OAAC Adapt Projects

December 2024

Exhibit 1
Item 5-C, December 16, 2024
Planning Board Meeting

Oakland Alameda Adaptation Committee (OAAC):

A coalition of shoreline communities, agencies and stakeholders working to coordinate the Oakland Alameda subregion flood and adaptation projects to protect and restore water quality, habitat, equity, transportation and community resilience.

OAAC: Project Partners

Agencies

CITY OF Oakland

Caltrans

ALAMEDA

PORT OF OAKLAND
Seaport. Airport. Everyone's Port.

East Bay Regional Park District

Alameda County Flood Control & Water Conservation District

CALIFORNIA WATER BOARDS
San Francisco Bay - R2

Community Partners

CASA
Community Action for a Sustainable Alameda

SOGOREA TE' LAND TRUST
LED BY URBAN INDIGENOUS WOMEN

SFEI | AQUATIC SCIENCE CENTER
SAN FRANCISCO ESTUARY INSTITUTE & THE AQUATIC SCIENCE CENTER

Hood Planning Group

Ninth Root

REAP CLIMATE CENTER

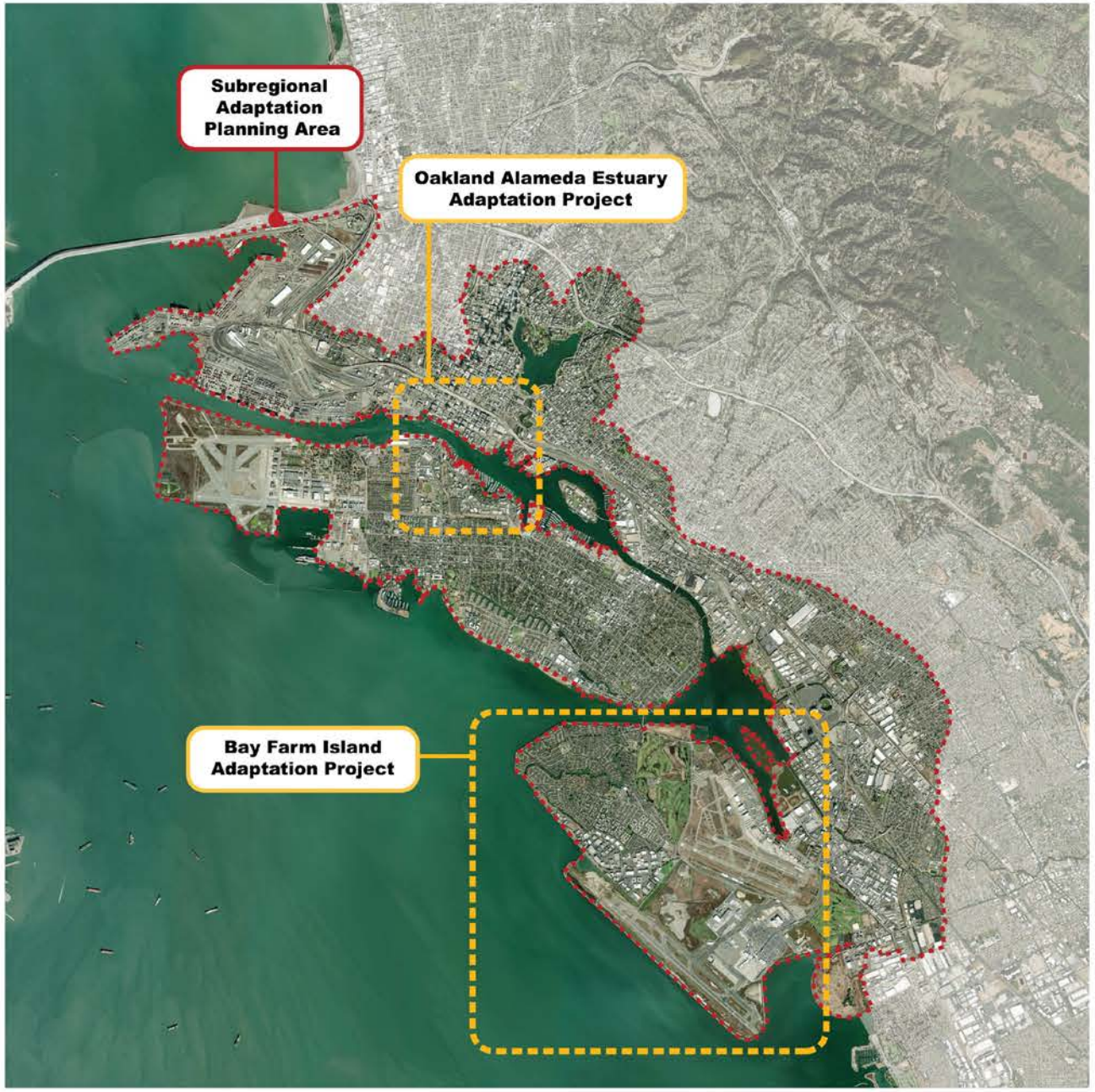
GREENBELT ALLIANCE

OAAC ADAPT Projects

- **Subregional Adaptation Plan**: Is a long-term plan that details actions for shoreline communities to take as the climate and shorelines change over time

- **Oakland Alameda Estuary Adaptation Project**: Includes a design concept to address coastal, stormwater and groundwater flooding for two feet of sea level rise over the coming decades

- **Bay Farm Island Adaptation Project**: Includes a design concept for the northern shoreline to address two feet of sea level rise over the coming decades and also includes a long-term plan for the entire Bay Farm Island



OAAC Project: Schedule

OAAC Project: Sea Level Rise Criteria

Near Term

2060 - 2080
35 to 50-year adaptation project lifespan

2' of sea level rise

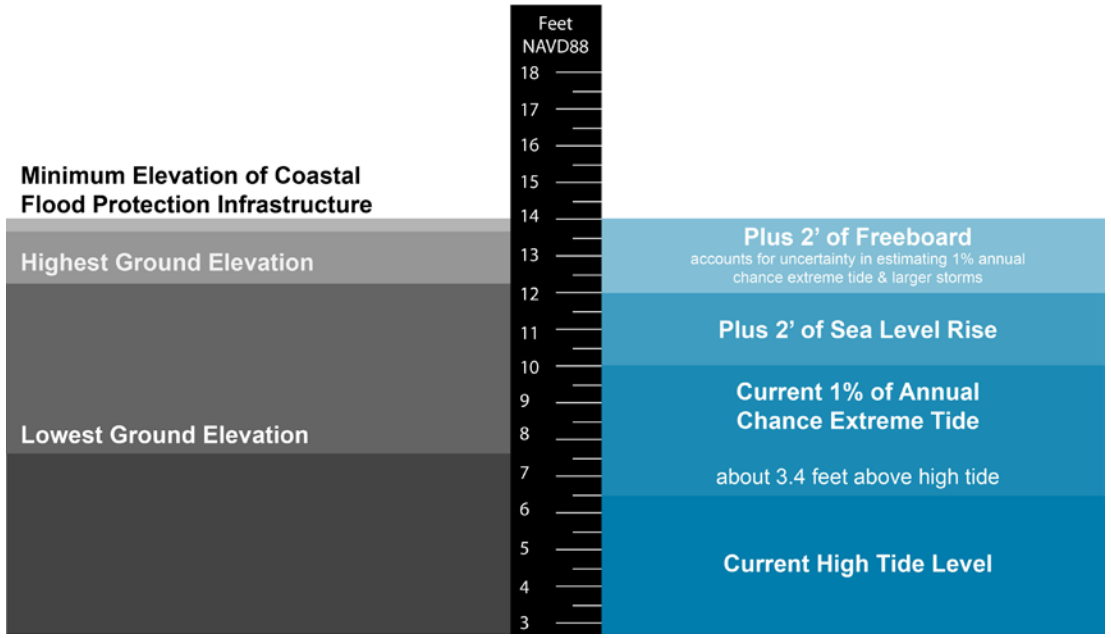
Protect to elevation +14’

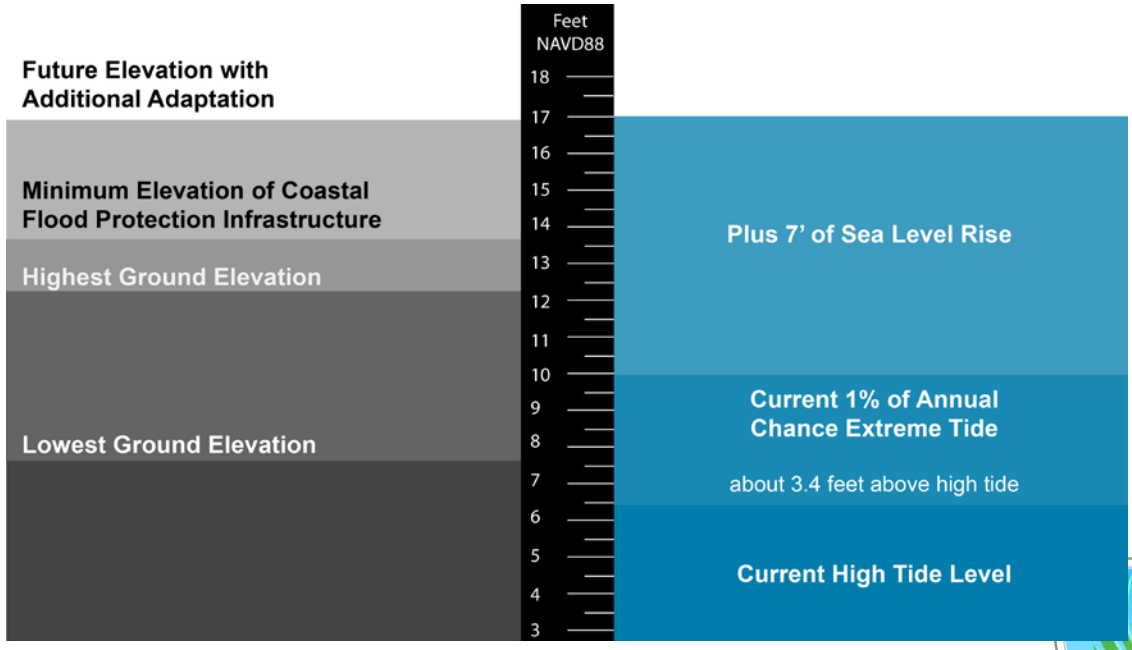
Long Term

2100+
Build upon near term projects

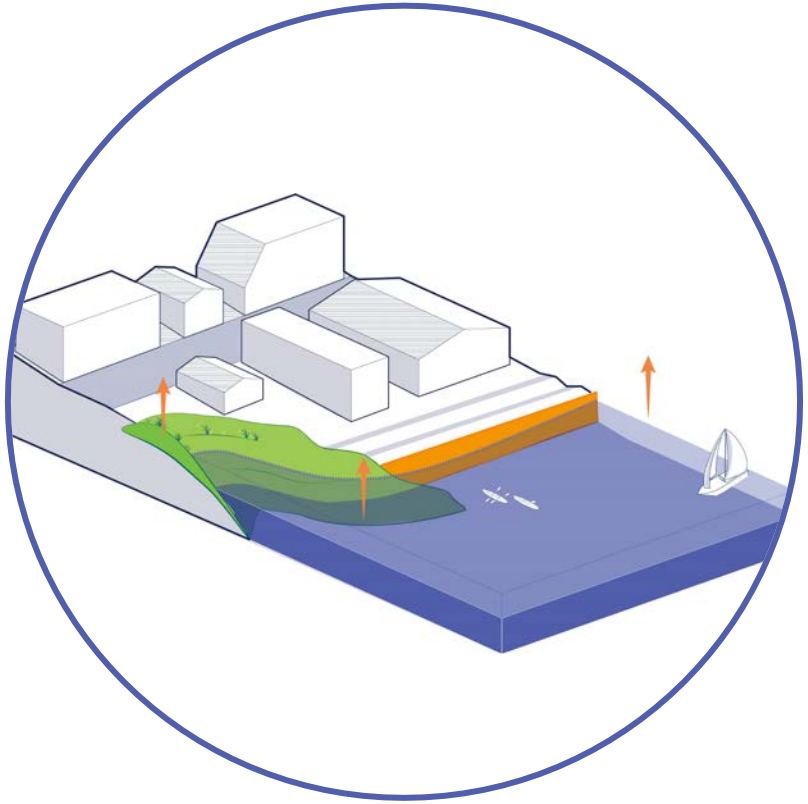
3.5 - 7' of sea level rise

Protect to elevation +17’





