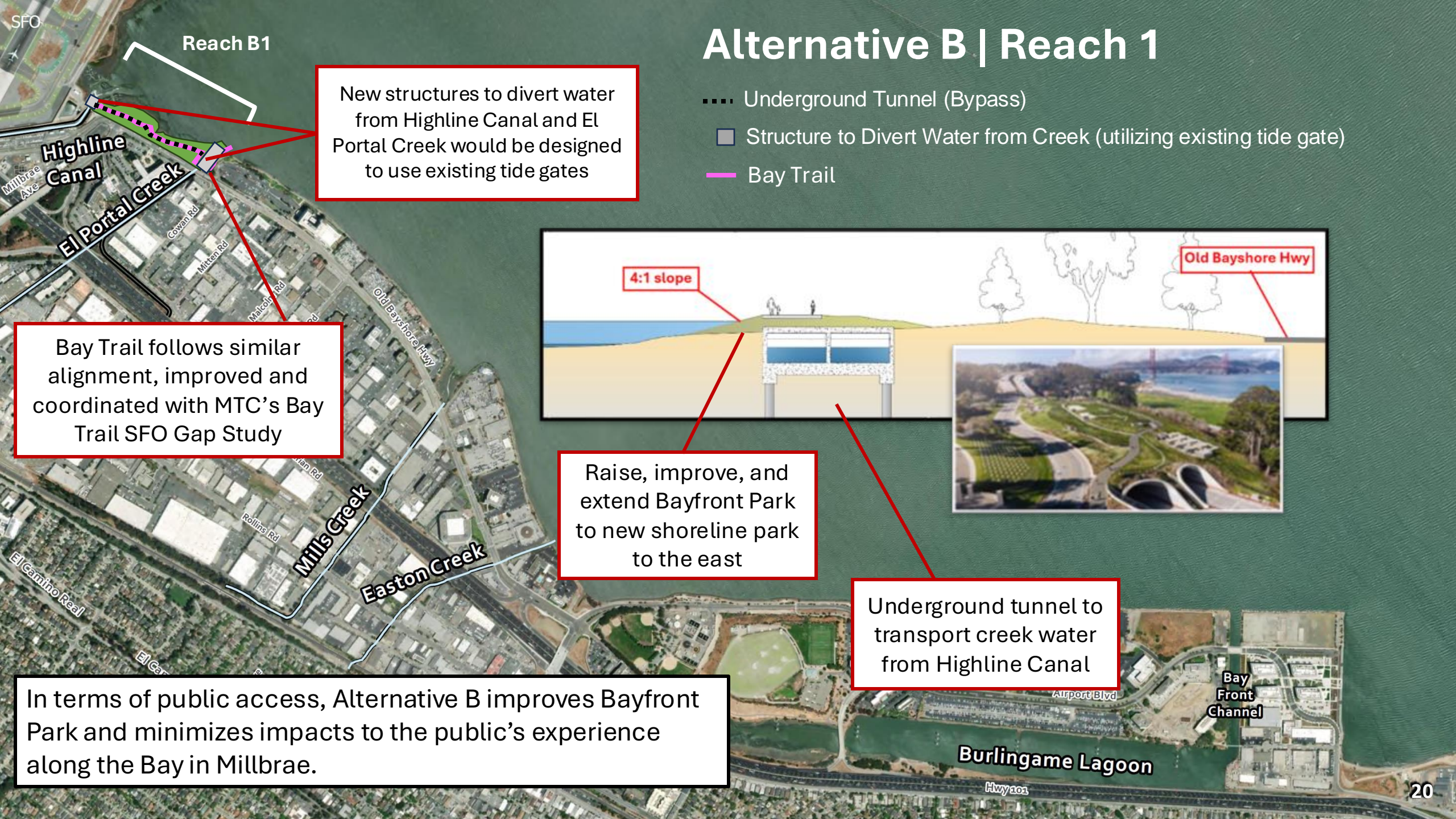
Flatten slope

10:1 slope

Underground tunnels transport creek water from creeks

Tie to San Mateo Bay Trail

Alternative B | Reach 1

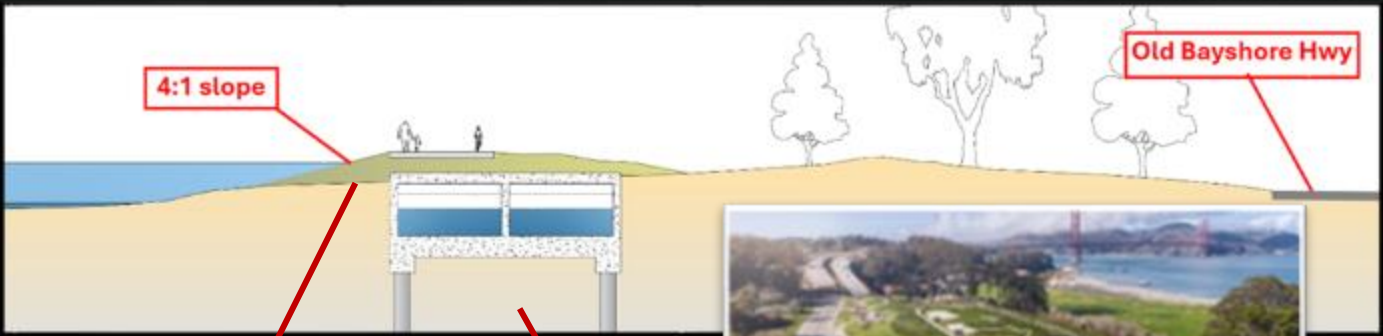


Reach B1

New structures to divert water from Highline Canal and El Portal Creek would be designed to use existing tide gates

- Underground Tunnel (Bypass)
