

Introduction

The concept plans described in the following pages include varying design opportunities for natural and ecological shoreline restoration. Possibilities include creation of a continuous salmon migration corridor, intertidal and shallow sub-tidal aquatic habitat, riparian habitat, and accessible pocket beaches at appropriate locations. Each concept provides a different approach for developing the public realm on the landside to create community gathering areas and to connect people to Puget Sound.

Each concept is consistent with the following project goals:

- Address critical structural public safety needs at shoreline
- Respect cultural, archeological, and historical resources
- Consider long-term vision for the Central Waterfront
- Provide enhanced habitat and environmental quality
- Provide enhanced public gathering and recreational opportunities
- Support economic vitality of the waterfront
- Minimize cumulative construction impacts
- Support fiscal responsibility

The following summaries outline five concepts. Each provides:

- A description of the perspective that has shaped the concept
- A physical description of the concept
- Suggested habitat improvements
- An identification of potential public space and public access opportunities

These concepts are intended for stakeholder and public discussion. They will be refined into alternatives in November 2010 for further design and environmental analysis in coordination with the Central Waterfront Project.



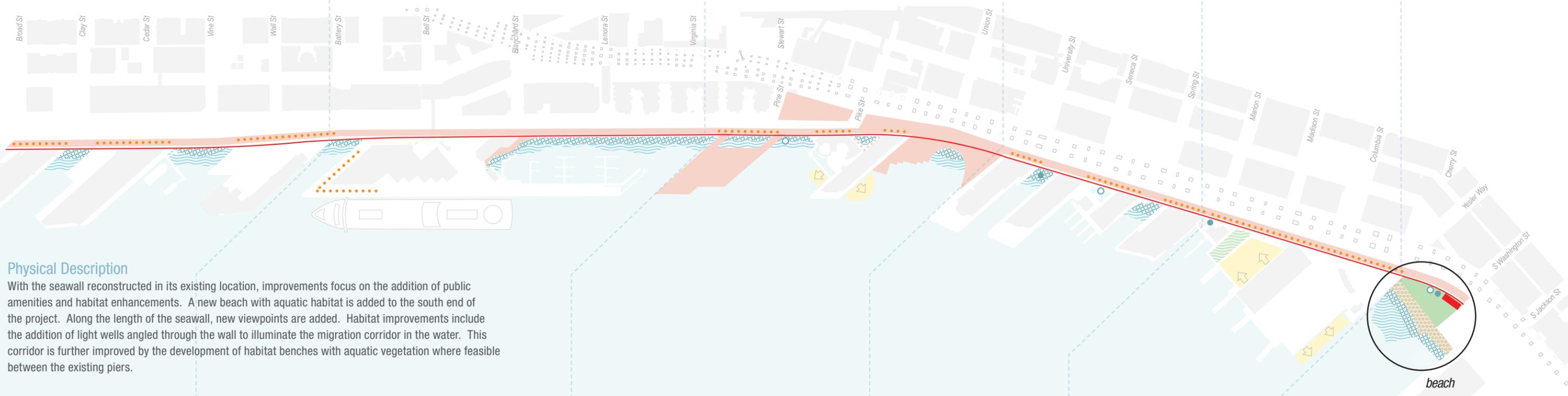
Concept A: In-kind Replacement

Replace the existing seawall in its current location. This is the fix-it alternative.

This concept will strive to replace the seawall in its existing location (approximate) and configuration to minimize impacts to existing land uses, ownership, operations, and circulation. The seawall replacement will be coordinated with known plans for future transportation projects and waterfront improvements, with minimal relocation of the wall. Habitat enhancement will consist of improvements that can be readily achieved in the current marine environment. These include habitat benches, improved seawall surfaces, and a lighted fish migration corridor.



