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Brisbane Lagoon Watershed Sea Level Rise Adaptation Plan

Sea Level Rise Subcommittee Update #2

March 30, 2026

Agenda

- Project Overview and Background Refresher
- Partners
- Community Outreach
- Hydrology & Hydraulic Summary
- Approaches and Measures
- Proposed Alternatives
- Draft Evaluation and Input
- Questions



Project Overview

The goal of the project is to develop and adopt a Brisbane Lagoon Watershed Sea Level Rise Adaptation Plan (Plan).


The Plan will identify solutions that:

- Protect Brisbane residents and Highway 101 from flooding impacts related to climate change
- Enhance lagoon resilience to sea level rise, while supporting natural systems
- Improve ecological function and habitat continuity
- Explore opportunities to improve existing public access




Project Linkage to Oneshoreline

ONESHORELINE & THE CITY OF BRISBANE
BRISBANE LIVING SHORELINE PROJECT - PHASE 1



OVERVIEW

The Brisbane Living Shoreline Project is a phased, multi-benefit effort to **restore at least 100 acres of eelgrass and 50 acres of oyster habitat elements along the Brisbane shoreline**. Phase 1—the focus of OneShoreline’s Measure AA proposal submitted in October 2025—includes baseline data collection, living shoreline design, and community engagement.



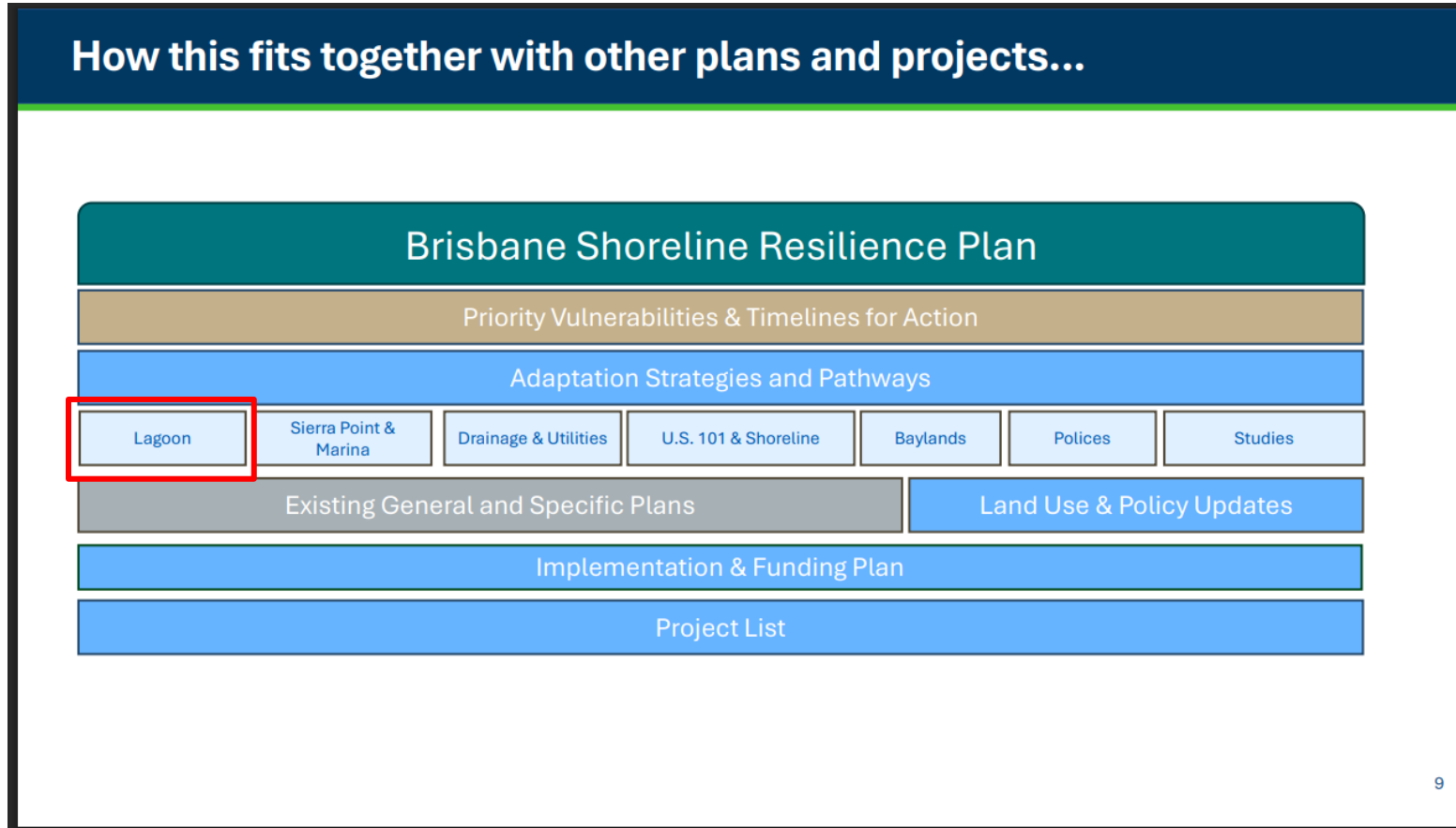
PROJECT CONTEXT

Today, the Brisbane shoreline currently lacks eelgrass and has only limited oyster settlement. According to the San Francisco Estuary Institute (SFEI), the Brisbane shoreline is the only stretch of the Bay shoreline suitable for eelgrass and oyster habitat restoration in

https://oneshoreline.org/wp-content/uploads/2025/12/BrisbaneLivingShoreline_2pager_20251218.pdf



Project Linkage to RSAP



\$750,000
California
Ocean
Protection
Grant

Project Advisory Committee

- Association of Ramaytush Ohlone
- Baylands Development Inc.
- BCDC
- California High Speed Rail Authority
- Caltrain – Peninsula Corridors Joint Powers Board
- Caltrans D4
- OneShoreline
- San Mateo County Department of Emergency Management
- Sierra Point Owners Association



Project Advisory Committee Role

- Provide feedback on planning process – PAC Meeting 1
- Review comments from the public – PAC Meeting 2
- Guide implementation of proposed activities – PAC Meeting 3
- PAC #3 Goal – provide input on three (3) alternatives and evaluation criteria for upcoming community meeting April 30th



Project Timeline



= Public Advisory Committee meeting

Brisbane SLR Subcommittee



Community Outreach

- Art contest online
- Through April
- \$50 gift cards
- Photo will likely be cover of report
- Community Meeting April 30th at library 5:30-7:30pm

Lagoon Plan Meeting @ the Library, April 30

ART CONTEST ENDS 4/15!

