

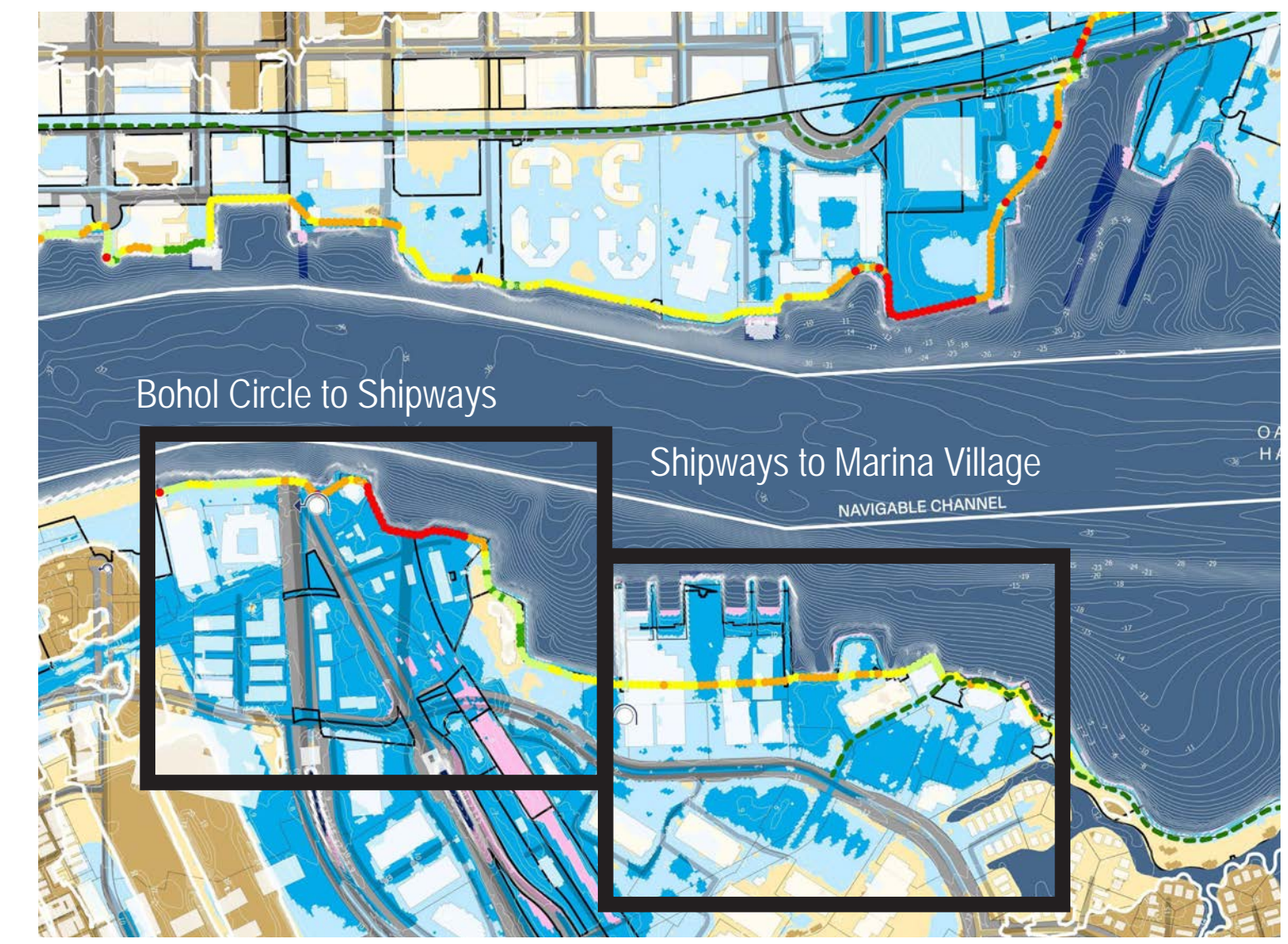
ALAMEDA COASTAL FLOOD PROTECTION

Oakland Alameda Adaptation Committee (OAAC ADAPT)

ALAMEDA NORTHERN SHORELINE CONCEPTUAL ADAPTATION STRATEGIES

Different adaptation measures — such as levees and seawalls — can be used in combination along the shoreline, based on the level of protection required, the amount of space available, adjacent land and water uses, and providing co-benefits of an improved public realm and/or shoreline and intertidal habitat.

This is an example of a strategy that could be implemented along this stretch of Alameda's northern shoreline that takes into account existing shoreline conditions and uses. This and other strategies will be refined and developed into a preferred alternative.



