

Waterfront Resilience Program Early Projects Downtown Coastal Resilience Project

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WATERFRONT RESILIENCE PROGRAM VISION STATEMENT

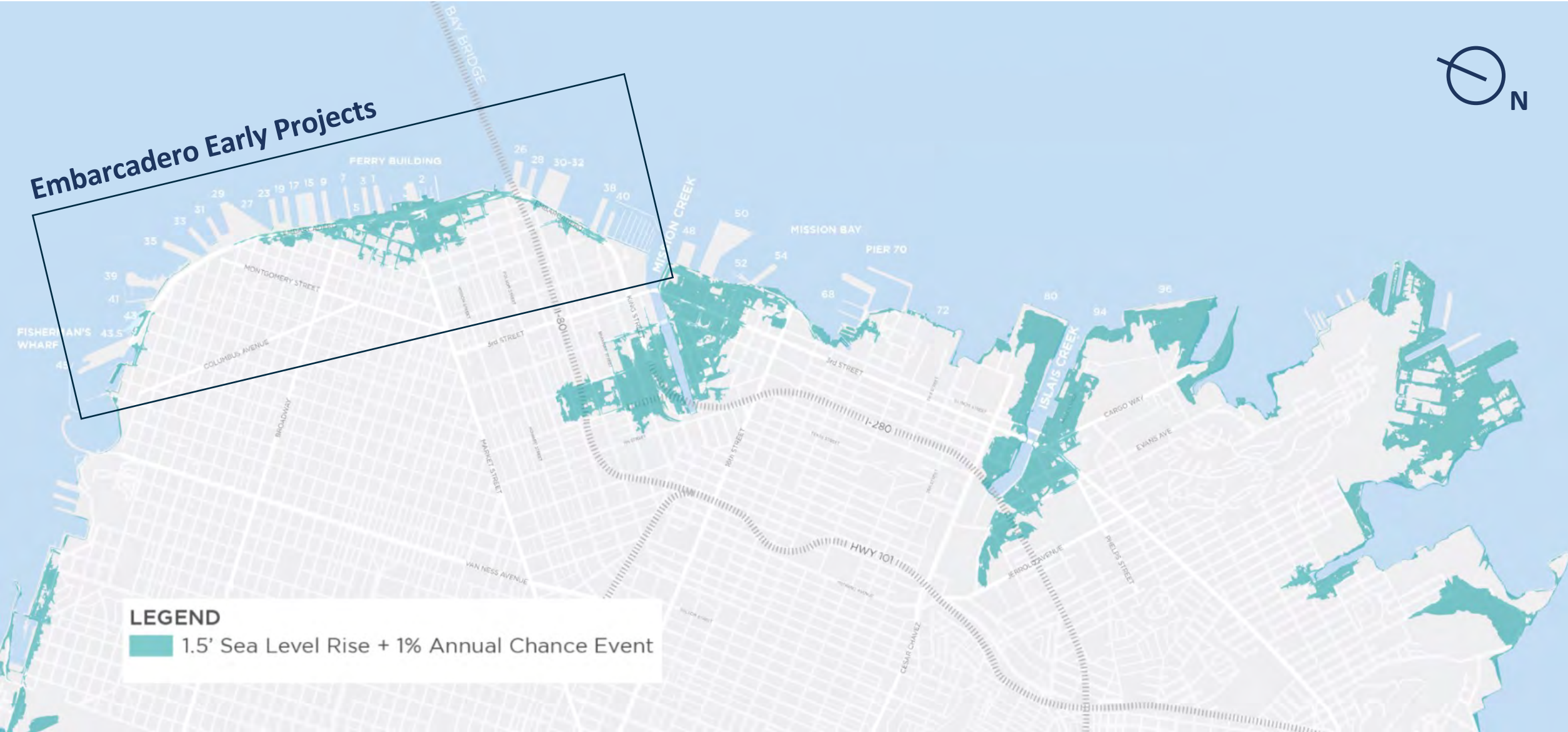
The Port's Waterfront Resilience Program will take actions to **reduce seismic and climate change risks** that support a safe, equitable, sustainable, and vibrant waterfront.



