

OAAC Project Site Walk

January 11, 2024



Agenda

01

Existing
Conditions
Report (Draft)

02

SLR
Concepts
and Criteria

03

Community
Engagement
Plan (Draft)

04

Best
Practices
Topics

05

Site Walk
Prep



**Existing
Conditions
Report
(Draft)**



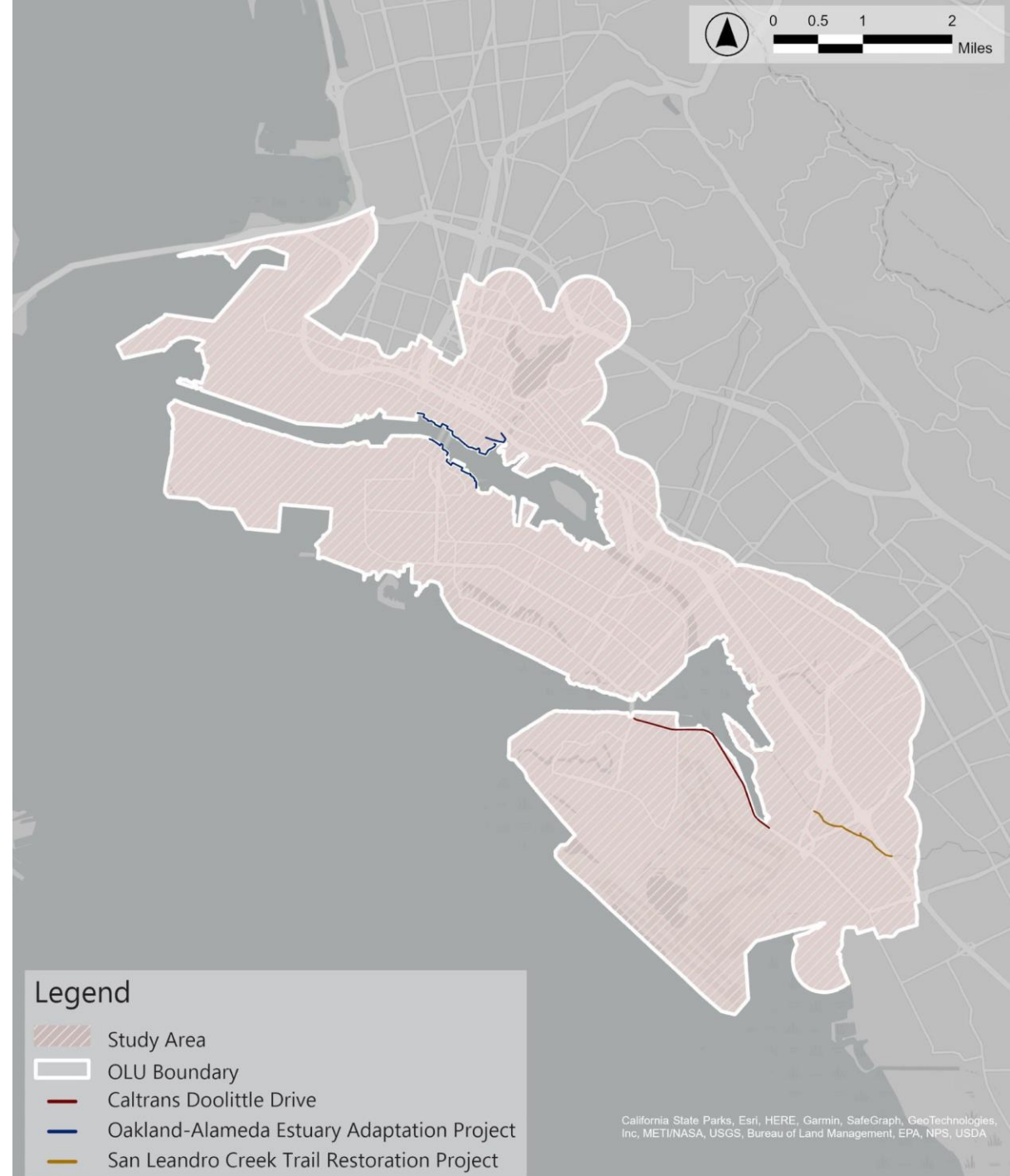
Report Organization

- 1 EXECUTIVE SUMMARY OF KEY FINDINGS
- 2 INTRODUCTION
- 3 OAKLAND-ALAMEDA SUBREGION
- 4 OAKLAND-ALAMEDA ESTUARY
- 5 BAY FARM ISLAND
- 6 CONCLUSION
- 7 REFERENCES



Report Purpose

- Present existing condition information collected to support adaptation planning for the Oakland Alameda Subregion
- Identify data gaps for future study and consideration

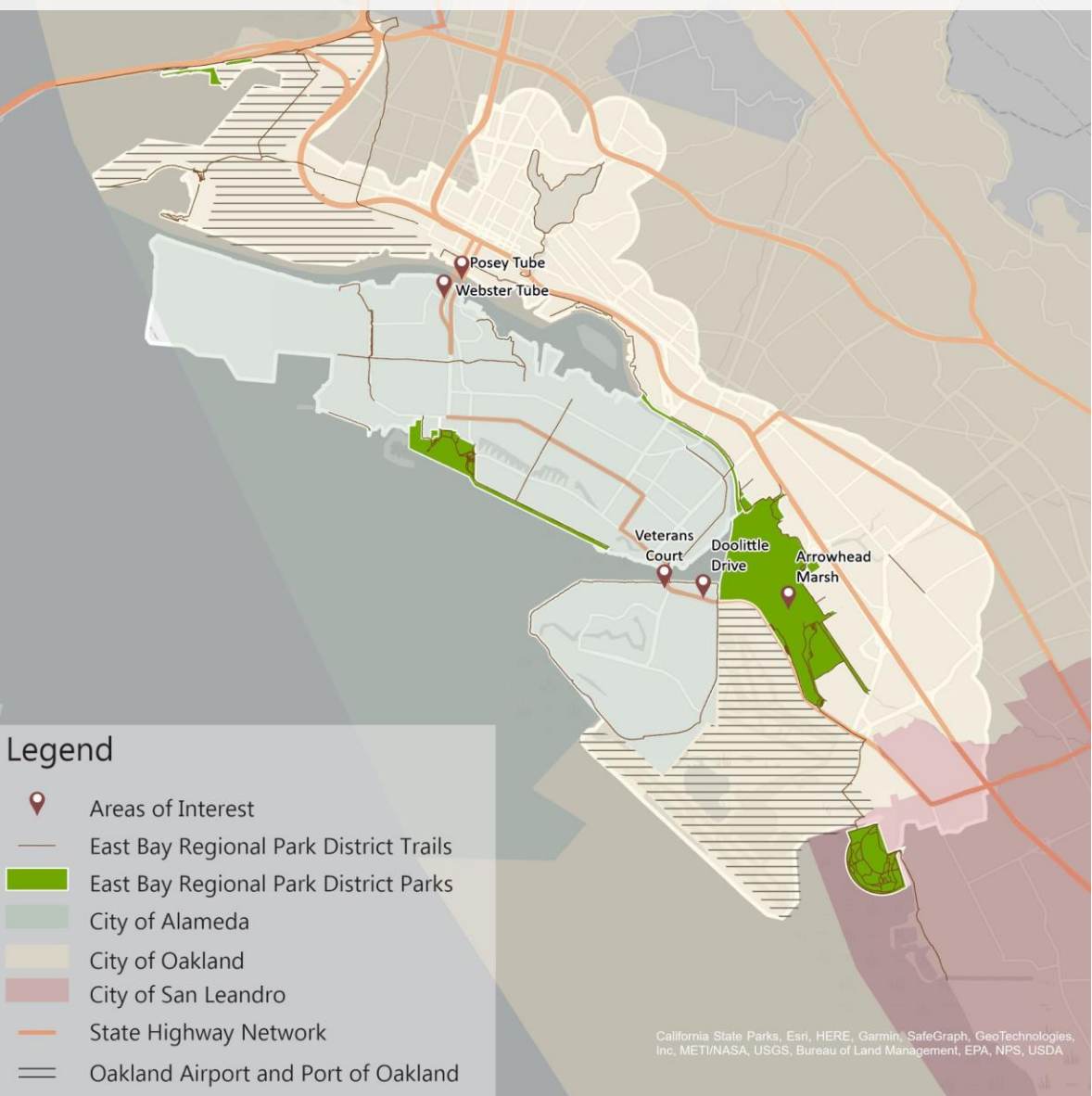


Contents of Chapter 3: Oakland-Alameda Subregion

- 3.1 OVERVIEW OF THE OAKLAND-ALAMEDA SUBREGION AND COMMUNITY CHARACTERISTICS
- 3.2 SUMMARY OF EXISTING ADAPTATION EFFORTS / PLANS
- 3.3 BEST AVAILABLE CLIMATE SCIENCE
- 3.4 HAZARDS
- 3.5 HABITAT
- 3.6 BUILT INFRASTRUCTURE
- 3.7 PUBLIC ACCESS AND RECREATION
- 3.8 PARKS AND OPEN SPACE
- 3.9 NEW DEVELOPMENT AND PLANNED REDEVELOPMENT
- 3.10 SHORELINE CONTAMINANTS



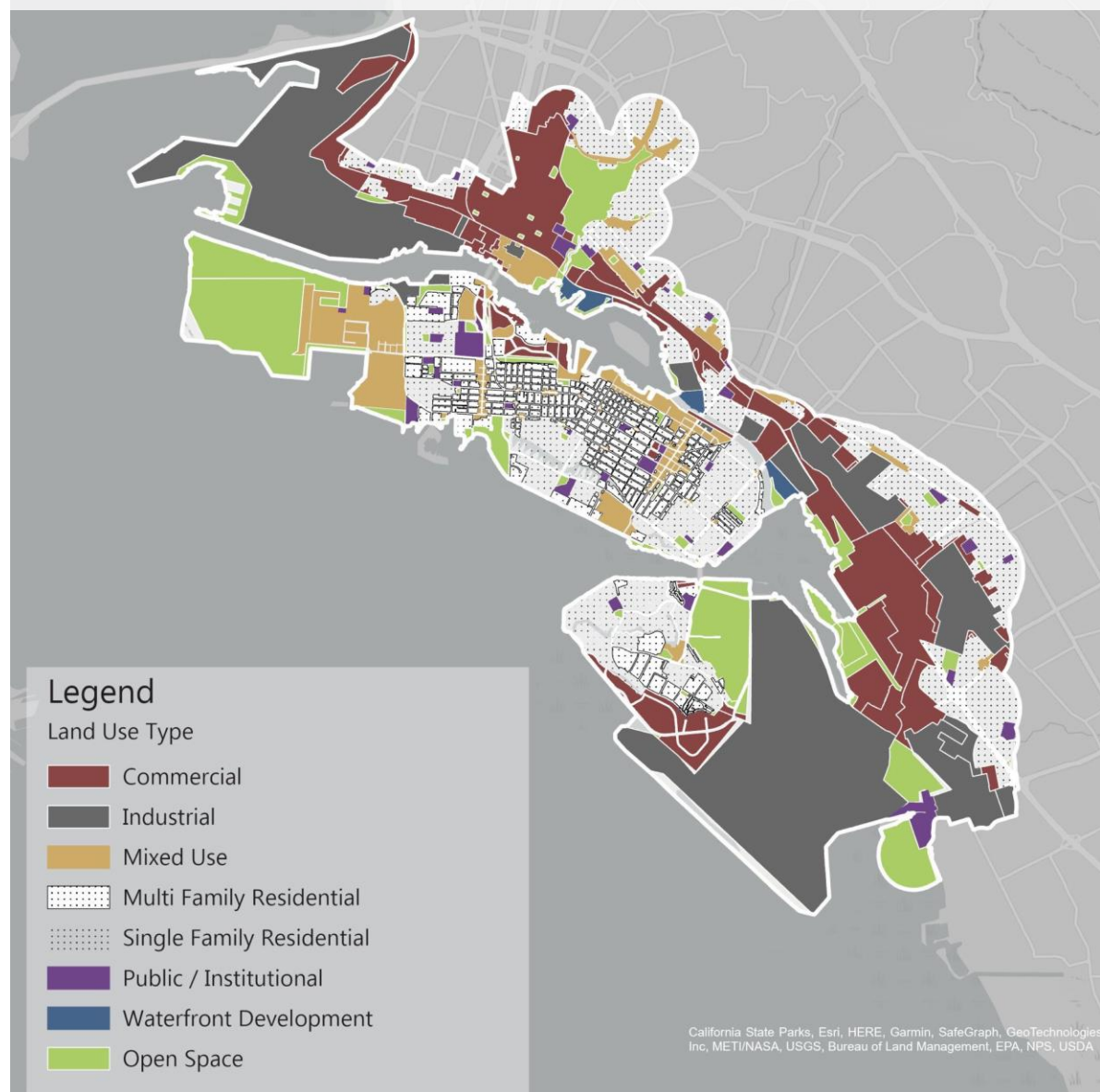
Jurisdiction Boundaries



- Legend**
- Areas of Interest
 - East Bay Regional Park District Trails
 - East Bay Regional Park District Parks
 - City of Alameda
 - City of Oakland
 - City of San Leandro
 - State Highway Network
 - Oakland Airport and Port of Oakland

California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

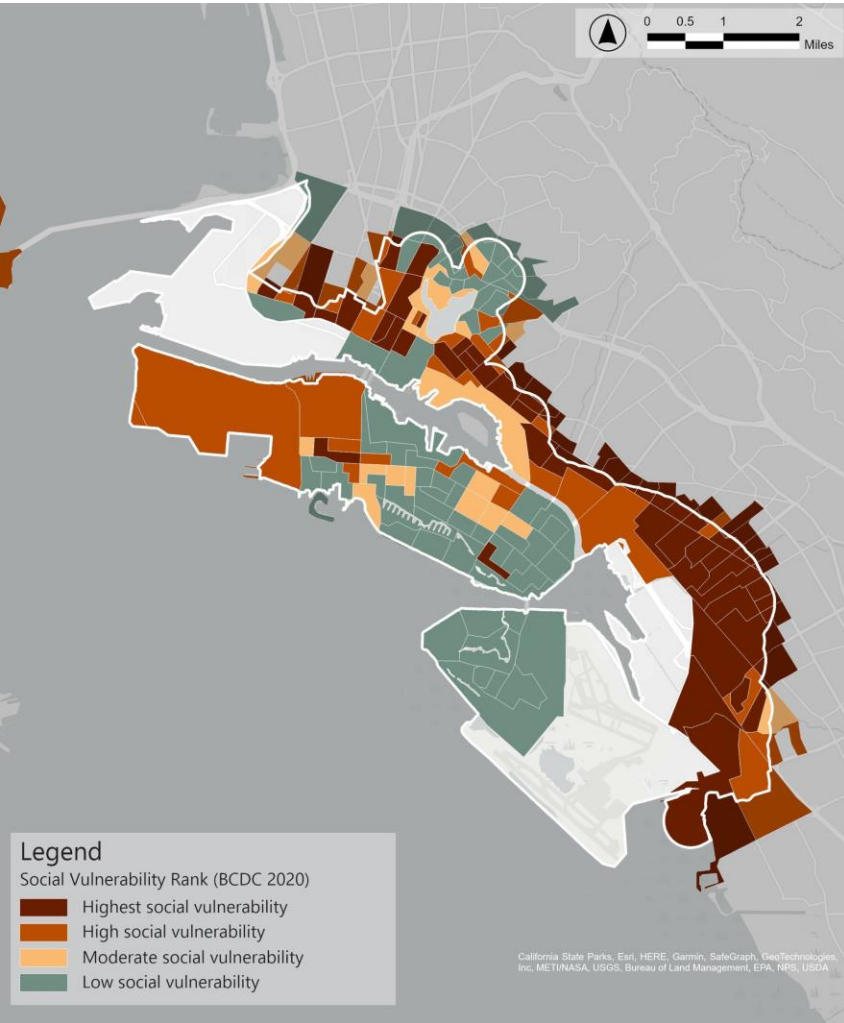
Land Use



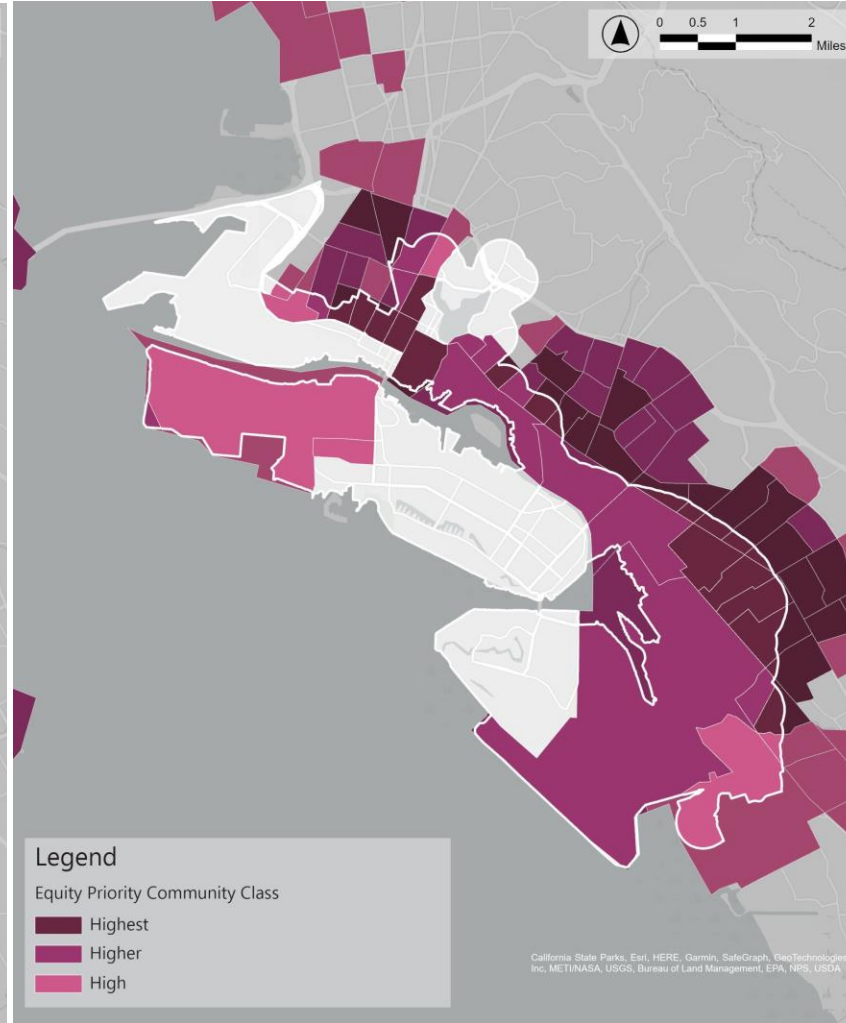
- Legend**
- Land Use Type
- Commercial
 - Industrial
 - Mixed Use
 - Multi Family Residential
 - Single Family Residential
 - Public / Institutional
 - Waterfront Development
 - Open Space

