West Bay Park Recreation, Trail & Restoration Analysis Report

DRAFT

September 11, 2019

Prepared for:

City of Olympia
Parks, Arts & Recreation Department

Prepared by:

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Special Thanks

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- Scott Steltzner, Research Biologist
- Stephanie Neil, Archaeologist

Land Managers, Regulators and Stakeholders

- Washington Department of Fish and Wildlife (WDFW)
- Port of Olympia
- Washington Department of Ecology (DOE)
- Army Corps of Engineers
- Washington Department of Natural Resources (DNR)
- Washington Recreation and Conservation Office (RCO)
- Olympia Community Planning and Development (CPD)
- West Bay Drive Neighborhood Association
- Northwest Olympia Neighborhood Association
- South Westside Neighborhood Association
- Olympia Downtown Association
- Olympia Coalition for Ecosystem Preservation

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- Arts Program Manager (Stephanie Johnson)
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- Olympia Transportation (Sophie Stimson and Andrew Beagle)
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- Coalition of Neighborhood Associations (CNA)

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- Mott MacDonald – Coastal engineering
- Confluence Environmental – Environmental planning, fisheries biology
- Davido Consulting Group – Civil engineering
- Landau Associates – Geotechnical engineering
- Carolyn Law – Art planning
- SWCA – archaeology
- Robert W. Droll – Landscape architecture

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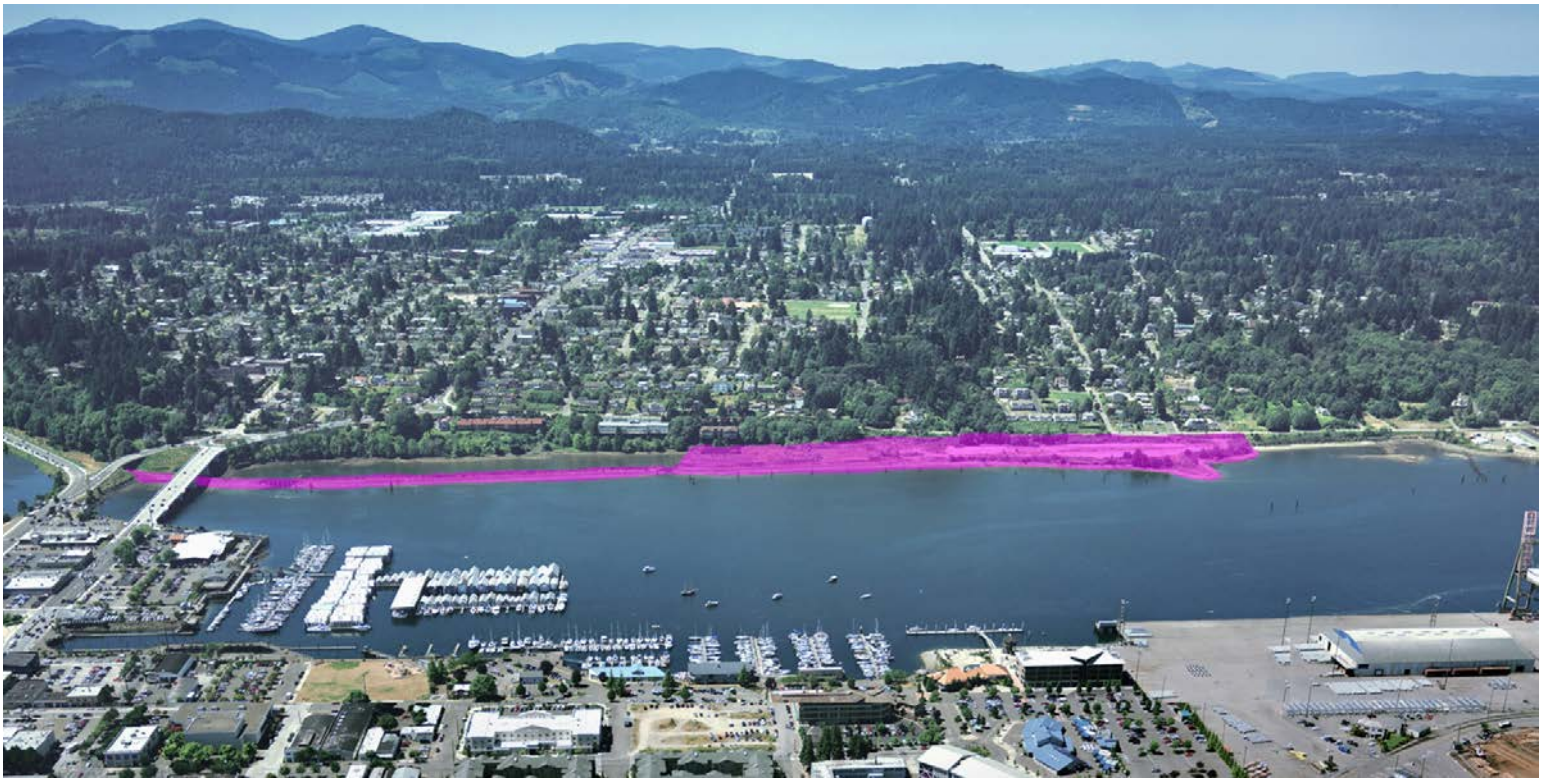


