Elliott Bay Seawall Project

MEMORANDUM

Date:	August 16, 2010
To:	Seawall Stakeholder Subgroup Members
From:	Elliott Bay Seawall Project Planning Team
Subject:	Preliminary Identification of Seawall System Replacement Opportunities and Issues (DRAFT)

INTRODUCTION

The purpose of this memo is to begin the process of identifying opportunities for habitat restoration and water touch points as part of the Elliott Bay Seawall Project. At the same time, this memo also documents initially identified issues associated with the potential implementation of opportunities. The opportunities and issues are identified from various standpoints: physical, regulatory, and consistency with land use guidelines.

Initial steps in design of the replacement of the Elliott Bay seawall have included delineating the existing shoreline into a series of planning zones. The zones are defined by existing land use patterns and character, water depth, and site history. The initially identified opportunities and issues presented below are not provided as recommendations but are intended to stimulate discussion of the possibilities by the project team, stakeholders, and the public. This is a living document and will continue to be revised as input is received during the design process and public process.

OPPORTUNITIES AND ISSUES COMMON TO ALL ZONES ALONG THE ELLIOTT BAY SEAWALL ALIGNMENT

Aquatic Habitat Opportunities:

- Increase the availability of shallow water migration corridor for juvenile salmon in the intertidal and shallow subtidal depth range.
- Increase the availability of larger habitat “oasis/patches” along the juvenile salmon migration corridor.
- Increase the extent to which natural light reaches the juvenile salmon migration corridor (Ordinary High Water/MHHW to -10 feet MLLW).
- Terrace the seawall to create day-lighting and habitat benches. Use scientific research to confirm if “shelves” constructed as a part of the wall have a habitat benefit.
- Modulate or texture vertical structures to create enhanced substrate for growth and diversity of algae and invertebrates.
- Increase the diversity of nearshore habitat, specifically intertidal, supratidal, and riparian habitats that are largely absent from Elliott Bay and the Elliott Bay seawall alignment, such as:
    - Increase native riparian vegetation including trees and shrubs overhanging the upper intertidal zone.

    - Increase presence of lower and upper intertidal and supratidal habitat (extreme high tide "dry beach") with fine-grained substrates.
- Improve quality of subtidal habitat that contains extensive debris or waste materials by improving substrate conditions to support a greater diversity of algae species, and remove substances harmful or repressive of marine life.
- Explore opportunities to tie treated stormwater to proposed intertidal habitats, particularly if surface treatment using vegetation is employed.

Shoreline Public Access Opportunities:

- Maximize views of Elliott Bay, the mountains, and the city and create opportunities for waterfront activities.
- Use street ends for viewing and access.
- Provide opportunities to view habitat enhancements.
- Create terraced sitting areas along the waterfront where visitors can sit and view the water.
- Provide grated or glass block walkways overwater.

Cultural / Education / Interpretation Opportunities:

- Integrate places for community gatherings that are water dependent. These may include: tribal canoe/kayak landing area for tribal ceremonies such as the "Tribal Journeys Festival," historic vessel docking area, seating areas for small gatherings to view the water, intertidal art elements, future concert pier, etc.
- Incorporate educational/interpretive elements: potential cultural, historic, and natural systems interpretive elements consistent with a design theme to be coordinated in the future with the Central Waterfront Project team.
- Express a design theme in the architectural detailing of the seawall and railings, etc. to be coordinated in the future with the Central Waterfront Project team. These may be visible from the water side or from the upland side or both orientations.
- Integrate public access with environmental education as part of the project design.

Sustainable Design Opportunities:

- Recycle demolished materials, such as for construction of habitat substrate or fill.
- Capture/treat stormwater for utilization as a source of fresh water for vegetative, educational, art/water features, or brackish habitat opportunities. Moderate the effects of existing stormwater and combined sewer overflow (CSO) outfalls.
- Use materials that can be re-used if treatments are temporary (concrete pavers, etc.).

Site Specific Issues:

- Coastal engineering preliminary review indicates that stabilizing new beach material may require fill extending waterward approximately 400' from the existing seawall.
- Propeller wash and boat wakes can impact aquatic habitat and potentially disturb contaminated sediments. Sediment quality and extent of contamination is currently being gathered and will provide data to guide the design of habitat features and clean-up measures.
- Loss of natural sediment inputs from upland bluffs and natural inputs from the Duwamish River due to historic river modifications make restoration of natural marine processes difficult.
- Consider beach replenishment regime and coordination with other owners along the waterfront.