California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

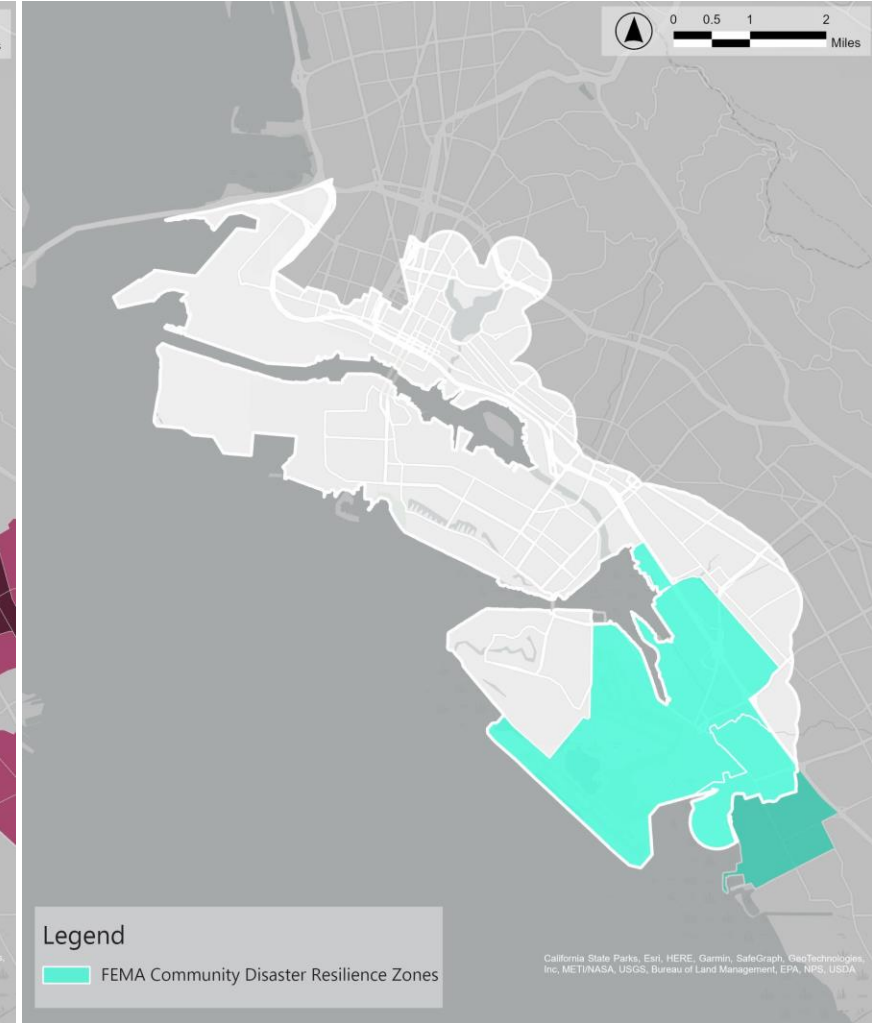
BCDC Social Vulnerability Rank



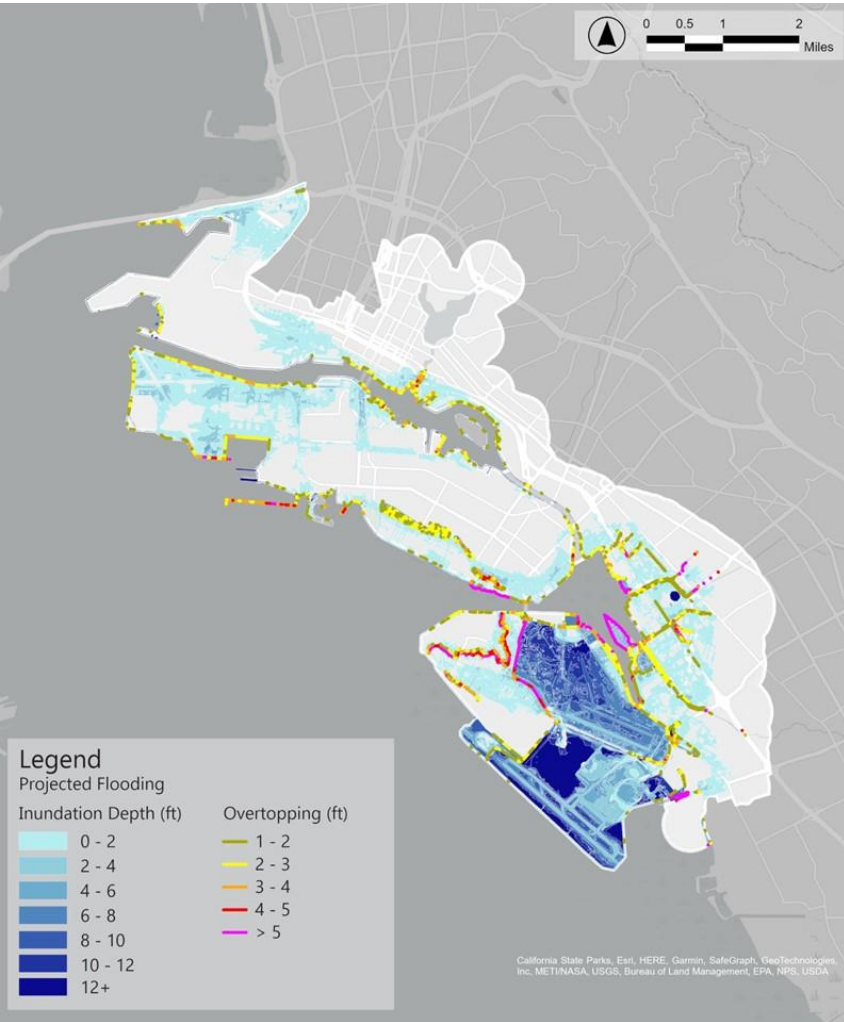
Plan Bay Area 2050 Equity Priority Communities



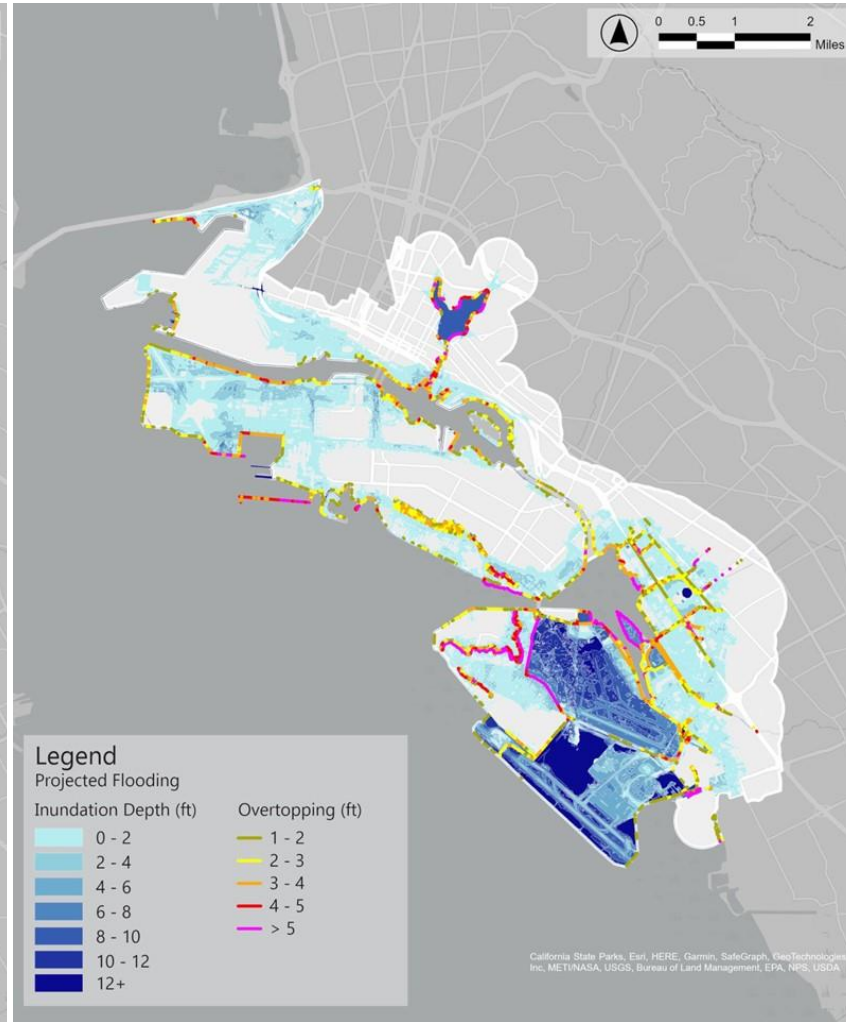
FEMA Community Disaster Resilience Zones



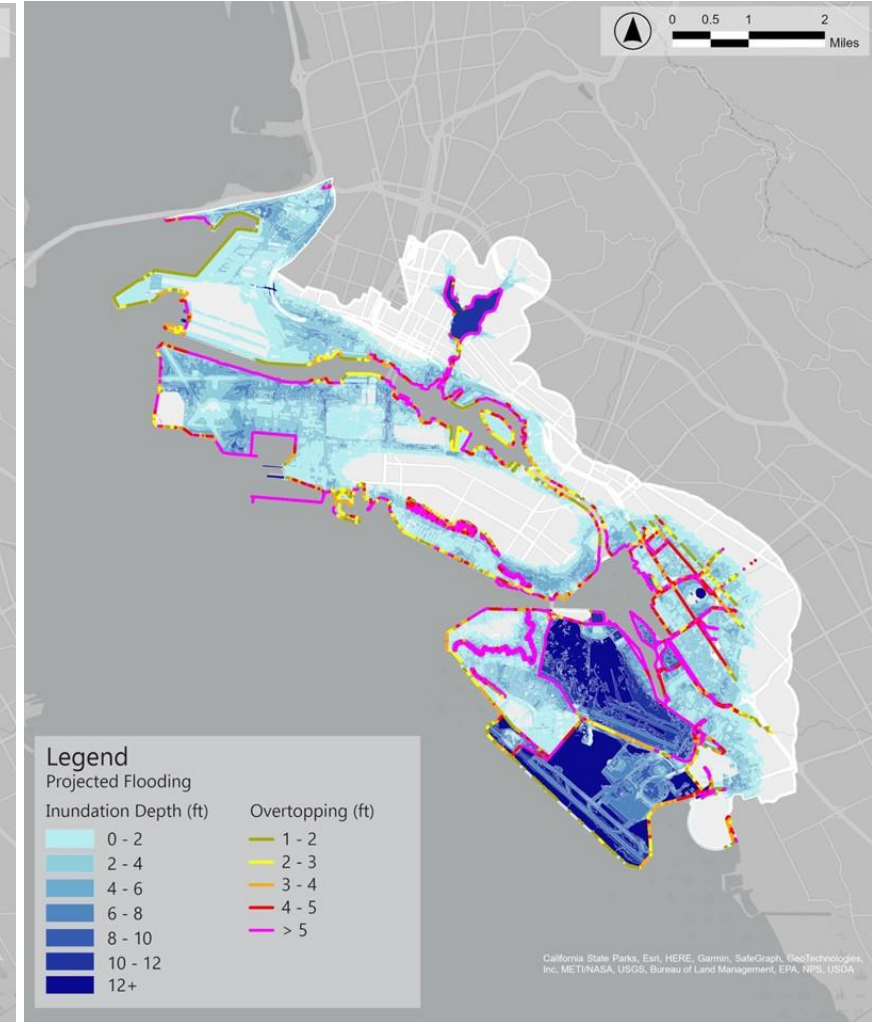
24" Sea Level Rise + 1% AEP Flood



36" Sea Level Rise + 1% AEP Flood



66" Sea Level Rise + 1% AEP Flood



Contents of Chapter 4: Oakland Alameda Estuary

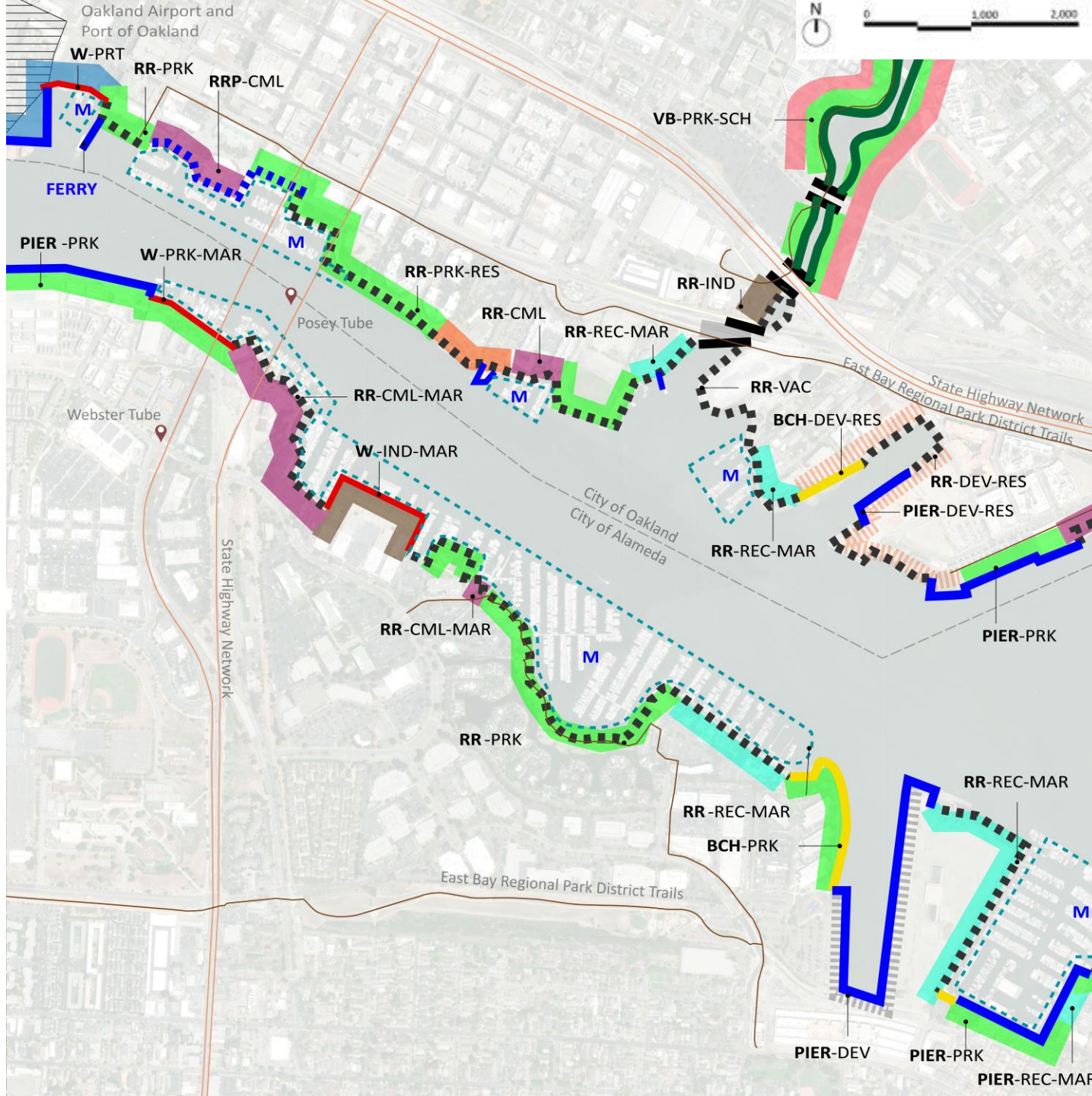
- 4.1 Overview of Project
- 4.2 Physical Setting
- 4.3 Shoreline conditions
- 4.4 Critical Infrastructure and Utilities
- 4.5 Geotechnical and Groundwater
- 4.6 Public Access and Recreation
- 4.7 Cultural Resources



Oakland-Alameda Estuary



Shoreline Zones and Jurisdictions



Annotation key

SHORELINE-LANDUSE-SUBTYPE

WATERUSE

Shoreline type

- BCH Beach
- CNL Canal
- E Lake Edge
- I Infrastructure/Bridge/Viaduct
- MRSH Marsh
- M Mixed Edge
- PIER Pier
- RR Riprap
- RRB Riprap Beach
- RRM Riprap Marsh
- RRP Riprap Pier
- VB Vegetated Embankment
- W Concrete Wall or Seawall

Jurisdiction Boundaries

- East Bay Regional Park District Trails
- State Highway Network
- City of Oakland/ City of Alameda Boundary
- Oakland Airport and Port of Oakland

Land use

- CML Commercial
- DEV Development (future land use)
- IND Industrial
- MRSH Marsh
- OS Open Space
- PRK Park
- PRT Port
- RD Road
- RES Residential
- REC Recreation
- SCH School
- VAC Vacant

Sub land use

- DEV Development
- H Hotel
- MAR Maritime
- O Office
- P Private
- RD Road
- RES Residential
- SCH School
- TRAIL Trail
- U Urban