OAAC Project: Combined Adaptation



Shoreline elevation to prevent coastal flooding from sea level rise and storm surges

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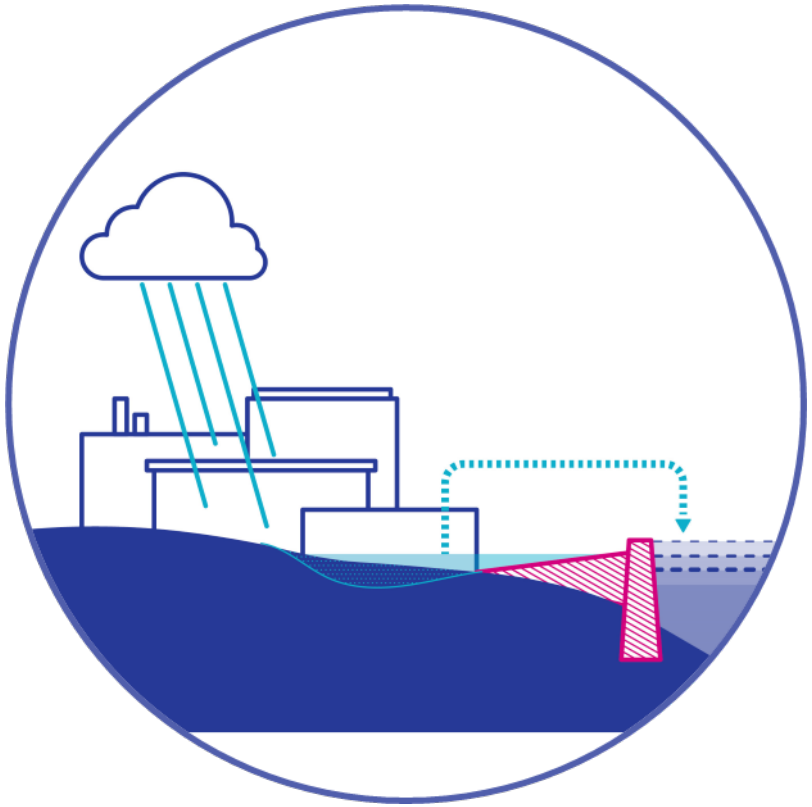


Inland adaptation (green and grey infrastructure) to manage stormwater and groundwater

Seawall

Seawall at Jack London District

Levee with Seawall and the Bay Trail

Foster City Shoreline Protection Levee with Seawall and Bay Trail

Levee and Waterfront Park

Alameda Point at Seaplane Lagoon

Waterfront Park with beach access and rocky intertidal habitat

Crane Cove Park, San Francisco

Stormwater green detention basin

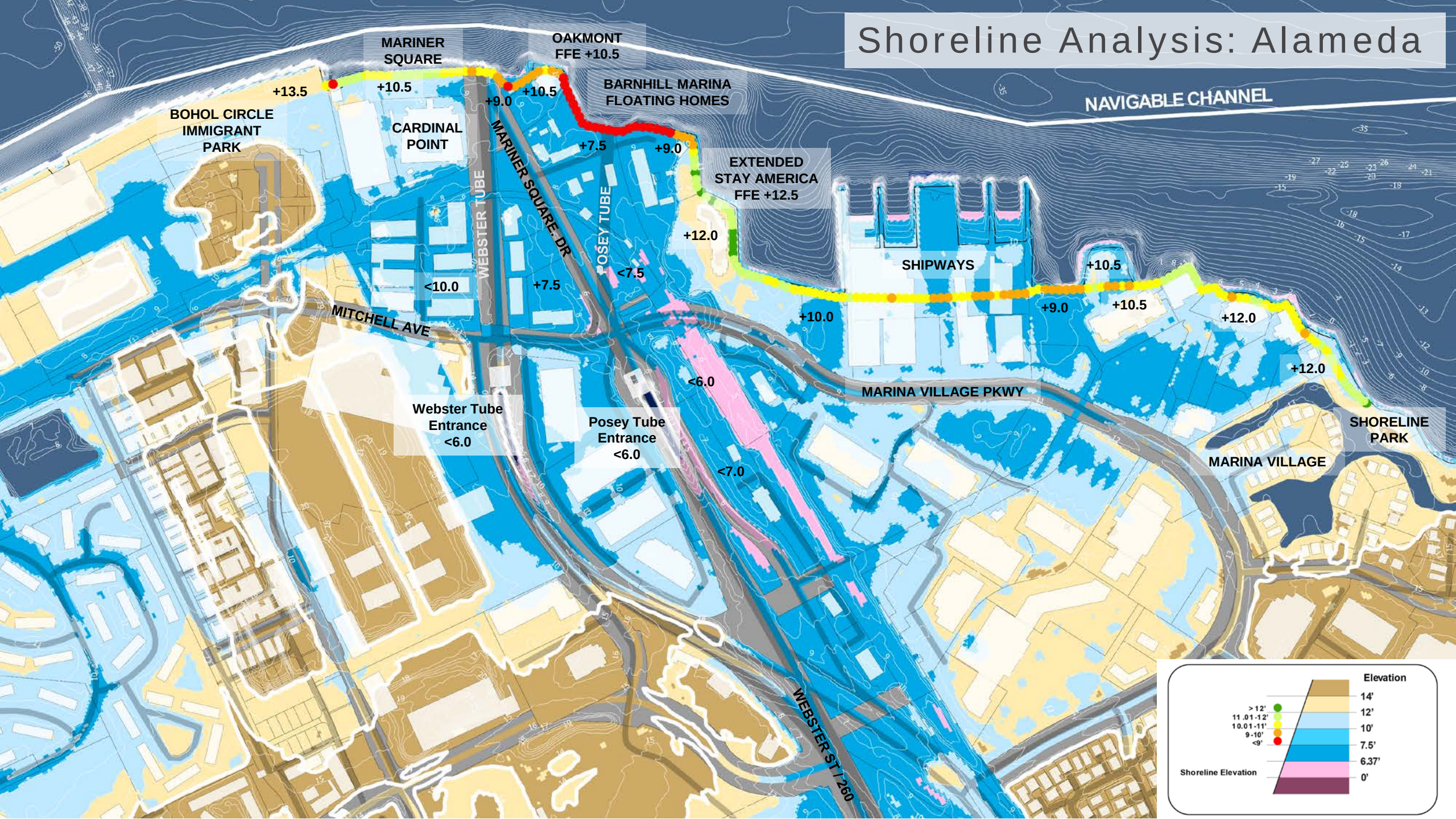
Stormwater Basin at Fifth and Eucalyptus Street, Alameda

Oakland-Alameda Estuary Near-term Adaptation Project

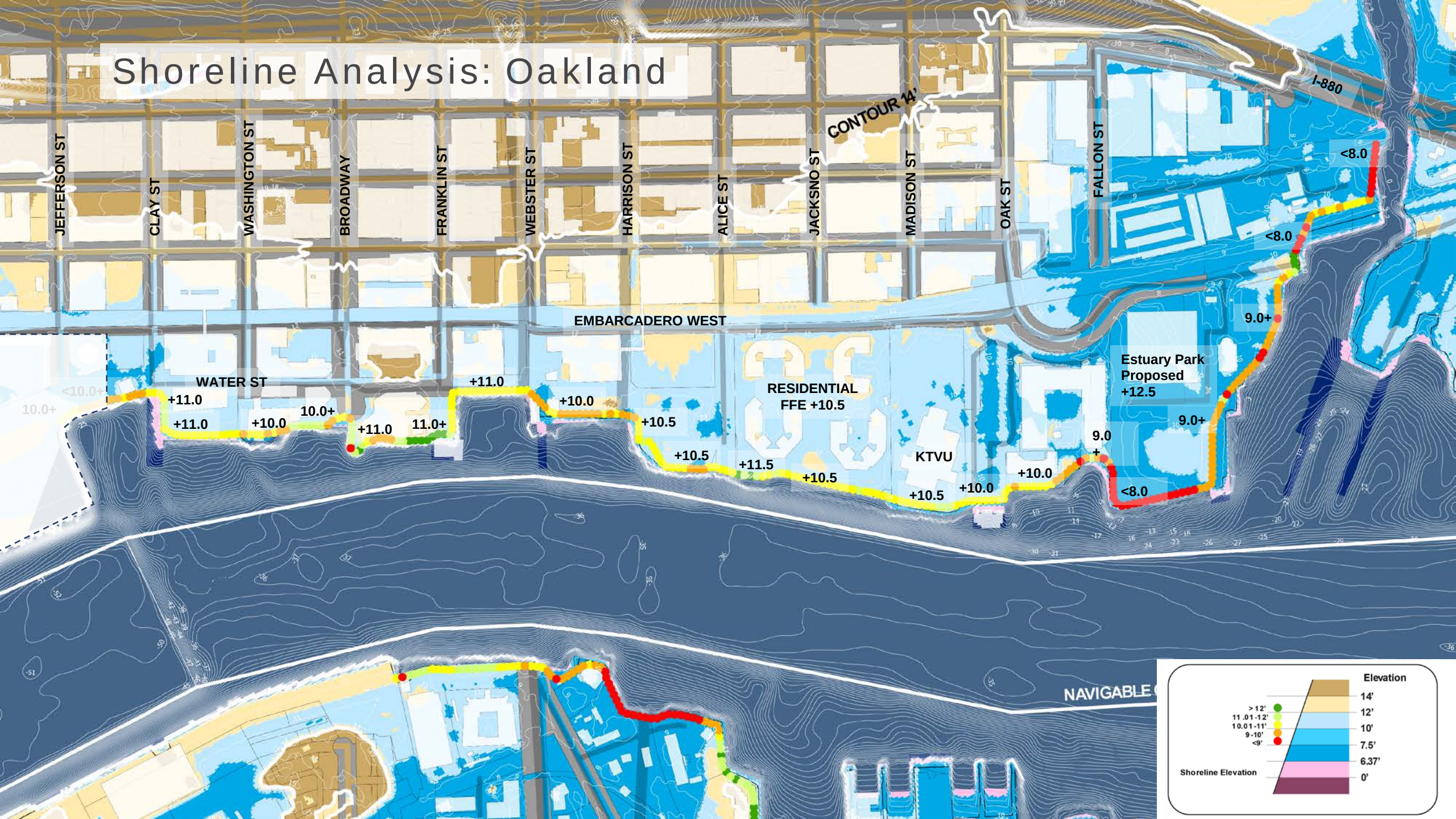
December 2024


Project Area:
Oakland-Alameda Estuary
Jack London Square
Bohol Circle
I-880
Oakmont
The Landing
Barnhill Marina
Lake Merritt Channel
Estuary Park
Marina Village
Shoreline Park
OAKLAND ALAMEDA ESTUARY

