OAAC Adapt Projects

December 2024

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 Adapt: Project Partners

Agency Partners

CITY OF Oakland

ALAMEDA

East Bay Regional Park District

Alameda County Flood Control & Water Conservation District

Caltrans

California Water Boards San Francisco Bay - R2

Port of Oakland
Seaport. Airport. Everyone's Port.

Community Partners

SOGOREA TE' LAND TRUST
LED BY URBAN INDIGENOUS WOMEN

CASA
Community Action for a Sustainable Alameda

SFEI Aquatic Science Center
San Francisco Estuary Institute & the Aquatic Science Center

REAP Climate Center

Greenbelt Alliance

Ninth Root

Hood Planning Group

Consultants

cmg Landscape Architecture

ESA

moffatt & nichol

Schaaf & Wheeler
Consulting Civil Engineers

NHA | Advisors
Financial & Policy Strategies. Delivered.

Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering

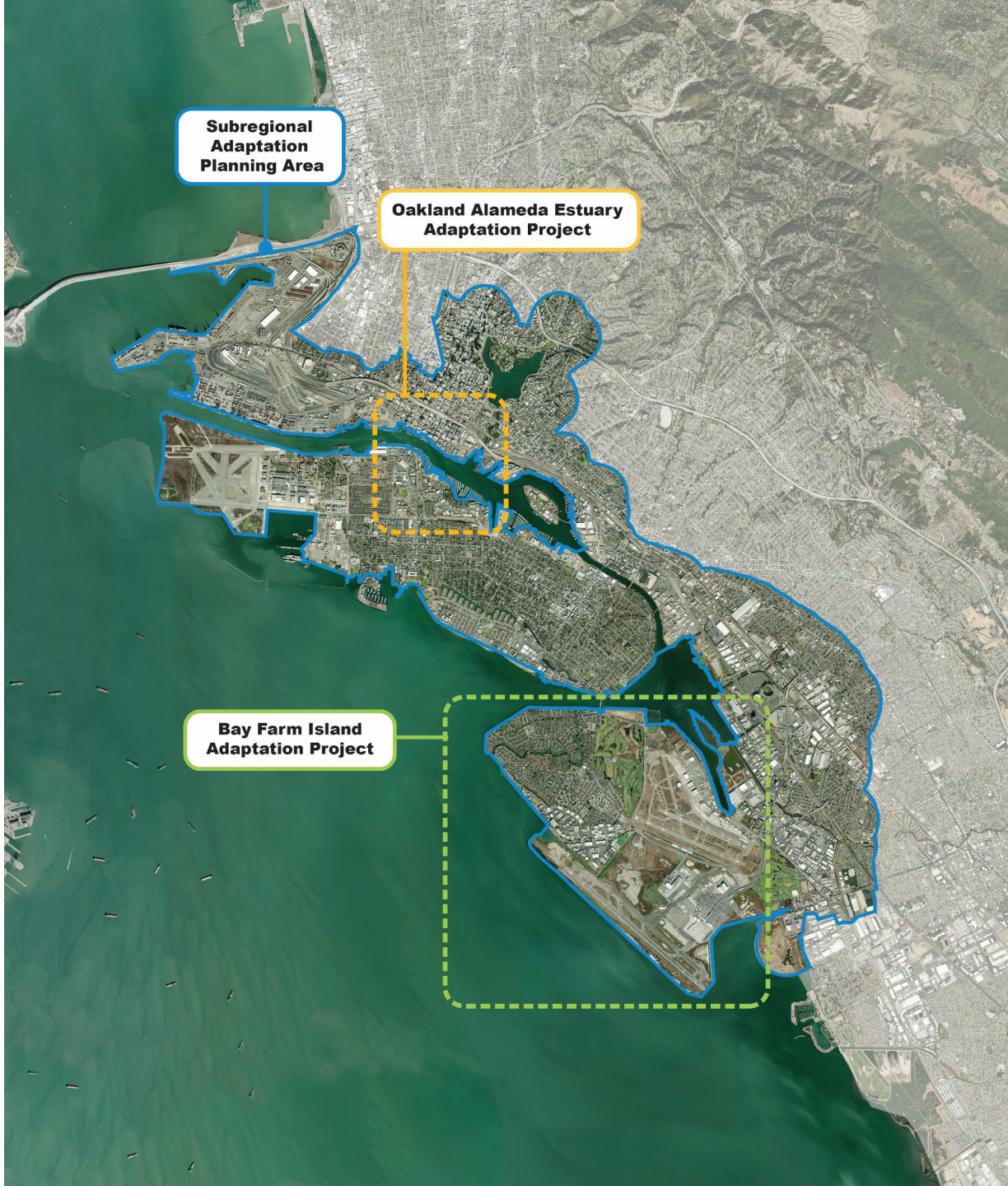
pathways
Climate Institute

OAAC ADAPT Projects

- The **Subregional Adaptation Plan** is a long-term plan that details preliminary strategies and pathways for shoreline communities to take as the climate and shorelines change over time

- The **Oakland Alameda Estuary Project** is a near-term sea level rise adaptation design concept to address increased coastal, stormwater, and groundwater flooding for up to two feet of sea level rise over the coming decades

- The **Bay Farm Island Adaptation Project** is a near-term sea level rise adaptation design project to address compound flooding and up to two feet of sea level rise and long-term planning coordination.



Project Schedule

2023 FALL | 2024 JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC | 2025 JAN FEB MAR APR MAY JUNE JULY AUG SEPT

Long-Term Subregional Adaptation Plan

- Planning Principles, Analysis and Criteria
- Strategy Foundation
- Strategy Development & Stakeholder Input
- Strategy Refinement
- Plan Completion & Council Hearings

Near-Term Bay Farm Island Adaptation

- Existing Conditions & Analysis
- Develop Alternatives
- Alternative Refinement & Stakeholder Input
- Preferred Concept
- 30% Design Development of Preferred Concept
- 30% Design Completion & Council Hearings

We are here!

Near-Term Oakland Alameda Estuary Adaptation

- Existing Conditions & Analysis
- Develop Alternatives
- Altenative Refinement & Stakeholder Input
- Final Concept Development
- Final Concept & Council Hearings

Project Grant Deadline Feb 2025

Community Engagement Event

Oakland Alameda Estuary
REAP Climate Center 8/3/24

Bay Farm Island
Leydecker Park 8/12/24

Oakland Alameda Estuary
Jack London Square 8/15/24

OAAC Project: Sea Level Rise Criteria

Near Term

2060 - 2080
35 to 50-year adaptation project lifespan

2' of sea level rise

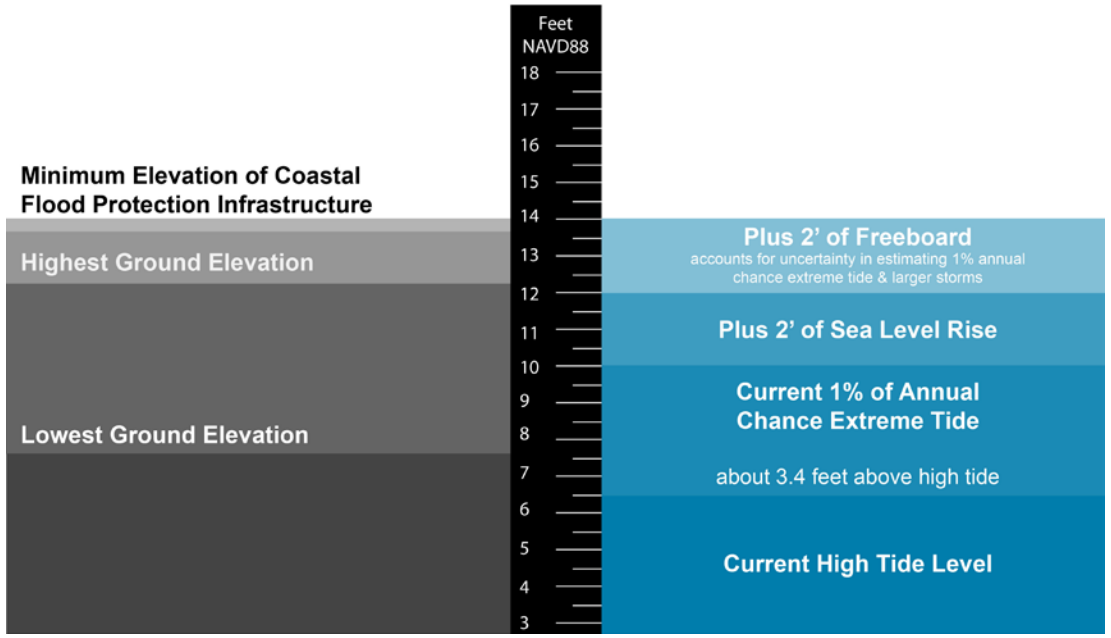
Protect to elevation +14’