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|--|--|---|--|
|  Backshore Beach |  Public Space |  Light Penetrating Surface |  Combined Sewer Outfall |
|  Habitat Bench |  Potential Rain Garden |  Existing Seawall |  Stormwater Outfall |
|  Aquatic Vegetation and Reef |  Potential Renovation/Expansion |  Proposed Seawall | |



Physical Description

With the seawall reconstructed in its existing location, improvements focus on the addition of public amenities and habitat enhancements. A new beach with aquatic habitat is added to the south end of the project. Along the length of the seawall, new viewpoints are added. Habitat improvements include the addition of light wells angled through the wall to illuminate the migration corridor in the water. This corridor is further improved by the development of habitat benches with aquatic vegetation where feasible between the existing piers.

Zone 6 North Pier

- Wall in place
- Viewing piers/viewpoints on existing piers
- Habitat bench improvements
- Light wells
- Aquatic vegetation and reef
- Vertical gardens

Zone 5 Bell Harbor

- Wall in place
- Viewing piers/viewpoints on existing piers
- Habitat bench improvements
- Light wells

Zone 4 Park/Aquarium

- Wall in place
- Light permeable walkways (limited)
- Light wells
- Habitat bench
- Aquatic vegetation and reef

Zone 3 Central Pier

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Rip rap with tide pools
- Habitat bench
- Aquatic vegetation and reef
- Vertical gardens

Zone 2 Ferry Terminal

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Possible rain gardens for stormwater treatment at Colman Dock (coordinated with Ferries)

Zone 1 Pioneer Square/Washington St.

- Wall in place
- Historic pavilion
- Fine substrate beach with sills
- Habitat bench
- Aquatic vegetation and reef

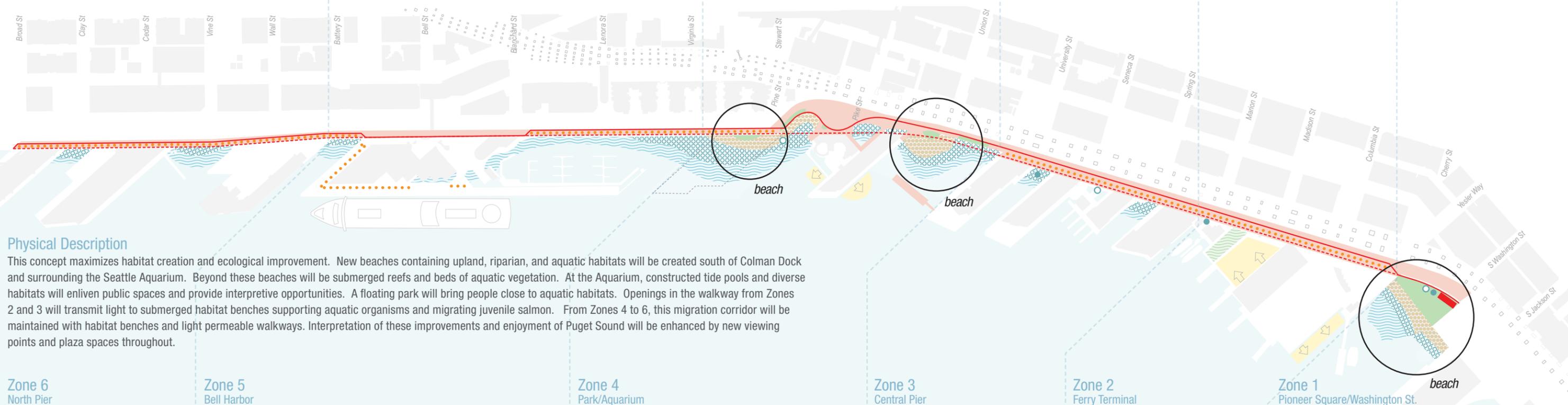
Concept B: Ecological Waterfront

A green urban waterfront immersed in rich Puget Sound ecology. This is the natural resource-based alternative, using the dynamic systems fundamental to the ecology, biology, culture, and economic characteristics of the place and its inhabitants.

