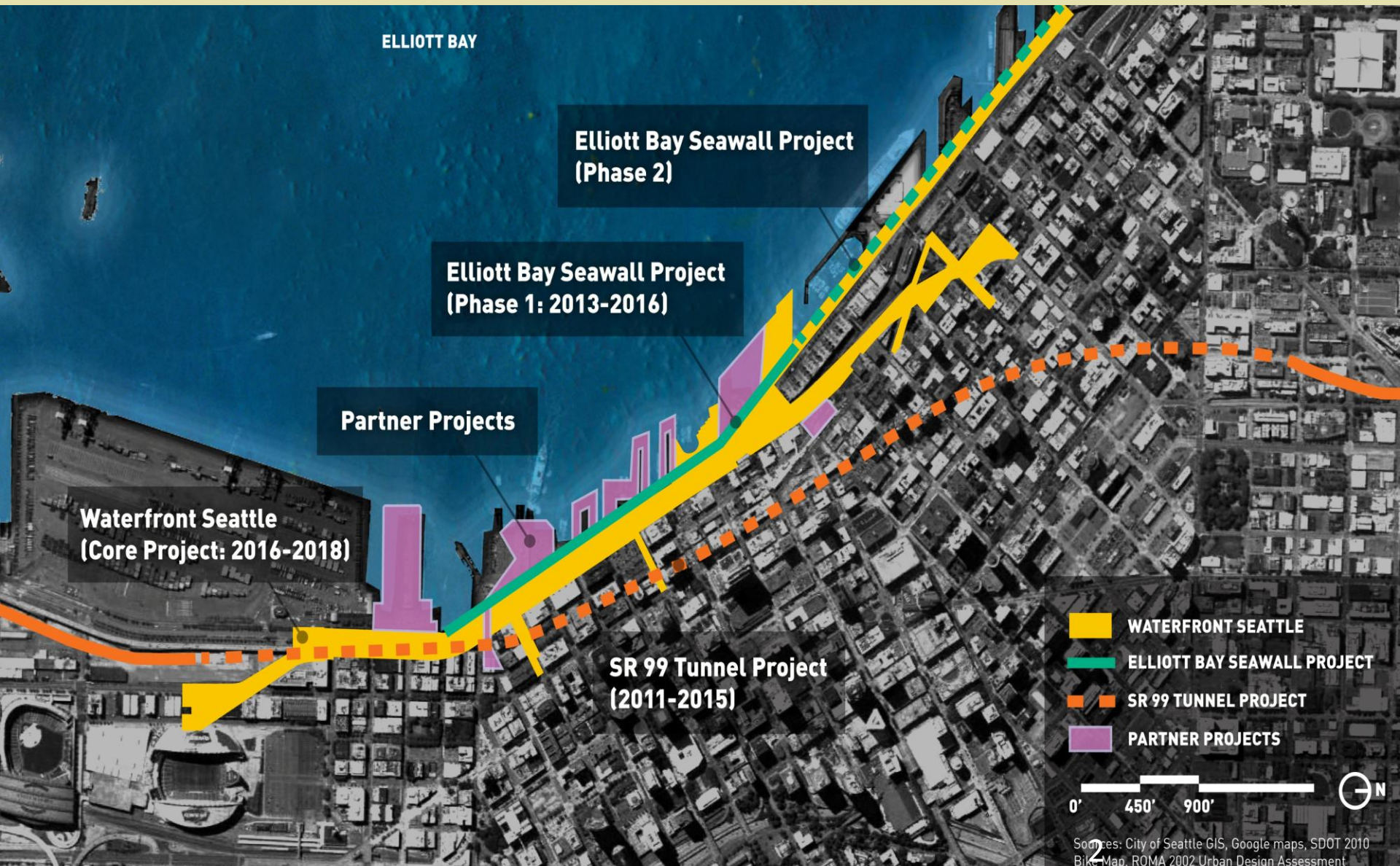


Elliott Bay Seawall Project

***Seattle Design Commission
September 6, 2012***

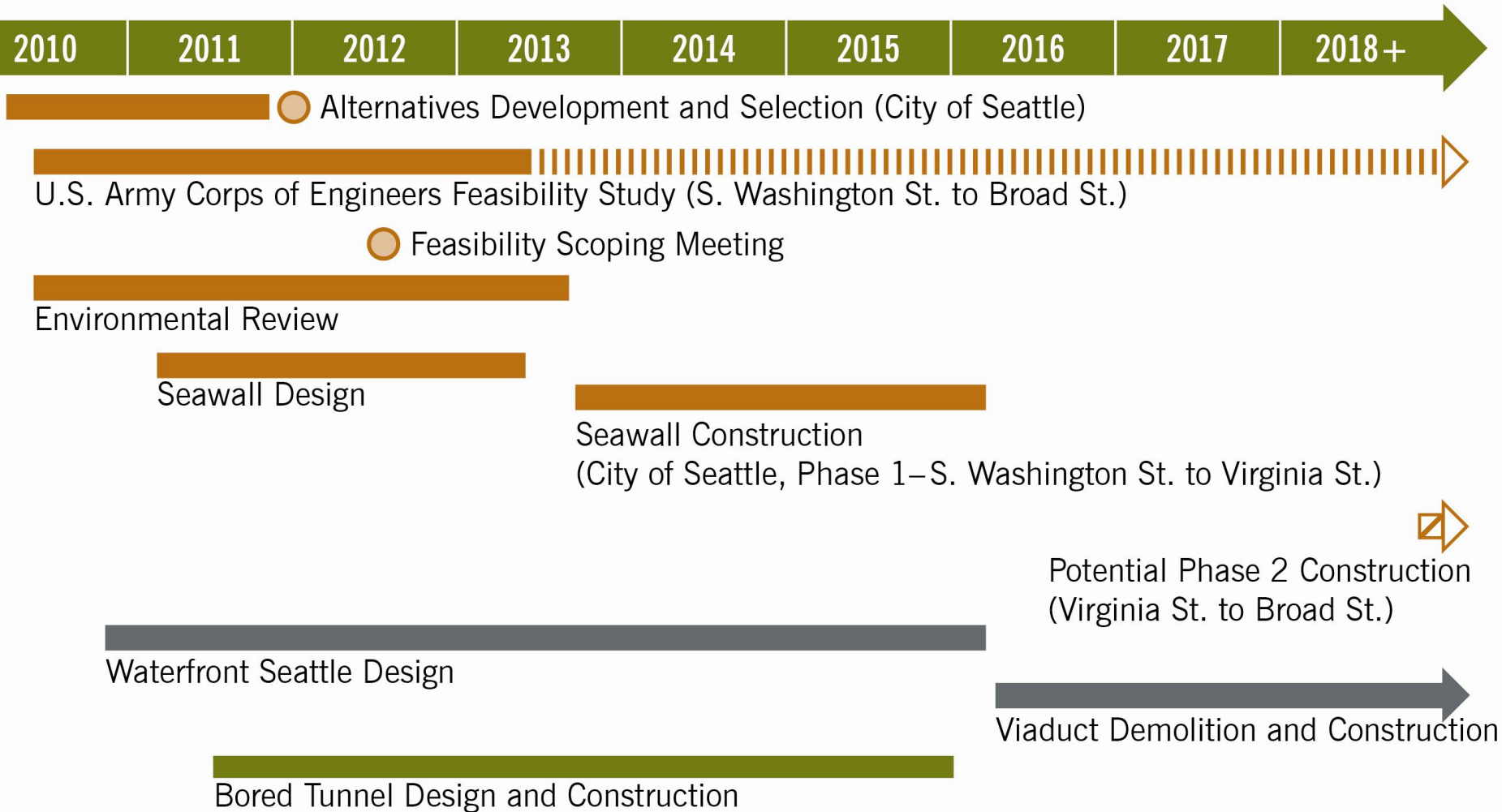
“Foundation” of the Waterfront Program



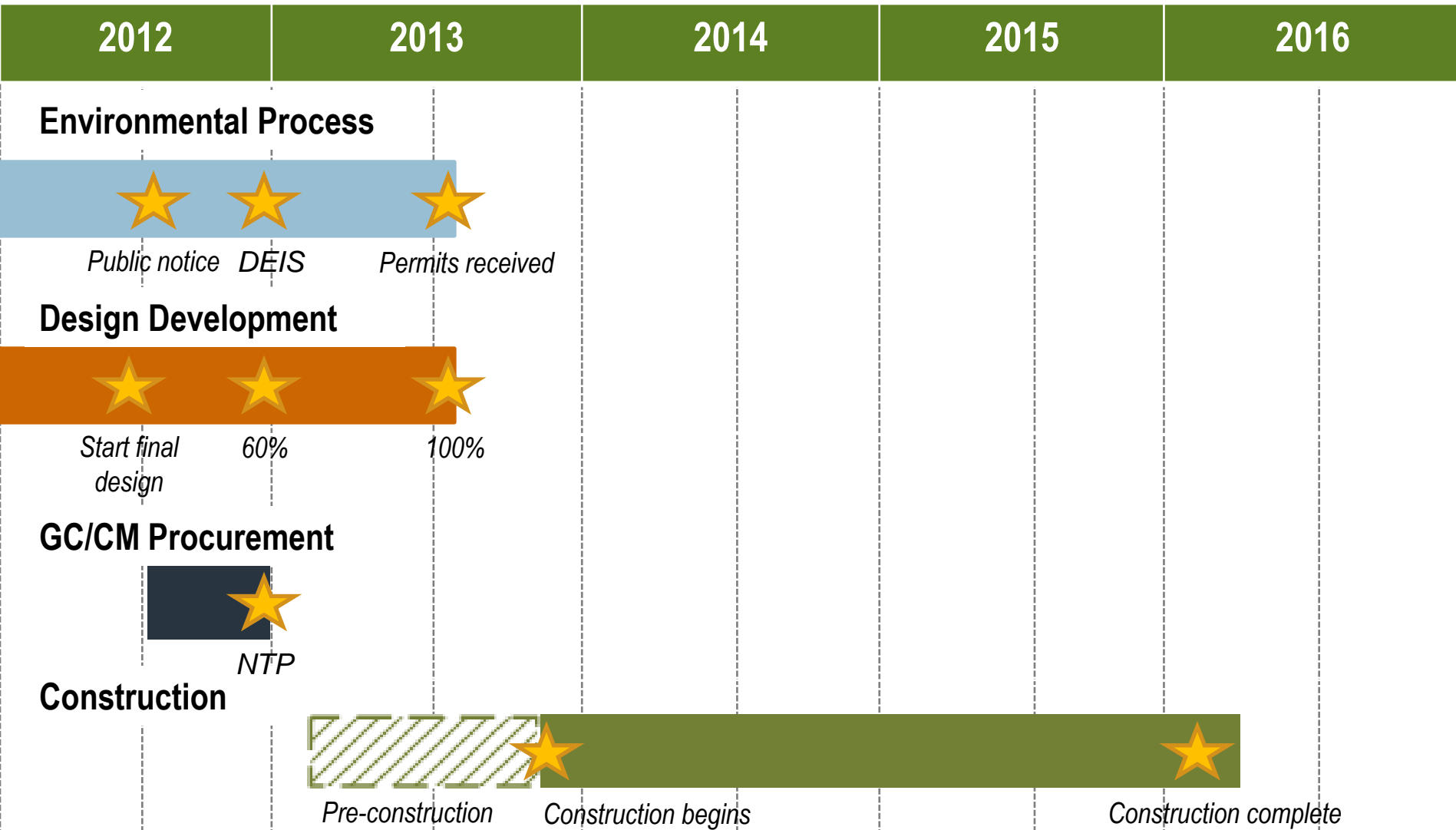
Seawall Project Area



Current Project Schedule



Project Milestones



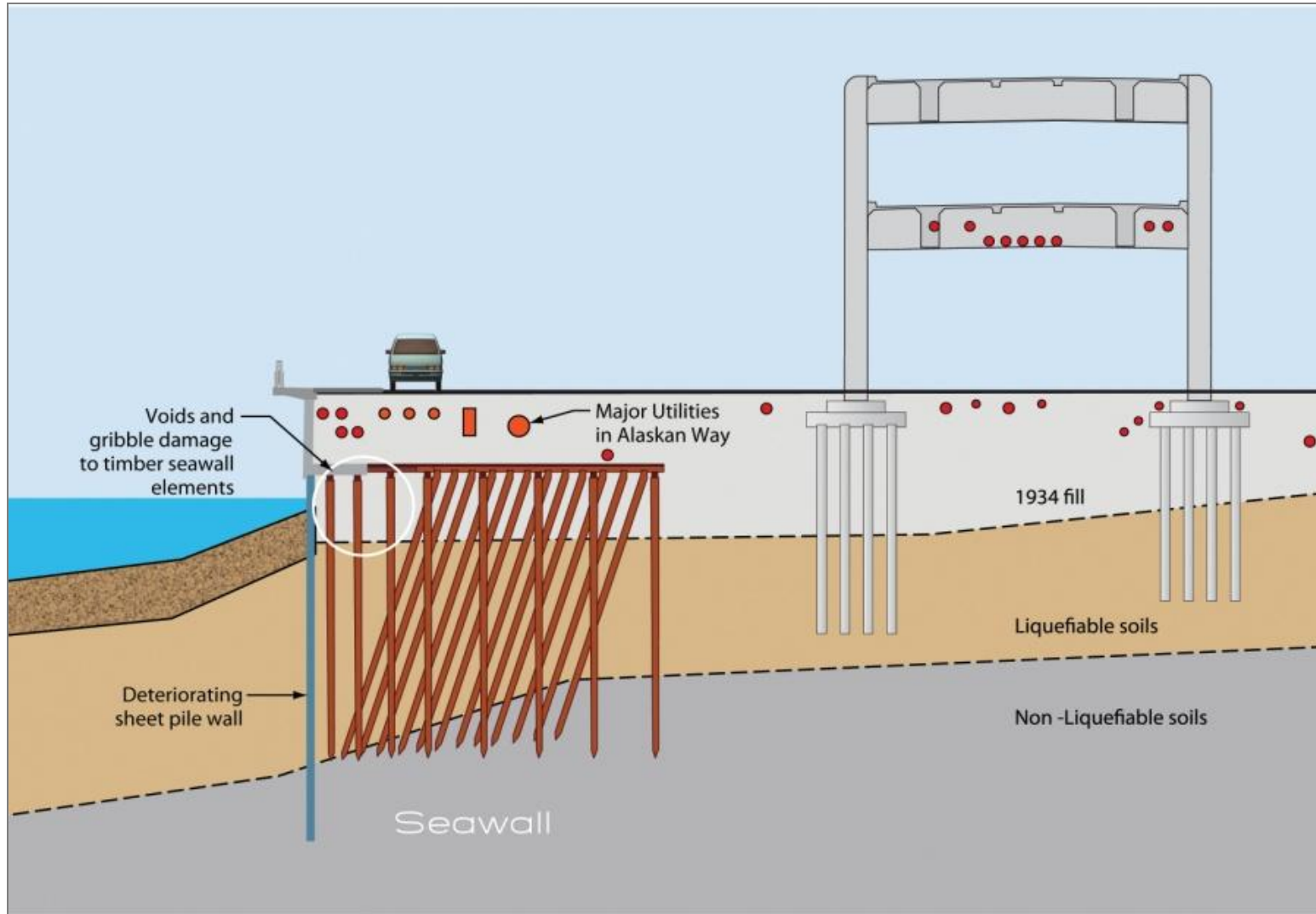
Project Purpose and Need

Project Purpose

- Reduce the ***risks of coastal storm and seismic damages***
- ***Protect public safety***, critical infrastructure, and associated economic activities along Seattle's central waterfront
- ***Improve the degraded ecosystem functions*** and processes of the Elliott Bay nearshore in the vicinity of the existing seawall



