

West Bay Yards

30% Esplanade and Shoreline Design Criteria Memorandum - DRAFT

May 26, 2021

Project Description

West Bay Yards is a residential, commercial, recreational, and shoreline restoration project. JAB work consists of the esplanade and shoreline design work.

The esplanade is a multiuse recreation feature with gathering nodes, viewsapes, overlooks, beach access and other recreational elements. The shoreline design consists of restoration of the interface to native conditions with a riparian and salt marsh plantings as well as a gravel beach. Local codes, reports, and anticipated future conditions such as climate change were incorporated into the designs.

Existing Site Conditions

Existing conditions consist of an upland fill area that used to be an industrial site. Most infrastructure is demolished and all that remains is some paving and the riprap armored shoreline. There are several existing vegetation including trees like madrone and birch. Lots of crushed seashell pieces cover large parts of the paving. Below the armored rip rap is beach gravel. Very limited salt marsh plantings.

Proposed Improvements

Shoreline Interface

Project Datum: NAVD88

Datum conversion: 4.03 (Moffat Nichol to confirm)

Image above is from the West Bay Environmental Restoration Assessment Report.

Key water levels:

OHW – 11.5 ft NAVD88 (15.5 ft MLLW)

HTL – 11.9 ft NAVD88 (15.9 ft MLLW)

EHT or HAT -

Or - Highest Observed 13.95

MHHW – 10.53 NAVD88 (14.56 MLLW)

MLLW - -4.03 NAVD88 (0 MLLW)

Summary Elevations of treatments:

- Promenade – 17 FT NAVD88 (21 FT MLLW)
- Riparian – 12.5 FT + NAVD88 (16.5 FT + MLLW)
- Transition – 11.5 – 12.5 FT NAVD88 (15.5 – 16.5 FT MLLW)
- Salt Marsh – 8 – 11.5 FT NAVD88 (12 – 15.5 FT MLLW)
- Gravel Beach – 5 – 8 FT NAVD88 (9 – 12 FT MLLW)

Top of Bank Location:

The proposed top of bank will be located directly above vertically to the existing top of bank.

Provided Shoreline Design Types

Mudflat

The mudflat zone extends from approximately elevation -9’ to 2’ NAVD88 (-5’ to elevation 6’ MLLW) and is a low gradient unvegetated tide flat that wets and dries during the typical tidal cycle and is composed of fine sediment, sand, and gravel. Slope: 9:1 maximum. This is an existing habitat to be preserved.

Gravel Beach

The beach zone can extend from approximately elevation 2’ to 11.5’ NAVD88 (6’ to 15.5’ MLLW) and is essentially unvegetated due to tidal inundation and wave action. This zone overlaps with the salt marsh zone and ranges in slope from maximum 7:1 to 9:1 gradient where space allows. This zone will provide excellent enhanced rearing habitat for salmonids.

Planting Design Types

Salt Marsh Planting Zone

The salt marsh zone consists of plants such as pickleweed, tufted hairgrass and saltgrass. This zone ranges in slope from maximum 8:1 to very gentle gradient where space allows. Where the salt marsh is low (8’ NAVD88 or 12’ MLLW) and on a gentle gradient with fine substrate with freshwater inputs (e.g., Garfield Creek); it may support plants such as Lyngby Sedge and American Threesquare planted with bare root and plug plant materials or potentially colonized naturally with seeds brought in by the tides (depending on species and proximity to existing seed sources).

- Identified at West Bay Park near the site
 - Pickleweed
 - Salt-marsh plantain
 - Puget Sound Gumweed
 - Fleshy Jaumea
- Identified in the West Bay Restoration Analysis
 - Pickleweed
 - Puget Sound Gumweed
 - Seacoast bulrush
 - Saltgrass
 - Spear saltbrush
 - Fleshy Jaumea
 - Baltic rush
 - Salt-marsh plantain
 - Pacific Silverweed
 - Lyngby Sedge
 - American Threesquare

Salt Marsh Plantings			
Common Name	Scientific Name	Size	Spacing
Plugs			
Fleshy Jaumea			18” O.C.
Pickleweed			18” O.C.
Puget Sound Gumweed			18” O.C.
Salt-marsh Plantain			18” O.C.