- Beach zones and touch points need to be designed to allow for rising sea levels.

Ownership / Existing Use Issues:

- Future plans by adjacent landowners are uncertain.
- The creation of habitat elements on tidelands that are owned by private entities (and not by the City of Seattle) may not be permitted. Need to understand ownership of tidelands in order to understand opportunities and issues.
- Navigational movements and boat and service access to docks and piers need to be provided or relocated (work with the Washington State Department of Natural Resources (DNR) to relocate these functions as necessary).
- Historic sites, structures, and uses need to be preserved.
- Habitat, water access, and recreation opportunities will be constrained by the available space, which will be determined by addressing transportation needs, circulation needs, property ownership, etc.
- Combined Sewer Outfalls (CSO) and storm drain outfalls are a potential source of water and sediment contamination. Data on sediment and water quality (Ecology database) is limited. Sources in many cases are distant from the project footprint.
- Outfalls run perpendicular to shoreline. Modifications to the seawall and aquatic habitat may need to address these outfalls in terms of lengthening or shortening them. If new habitat substrate materials or public access (water/beach contact) are located in close proximity to outfalls, the potential for ongoing contamination from these outfalls needs to be evaluated.

Access / Circulation Issues:

- Appropriate access to historical commercial piers and other structures needs to be provided. This may include service and emergency vehicle access and on-pier parking access.
- Service and emergency vehicle access need to be provided.
- Emergency access may have to be maintained separate from public pedestrian access routes.
- Limited parking is available in the area. Future projects may increase demand and impact existing parking.
- A large volume of pedestrian traffic needs to be accommodated.
- Utilities, vehicle traffic volumes, and pedestrian traffic volumes constrain horizontal location of proposed seawall, habitat improvements, and upland grading.
- Alaskan Way is currently the primary over-height trucking route through downtown. This use needs to be accommodated either on Alaskan Way or elsewhere through downtown.

Regulatory Issues:

- The area between the Inner Harbor Line and Outer Harbor Line, the "Harbor Area," is "forever reserved for landings, wharves, streets, and other conveniences of navigation and commerce" (Chapter 79.115 RCW). The state harbor areas between the Inner and Outer Harbor Lines are established by the Harbor Line Commission. Construction of wharves, docks or other structures within the harbor area require a lease agreement which is limited to a 30-year lease period. DNR is responsible for the management, lease, and sale of aquatic lands, and has the power to establish the terms and conditions of leases.
- Tidelands (areas between the Inner Harbor Line and the ordinary high tide) can be leased for up to 50 years, can only be sold to other public agencies, and are subject to the Shoreline Management Act (RCW79.01.470). Information regarding current tidelands lease agreements

will need to be reviewed during the design process to confirm allowed uses, length of leases, and agency ownership.
- Per the existing shoreline code, dry land cannot be created in Urban Harborfront (on areas that are currently submerged).

OPPORTUNITIES AND ISSUES SPECIFIC TO EACH PLANNING ZONE

Zone #1 – Pioneer Square / Washington Street Zone

The Pioneer Square/Washington Street Zone extends from the south edge of Pier 48 to the north edge of Jackson Street. This zone is closely linked to historic sites and structures in Pioneer Square and Occidental Park. Future City acquisition of Pier 48 (currently WSDOT property) is a possibility. This zone includes Pier 48 and the WSDOT-owned public access site just north of Pier 48, "Alaska Square." The existing Washington Street Public Boat Landing pavilion at the foot of South Washington Street is a waterfront icon, is listed on the National Register of Historic Places and is within the boundaries of Seattle's Pioneer Square Historic District. However, it is little used and there are perceived safety concerns. The adjacent Alaska Square is fenced, poorly maintained, and is currently a forgotten urban space.