Sample Seawall Cross-Section



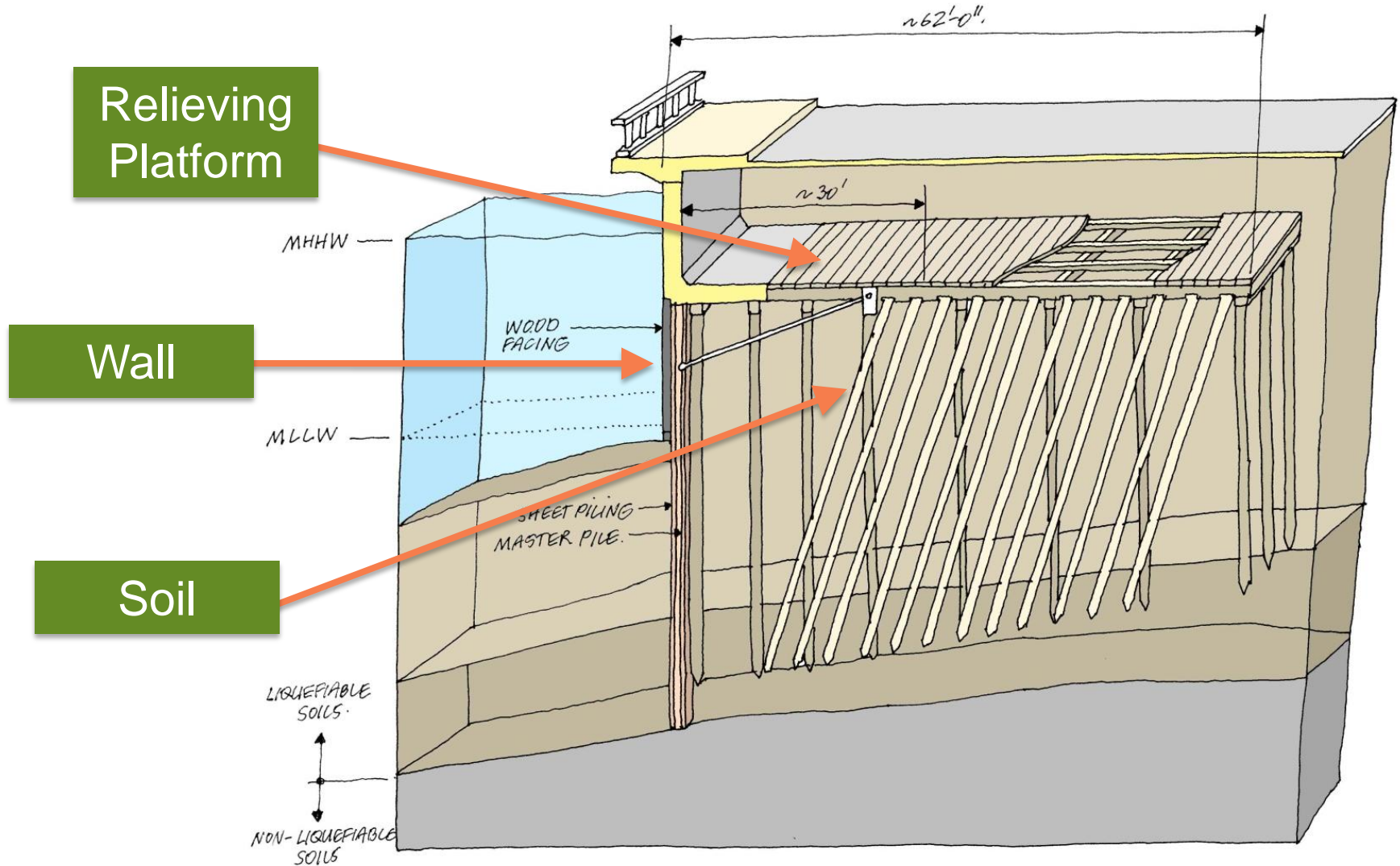
**Type B
Seawall
(Madison
to Union)**

Seawall Location: Eastern Extent



**Type A
Seawall
(Union to
Broad)**

Structural Elements of the Wall



Seawall Repairs and Vulnerability



*1954 failure, Clay Street
(above/at right)*



*2002 relieving platform
repairs (to right)*

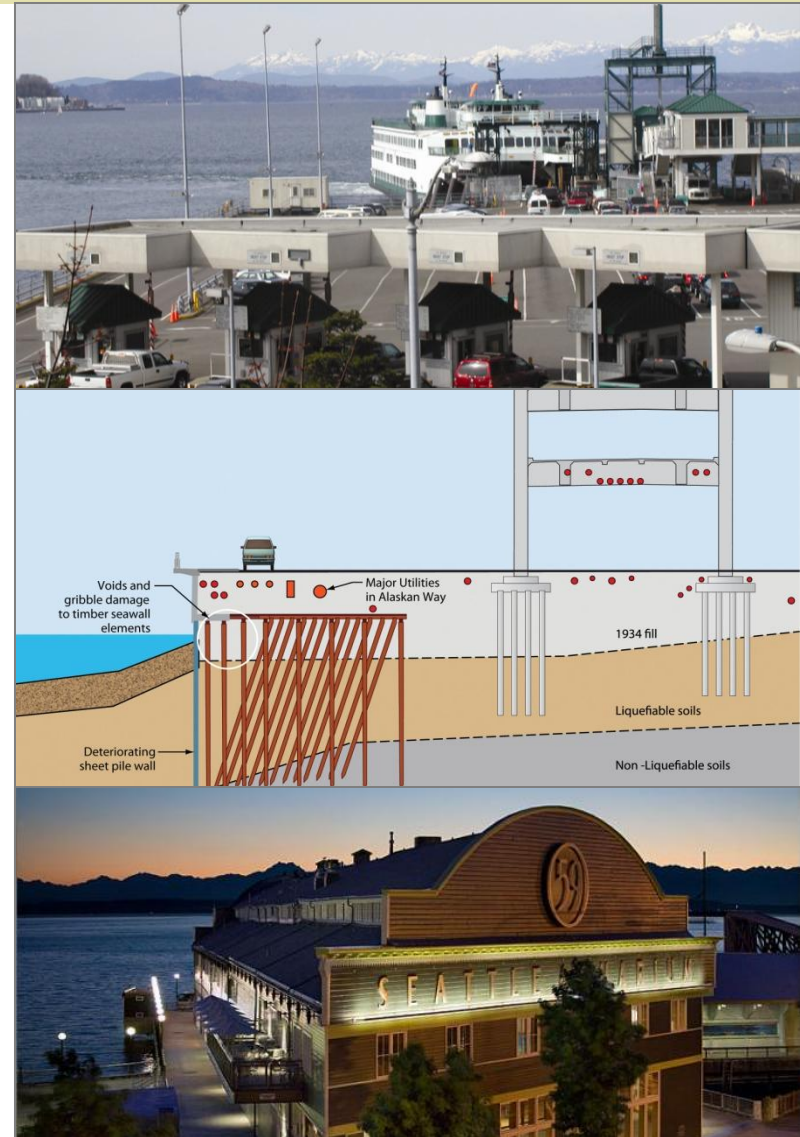


Result of a Seawall Failure

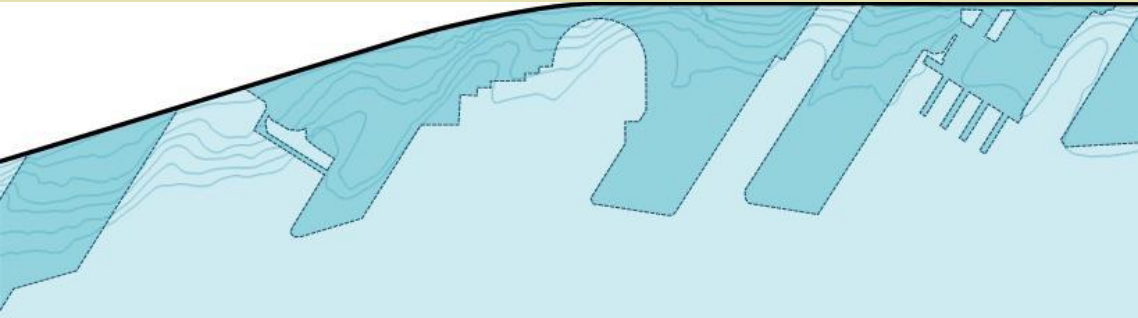


What's at Risk?

- Public safety
- Transportation corridor
- Critical utilities
- Residential and commercial structures
- Public recreation
- Tourism and local attractions
- Seattle's front porch



Degraded Nearshore Habitats



- Migratory corridor
 - Depth
 - Light
- Nearshore ecosystem productivity
 - Aquatic and riparian vegetation
 - Macroinvertebrates
 - Substrate diversity



Threatened and Endangered Species

- Salmon
- Trout
- Puget Sound Rockfish



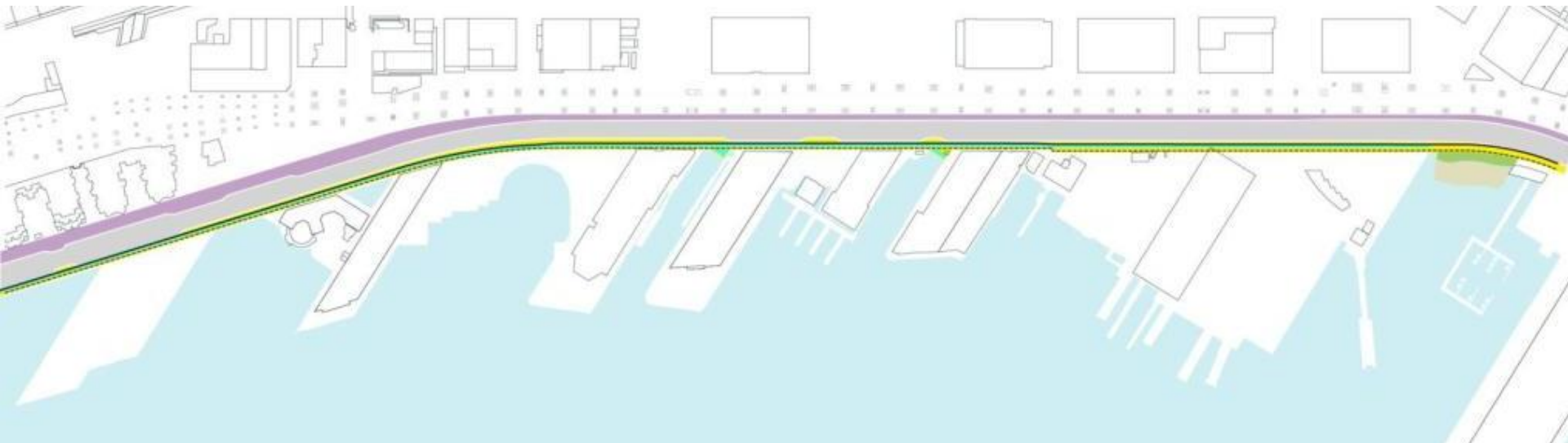
Developing Alternatives

Public Engagement Themes

- For those most affected, *the project is well-known* and they are ready to *get construction started*
- *Seize the habitat opportunity* by using innovative and science-based enhancements
- Maintain a *responsible project budget*
- Create more *physical access to water* and public gathering space
- Maintain transportation routes, including *continuous non-motorized pathways*
- Consider *construction impacts to businesses* and tourism
- Preserve *historical and cultural significance*

Recommended Design Features

- Face of wall: 10-15 feet inland
- Soil stabilization with jet grouting
- Continuous migration corridor and nearshore restoration
- Restored Alaskan Way and pedestrian/bicycle facilities
- Early program wins