Call for art entries! In order to promote the Brisbane Lagoon Watershed Sea Level Rise Adaptation Plan (brisbaneca.gov/lagoonplan), we're hosting an art contest and want to see your art of the Lagoon! Entries are accepted now until April 15, 2026. Three winners will be selected, with each receiving a \$50 gift card to a local Brisbane business/eatery.

How to Enter:

- Create visual art of Brisbane Lagoon (photos, videos, paintings, collages, etc).
- Upload to Instagram on a public account or email entry to brisbanelagoon@thecivicedge.com.
- If under 21, please state that the entry is for the "Youth" category.
- Tag @cityofbrisbaneca and hashtag #BrisbaneLagoonArtContest.

Winners will be announced at our upcoming community meeting on Thursday, April 30!
RSVP: brisbanelagoon.eventbrite.com

What's the Brisbane Lagoon Watershed Sea Level Rise Adaption Plan?

This project will study Brisbane Lagoon's capacity to handle impacts from climate change, and will identify strategies to enhance shoreline resilience to sea level rise while supporting natural systems. Visit the project webpage to learn more at brisbaneca.gov/lagoonplan.



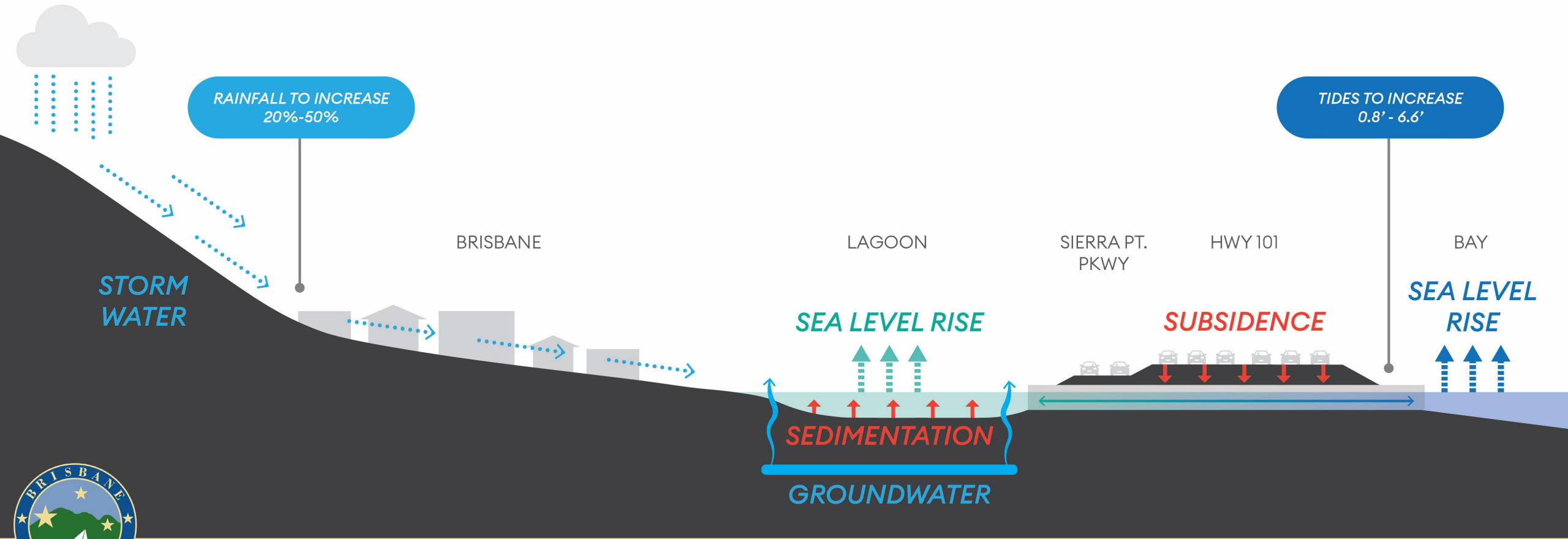
A vertical poster for a community meeting. At the top left is a yellow star and the text 'BRISBANE LAGOON'. At the top right is the Brisbane City of Stars logo, which is a circular seal with 'BRISBANE CITY OF STARS' and '1961' around a central image of a sailboat on water. The main title 'Community Meeting' is in large white font. Below it, the text reads 'Brisbane is preparing for future sea level rise and flooding'. A large yellow star contains the date and time: 'Thursday, April 30th 5:30 - 7:30 PM @ Brisbane Library 163 Visitacion Ave'. There are two small icons: a lightbulb for 'Learn about the Brisbane Lagoon Watershed Sea Level Rise Adaptation Plan' and a ballot box for 'Vote for winners of the Brisbane Lagoon Art Contest!'. At the bottom, it says 'Register to get reminders and save your spot!' with a QR code to the right. The background is dark blue with a white wave at the bottom.