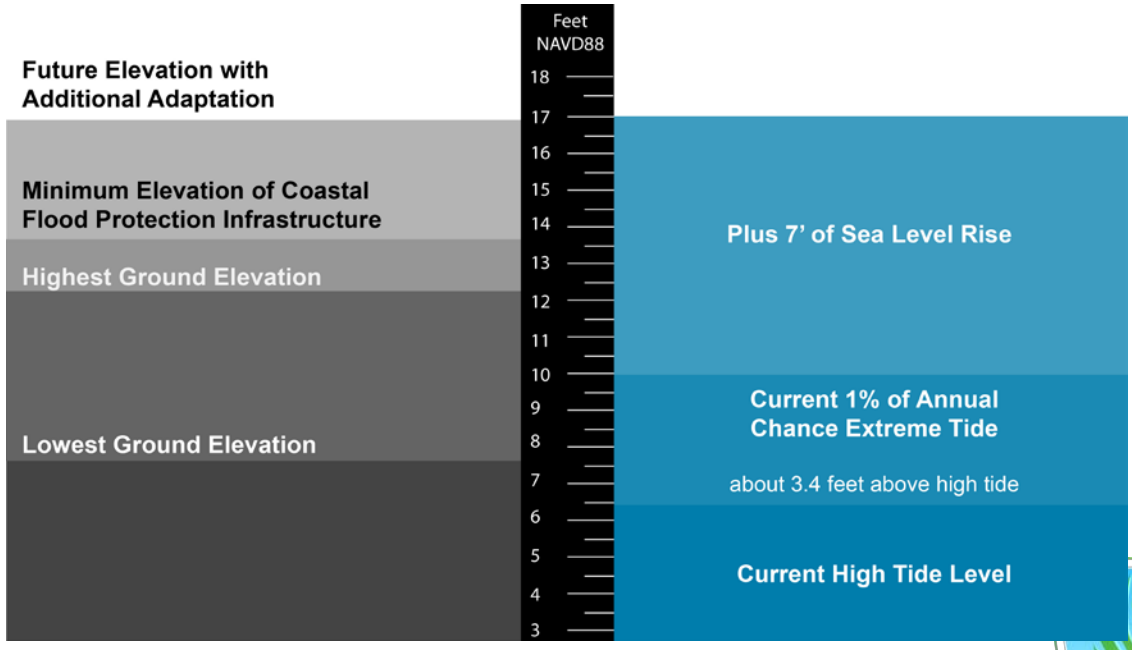
Long Term

2100+
Build upon near term projects

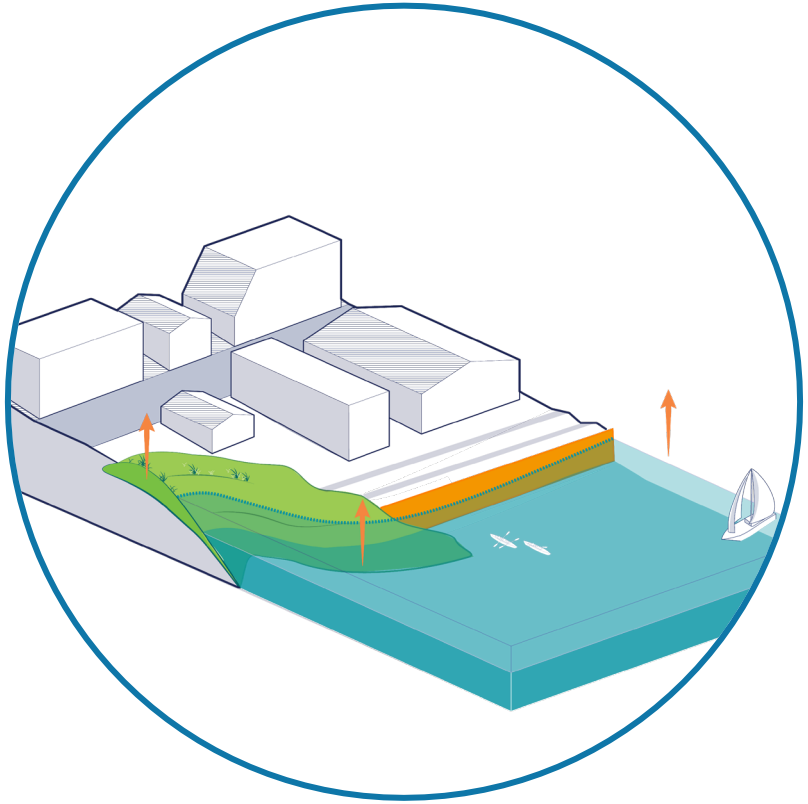
3.5 - 7' of sea level rise

Protect to elevation +17’



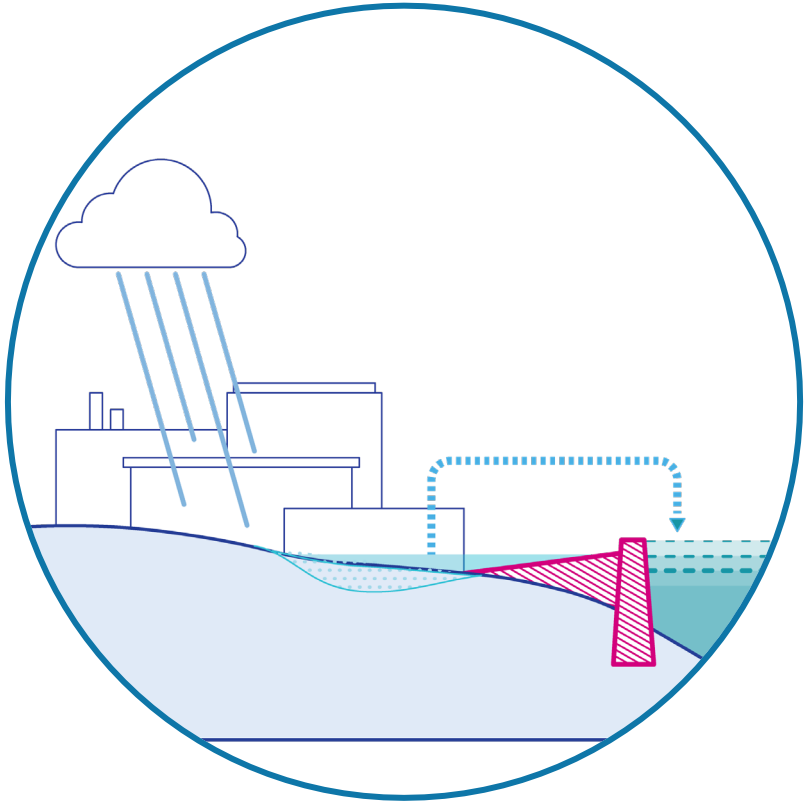


Combined Adaptation



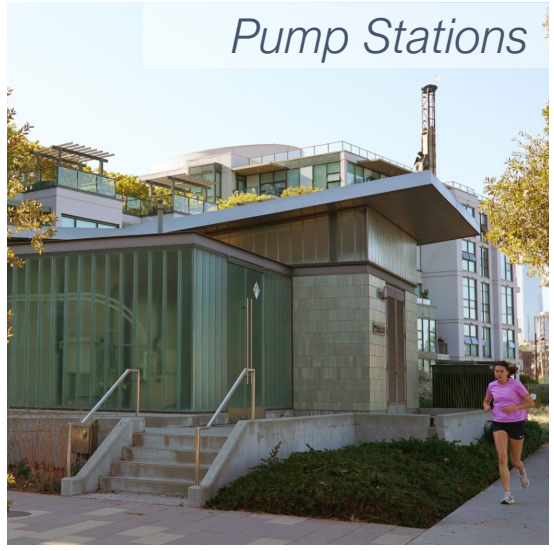
Shoreline elevation to prevent coastal flooding from sea level rise and storm surges

+

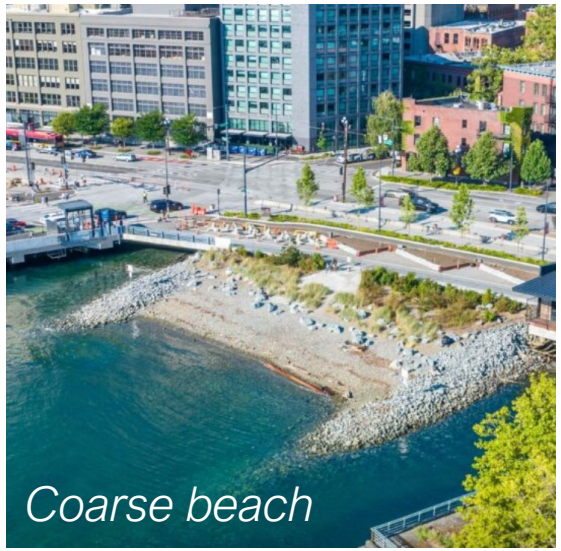


Inland adaptation (green and grey infrastructure) to manage stormwater and groundwater