Zone #1 Opportunities:

- Provide a beach touchpoint and shallow water habitat opportunity in the relatively shallow water north of the pavilion.
- Connect the shallow water area at the north edge of this zone to the Pier 48 area, creating an extensive open space/natural area. This could provide a "bookend" park on the south end of the waterfront, which would mirror the potential park space in the Aquarium Zone (Zone #4) and the existing natural areas found at Myrtle Edwards Park and the Olympic Sculpture Park.
- Remove the existing seawall and bulkheads in the Pier 48 area and (fenced) public access site and re-grade to develop a significant beach touchpoint and shallow water habitat.
- Consider wave attenuation and enhanced habitat features to improve aquatic habitat, reduce maintenance requirements related to beach material erosion, and improve safety for potential canoe/kayak access.
- Tribal canoe/kayak landing area could be introduced for tribal ceremonies such as the "Tribal Journeys Festival," possibly at a constructed beach touchpoint.
- Restore the historical public boat landing.
- Provide a strong connection between the historic pavilion structure and Pioneer Square, Occidental Park, King Street Station, and the stadiums, and orient tourists to the historic Pioneer Square neighborhood.
- Install signage to make this zone a focal point for cultural and historic interpretation.

Zone #1 Issues:

- Long range ferry terminal expansion plans are unknown making it more difficult to develop long term design solutions adjacent to the ferry docks that will not be impacted by future WSDOT development.
- King County is planning to locate a barge north of Pier 48 for five years starting in 2011.
- The derelict nature of this location together with the lack of active uses makes it inviting for illegal behavior, and it is a public safety concern.
- Non-motorized boater safety is a concern here as it is close to the passenger ferry which has

significant prop wash and a larger turning motion as it turns to dock. Coordination with WSF and the Port of Seattle will be required to assess potential security and safety concerns.

- Design of this zone will likely require a phased implementation plan as the existing public access site and Pier 48 are currently owned by WSDOT and would need to be purchased by the City.
- There are an existing 48" CSO and a stormwater outfall at King Street and a 24" CSO at Washington Street. The suitability of this area for major investments in habitat and public access must be evaluated relative to sediments and recontamination from the stormwater and CSO outfalls.
- There is an active MTCA cleanup site which extends from Pier 48 through Pier 51, and there is a Sediment Cap Area located under Pier 51. Removal or capping of contaminants should be a part of all habitat enhancements in this zone. If possible, sediment cap areas should not be disturbed.

Zone #1 Maintenance Considerations:

- Planted areas and beach space will require regular maintenance and may require periodic replenishment of beach materials.
- The historic pavilion requires continued maintenance and is likely to require new piles prior to any changes to the shoreline.

Zone #2 – Ferry Terminal Zone

The Ferry Terminal Zone extends from the Colman Dock ferry terminal complex at Piers 50 and 52 north to the City of Seattle fire station at Pier 53. The city plans to retain the fire station. Washington State Ferries (WSF) plans to renovate the ferry terminal complex within the next 20 years, focusing on maintaining the existing facilities, including the existing pier footprints. The passenger-only ferry has high ridership, and WSF would like to work toward making the ferry system more multi-modal by adding a bicycle-only entry booth and improving bus/ferry connectivity. This zone is a focal point for regional access for waterborne craft to and from Seattle. Though this zone is publicly owned, and it is a sensitive security area with limited public water access.

Zone #2 Opportunities:

- Build a wall landward of WSF that would allow for pulling the shoreline back and creating a lighted fish corridor east of the current wall alignment in the future.
- Work with WSF to create opportunities to add overhanging vegetation to the edges of the dock which could provide fish habitat while functioning as a part of a stormwater management treatment rain garden.
- A modified vertical seawall could include a constructed habitat bench/ledge or a variety of wall textures to provide improved aquatic habitat.
- Use grated decking at portions of the dock that are primarily used by bicyclists and pedestrians, such as the access to the foot passenger ferry on the south edge and possibly the proposed bicycle-only entry booth area.
- Install a shallow water bench along the full extent of the nearshore.
- Continue coordination with WSF to discuss habitat enhancement and improved public use opportunities.
- Add new commercial structures along the street making a "street wall" to activate the pedestrian space and screen the ferry parking areas.

Zone #2 Issues:

- The schedule for rebuilding the ferry terminal is unknown. The seawall may need to be flexible enough to work with the current terminal configuration and potential future configurations.
- The terminal is a barrier to fish migration due to the extensive overwater structure along the shore.
- Providing fish passage through this zone will be a challenge. The ferries require deep water at the pier ends for navigation, which conflicts with the goal of providing shallow water habitat. Ferry prop wash may conflict with fish migration, unless a shallow water fish migratory corridor (potentially with light) can be created away from the deep water ferry traffic areas.
- Propeller wash also disturbs contaminated sediments that are a detriment to marine life.
- There is an existing 60" CSO at Madison Street. Explore options to mitigate its effect on aquatic habitat.
- The ferry terminal has unique security needs.