KEY PLAN

Existing Conditions



Oakmont



Barnhill Marina



Shoreline Levee and Seawall

Bohol Circle to Shipways

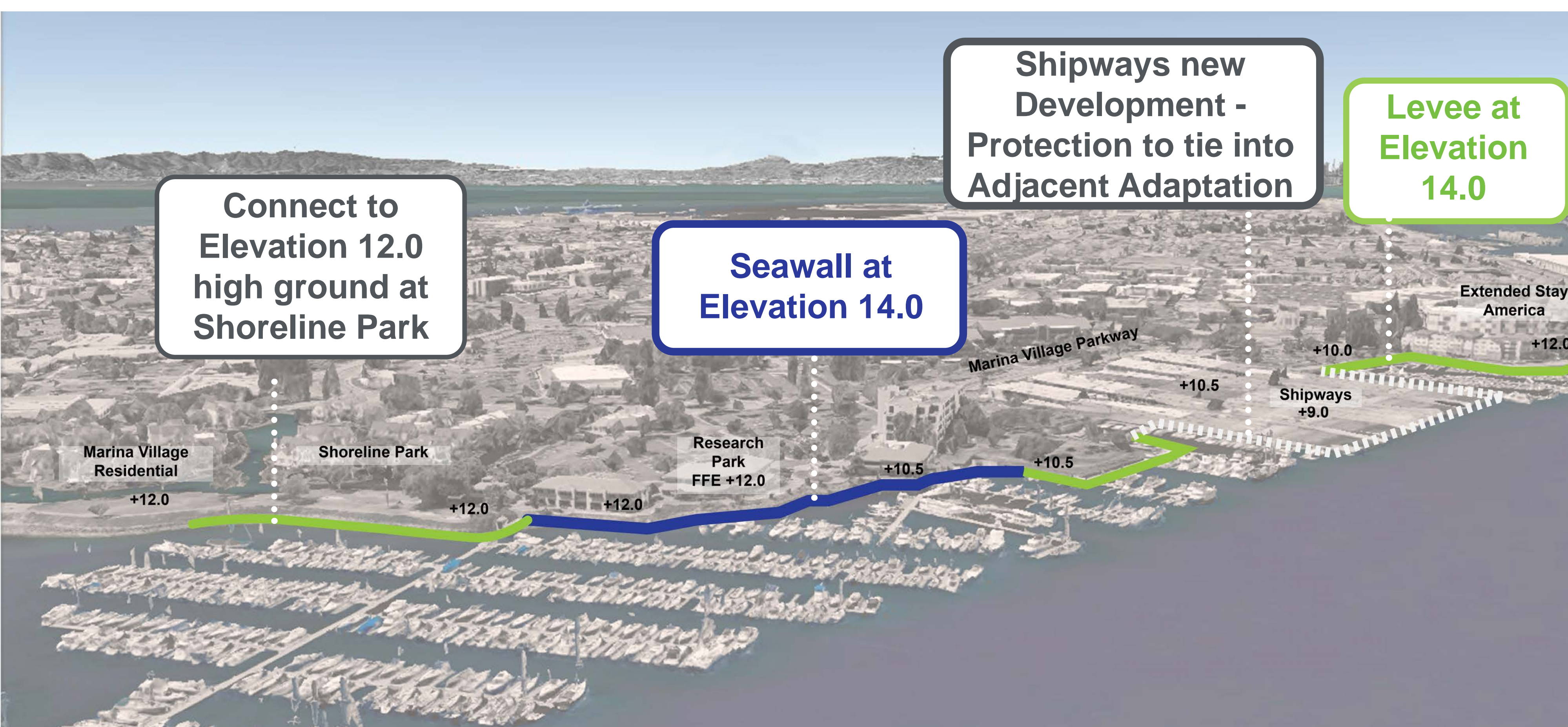
Existing Conditions



Extended Stay America Hotel



Marina Village



Shoreline Levee and Seawall

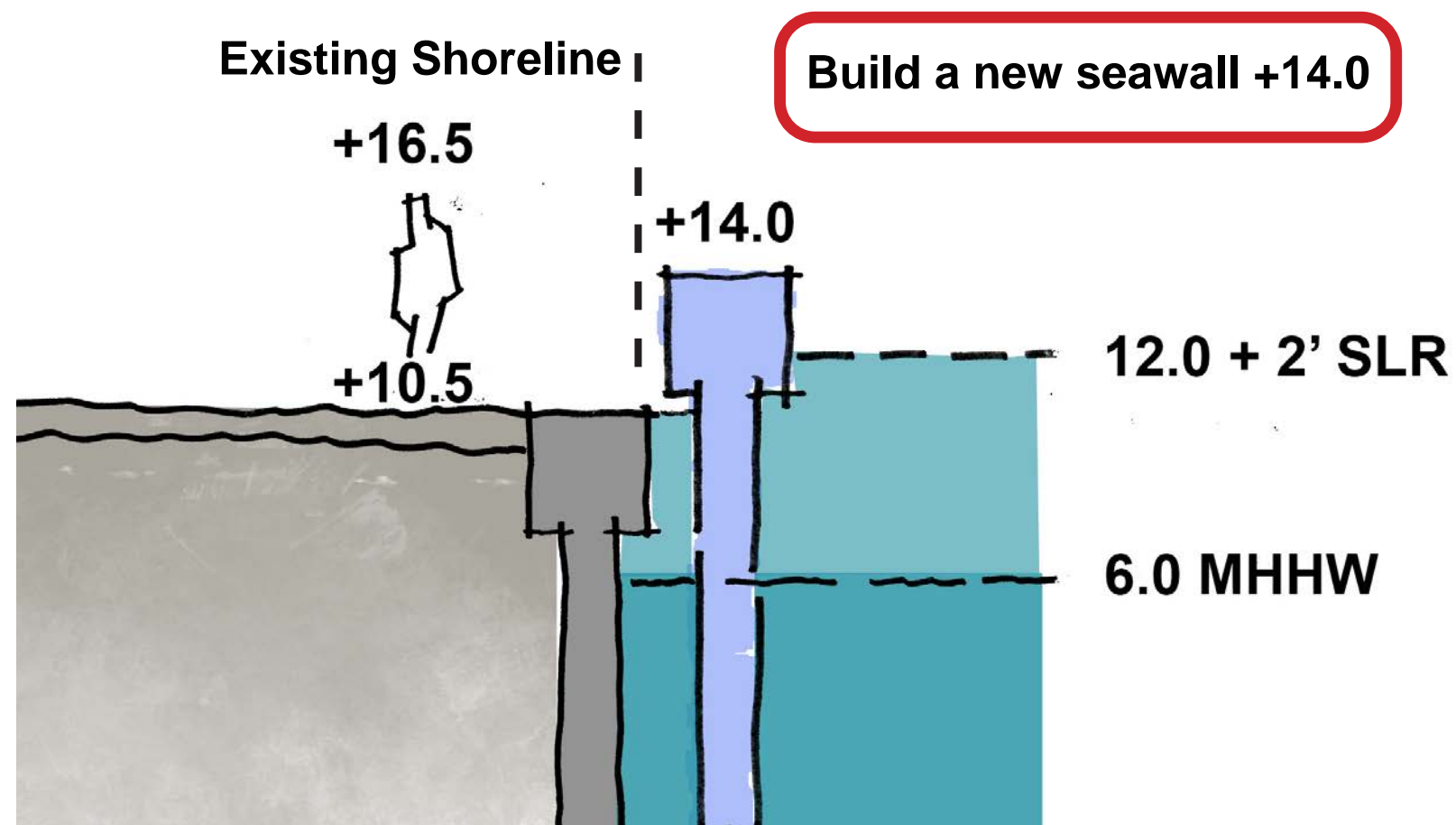
Shipways to Marina Village

ALAMEDA COASTAL FLOOD PROTECTION

Oakland Alameda Adaptation Committee (OAAC ADAPT)

ALAMEDA NORTHERN SHORELINE POTENTIAL ADAPTATION MEASURES

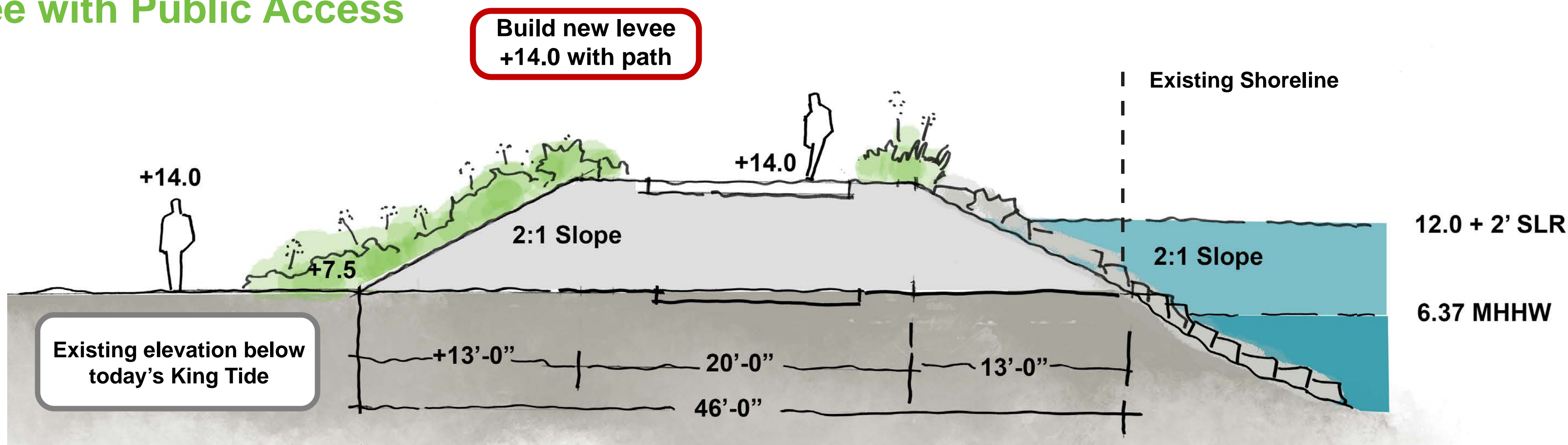
Seawall



Seawall at Foster City

Seawall adapted or rebuilt to elevation 14.0. Required where setback between buildings and shoreline is too narrow to accommodate a levee. Where existing pedestrian access is below elevation 10.5, views over the seawall may be blocked. The pathway would need to be elevated to allow for views over the seawall.