Potential Adaptation Measures

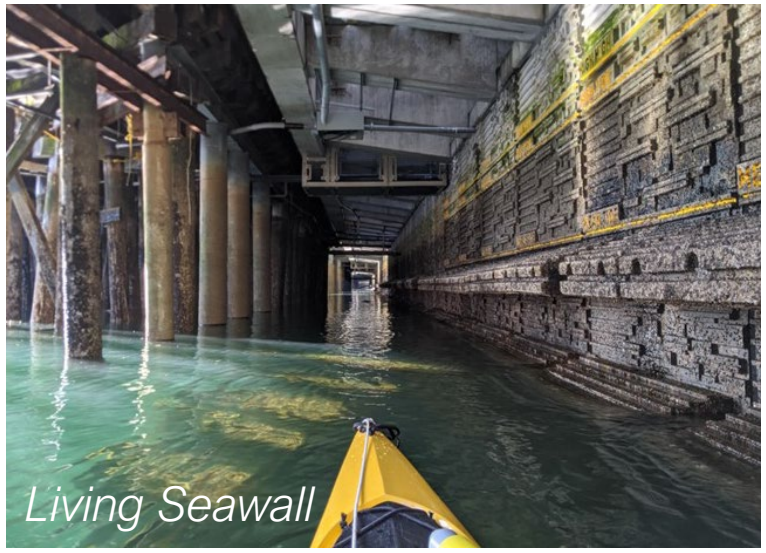


Natural & Nature-Based Features


Coarse beach


Gravel Beach and Rocky Intertidal Habitat


Cobble Marsh


Living Seawall


Habitat Panels

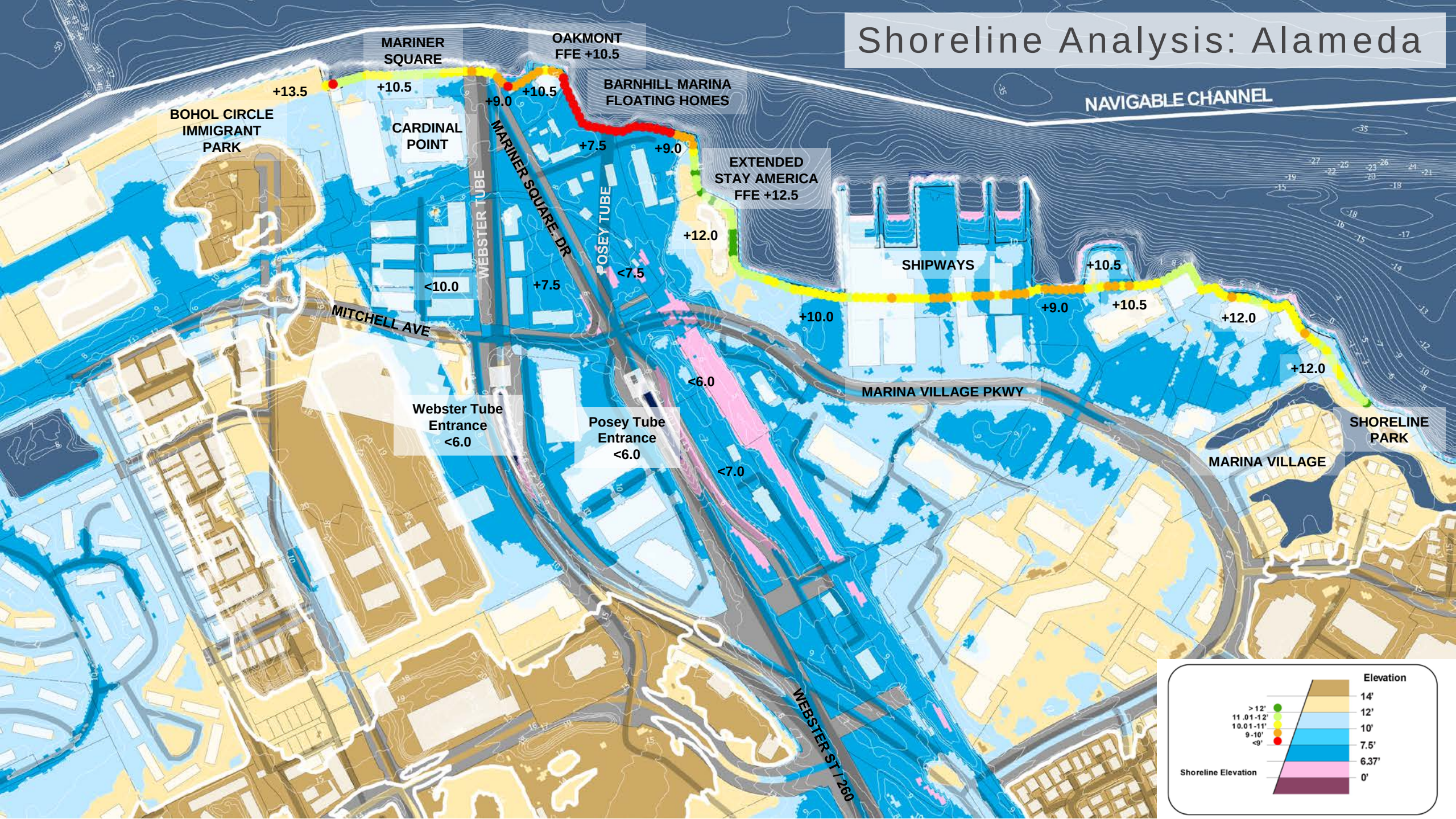

Rock and Log Groynes and Beach Protection

Oakland-Alameda Estuary Near-term Adaptation Project

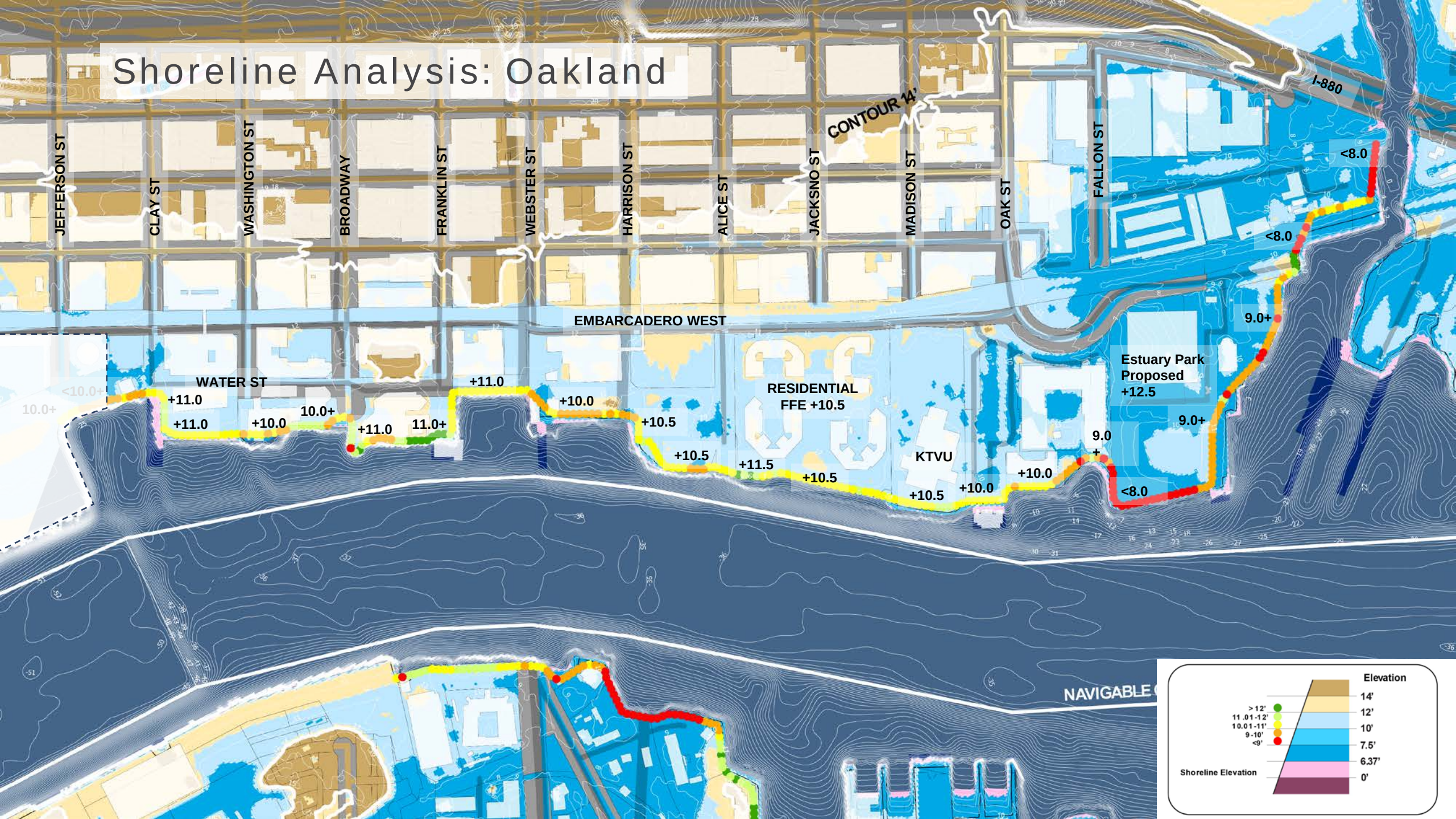
December 2024


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

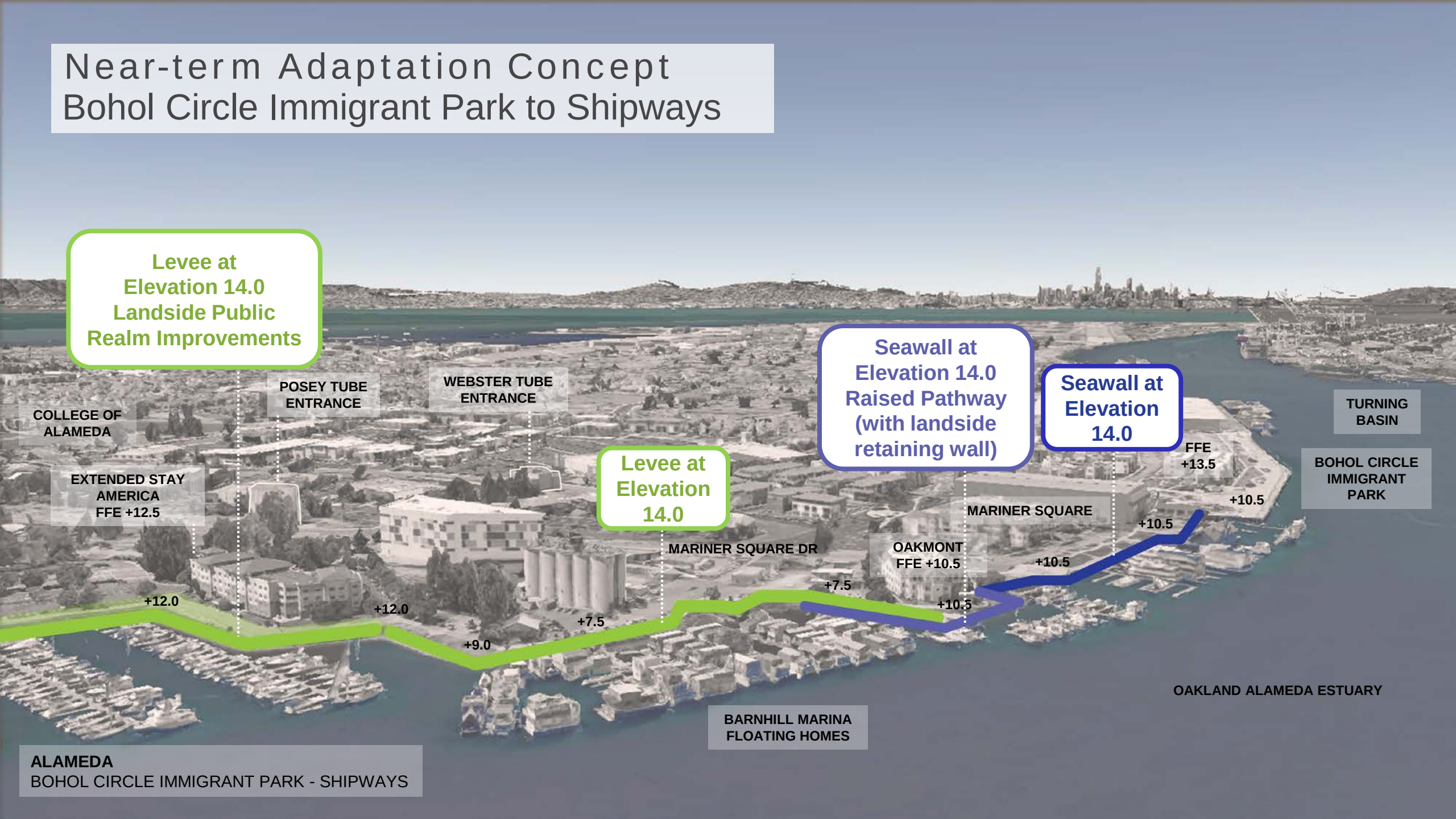
Shoreline Analysis: Alameda



Shoreline Analysis: Oakland

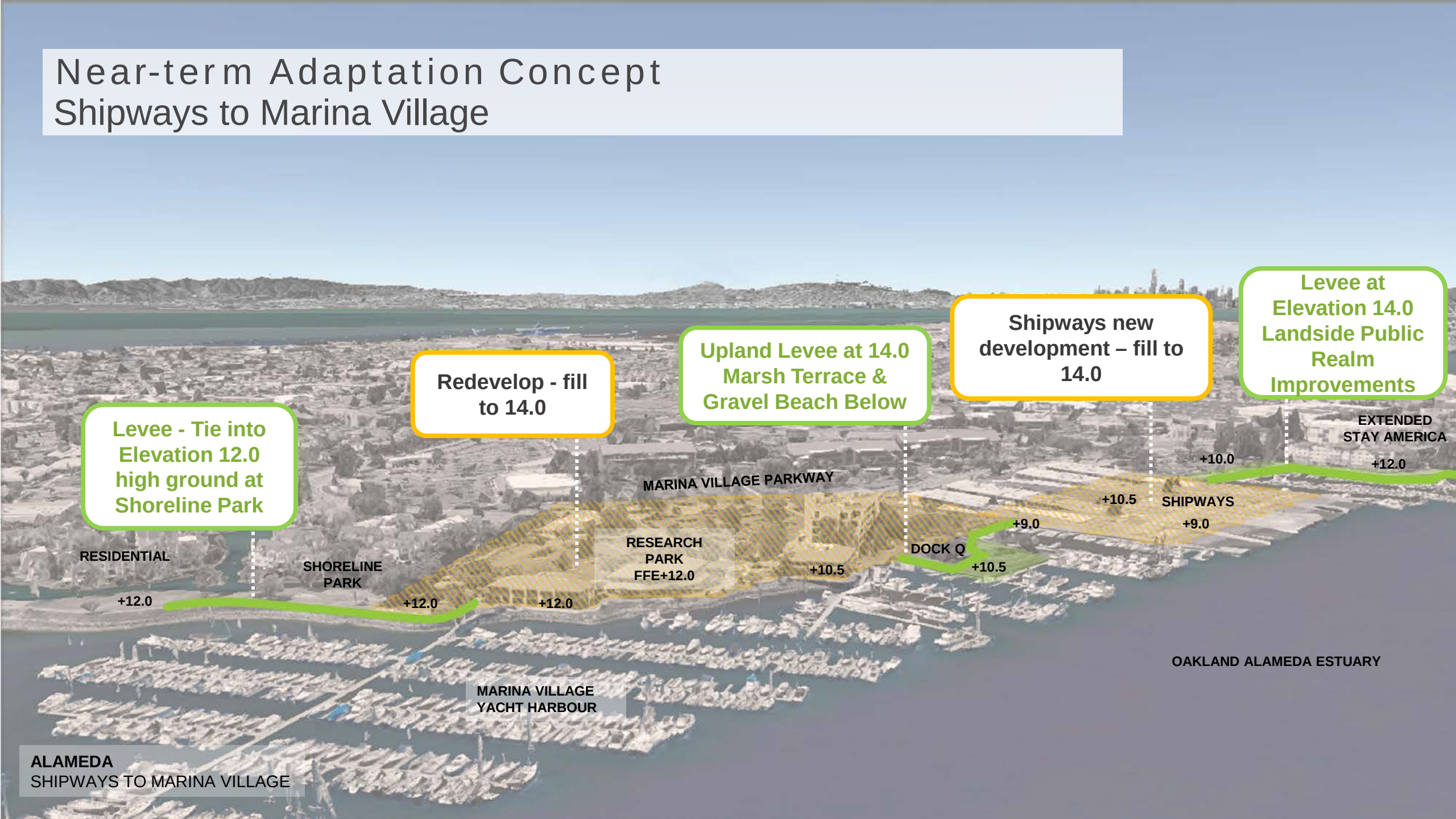