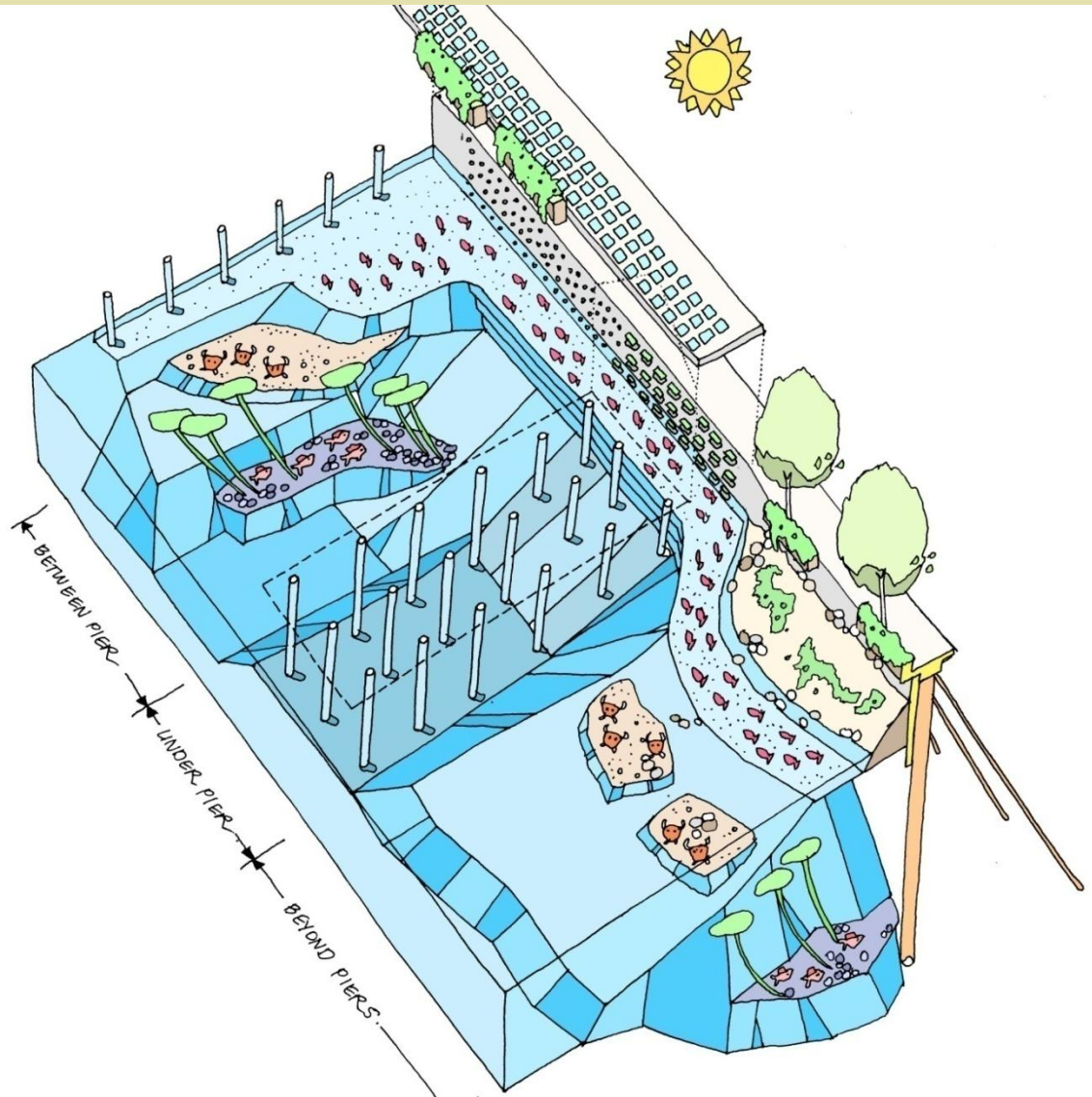
Soil Stabilization: Jet Grouting

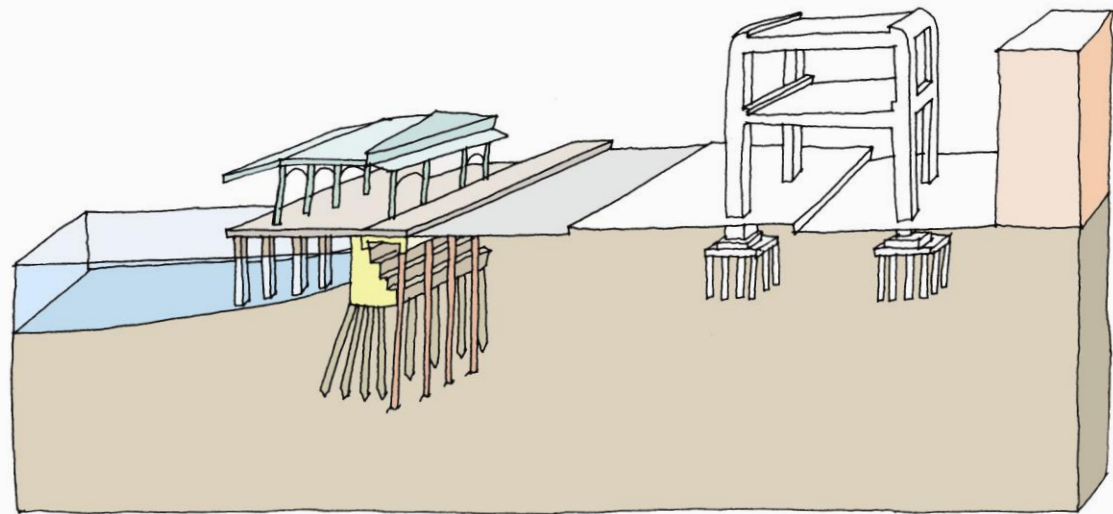
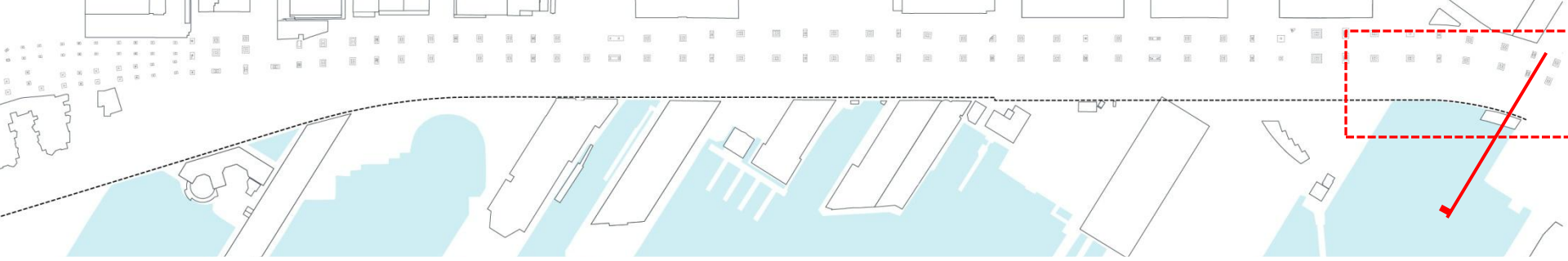
- Standards
 - 1,000 year seismic event
 - 75-year design life
- Structure
 - Directly addresses soil liquefaction problem
- Time
 - Potentially faster construction
- Cost
 - Lower than other options



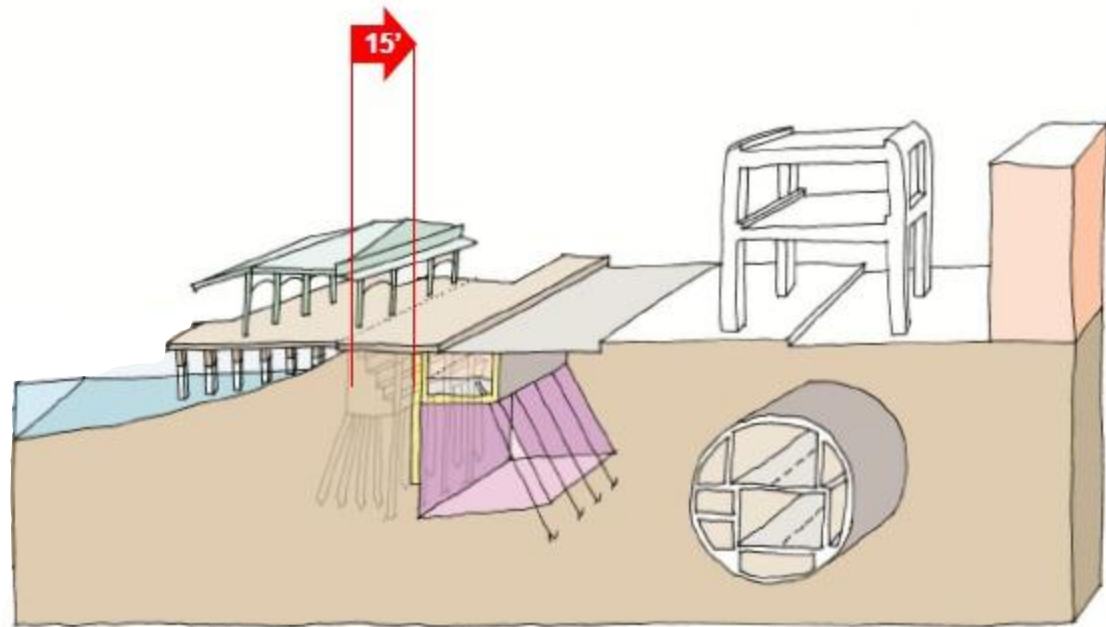
Potential Habitat Enhancement Measures

- New seawall
- Intertidal corridor
- Lighting
- Riparian vegetation
- Textured wall
- Substrate enhancement
- Cobble reefs

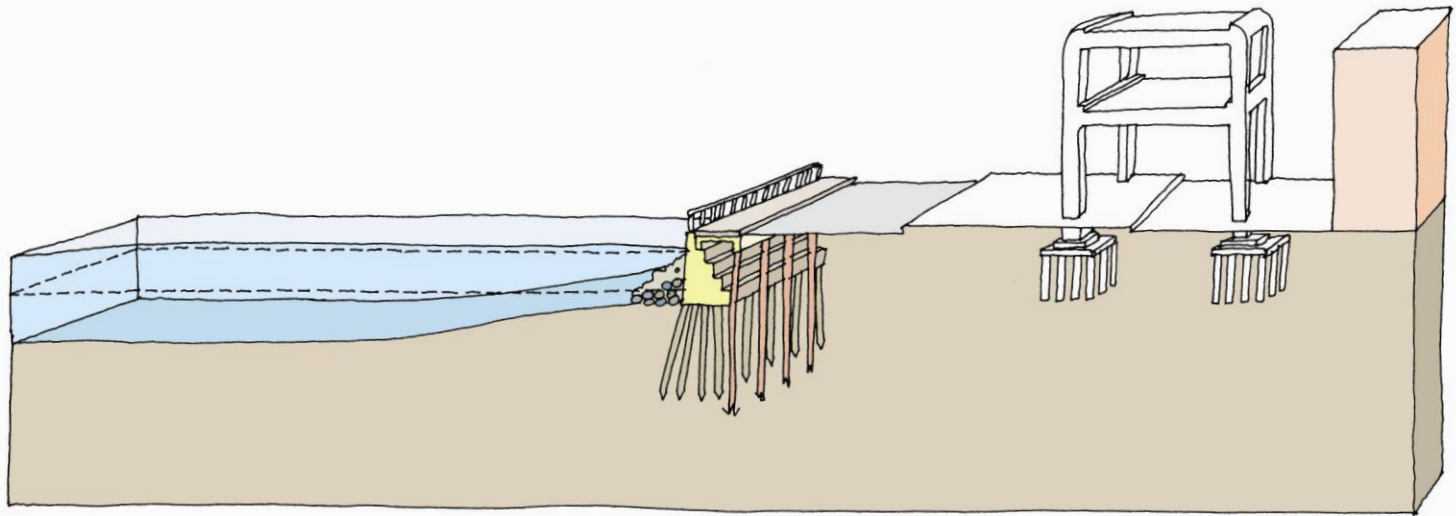
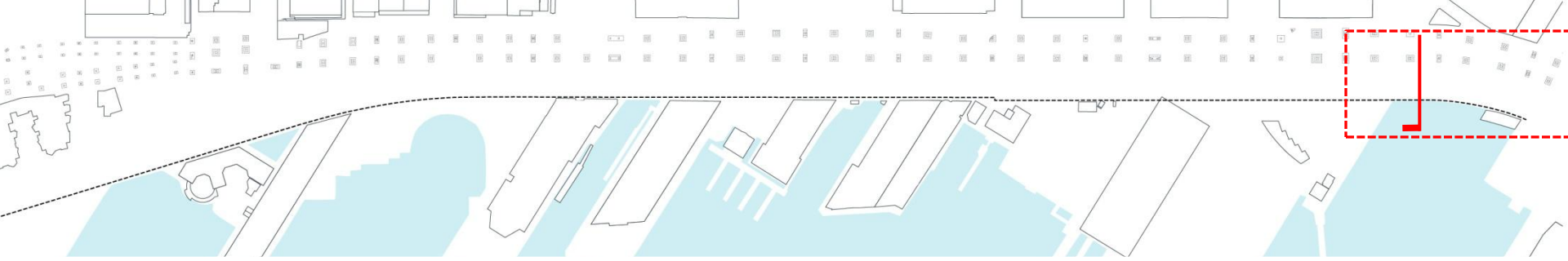