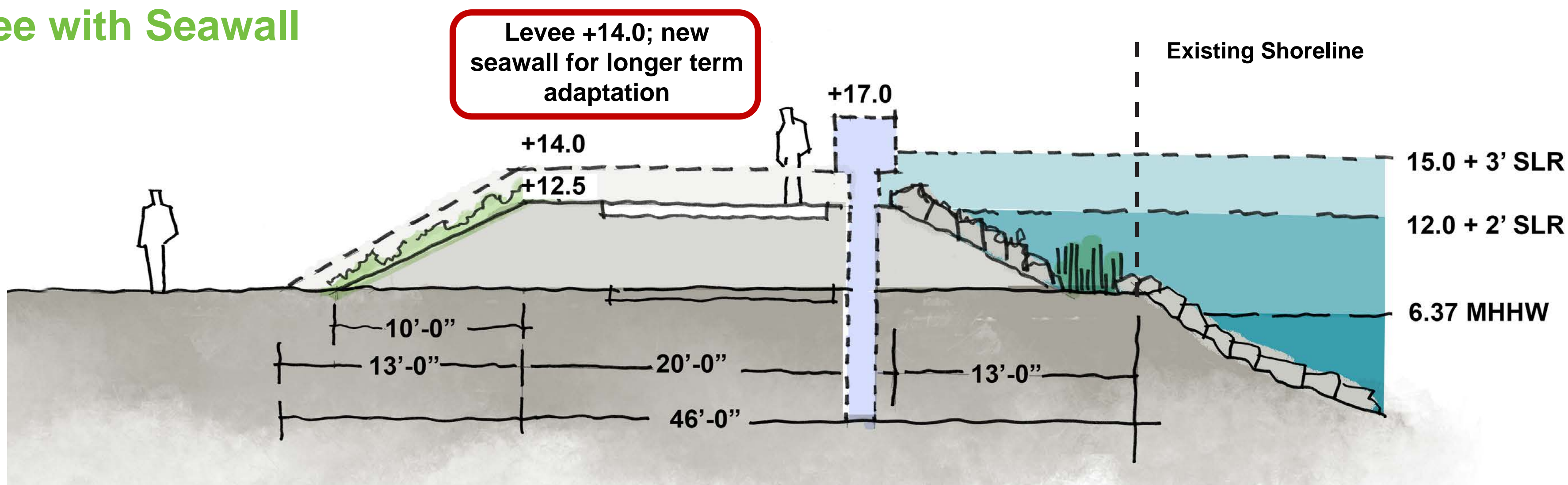
Levee with Public Access



Levee with Public Access SF Bay Trail

Levee constructed to elevation 14.0 with public access path on top. Requires sufficient space (minimum 46' from shoreline). Top of levee is over 6'-0" above adjacent inland grade, which would block views to water.

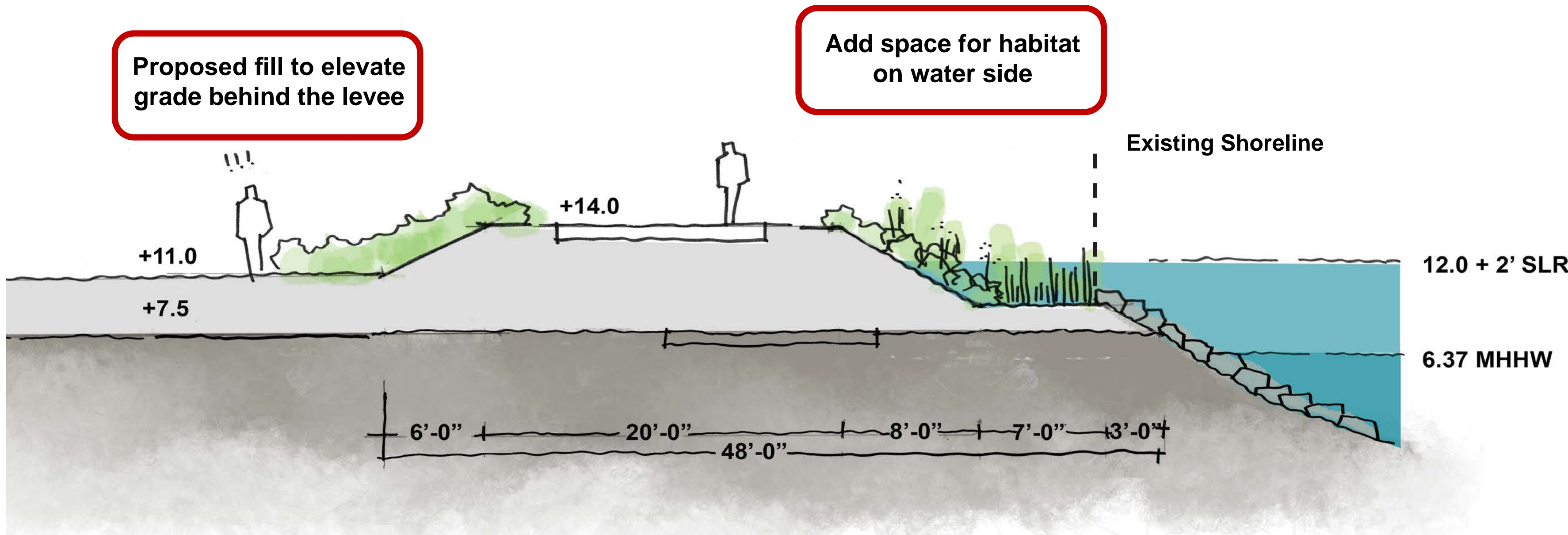
Levee with Seawall



Levee with Seawall Foster City

Levee constructed to elevation 12.5 for near-term protection. Levee can be adapted to elevation 14.0 and a seawall added to protect to elevation 17.0 for long-term protection. Views out to the water are kept more open in the near term, but may be blocked as the levee and wall are elevated in the long-term. Additional space included along shore for planting within shoreline protection measures.

Levee with Elevated Grade



Levee with Elevated Grade Alameda Point

Levee constructed to elevation 14.0 and inland ground raised to elevation 11.0. Visual and physical connectivity to shoreline is maintained and can provide space for generous public realm improvements. Seawall can be added for long-term adaptation. Additional space included along shore for planting within shoreline protection measures.