Rogers St NW
WEST OLYMPIA
Percival St NW
Foote St NW
Sherman St NW
Jackson Ave NW
Madison
Giles Ave
Blanne Ave NW
Langridge
Dickinson
Hays Ave
Farwell Ave
Woodard Ave NW
SCHNEIDER CREEK
Crestline
Harbor View Dr NW
West Bay Dr NW
WEST BAY WOODS
GARFIELD CREEK
WEST BAY DRIVE
WEST BAY DRIVE
Olympic Way
HARDEL PLYWOOD
RELIABLE STEEL
WEST BAY MARINA
WEST BAY PARK
4TH AVE BRIDGE
APPROXIMATE PROJECT AREA
5TH AVE DAM
APITOL AKE
WEST BAY
OLYMPIA YACHT CLUB
PORT OF OLYMPIA
ERITAGE ARK
MARTIN MARINA
BUDD INLET
Columbia St NW
DOWNTOWN OLYMPIA
Legion Way SW
5th Ave SW
4th Ave E
State Ave NE
Olympia Ave NE
Adams St SE
Adams St NE
Jefferson St SE
Jefferson St NE
Cherry St SE
Marine Dr NE
Brawne Ave NE
Washington Ave NE
Ward St NE
Port of Olympia Rd
SWANTOWN MARINA
EAST BAY

I. Introduction

West Bay Park is in the City of Olympia on the west shoreline of West Bay within Budd Inlet. The park is situated immediately north of the Capitol Lake dam and the Deschutes River's connection to Budd Inlet.

Planning for West Bay has been a continuation of study, research and design over the past twelve years. Starting with Phase 1 park design and construction and including more recently, the development of the 2016 West Bay Environmental Restoration Assessment (Appendix B), the site's physical and biological characteristics continue to be more fully understood.

Starting in October 2017, the City of Olympia Parks, Arts and Recreation Department began the current design process for future development of a master plan for West Bay habitat restoration, park and trail features . The City remained consistent with the coastal engineering and landscape architectural design consultants between the Environmental Restoration Assessment and subsequent Park project, thereby retaining greater continuity in the background of the site and project. The project design team consists of landscape architects, coastal engineers, fisheries biologists, civil and geotechnical engineers, an artist, archaeologist, and local landscape architect to thoroughly address every unique aspect found at this complex site.

The project has an ambitious goal of combining a robust ecological restoration of the site's various ecosystems with a multi-use trail and increased passive recreation opportunities. The park will expand from its current 4-acre developed area to an additional 13-acres of restored habitat and developed park on Budd Inlet. The habitat restoration opportunities include expansion of aquatic areas, enhanced intertidal habitat slopes and substrates, daylighted creek(s) with expanded pocket estuaries, improved water quality through treatment, and enhanced riparian marine shoreline conditions.

Out of the design process and a rigorous public, stakeholder and tribal involvement process, the City of Olympia narrowed down the design alternatives for continued design and study to two bookend alternatives as documented in this report: Alternative 1 and Alternative 5, with some modifications. Further information, design and analysis are required before a preferred alternative can be selected. One aspect that may affect future decisions is the outcome of the Capitol Lake Restoration Project EIS. Shoreline and marine conditions adjacent to West Bay Park could be affected in the event of the removal of the 5th Avenue Dam. While the two bookend alternatives take these potential future shoreline and marine conditions into account, the exact routing of the trail along West Bay, remains in flux. This report documents the research, public input, and progress made during this most recent planning effort for West Bay Park.

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II. Design Principles

Design Principles create a foundation for the design of this important public space. The Design Principles for the West Bay Restoration and Park Master Plan encompass all of the major interests and goals for the park site and are high level, over-arching concepts. The principles were used to evaluate the attributes of the alternatives considered. Each alternative design was developed to meet the requirements of the principles; however, a design may put a greater or lesser emphasis on some principles over others. These Design Principles have been developed and refined with the input of the City of Olympia, the Squaxin Island Tribe, members of the public and the project design team. The design principles are all important to the project, but the following are also organized in their relative order of importance to the community, with the first being the most important.

1. *Enhance Habitat & Ecological Function*
   - Base design on best available science
   - Plan for all habitat and ecological features to be compatible with the Deschutes River Estuary restoration or existing Capitol Lake conditions
   - Restore high functioning fish and wildlife habitat (aquatic, wetland & riparian) appropriate for the ecological setting
   - Daylight Garfield Creek and the South Stem
   - Improve juvenile fish habitat and connectivity along the shoreline
   - Restore ecological and physical processes
   - Create a site that provides ecosystem services, including carbon sequestration and stormwater treatment
   - Enhance opportunities for restoration of Olympia Oysters where feasible
   - Improve water and sediment quality
   - Create a design that is adaptable to future environmental conditions including Sea Level Rise and avoids new park infrastructure in the projected inundation area for 2100

2. *Balance Human Use and Ecological Value*
   - Balance ecological and recreational opportunities
   - Use site design techniques such as boardwalks and rail fences that limit access to sensitive areas

3. *Create Strong Links to The Surrounding Community & Region*
   - Provide a critical western segment of the "Big W" Waterfront Trail
   - Link to Downtown
   - Link to Capitol Lake / Deschutes Estuary
   - Link to surrounding neighborhood
   - Link to future trail extensions north along West Bay