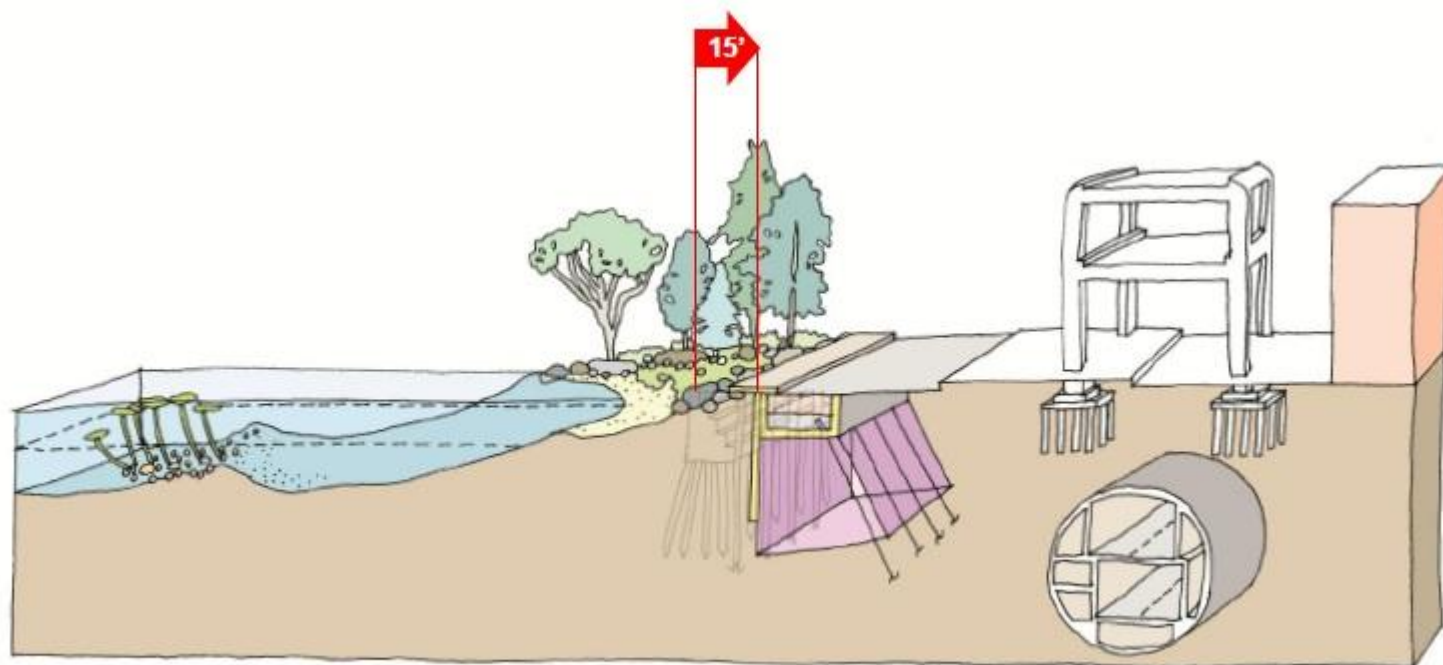
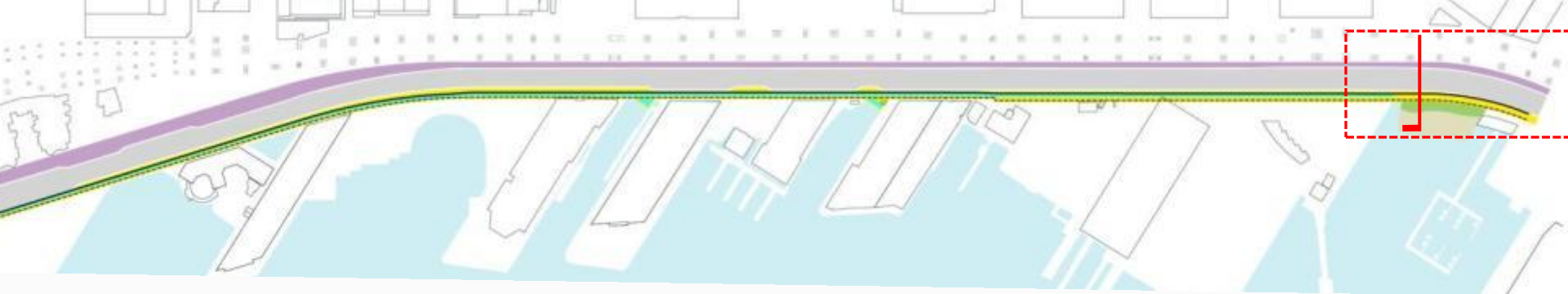
Existing – Zone 1



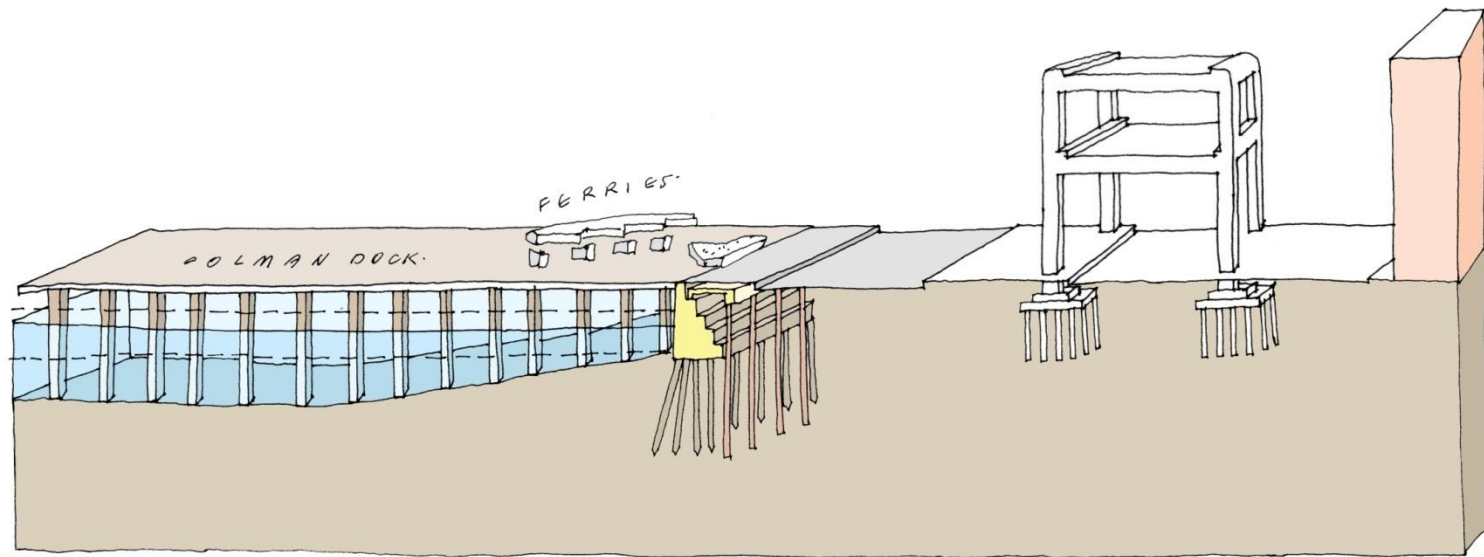
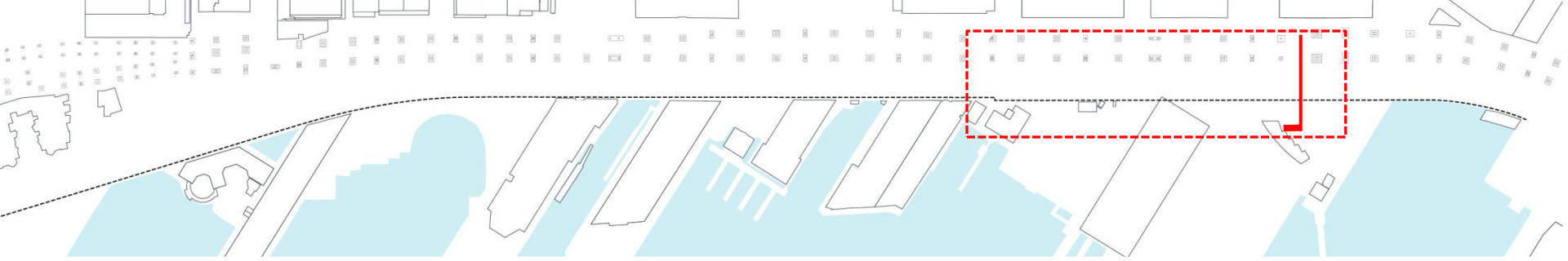
Proposed – Zone 1



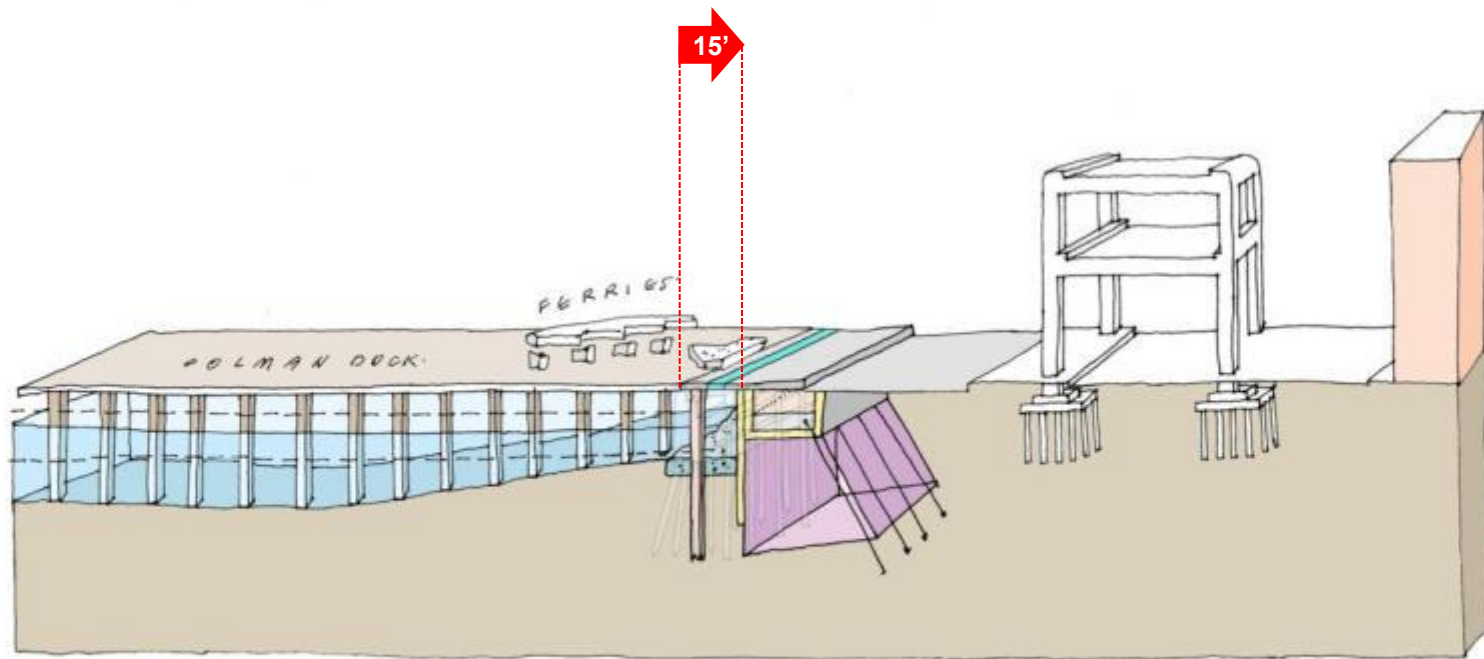
Existing – Zone 1



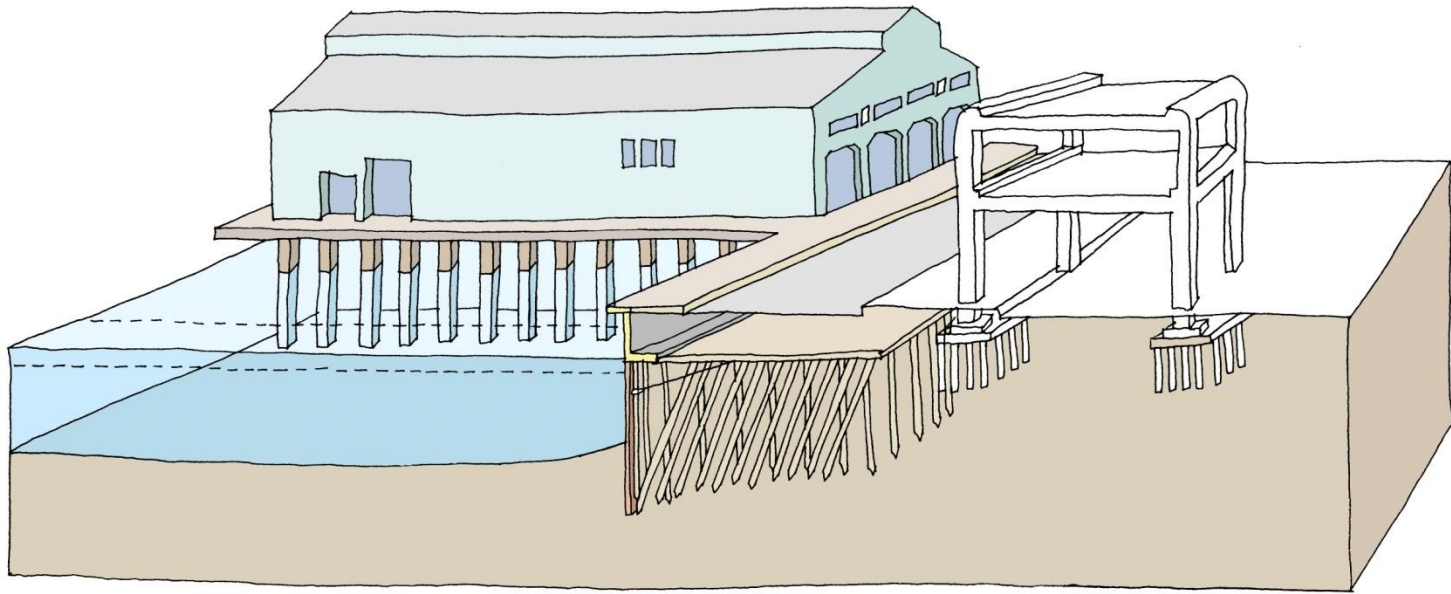
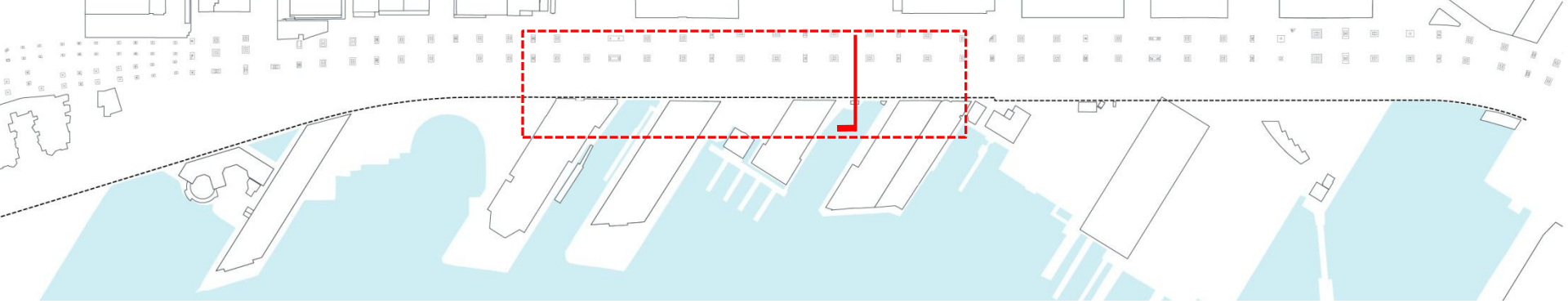
Proposed – Zone 1