SAN FRANCISCO WATERFRONT



Embarcadero Early Projects



DEFINING EMBARCADERO EARLY PROJECTS

Goals for Embarcadero Early Projects



Identify
Implementable
Projects

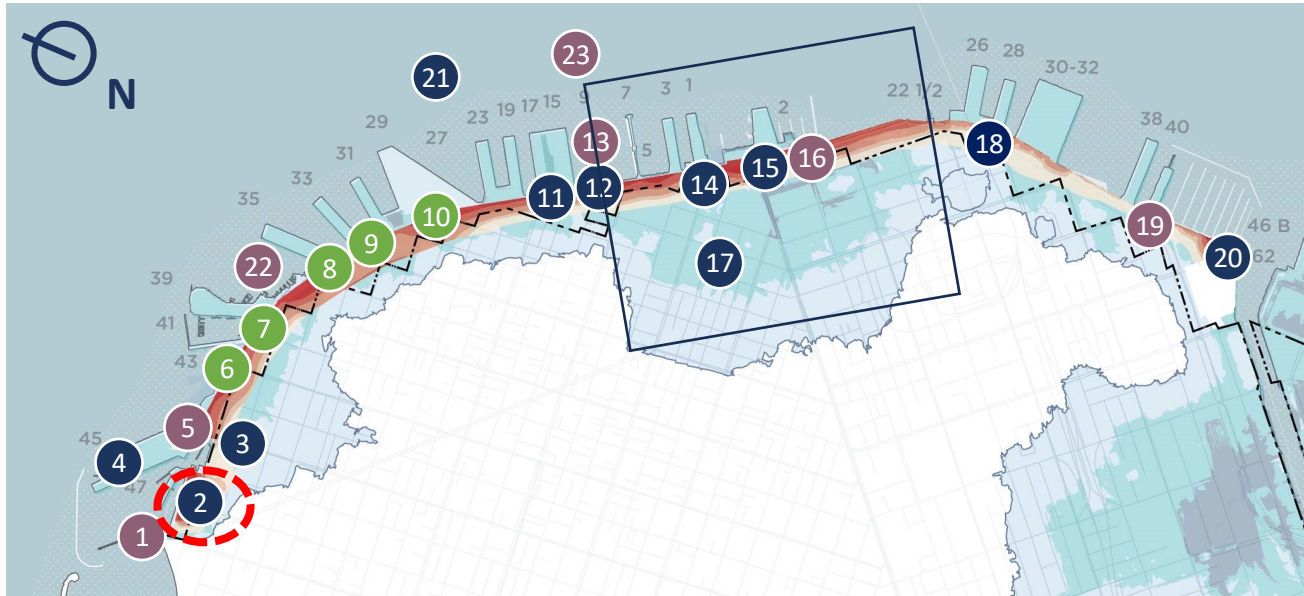


Reduce EQ Risk
Prioritize Life Safety +
Disaster Response
Capability



Reduce Flood Risk
Near-Term Flood
Defenses & Later
Adaptation

EMBARCADERO EARLY PROJECTS LIST



PROJECT LIST:

- 1 Joint Operations Security Center and Fuel Dock Reliability Project
- 2 Wharf J9 Replacement and Resilient Shoreline Project**
- 3 Taylor Street Seawall Earthquake Stabilization Project
- 4 Pier 45 Apron Earthquake Safety Retrofit and Flood Risk Reduction
- 5 Pier 43-1/2 Seawall and Wharf Earthquake Safety Project
- 6 Pier 41 Seawall Earthquake Stabilization and Wharf Retrofit
- 7 Pier 39 Seawall EQ Stabilization & Wharf Retrofit/Replacement
- 8 Pier 33 to 35 Seawall and Wharf Earthquake Reliability Project
- 9 Pier 31-1/2 Bulkhead Wall and Wharf Earthquake Safety Retrofit
- 10 Pier 27 Seawall and Wharf Earthquake Reliability Project
- 11 Pier 15 Bulkhead Wall and Wharf Earthquake Safety Retrofit**
- 12 Pier 9 Bulkhead Wall and Wharf Earthquake Safety Retrofit**
- 13 Pier 9 Historic Shed Building Earthquake Safety Retrofit Project
- 14 Pier 1 Bulkhead Wall and Wharf Earthquake Reliability Project
- 15 Ferry Building Seawall & Substructure Earthquake Reliability**
- 16 Agriculture Building Bulkhead Wall and Wharf Earthquake Safety
- 17 Downtown Coastal Resilience Project**
- 18 Pier 24 to Pier 28-1/2 Bulkhead Wall and Wharf Earthquake Safety**
- 19 EFWS, Intake Tunnel #1 Earthquake Reliability Project
- 20 Giants Seals Plaza Seawall Earthquake Stabilization Project
- 21 Pier Fire Suppression & Waterside Evacuation Improvements
- 22 EFWS Fireboat Manifold Earthquake Resilience Project (P35.5)**
- 23 Pier Utility Connection Earthquake Retrofits at Seawall