4. *Provide Recreational Opportunities*
   - Create places for social interaction
   - Foster healthy community connections to nature
   - Create passive recreation opportunities
   - Capitalize on the waterfront setting of the site in recreational development
   - Create a bicycle and pedestrian trail that transects the site
   - Enhance water dependent use for local and regional park patrons
   - Create a safe experience and appropriate integration or separation of uses (e.g. pedestrian and bicyclists)

5. *Create A Beautiful Site Aesthetic with Design Simplicity*
   - Enhance the natural visual character of the site
   - Consider views to the Capitol Dome and Mt. Rainier
   - Consider views from the Capitol, 4th Avenue Bridge and Percival Landing

6. *Respect and Express Cultural, Archaeological, Ecological & Historic Site Significance*
   - Design the site so it fosters connections to and understanding of the natural & cultural environment
   - Create a site that bridges cultures and generates innovative expressions of cross-cultural understanding
   - Integrate or infuse art into a range of experiences
   - Express an authentic Olympia character
   - Facilitate events and gathering spaces
   - Create engaging educational amenities

7. *Create an Implementable Design*
   - Create a design that is supported by the Squaxin Island Tribe, Public and Stakeholders. This is critical to the funding of the project
   - Create a design that can be permitted
   - Create a design that is "self-mitigating," i.e. the ecological benefits outweigh any impacts such that no separate mitigation is required
   - Create a design that can be achieved with available funding
   - Design structures and landscaping that are easy and efficient to maintain
   - Create a site that is adaptable to future environmental conditions including sea level rise and the potential Deschutes River Estuary restoration
   - Create a multifaceted design that competes well for grant funding (park, restoration, and trail grants)

8. *Enhance Public Health & Safety*
   - Create a design that minimizes crime (CPTED)
   - Design for safe water access
   - Mitigate human risk associated with contaminated soil

5TH AVE SW
4TH AVE W
HARRISON AVE NW
GARFIELD AVE NW
JACKSON AVE NW
BRAWNE AVE NW
GARFIELD CREEK SOUTH STEM
GARFIELD CREEK
WEST BAY DRIVE
OLYMPIC WAY
7 OARS PARK
WEST BAY PARK
SEE OMC 18.20.830 RE: FILL CONSTRAINTS
DELINEATED WETLAND, TYP.
RAIL BERM
SUSPECTED CONTAMINATED SOILS, TYP.
STORM DRAIN LINE
PROJECT BOUNDARY
CREEK OUTFALL, EROSION, CULTURAL RESOURCES
SUSPECTED CAT. 1 OR CAT. 2 WETLAND (150-250' BUFFER)
EXISTING PARK AREA OUTSIDE BUFFER / SETBACK
SHORELINE SETBACK (150')
2' SEA LEVEL RISE AREA
WIND FROM SOUTH (PRIMARY)
WIND FROM NORTH (SECONDARY)
BOAT WAKES
6TH AVE W

Scale: 1" = 100'
0' 100' 200'

Opportunities & Constraints Map

West Bay Restoration & Park Master Plan

January 30, 2018

j.a. brennan associates PLLC

1) Enhance Habitat & Ecological Function

- Base design on best available science
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- Design the site so it fosters connections to and understanding of the natural & cultural environment
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- Facilitate events and gathering space(s)
- Create engaging educational amenities

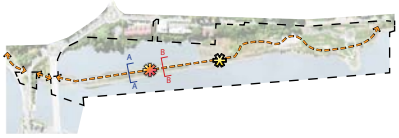
4) Create Strong Links to the Surrounding Community

- Provide a critical western segment of the "Big W" Waterfront Trail
- Link to Downtown
- Link to Capitol Lake / Deschutes Estuary
- Link to surrounding neighborhood(s)
- Link to future trail extensions north along West Bay

Which TRAIL ALIGNMENT do you want for West Bay?

Public Preference

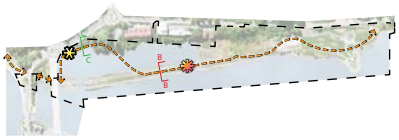
Option A:
Railroad Berm (Elevated or On-Grade)



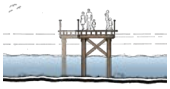
Section A-A
On-Grade Trail, Berm Alignment

Section B-B:
Elevated Trail, Berm Alignment

Option B:
Shoreline & Railroad Berm (Elevated)

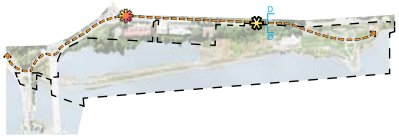


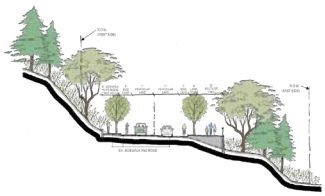
Section C-C:
Elevated Trail, Shoreline Alignment



Section B-B:
Elevated Trail, Berm Alignment

Option C:
West Bay Drive (On Grade)





Section D-D:
On-Grade Trail, West Bay Drive Alignment

West Bay Restoration & Park Master Plan

Olympia Parks, Arts & Recreation

January 17, 2018

5) Enhance Public Health & Safety

- Create a design that minimizes crime (CPTED)
- Design for safe water access
- Address human risk associated with contaminated soil

7) Create a Beautiful Site Aesthetic with Design

- Enhance the natural visual character of the site
- Consider views to the Capitol Dome and Mt. Rainier
- Consider views from the Capitol, 4th Avenue Bridge and Percival Landing