Near-term Adaptation Concept
Bohol Circle Immigrant Park to Shipways



ALAMEDA
BOHOL CIRCLE IMMIGRANT PARK - SHIPWAYS

Near-term Adaptation Concept
Shipways to Marina Village



ALAMEDA
SHIPWAYS TO MARINA VILLAGE

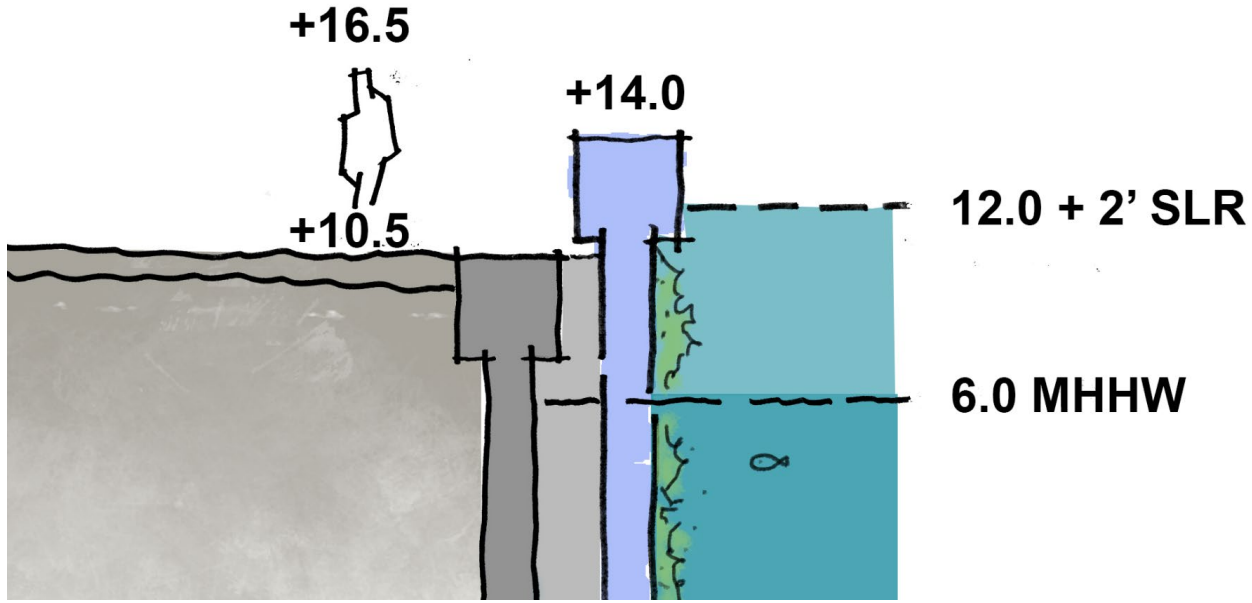
Alameda Concept Plan – Mariner Square to Shipways

**Finished Floor Elevation

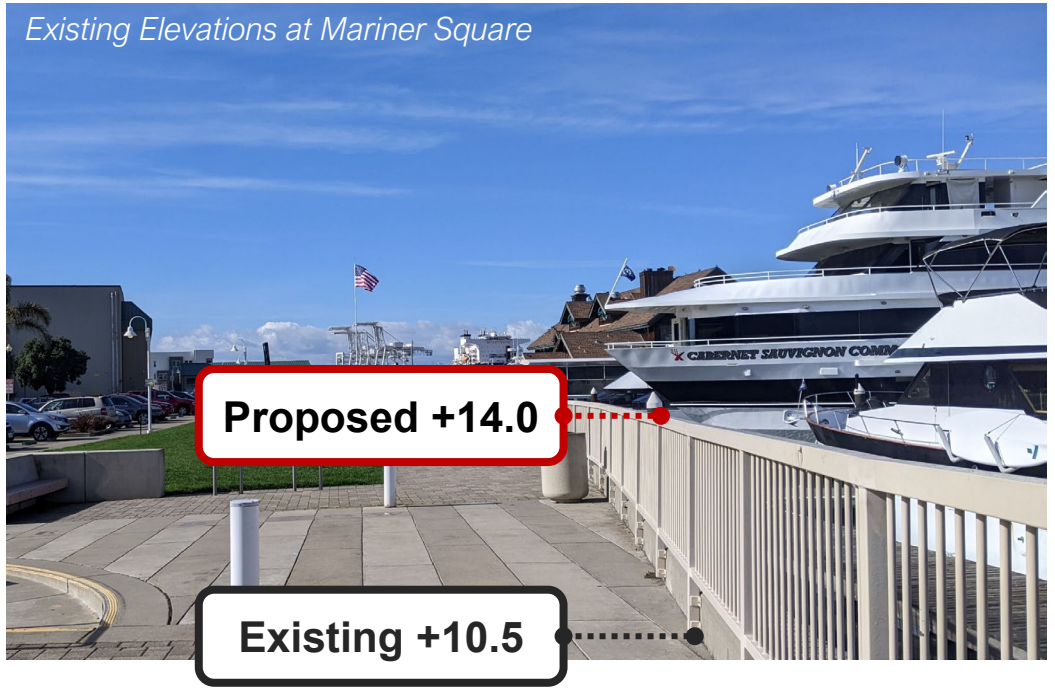
Alameda Shoreline – Near Term Adaptation

Elevated Seawall

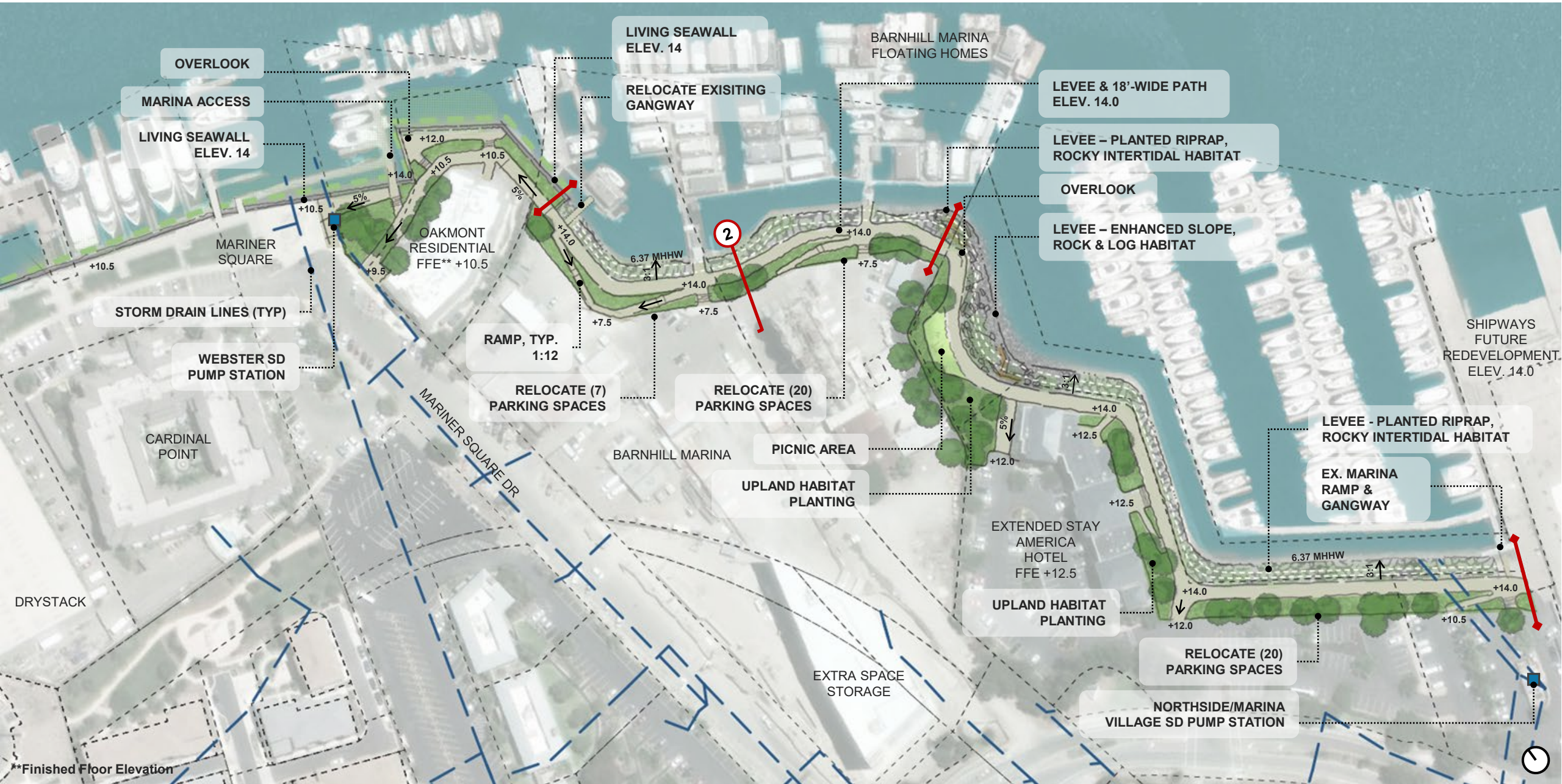
Build new Seawall water side of existing wall. Environmental permits and agency coordination required.