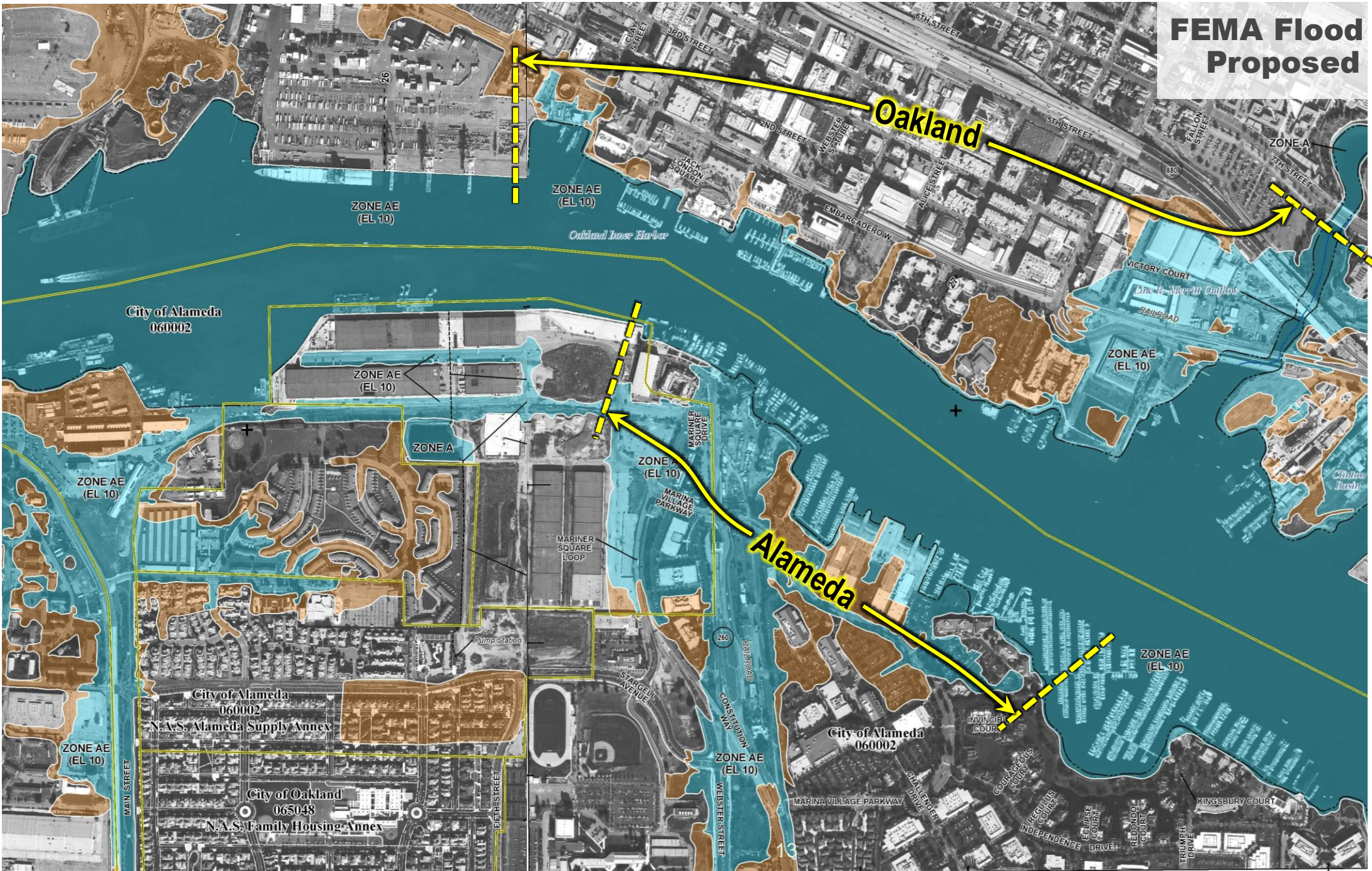
Water use

- Docking area
- M Marina
- R Ramp
- FERRY Ferry
- PD Private Dock

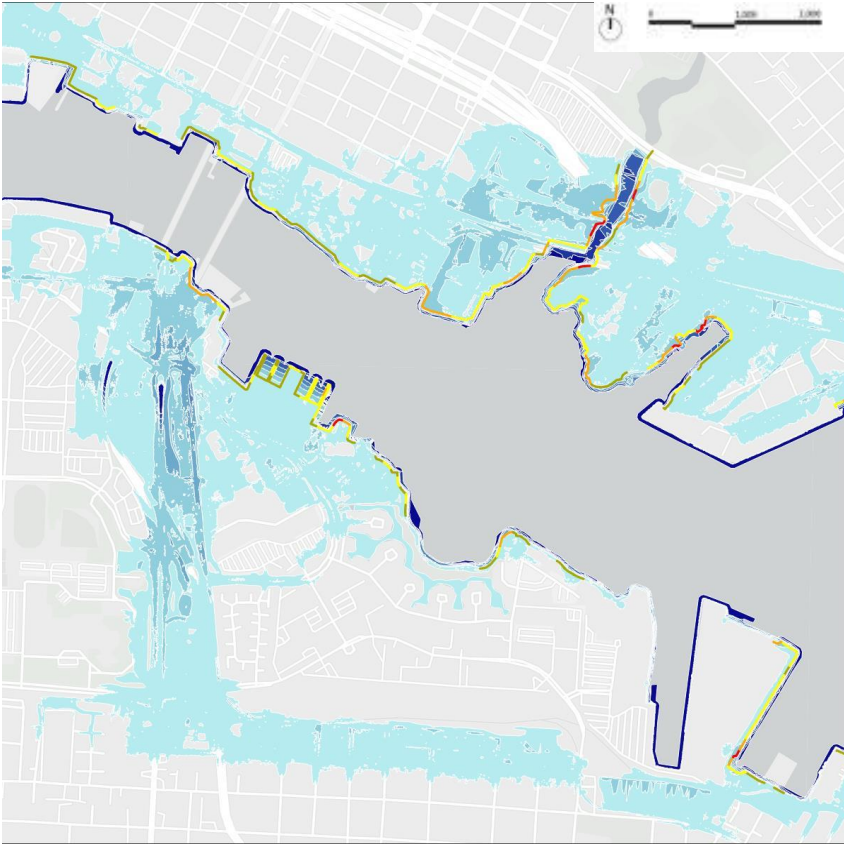
Misc. Land use

- JETTY Jetty
- PUMP Pump

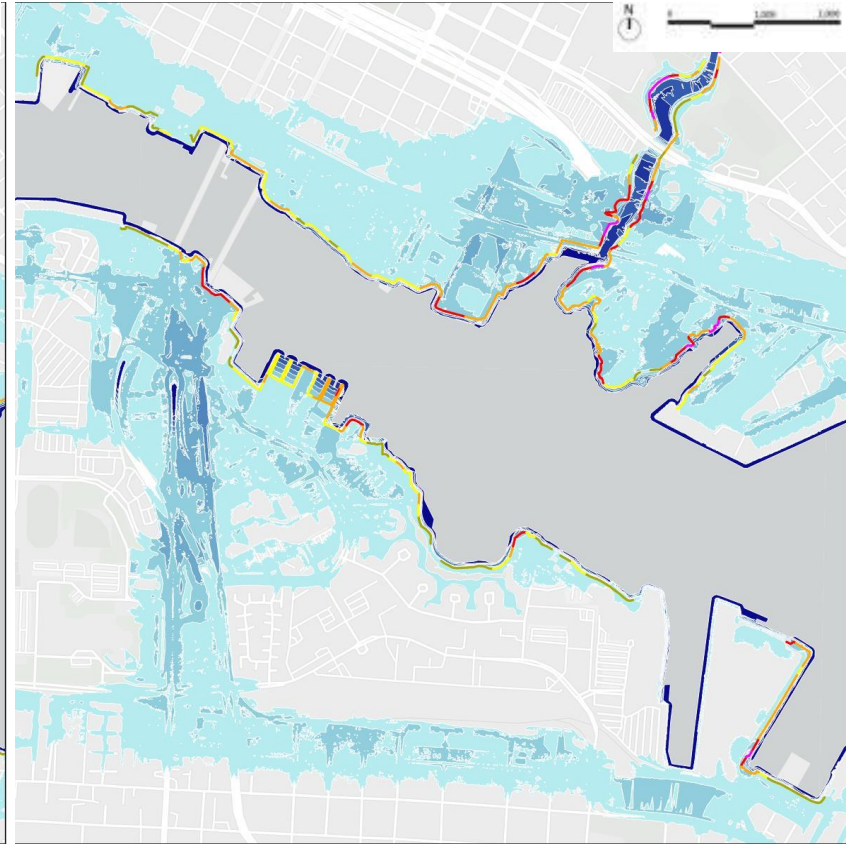
FEMA Flood Zones and Proposed Projects



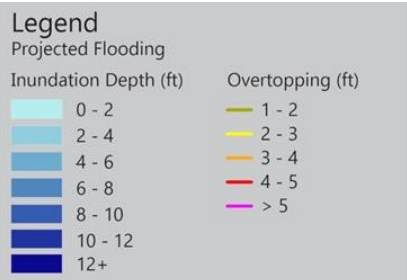
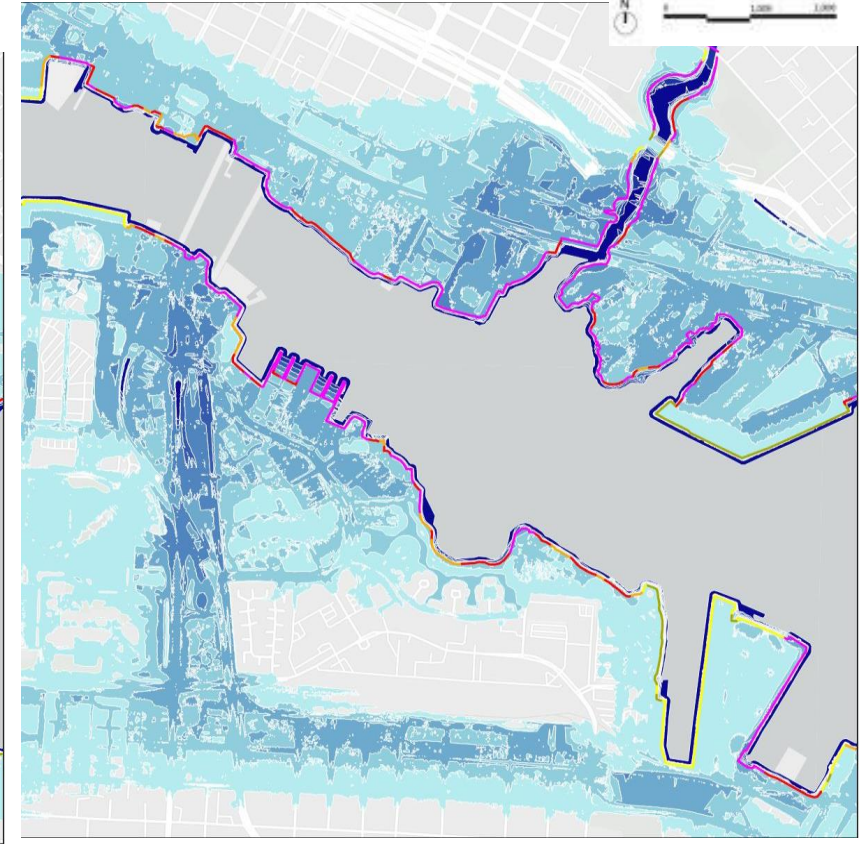
24" Sea Level Rise + 1% AEP Flood



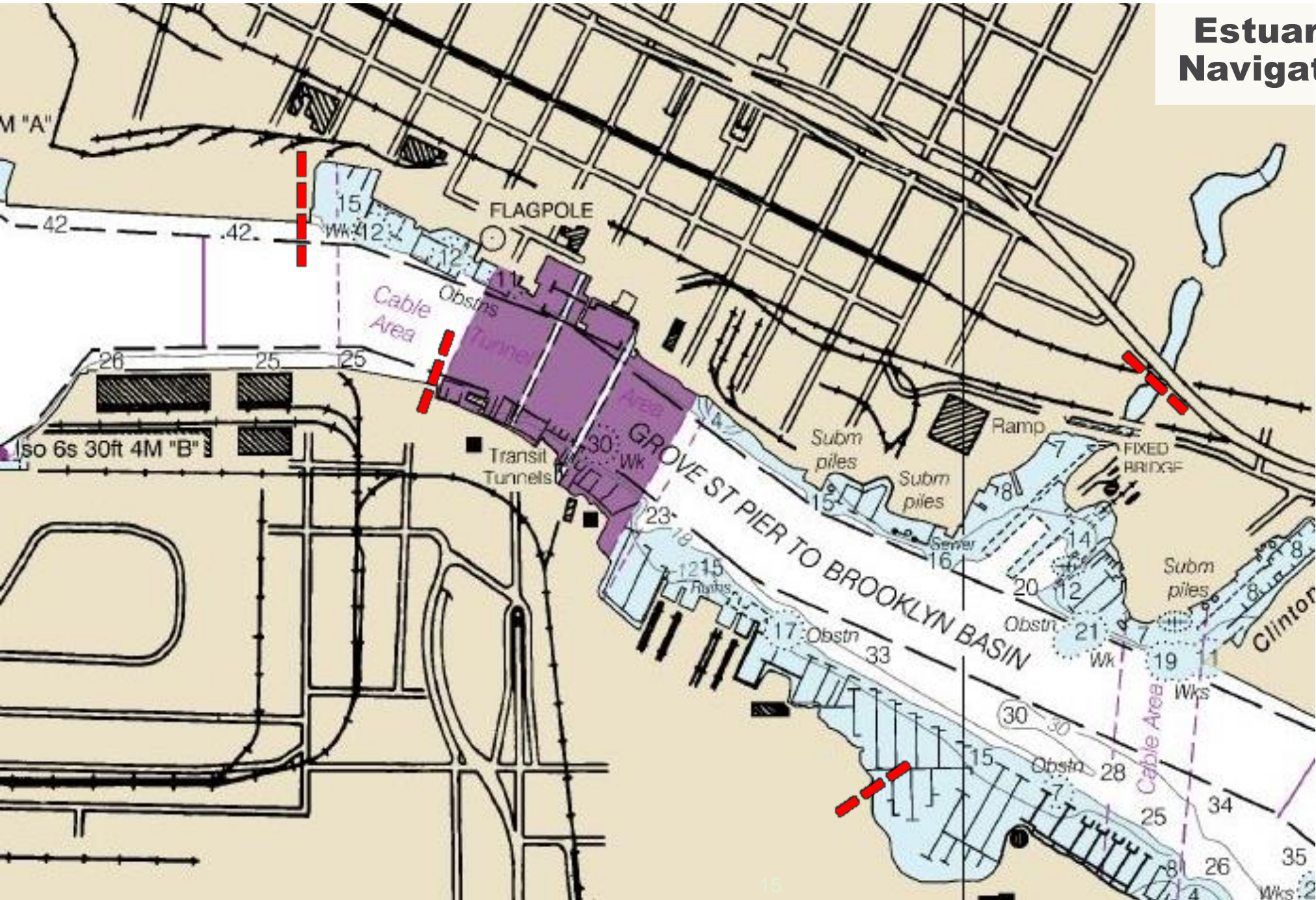
36" Sea Level Rise + 1% AEP Flood



66" Sea Level Rise + 1% AEP Flood



Estuary Overview Navigation Channel



Authorized
Depth -35'



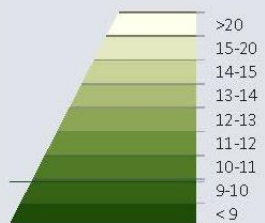
Topography



Legend

— OLU Boundary

Elevation (ft)



Source: NOAA Lidar



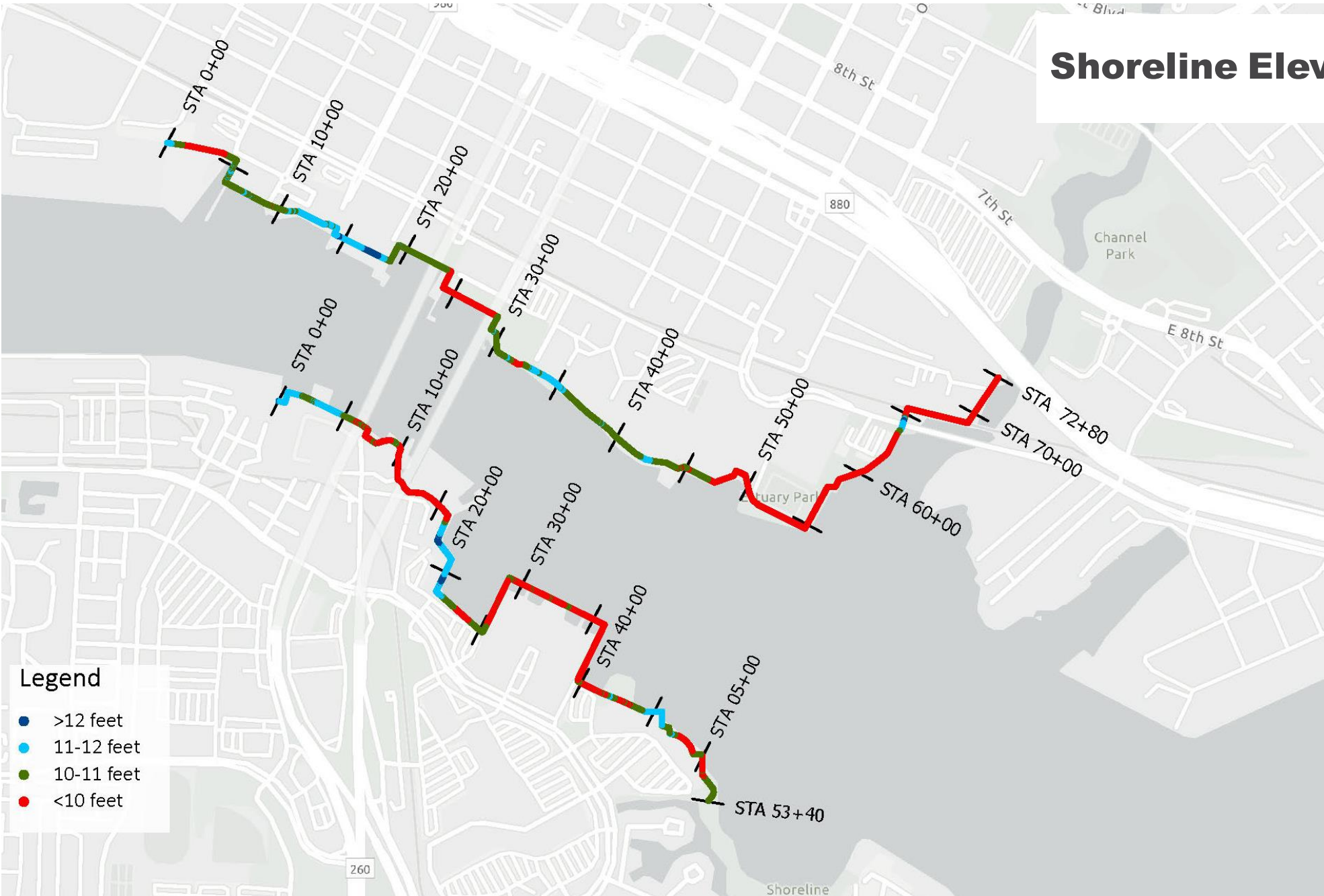
Shoreline Reaches



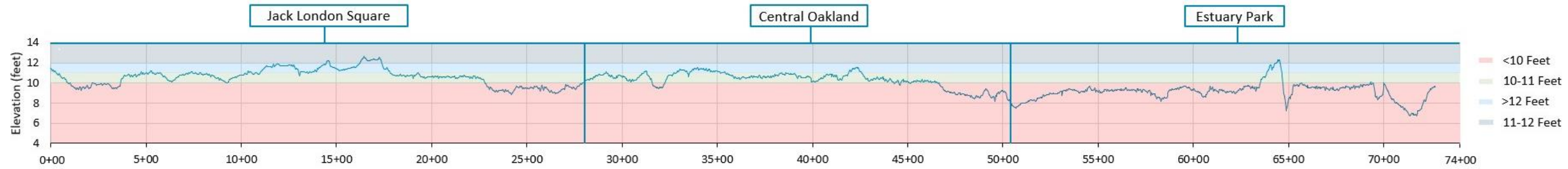
Legend

- Jack London Square
- Central Oakland
- Estuary Park
- Alameda Webster
- Alameda Posey
- Alameda Shipways
- Alameda Marina Village