6) Provide Recreational Opportunities

- Create places for social interaction
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8) Balance Human Use & Ecological Value

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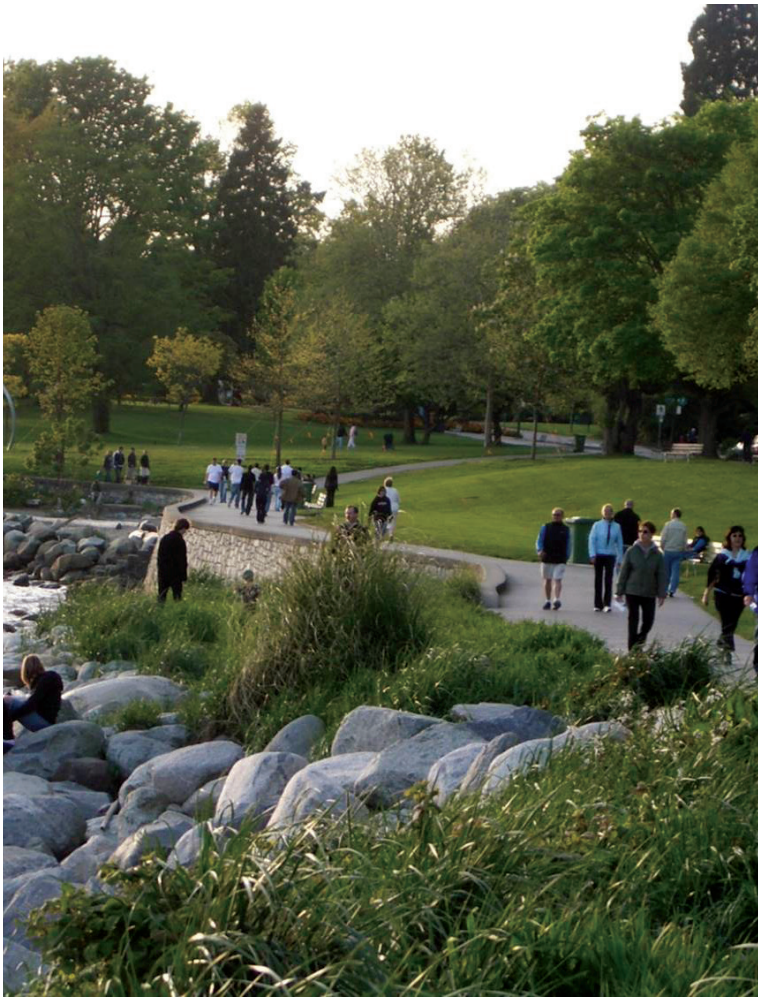


III. Public Involvement Process

The City of Olympia's project process has been highly interdisciplinary and collaborative, soliciting regular input from the Squaxin Island Tribe (Natural Resources and Cultural Resources Departments), city staff, and the Olympia community. To date, over 10 internal meetings and two public meetings have been held to identify guiding design principles, identify priorities, and develop and review potential options for the West Bay Restoration & Park Master Plan. In addition, two online public surveys were conducted to solicit broader public feedback. Throughout this process, it has become abundantly clear that there exists substantial shared interest between all parties; chiefly that enhancing habitat and ecological function are of utmost importance, and that park users are willing to reduce their degree of access to active recreation opportunities so that habitat can be protected and restored.

The design team actively sought feedback and collaboration from the Squaxin Island Tribe, as well as agencies such as U.S. Army Corps of Engineers, Washington Department of Fish and Wildlife, Washington Department of Ecology, and the Washington Department of Natural Resources.

The planning process included the general public in two workshop meetings which provided background information about the project site conditions, sought feedback on recreational amenities (including preferences for interaction with the water), and updated local users on the habitat restoration design options. The workshops were structured to be informative as well as participatory so that the design team could collect feedback and generate new ideas in collaboration with the community. The public process prioritized feedback while explaining the constraints and challenges of developing the property. Conversations focused on how to create a balance between conservation, habitat restoration and recreation.

Interactive workshops included documentation on flip charts and posters for participants to list concerns, activities and ideas. A regional map showed other recreational, open space and connectivity opportunities in the immediate vicinity of West Bay Park (Downtown Olympia, West Olympia, Capitol Lake, etc.). Meeting participants also participated in a dot-sticker preferencing activity where they placed green dots next to features they wanted to see at West Bay and red dots next to activities they were not interested in incorporating into the Restoration & Park Master Plan. Based on feedback provided from the initial programming meetings, five park and restoration alternative concepts were developed and presented at the second public meeting.

To gather additional public feedback, two online surveys were conducted. The first survey asked users to provide feedback on potential program activities and services that could be developed in West Bay Park. The survey was posted online from November 15 to November 30, 2017. When the survey closed after two weeks, there were 787 responses. Links to the survey were promoted through the City of Olympia's website, Facebook page, neighborhood newsletters and the public meetings and their associated promotional materials. The second survey requested public feedback on the recreational alternatives and design principles presented at the second public meeting. The survey was posted online from January 18 to February 4, 2018 and received responses from 419 individuals.

See Appendix G for public meeting notes and public survey results.

IV. Program & Design Criteria

Future Park Facilities, Restoration Opportunities and Program

Programming Process

The process of determining programming for a site as large as West Bay started from the earliest planning discussions. The consulting team presented a list of potential uses and facilities (programming elements) that might be a good fit for the West Bay Restoration & Park Master Plan using sample images to aid in portraying the ideas. A series of meetings were held with project stakeholders, the general public, Squaxin Island Tribe and the City and consultant project team to select the preferred program elements for the park, habitat restoration and public art.