This concept draws its function and aesthetic from Puget Sound's lush ecology. Here, the natural environment will influence urban design as city residents and visitors feel the presence of nature. The seawall will be softened with vertical gardens, and it will dissolve into stone sills with beaches, kelp beds, and reefs beyond. Walkways and plazas will transmit daylight with permeable paving, viewing shafts, and marine atria. Upland, riparian, and aquatic habitats will be created. Crabs and sea stars will inhabit new tide pools. Migrating salmon will follow a submerged habitat bench and illuminated water corridor formed by innovative light wells and permeable pavements. Where possible, stormwater will naturally infiltrate through vegetated swales and rain gardens. The waterfront will be celebrated and interpreted as a model of Seattle's sustainable ethic and careful stewardship of Puget Sound.



-  Backshore Beach
-  Habitat Bench
-  Aquatic Vegetation and Reef
-  Public Space
-  Potential Rain Garden
-  Potential Renovation/Expansion
-  Light Penetrating Surface
-  Existing Seawall
-  Proposed Seawall
-  Combined Sewer Outfall
-  Stormwater Outfall



Physical Description

This concept maximizes habitat creation and ecological improvement. New beaches containing upland, riparian, and aquatic habitats will be created south of Colman Dock and surrounding the Seattle Aquarium. Beyond these beaches will be submerged reefs and beds of aquatic vegetation. At the Aquarium, constructed tide pools and diverse habitats will enliven public spaces and provide interpretive opportunities. A floating park will bring people close to aquatic habitats. Openings in the walkway from Zones 2 and 3 will transmit light to submerged habitat benches supporting aquatic organisms and migrating juvenile salmon. From Zones 4 to 6, this migration corridor will be maintained with habitat benches and light permeable walkways. Interpretation of these improvements and enjoyment of Puget Sound will be enhanced by new viewing points and plaza spaces throughout.

Zone 6 North Pier

- Wall moved back
- Light permeable walkways
- Viewing piers/viewpoints on existing piers
- Habitat bench improvements
- Aquatic vegetation and reef
- Vertical gardens
- Intertidal art element and habitat

Zone 5 Bell Harbor

- Wall moved back
- Light permeable walkways
- Viewing piers/viewpoints on existing piers
- Habitat bench improvements
- Vertical gardens

Zone 4 Park/Aquarium

- Wall moved back and reconfigured
- Fine substrate beaches with sills
- Riparian vegetation
- Constructed tide pools
- Aquatic vegetation and reef
- Habitat bench
- Floating park (over-water walkways)

Zone 3 Central Pier

- Wall moved back
- Open water portals
- Light permeable pavement
- Habitat bench
- Aquatic vegetation and reef
- Viewing piers/viewpoints on existing piers

Zone 2 Ferry Terminal

- Wall moved back
- Open water portals
- Light permeable pavement
- Habitat bench
- Possible rain gardens for stormwater treatment at Colman Dock (coordinated with Ferries)
- Viewing piers/viewpoints on existing piers
- Riparian vegetation (at rain garden and portals)

Zone 1 Pioneer Square/Washington St.

- Wall in place
- Historic pavilion
- Fine substrate beach with sills
- Habitat bench
- Aquatic vegetation and reef
- Riparian vegetation

Concept C: Urban Waterfront

An active civic waterfront influenced by historic and contemporary urban fabric. This is the urbane alternative, using western civilization's evolution of the downtown as the synthesis of humankind's potential to manage and enrich contributions on earth.