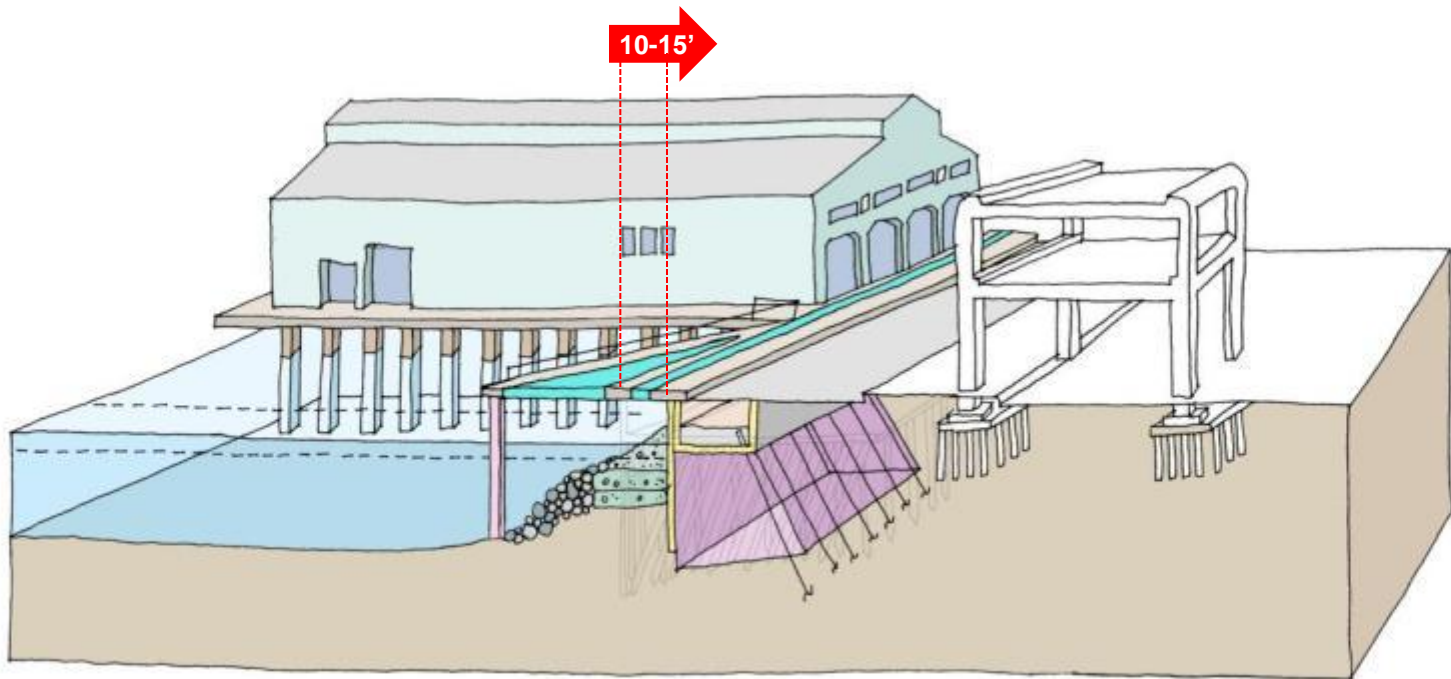
Existing – Zone 2



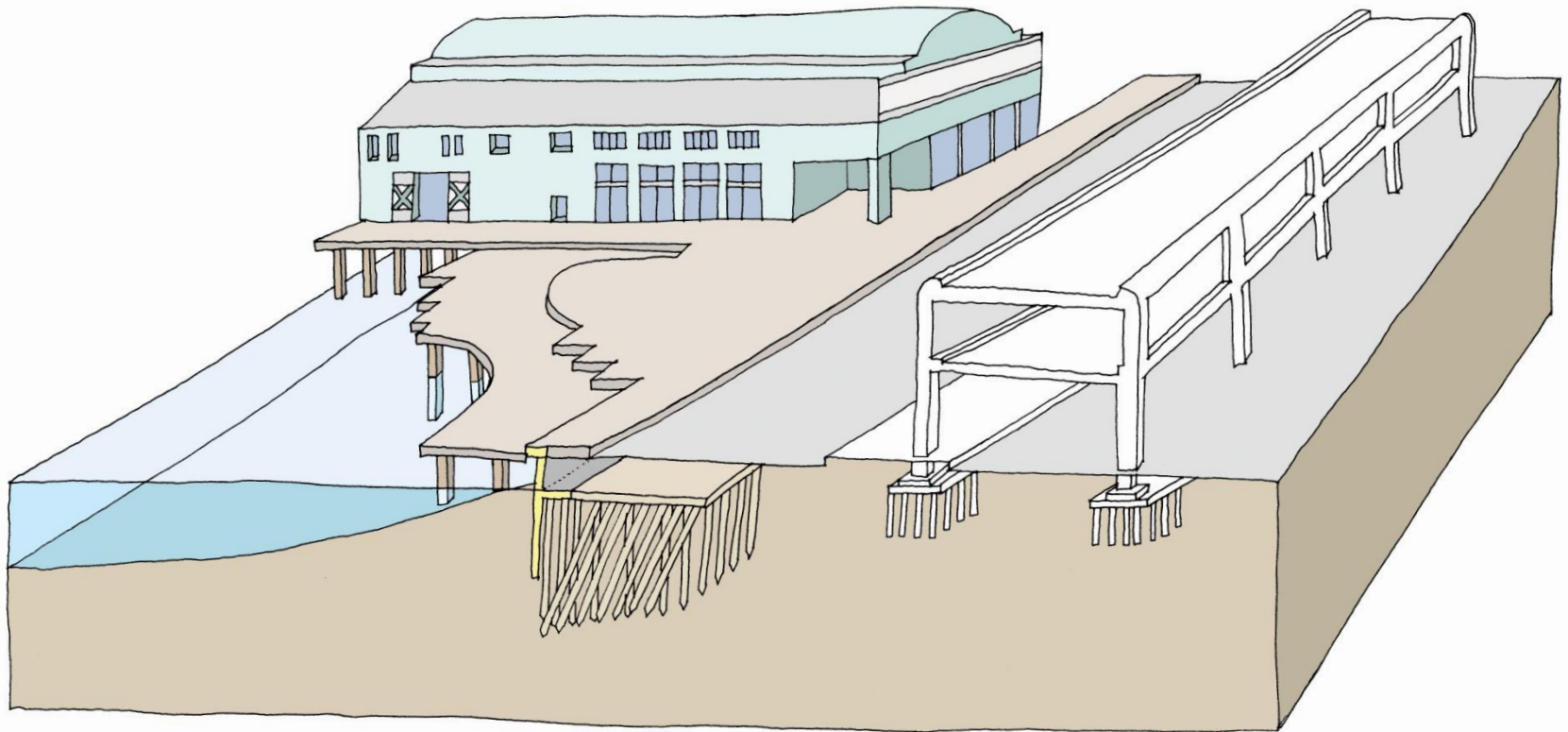
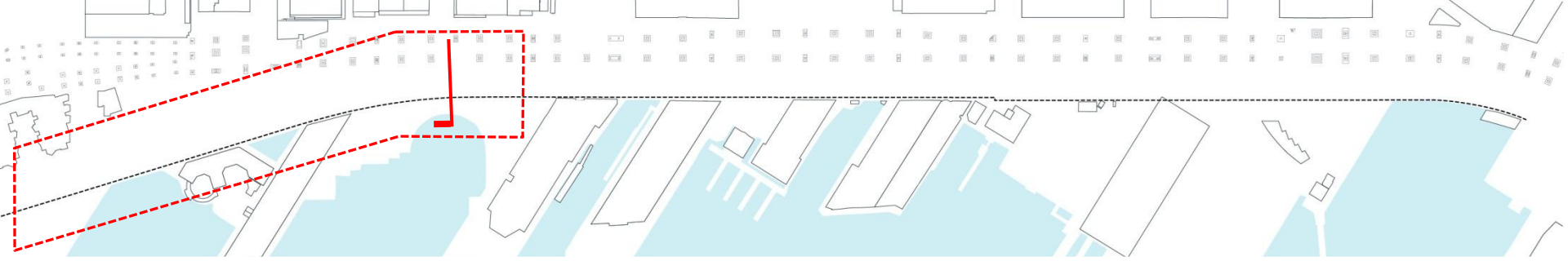
Proposed – Zone 2