Analysis Overview

Flood Hazards Analyzed

SAN BRUNO MOUNTAIN



Hydrologic and Hydraulic Results

Scenario	TIDES	>	STORMS
	10yr Storm, 100yr Tide Lagoon Peak Water Surface Elevation (ft, NAVD)		100yr Storm, 10yr Tide Lagoon Peak Water Surface Elevation (ft, NAVD)
Existing	10.0		8.9
2050	10.8		9.8
2100 LOW	13.2		12.1
2100 HIGH	Overtops Highway 101		Overtops Highway 101

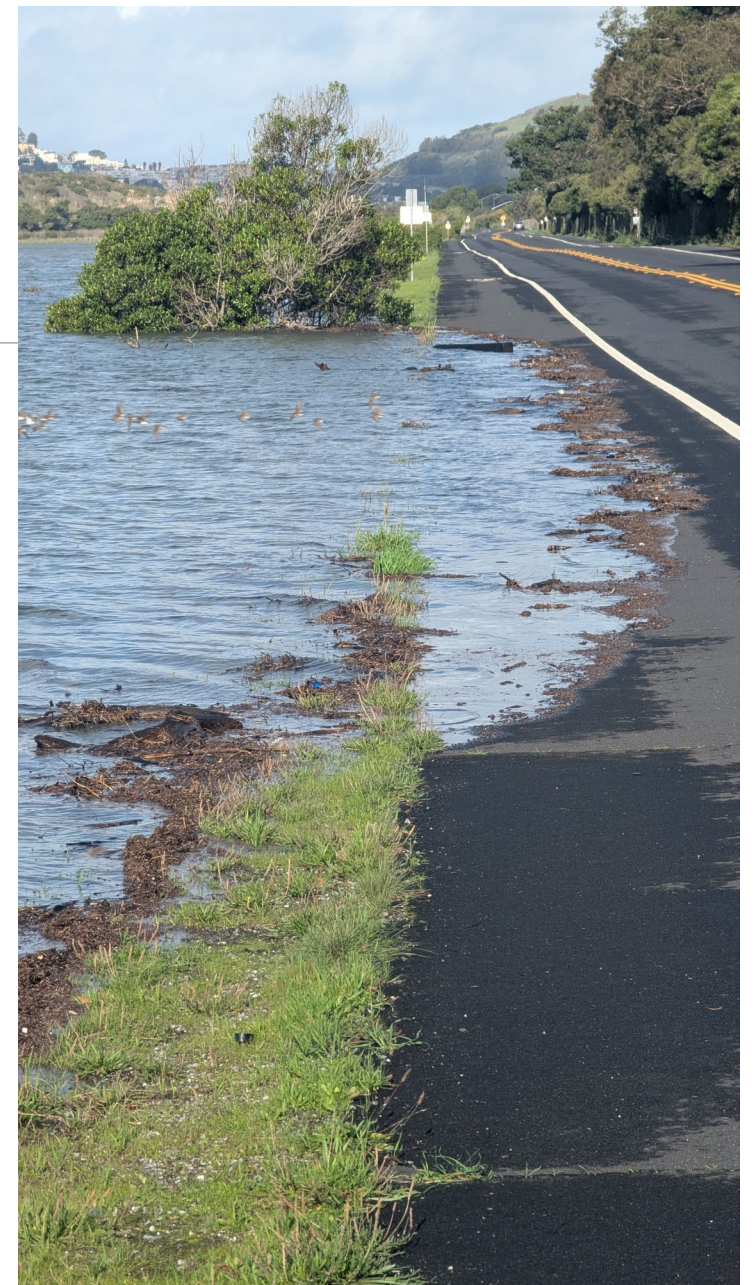




January 3rd 2026

- Existing condition roadway is underwater
- Jan 3rd was about 1-ft lower than 100-yr tide
- Increasing tides will get worse

Curtesy of Brisbane Resident Emmett



Marsh Under Water on December King Tide



Hydrologic and Hydraulic Summary

- Lagoon water surface is drive by the **tide**
- The twin culverts **have capacity** to drain out the lagoon
- The lagoon is not significantly overwhelmed by 100yr runoff
- The lagoon fills and drains **delayed** from tide about 1.5hr
- Mid Century - lagoon water surface elevation about 1-ft higher
- At around lagoon elevation 8.5-ft a portion of Sierra Point Parkway is **underwater**
- End of century, water is **overtopping** highway 101



Approaches

Adaptation Approaches

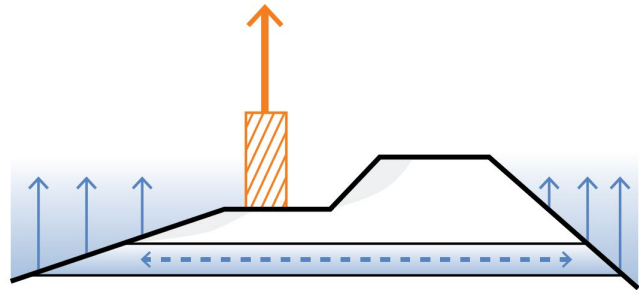
PROTECT

ACCOMMODATE

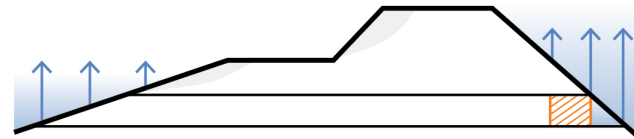
RETREAT

Primary Measures: Lagoon/Coastal Flooding

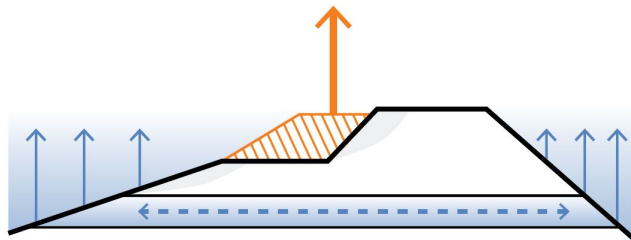
Protect: Raise Edge



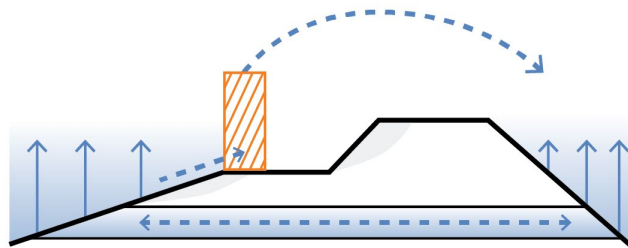
Protect: Tide Gate



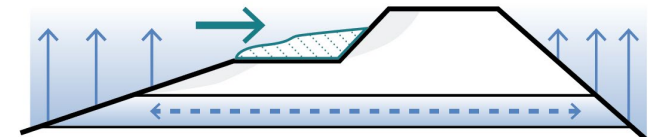
Accommodate: Raise Infrastructure (Roads/Rail)