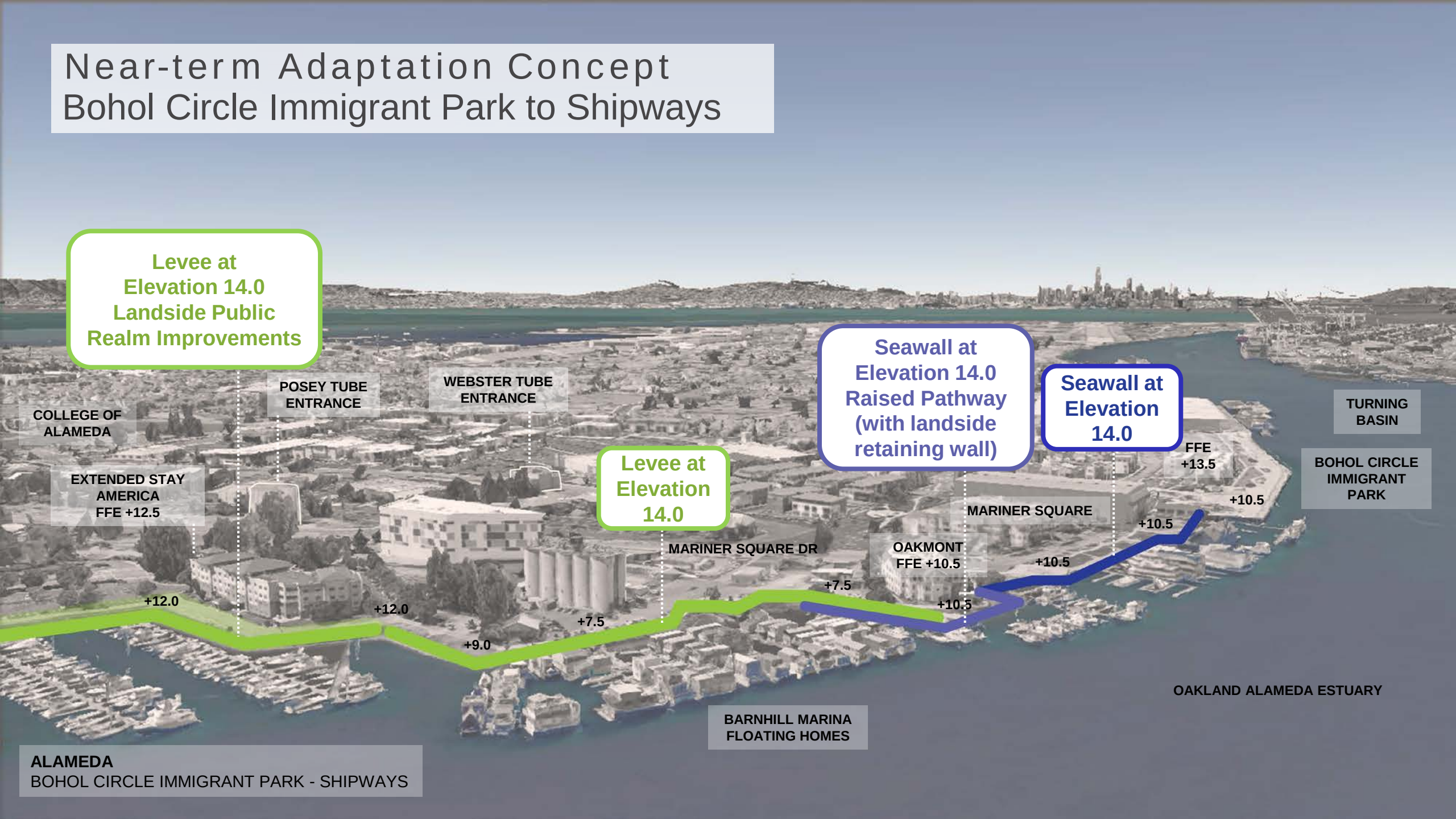
Shoreline Analysis: Alameda



Shoreline Analysis: Oakland

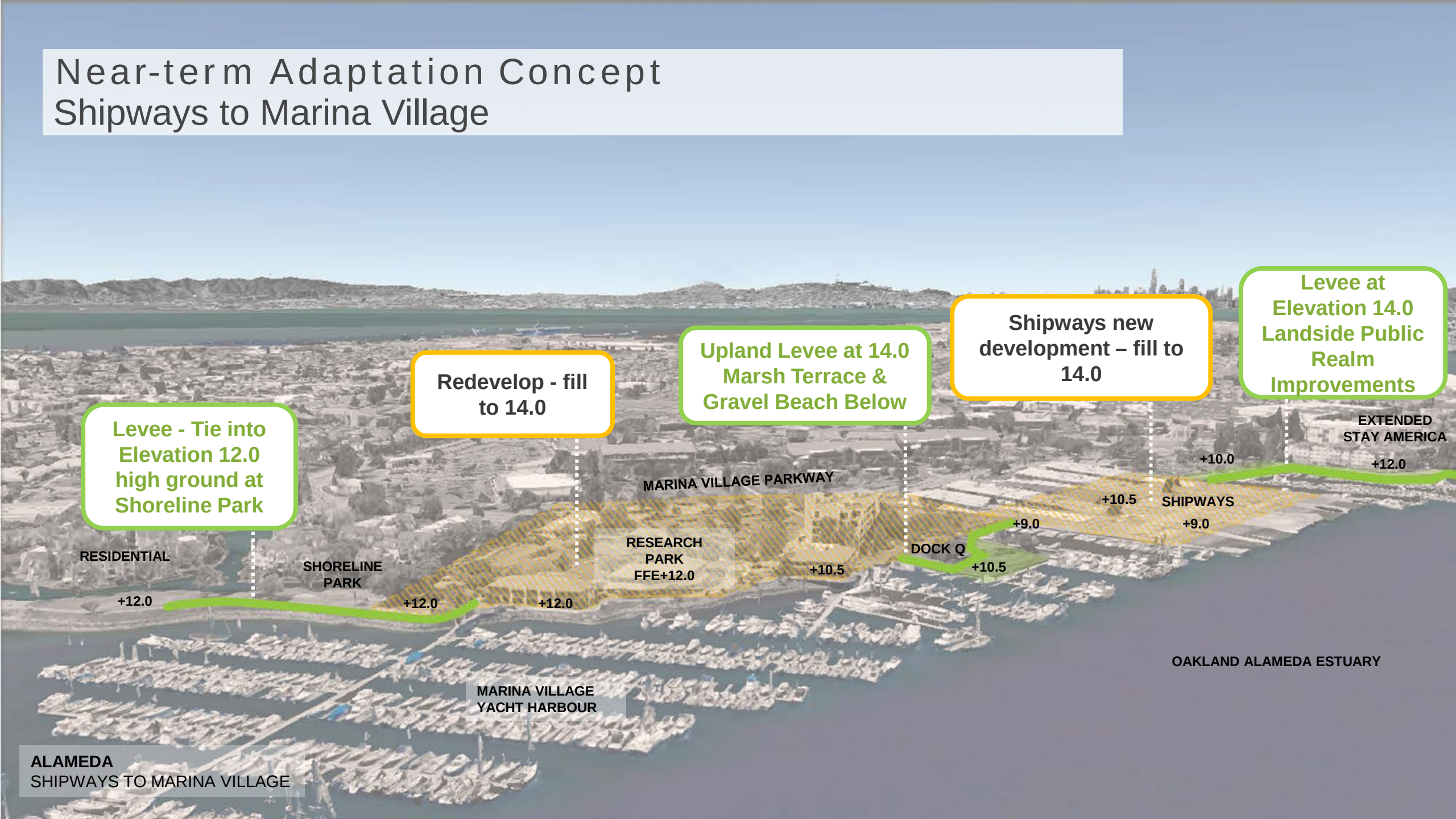


Near-term Adaptation Concept
Bohol Circle Immigrant Park to Shipways



ALAMEDA
BOHOL CIRCLE IMMIGRANT PARK - SHIPWAYS

Near-term Adaptation Concept
Shipways to Marina Village

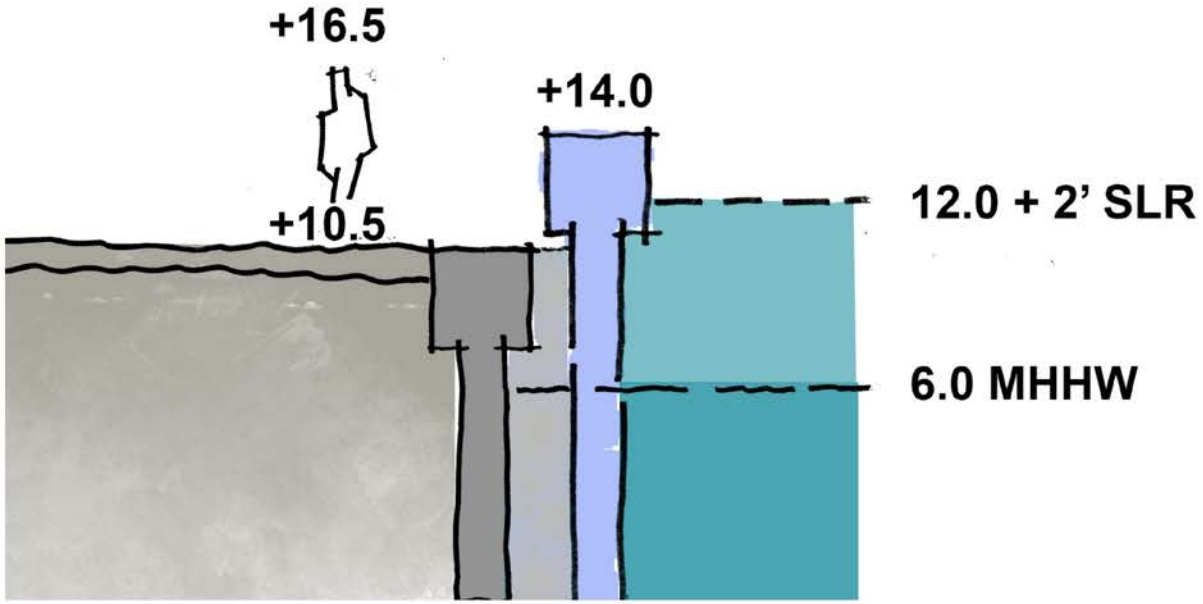


ALAMEDA
SHIPWAYS TO MARINA VILLAGE

Alameda Shoreline – Near-term Adaptation

Typical Condition (Oakmont to Bohol Circle)