Section 1 – Typical condition at Cardinal Point and Mariner Square Drive



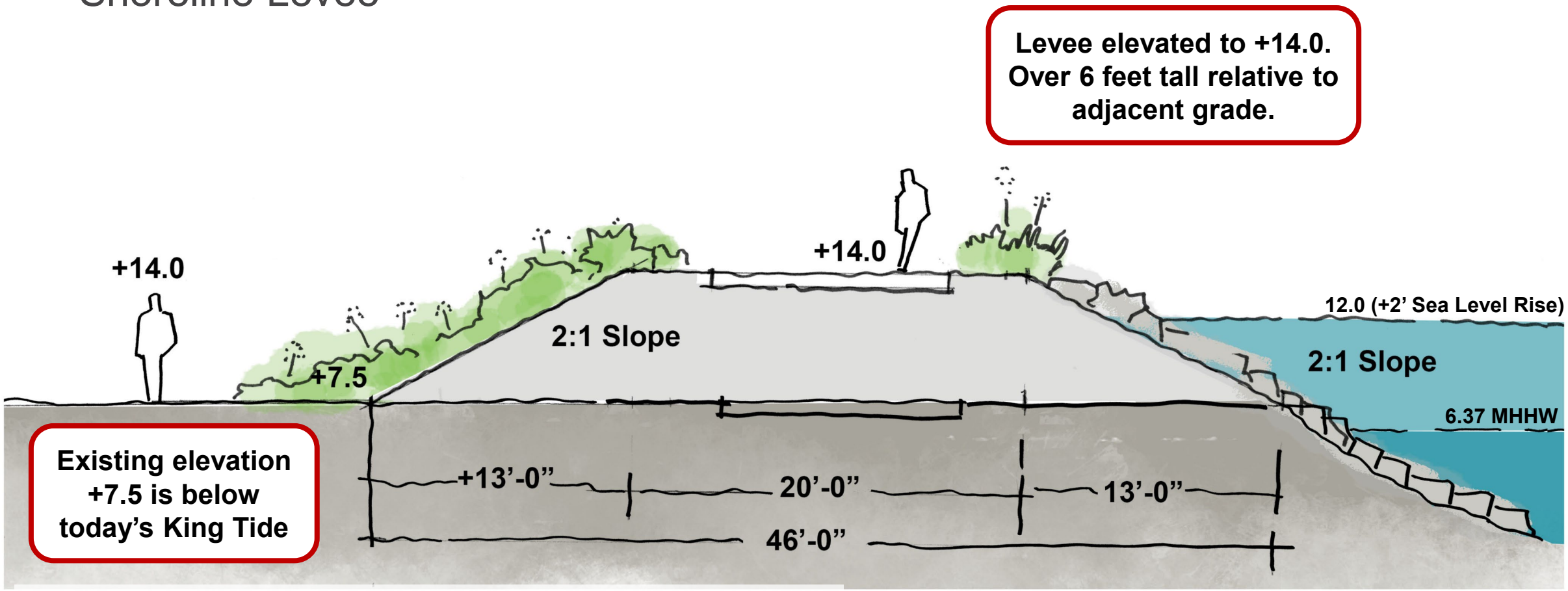
Alameda Concept Plan – Mariner Square to Shipways



**Finished Floor Elevation

Alameda Shoreline – Near Term Adaptation

Shoreline Levee

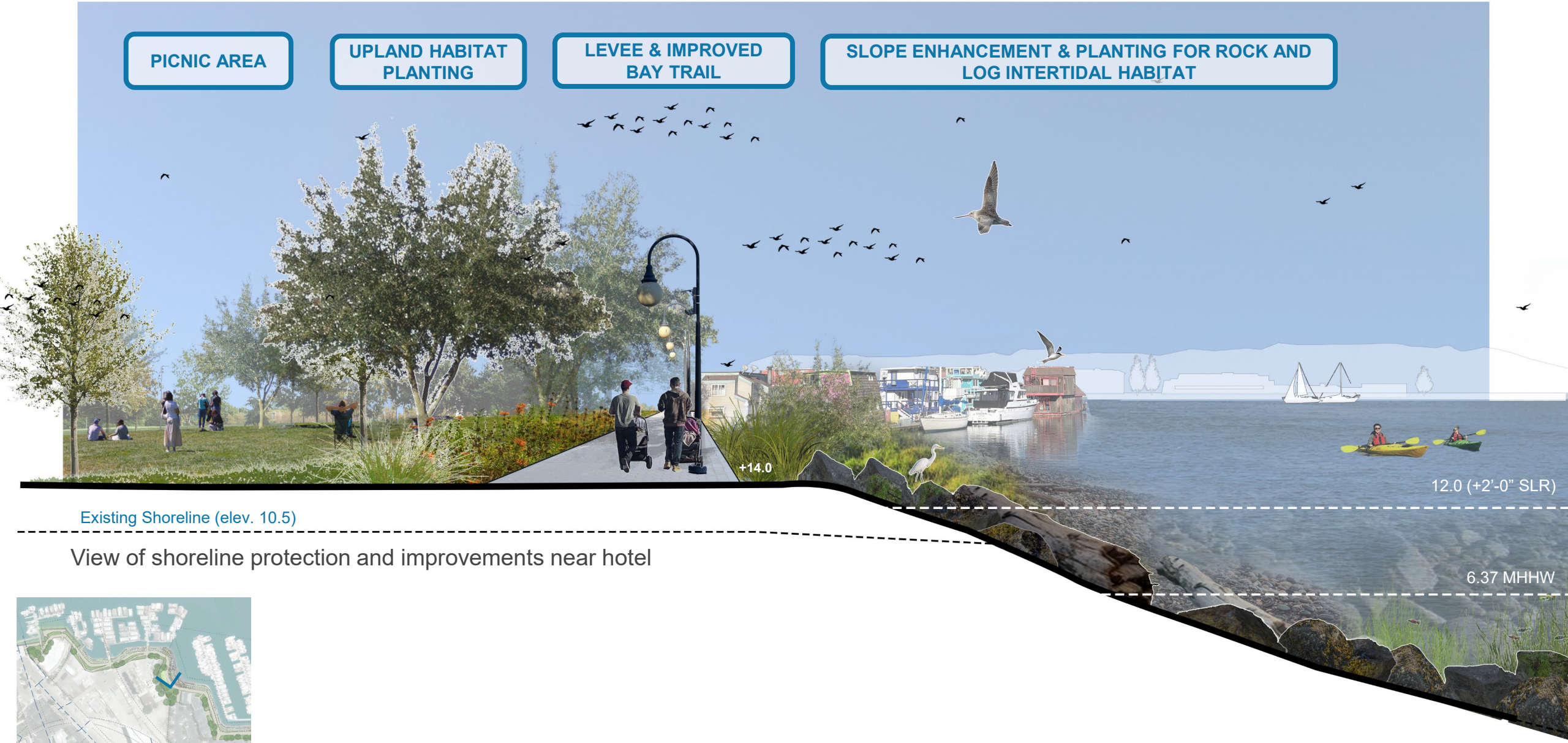


Section 2 – Typical condition at Barnhill Marina

Alameda Concept Plan – Mariner Square to Shipways

**Finished Floor Elevation

Alameda Shoreline



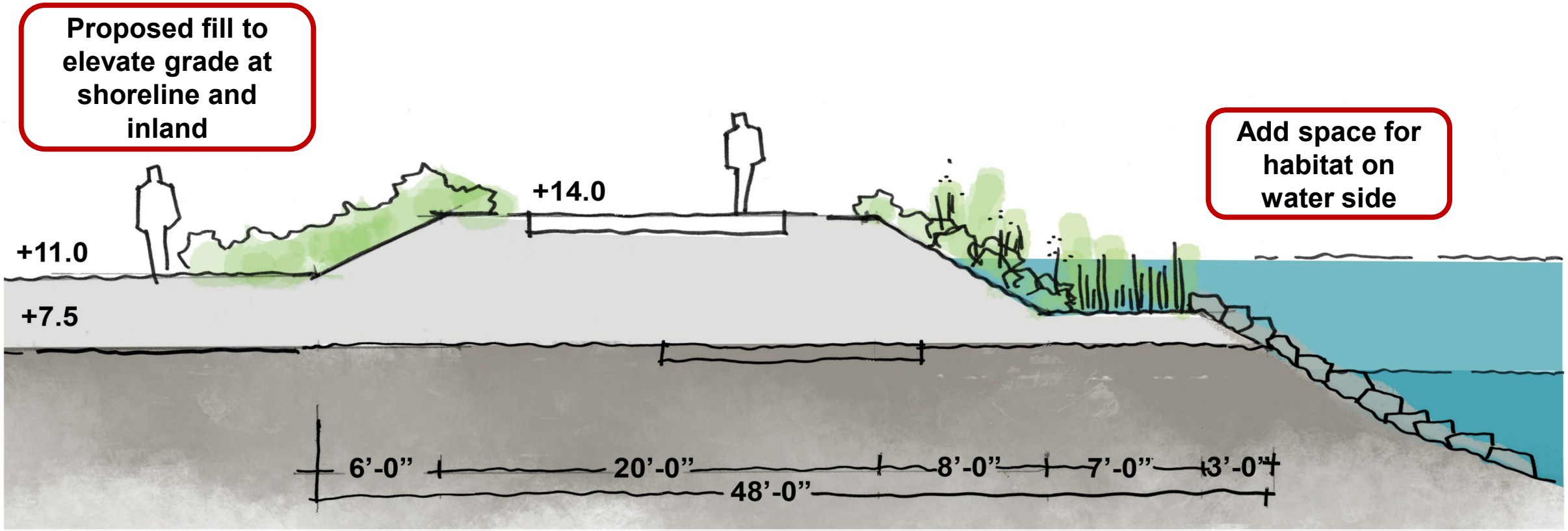
View of shoreline protection and improvements near hotel