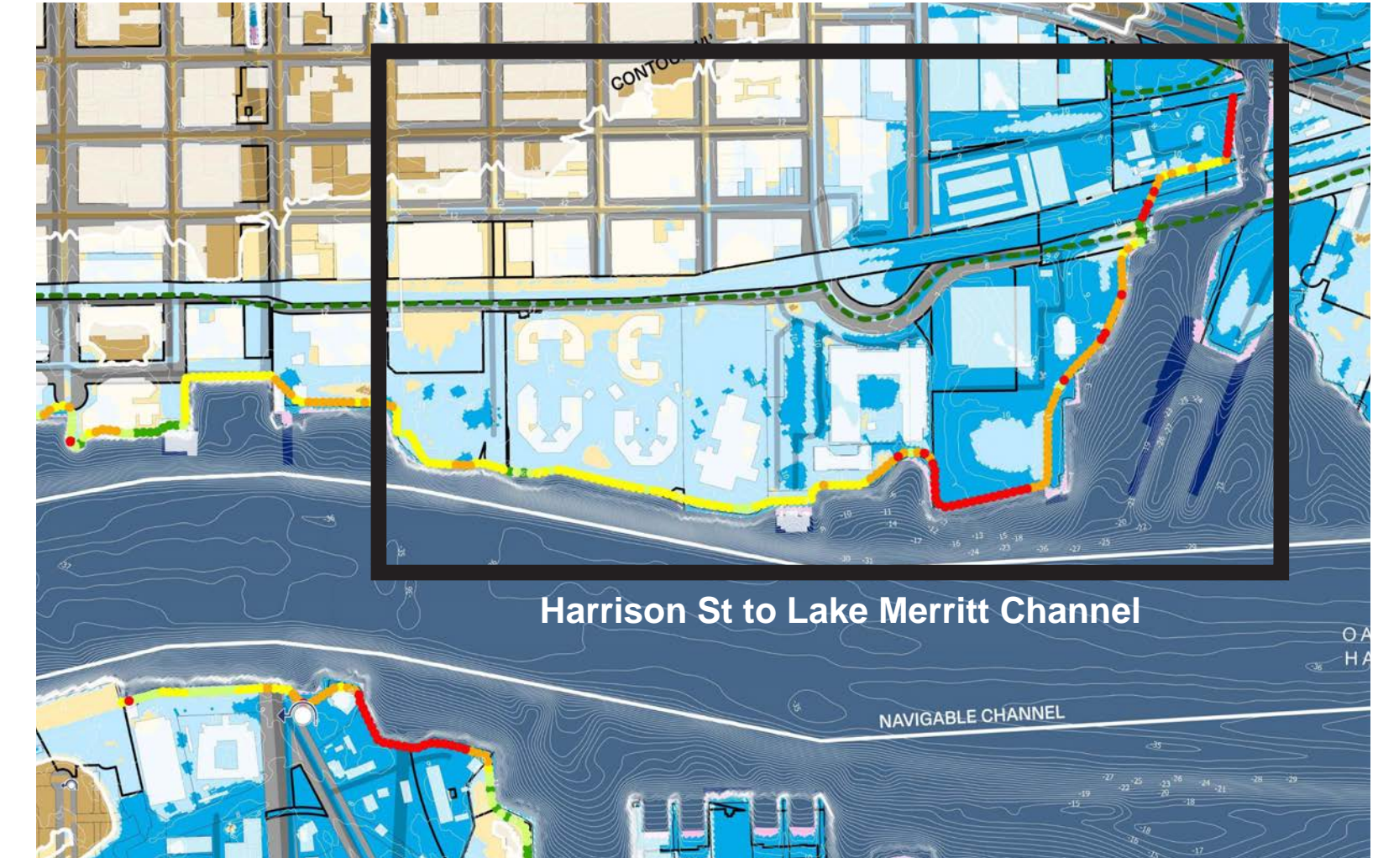
OAKLAND COASTAL FLOOD PROTECTION

Oakland Alameda Adaptation Committee (OAAC ADAPT)

OAKLAND SHORELINE CONCEPTUAL ADAPTATION STRATEGIES

Different adaptation measures — such as levees and seawalls — can be used in combination along the shoreline, based on the level of protection required, the amount of space available, adjacent land and water uses, and providing co-benefits of an improved public realm and/or shoreline and intertidal habitat.

These examples show two strategies that could be implemented along the shoreline from Harrison Street to the Lake Merritt Channel that take into account existing shoreline conditions and uses. These and other strategies will be refined with further study and developed into a preferred alternative.



KEY PLAN



Shoreline Levee with Public Access, Upland Park Space and Flood Walls

Levee constructed to elevation 14.0 at current shoreline. Public realm elevated inland where wider setbacks allow. The Estuary Park design elevates the shoreline to 12.5 for near-term protection and adaptation to higher elevation in the longer term. Flood walls at rail bridge would provide shoreline protection while minimizing impacts to water quality and function of the current tidal channel. Flood walls would be engineered to a high elevation relative to adjacent grades, and may be difficult to implement within the limited footprint of the rail corridor and right-of-way constraints. Additional levees would be required along the channel to 7th Street to provide sufficient protection.