Zone #2 Maintenance Considerations:

- Vertical seawall habitat will need to be accessed for maintenance from the water side.
- Coordination is required between the City and WSF for maintenance of potential stormwater facilities and also seawall surface habitat.

Zone #3 – Central Pier Zone

The Central Pier Zone extends from Piers 54, 55, and 56 north to Pier 57. All of the piers in this zone are privately owned, are a part of the City's "Historic Character Area," and are collectively listed as a Seattle Landmark. Although several of the piers require structural repairs, all of the owners currently plan on rehabilitating and retaining them in their existing configuration with the existing historic structures. This zone represents the economic core of the downtown waterfront. The piers host a variety of restaurants, souvenir shops, and visitor attractions and cater largely to tourists.

Zone #3 Opportunities:

- The new shoreline could potentially be pulled back from the existing shoreline alignment to provide a fish passage corridor. Historic designations should be considered when exploring this possibility. Even if this option is not immediately implemented, a wall could be built that would allow for the possibility of pulling the shoreline back in the future.
- A modified vertical seawall (e.g., bumpy wall, tidal benches) could provide improved aquatic habitat (compared to the existing wall).
- A shallow water habitat bench could be implemented along the full extent of the nearshore.
- Consider narrower deep water pier entrances/boat access zones between piers.
- Floating docks at the ends of existing piers could allow greater access to pier ends while also providing moorage for boat-in restaurant patrons. These could also serve as breakwaters to reduce wave energy. These structures would need to remain within the harbor area. Space is available at Piers 54-56, but not at Pier 57.
- Overwater walks with grated decks between piers could enliven gathering spaces farther from the street. Lease issues would need to be explored.
- New habitat structures on and around the existing piers could improve aquatic habitat.

Zone #3 Issues:

- Retaining the existing historic buildings and piers limits the potential for shallow water habitat. The local historic designation of these buildings and piers may be a challenge when considering changes to the relationship between the piers and the pedestrian space. Creative approaches should be considered to improve habitat and access.
- Any changes within the Historic Character Area are subject to both Landmarks Preservation Board review and Department of Neighborhoods review and comment.
- Historic Character Area review criteria include: "*pier aprons shall be surfaced with timber" and "the existing railing along the Alaskan Way Seawall should be maintained or reconstructed."*
- Private ownership of the piers may limit the possibility for additional public access.
- There are some concerns related to crime prevention through environmental design (CPTED), though intense commercial use of the zone reduces them.
- Dumpster locations impact the quality of experience in this area.
- There is an existing 48" CSO outfall at University Street and a stormwater outfall at Seneca Street.
- The entire length of this zone is an active MTCA cleanup site, and there is a Sediment Cap Area located off of the ends of Piers 53-55. Removal or capping of contaminants should be a part of all habitat enhancements in this zone. If possible, sediment cap areas should not be disturbed.

Zone #3 Maintenance Considerations:

- Vertical seawall habitat will need to be accessed for maintenance from the water side.
- Service and emergency vehicle access to the piers must be maintained. Piers 56 and 57 have emergency access routes around their perimeters.

Zone #4 – Park / Aquarium Zone

The Park / Aquarium Zone extends from the south edge of Waterfront Park to Pier 63. It includes Piers 58 and 59 (The Seattle Aquarium) and Piers 62 and 63 (former site of Summer Nights at the Pier). All of the land and structures in this zone are publicly owned. Piers 62 and 63 are no longer used to host events due to deterioration of their structures and are slated for demolition. Waterfront Park is also structurally compromised and requires demolition (timing of demolition to be confirmed). The Seattle Aquarium plans to retain the historic (existing) structure on Pier 59 and add new wings on either side of it. Pier 59 is also a part of the City's "Historic Character Area" (see above for criteria related to this designation) and is a Seattle Landmark. The current plan calls for a new pier (replacing the event functions of Piers 62 and 63) to be built just north of the Aquarium. In the near term (within the next 10 years) the Aquarium remodel will likely be limited to improvements within the existing Pier 59 footprint. The planned realignment of Alaskan Way will create additional upland space for public waterfront access at the north area of this zone. This zone is all publicly owned and has been identified in previous waterfront planning efforts as having the potential to become a central focus of Seattle's grand public waterfront space (to be determined during subsequent Central Waterfront Project planning phase).