Accommodate: Pump station



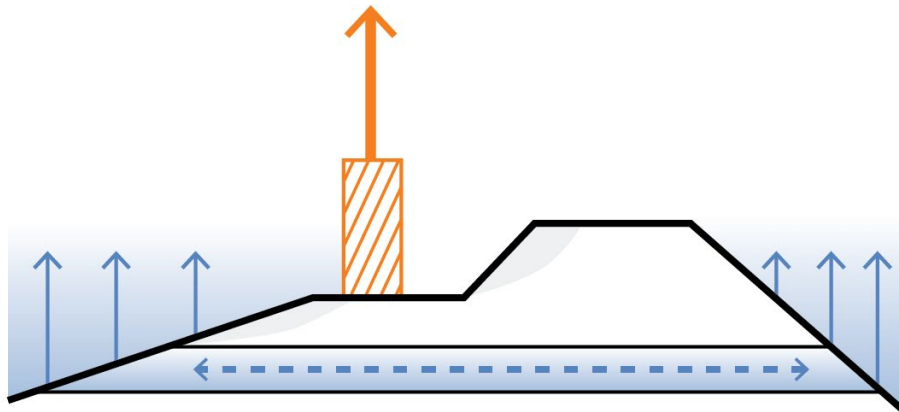
Retreat: Repurpose street/naturalize



Raise Edge: Flood Wall

Hazard: Lagoon/Coastal Flooding

Strategy: Raise Edge

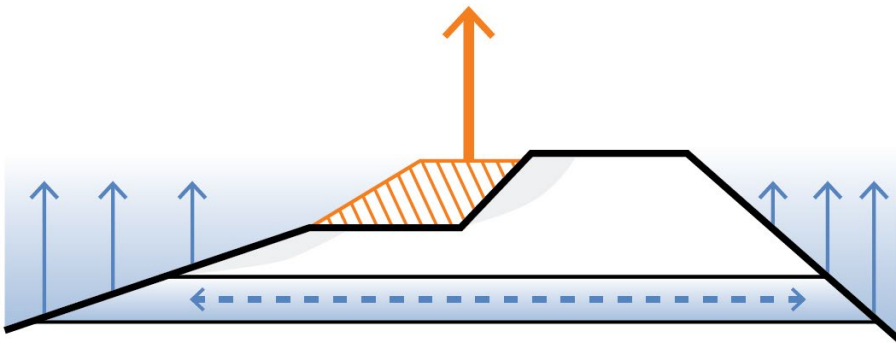


Vinyl Sheetpile at SFO

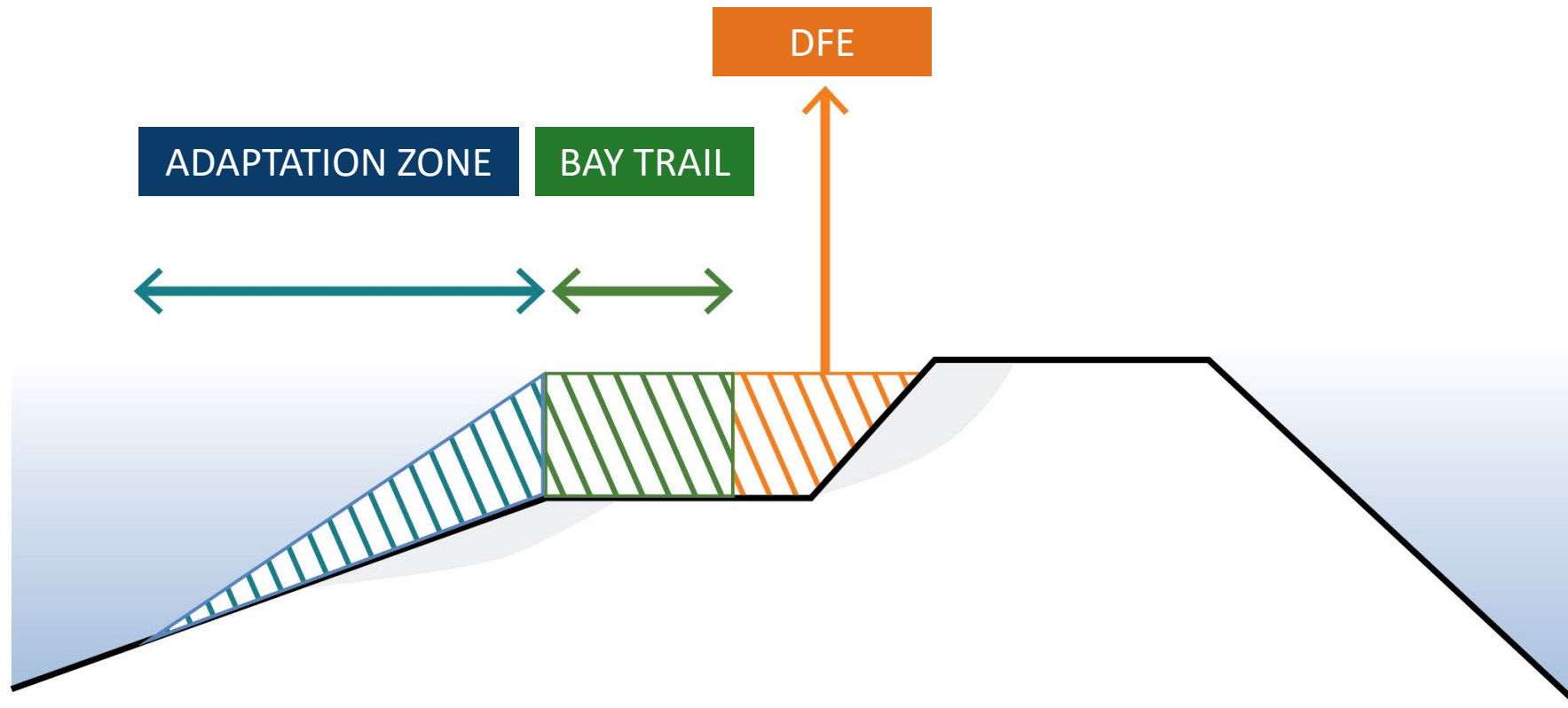
Adaptation Approach: Accommodate

Hazard: Lagoon/Coastal Flooding

Strategy: Raise Infrastructure (Roads/Rail)



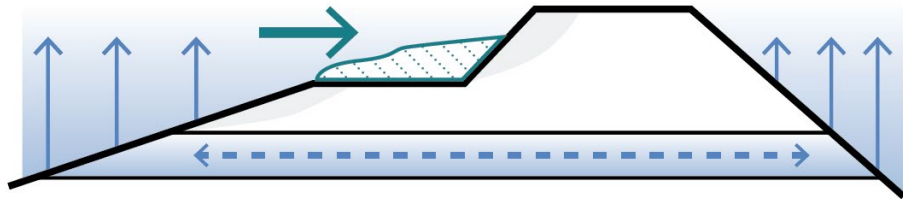