Elevated **Seawall**

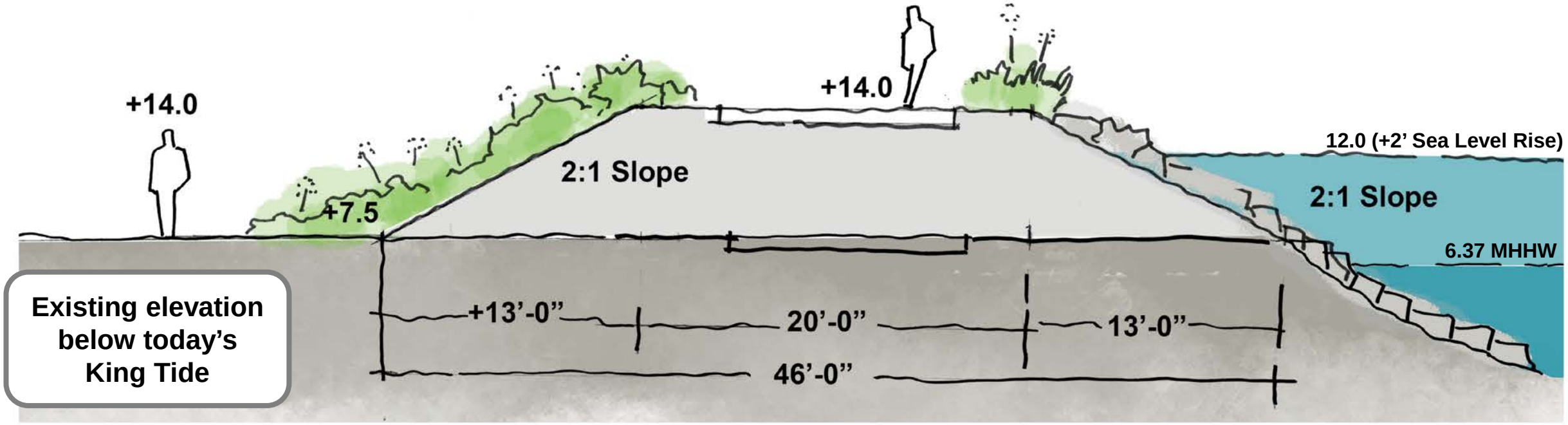


Alameda Shoreline – Near Term Adaptation

Typical Condition (Shipways to Barnhill Marina)

Shoreline **Levee**

Levee elevated to +14.0. Over 6 feet tall relative to adjacent grade.

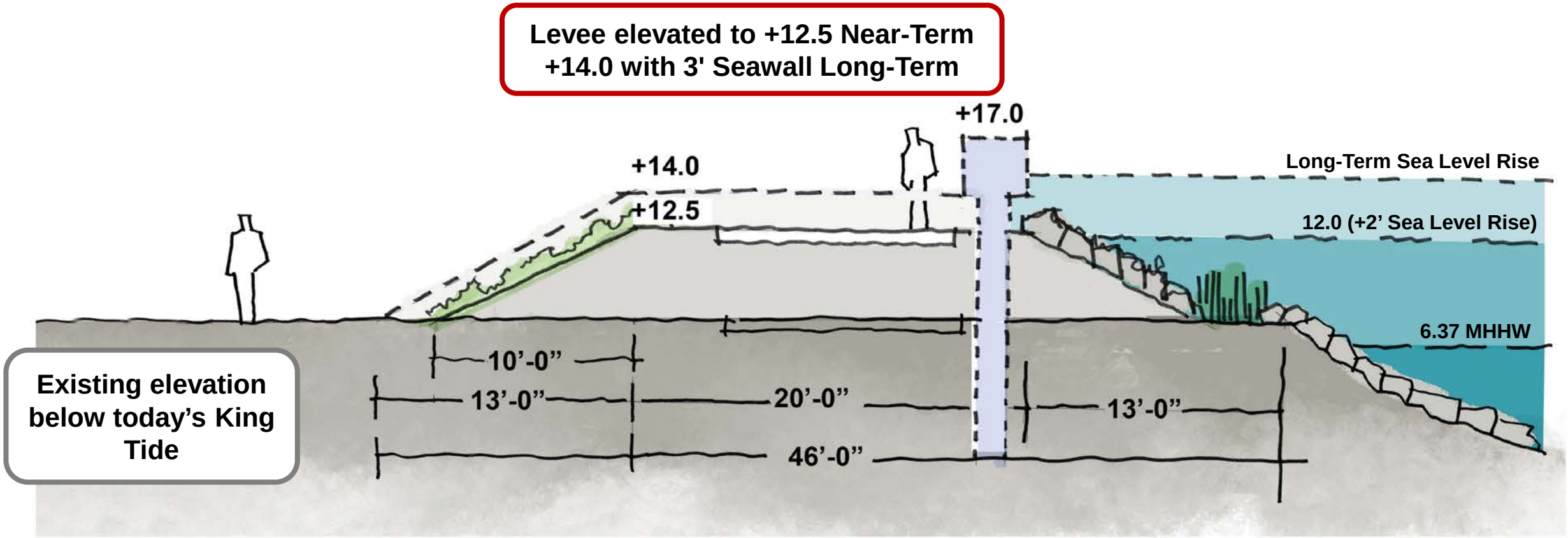


Existing elevation below today's King Tide

Alameda Shoreline – Long-term Adaptation

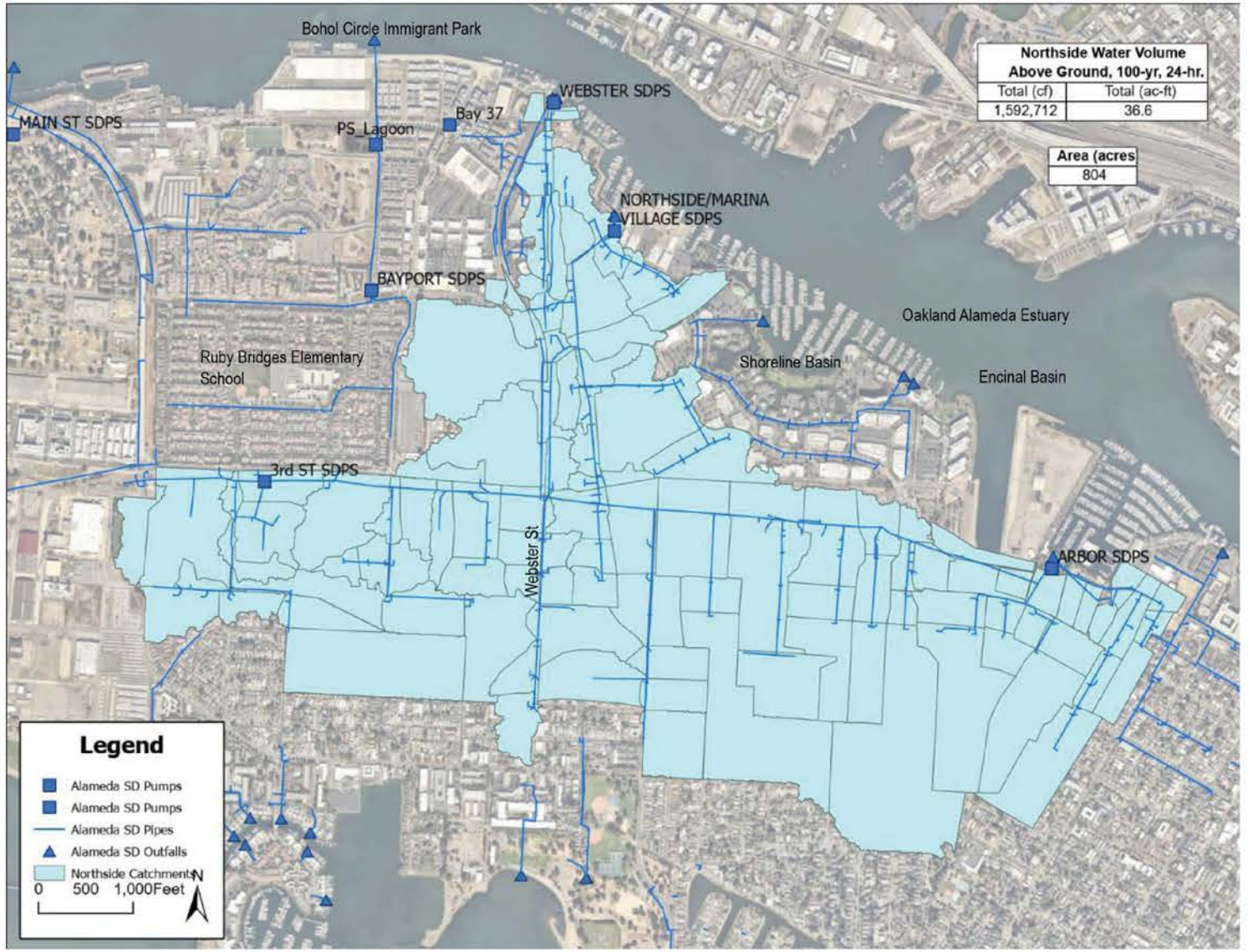
Typical Condition (Shipways to Barnhill Marina)

Shoreline **Levee with Seawall**



Inland Flooding Analysis
Stormwater: Northside of Alameda

- Stormwater flooding generated by 100-yr, 24-hr storm: 36.6 acre-feet of water.
- This is the volume of water that does not fit in Alameda's storm drain system today.
- Analysis includes stormwater detention for today's volume with added capacity for future rainfall increases.