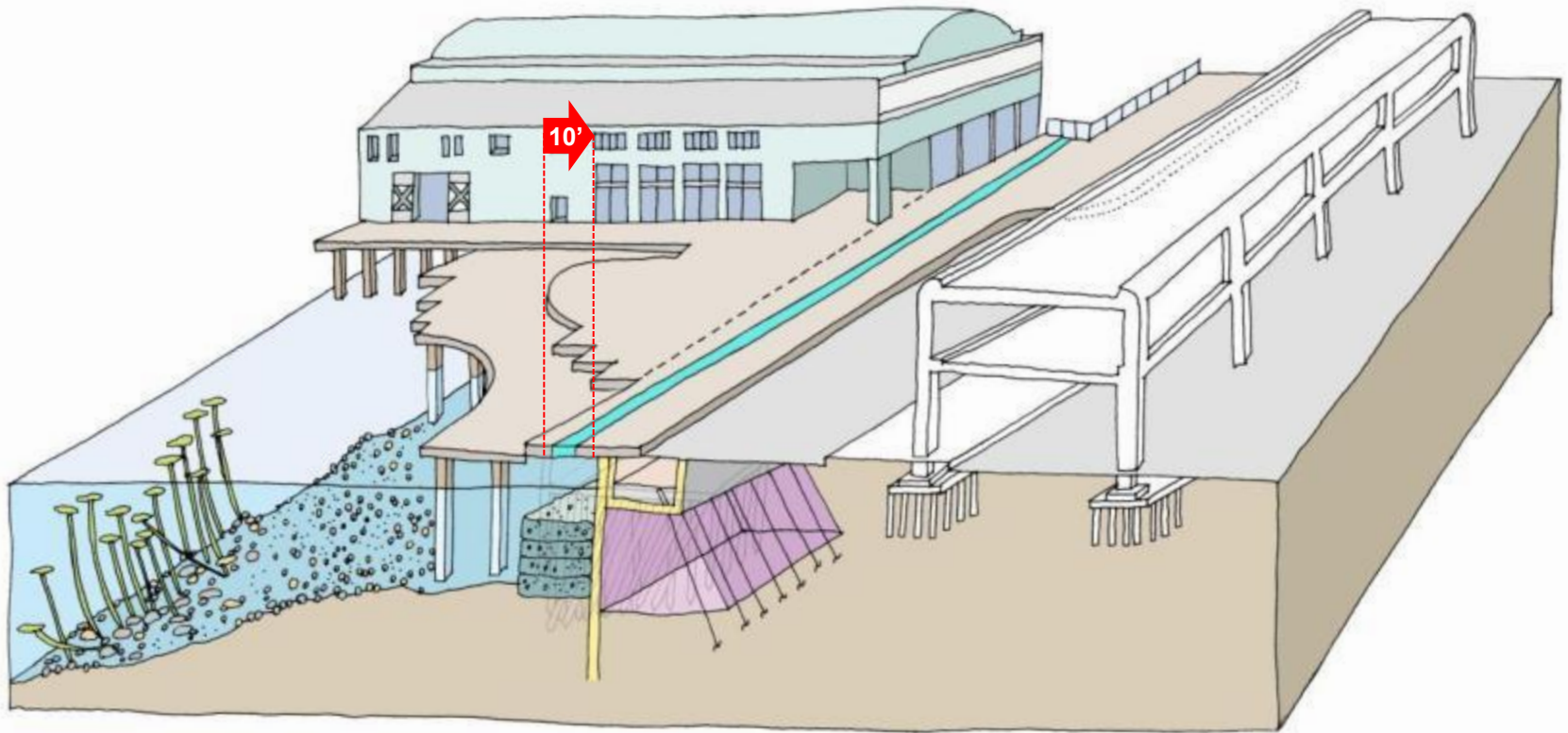
Existing – Zone 3



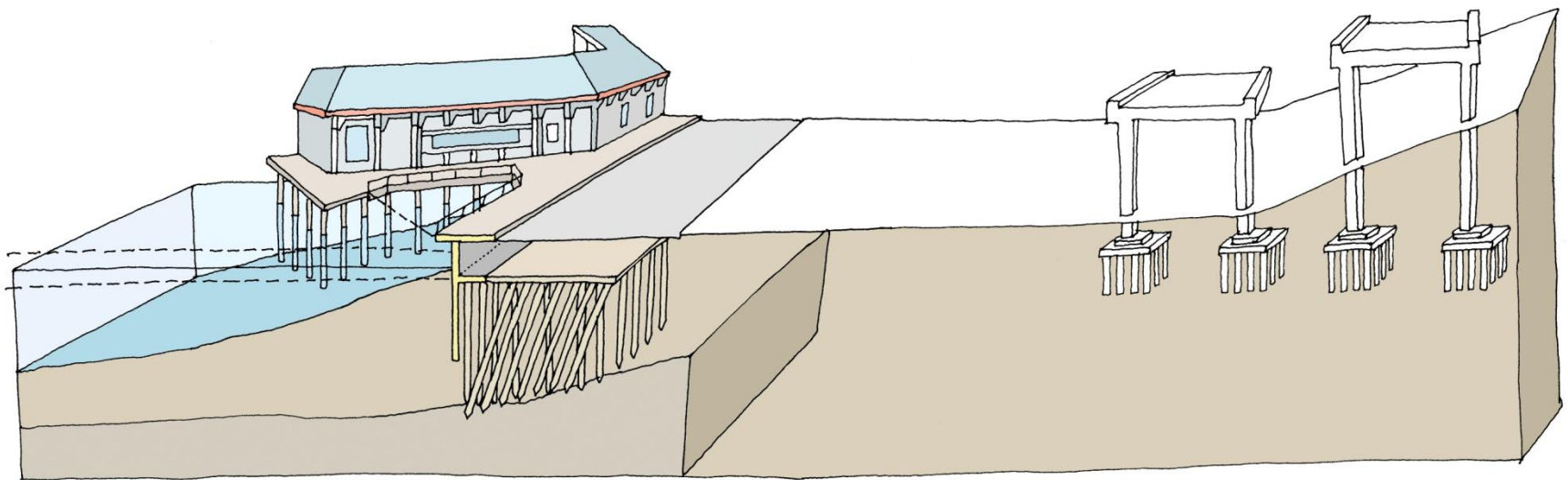
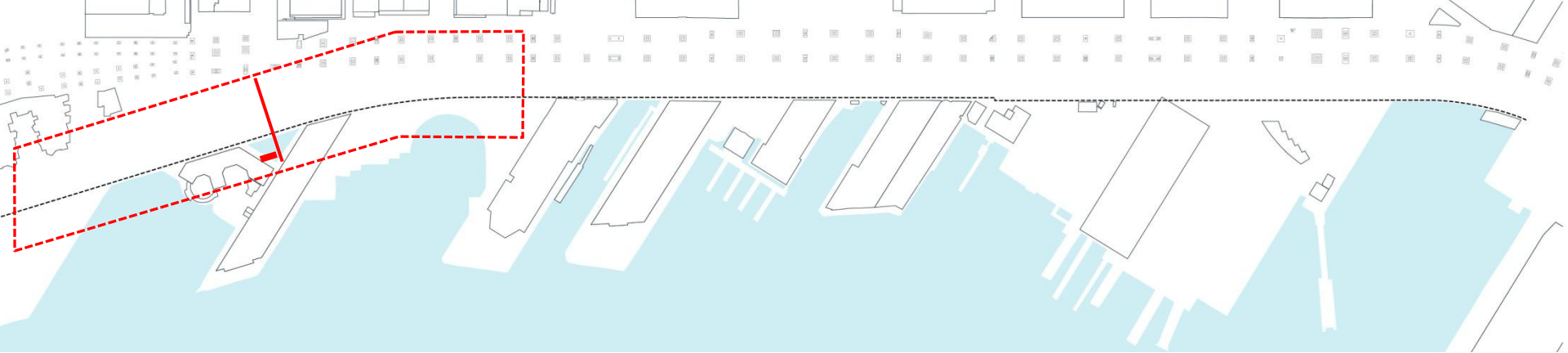
Proposed – Zone 3



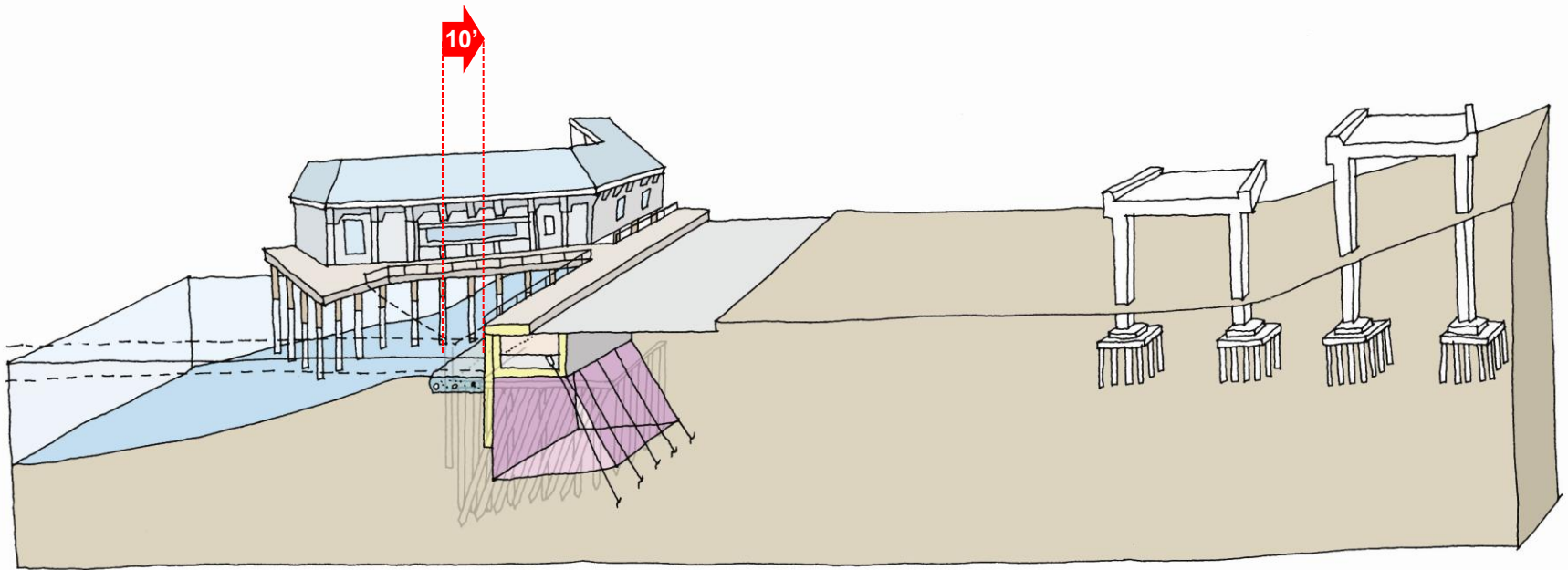
Existing – Zone 4



Proposed – Zone 4



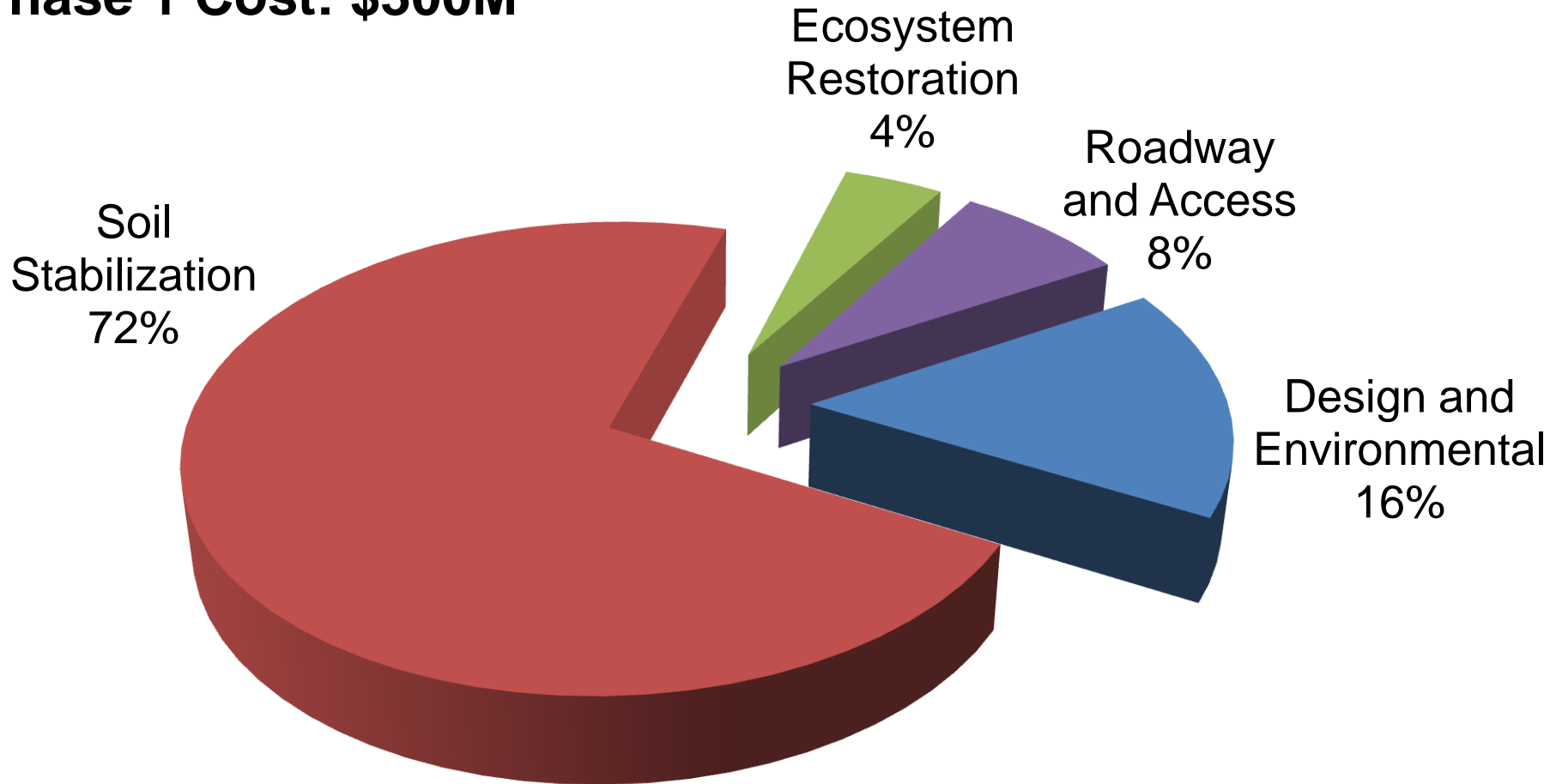
Existing – Zone 4



Proposed – Zone 4

Breakdown of 35% Cost Estimate

Phase 1 Cost: \$300M



Delivering Final Design

Key Design and Cost Questions after 35%

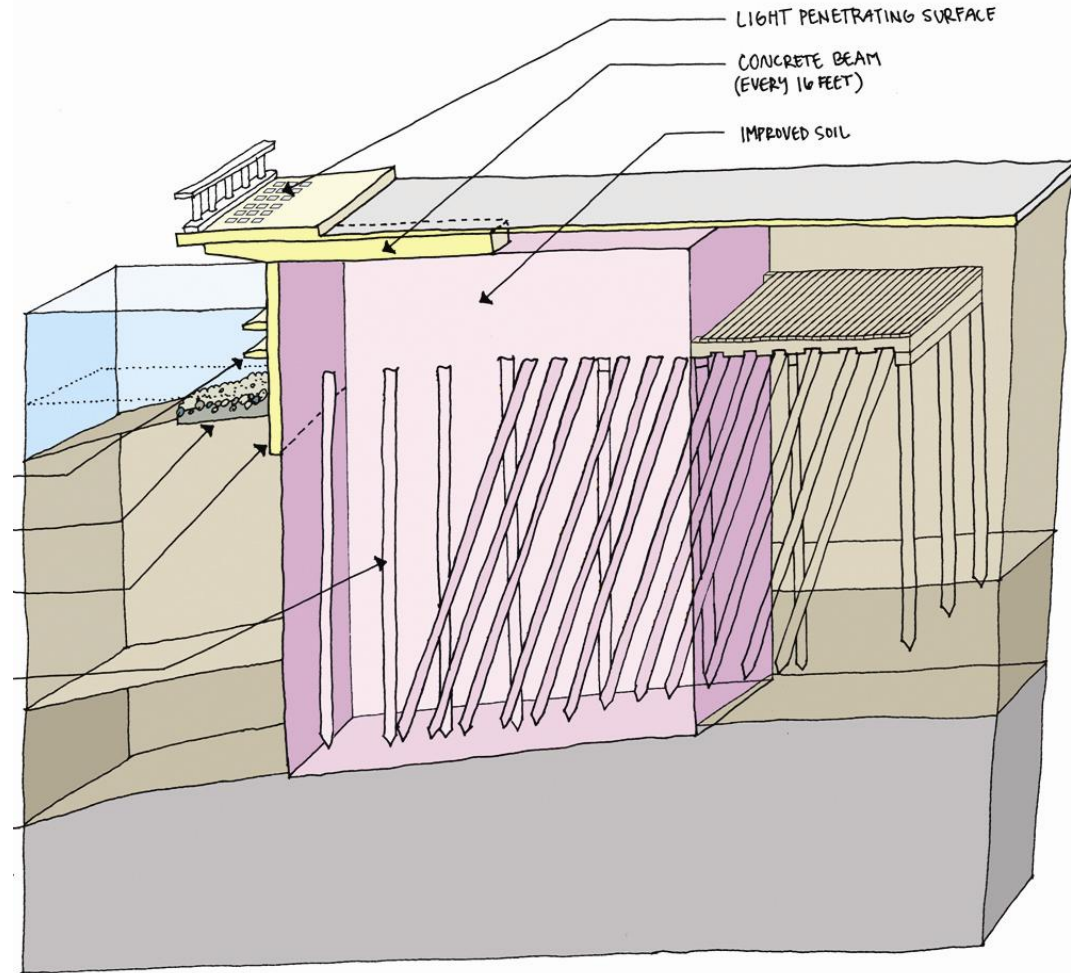
Structural:

Do we have the most streamlined, elegant structure, with few redundant elements?