Section Elements



Repurposed Street/Retreat

Hazard: Lagoon/Coastal Flooding

Strategy: Abandon infrastructure/naturalize



Measures

Engineering Measures



Tide Gate



Flood Walls



Raise Trail



Pump Station



Increased Detention

Complementary Measures + Nature-Based Features



Erosion:
Lagoon Beach



Erosion:
Naturalized Edge



Erosion:
Ecological armoring



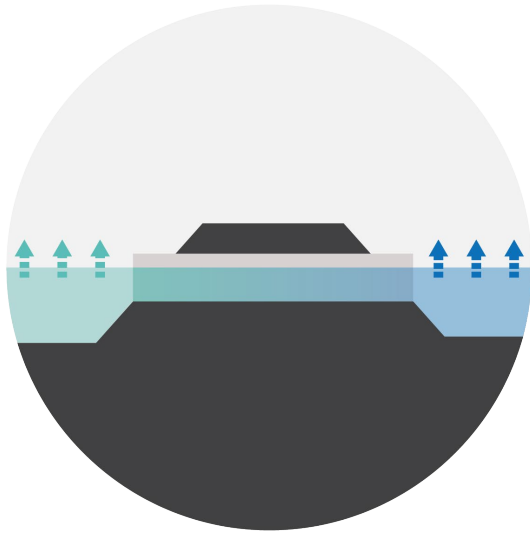
Mitigation:
Enhance/preserve
Existing wetlands