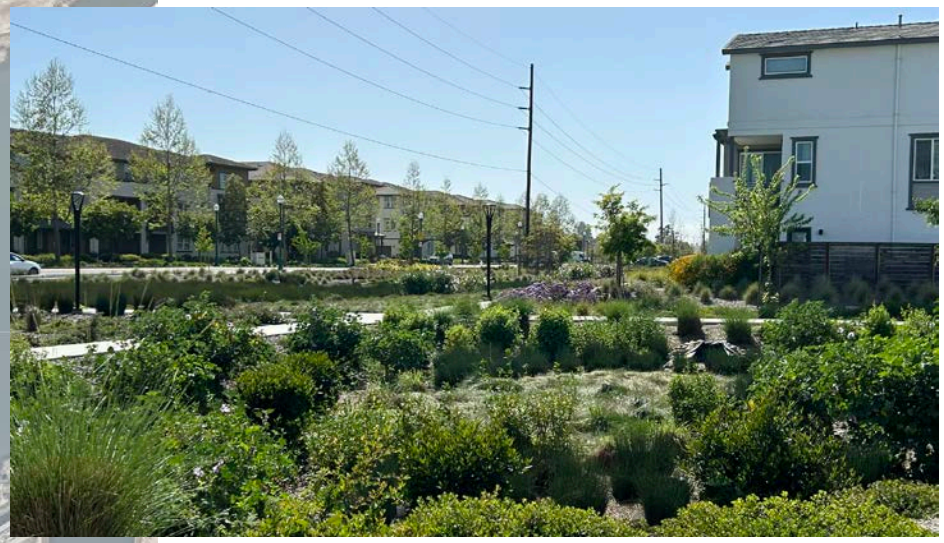


Estimated Future Precipitation % Increase With Climate Change

		10-yr	100-yr
2050	3-hr	21.6%	25.8%
	24-hr	17.9%	22.1%
2060	3-hr	27.8%	32.7%
	24-hr	22.2%	26.8%
2070	3-hr	33.7%	39.3%
	24-hr	25.9%	31.2%
2080	3-hr	40.7%	47.1%
	24-hr	30.7%	36.6%
2090	3-hr	49.6%	56.9%
	24-hr	37.1%	43.7%
2100	3-hr	59.0%	67.2%
	24-hr	43.6%	51.0%

San Francisco Bay Area Domain SSP5-8.5

Inland Flooding Detention Basin Locations



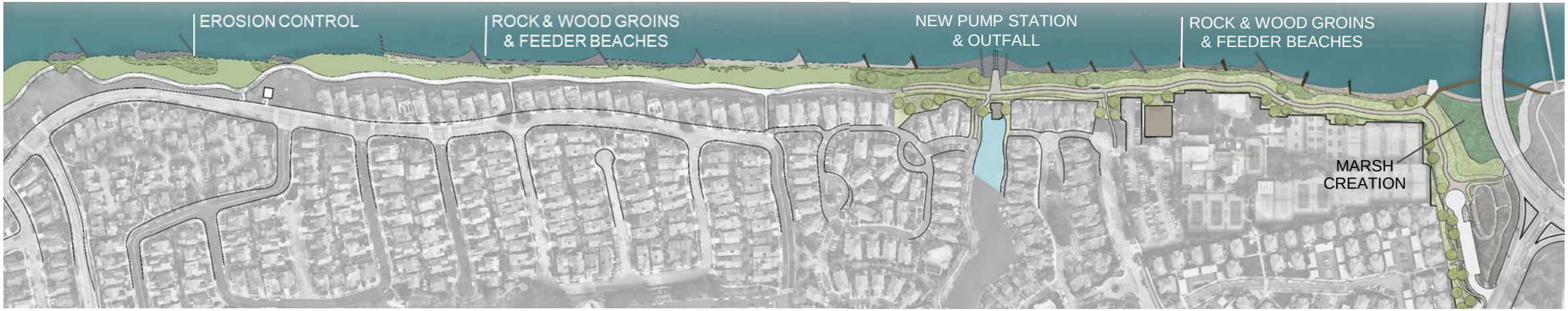
Bay Farm Island Adaptation Project

December 2024

BFI Project: Current Flood Conditions

BFI Project: Near-term Project Area

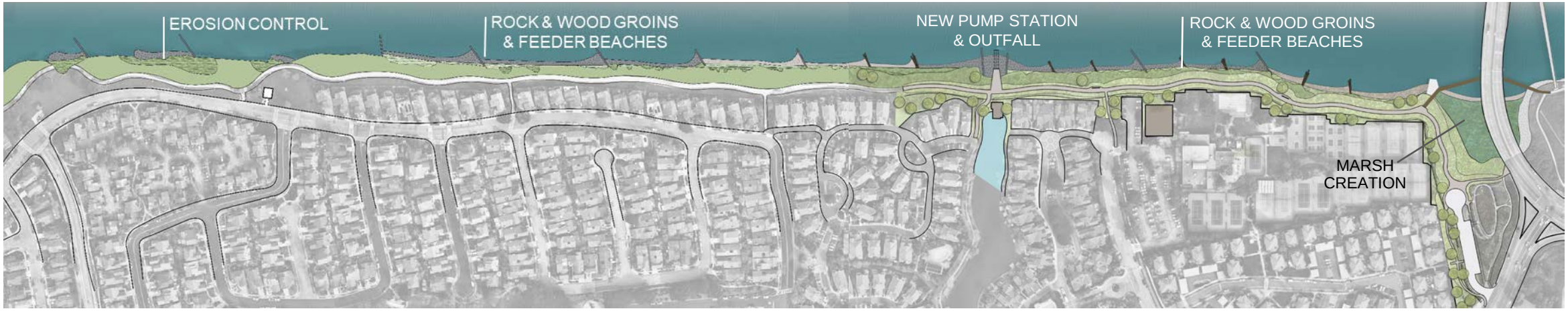
NORTHERN SHORELINE | LAGOON OUTFALL | VETERANS COURT



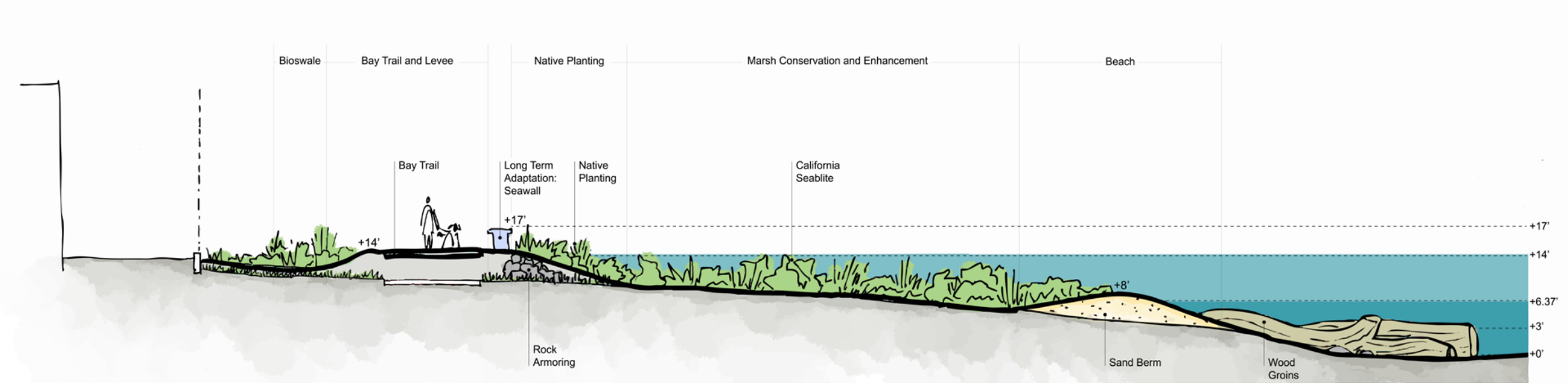
BFI Project: Preferred Near-term Alternative

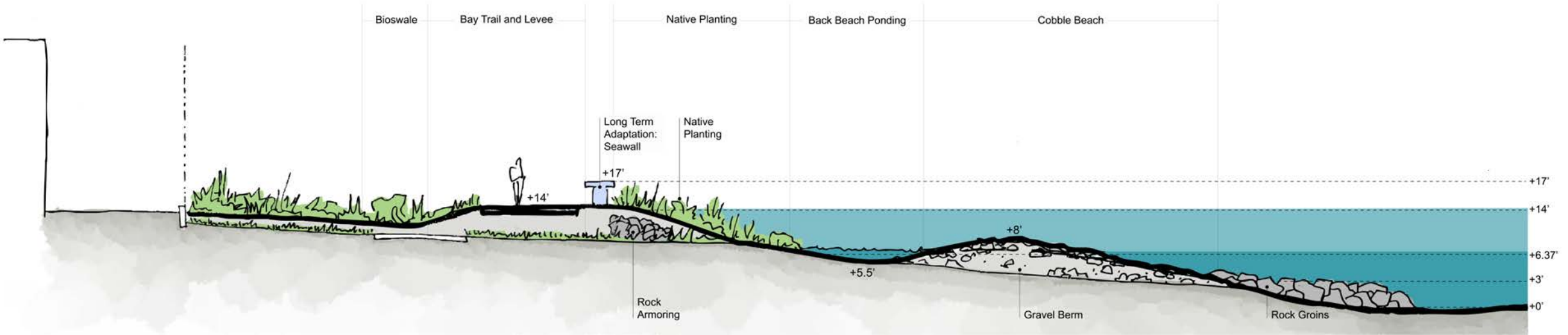
- Nature-based solutions
- Levee: Lagoon to Veterans Ct
- Lagoon: New tide gate, pump station & gravity pipe
- Marsh expansion

Nature-Based Solutions | Levee & Floodwall & Nature-Based Solutions

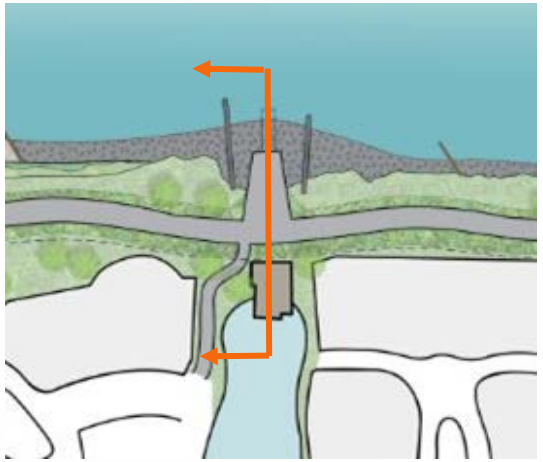


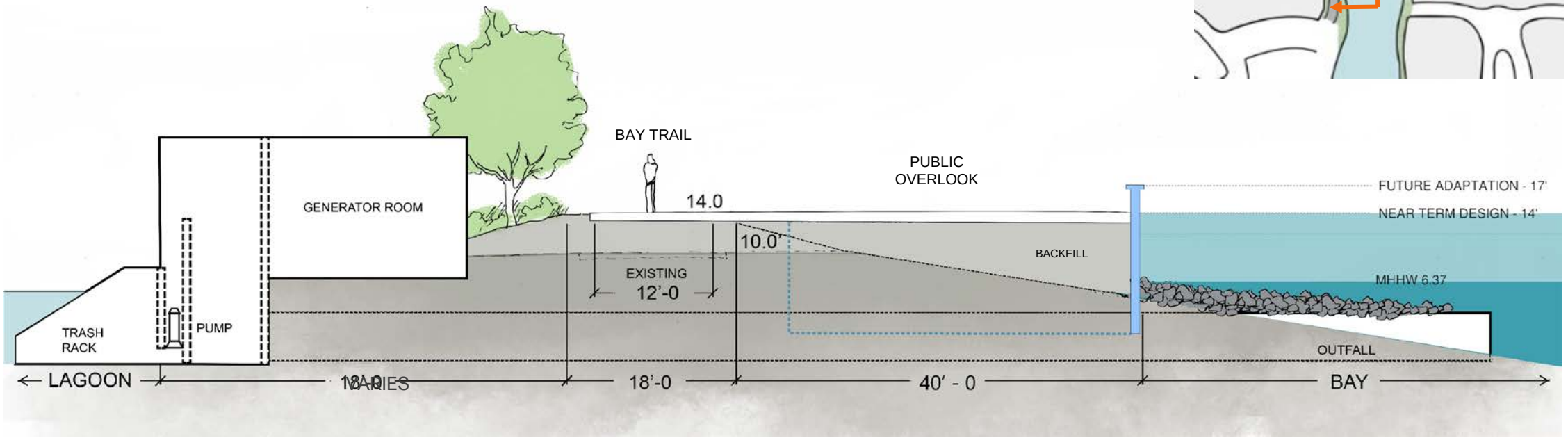
BFI Project: Levee / Bay Trail / Habitat Concepts