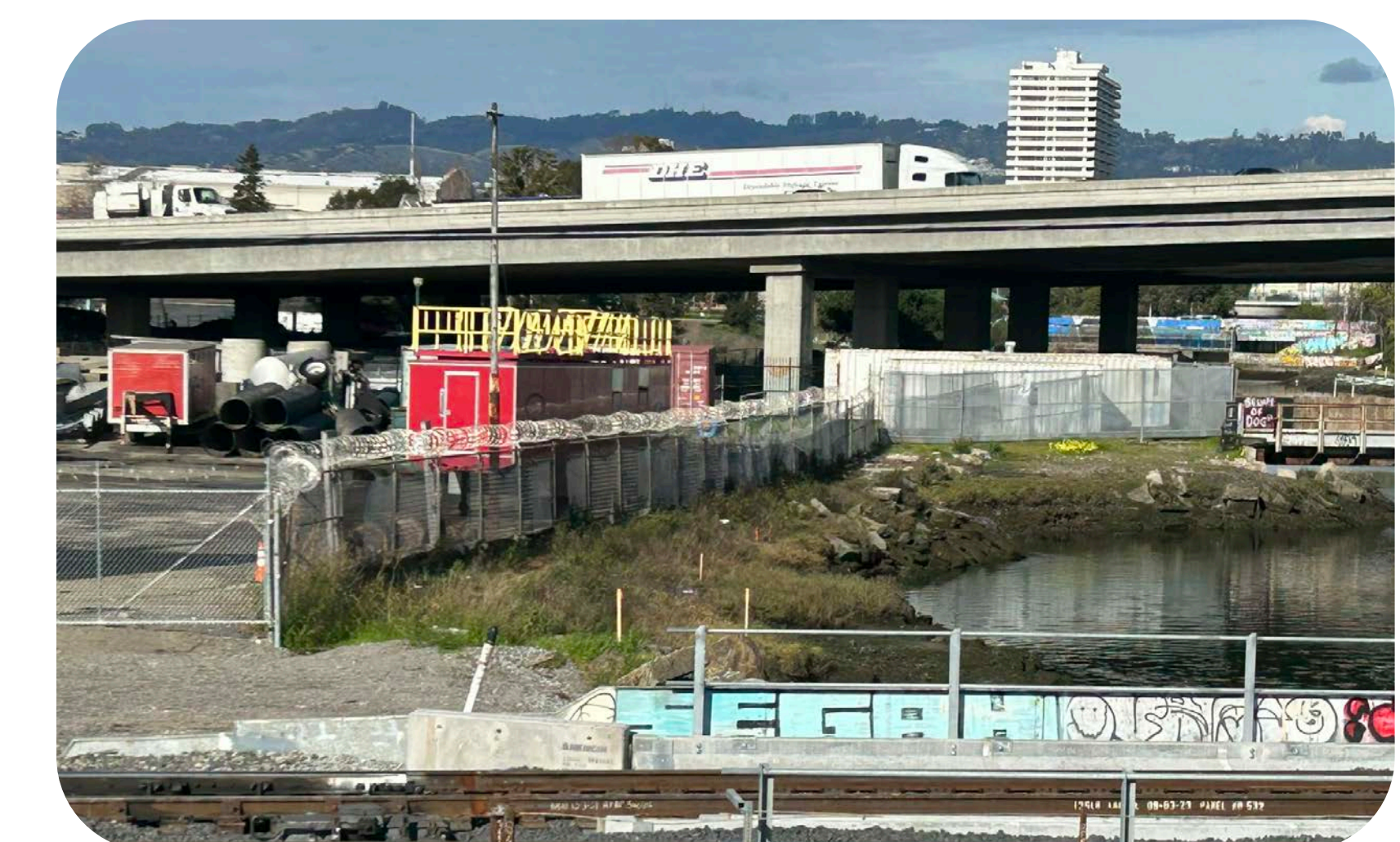
The Landing



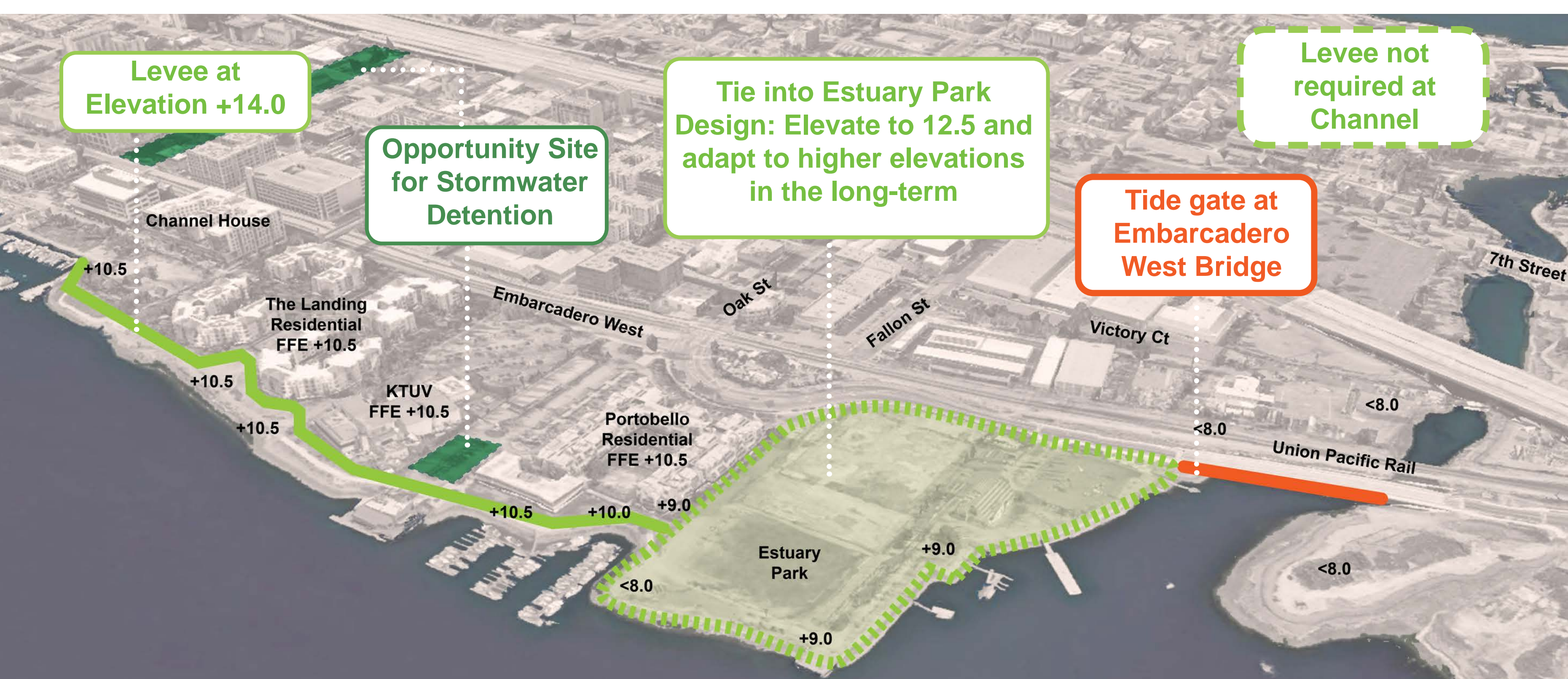
KTVU Station



Portobello Marina and Estuary Park



Lake Merritt Channel



Shoreline Levee with Habitat Expansion and Tide gate

Levee constructed to elevation 14.0 landward. Shoreline sloped more gradually for rocky intertidal, marsh or gravel beach, and upland habitat. The Estuary Park design elevates the shoreline to 12.5 for near-term protection and adaptation to higher elevation in the longer term. A tide gate at the Embarcadero West Bridge would provide coastal flood protection for the rail bridge and the Channel outside of the limitations of the rail bridge footprint (closed only during very high tide events, increasing over time). The potential impacts of a tide gate at this location on water quality and habitat require further study. Additional levees north of the tide gate would not be required. The grade of the shoreline adjacent to the tide gate (for example at Estuary Park) would be raised to provide the same protection height as the tide gate.

OAKLAND COASTAL FLOOD PROTECTION

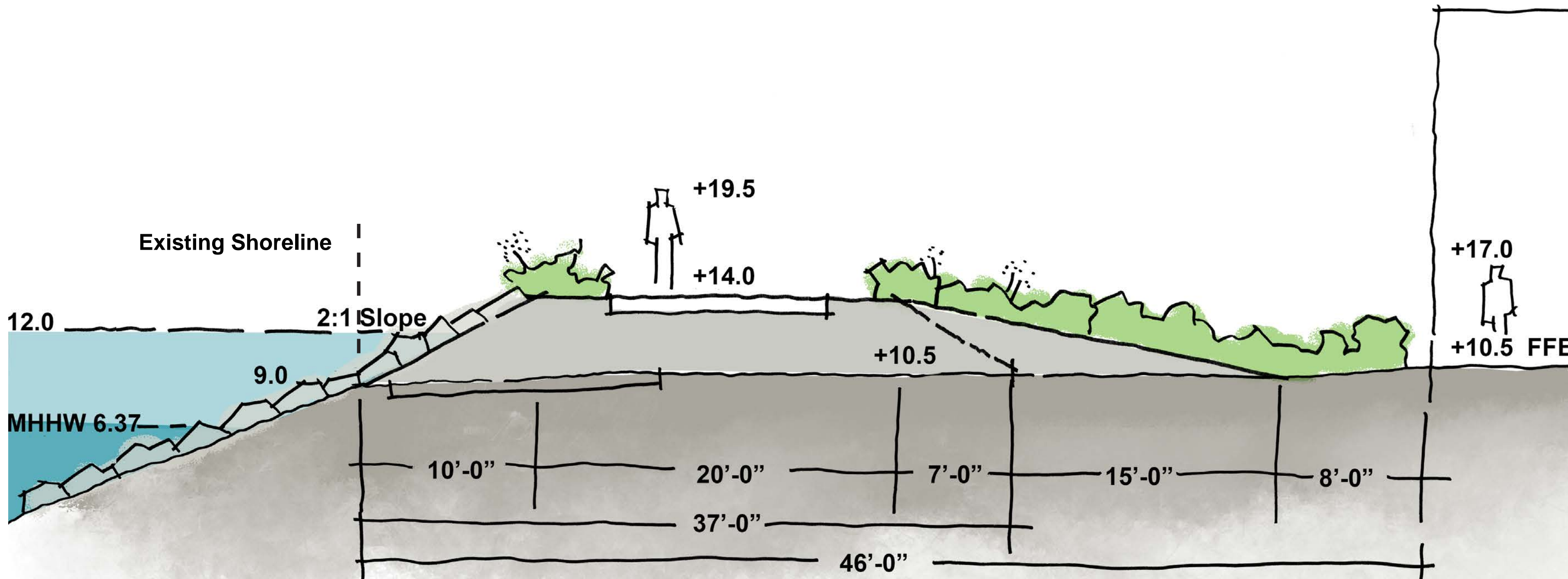
Oakland Alameda Adaptation Committee (OAAC ADAPT)

OAKLAND SHORELINE POTENTIAL ADAPTATION MEASURES

Different adaptation measures — such as levees and seawalls — can be used in combination along the shoreline, based on the level of protection required, the amount of space available, adjacent land and water uses, and providing co-benefits of an improved public realm and/or shoreline and intertidal habitat.

These options show only some of the measures that could be implemented along this stretch of shoreline in coordination with the redesign of Estuary Park already underway. A combination of these measures could be selected as the preferred alternative to be developed further.