Alameda Concept Plan – Shipways to Marina Village

***"Finished Floor Elevation" (estimated)

Alameda Shoreline – Near Term Adaptation

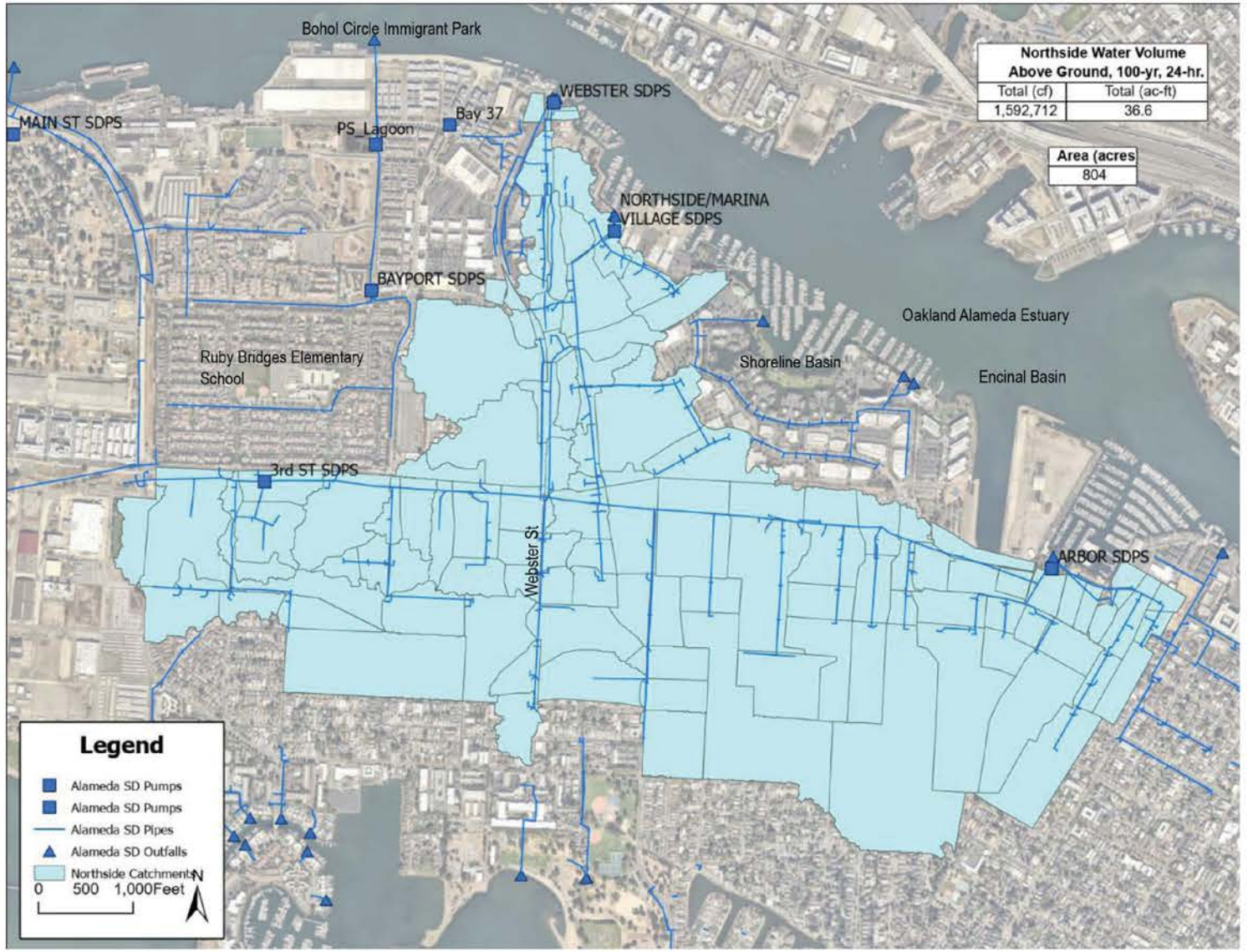
Raised Grade at Shoreline and Inland



Section 4 – Typical condition at Marina Village

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.

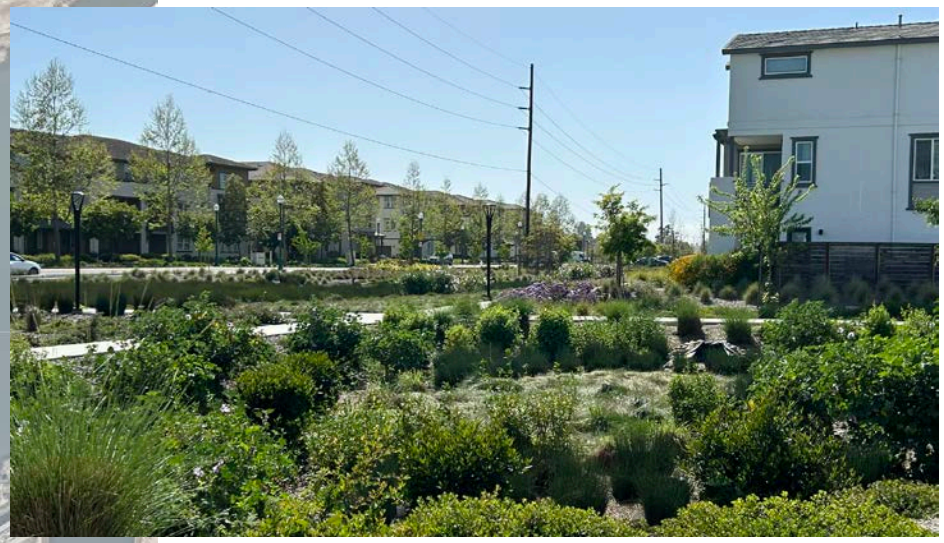


Estimated Future Precipitation % Increase With Climate Change

		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



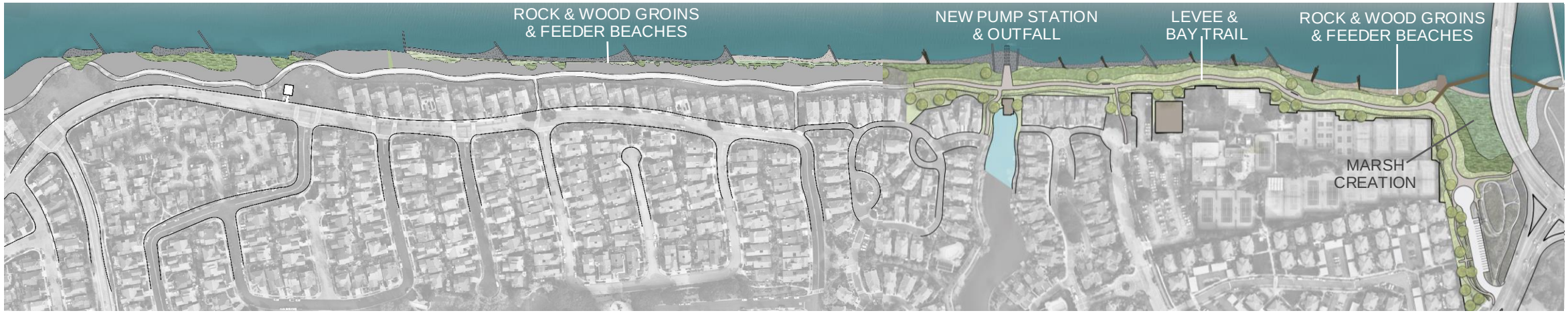
Bay Farm Island Adaptation Project

December 2024

BFI Project: Current Flood Conditions

BFI Project: Near-term Project Area

NORTHERN SHORELINE | LAGOON OUTFALL | VETERANS COURT



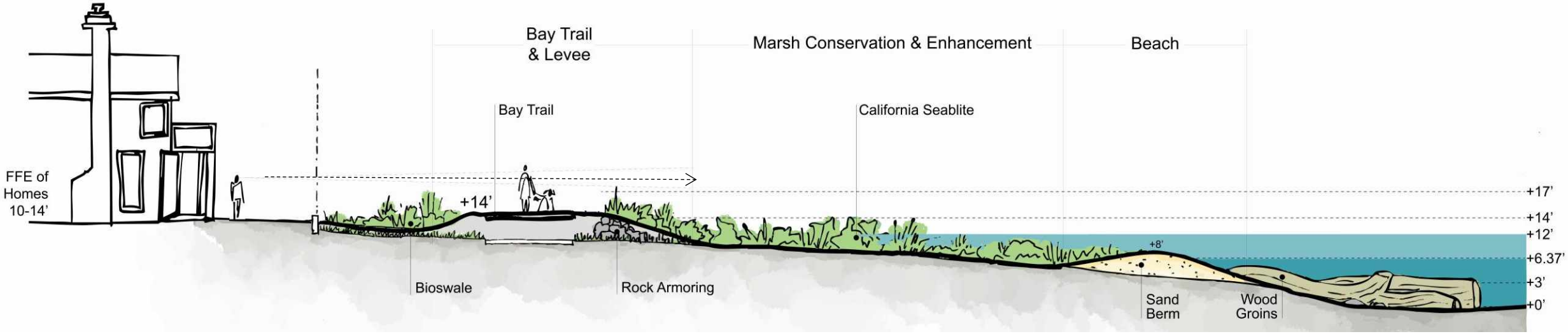
BFI Project: Preferred Near-term Alternative

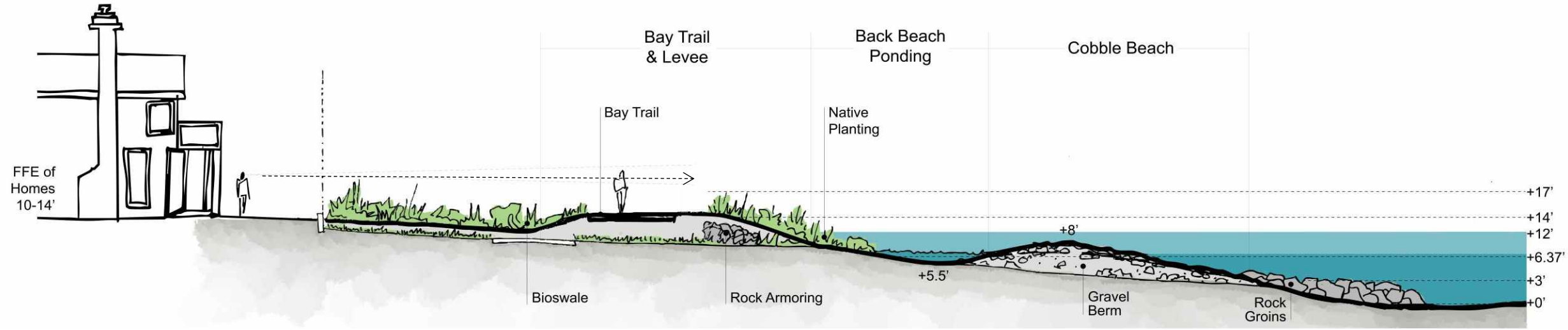
- Nature-based solutions
- Levee: Lagoon to Veterans Ct
- Lagoon: New tide gate, pump station & gravity pipe
- Marsh expansion

Nature-Based Solutions

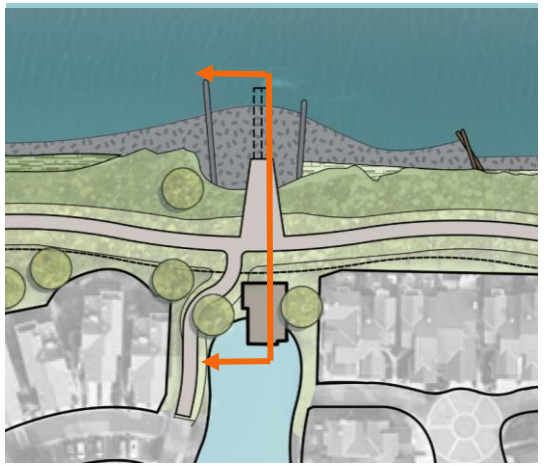
Levee & Floodwall & Nature-Based Solutions