- Structure to Divert Water from Creek (utilizing existing tide gate)
- Bay Trail

Bay Trail follows similar alignment, improved and coordinated with MTC's Bay Trail SFO Gap Study









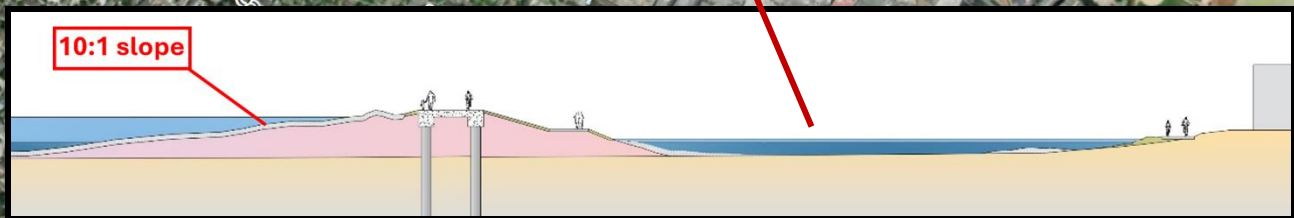
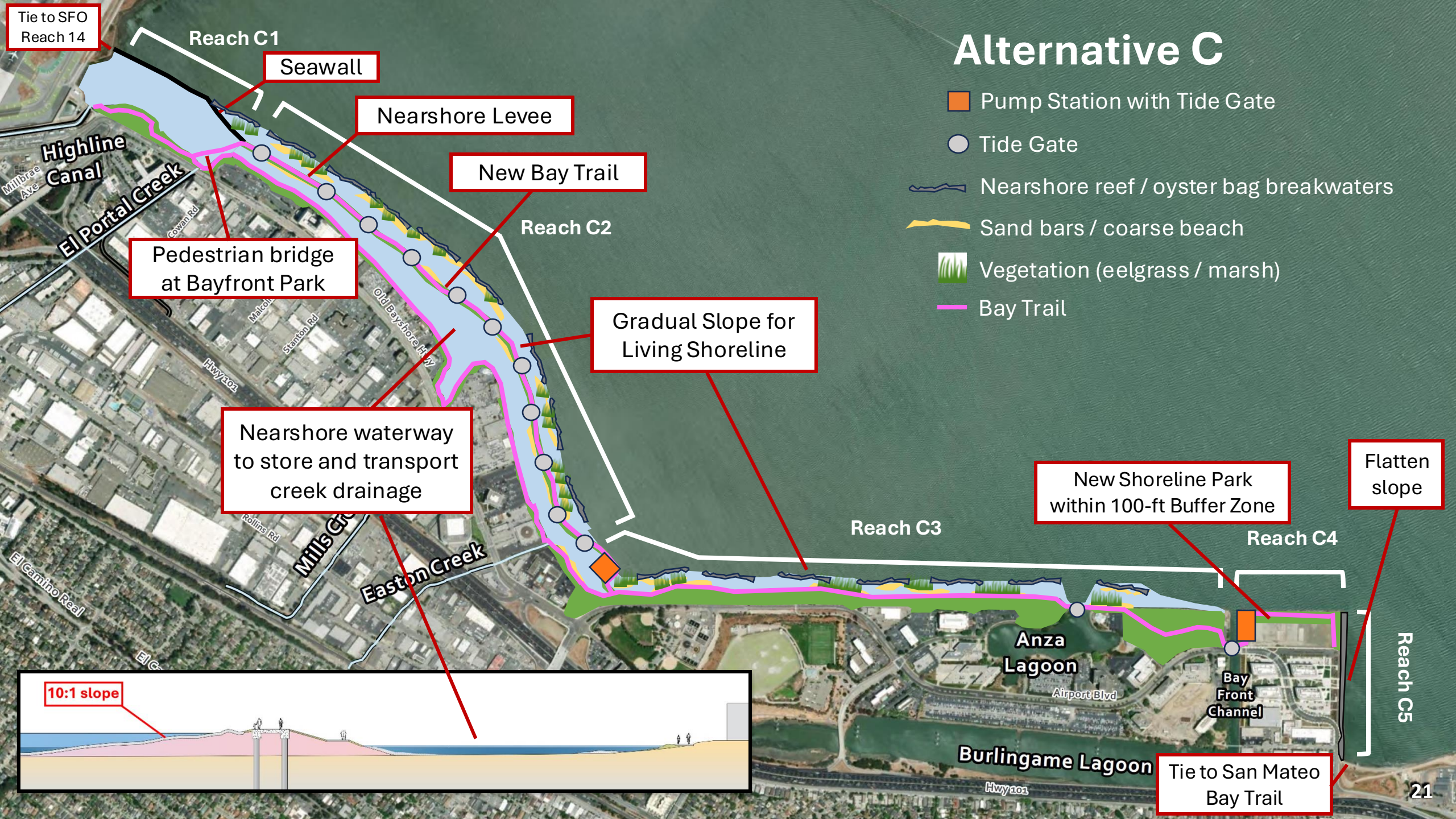
Raise, improve, and extend Bayfront Park to new shoreline park to the east