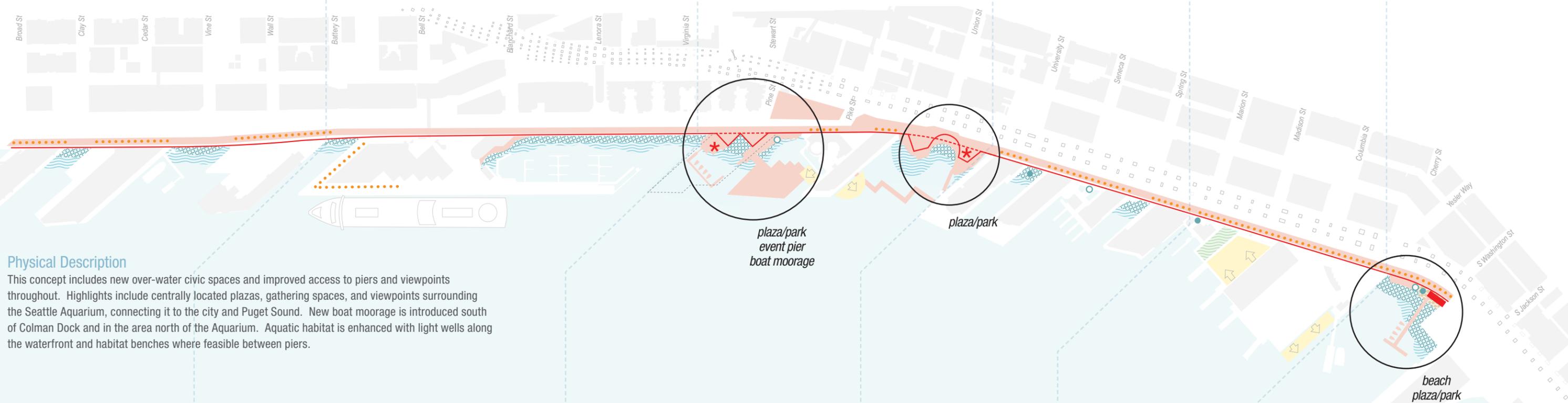
This concept maximizes civic spaces along the waterfront. The seawall supports cantilevered platforms, plazas, steps, and a promenade enlivened by the bustle of shipping, tourism, socializing, and performing. This is a place of urban theater on Elliott Bay. A stage of piers, pilings, moorings, and boardwalks hosts an ever-changing show of docking and departing boats and a parade of tourists and residents interacting with the city and its authentic urban waterfront. Embracing this activity is a backdrop of majestic mountains, orange cranes, container-laden cargo ships, and Seattle's architectural skyline.

While ecology is improved in this scheme, the improvements are less conspicuous. Light permeable pavement brings natural light to an enhanced shallow water corridor below, improving salmon migration. Underwater gravel and rock substrates host aquatic organisms, the building blocks of an aquatic food web.



-  Backshore Beach
-  Habitat Bench
-  Aquatic Vegetation and Reef
-  Public Space
-  Potential Rain Garden
-  Potential Renovation/Expansion
-  Light Penetrating Surface
-  Existing Seawall
-  Proposed Seawall
-  Combined Sewer Outfall
-  Stormwater Outfall

★ Seawall could be over-water structure in this area.



Physical Description

This concept includes new over-water civic spaces and improved access to piers and viewpoints throughout. Highlights include centrally located plazas, gathering spaces, and viewpoints surrounding the Seattle Aquarium, connecting it to the city and Puget Sound. New boat moorage is introduced south of Colman Dock and in the area north of the Aquarium. Aquatic habitat is enhanced with light wells along the waterfront and habitat benches where feasible between piers.

Zone 6 North Pier

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Habitat bench improvements
- Aquatic vegetation and reef

Zone 5 Bell Harbor

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Habitat bench improvements
- Aquatic vegetation and reef
- Vertical garden

Zone 4 Park/Aquarium

- Portion of wall moved out and reconfigured
- Plazas and stepped seating access to the water
- Light permeable walkways and light wells
- Boat moorage
- Large event pier
- Over-water walkway
- Constructed tide pools
- Aquatic vegetation and reef

Zone 3 Central Pier

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Habitat bench

Zone 2 Ferry Terminal

- Wall in place
- Light wells
- Viewing piers/viewpoints on existing piers
- Possible rain gardens for stormwater treatment at Colm an Dock (coordinated with Ferries)

Zone 1 Pioneer Square/Washington St.