BFI: Pump Station & Tide Gate Replacement



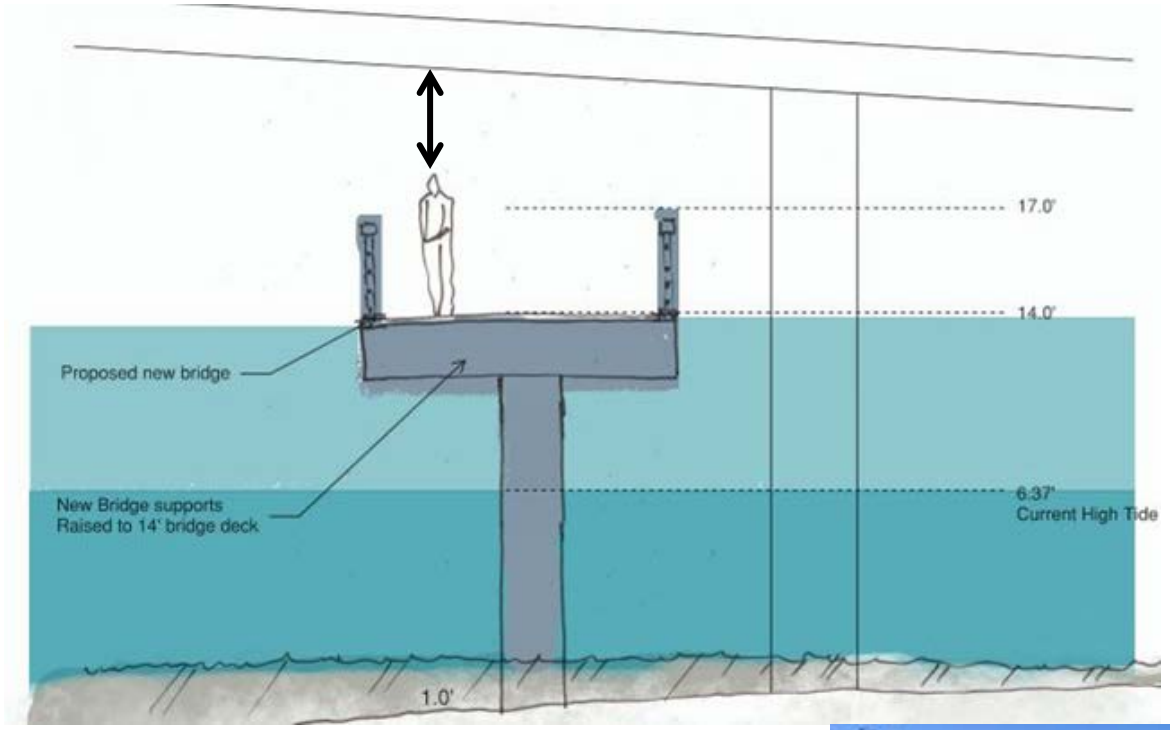


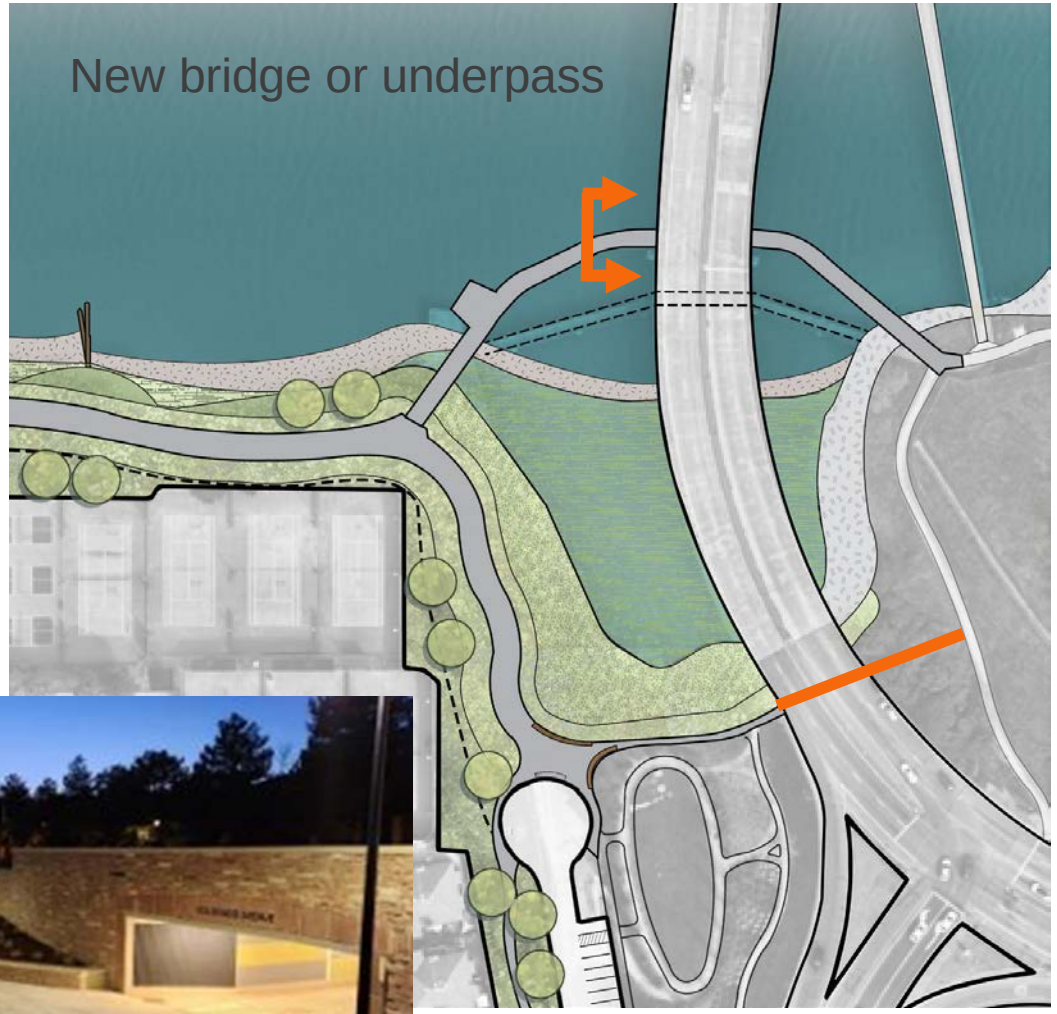
- Interior drainage to comply with FEMA 65.10
- Maintain existing lagoon circulation & stormwater management goals
- Clarify Operations & Maintenance responsibilities
- Obtain right-of-way or easements for gravity pipe

BFI Project: Veterans Court Adaptation

- Expands marsh to enhance habitat
- Shortens road to Veterans Park
- Maintains 20-25 parking spaces including ADA spaces
- Does not include wooden bicycle/pedestrian bridge – analysis for replacement or for underpass of Doolittle Drive will occur in near term (Phase 2)

BFI Project: Bay Trail Bridge Adaptation Alternatives (Phase 2)





FEMA BRIC Grant: Near-term Project (Phase 1)

BRIC federal: $50 m (90%)

Non-federal: $5.5 m (10%)