23 Embarcadero Early Projects Identified

- **11** to advance to pre-design using Proposition A funding
- **5** on hold pending USACE First Action Decision
- **7** advancing through coordination with long-term Port tenants, capital programs, and City agency coordination

DOWNTOWN COASTAL RESILIENCE PROJECT

Historical Context



Embarcadero Historic District

San Francisco, 1851
Outline of Original Yerba Buena Cove
(credit: BLR Antique Maps)



DOWNTOWN COASTAL RESILIENCE PROJECT

Coastal Flood Hazard



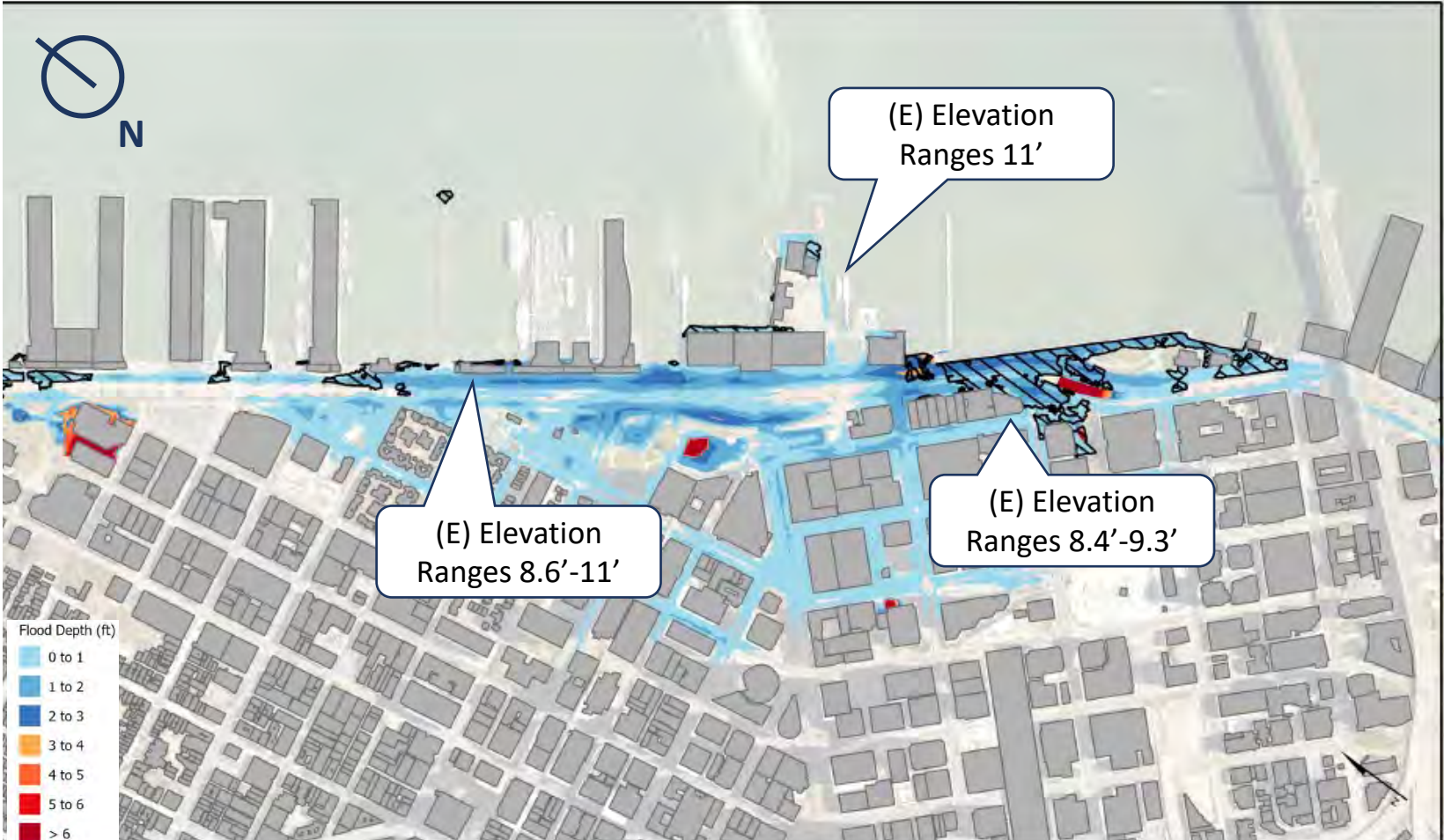
December 21, 2022



March 21, 2023

DOWNTOWN COASTAL RESILIENCE PROJECT

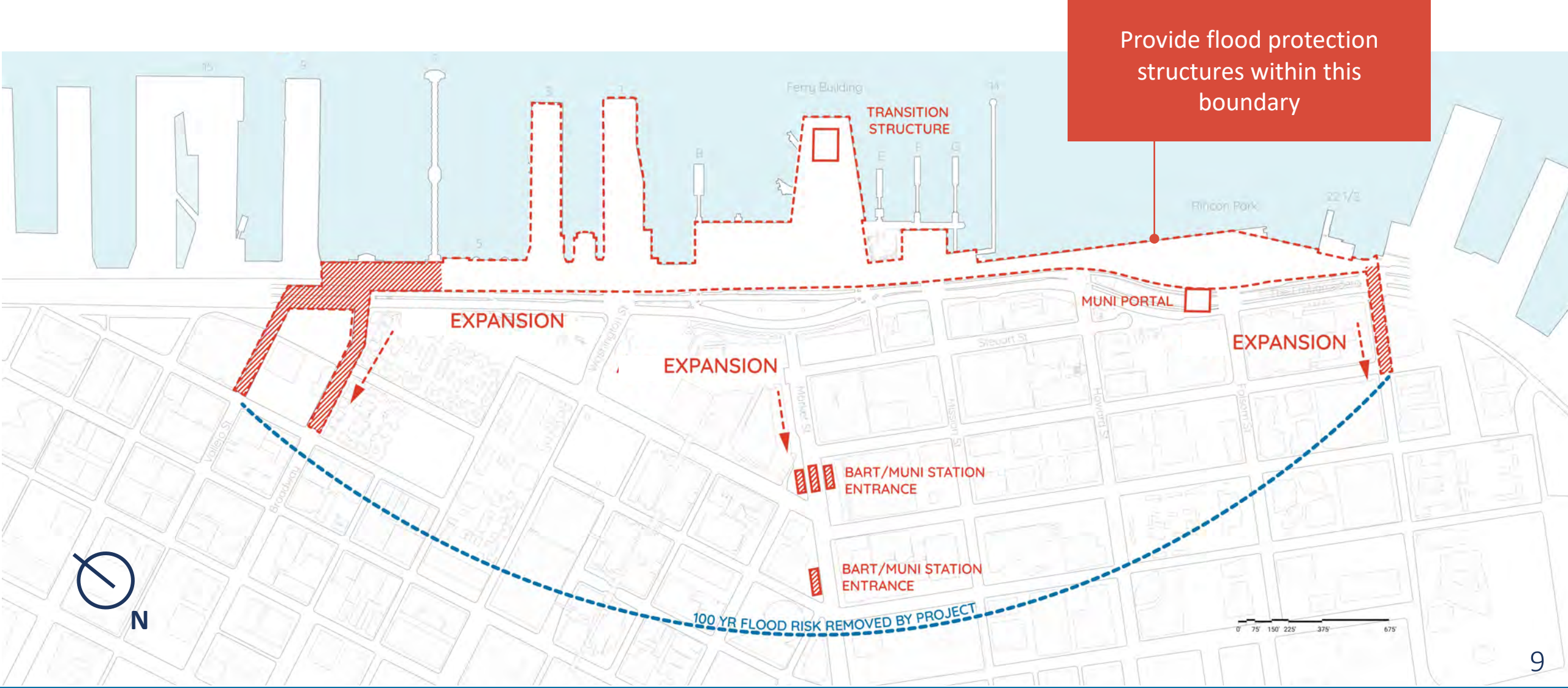