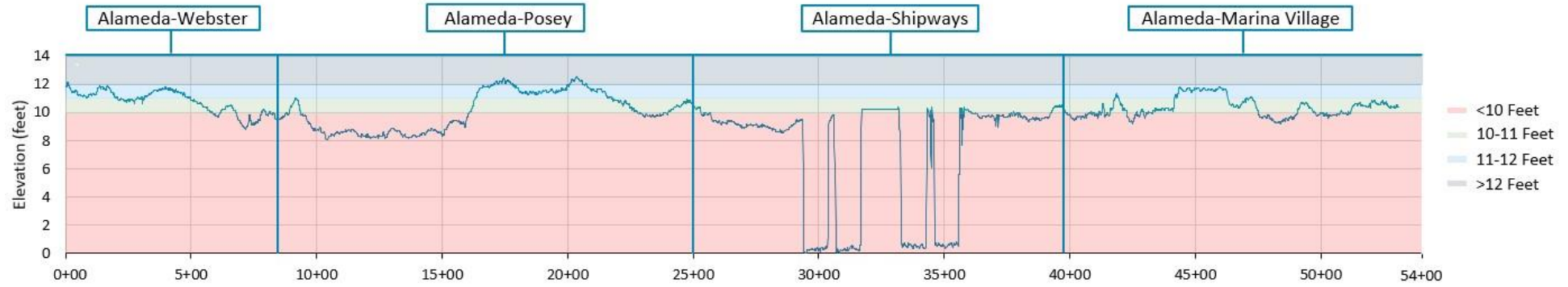
Shoreline Elevations



Shoreline Elevations



Oakland Profile



Alameda Profile



Critical Infrastructure Storm & Sewer Overview

Legend

— OLU Boundary

Utilities

▲ Sewage Pump Stations

▲ Sewerage Lift Stations

▲ Stormwater Pump Stations

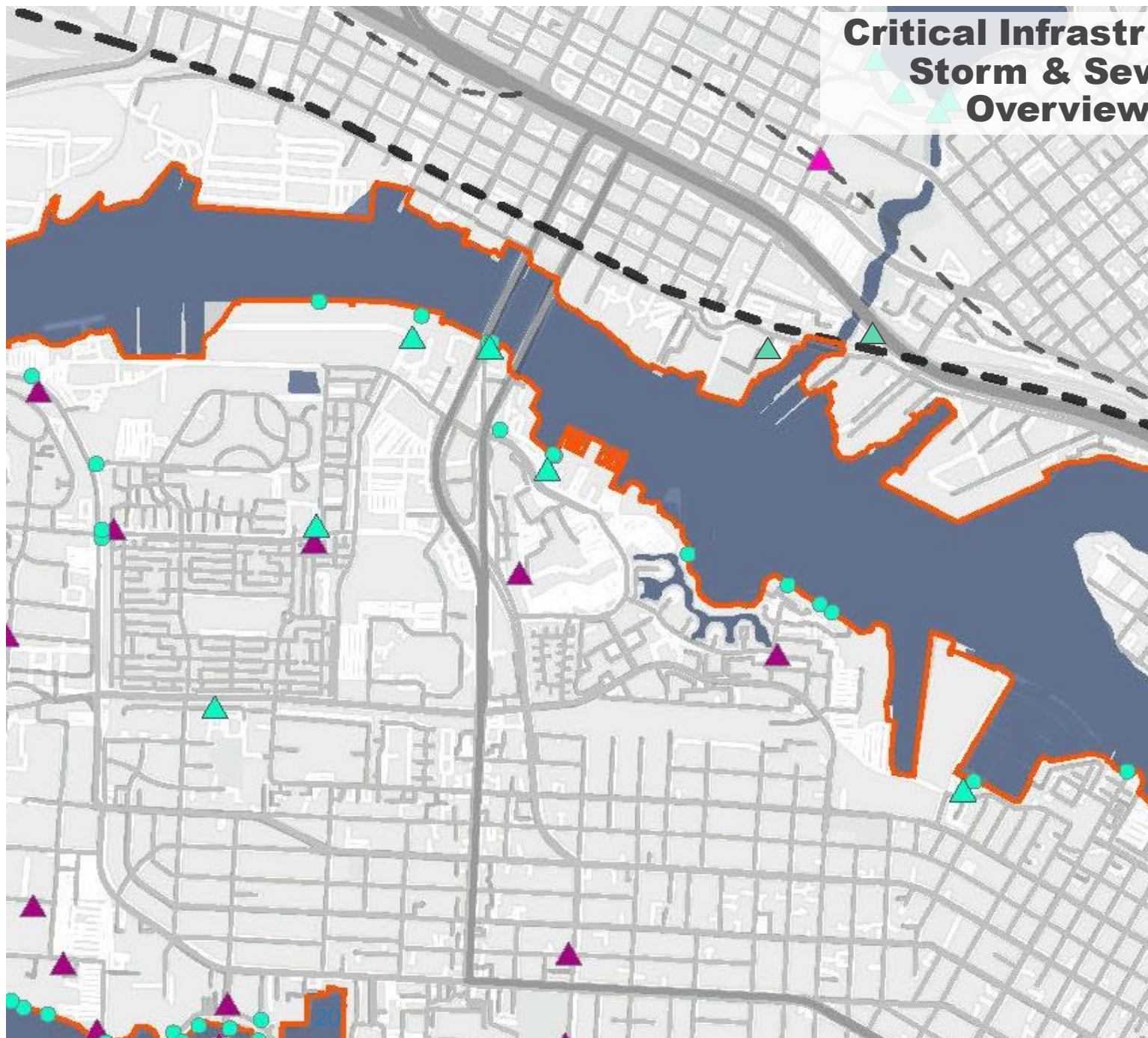
● Stormwater Outfalls

Transportation

— Roads

- - - BART

— Rail



Geotechnical Depth to Groundwater

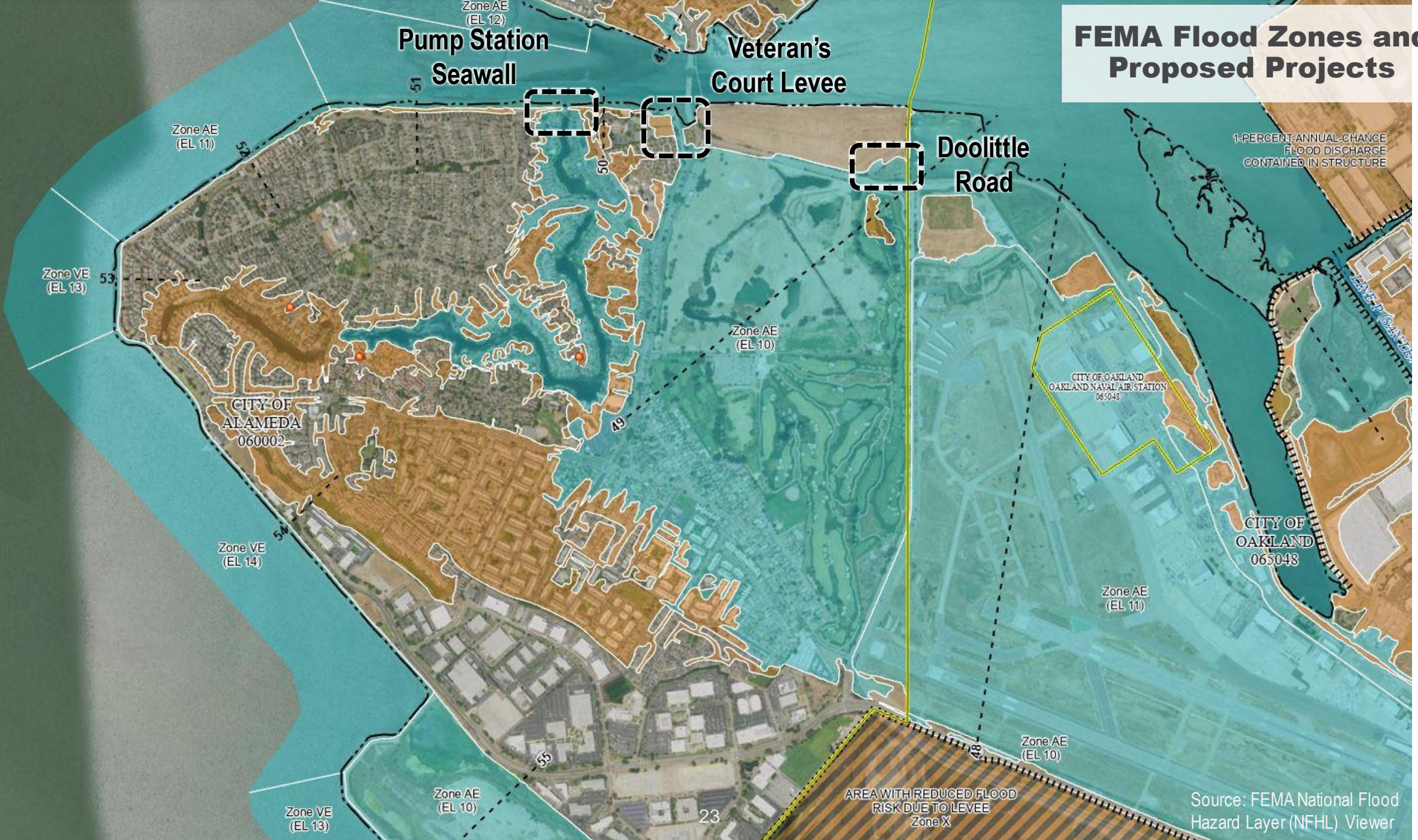


Contents of Chapter 5: Bay Farm Island

- 5.1 Overview of Project
- 5.2 Physical Setting
- 5.3 Shoreline conditions
- 5.4 Critical Infrastructure
- 5.5 Geotechnical
- 5.6 Groundwater
- 5.7 Public Access and Recreation
- 5.8 Biological Resources
- 5.9 Cultural Resources



FEMA Flood Zones and Proposed Projects



1-PERCENT-ANNUAL-CHANCE
FLOOD DISCHARGE
CONTAINED IN STRUCTURE

Zone AE
(EL 11)

Zone AE
(EL 12)

Veteran's
Court Levee

Pump Station
Seawall

Doolittle
Road

Zone AE
(EL 10)

CITY OF
ALAMEDA
060002

CITY OF OAKLAND
OAKLAND NAVAL AIR STATION
065048

CITY OF
OAKLAND
065048

Zone VE
(EL 14)

Zone AE
(EL 11)

Zone AE
(EL 10)

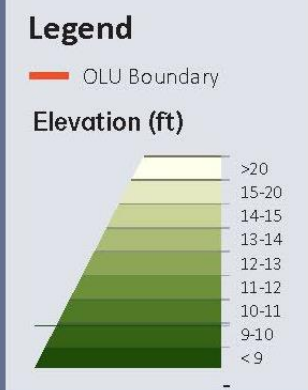
Zone AE
(EL 10)

AREA WITH REDUCED FLOOD
RISK DUE TO LEVEE
Zone X

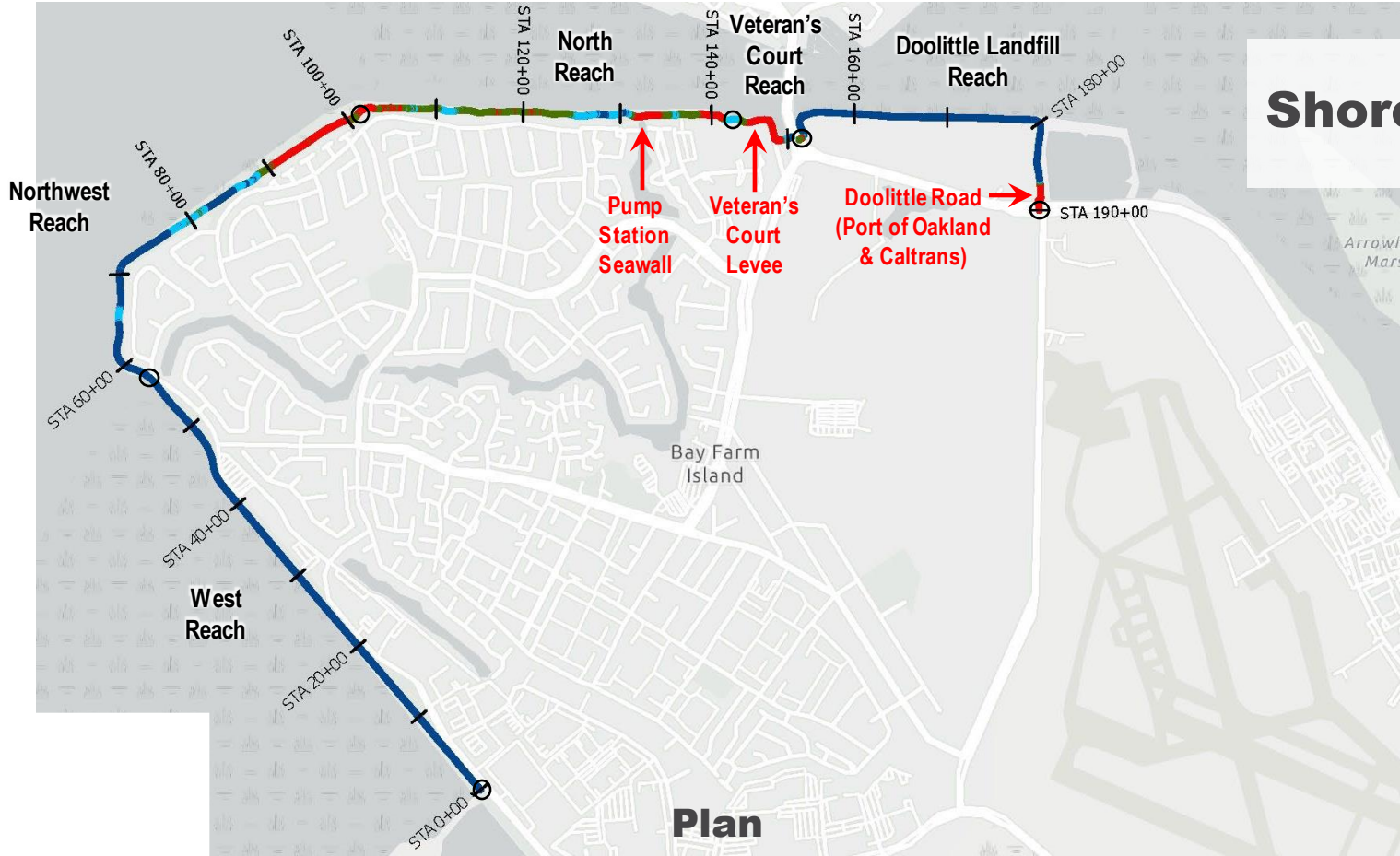
Zone VE
(EL 13)

Source: FEMA National Flood
Hazard Layer (NFHL) Viewer

Topography



Shoreline Elevations



Critical Infrastructure Overview

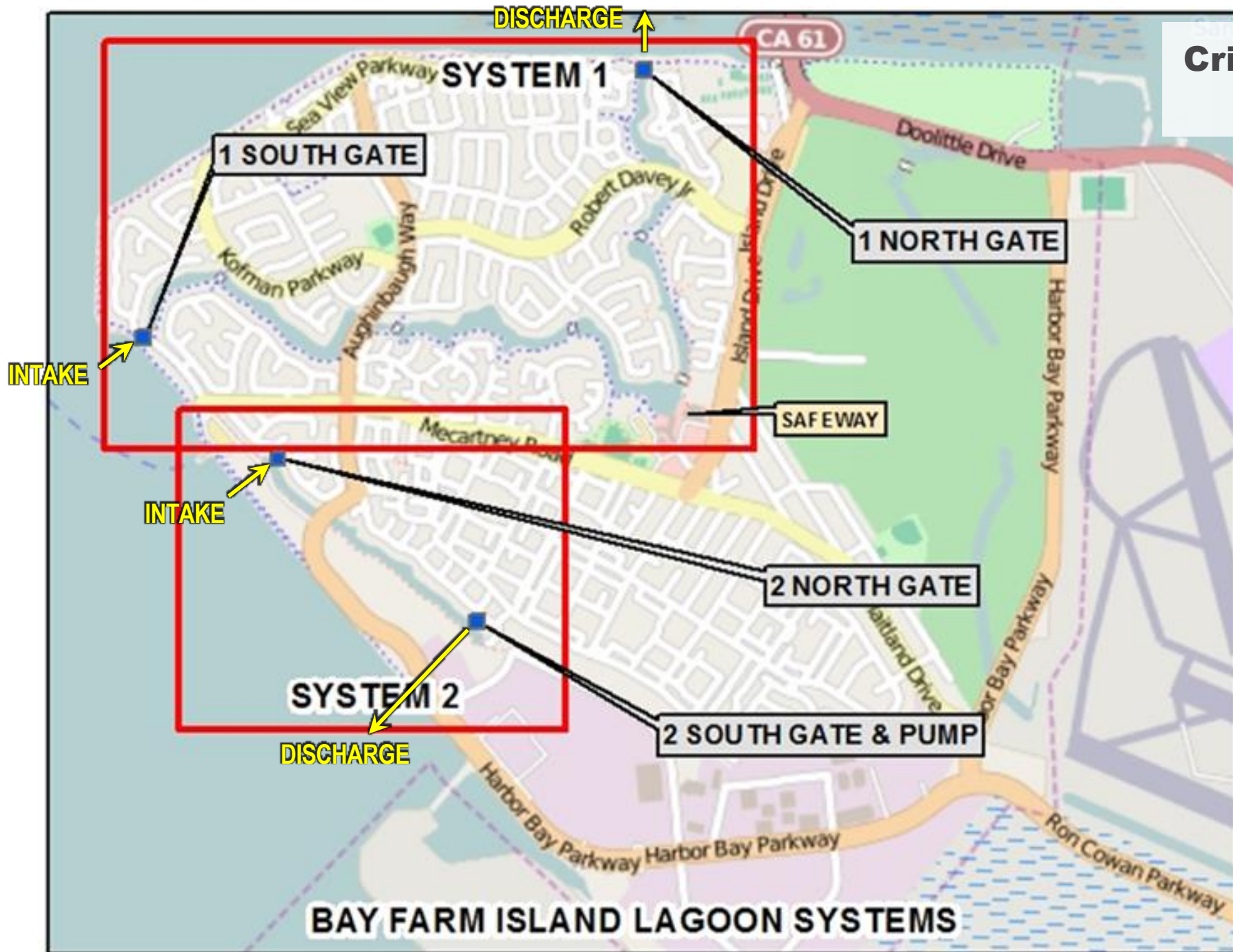


Legend

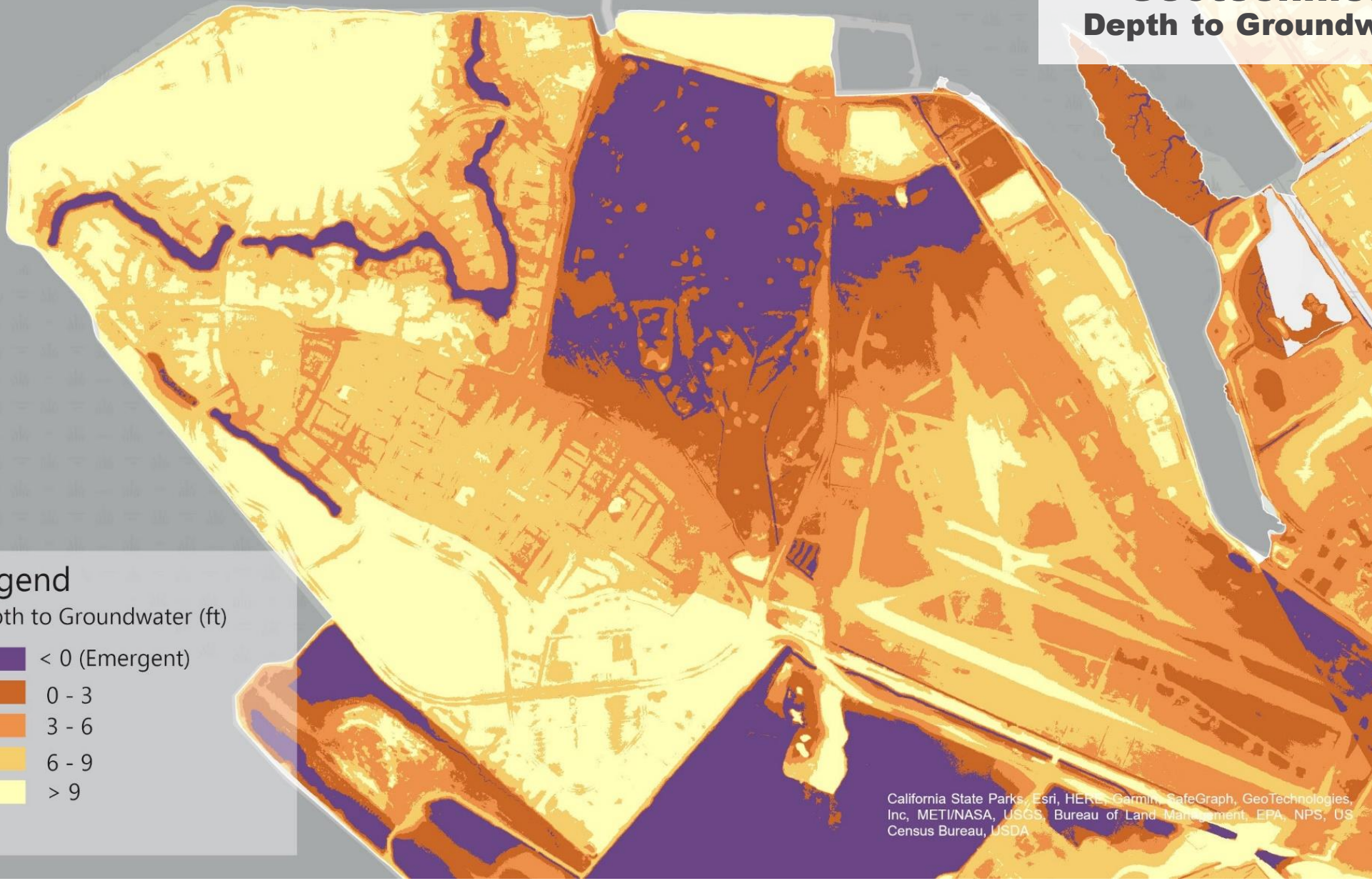
- OLU Boundary
- Utilities**
 - ▲ Sewage Pump Stations
 - ▲ Sewerage Lift Stations
 - ▲ Stormwater Pump Stations
 - Stormwater Outfalls
- Transportation**
 - Roads
 - - - BART
 - - - Rail



Critical Infrastructure Lagoon System



Geotechnical Depth to Groundwater



California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA



Sensitive Resources

Legend

- OLU Boundary
- Sensitive Resources**
- Priority Conservation Areas
- Oyster Restoration
- Wetlands
- Eel Grass
- Living Shoreline Restoration
- Stuckenia
- Ruppia Maritima
- Native Oysters
- Mussel Beds
- Commercial Fishing