The habitat restoration opportunities for West Bay Park and the Port lagoon area were developed as a part of the 2016 West Bay Environmental Restoration Assessment (see Appendix J). These were presented to the public to inform them of the ecological needs based on review of historic and existing conditions of the site, opportunities for restoration, and a science-based process that was the basis for the resulting restoration conceptual alternatives. Although the habitat restoration opportunities and concepts would not be designed based on public input but rather using best available science, the City presented these elements to the public to gauge public support for restoration at the park.

The public, both at the interactive meeting and in an online survey (see Appendix G) identified the following program items as preferred for the West Bay Restoration and Park Plan.

- Paved Biking & Walking Trails
- Unpaved Hiking & Walking Trails
- Boardwalks (Over Open Water)
- Boardwalks (Over Streams & Wetlands)
- Bird / Nature Viewing Structures
- Restrooms
- Mixed Upland Forest
- Emergent Wetland
- Gravelly Beach
- Viewing Mounds
- Ethnobotanical Gardens
- Beaches
- Environmental Education Spaces
- Non-motorized Watercraft Rental
- Waterfront Seating
- Signage
- Hand Carry Boat Launches
- Shade / Rain Protection Structures
- Salt Marsh
- Emergent Shrub/Scrub or Forested Wetland
- Mudflat
- Scientific Research Spaces
- Focal Point Art
- Embedded Art
- Functional Art

Park Restoration and Recreation Design Criteria

Habitat Restoration Design

The following shoreline habitat design elements are taken from the West Bay Environmental Restoration Assessment, February 26, 2016. Refer to this analysis document for the origin of the conceptual restoration alternatives included in the West Bay Park project and for the evaluation of the restoration concepts using science-based semi-quantitative and qualitative frameworks. The Park project team built upon the foundation of the previous work, while delving into greater detail in site analysis and design for the park and lagoon.

Description of Shoreline Habitat Zones

Riparian

Riparian plantings extend from elevation 16.5′ to elevation 19′ (MLLW) and above along the shoreline, with slopes from 3:1 to 50:1. The riparian planting zone ranges from approximately 25′ wide to 50′ or more, 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. 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.

Natural Meadow

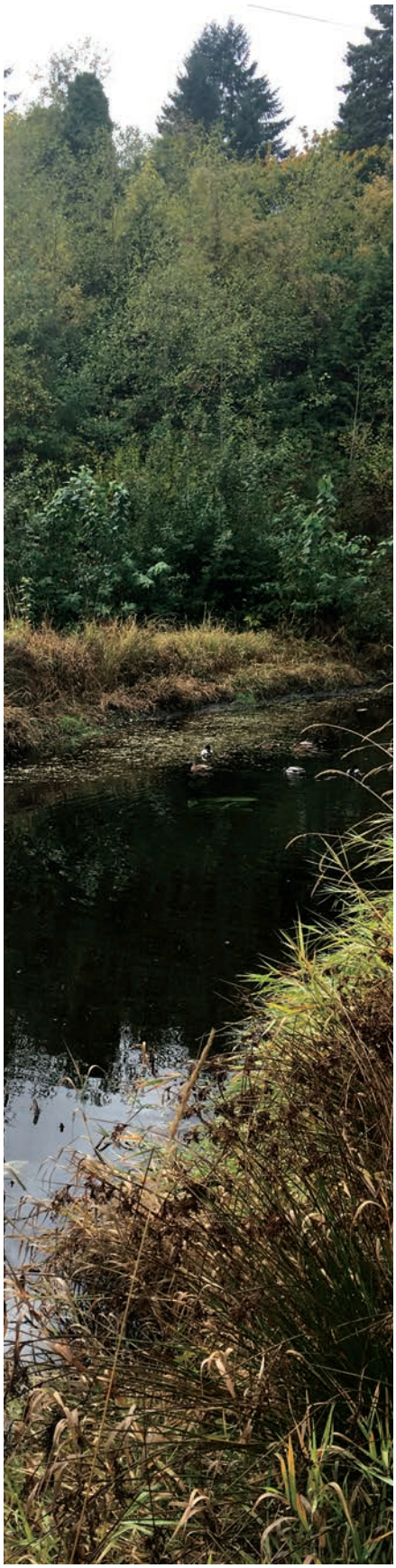
Meadow areas are seeded with a variety of native grasses and wildflowers that can provide habitat for insects and birds. Meadows occur in natural and informal areas of the shoreline environment between riparian plantings and upland of marsh habitats. Maintenance of meadows typically consists of annual late summer mowing to prevent invasion by woody plants such as Himalayan blackberries and Scots broom.

Lawn

Lawn areas are located in upland areas such as West Bay Park where frequent public use is anticipated and a flexible open space is desired. Lawns are seeded with ornamental perennial grasses that can tolerate public use.

Salt Marsh

The salt marsh zone extends from elevation 12′ to elevation 15.5′ (MLLW) and 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, such as at the edge of the lagoon in West Bay Park. Where the salt marsh is low (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 (Carex lyngbyei) and American Threesquare (Schoenoplectus pungens). Salt marsh areas can be



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).