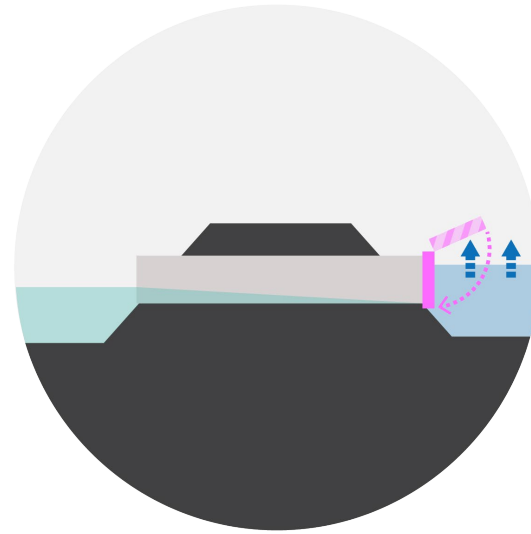
Stormwater:
Green infrastructure

Alternatives

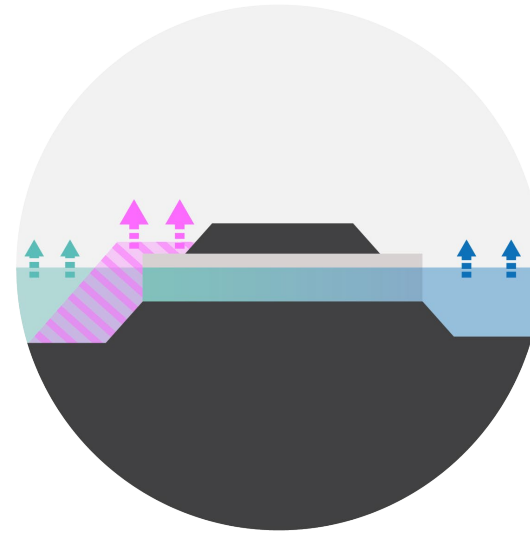
Proposed Flood Mitigation Alternatives



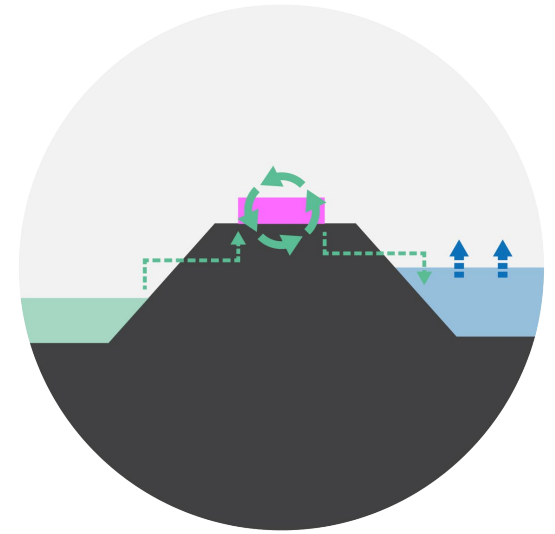
1. Do Nothing



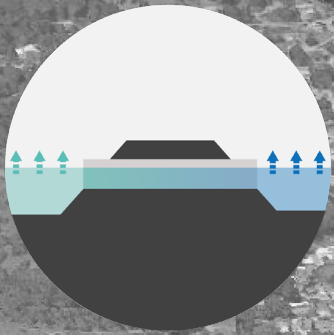
2. Manage Bay Water



3. Raise Lagoon Edge



4. Pump Station



KEY

- 6.6' OF SEA LEVEL RISE
- 3.1' OF SEA LEVEL RISE
- 0.8' OF SEA LEVEL RISE



BRISBANE LAGOON

LAGOON RD

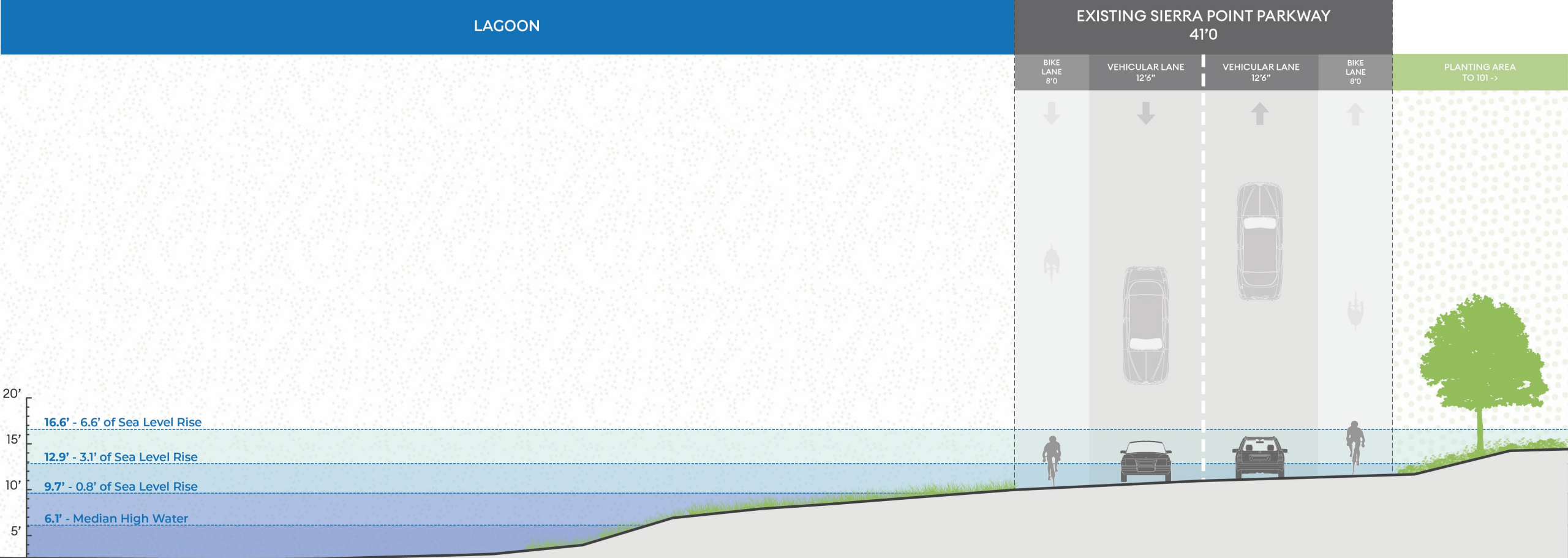
CAL TRAINS TRACKS

SIERRA POINT PKWY
HIGHWAY 101

SF BAY

Do Nothing

Do Nothing



LAGOON

EXISTING SIERRA POINT PARKWAY
41'0

BIKE
LANE
8'0

VEHICULAR LANE
12'6"

VEHICULAR LANE
12'6"

BIKE
LANE
8'0

PLANTING AREA
TO 101 ->

20'

16.6' - 6.6' of Sea Level Rise

12.9' - 3.1' of Sea Level Rise

9.7' - 0.8' of Sea Level Rise

6.1' - Median High Water

5'

10'

15'