Underground tunnel to transport creek water from Highline Canal

In terms of public access, Alternative B improves Bayfront Park and minimizes impacts to the public's experience along the Bay in Millbrae.

Alternative C

-  Pump Station with Tide Gate
-  Tide Gate
-  Nearshore reef / oyster bag breakwaters
-  Sand bars / coarse beach
-  Vegetation (eelgrass / marsh)
-  Bay Trail



Alternative C | Reach 1

- Seawall
- Bay Trail
- Pump Station with Tide Gate
- Tide Gate
- Nearshore reef / oyster bag breakwaters
- Sand bars / coarse beach
- Vegetation (eelgrass / marsh)

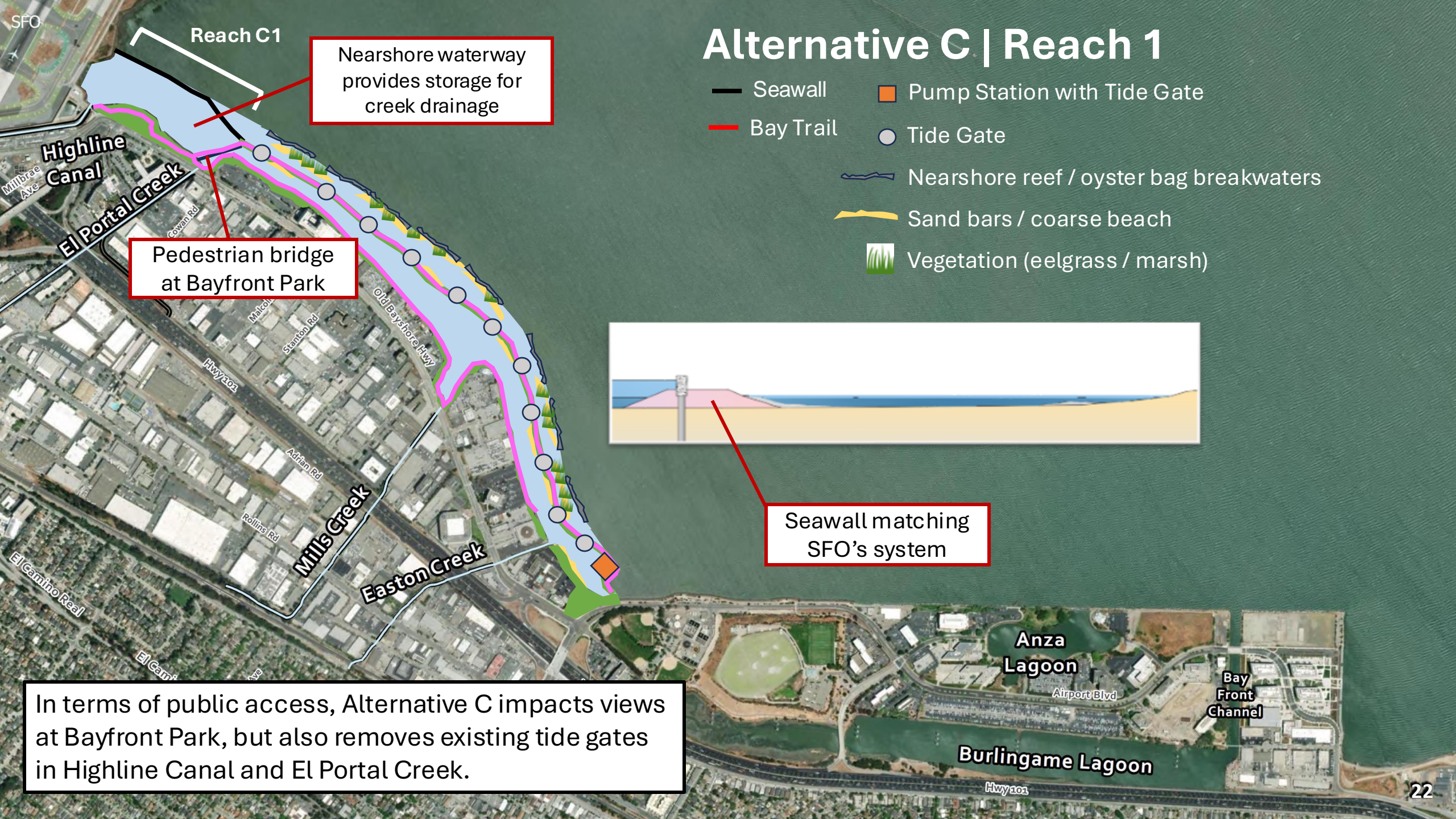
Nearshore waterway provides storage for creek drainage