Shoreline Levee with Public Access, Upland Park Space

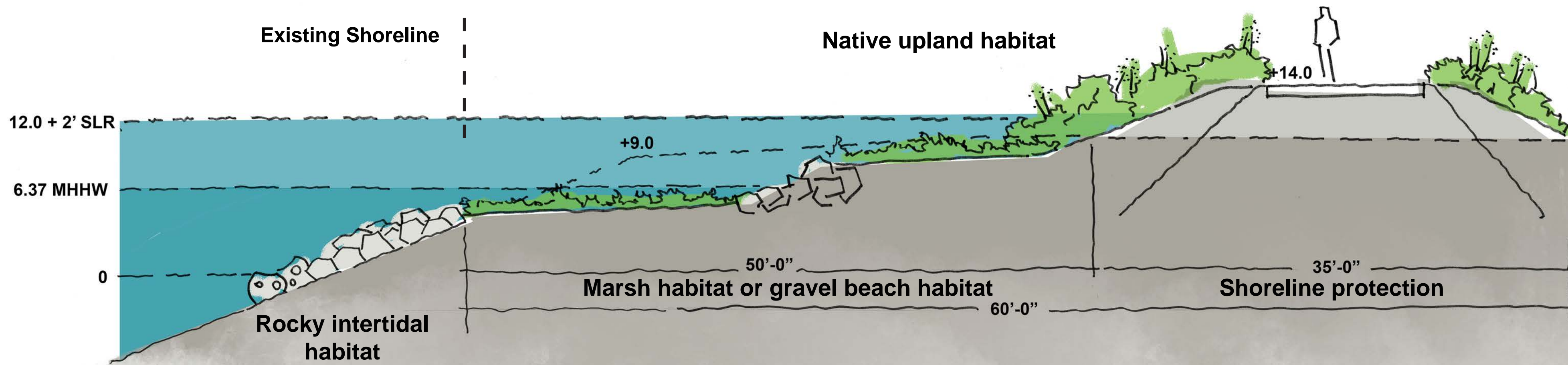


Levee constructed to elevation 14.0 at current shoreline. Public realm elevated inland where wider setbacks allow.



Levee with Waterfront Park

Levee with Habitat Expansion



Levee constructed to elevation 14.0 landward. Shoreline sloped more gradually for rocky intertidal, marsh or gravel beach, and upland habitat.



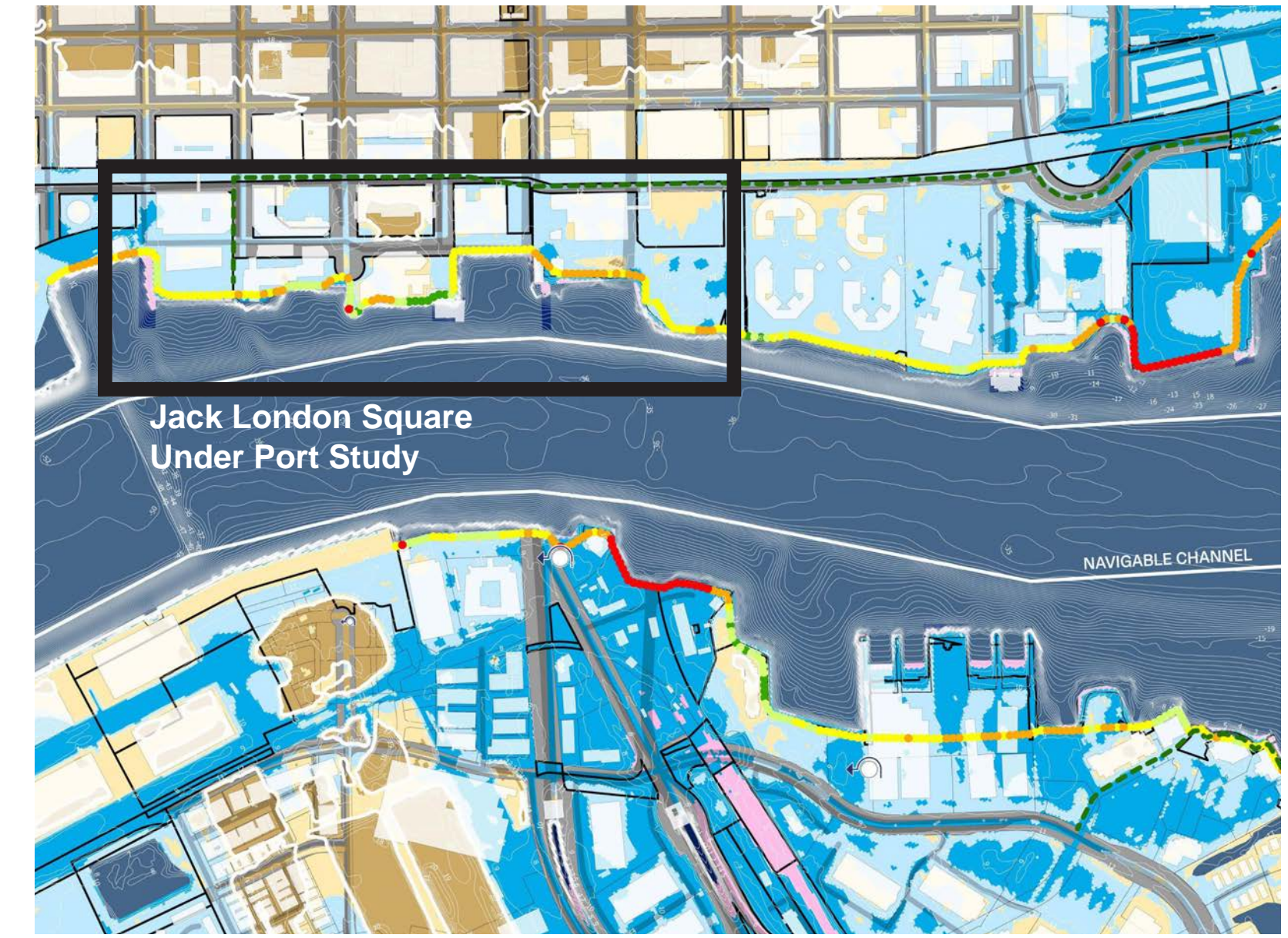
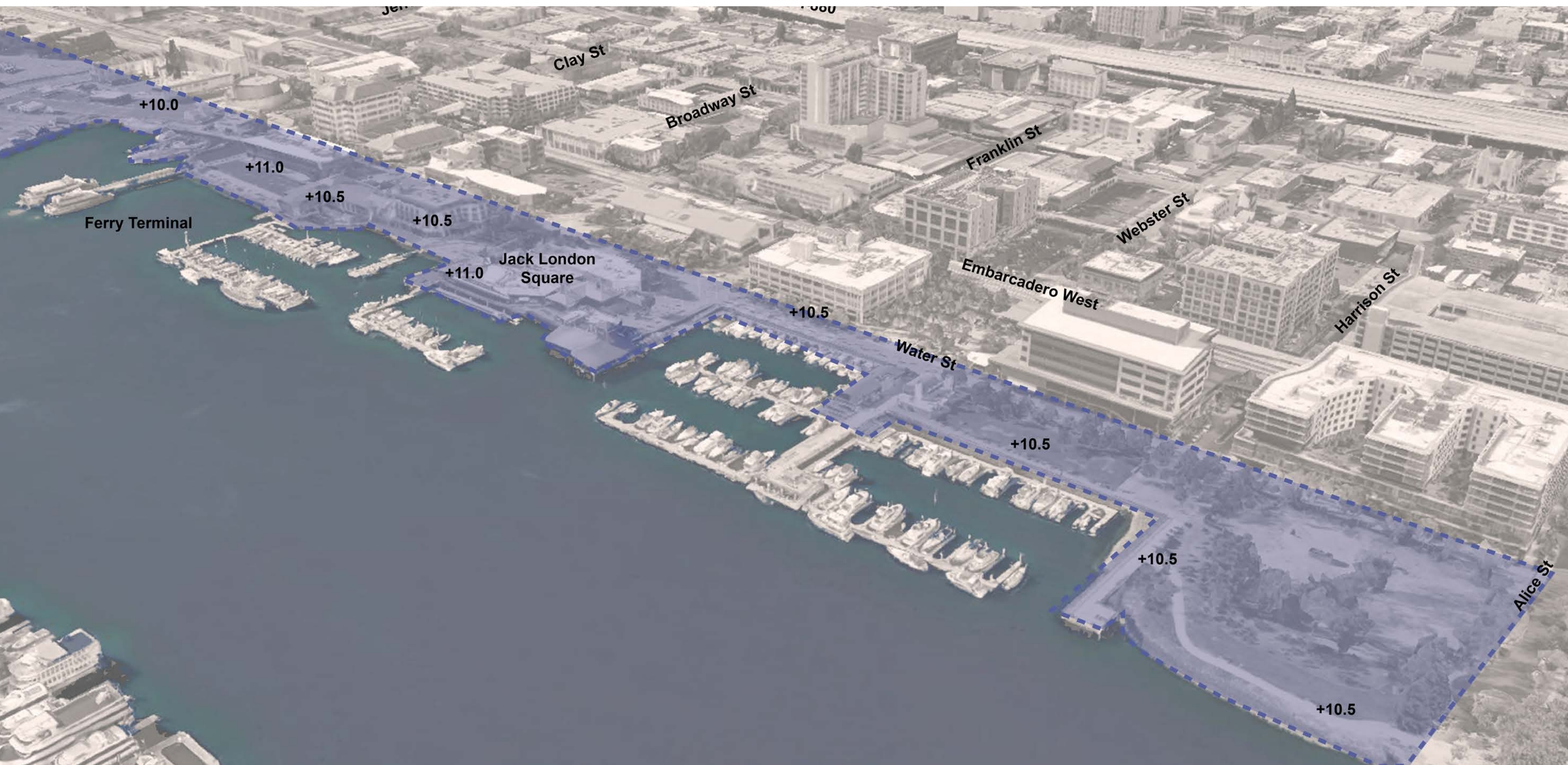
Heron's Head Park - Public Access and Tidal Marsh Habitat