Sea Level Rise Concepts and Criteria

Sub- Agenda

01

Sea Level
Rise science

02

Review of
Best Practices

03

Sea Level
Rise
Criteria

04

Site Specific
Considerations

05

Summary /
Conclusions

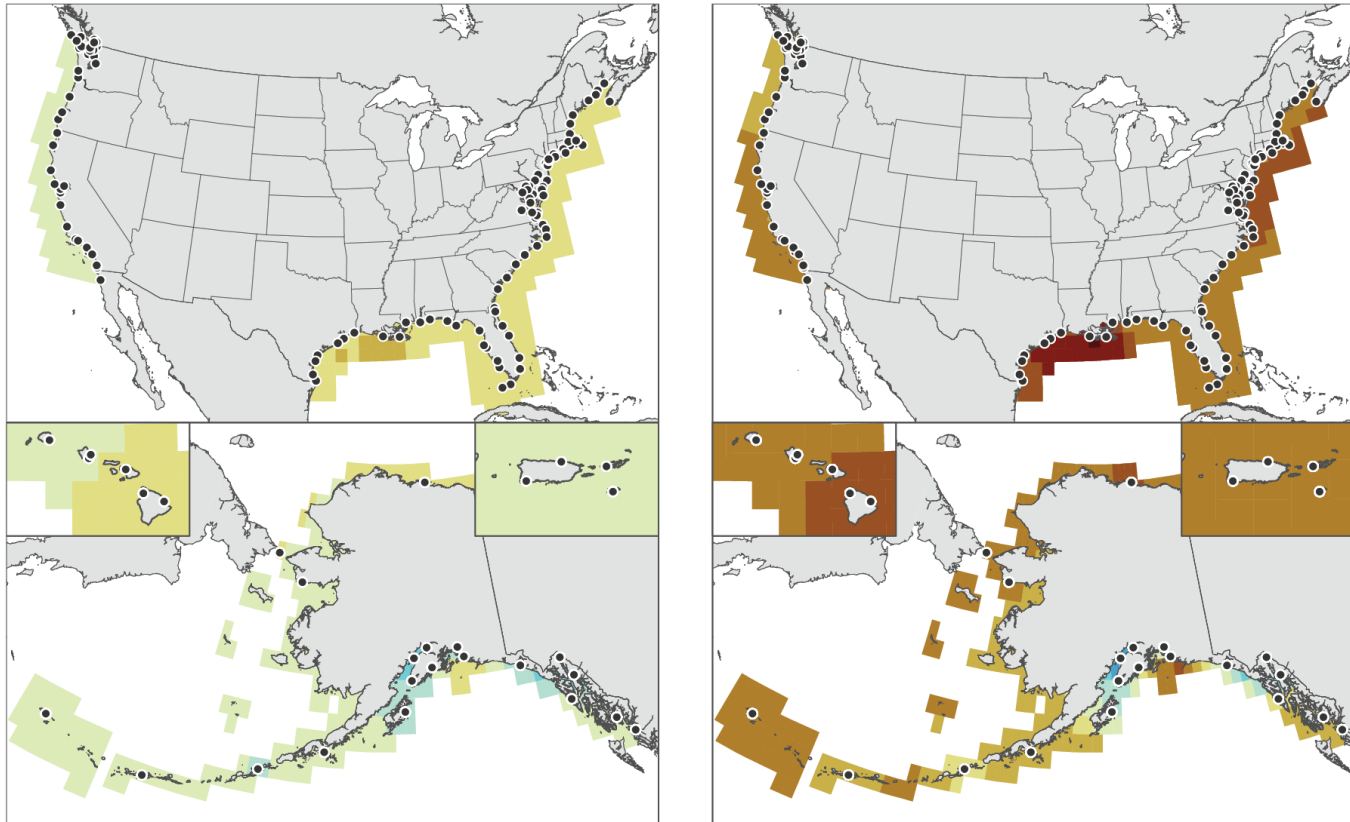


Sea Level Rise Science



Sea Level Rise varies along the US Coast

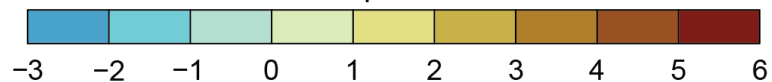
Projected Sea Level Rise



Intermediate Scenario in 2050

Intermediate Scenario in 2100

Feet Compared to 2000



• Black circles represent the locations of tide gauges

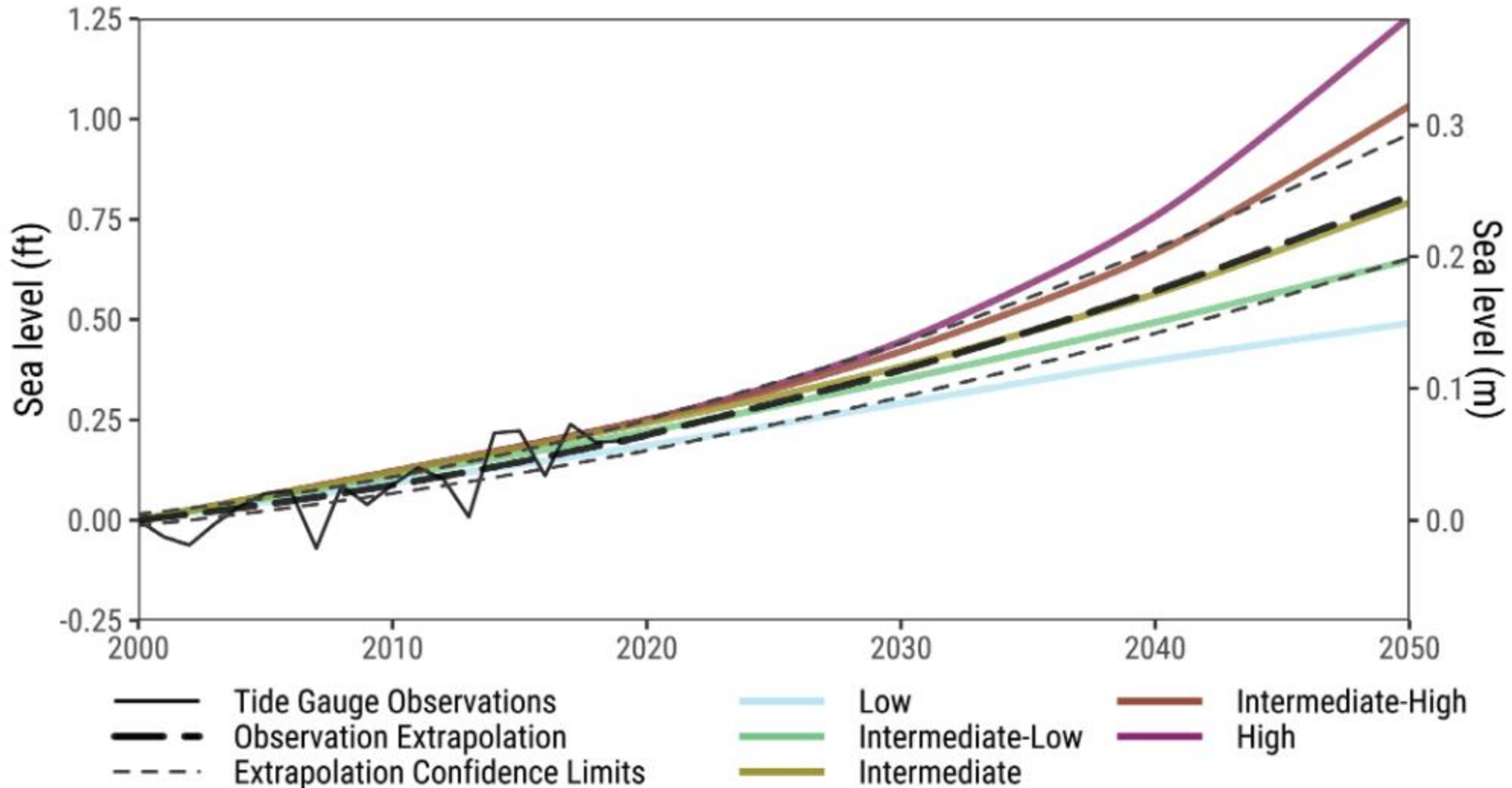
- Relative sea level rise is lower on the Pacific Coast than the Atlantic and Gulf Coasts, largely driven by the Pacific Decadal Oscillation
- The Pacific Coast is currently in a period of accelerating sea level rise

- Federal Interagency Sea Level Rise Task Force (Sweet et al. 2022)
- National Climate Assessment Coasts Chapter (May et al. 2023)

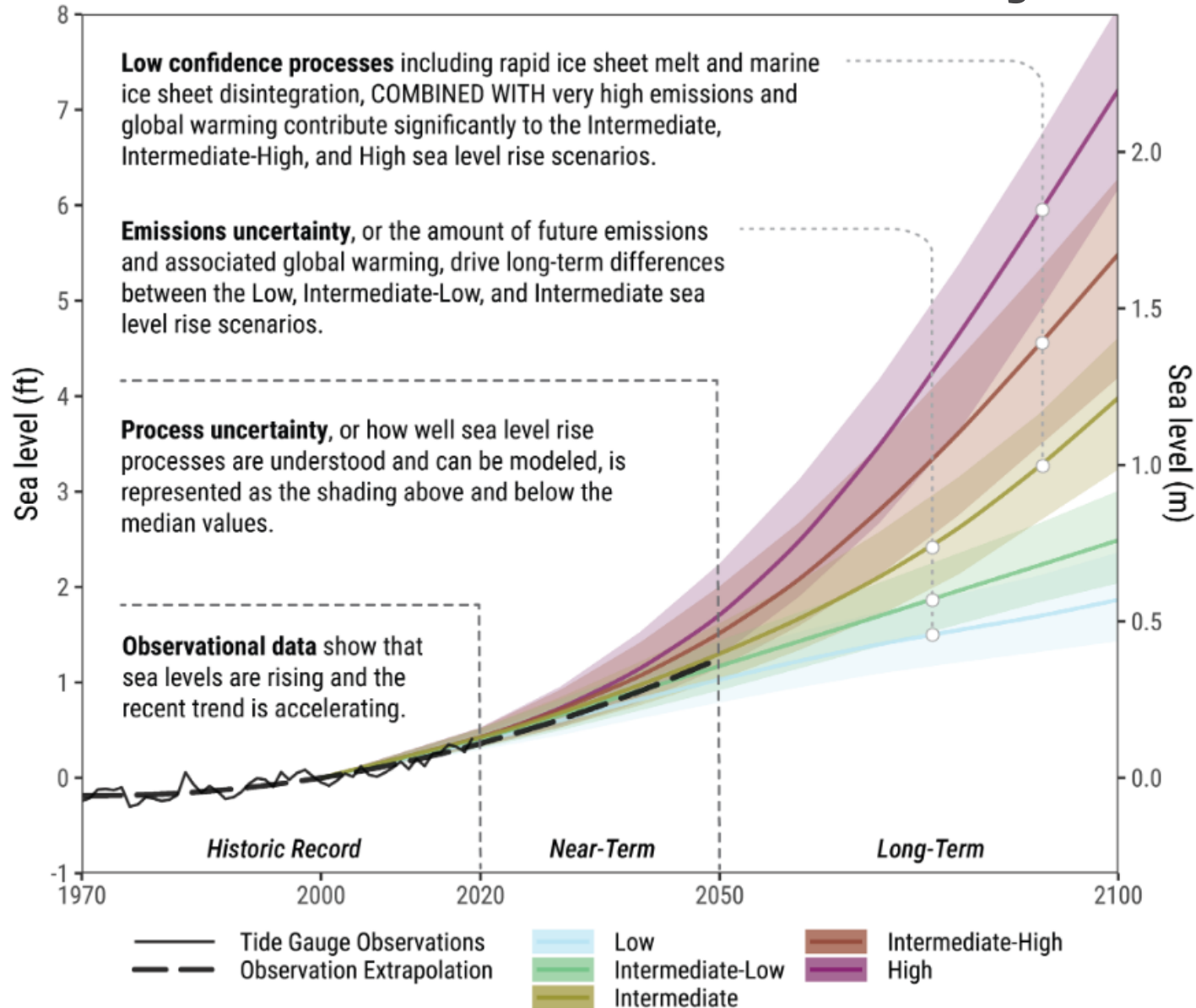


California Sea Level Rise

Observation-based Extrapolation trending with Intermediate Curve



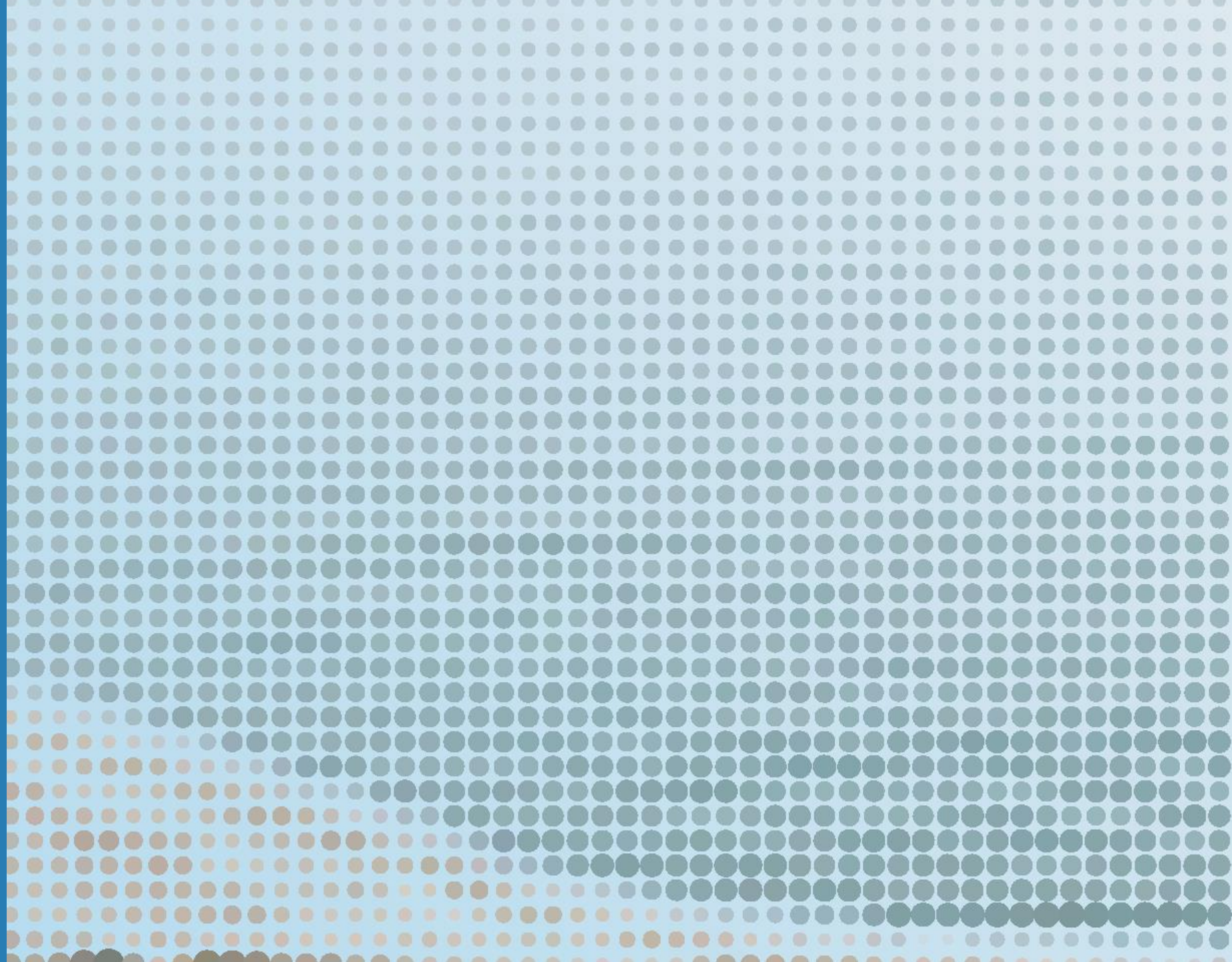
Future Sea Level Rise Uncertainty



- **3.4 feet by 2100** (Intermediate, Likely)
- **6.9 feet by 2100** (Plausible, High Impact, but Low Confidence – assumes both high emissions and rapid ice sheet melt)



Review of Best Practices



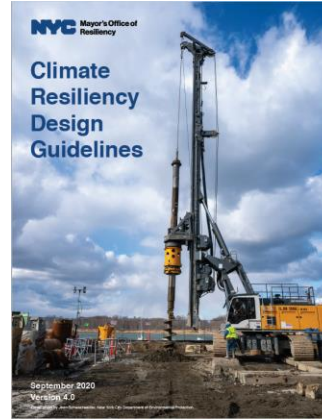
Review of Best Practices

Precedents from other Jurisdictions

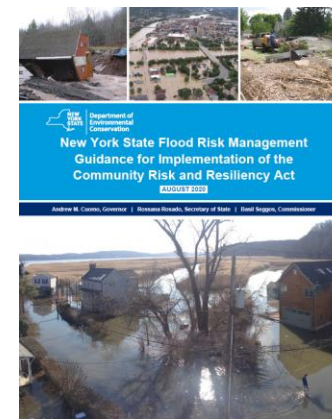
Climate Ready Boston



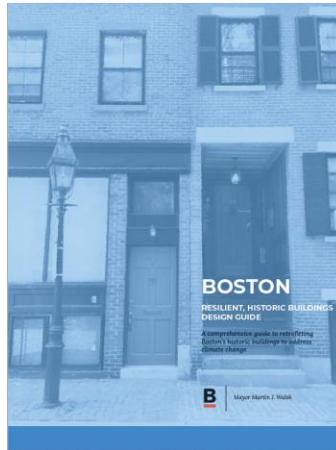
New York City



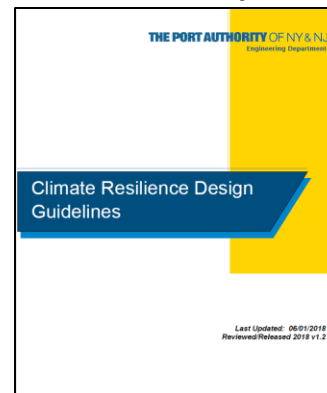
New York State



Miami



Port Authority NY/NJ



San Francisco

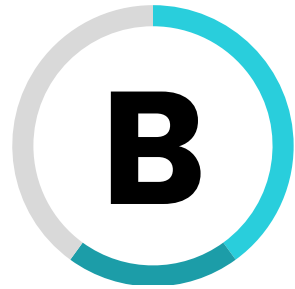


- Miami has the most progressive criteria
- 2080
 - 4 feet of SLR
 - ✓ Future groundwater rise
 - ✓ Future increase in extreme precipitation
- 2100
 - ✓ 6 feet of SLR plus...

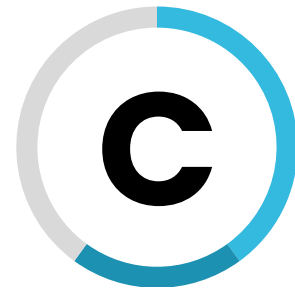
Process for Defining Coastal Flood Infrastructure Elevation



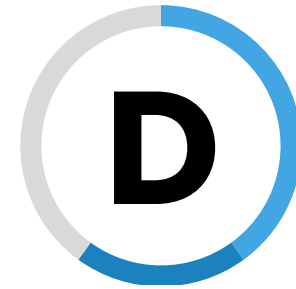
Select **baseline sea level rise curves** upon which to base initial evaluation



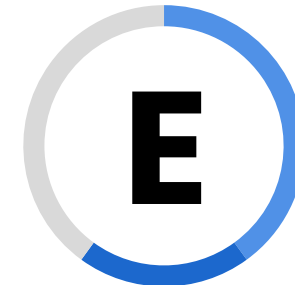
Select a **year** through which new flood defenses are desired to perform



Select a **base level of performance** for flood defenses



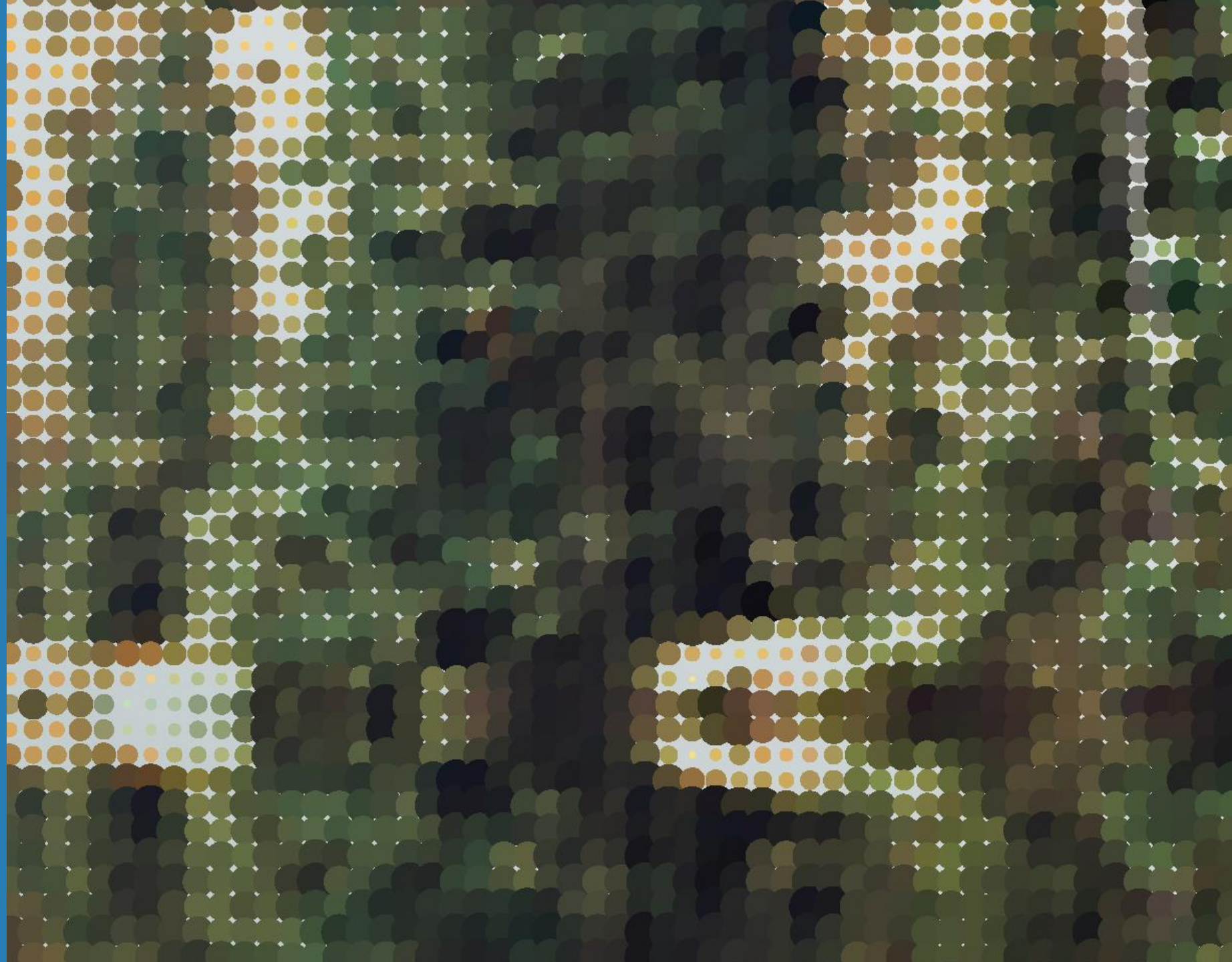
Identify **most stringent** base flood performance definition



Translate to a **flood resilience project elevation** and **future adaptation elevation**



**Sea Level
Rise Criteria
for OACC**



Recommended Flood Protection Infrastructure Elevations

Near Term

A

Likely sea level rise for design
Plausible, High Impact for adaptation considerations

B

2080: ~35- to 50-year lifespan
Design: 2 feet SLR Adaptation +3 additional feet SLR

C

1% annual chance extreme tide (~3.4 feet above MHHW)
1% annual chance total water level (with wave, variable)

D

FEMA accreditation, removal of structures from SFHA;
2 feet of Freeboard included