Freshwater Wetland

Freshwater wetland habitat currently exists in West Bay Park above the elevation of the existing salt marsh. The existing wetland consists of both native emergent plants and scrub/shrub wetland. There is potential to expand on the existing freshwater wetland area to create native emergent and scrub/shrub areas that can transition to brackish and salt marsh over time as the sea level rises. Fresh wetland plantings may include emergent perennial species in herbaceous areas and willows, Pacific crabapple, native roses, black twinberry, and Oregon ash in scrub/shrub and forested wetlands.

Intertidal Beach

The beach zone extends from approximately elevation 6′ to elevation 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.

Intertidal Mudflat

The mudflat zone extends from approximately elevation -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.

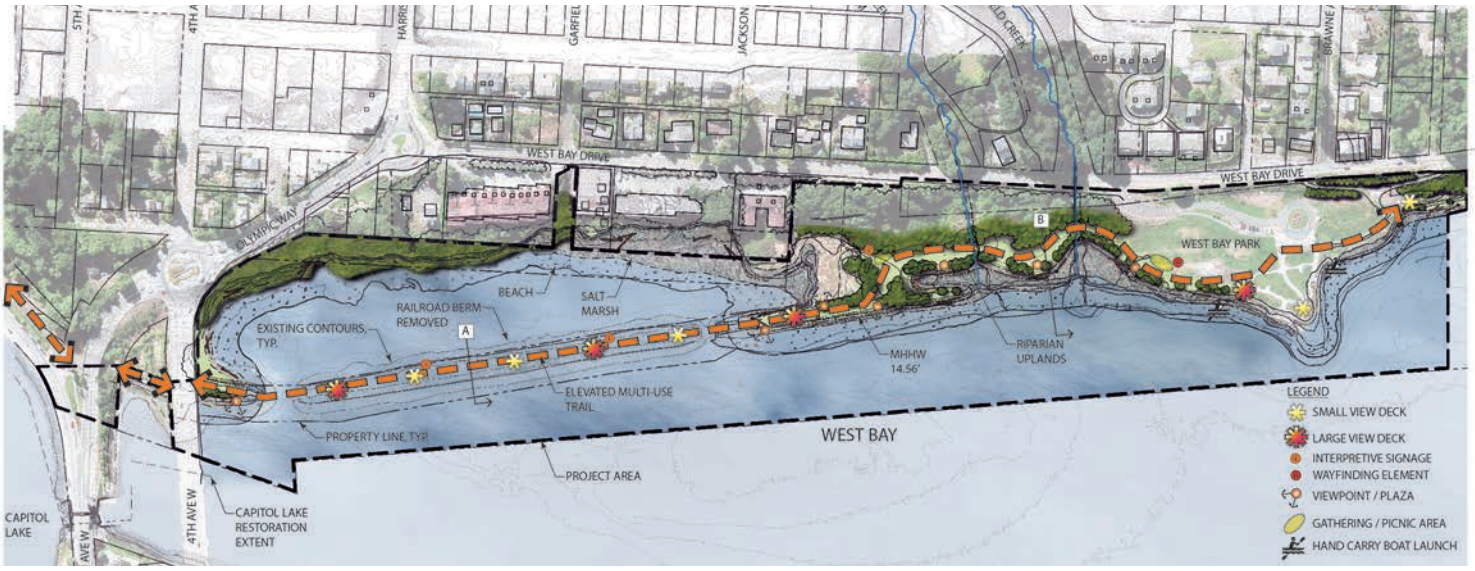
V. Conceptual Alternatives

The design team developed five conceptual alternatives for the project area guided by prior design, science and engineering during the West Bay Environmental Restoration Assessment and updated and refined project-guiding design principles developed with city staff, tribal and community input. The alternatives share many traits including: daylighting Garfield Creek, water quality treatments, riparian vegetation enhancement, and intertidal habitat improvements including removal of fill, but differ from each other in a few key ways, which are outlined below:

1. *Removal of existing rail berm fill/intertidal restoration:*
   - full removal of the rail berm
   - removal of portions of the berm to form habitat islands
   - removal of one third to one half of the berm to form one habitat island
2. *The routing of a multi-use trail:*
   - along the existing rail alignment next to the Port lagoon
   - along West Bay Drive
   - across and along the shoreline of the Port lagoon
3. *The routing of the unnamed drainage south of Garfield Creek*
   - daylight and preserve current flow alignment (into West Bay)
   - daylight and route flow alignment into Port Lagoon
4. *The degree of programming & recreation to be added to the currently developed north portion of the park*
   - a modest amount
   - a moderate amount
   - a substantial amount

Alternative 1

Alternative 1 provides significant habitat restoration opportunity through the removal of the entire railroad berm and the opening of the Port Lagoon to Lower Budd Inlet. This would restore complete tidal mixing between the lagoon and West Bay, resulting in restored tidal circulation and sediment processes. The existing beach and marsh along the south and west shore of the lagoon would be enhanced and widened through natural beach substrate placement, reuse of clean excavated berm materials and plantings. Alternative 1 also proposes partially daylighting both stems of Garfield Creek including removal of fill to create enhanced beaches, salt marsh and riparian habitats. These enhancements will greatly improve nearshore conditions and benefit juvenile salmonids. Alternative 1 routes the multi-use trail across the lagoon on an elevated boardwalk/bridge structure in the existing rail corridor and across the southern park at the base of the bluff.