- Wall in place
- Historic pavilion
- Short stay boat moorage
- Over-water decks/bridges, steps/ramps to the water
- Light permeable walkway
- Habitat bench

Concept D: Context Connections

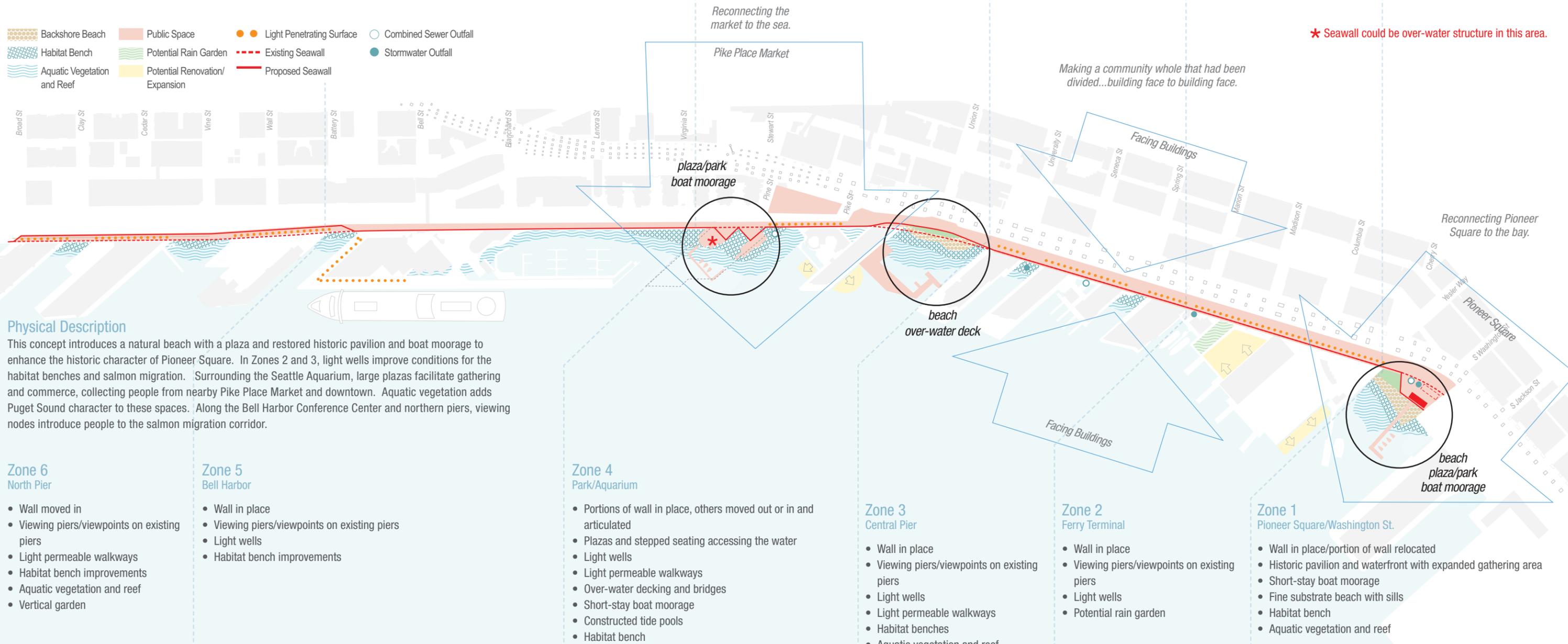
A waterfront connected to adjacent neighborhood character, function, and aesthetic. This concept links distinct waterfront communities at the heart of one of the world's most diverse intersections, producing an environment that connects water and land and enriches as each element passes another.

This concept connects the waterfront to the unique character of the adjacent city neighborhoods. The history of Pioneer Square and the bustle of Pike Place Market are reflected in the waterfront and the seawall design. Pioneer Square may embrace the space south of the Ferry Terminal as its front porch. The threshold of the Central Pier Zone between historic piers and facing buildings currently east of the Viaduct will unify and stimulate a now divided waterfront neighborhood. Near Pike and Union Streets, large plazas and gathering areas and sustainable interventions will extend and make whole a shared public realm of Pike Place Market, the Seattle Art Museum, and Seattle Aquarium. To the north, the seawall will embrace boat moorage serving and complementing the Belltown neighborhood. Throughout, viewing piers will focus attention inward to the city skyline and outward to Puget Sound.