Coastal Flood Hazard



Coastal Flood Map - 11.1 ft Water Level

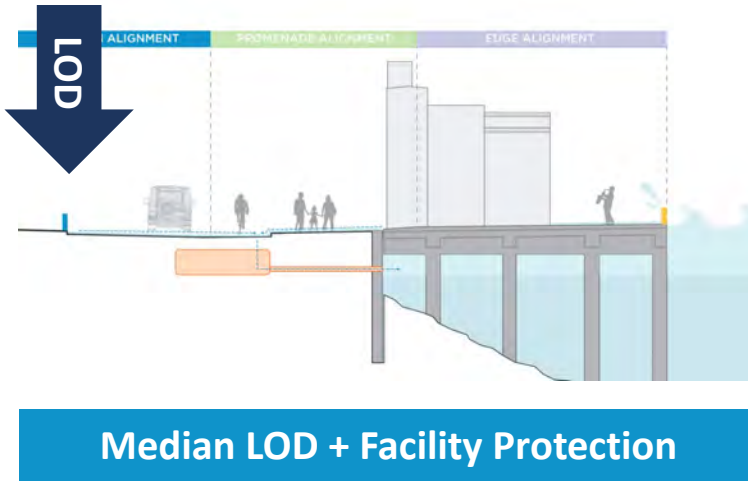
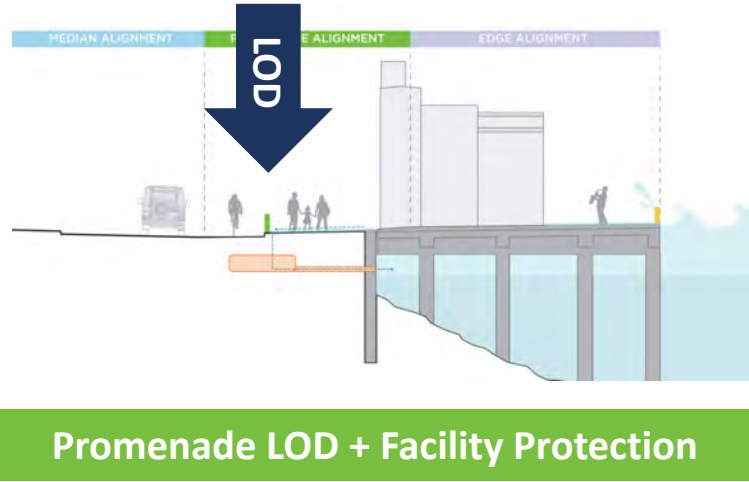
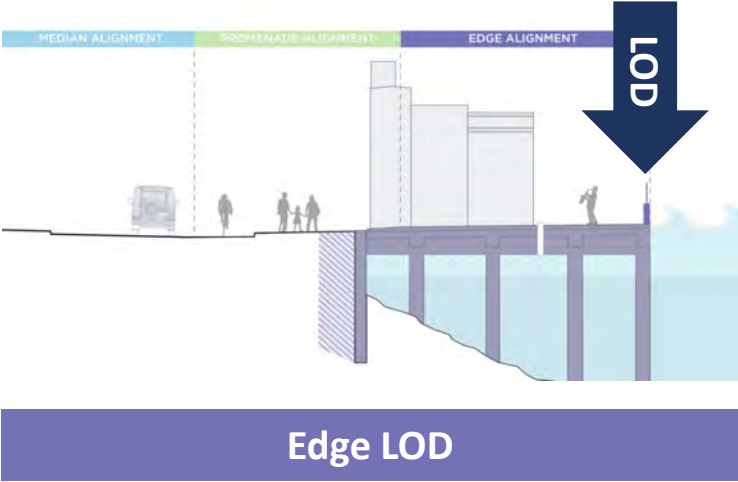
Flood Level	SLR Amount	Likely Year	Possible Year
500 yr	0.4 ft	2023	2019
100 yr	1.5 ft	2060	2044
10 yr	2.6 ft	2085	2059