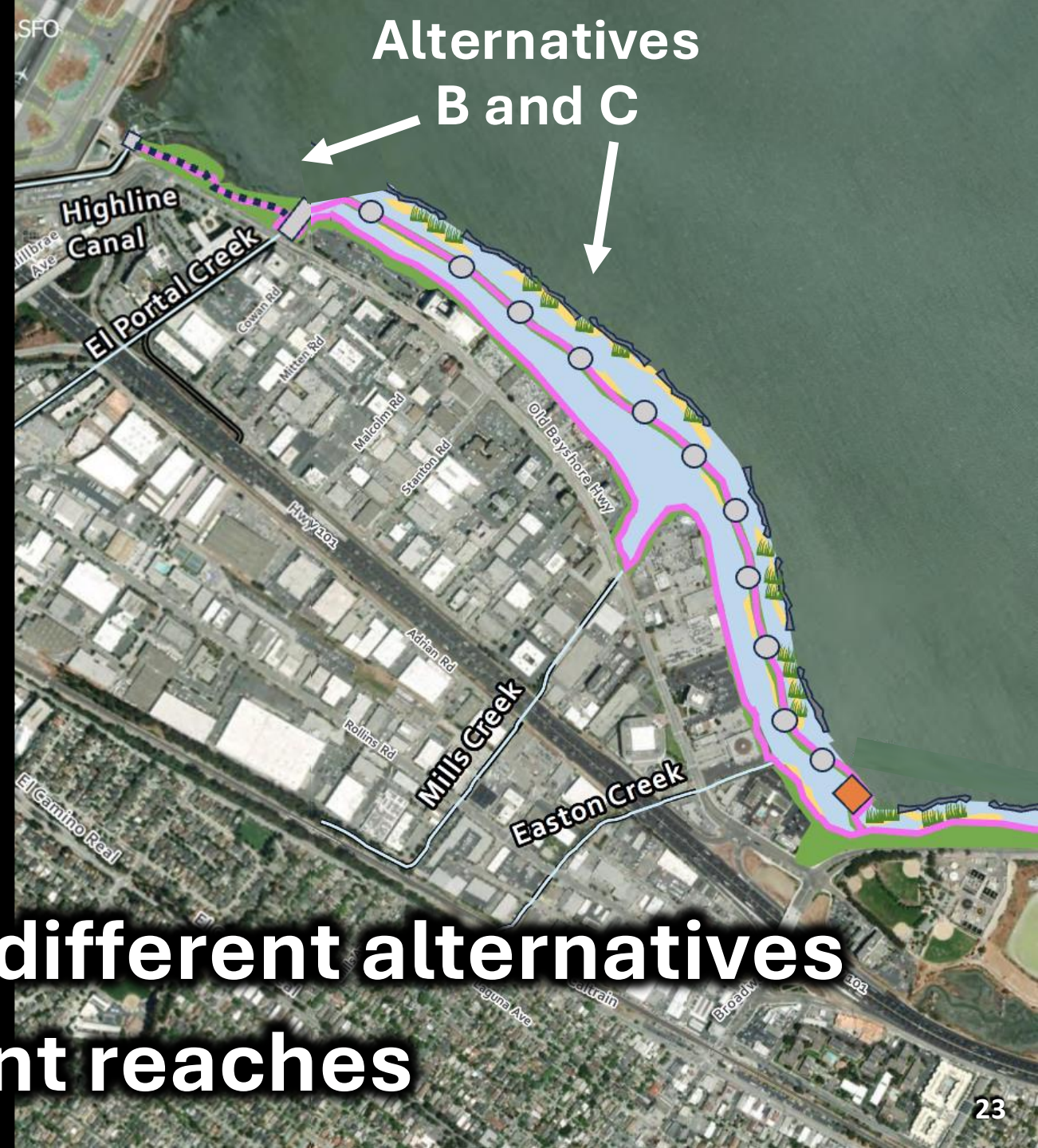
Pedestrian bridge at Bayfront Park



Seawall matching SFO's system

In terms of public access, Alternative C impacts views at Bayfront Park, but also removes existing tide gates in Highline Canal and El Portal Creek.





It is possible to use different alternatives in different reaches

To select a preferred project alternative, we propose the following criteria:

Flood Protection

Does the alternative provide the required coastal flood protection benefits? Does it allow for stormwater to drain? Does it increase or reduce flooding from groundwater rise?

Habitat

Does the alternative harm or benefit current and future species habitat? Does it impact water quality?

Public Access + Recreation

What does the alternative look like and how would one experience it? What benefits or impacts does the alternative have on the Bay Trail and Bay recreation?

Implementation

How will the alternative be implemented? Is it feasible to obtain the land rights and permits necessary to construct? What is the alternative's cost and schedule?

Operations & Maintenance

How will the alternative be operated and maintained? How will this change as sea levels rise and storms become more extreme?

SFO

Does the alternative increase the likelihood of bird strikes?

Next Steps



You can find event details and links to register on our project website: OneShoreline.org/MBSRP