Habitat will flow throughout the waterfront, as a reminder that Seattle, the Emerald City, was born from the cedar, stone, and salmon of Puget Sound. Walkways will include openings to welcome the presence of water. Kelp and other aquatic vegetation will soften and naturalize urban spaces. Below and beyond walkways, salmon will continue their annual migration along habitat benches as they have throughout the development and evolution of Seattle's neighborhoods.



-  Backshore Beach
-  Habitat Bench
-  Aquatic Vegetation and Reef
-  Public Space
-  Potential Rain Garden
-  Potential Renovation/Expansion
-  Light Penetrating Surface
-  Existing Seawall
-  Proposed Seawall
-  Combined Sewer Outfall
-  Stormwater Outfall



Physical Description

This concept introduces a natural beach with a plaza and restored historic pavilion and boat moorage to enhance the historic character of Pioneer Square. In Zones 2 and 3, light wells improve conditions for the habitat benches and salmon migration. Surrounding the Seattle Aquarium, large plazas facilitate gathering and commerce, collecting people from nearby Pike Place Market and downtown. Aquatic vegetation adds Puget Sound character to these spaces. Along the Bell Harbor Conference Center and northern piers, viewing nodes introduce people to the salmon migration corridor.

Zone 6 North Pier

- Wall moved in
- Viewing piers/viewpoints on existing piers
- Light permeable walkways
- Habitat bench improvements
- Aquatic vegetation and reef
- Vertical garden

Zone 5 Bell Harbor

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Habitat bench improvements

Zone 4 Park/Aquarium

- Portions of wall in place, others moved out or in and articulated
- Plazas and stepped seating accessing the water
- Light wells
- Light permeable walkways
- Over-water decking and bridges
- Short-stay boat moorage
- Constructed tide pools
- Habitat bench
- Aquatic vegetation and reef

Zone 3 Central Pier

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Light permeable walkways
- Habitat benches
- Aquatic vegetation and reef

Zone 2 Ferry Terminal

- Wall in place
- Viewing piers/viewpoints on existing piers
- Light wells
- Potential rain garden

Zone 1 Pioneer Square/Washington St.

- Wall in place/portion of wall relocated
- Historic pavilion and waterfront with expanded gathering area
- Short-stay boat moorage
- Fine substrate beach with sills
- Habitat bench
- Aquatic vegetation and reef

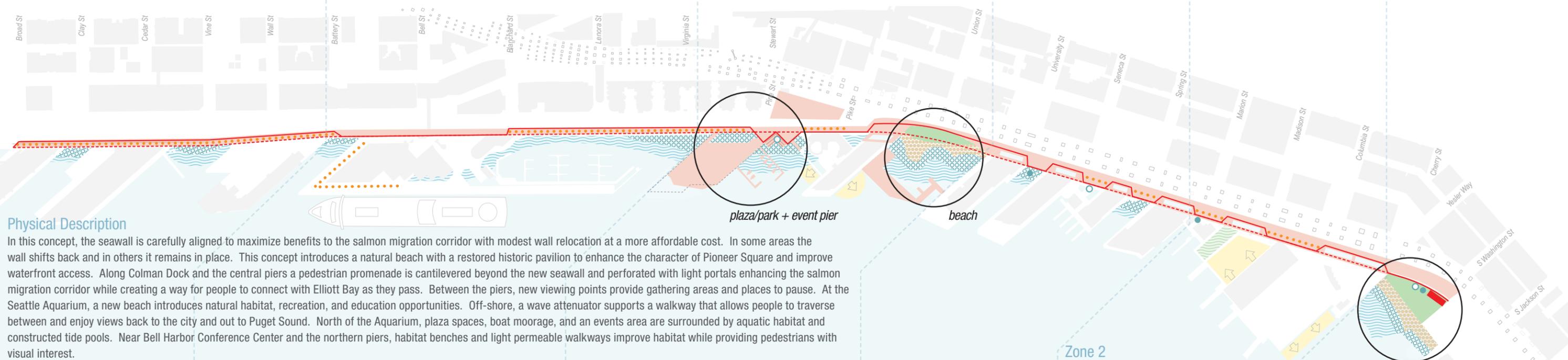
Concept E: Evolving Experiences

An episodic composition of places that tell a story of the importance of Puget Sound to its inhabitants. This is the cultural concept - the synthesis of native animal, Native American, pioneer, immigrant, maritime, and industrial societies, their distinguishing characteristics, and shared ethics that have shaped Seattle and its waterfront.