DOWNTOWN COASTAL RESILIENCE PROJECT

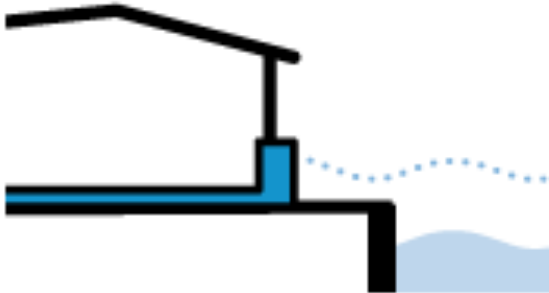


LINE OF DEFENSE (LOD) OPTIONS

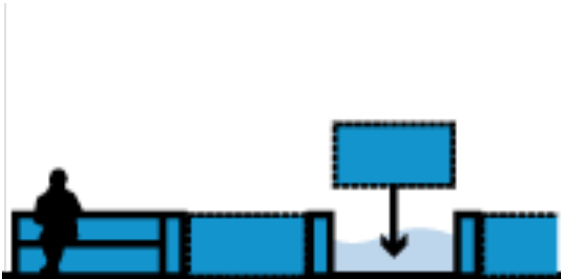
3 Alignments



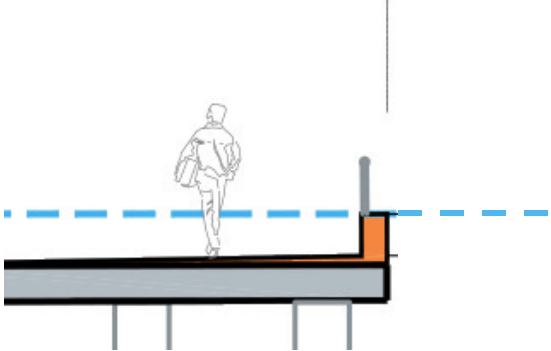
FLOOD PROTECTION TOOLKIT



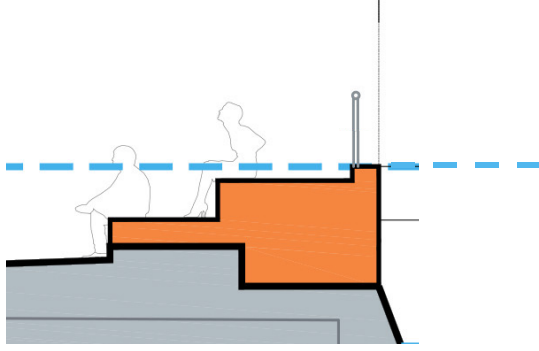
Building protection



Deployable systems



Solid guardrail



Permanent elevated features

DOWNTOWN COASTAL RESILIENCE PROJECT

Project Considerations

Consider constructability and limit **construction disruptions**

Manage **stormwater/seawater** drainage and limit impacts to combined sewer system

Consider **operations, maintenance**, and reliability of flood defense components

Limit impacts to **businesses, transit, and public access** (before, during and after flood event)

Coordinate with **emergency response** requirements

Integrate with **public realm** experience

Align with City and Port projects, including larger **adaptation** work

Improve conditions and **seismic safety** of waterfront structures

EDGE LOD

Design Alternative



EMERGENCY RESPONSE ACCESS

PUBLIC REALM IMPROVEMENT

Pier 5

Pier 9

Pier 7

Pier 3

Pier 1.5

Pier 1

BART Transition Structure

WETA

Pier 14

Rincon Park

Fire Station 35

Draft Diagram
Not representative of final design

DOWNTOWN COASTAL RESILIENCE PROJECT

FEMA BRIC



FEMA

FEMA Building Resilient Infrastructure and Communities (BRIC) Program

August 28, 2023: FEMA selected the Port's proposed Downtown Coastal Resilience Project for a potential \$50M FEMA BRIC National Competition Grant award (FY2022).

Tentative award is subject to further review by FEMA.

Thank you