Alternative 1

Alternative 2

Alternative 2

Alternative 2 fragments the existing railroad berm into two islands, allowing for greater tidal mixing between the Port Lagoon and West Bay and increasing the opportunities for biodiversity through the creation of the island landforms that create marsh fringe, beach and riparian habitat. Closer to the existing West Bay Park, Alternative 2 proposes daylighting the (un-named) South Stem of Garfield Creek to the south, discharging into an enhanced fresh marsh wetland while simultaneously cutting back the adjacent shoreline to recreate the historic pocket estuary where Garfield Creek currently drains. The multi-use trail alignment follows the historic railroad berm but is constructed on an overwater boardwalk with on grade trail segments across the islands and along the riparian edge between the beach and new creek estuary, then into the existing park area.

Alternative 3

Alternative 3 removes the southern portion of the railroad berm, expands the opening at the north end of the lagoon for improved tidal flushing and uses some berm material to create an irregular, convoluted island form. The multi-use trail alignment in this alternative follows a serpentine route, passes through the riparian edge of the southwestern portion of the Port Lagoon, then crosses over open water on a boardwalk/bridge, landing on the island and continues on grade along the West Bay shoreline into the existing park. This alignment allows for a diversity of user experiences, but provides the most indirect and lengthy route for commuting users.

Alternative 3 retains the daylighting and pocket estuary creation strategies exhibited in Alternative 2.

Alternative 4

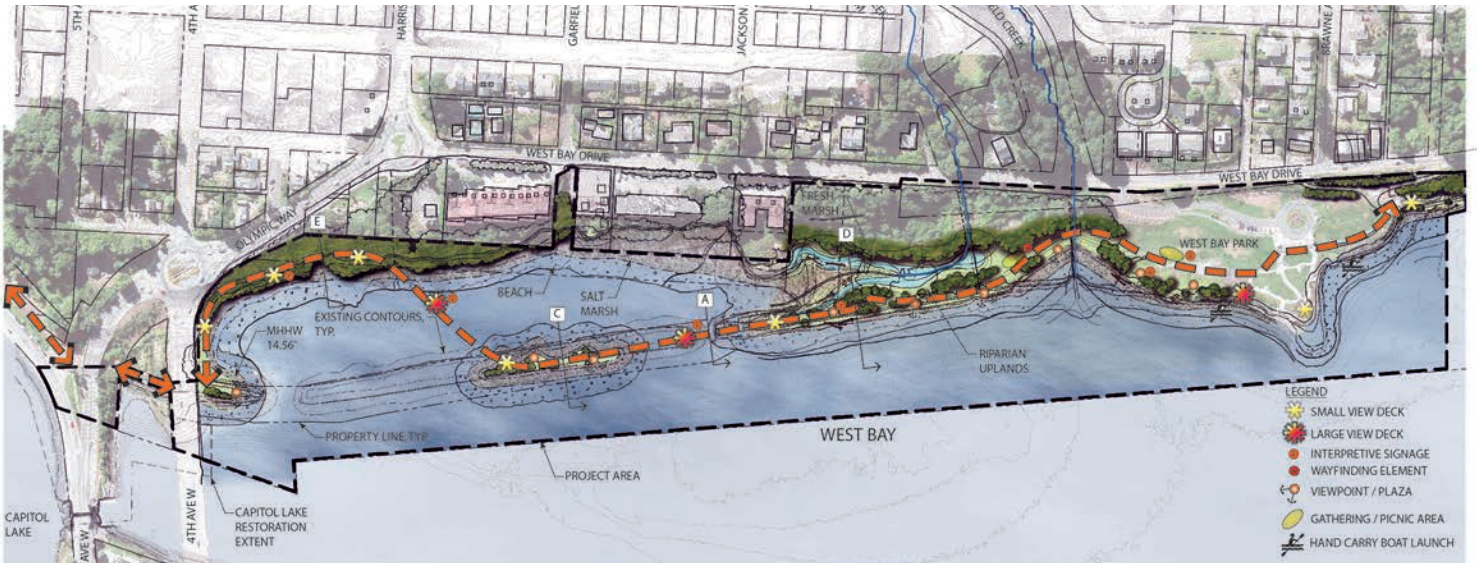
Alternative 4 retains much of the rail berm, while adding clean fill to the berm to cap contaminants and create a mix of salt marsh, beach and upland riparian habitat, protected from human access. The openings at the north and south of the berm island are widened for improved lagoon tidal flushing.

In the southern portion of the park, this option proposes partially daylighting both stems of Garfield Creek, restoring estuarine habitat and removing fill to create swaths of beach, salt marsh and riparian habitats.