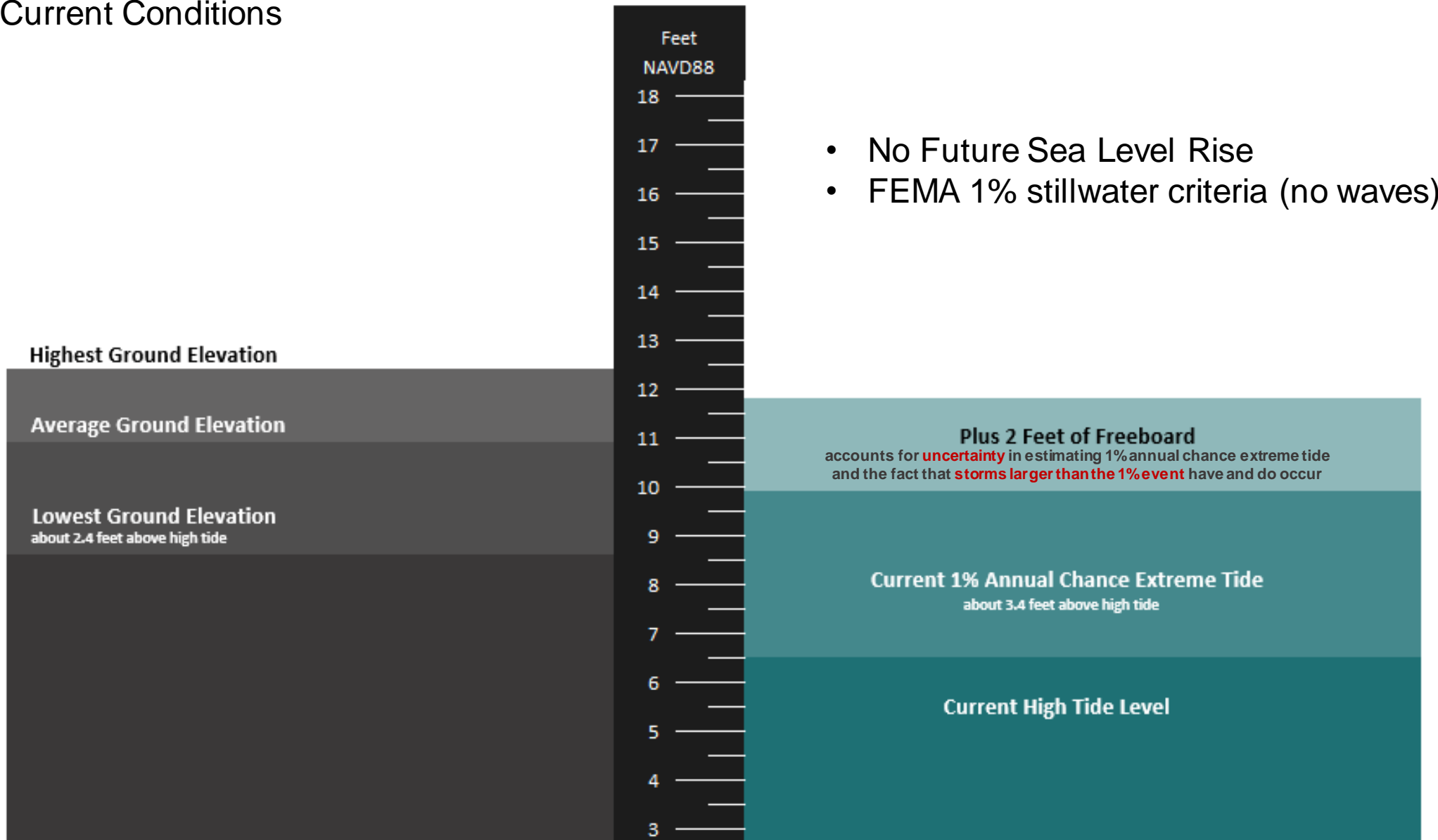
E

Design: 13.8 feet NAVD88
Adaptation: 16.8 feet NAVD88
(based on stillwater elevations only)



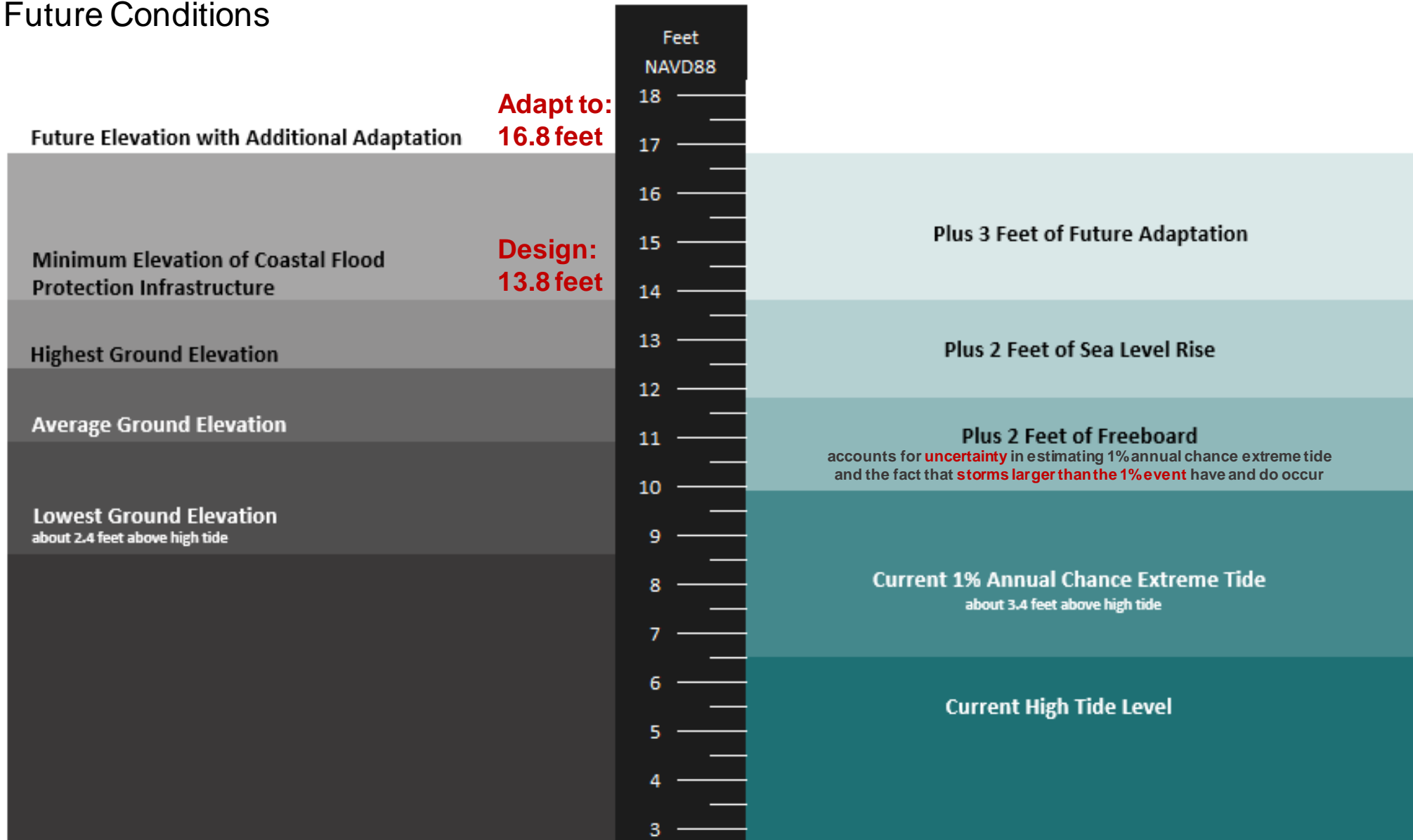
Northern Bay Farm Near-term Flood Protection Elevation Targets

Current Conditions



Northern Bay Farm Near-term Flood Protection Elevation Targets

Future Conditions



Recommended Flood Protection Infrastructure Elevations

Near Term

A

Likely sea level rise for design
Plausible, High Impact for adaptation considerations

B

2080: ~35- to 50-year lifespan
Design: 2 feet SLR Adaptation: +3 feet SLR

C

1% annual chance extreme tide (~3.4 feet above MHHW)
1% annual chance total water level (with waves, variable)

D

FEMA accreditation, removal of structures from SFHA;
2 feet of Freeboard included

E

Design: 13.8 feet NAVD88
Adaptation: 16.8 feet NAVD88
(based on stillwater elevations only)

Long Term

A

Likely sea level rise for design
Plausible, High Impact for adaptation considerations

B

2100+
Design: 3.5 feet SLR Adaptation: +3.5 feet SLR

C

No Change

D

Unknown what the long-term National Flood
Insurance Program will be; Freeboard may be optional

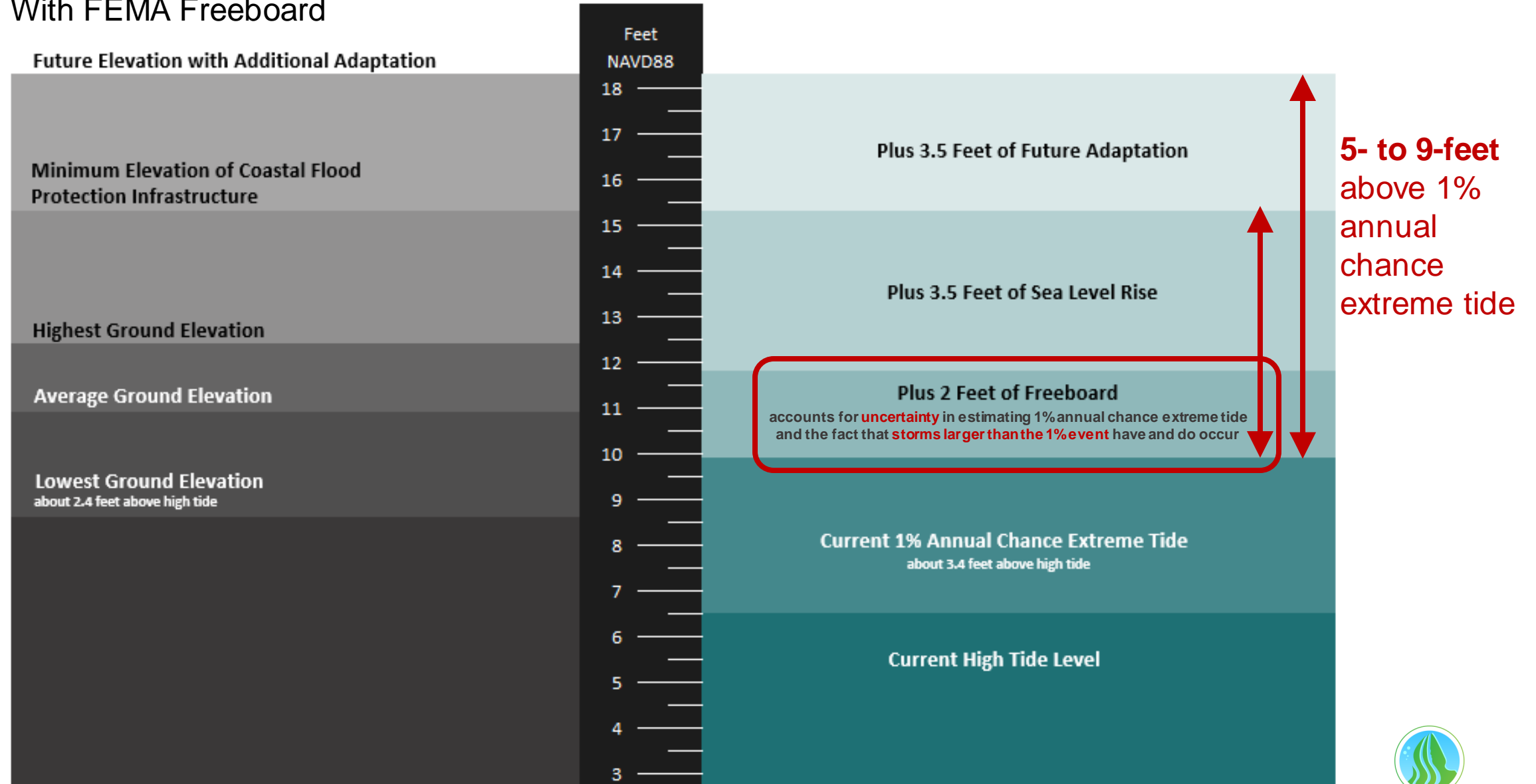
E

Design: 13.8 to 15.8 feet NAVD88
Adaptation: 16.8 to 18.8 feet NAVD88 adaptation
(based on stillwater elevations only)



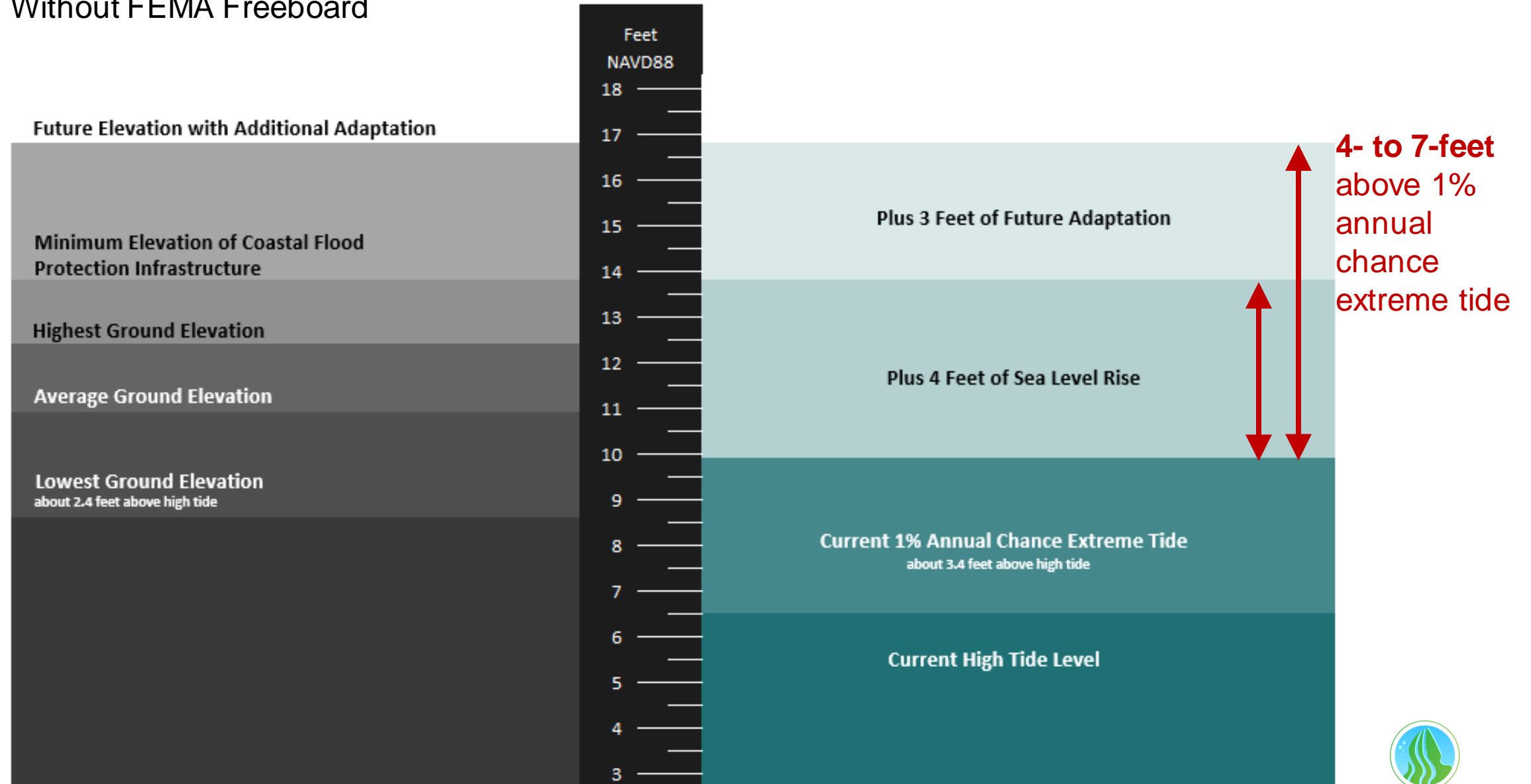
Northern Bay Farm Long-term Flood Protection Elevation Targets

With FEMA Freeboard



Northern Bay Farm Long-term Flood Protection Elevation Targets

Without FEMA Freeboard



Recommended Flood Protection Infrastructure Elevations

Near Term

Long Term

A

Likely sea level rise for design
Plausible, High Impact for adaptation considerations

B

2080: ~35- to 50-year lifespan
Design: 2 feet SLR Adaptation: +3 feet SLR

C

1% annual chance extreme tide (~3.4 feet above MHHW)
1% annual chance total water level (with waves, variable)

D

FEMA accreditation, removal of structures from SFHA;
2 feet of Freeboard included

E

Design: 13.8 feet NAVD88
Adaptation: 16.8 feet NAVD88
(based on stillwater elevations only)

A

Likely sea level rise for design
Plausible, High Impact for adaptation considerations

B

2100+
Design: 3.5 feet SLR Adaptation: +3.5 feet SLR

C

No Change

D

Unknown what the long-term National Flood Insurance Program will be; Freeboard may be optional

E

Design: 13.8 to 15.8 feet NAVD88
Adaptation: 16.8 to 18.8 feet NAVD88 adaptation
(based on stillwater elevations only)

Our Goal

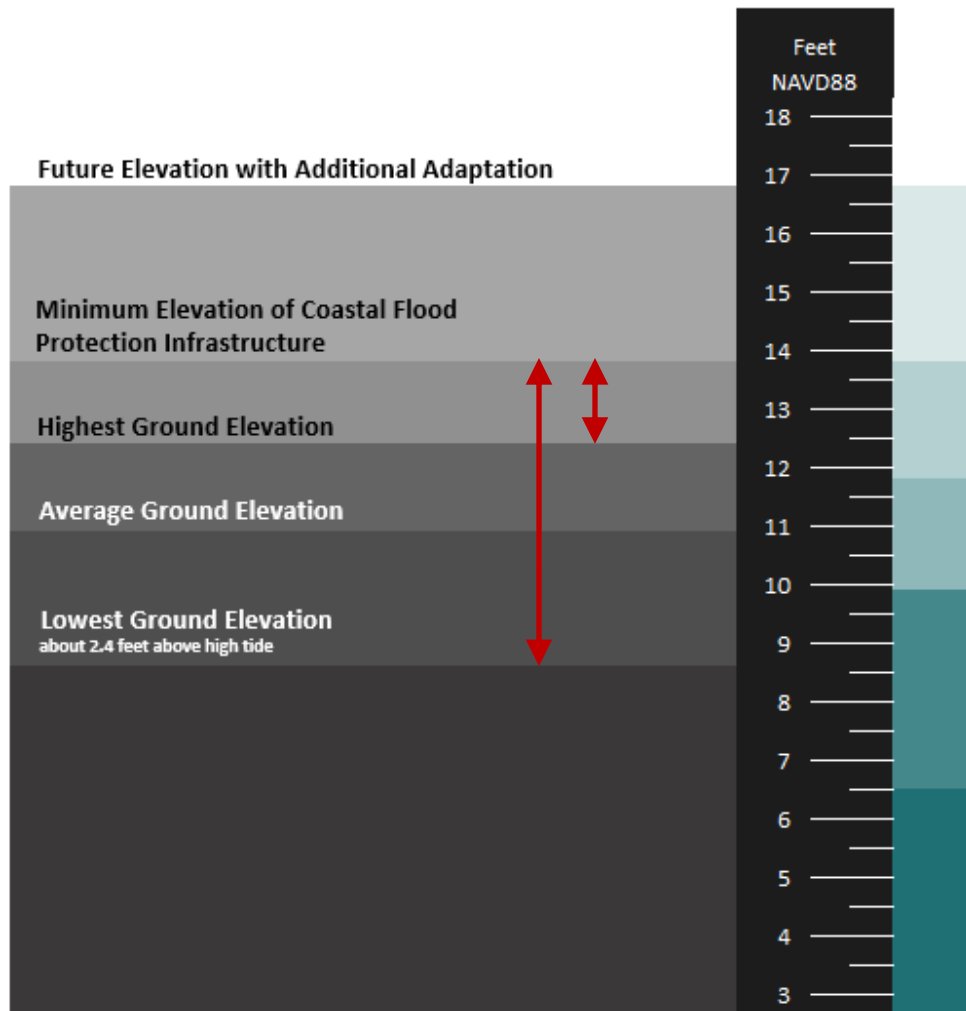


Site Specific Considerations



Site Specific Considerations for Northern Bay Farm

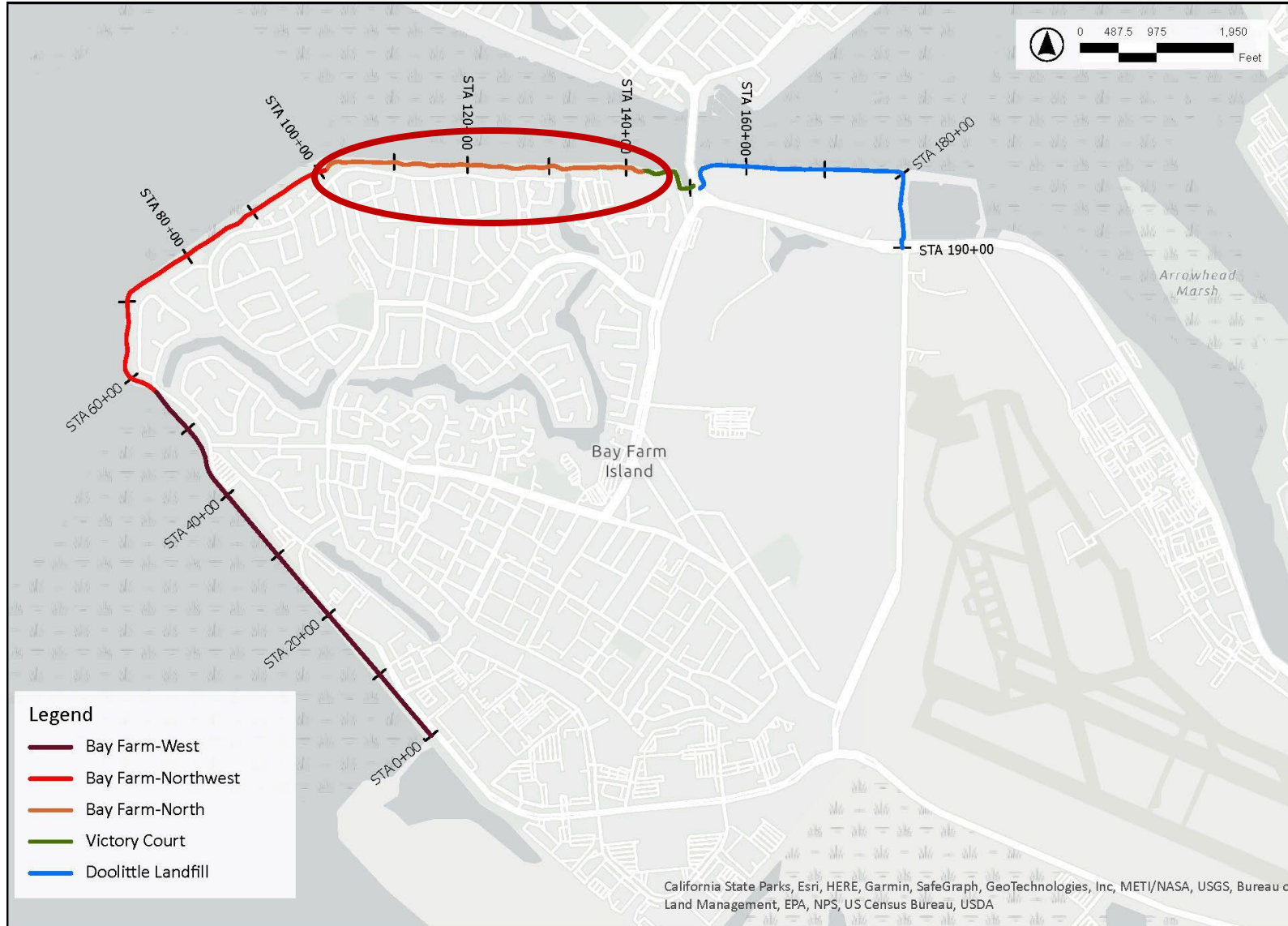
It is not always one and done, site considerations and constraints matter