Ongoing Vetting with city staff, permitting agencies, landowners

Oct. 28 Presentation to OneShoreline Board

Nov. 12 Presentation to Millbrae City Council

Nov. 16 Burlingame Community Workshop

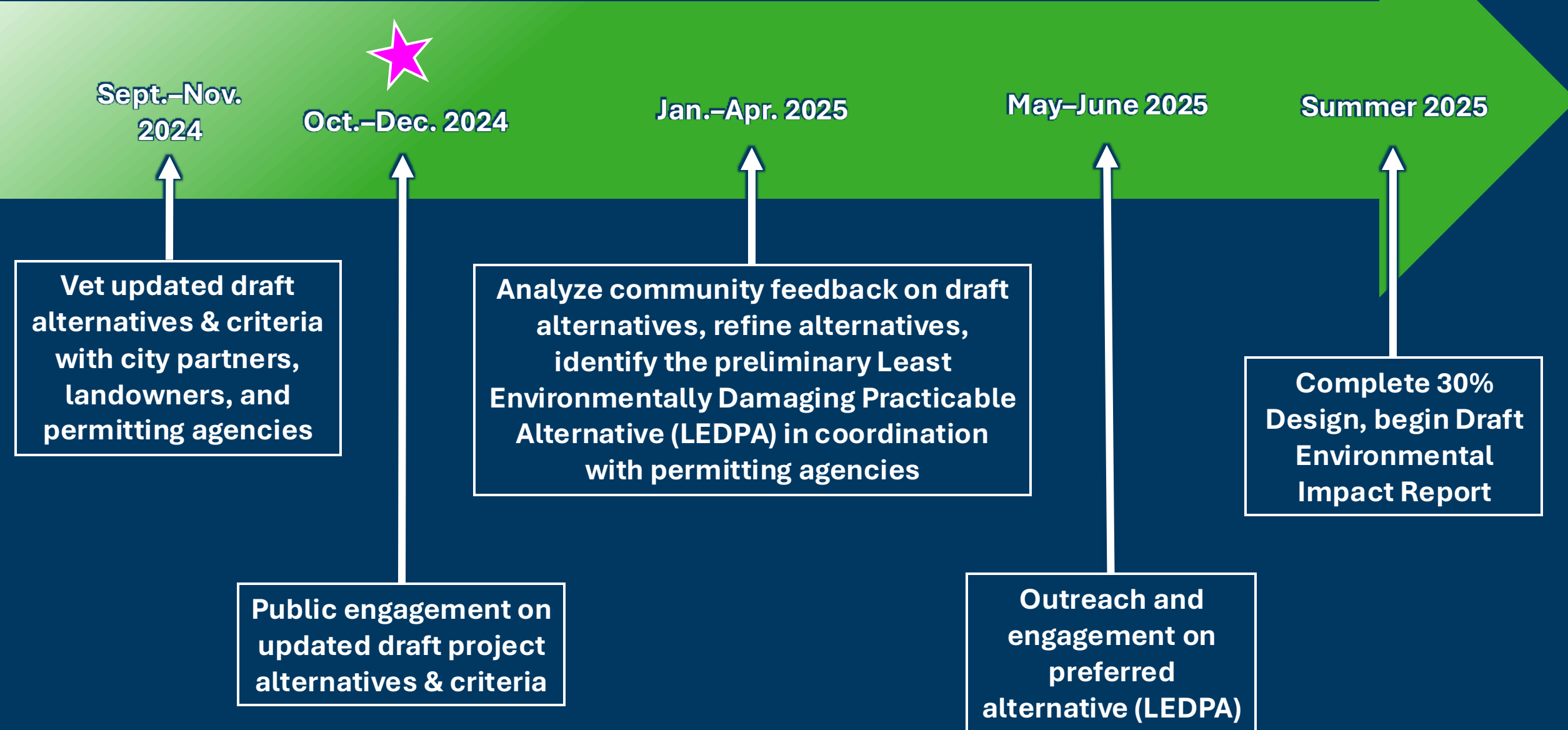
Nov. 17 Public shoreline walking tour

Nov. 18 Presentation to Burlingame City Council

Nov. 19 Millbrae Community Workshop ←

Dec. 4 Online Community Meeting (webinar)

Next Steps – anticipated schedule in 2025



Thank you



[OneShoreline.org/MBSRP](https://www.OnShoreline.org/MBSRP)



MBSRP@OneShoreline.org

Now, we want to hear from you!