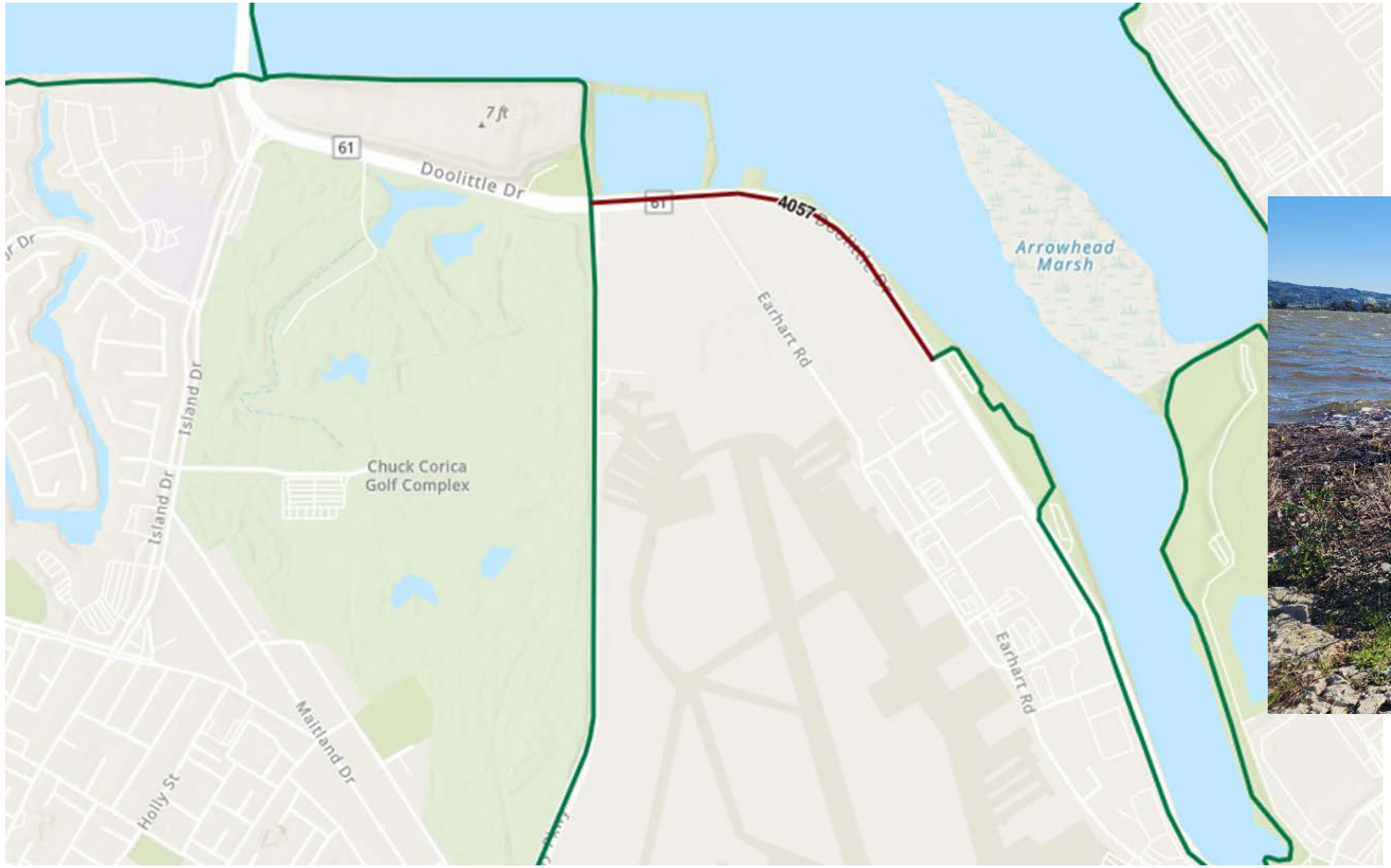
Total: $55.5 m

Recommended for further review by FEMA

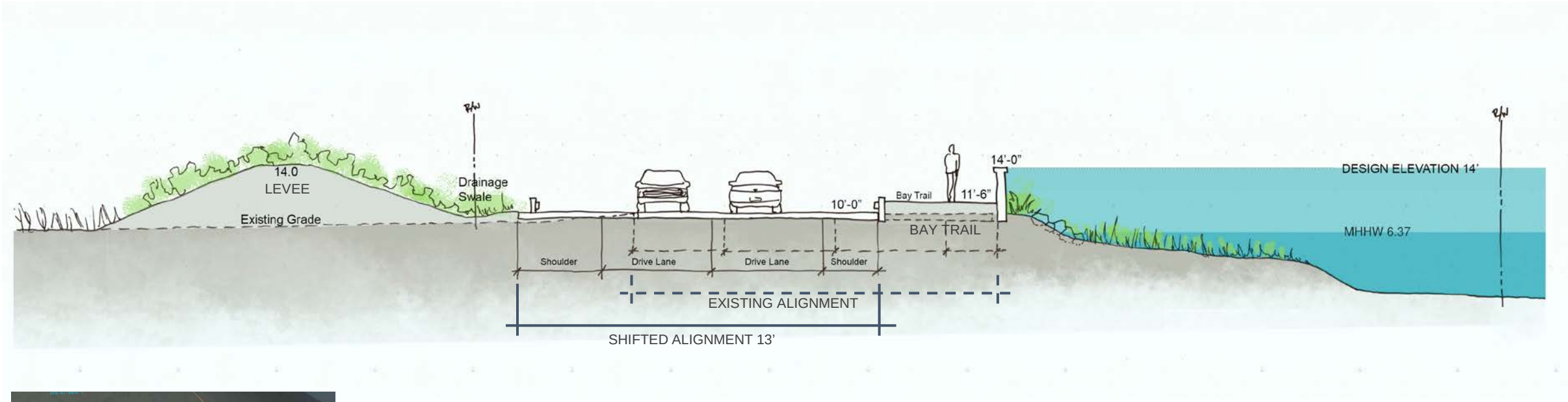
Start: 2025?

Construction: 2030

FEMA BRIC Grant: Bay Trail Gap Closure



FEMA BRIC Grant: Proposed Adaptation – Doolittle Drive



BAY TRAIL

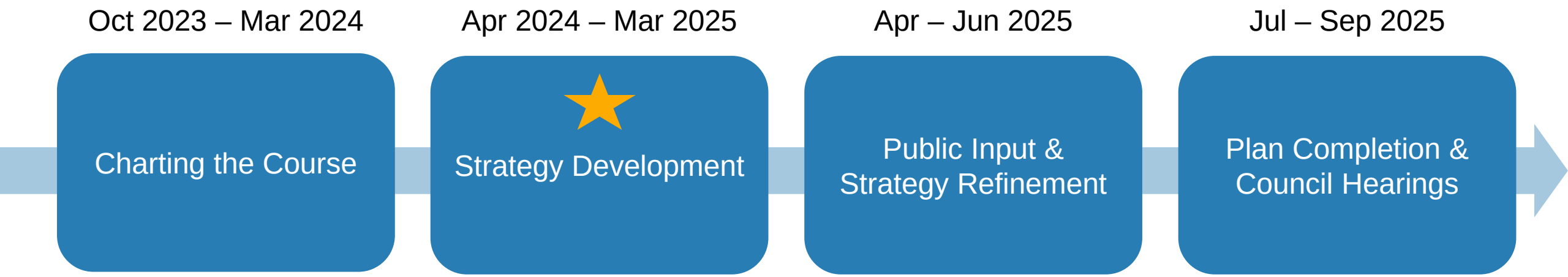
SHIFT DOOLITTLE SOUTHWEST 13'

LEVEE TO ELEVATION 14'

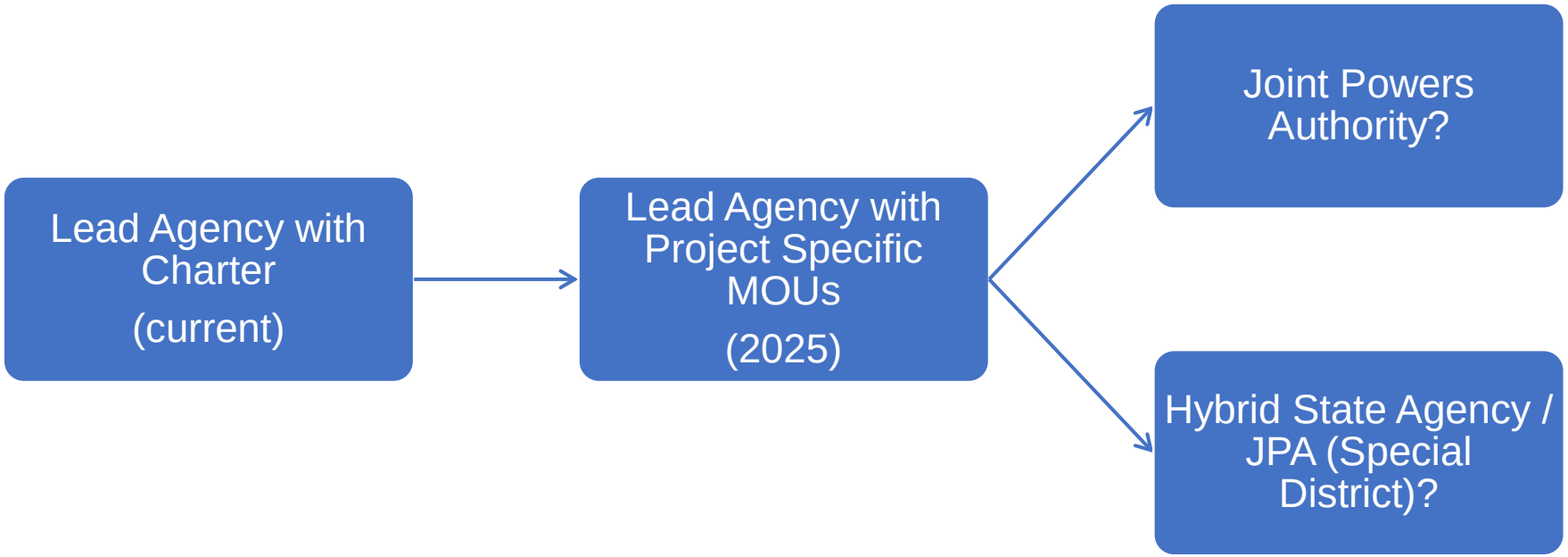
Subregional Adaptation Planning

December 2024

Subregional Adaptation Plan Process



Governance: Recommended Evolution



Governance: Project-specific MOUs

Project	Funding source	MOU partners	Other potential partners
Bay Farm Island/Doolittle Project	BRIC	• City of Alameda • City of Oakland • Port of Oakland	• Caltrans • EBRPD • Community Partners
Estuary Project	WRDA	• City of Alameda • City of Oakland • Port of Oakland	• Caltrans • Community Partners

OAAC Adapt Projects

December 2024

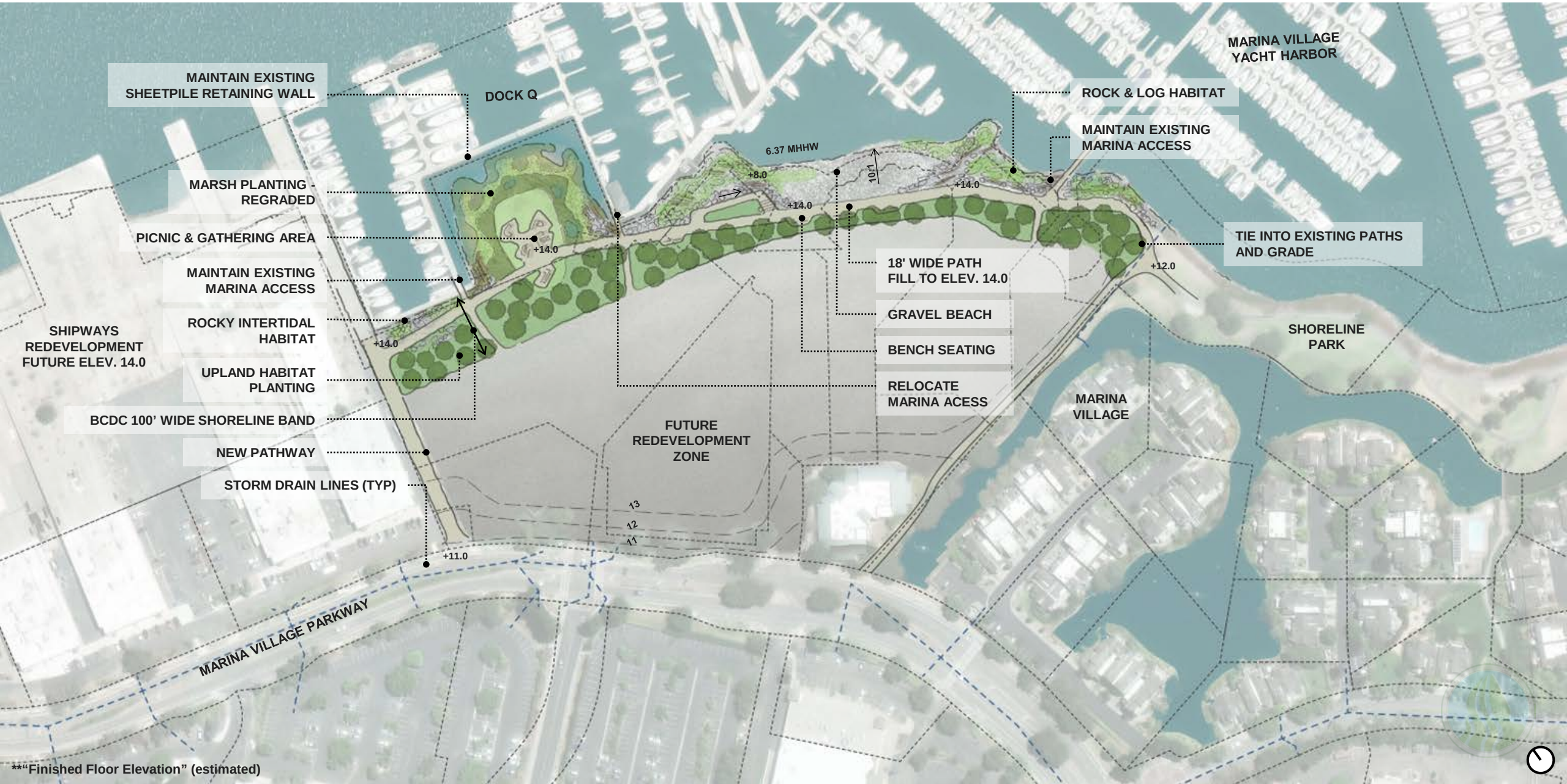
Estuary Project: Mariner Square to Shipways

**"Finished Floor Elevation" (estimated)

Estuary Project: Mariner Square to Shipways (cont.)