OAKLAND COASTAL FLOOD PROTECTION

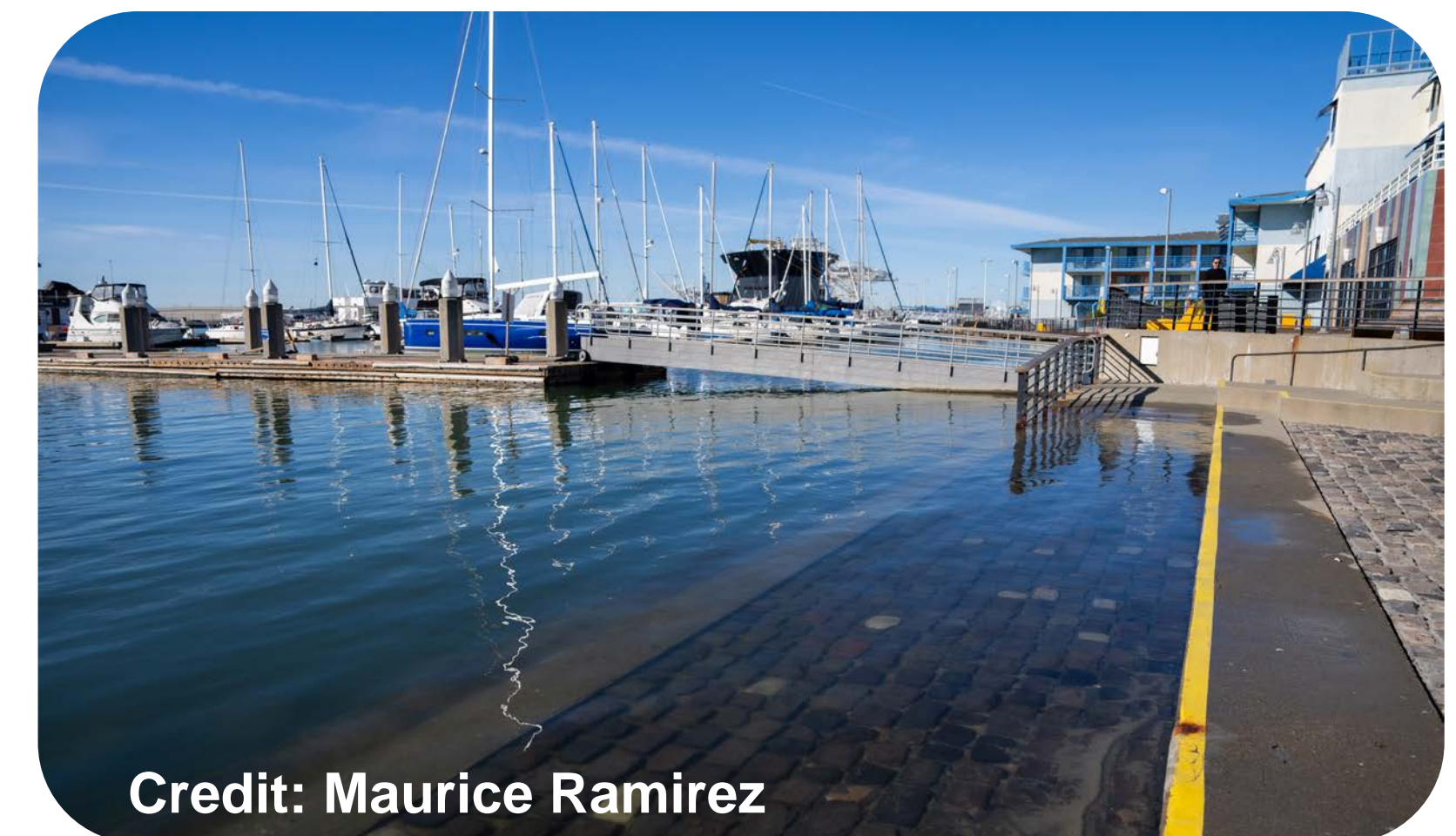
Oakland Alameda Adaptation Committee (OAAC ADAPT)