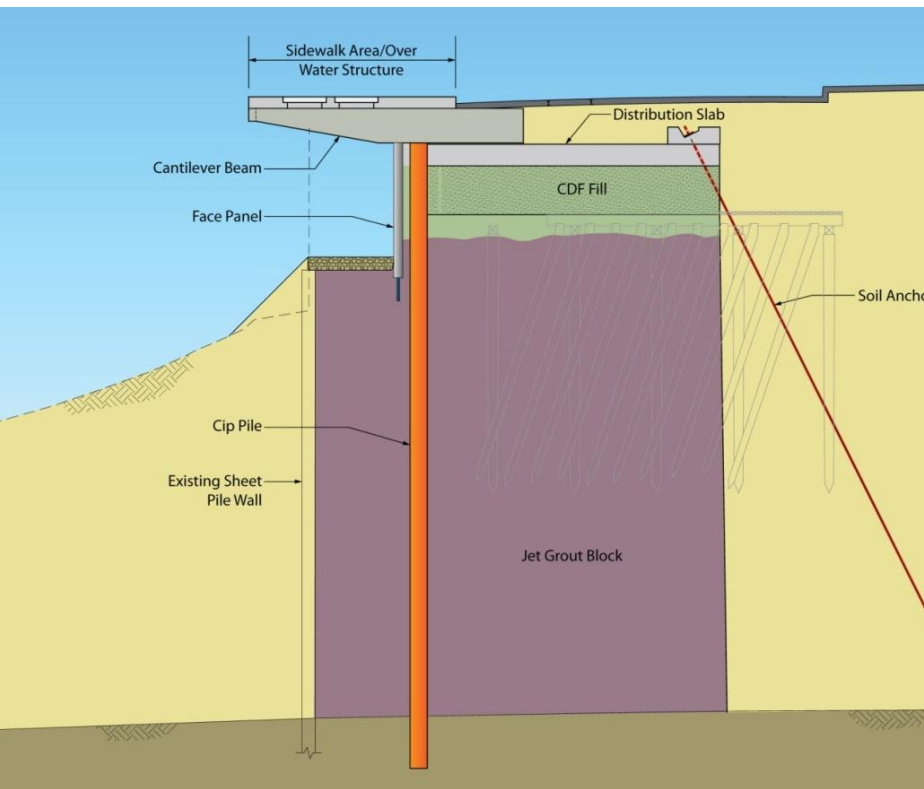
Work sequence:

Can we maximize access and minimize impact for:

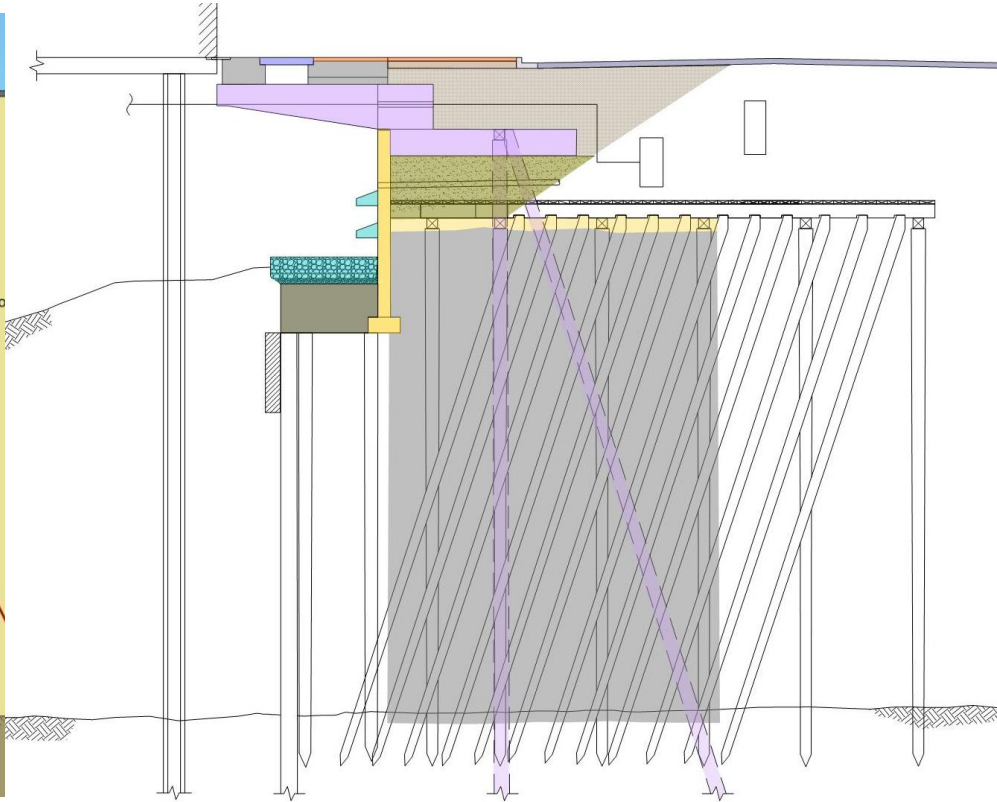
- Businesses
- Users
- Environment
- Utilities



Moving to Final Design

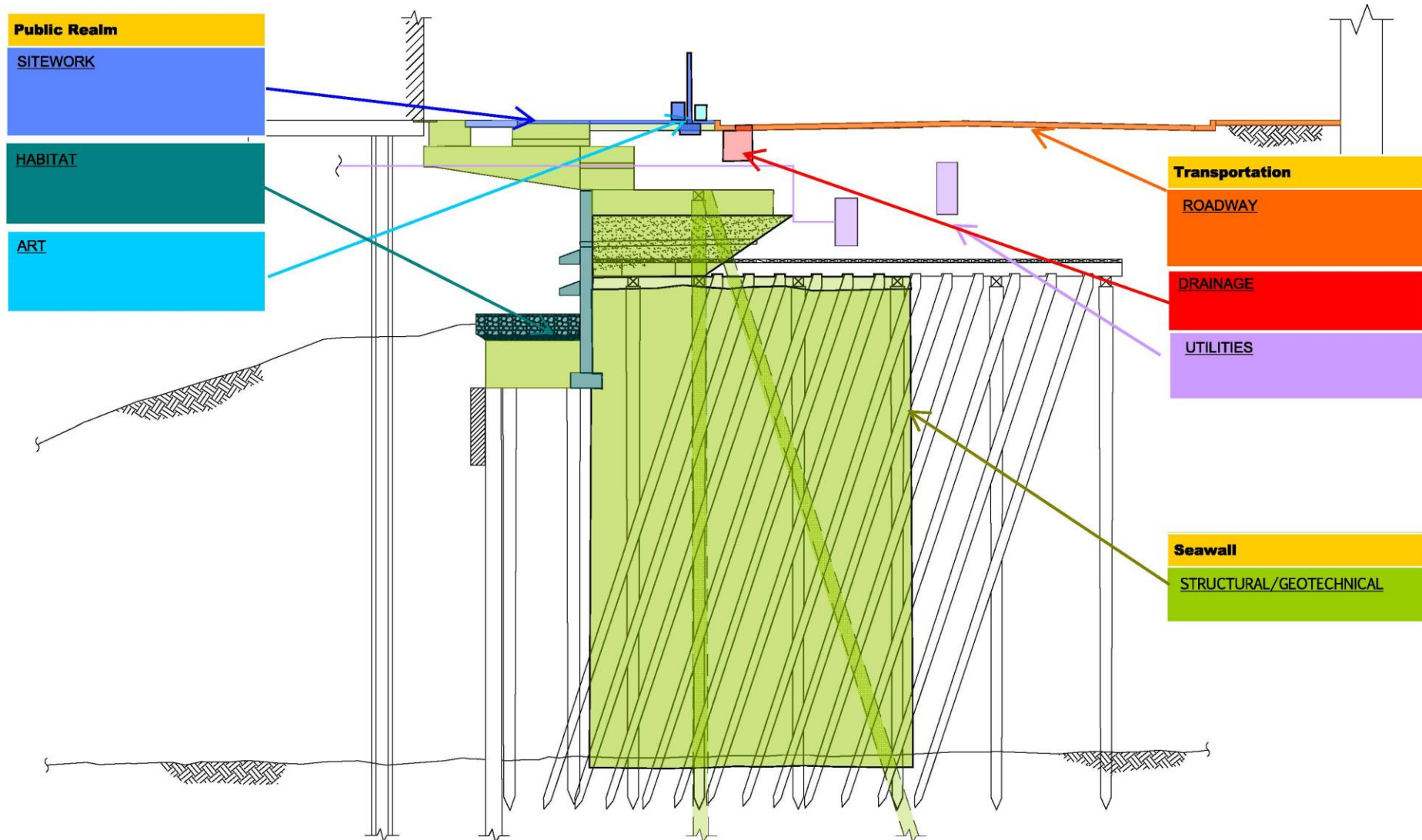


35% Design



Preliminary Approach to Final Design

Design Team Organization

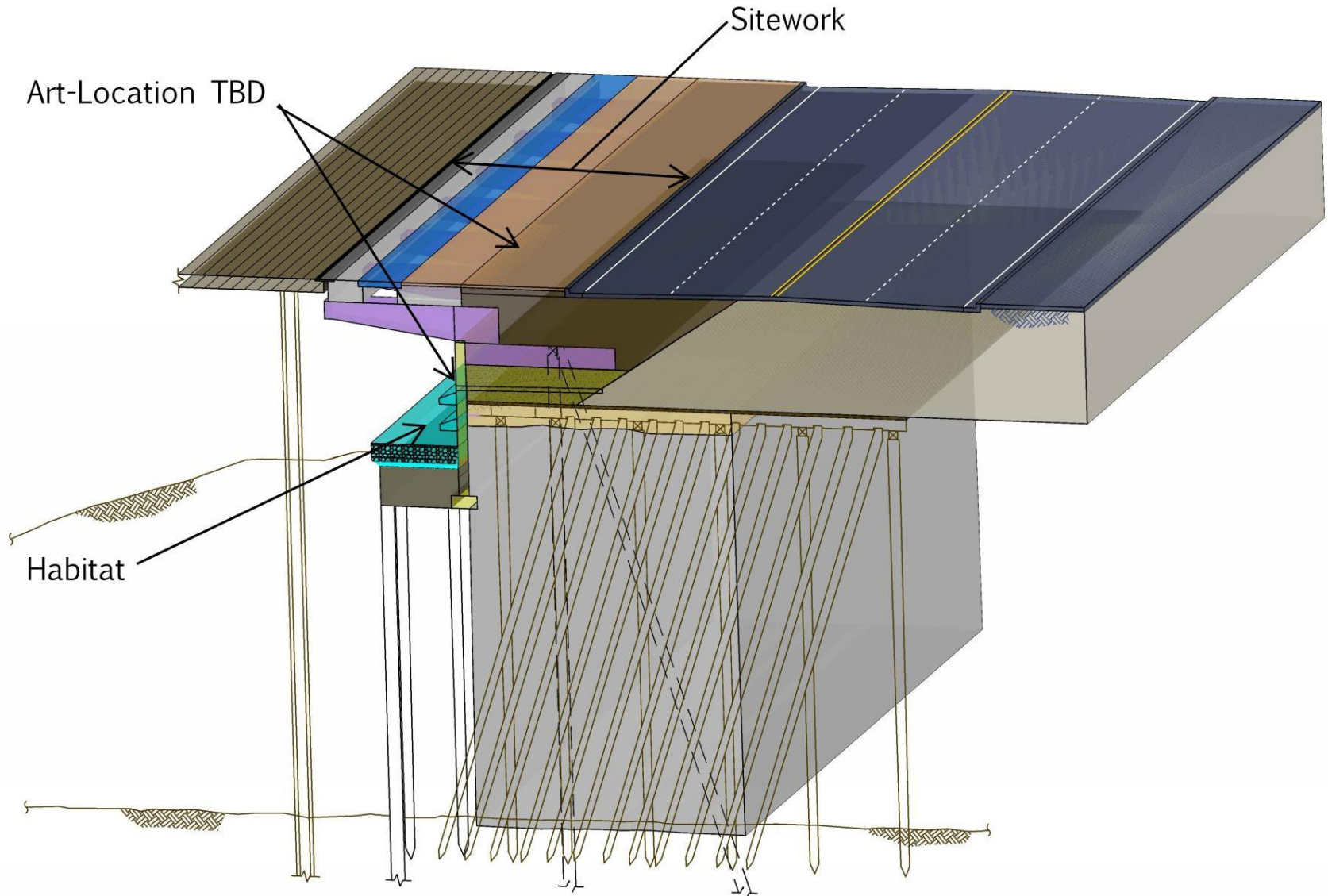


Systems Approach

- Waterfront vision
- Transportation
- Seawall structure
- Utilities
- Habitat
- Public realm