Marsh Habitat

AS SEA LEVELS RISE, MARSH HABITATS WILL MIGRATE UP IN ELEVATION

MUDFLAT

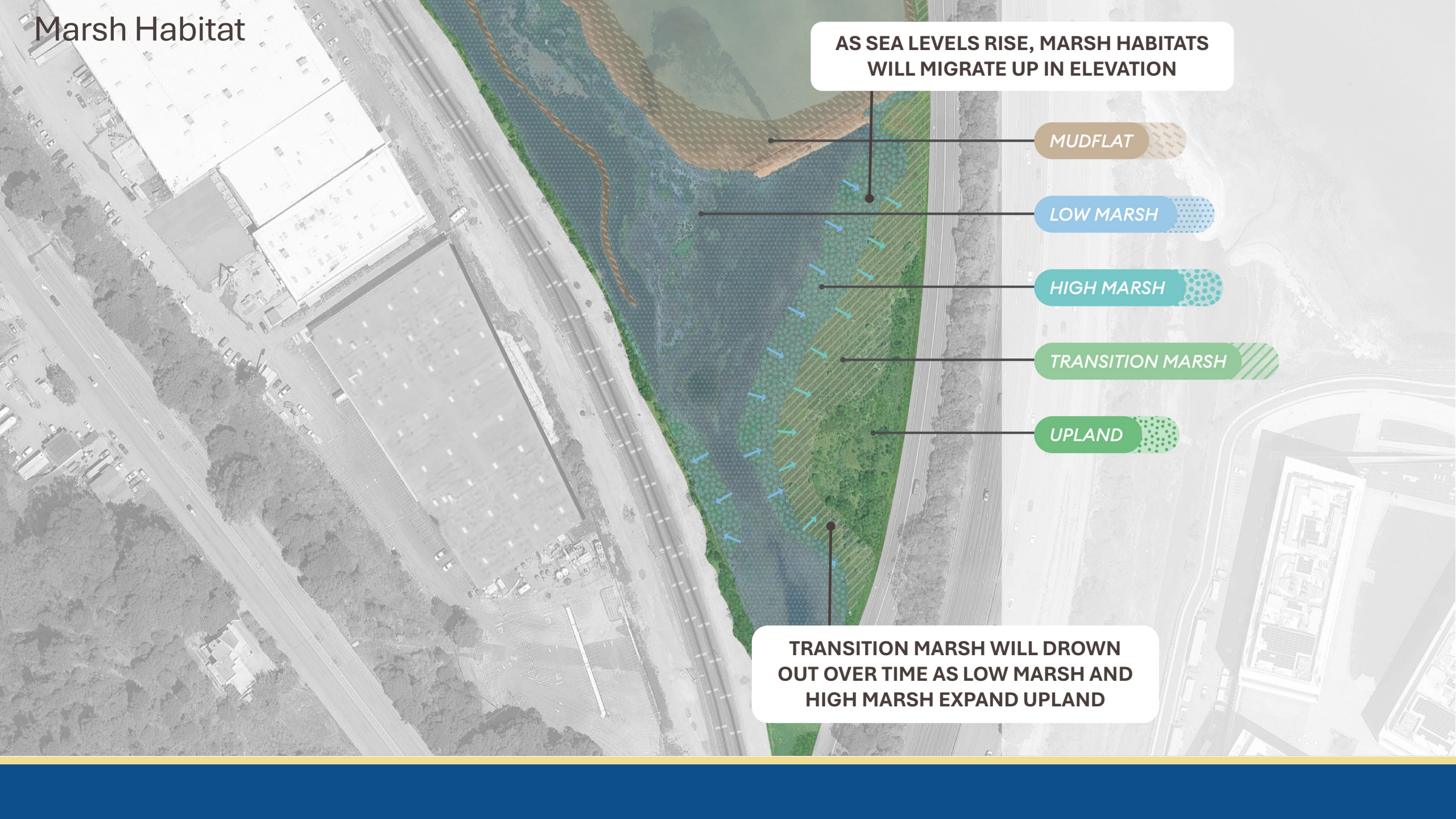
LOW MARSH

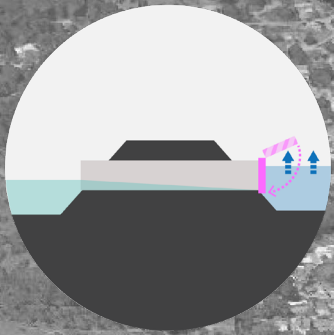
HIGH MARSH

TRANSITION MARSH

UPLAND

TRANSITION MARSH WILL DROWN OUT OVER TIME AS LOW MARSH AND HIGH MARSH EXPAND UPLAND





ADD
TIDE GATE

INCORPORATE
ECOLOGICAL ARMORING

SLOW DROWNING OF
EXISTING WETLAND

KEY
● +10% PRECIPITATION INCREASE
● +30% PRECIPITATION INCREASE

Manage Bay Waters

Manage Bay Waters



20'
15'
10'
5'

9.6' - 30% Precipitation Increase
8.8' - 10% Precipitation Increase
6.1' - Median High Water

<https://www.youtube.com/watch?v=cW300UkNCQo>

Open and shut tide elevations can be managed

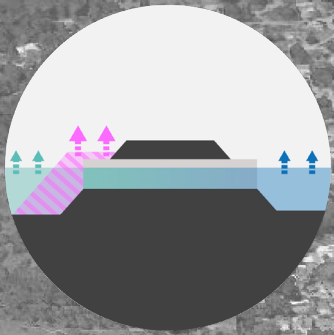


SELF REGULATING TIDE GATE INSTALLED ON BAY SIDE OF CULVERT

Future Design Considerations

- Regulatory
- Lagoon vs bayside
- Permitting timeline
- Frequency of closure, need to close around 8-ft tide
- Change to salinity in the lagoon
- Maintenance responsibility of tide gate