JACK LONDON SQUARE - PORT OF OAKLAND PROJECT AREA



KEY PLAN

Existing Conditions

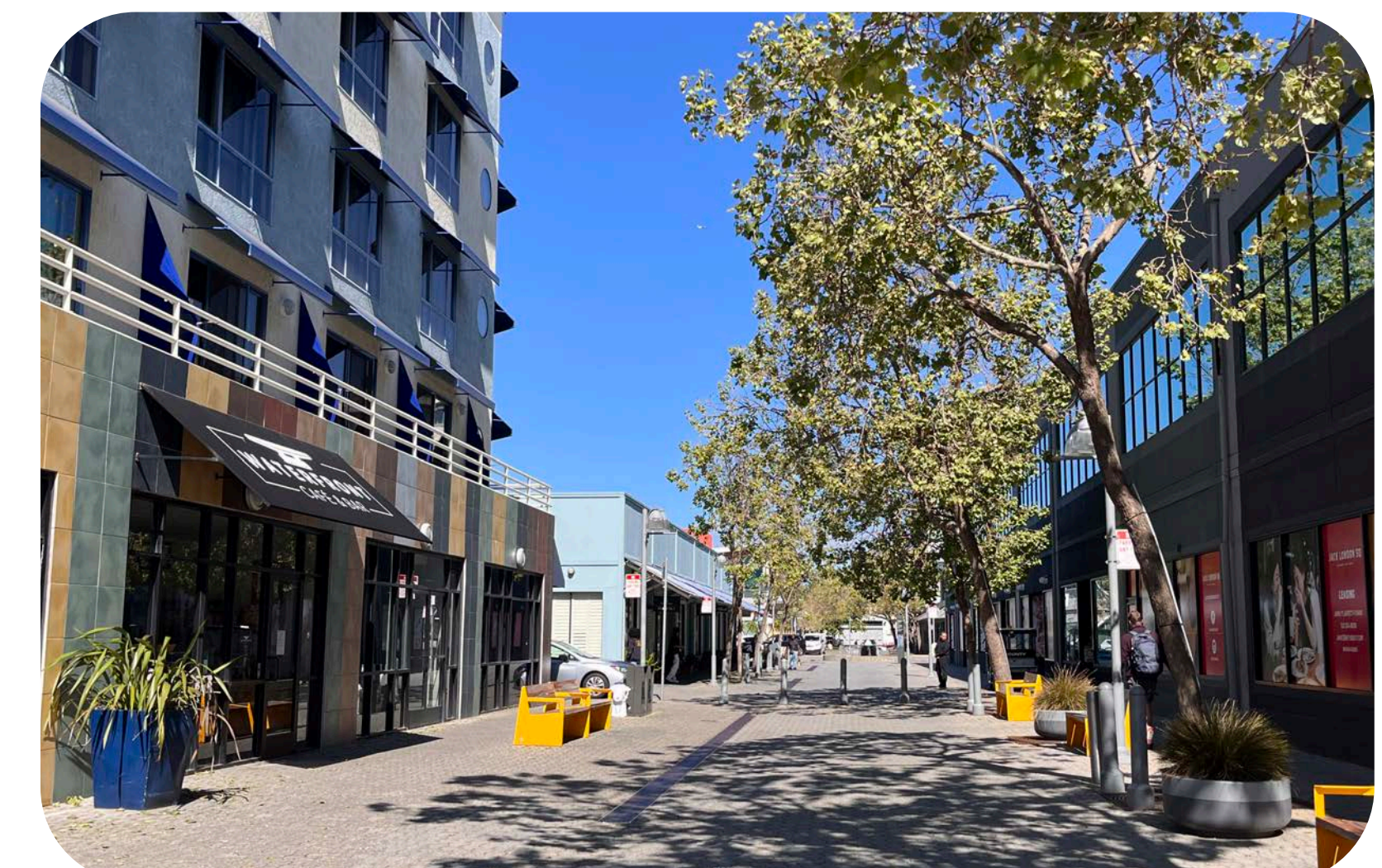


Credit: Maurice Ramirez

Stepped Terrace at Waterfront Hotel



Water St at Marina Lawn, View to the water



Water St, View to the commercial street

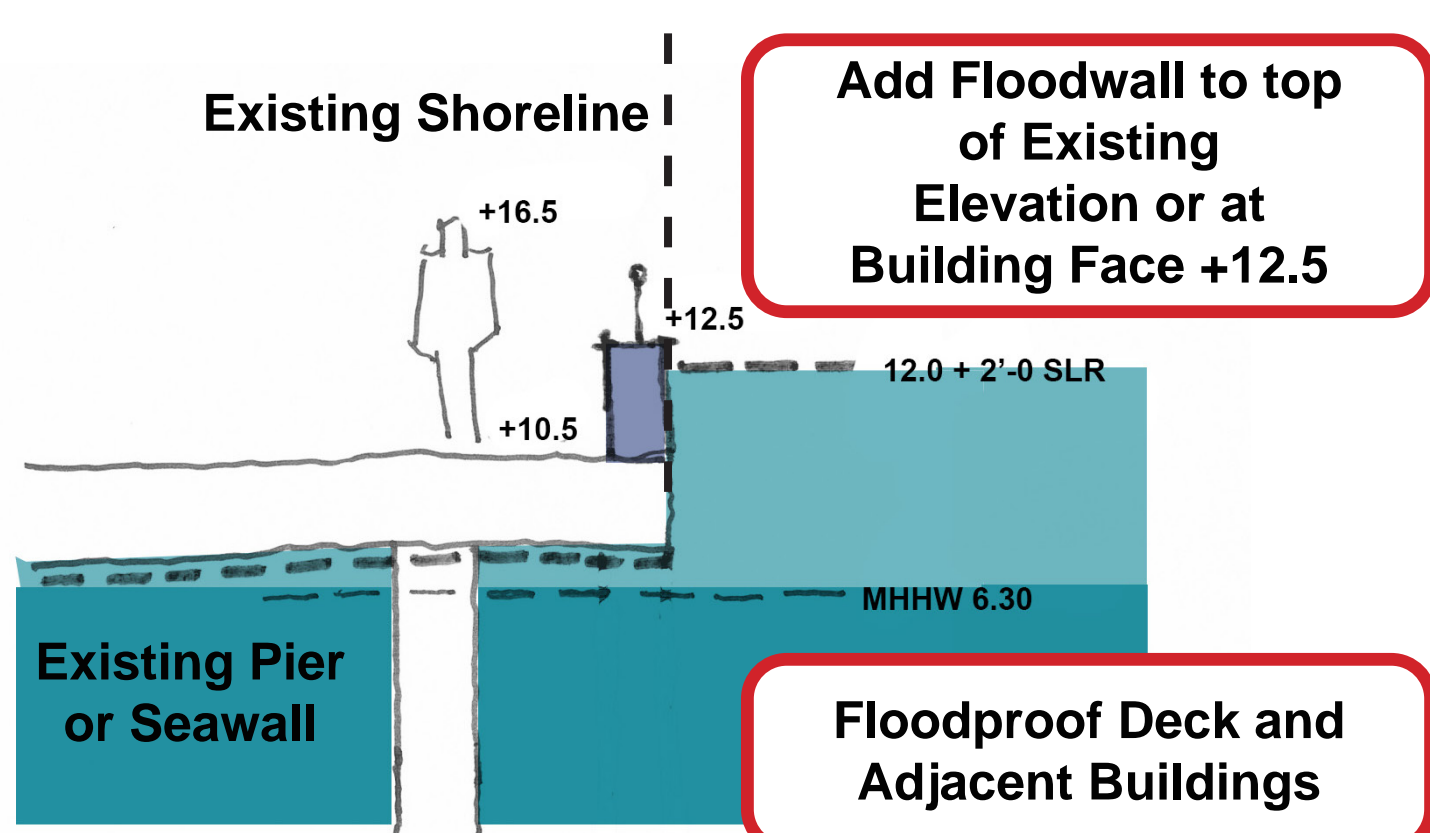


Marina Lawn, Jack London Square

Jack London Square, Howard Terminal to Alice Street

The Port of Oakland has begun an additional adaptation study for Jack London Square in coordination with the OAAC ADAPT project and team. As that project is developed, the work will be shared with the community and other stakeholders at future engagement events. Below are some potential strategies that may be considered for the project area. These options show only a sampling of the measures that could be implemented along this stretch of shoreline.

POTENTIAL ADAPTATION MEASURES



Add Floodwall to top of Existing Elevation or at Building Face +12.5

Floodproof Deck and Adjacent Buildings



Seawall

New seawall constructed or existing seawall adapted. Required where setback between buildings and shoreline is too narrow to accommodate a levee. Where existing pedestrian access is below elevation 10.5, views over the seawall may be blocked. The pathway would need to be elevated to allow for views over the seawall.

Tactical Flooding-Proofing

A new floodwall is added on top of an existing seawall, pier or building face to elevation 12.5 to maintain views over the wall. Pier deck and adjacent buildings are floodproofed to keep flood waters out. Additional adaptation measures are required for protection over elevation 12.5.



Levee with Public Access

Levee constructed to elevation 14.0 with public access path on top. Requires sufficient space (minimum 46' from shoreline). Where top of levee is over 6'-0" above adjacent inland grade, views to water are blocked.



Levee with Elevated Grade

Levee constructed to elevation 14.0 and inland ground elevated to elevation 11.0. Visual and physical connectivity to shoreline is maintained and can provide space for generous public realm improvements. Seawall can be added for long-term adaptation.