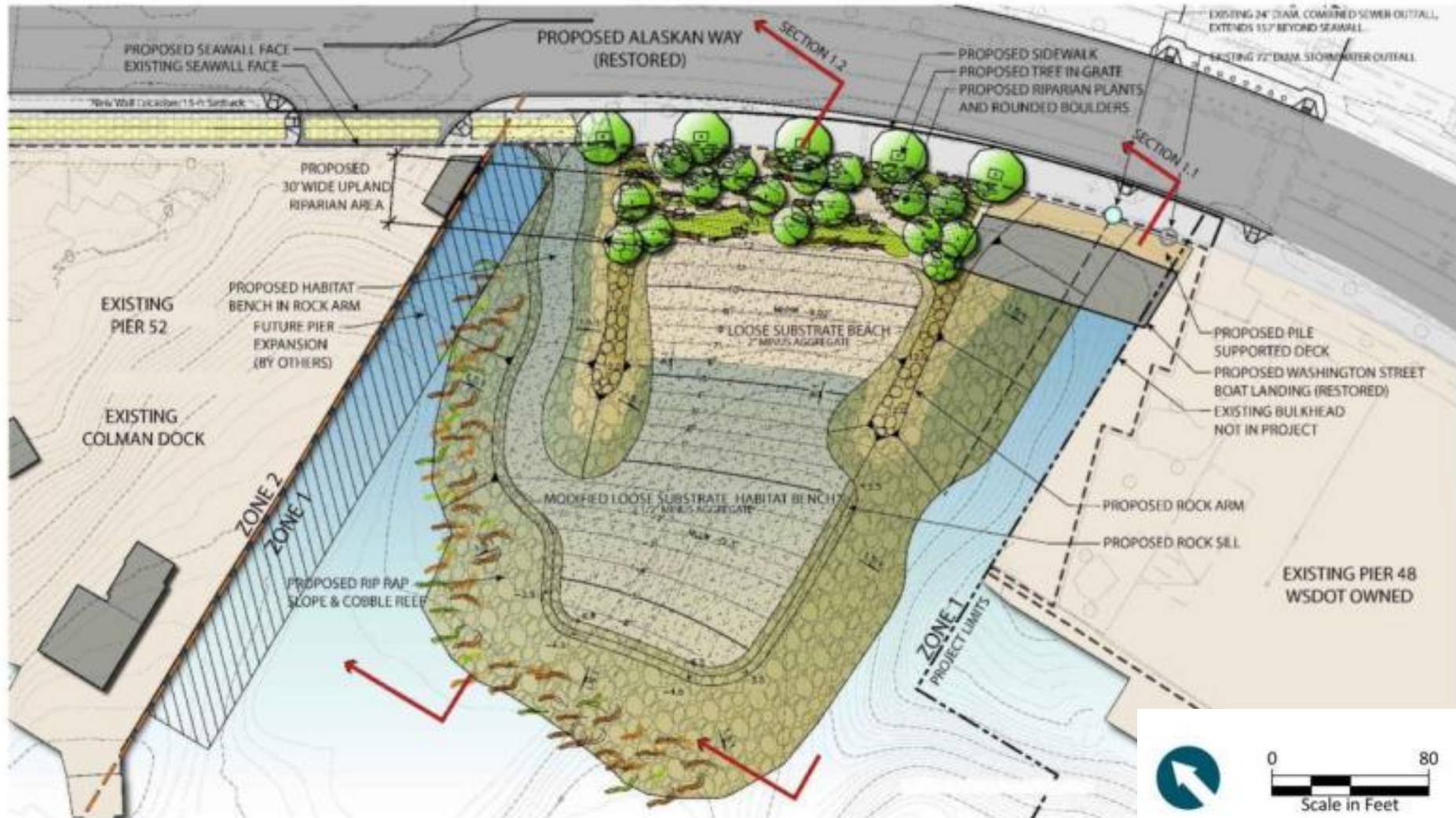
Defining the Public Realm



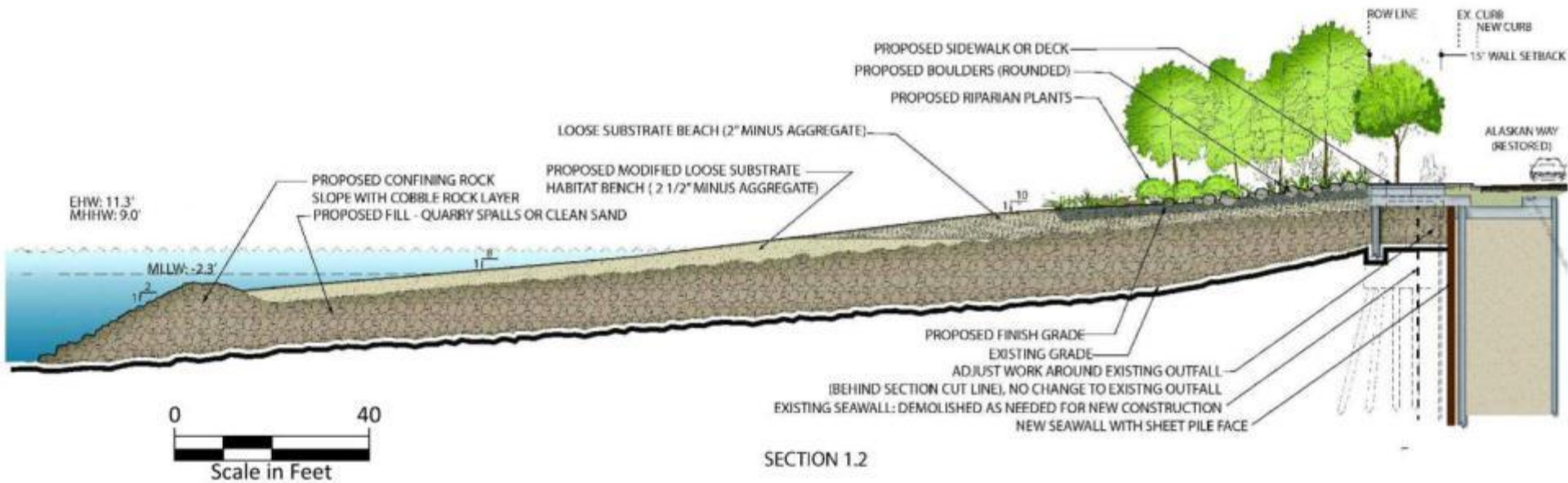
Zones 1 & 2: Washington St & Colman Dock



Zone 1 – Plan View



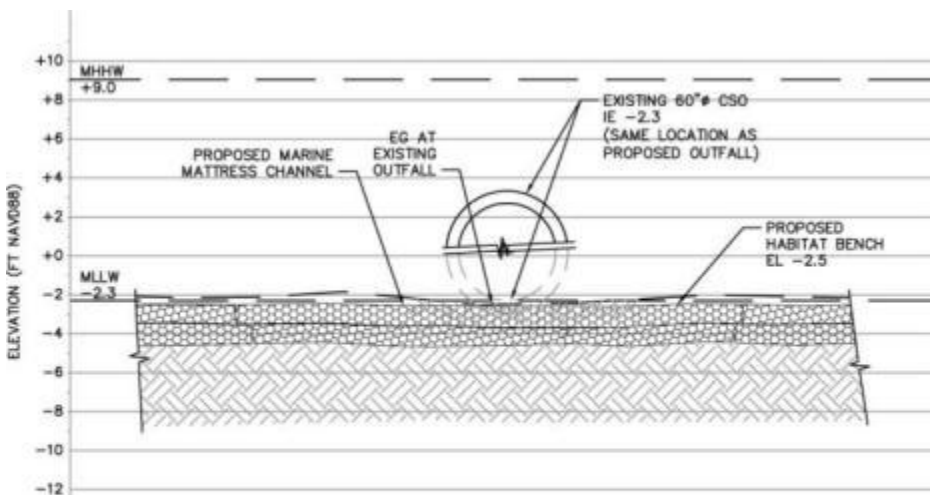
Zone 1 – Cross Section



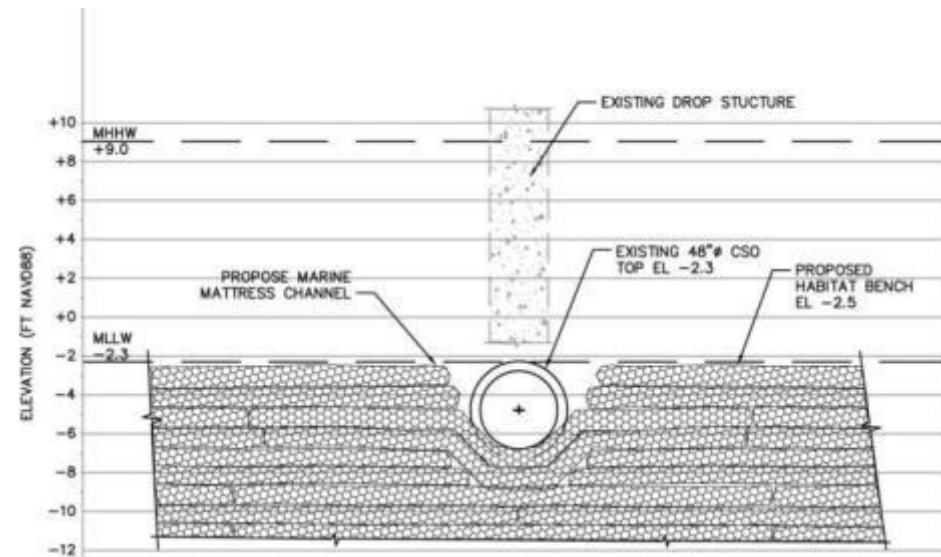
Zone 3: Historic Piers



Outfalls and Habitat Benches



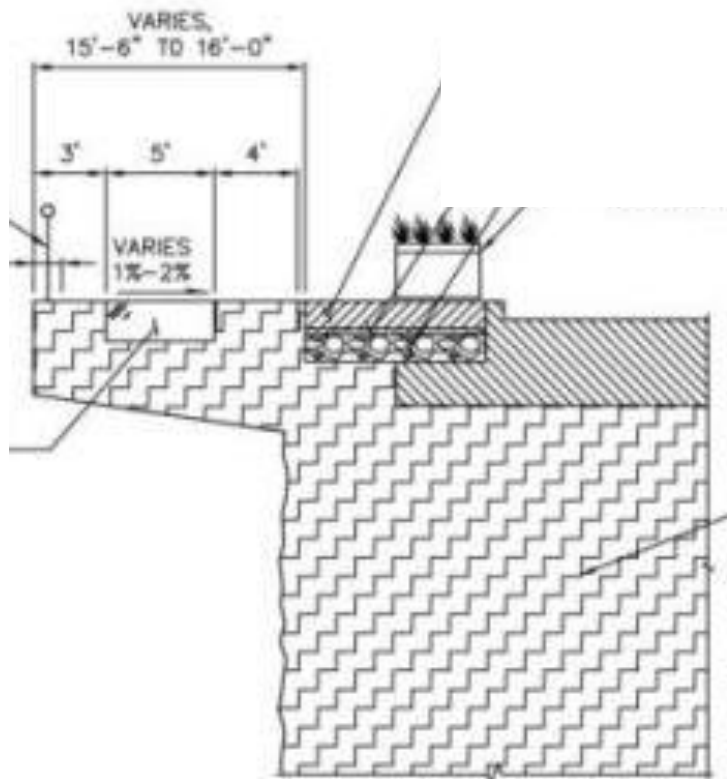
SECTION AT END OF EXISTING OUTFALL



SECTION AT END OF EXISTING OUTFALL



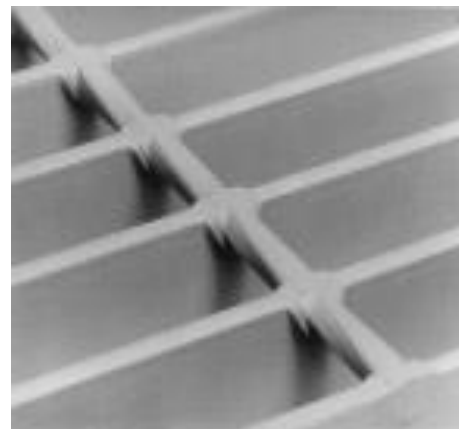
Light Penetrating Surfaces (LPS)



Glass blocks



Glass plank panels



Grating



Solar tubes

Zone 4: Seattle Aquarium



Zone 4 – Plan View

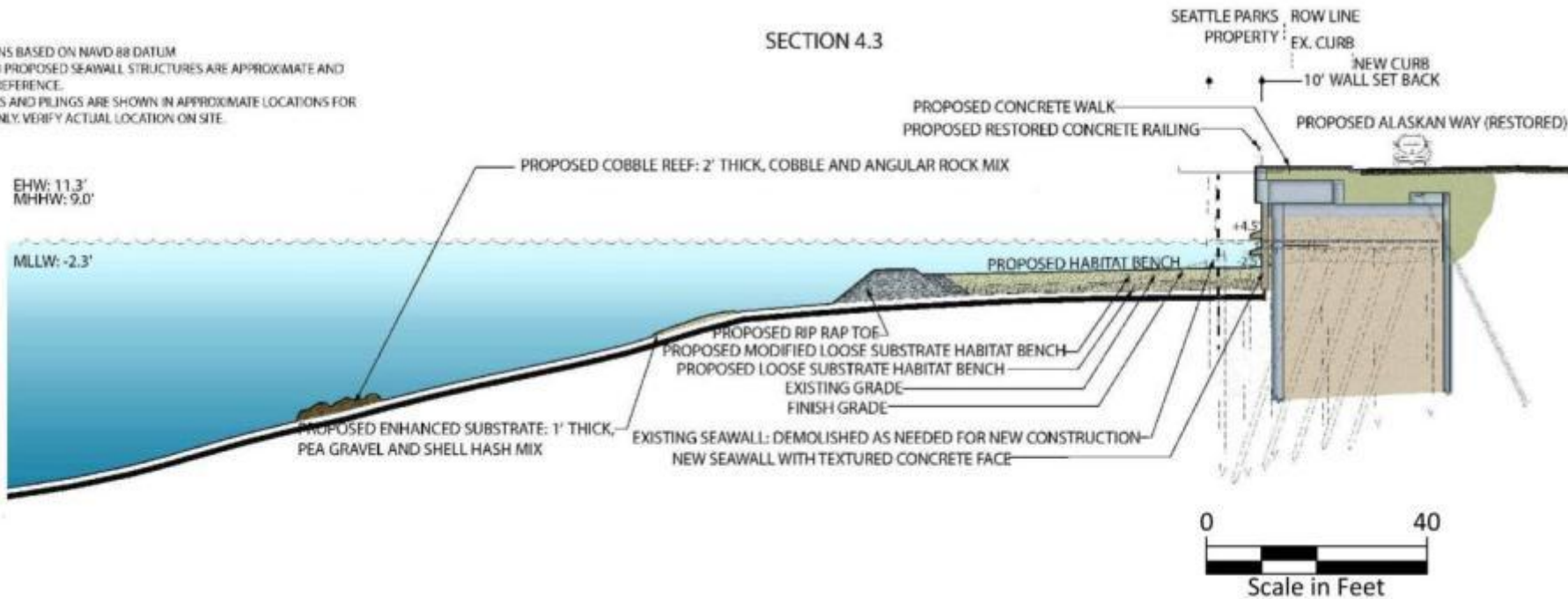


Zone 4 – Cross Section

GENERAL NOTES:

1. ALL ELEVATIONS BASED ON NAVD 88 DATUM
2. EXISTING AND PROPOSED SEAWALL STRUCTURES ARE APPROXIMATE AND SHOWN FOR REFERENCE.
3. EXISTING PIERS AND PILINGS ARE SHOWN IN APPROXIMATE LOCATIONS FOR REFERENCE ONLY. VERIFY ACTUAL LOCATION ON SITE.

SECTION 4.3



Upcoming Fall Events and Outreach

- Light penetrating surfaces study on Pier 62/63
- Habitat/fish migration studies
- Habitat education
- Fairs, festivals, events
- Briefings
- Collaboration with Waterfront Seattle activities



Contact Information

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- **Website:** <http://www.seattle.gov/transportation/seawall.htm>
- **Phone:** Jennifer Wieland, SDOT: 206-733-9970