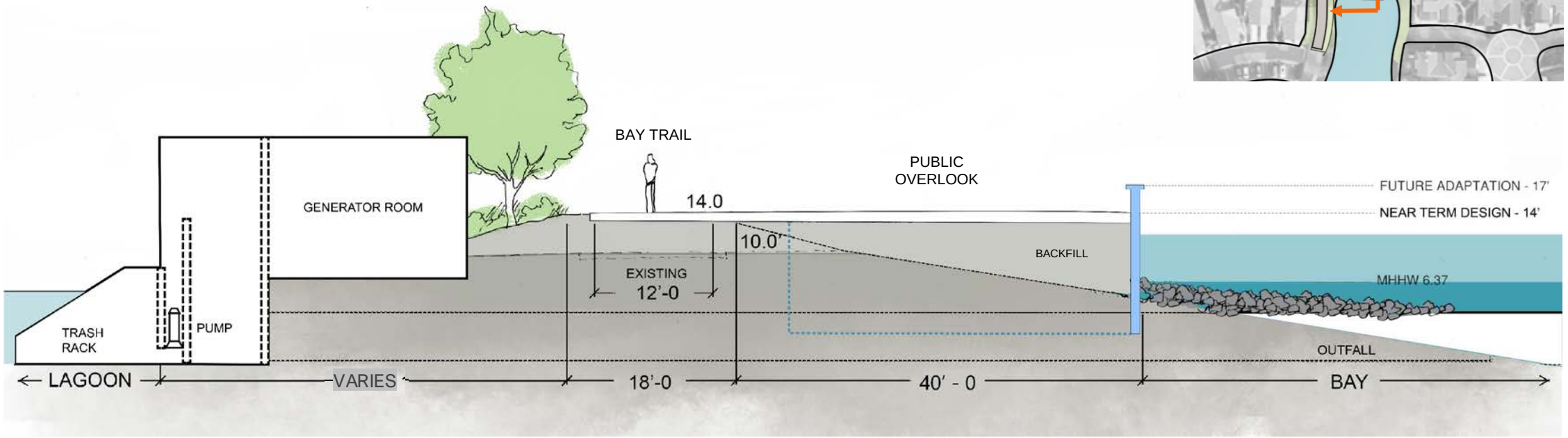
BFI Project: Levee / Bay Trail / Habitat Concepts





BFI: Pump Station & Tide Gate Replacement



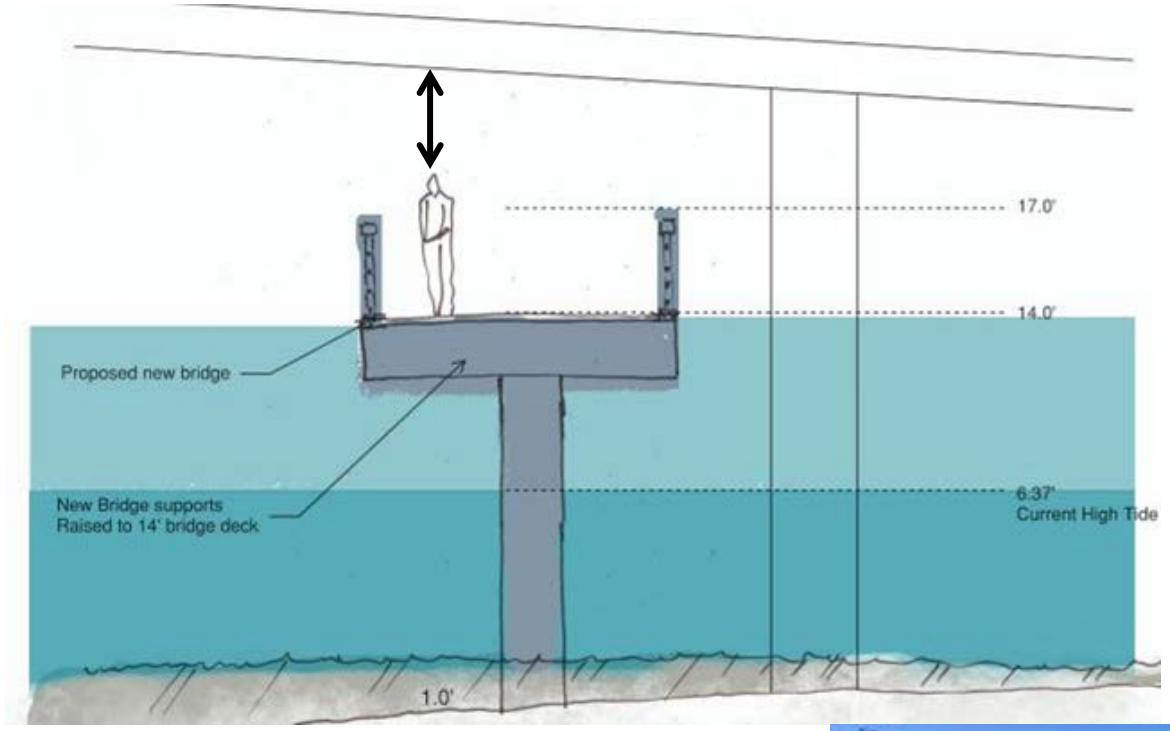


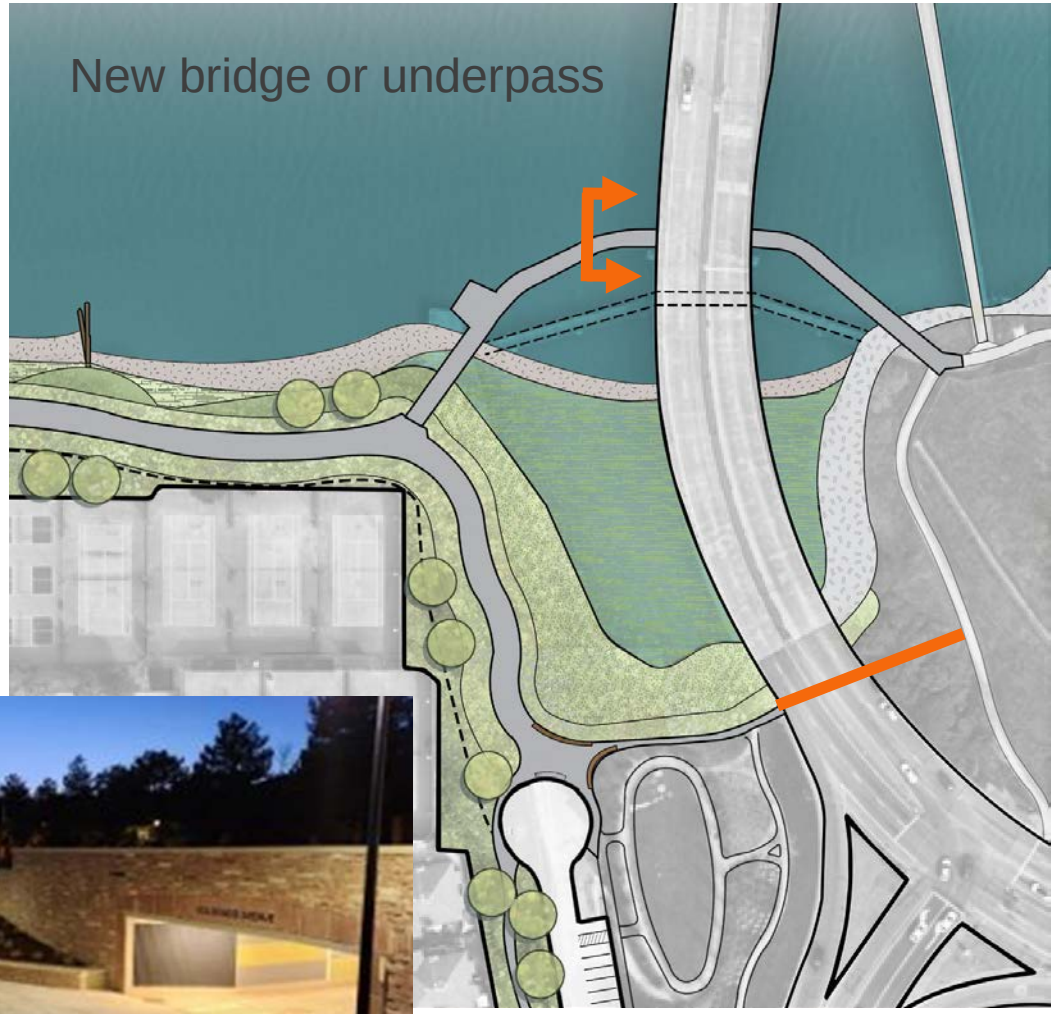
- Interior drainage to comply with FEMA 65.10
- Maintain existing lagoon circulation & stormwater management goals
- Clarify Operations & Maintenance responsibilities
- Obtain right-of-way or easements for gravity pipe

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%)