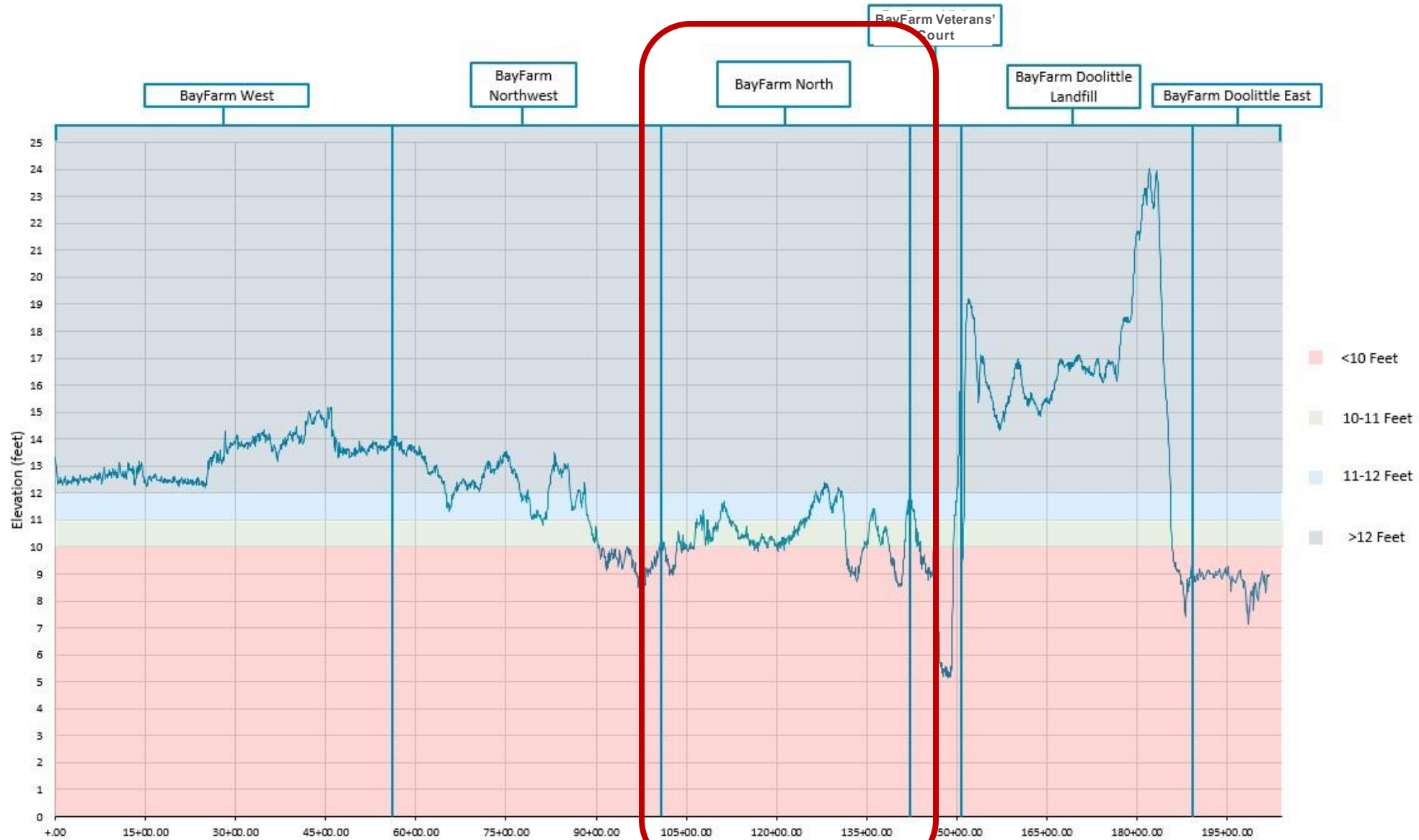
- Minimum coastal flood protection elevation is **13.8 feet NAVD88**
- Flood protection could be **1.4 feet** to **5.3 feet** above inland ground elevations
- May inform structure selection (e.g., earthen levee vs. floodwall). 5.3 feet floodwalls may be acceptable?
- Design height of flood protection infrastructure may require review of alignment topography and other potential constraints (e.g., urban realm consideration, space limitations)



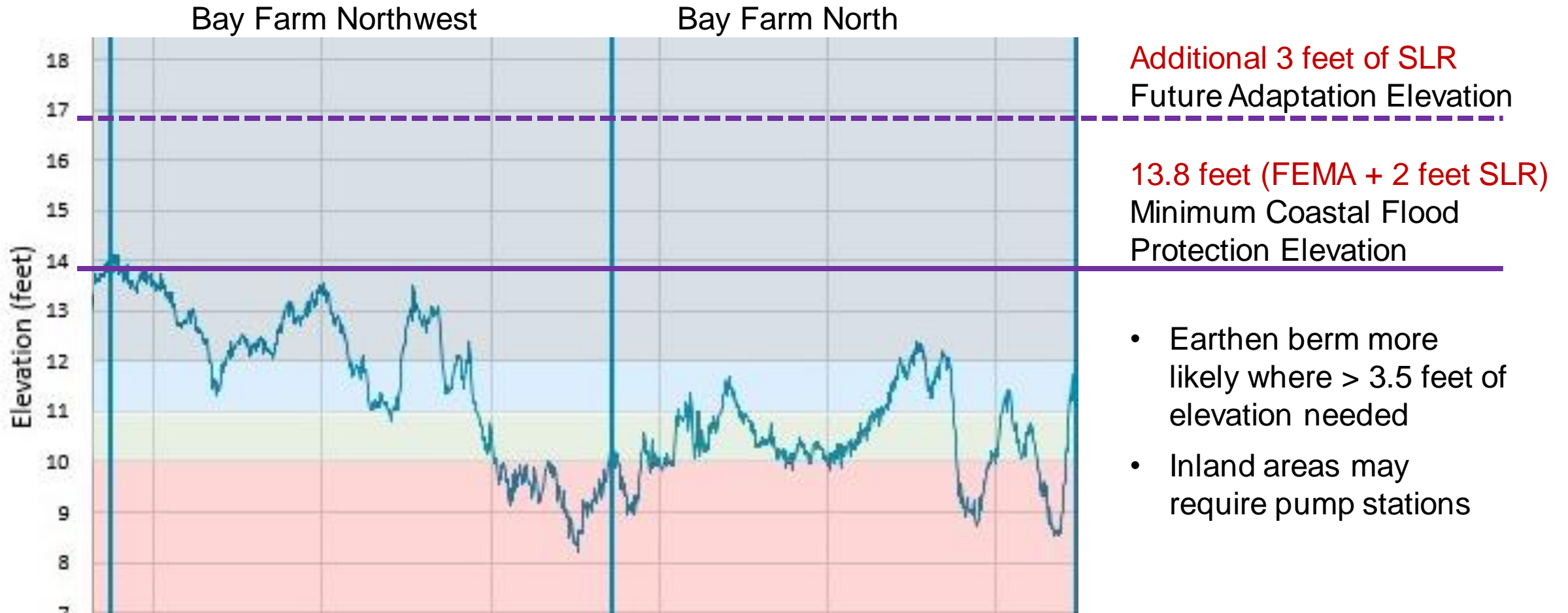
Bay Farm Island Shoreline Reaches



Bay Farm Island Shoreline Elevations



Bay Farm Island Shoreline and Flood Protection Elevations



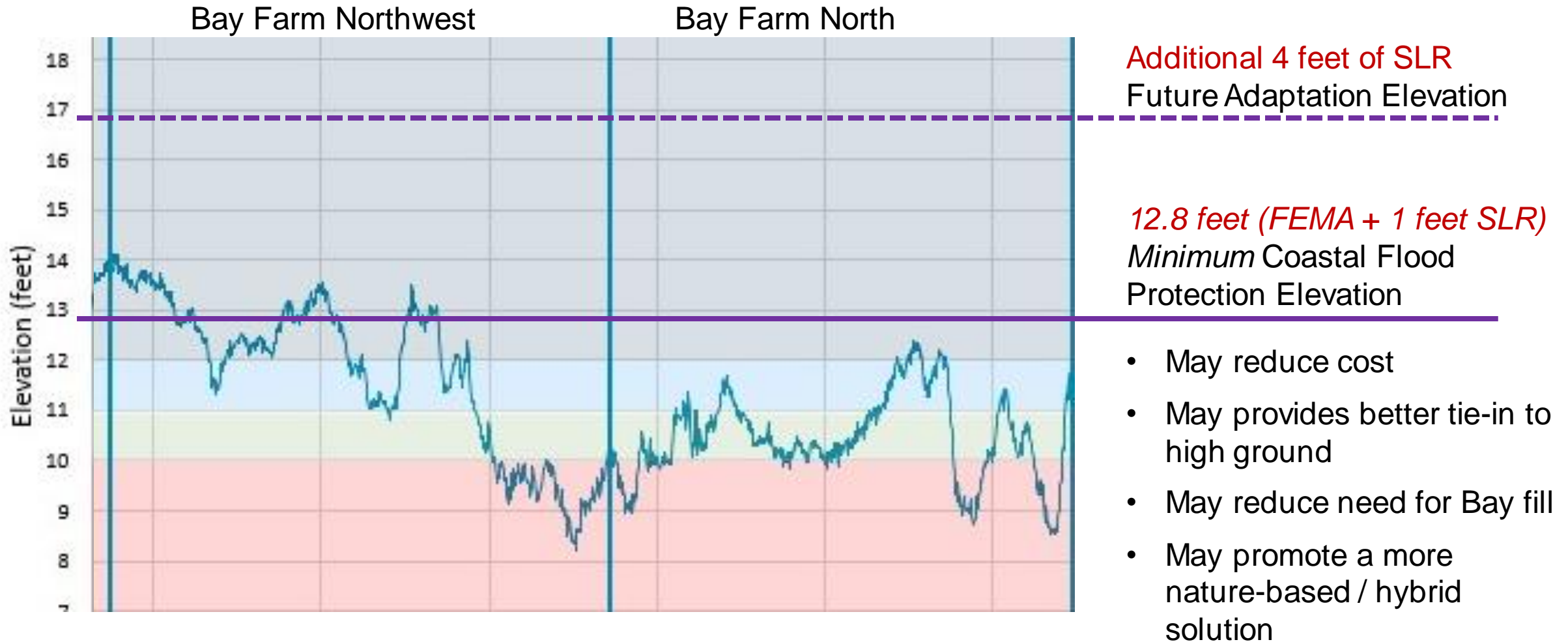
Additional 3 feet of SLR
Future Adaptation Elevation

13.8 feet (FEMA + 2 feet SLR)
Minimum Coastal Flood
Protection Elevation

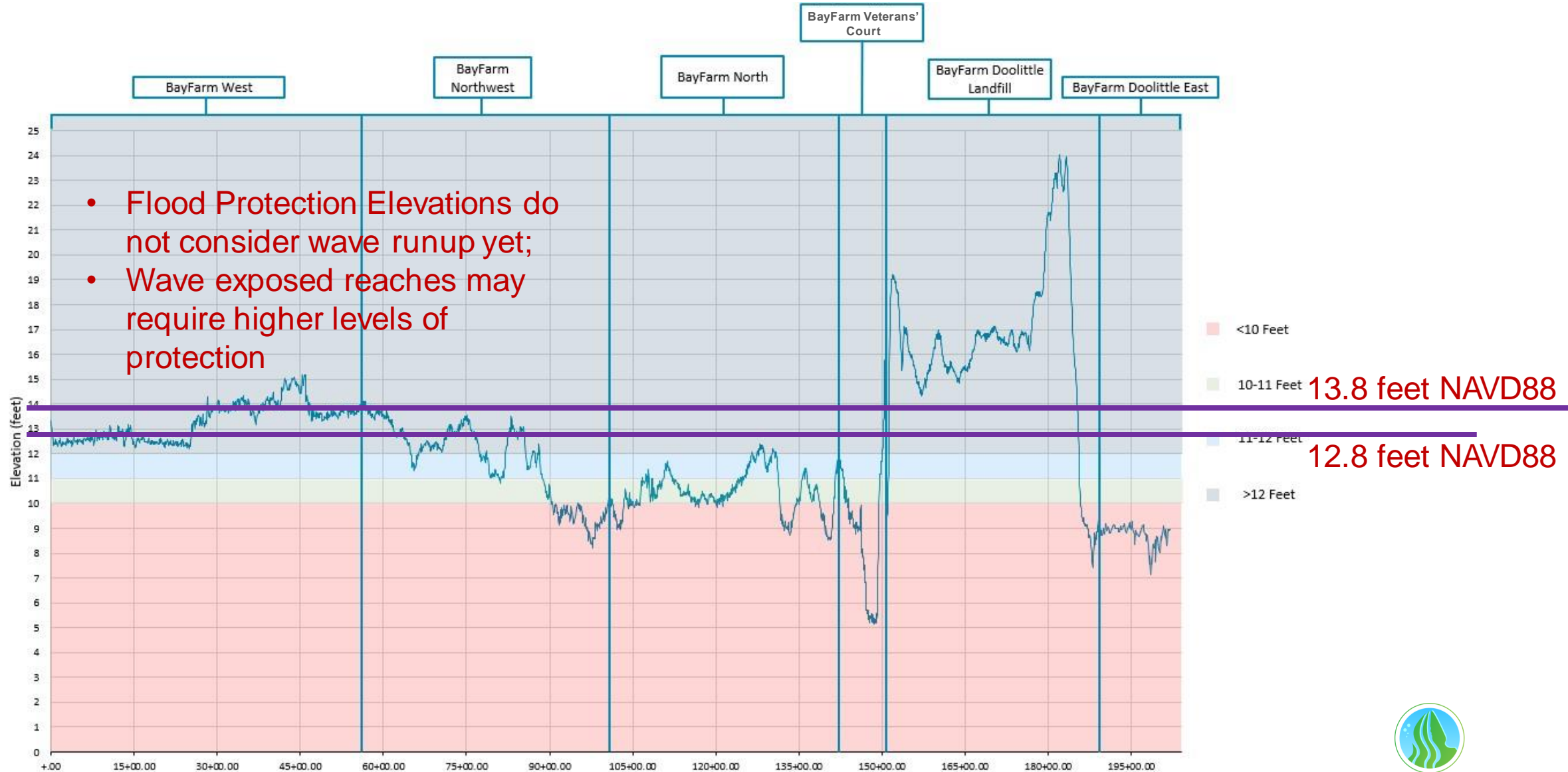
- Earthen berm more likely where > 3.5 feet of elevation needed
- Inland areas may require pump stations



Bay Farm Island Shoreline and Flood Protection Elevations



Bay Farm Island Shoreline and Flood Protection Elevations



Summary / Conclusions



Recommended Flood Protection Infrastructure Elevations

Near Term

Long Term

A

Likely sea level rise for design
Plausible, High Impact for adaptation considerations

B

2080: ~35- to 50-year lifespan
Design: 2 feet SLR Adaptation: +3 feet SLR

C

1% annual chance extreme tide (~3.4 feet above MHHW)
1% annual chance total water level (with waves, variable)

D

FEMA accreditation, removal of structures from SFHA;
2 feet of Freeboard included

E

Design: 13.8 feet NAVD88
Adaptation: 16.8 feet NAVD88
(based on stillwater elevations only)

A

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Design: 3.5 feet SLR Adaptation: +3.5 feet SLR

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No Change

D

Unknown what the long-term National Flood Insurance Program will be; Freeboard may be optional

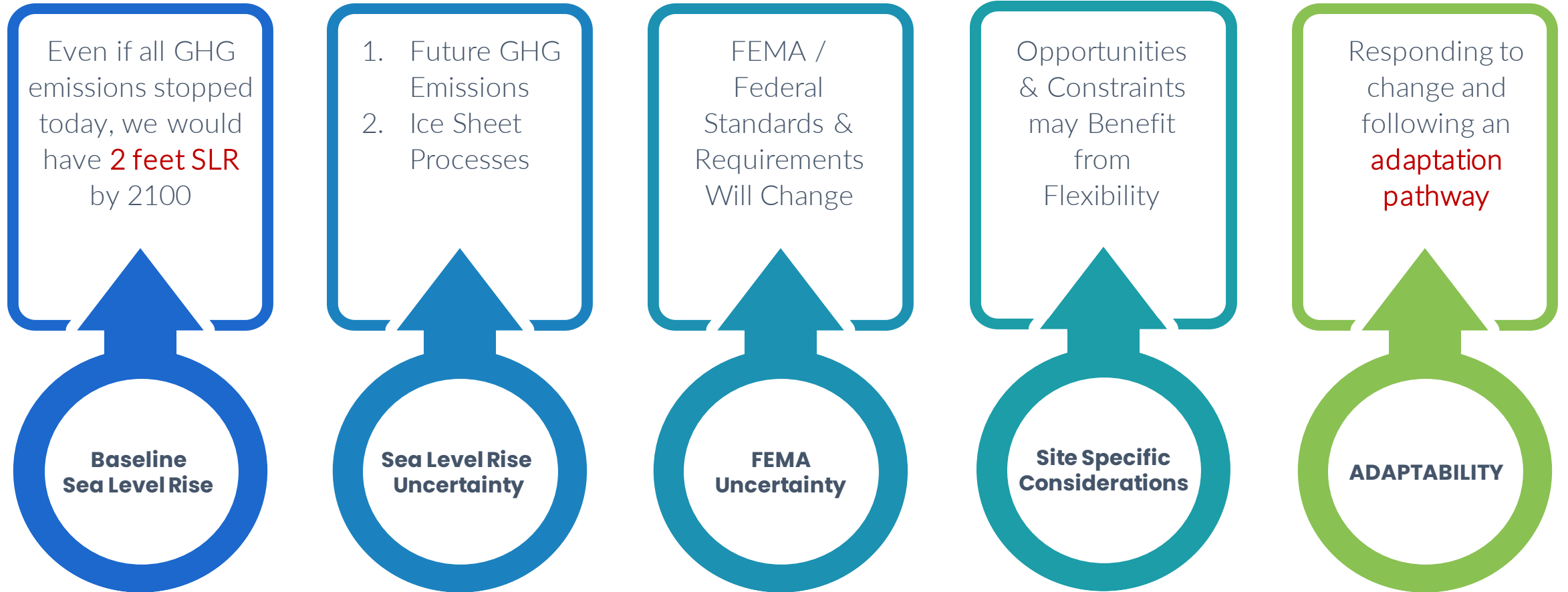
E

Design: 13.8 to 15.8 feet NAVD88
Adaptation: 16.8 to 18.8 feet NAVD88 adaptation
(based on stillwater elevations only)

Our Goal



Sea Level Rise Criteria – It's a Goal, not a Standard



Community Engagement Plan

OAAC Community Partners Engagement

January 2024



Mission Statement

The Community Partners Group unites efforts to champion flood resilience and adaptation projects along the San Leandro Bay/Oakland-Alameda Estuary. Our mission is to safeguard and rejuvenate water quality, habitat, recreation, and the vitality of our neighboring communities. Through robust community engagement, we gain invaluable insights into the urgent needs of our residents, further refining the visionary objectives set forth by the Working Group in 2022. Together, we forge a path to a more resilient and thriving future.