**"Finished Floor Elevation" (estimated)

Estuary Project: Shipways to Marina Village



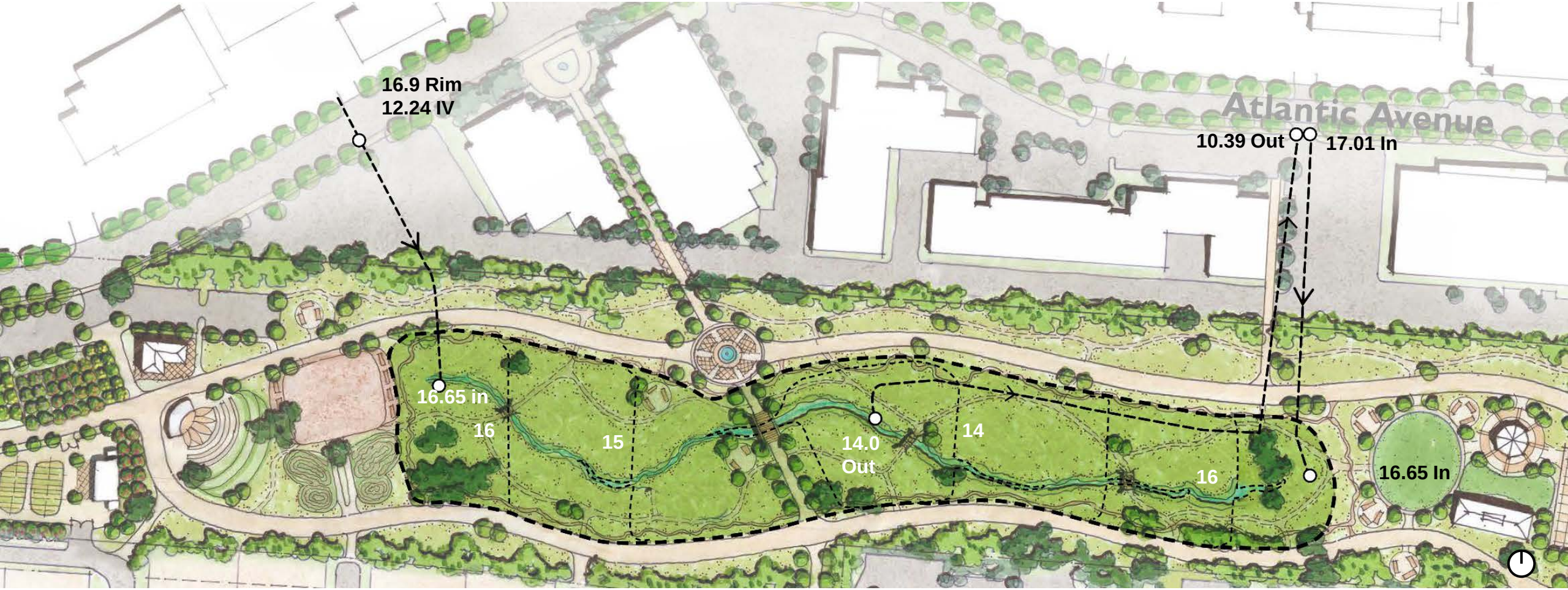
**"Finished Floor Elevation" (estimated)

Alameda Inland Flooding – Detention Basin Concept Plans

Neptune Park

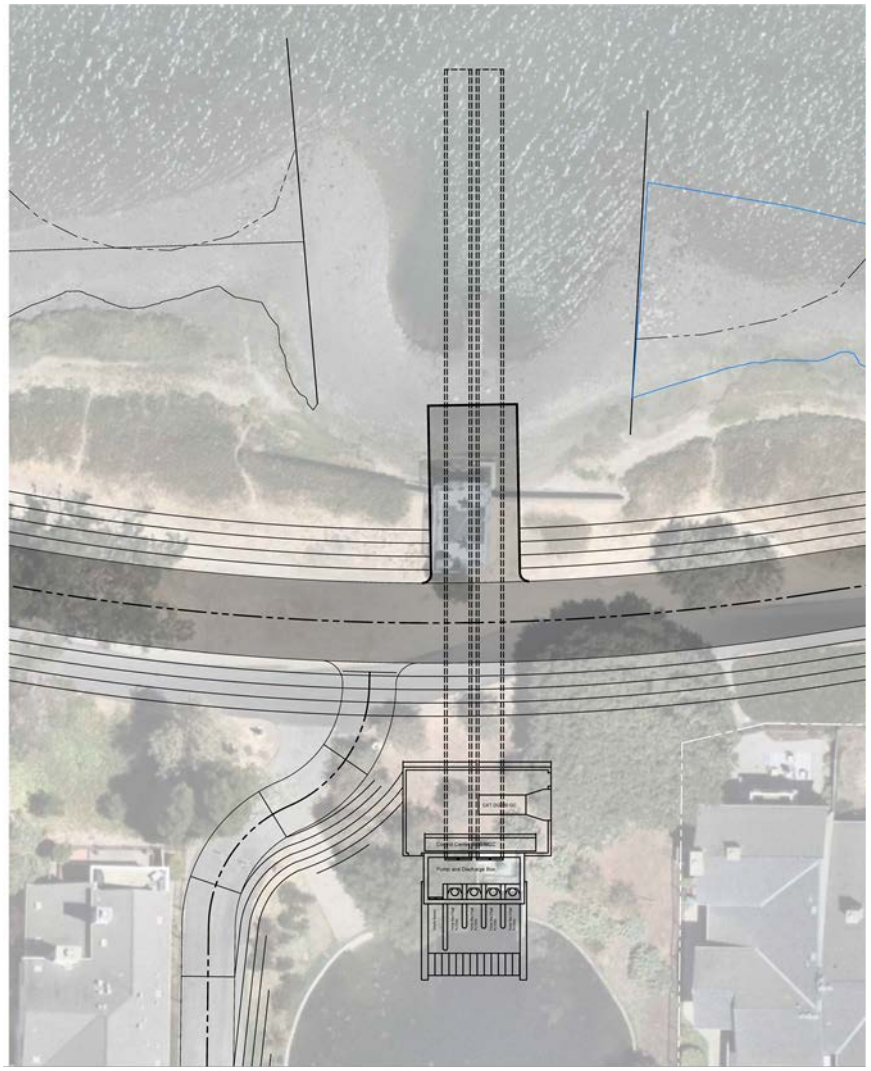
Alameda Inland Flooding – Detention Basin Concept Plans
Alameda #2 & #3

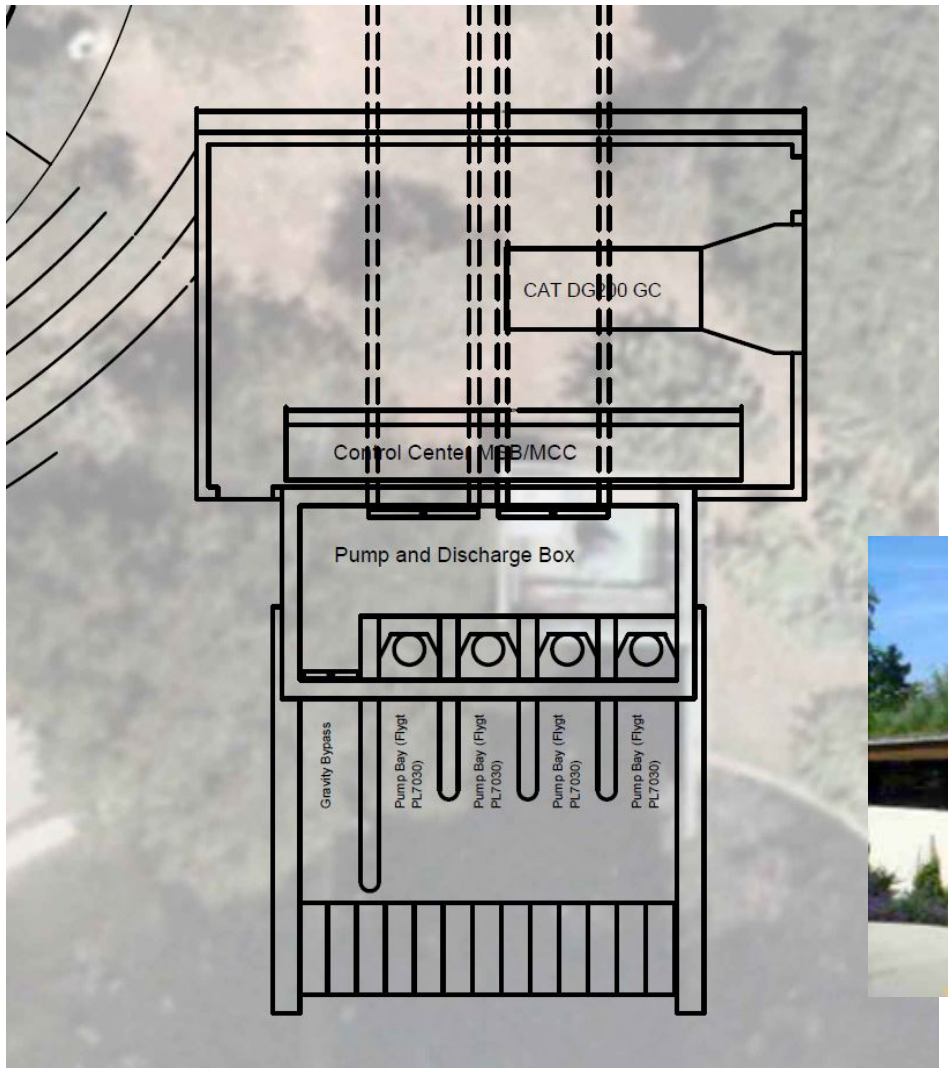
Alameda Inland Flooding – Jean Sweeney Park Master Plan



- Fruit Tree Orchard
- Existing Oak Trees
- Park Structure
- 1 Mile Trail & Bike Loop
- Fountain
- Water & Dry Creek
- Foot Bridge
- Plaza or Special Paving
- Natural Landscape
- Lawn Area
- Existing Vegetation
- Community Garden

BFI Project: Pump Station & Tide Gate - Plan





Remove Levee Penetration
(Redirect Gravity System Outfall to Lagoon)

- New gravity pipe to be constructed as part of levee construction
- New pipe to follow levee toe rather than go through Palm Beach Ln
- Construction implications through private property
- Separate HOA?
- Assumption of new lagoon operations plan

Preliminary Hydrology Evaluation				
	100-yr, 24-hr (2024)		100-yr, 24-hr (2060)	
Design Parameter	Lagoon Only	Lagoon + Waterfront	Lagoon Only	Lagoon + Waterfront
Drainage Area (acres)	433	442	433	442
Pump Rate (cfs)	22.28	22.28	80	80
Inflow Volume (acre-ft)	129	131	170	174
Peak Storage (acre-ft)	170	173	153	155
Peak Elevation (ft)	5.7	5.8	5.2	5.2