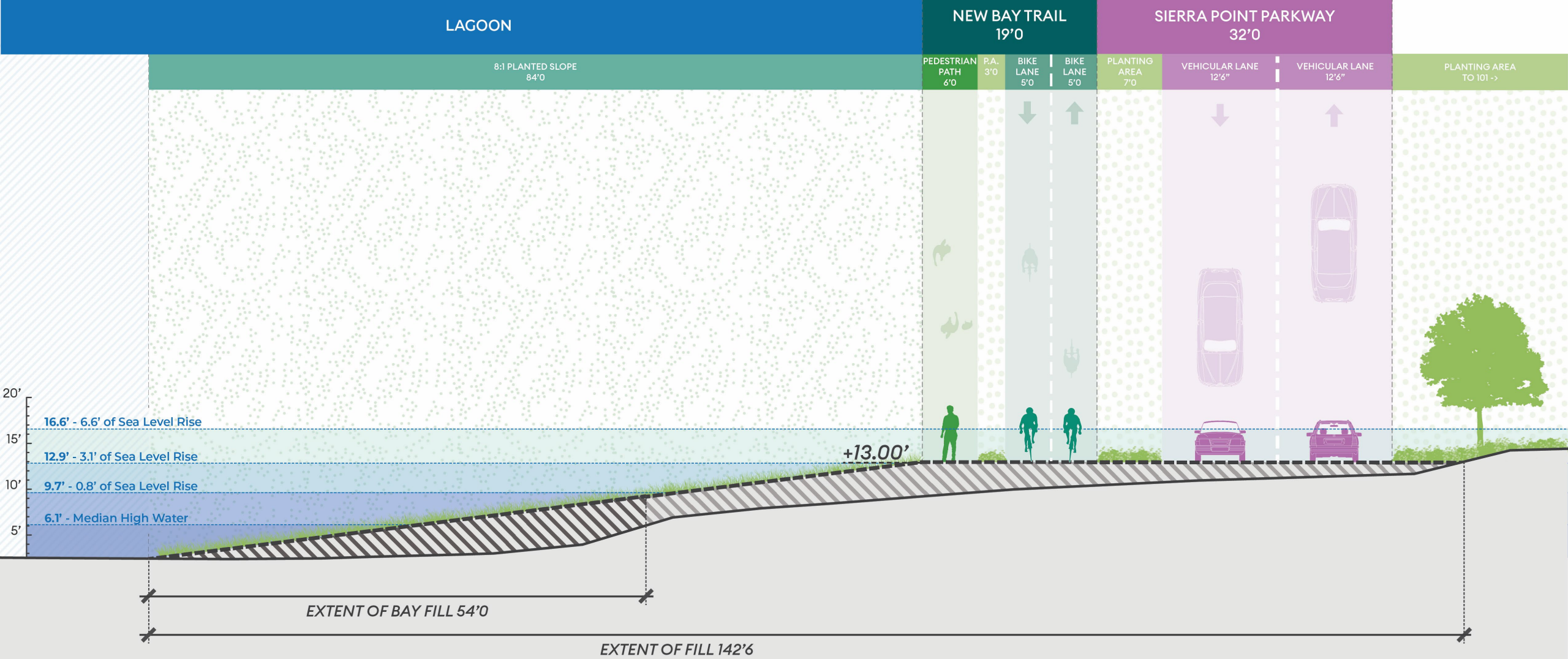
KEY

- 6.6' OF SEA LEVEL RISE
- 3.1' OF SEA LEVEL RISE
- 0.8' OF SEA LEVEL RISE



Raise Lagoon Edge

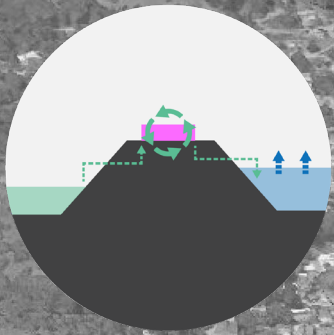
Raise Lagoon Edge



Future Design Considerations

- Amount of beneficial fill
- Protect to end of century or adapt by mitigating tides
- Fisherman Park considerations





KEY

LAGOON

- AVERAGE WATER LEVEL (DICTATED BY PUMP STATION)
- +30% PRECIPITATION INCREASE

BAY

- +10% PRECIPITATION INCREASE
- +30% PRECIPITATION INCREASE



**CLOSE CULVERT,
INSTALL PUMP STATION**

**INCORPORATE
ECOLOGICAL ARMORING**

**BRISBANE
LAGOON**

SF BAY

Pump Station

CAL TRAINS TRACKS

LAGOON RD

MARSH

SIERRA POINT PKWY

HIGHWAY 101

Pump Station

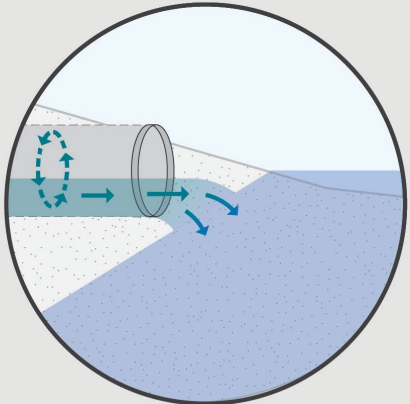
FRESHWATER OR BRACKISH LAGOON

EXISTING SIERRA POINT PARKWAY
41'0"

BIKE LANE 8'0" VEHICULAR LANE 12'6" VEHICULAR LANE 12'6" BIKE LANE 8'0"

PLANTING AREA TO 101 ->

20'
15'
10'
5'



PUMP STATION PUMPS
STORMWATER FLOWS
INTO THE BAY

Future Design Considerations

- Change in habitat to freshwater
- Location for large pump station



Evaluation Criteria



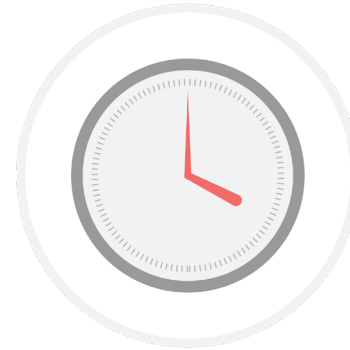
Evaluation Criteria



Ecological Benefit



Benefit to Existing
Public Access















Permitting/
Design Duration



Cost

Legend

Ecological Benefit	Existing Public Access	Permitting/ Design Duration	Cost
Low Habitat Benefit 	Low Public Access Benefit 	0-5 years to permit 	<\$5m project costs 
Medium Habitat Benefit 	Medium Public Access Benefit 	5-10 years to permit 	\$5m - \$15m project costs 
High Habitat Benefit 	High Public Access Benefit 	>10 years to permit 	>\$15m Project costs 



Evaluation - DRAFT

Alternatives	Lagoon W.S.E - Mid Century	Lagoon W.S.E. - End of Century	Adaptability	Cost	Ecological Benefit	Permitting/Design Duration	Existing Public Access
Do Nothing	9.8 - 10.9	16.0+	None	None	None	None	
Manage Bay Waters	8.6 - 9.2	11.3 - 12.9	Decrease tide at which tide gate shuts				
Raise Lagoon Edge	9.8 - 10.9	16.0+	Add tide gate or pump station in future				
Pump Station	Based on pump station design	Based on pump station design	Increase pumping				



Questions