Seattle's waterfront serves many roles. This concept will acknowledge the conversation between an ecology, a place, and their occupants. A mosaic of aquatic and riparian habitats, urban pathways, and gathering spaces will expose this conversation. Driftwood, gravel, sand, stone, concrete, and brick are the substrate. For visitors and residents, the varied waterfront spaces will unfold in a choreographed sequence explaining Seattle and Puget Sound. To plants, fish, mammals, and birds, the seawall will provide a complex and diverse habitat. In this concept, Seattle's waterfront will model interaction between urban and natural environments.



-  Backshore Beach
-  Habitat Bench
-  Aquatic Vegetation and Reef
-  Public Space
-  Potential Rain Garden
-  Potential Renovation/Expansion
-  Light Penetrating Surface
-  Existing Seawall
-  Proposed Seawall
-  Combined Sewer Outfall
-  Stormwater Outfall



Physical Description

In this concept, the seawall is carefully aligned to maximize benefits to the salmon migration corridor with modest wall relocation at a more affordable cost. In some areas the wall shifts back and in others it remains in place. This concept introduces a natural beach with a restored historic pavilion to enhance the character of Pioneer Square and improve waterfront access. Along Colman Dock and the central piers a pedestrian promenade is cantilevered beyond the new seawall and perforated with light portals enhancing the salmon migration corridor while creating a way for people to connect with Elliott Bay as they pass. Between the piers, new viewing points provide gathering areas and places to pause. At the Seattle Aquarium, a new beach introduces natural habitat, recreation, and education opportunities. Off-shore, a wave attenuator supports a walkway that allows people to traverse between and enjoy views back to the city and out to Puget Sound. North of the Aquarium, plaza spaces, boat moorage, and an events area are surrounded by aquatic habitat and constructed tide pools. Near Bell Harbor Conference Center and the northern piers, habitat benches and light permeable walkways improve habitat while providing pedestrians with visual interest.

- Zone 6**
North Pier
- Wall moved back or in place
 - Viewing piers/viewpoints on existing piers
 - Light permeable walkway
 - Habitat bench improvements
 - Aquatic vegetation and reef

- Zone 5**
Bell Harbor
- Wall moved back or in place
 - Viewing piers/viewpoints on existing piers
 - Light penetrating walkway
 - Habitat bench improvements

- Zone 4**
Park/Aquarium
- Portion of wall reconfigured - pushed out and pulled back
 - Plazas and stepped seating accessing the water
 - Short-stay boat moorage
 - Events pier
 - Light permeable walkways

- Zone 3**
Central Pier
- Light wells
 - Wave attenuator/over-water park
 - Fine substrate beach with sills
 - Aquatic and riparian habitat
 - Constructed tide pools and reef
 - Habitat bench
 - Wall in place in some areas and moved back in others
 - Viewing piers/viewpoints on existing piers
 - Limited open water portals
 - Light permeable walkway
 - Light wells
 - Habitat bench
 - Aquatic vegetation and reef

- Zone 2**
Ferry Terminal
- Wall in place in some areas and moved back in others
 - Viewing piers/viewpoints on existing piers
 - Limited open water portals
 - Light permeable walkway
 - Light wells
 - Habitat bench
 - Potential rain gardens for stormwater treatment at Colman Dock (Coordinate with Ferries)

- Zone 1**
Pioneer Square/Washington St.
- Wall in place
 - Historic pavilion
 - Fine substrate beach with sills
 - Habitat bench
 - Aquatic vegetation and reef
 - Riparian vegetation