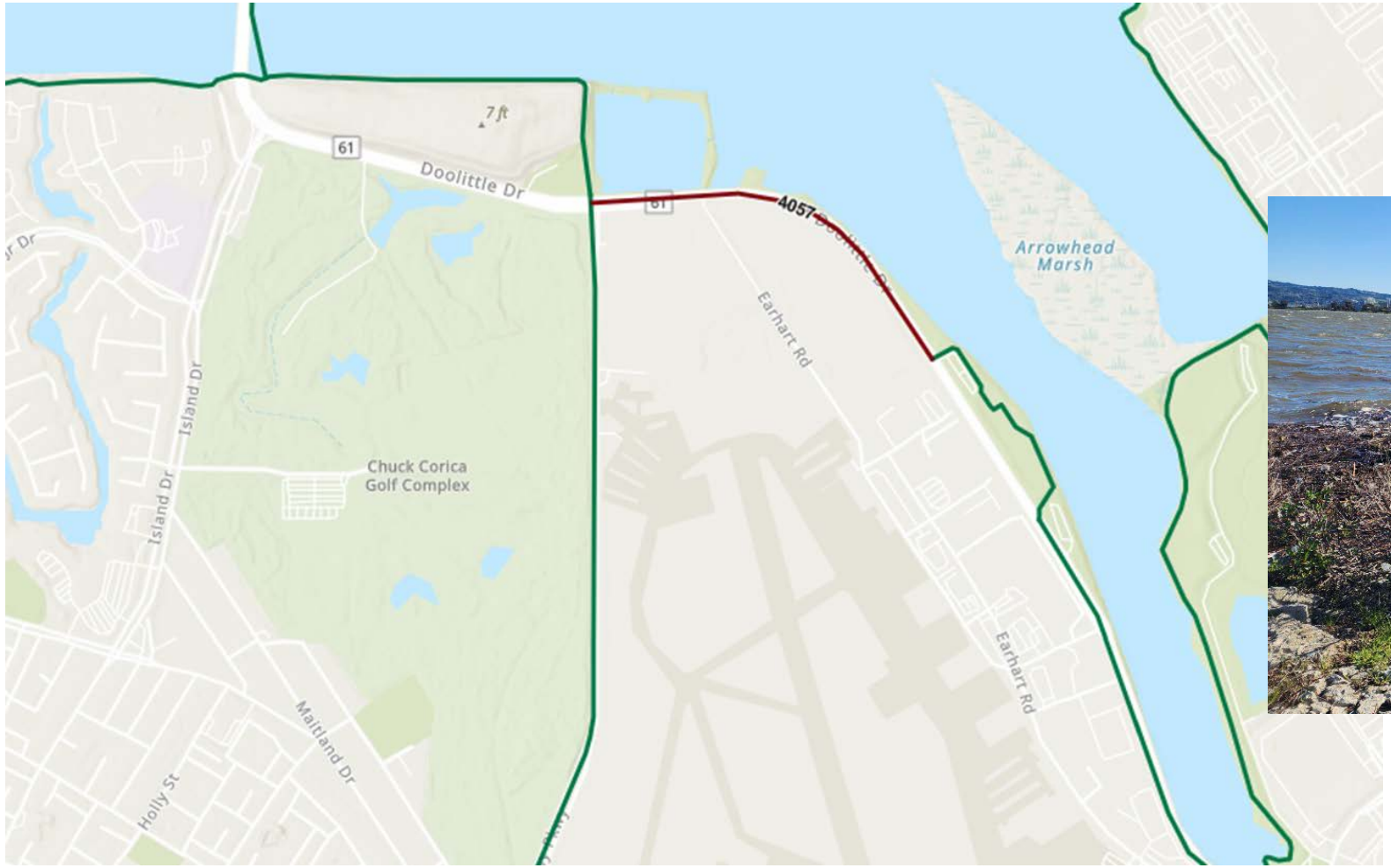
Total: $55.5 m

Recommended for further review by FEMA

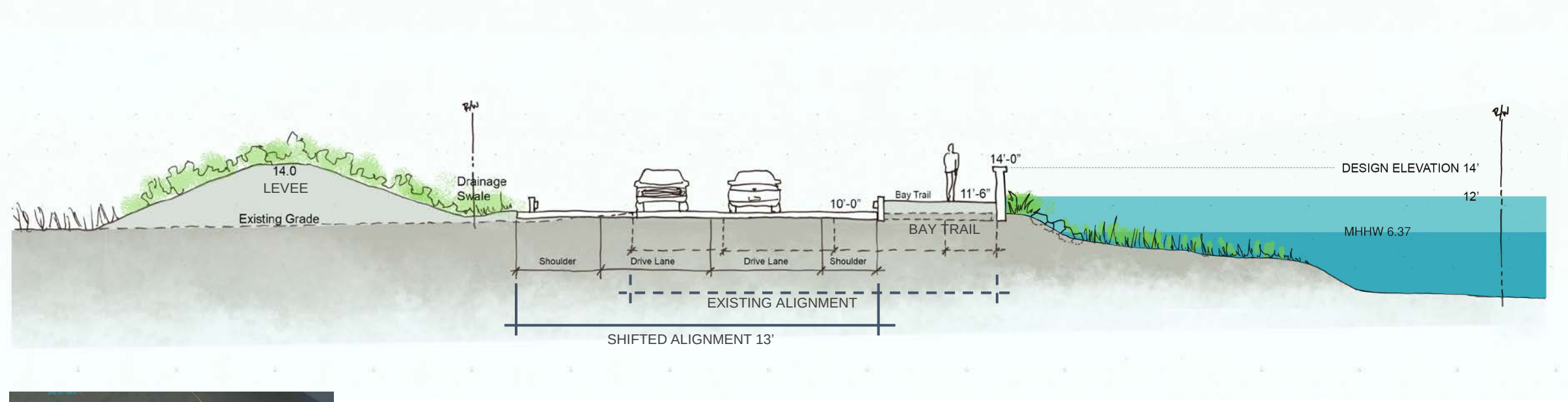
Start: 2025?

Construction: 2030

FEMA BRIC Grant: Bay Trail Gap Closure



FEMA BRIC Grant: Proposed Adaptation – Doolittle Drive



BAY TRAIL

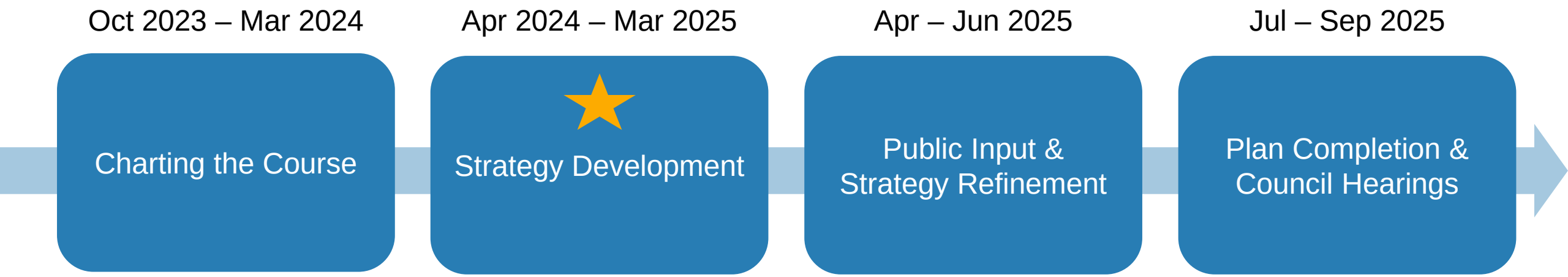
SHIFT DOOLITTLE SOUTHWEST 13'

LEVEE TO ELEVATION 14'

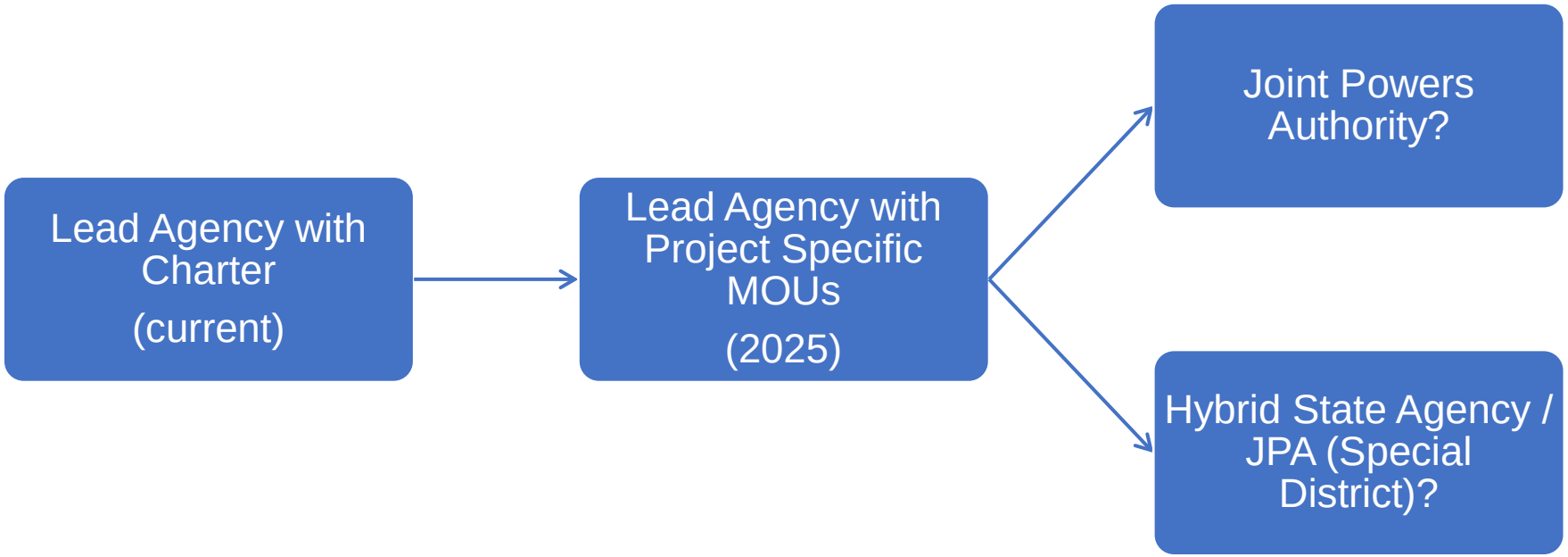
Subregional Adaptation Planning

December 2024

Subregional Adaptation Plan Process



Governance: Recommended Evolution



Governance: Project-specific MOUs

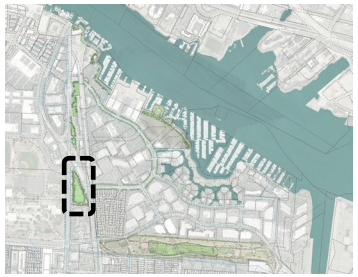
Project	Funding source	MOU partners	Other potential partners
Bay Farm Island/Doolittle Project	BRIC	• City of Alameda • City of Oakland • Port of Oakland	• Caltrans • EBRPD • Community Partners
Estuary Project	WRDA	• City of Alameda • City of Oakland • Port of Oakland	• Caltrans • Community Partners

OAAC Adapt Projects

December 2024

Alameda Inland Flooding – Detention Basin Concept Plans

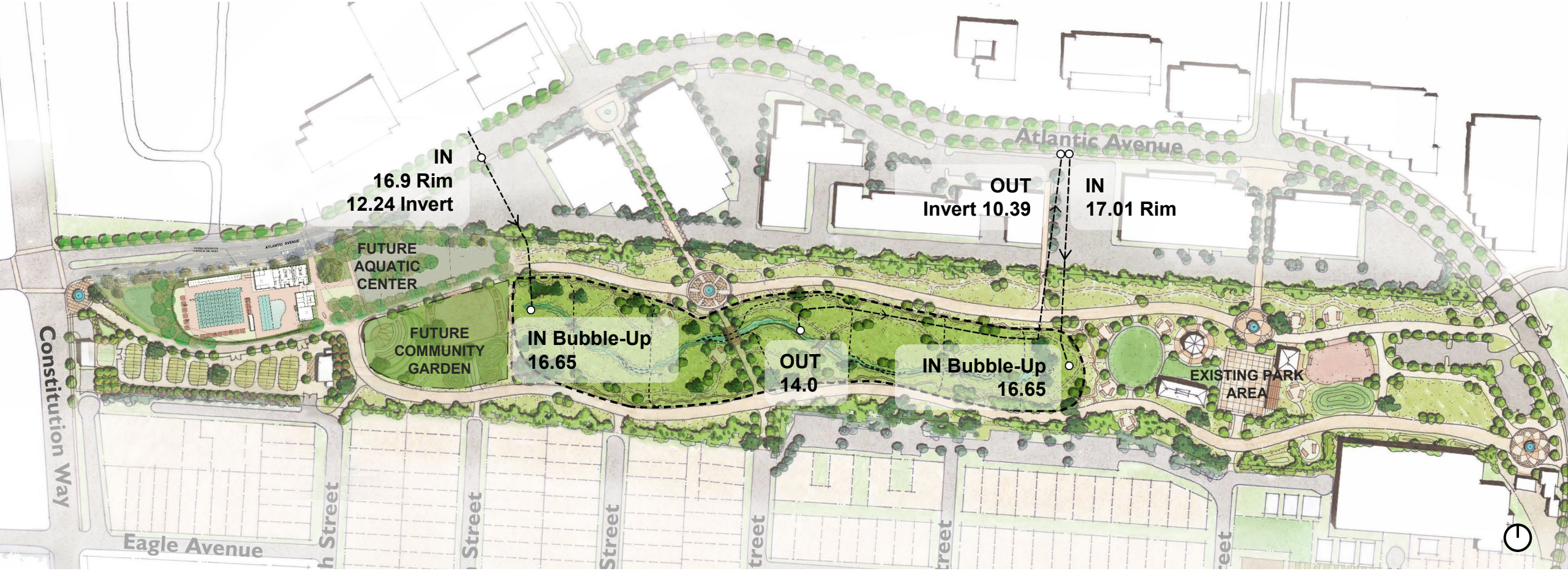
Neptune Park



Alameda Inland Flooding – Detention Basin Concept Plans

Alameda #2 & #3

Jean Sweeney Park



- 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