Zone #4 Opportunities:

- Pull the shore back and create a public touchpoint with beaches and/or shallow water habitat. This is an important public touchpoint on the waterfront due to public ownership and the strategic location at the foot of the Pike Street Hill Climb.
- Incorporate flexible seawall design to accommodate additional enhancement opportunities with future implementation of the Seattle Department of Parks and Recreation master plan. A

phased design approach would allow more habitat enhancement and public touchpoints over time as the existing piers, park, and Aquarium are rebuilt.

- Coordinate shallow water habitat with Aquarium exhibits to create unique interpretive opportunities and a seamless transition between the Aquarium and Puget Sound. Tide pools similar to those at the Monterey Bay Aquarium could potentially be created, if desired or appropriate as a habitat type.
- Enhance existing shallow water habitat.
- Add riparian vegetation systems, including potential use of stormwater for irrigation and infiltration in vegetated areas.
- Consider demolition of Waterfront Park in the near-term for development of a beach. Examine opportunity to advance construction of planned Pier 62/63 replacement with seawall construction to take advantage of the swap of overwater coverage from a permit standpoint.
- Create shallow water habitate zone under Pier 62/63 after demolition.
- Allow recreational opportunities such as hand-carry boat launching and potentially SCUBA diving in beach touch points.
- Incorporate tribal canoe/kayak landing area for tribal ceremonies such as the "Tribal Journeys Festival," possibly at a constructed beach touchpoint.
- Incorporate habitat/touch points in the vicinity of the Aquarium, creating an educational link between seawall system habitat elements and the conservation mission and educational mission of the Aquarium; creating real, functional, habitat benefits; creating active and lively spaces to limit safety concerns; and creating a civic space on the waterfront.

Zone #4 Issues:

- The timing of the road realignment could make pulling back the seawall from the existing shore in this zone difficult. A phased seawall construction approach may be necessary here.
- City acquisition of the triangle property across from the Aquarium is necessary in order to open up greater opportunities for habitat improvements, public open space, and upland park improvements up to the future roadway (roughly in the current Viaduct footprint).
- The road alignment at the triangle property is constrained by the steep grade. The potential road alignment that allows the greatest amount of park land in this area also results in a 10% road grade. The final road alignment will likely be a compromise between maximizing park space and ensuring a safe road grade.
- Collaboration with the Aquarium and other stakeholder groups is necessary to coordinate with the new development, which will likely occur after the seawall replacement is complete. This collaboration is critical for project success.
- Removal of Pier 62/63 could expose the Bell Street Marina to additional wind and waves. (Further analysis by Coast & Harbors and scientists is required.)
- Carefully consider the timing of demolition of overwater structures to coincide with permits for new overwater structures in order to avoid restrictions imposed by the Washington Department of Fish and Wildlife (WDFW) and/or U.S. Fish and Wildlife (USFW); alternatively, determine what type of agreement could be formed whereby credit for the overwater structures could be given many years after their removal.
- Pier 62/63 is in "fair to poor" condition and will sustain "total loss of uniform load carrying capacity" in somewhere between 6 and 20 years, but likely sooner than later (PND-Pier 62/63 Condition Assessment Letter Report, Feb. 16, 2009).

- Beach touchpoints need to be designed to prevent pedestrian access underneath pier structures.
- Public beaches could attract undesirable activities. Careful attention to CPTED principles will be needed in design. Commercial activities such as concessions may be a way to draw more people into the area in the evening.
- There is an existing stormwater outfall at Pine Street. Explore options to treat the stormwater at the existing outfall at Pine Street, and consider its effect on any habitat enhancement or public touchpoints.

Zone #4 Maintenance Consideration:

- Planted areas and public beaches will require regular maintenance and may require periodic replenishment of beach materials.