Who Are We?



Marqueta Price
Hood Planning



Victor Flores
Greenbelt Alliance



Dana Mandolesi
CASA



Shy Walker
Ninth Root



Zoe Siegel
Greenbelt Alliance



Deja Gould
Sogorea Te Team

Corrina Gould
Sogorea Te Land Trust



Lauren Eisele
CASA



Silvia Gibson
CASA



Shan Wahwasuck-Jessepe
REAP Climate Center

REAP Climate Center

Jonathan DeLong
David Diaz
Julien Luebbers
Patrick Cavanaugh
Saleem Mokatrin
Sophia Strena



Primary Objectives

- Coordinate efforts
- Ensure equity and social justice
- Better outcomes for the Bay and communities
- Maintain transparency and inclusivity
- Prioritize education and awareness
- Foster collaboration and empowerment

Project Partners



Engagement Methods

INFORM

CONSULT

INVOLVE

COLLABORATE

EMPOWER





Breaking Down The Methods



- Outreach materials
- Website updates
- Postcards
- Social media
- Advertisement
- Press
- Language Translation
- Emails

INFORM

CONSULT

INVOLVE

COLLABORATE

EMPOWER



CONSULT

- Community Surveys
- Community Workshops
- Alternatives Selection Matrix
- Public Presentations
- Tabling
 - Farmers markets
 - Shoreline popups
 - Beach Clean up
 - Affordable housing buildings
 - Other existing events

INFORM

INVOLVE

COLLABORATE

EMPOWER



- Agency-to-agency Meetings
- Topical Focus Groups
- Subarea Community Committees
- Culturally diverse community tours

INVOLVE

INFORM

CONSULT

COLLABORATE

EMPOWER



- Community Partners
- Project Steering Committee seats
- CBO Coordination
- Door to door Outreach
- Phone Calls

COLLABORATE

INFORM

CONSULT

INVOLVE

EMPOWER



- Community creation
- Community stewardship
- Youth engagement (Y-Plan) and leadership opportunities
- Educational training on NBS
- Residents in decision making for shoreline design
- Culturally diverse community tours

INFORM

CONSULT

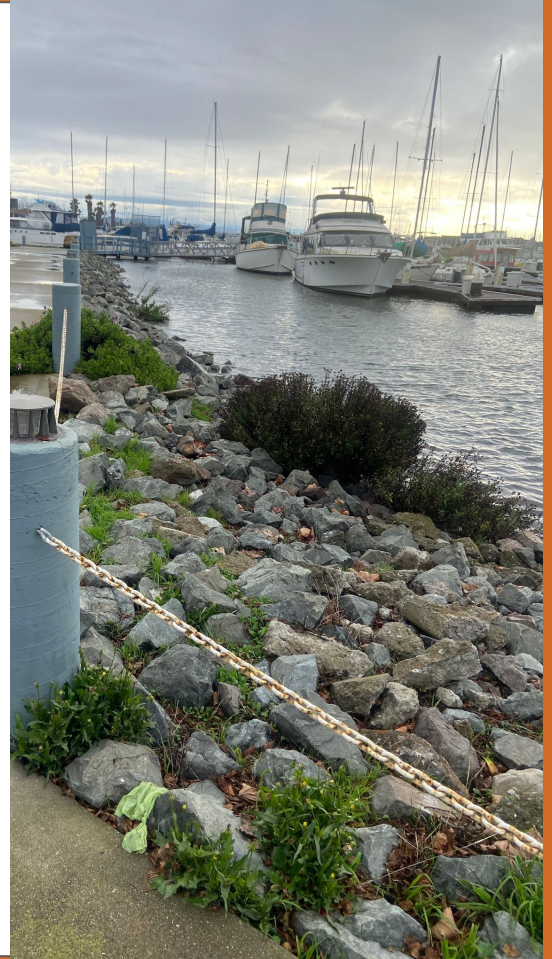
INVOLVE

COLLABORATE

EMPOWER

Who are we reaching out to?

- Public agencies
 - Cities
 - Transit Districts
 - EBMUD
- Marinas
- Youth Groups
- Local Chambers of Commerce
- Business Improvement Districts
- Homeowners Associations
- Places of worship
- Community Based Organizations
- And More!



DRAFT

High Level Timeline

Feb. 29th, 2024

Finalize Round 1
Engagement
materials

April 9th, 2024

Y-Plan/Sacred Spaces: Poster
Presentations

May 1st, 2024

Round 1 Engagement
begins: Guided Tours,
virtual hangouts, and
focus groups

July 31st, 2024

Engagement Round
1 ends

Jan. 1st, 2025

Round 2 Project A
Engagement begins

Feb. 1st, 2025

R2 Project C Begins

Jan. 5th, 2024

Pre-engagement
work ramps up.

March 1st, 2024

First Newsletter
goes out

June 1st/8th, 2024

Pop up: 3rd Annual
East Oakland
Futures Fest by
HPG, Emergent
Labs, and WOBO

Oct. 1st, 2024

Project B: Alameda/
Oak Round 2 starts

Jan. 20th, 2025

MLK Day: Clean up
& Community event

**March 30th,
2025**

Engagement
ends

Legend



Activity



Material



Questions & Answers

Best Practices Topics



Proposed Topics for Best Practices Presentations and Memos

- Governance Frameworks
- Long-term Adaptation Strategies
 - Lessons from other locations and a projects
- Equitable Approaches to Adaptation
- Nature Based Solutions
- Private Residential Waterfront Adaptation

- Other Topics



Governance Topic - Introduction



Why Governance is an issue

- **SLR adaptation projects are likely to overlap multiple jurisdictions. Who is the lead agency for contracting and managing construction?**
- **Grant funders like regional collaboration. How do we maximize our grant funding opportunities?**
- **How do we incorporate CBO'S into the process?**
- **Will a non-binding MOU (our current governance structure) work in the long run?**



Our Approach

- **Our goal: develop and review a white paper on potential governance options with public entities and CBO/community partners**
- **Inform public entities and CBOs on basic governance options**
- **Conduct interviews with public entities and CBO/community partners focused on core issues that drive what governance options will work best**
- **Facilitate discussion around best practices for governance and long term project implementation**



Four Basic Governance Options

Lead Agency with Non-Binding MOU (or Charter)

Description

- Lead agency manages projects and contracts with a non-binding MOU with other public entity stakeholders

Examples

- Highway 37
- North Richmond
- San Leandro Bay – Oakland Alameda Estuary Adaptation Working Group

Description

- Lead agency manages projects and contracts with a legally binding MOU/MOA with other public entity stakeholders

Examples

- South Bay Salt Restoration Project

Lead Agency with Legally Binding MOU or MOA

Joint Powers Authority

Description

- Agencies enter into a Joint Powers Agreement, forming a new entity that can execute contracts, potentially levy fees or taxes, issue bonds, hire staff, and work collaboratively

Examples

- San Francisquito Creek JPA, Hayward Area Shoreline Planning Agency, Marin Wildfire Prevention Authority

Description

- A new agency is created through State legislation to address a specific issue
- The agency can: execute contracts, potentially levy fees or taxes, issue bonds, hire staff, work collaboratively, and may have other special powers authorized by legislation

Examples

- San Francisco Bay Restoration Authority, Sacramento Area Flood Control Agency, One Shoreline, Fort Ord Reuse Authority

Hybrid State Agency / JPA (Special District)



Governance Interviews and Best Practices Approach

Part 1: Education, Interviews, and Focus Group with OAAC Members

Winter 2024

Part 2: Best Practices Review

- Includes presentations to Steering Committee
- Governance options shared during 1st round of outreach

Spring 2024

Part 3: Develop Draft White Paper

Early Summer 2024

Part 4: OAAC Workshop

Summer 2024

Part 5: Finalize White Paper

December 2024

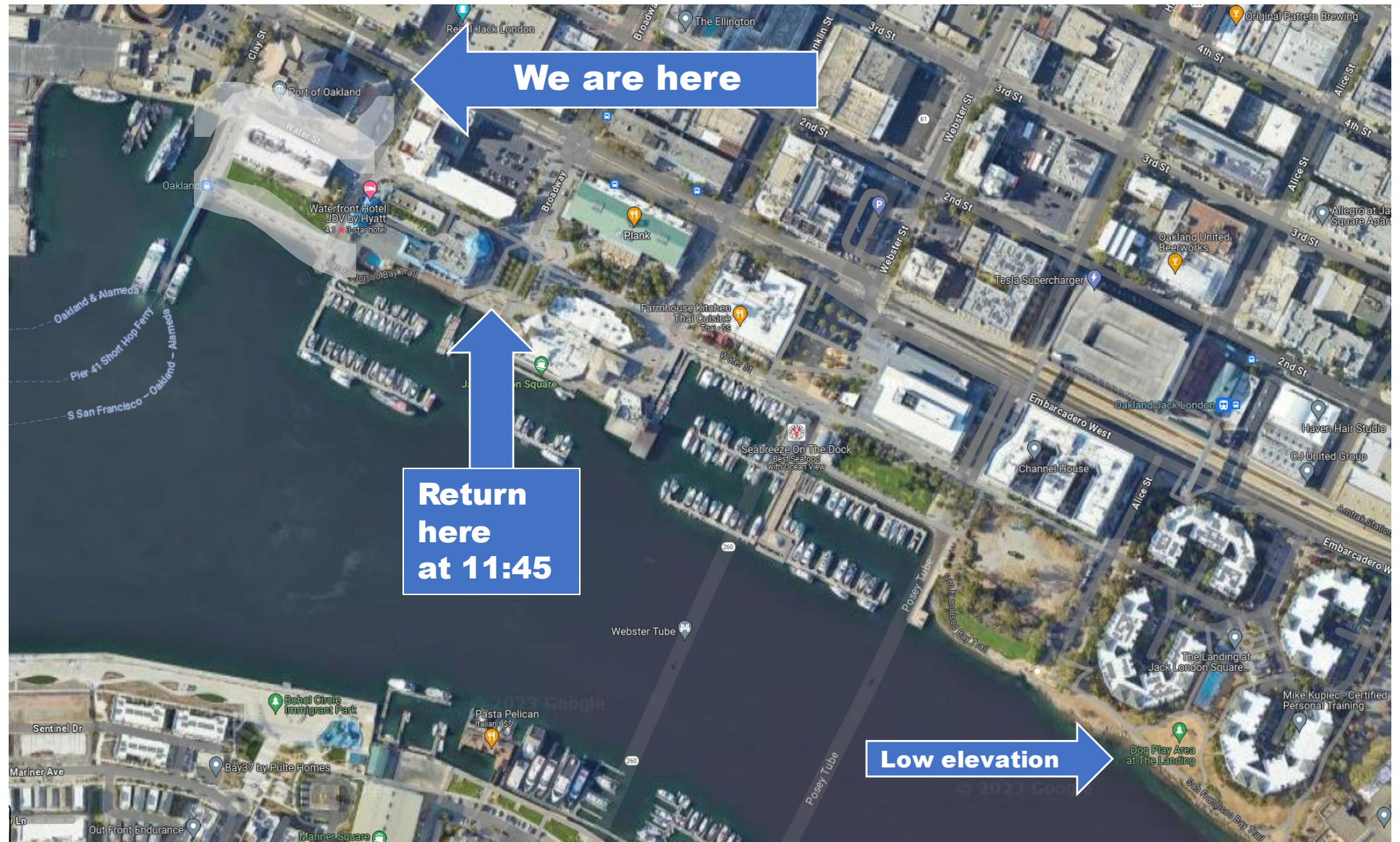


Site Walk Preparation

11:00 Shoreline Site Walk (Small Groups)

11:45 Group Photo, Announcements and Close

12:00 (Optional) Informal Networking Lunch at Plank Restaurant



King Tides Project

About the California King Tides Project: The California King Tides Project helps us visualize future sea level by observing the highest tides of today. You can help by taking and sharing photos of the shoreline during King Tides to create a record of changes to our coast and estuaries.

During today's walk:

Geotag photos of king tides – make sure location services are turned on for your camera. The King Tides Project says that “the best photos show the water level next to landmarks such as cliffs, roads, buildings, bridge supports, sea walls, staircases, and piers.”

After the walk:

Upload your photo to the King Tides project!

Upload your photos to the King Tides Project. Go to <https://www.coastal.ca.gov/kingtides/> The King Tides Project photo upload form includes instructions in both English and Spanish. If you have trouble with using the upload form, you can email kingtides@coastal.ca.gov.

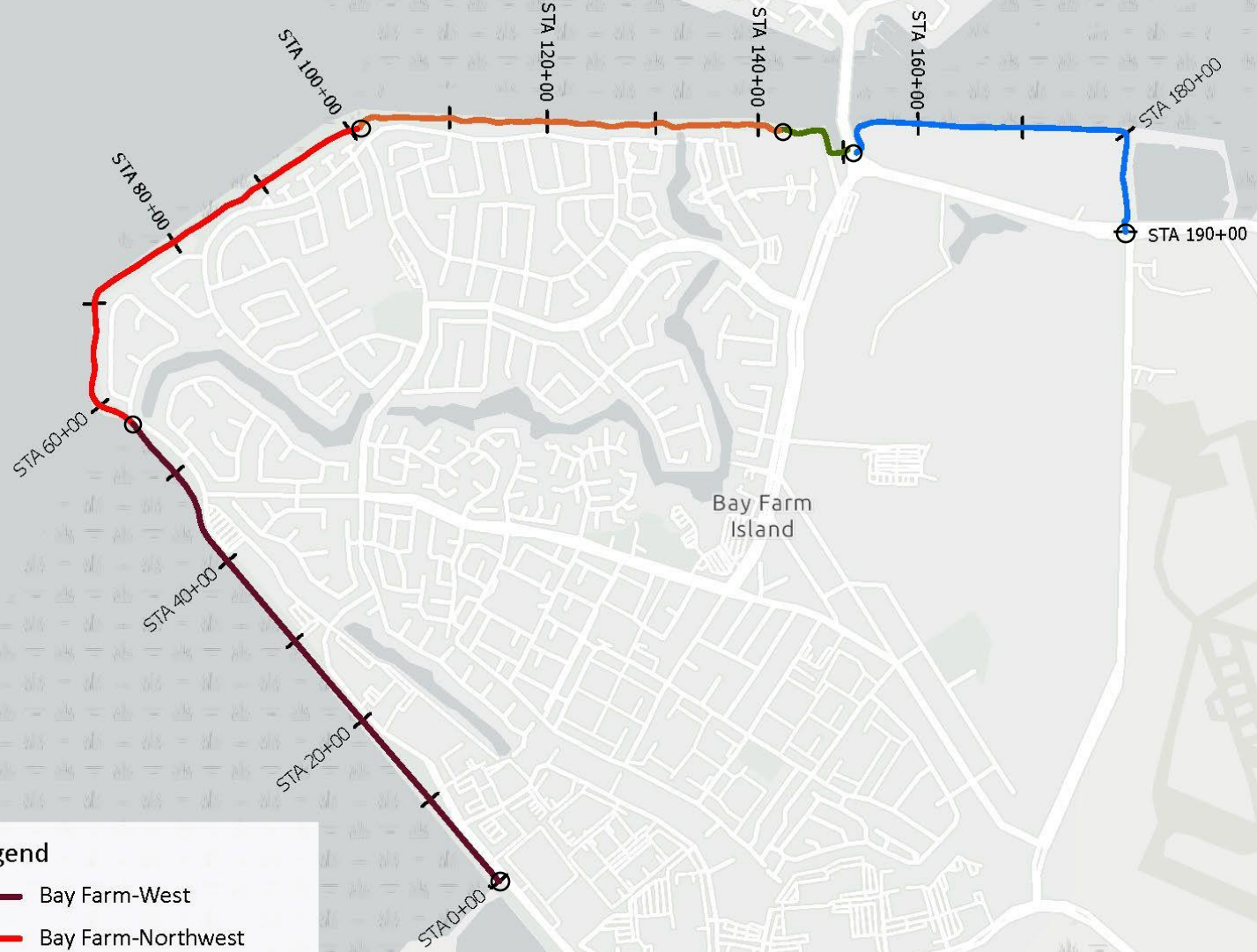
Note that uploading photos to the King Tide Project grants the California Coastal Commission “royalty-free right to use, copy, store, cache, host, prepare derivative works, reproduce, modify, adapt, publicly display and publish, redistribute, rebroadcast, and retransmit the shared photo as part of this service”.



THANK YOU



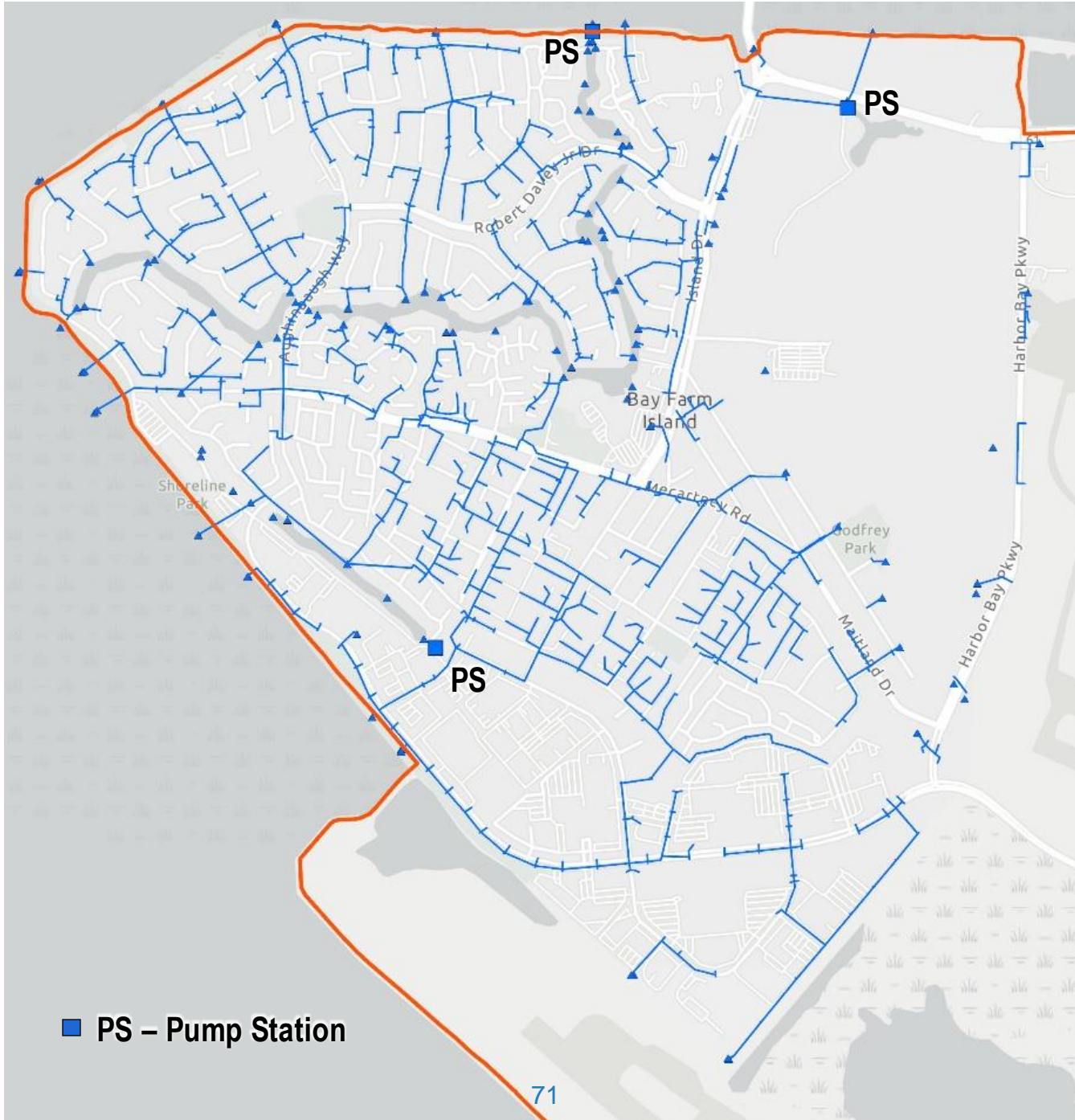
Shoreline Reaches



- Legend**
- Bay Farm-West
 - Bay Farm-Northwest
 - Bay Farm-North
 - Veteran's Court
 - Doolittle Landfill



Critical Infrastructure Storm Drain System



Sensitive Resources