Total SF of Salt Marsh Planting: 33,350 SF

Provide massing of plantings within area with new plantings covering 60 – 75% of the area

Estimated Plant Counts:

Transitional Planting Zone - 11.5 – 12.5 FT NAVD88 (15.5 – 16.5 FT MLLW)

The transitional planting zone is a transition from the upland plantings in the riparian to the more halophytic plants in the salt marsh zone. This is an important ecotone zone to allow for the gradual transition between habitats. This zone will consist of the most salt tolerant of upland plantings and the least inundated required plantings in the salt marsh zone. Some potential plantings could include:

Pacific Silver weed

Dischamsea

Willow

Ocean spray

A salt spray tolerant meadow seed mix (As used on a similar project we are working on at Kayak Pointe Park)

Riparian Planting Zone

Riparian plantings along the shoreline, with slopes from 3:1 to 50:1. The riparian planting zone ranges from approximately 26' wide to 30', where space allows. A variety of native conifers, deciduous trees, and large and small shrubs will be planted in this zone. Overhanging vegetation along the shoreline drops leaf litter and insects into the nearshore, providing food for juvenile salmon and a wide variety of other species. The thickets of the planting and the inclusion of bird boxes and snags will provide habitat for a variety of birds and mammals. The upland planting zone provides a multitude of ecological benefits to people, wildlife, and the local environment.

Small, containerized plants (1-gallon and 2-gallon size) are used to plant shrubs and small trees to control costs and improve survival rates. Some 4' to 6' tall conifers and deciduous trees are mixed in with the smaller plants to accelerate the visual and habitat impact of the riparian planting.

- Identified at West Bay Park near the site
 - Bigleaf Maple
 - Douglas Fir
 - Nootka Rose
 - Hooker's Willow
 - Snowberry
- Identified in the West Bay Restoration Analysis
 - Tree
 - Sitka Spruce
 - Cascara
 - Western Red Cedar
 - Douglas Fir
 - Bigleaf Maple
 - Oregon Ash
 - Bitter Cherry
 - Vine Maple
 - Shrub
 - Indian Plume
 - Oceanspray
 - Red elderberry
 - Nootka Rose
 - Beaked Hazelnut
 - Hooker's Willow
 - Snowberry
 - Pacific crabapple
 - Tall Oregon grape

- Coastal Strawberry
- Douglas Aster
- Common Yarrow
- Sword Fern

Riparian Plantings			
Common Name	Scientific Name	Size	Spacing
Trees			
Bigleaf Maple			12' O.C.
Cascara			12' O.C.
Douglas Fir			12' O.C.
Hooker's Willow			12' O.C.
Pacific Madrone			12' O.C.
Red Alder			12' O.C.
Vine Maple			12' O.C.
Shrubs			
Nootka Rose			5' O.C.
Oceanspray			5' O.C.
Red Elderberry			5' O.C.
Snowberry			5' O.C.
Tall Oregon Grape			5' O.C.
Groundcover			
Coastal Strawberry			18" O.C.
Common Yarrow			18" O.C.
Sword Fern			18" O.C.

Total SF of Riparian Planting: 33,271 SF

Provide a mix of native seeding and container or bare root planting

Estimated Plant Counts:

- 15% Trees =
- 50% Shrubs =
- 35% Groundcovers =

Vegetation Conservation Area

Per permitting requirements, a vegetation conservation zone of 30ft is required along the shoreline. The proposed riparian zone will cover most if not all the zone, with the upper limits of the transitional zone meeting the last couple feet of required space. This will be shown on the shoreline section and plans.

Along with the VCA, we are required to have trees in a tree tract on site. Two identified tree tracts along the shoreline are along the norther and southern portions of the shoreline. This is to preserve the required viewsheds from the site across the bay and towards the capitol. See the plans for the identified areas.

Proposed Soil Conditions

Planted zones above MHHW will be top dressed with a mix of cobble, gravel and soil. Riparian areas above elevation 13 FT NAVD88 (17 FT MLLW) will have a soil layer of 2 – 3 feet thick topped with gravel or cobble much to protect the soil from erosion by waves and spray. A bench is included at elevation 13 FT NAVD88 (17FT MLLW) to dissipate potential wave and erosion action. See Coastal for more info on the bench and the substrate of the overall proposed shoreline.