Zone #5: Bell Harbor Zone

The Bell Harbor Zone includes the marina and breakwater and extends from the northern edge of Pier 62/63 to the northern edge of the Bell Harbor International Conference Center and the cruise ship docking area. The eastern and northern water edge consists primarily of a sloping rock rip-rap cross-section within the intertidal zone which is fairly fish friendly in comparison to vertical wall segments, although the rock revetment harbors predator fish. The marina provides private moorage opportunities for smaller-scaled vessels. The moorage area is visible from the pedestrian walkway and adjacent plazas and provides a distinctive visual character to the waterfront. The existing vertical icon at the marina creates an attractive artistic focal point along the waterfront. The Bell Harbor International Conference Center buildings strongly relate to the land uses and structures on the eastern side of the street, such as the World Trade Center and the pedestrian overpass connection along the Bell Street right-of-way. Pedestrian connections to the shoreline are limited to plazas and viewpoints adjacent to Anthony's restaurant and the Events Center.

Zone #5 Opportunities:

- Expand existing temporary moorage, thereby allowing greater unbroken habitat enhancement in other areas along the waterfront.
- Improve fish passage between the marina area and the front of the conference center fill area.
- Provide a modified vertical seawall (e.g., shelves, tidal benches) to improve aquatic habitat (compared to the existing wall).
- Add new habitat structures on and around the existing piers to potentially improve aquatic habitat.
- Improve intertidal habitat conditions within the moorage basin on rock rip-rap slope and adjacent uplands.
- Reduce the cross-section of Alaskan Way between Pine Street and Blanchard Street to two lanes of traffic with parking on one side and bicycle lanes. This could allow space for pulling the seawall back from the current alignment or for a wider pedestrian zone along the waterfront.

Zone #5 Issues:

- The recently developed Bell Harbor International Conference Center and Cruise Ship Terminal dock and the need for cruise line baggage drop-off access and circulation conditions limit opportunities to open up the footprint of the pier for a daylighted migratory corridor.
- Service and emergency vehicle access to the piers must be maintained.

- There is an existing stormwater outfall at the Bell Harbor Marina. Consider stormwater effects on new habitat enhancements.

Zone #5 Maintenance Consideration:

- Planted areas and public beaches will require regular maintenance and may require periodic replenishment of beach materials

Zone #6: North Pier Zone

The North Pier Zone extends from the northern edge of the Bell Harbor International Conference Center to the southern edge of the Olympic Sculpture Park shoreline. This zone presents a sequence of piers and open water areas. Areas of shallow water exist adjacent to the two northern-most piers. The Edgewater Hotel is on the southern-most pier in this zone. The parking associated with the hotel separates pedestrians from the water's edge. Pier 70 at the northern edge of this zone is an historic pier, although it is not included in the City's "Historic Character Area" designation. Currently Pier 70 houses the Waterfront Seafood Grill and private business offices. The Port of Seattle's offices are located in Pier 69, with the Victoria Clipper located on the south side of this pier.

Zone #6 Opportunities:

- Pull the shoreline landward from the existing shoreline alignment to provide a fish passage corridor, thereby narrowing the existing pedestrian space.
- Create a shoreline link to the existing rip-rap shoreline and habitat bench along the seawall of the Olympic Sculpture Park.
- Expand shallow water habitat in the relatively shallow water areas to the north and south of Pier 69.
- Provide a modified vertical seawall (e.g., shelves, tidal benches) to improve aquatic habitat (compared to the existing wall).
- Add new habitat structures on and around the existing piers to potentially improve aquatic habitat.
- Expand areas of relatively shallow water and bull kelp (*Nereocystis* spp.) in this area, and link to the salmon migration bench and kelp forest at Olympic Sculpture Park.
- Install floating docks at the ends of Pier 70 to allow greater access to the pier end while also providing moorage for boat-in restaurant patrons. These could also serve as breakwaters to reduce wave energy.
- Install overwater walks between piers to potentially enliven gathering spaces farther from the street.

Zone #6 Issues:

- Retaining the existing buildings and piers limits the potential for shallow water habitat.
- Private ownership of Piers 67 and 70 may limit the possibility for additional public access.
- There are some CPTED concerns due to limited general public use of the streetscape in this zone.
- Service and emergency access to the piers must be maintained.
- Propeller wash from the Victoria Clipper may cause sediment disturbance and disturbance of aquatic habitat features developed nearby. Wave attenuation may be required if a beach is created in the vicinity.
- There is an existing 48" CSO outfall at Vine Street.

Zone #6 Maintenance Consideration:

- Vertical seawall habitat will need to be accessed for maintenance from the water side.