Choose one of the following stations, move around as you like:

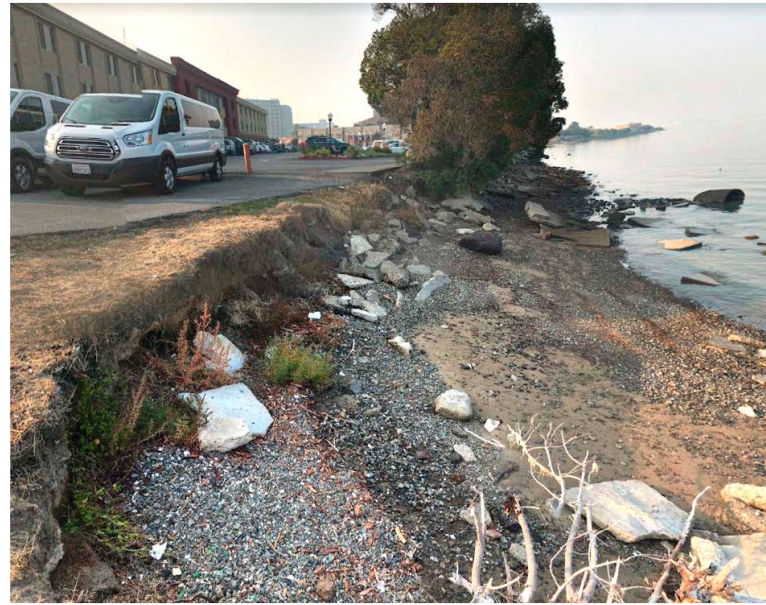
Coastal Flood Protection



Where are areas you are concerned about protecting?

What's good and what could be challenging about the alternatives in terms of coastal protection?

Habitat



Where are areas of habitat you are concerned about?

What's good and what could be challenging about the alternatives in terms of habitat?

Public Access + Recreation



Where do you currently go for recreation along the project area?

What's good and what could be challenging about the alternatives in terms of public access + recreation?