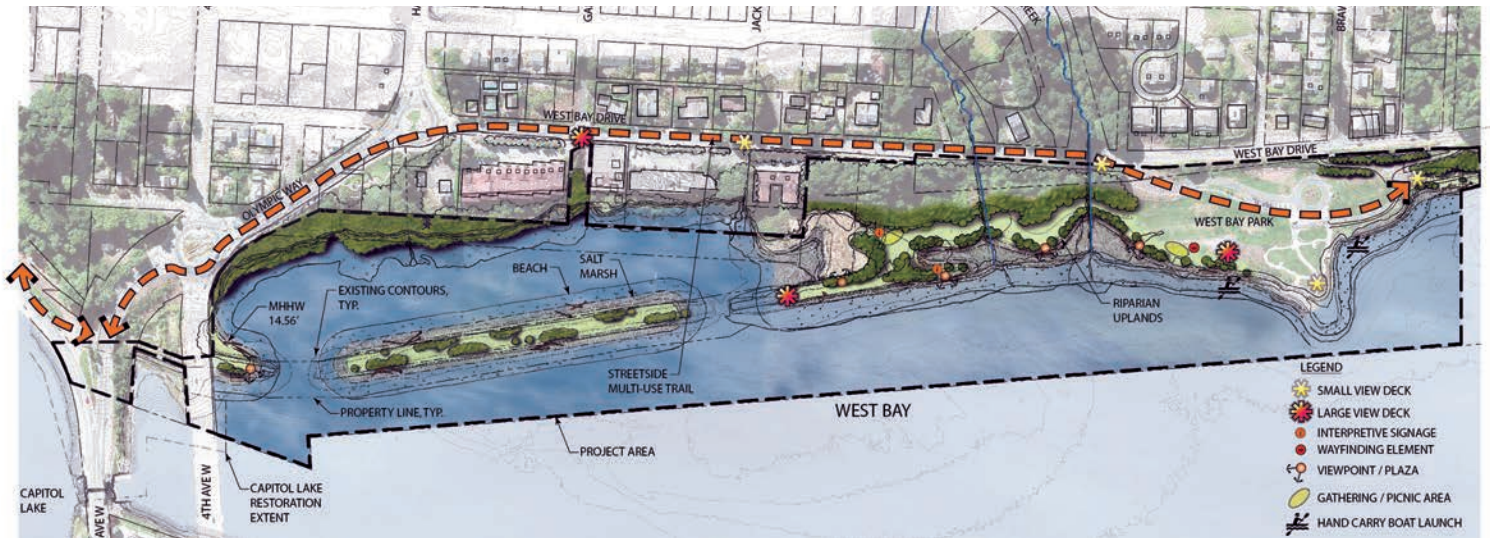
The proposed multi-use trail runs along a widened West Bay Drive, making a connection between Capitol Lake and the existing park.

Alternative 5

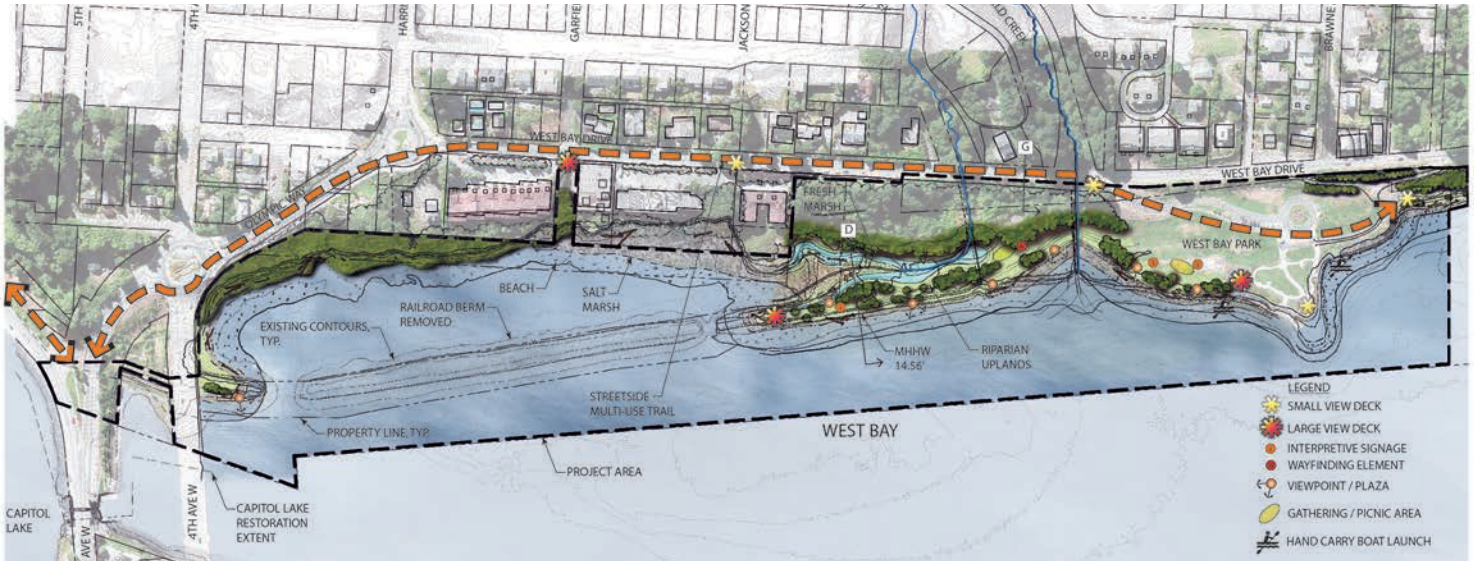
Alternative 5 provides significant habitat restoration through the full removal of the rail berm and the opening of the Port Lagoon to Lower Budd Inlet. As in Alternative 2, the (un-named) South Stem of Garfield Creek is day-lighted and flows to the south, in an enhanced fresh and intertidal marsh wetland, while also



Alternative 3



Alternative 4



Alternative 5

cutting back the shoreline at Garfield Creek to restore its historic pocket estuary. In this alternative a steep, pile-supported multi-use trail runs along the retaining wall that forms the 4th Avenue Bridge Approach and then is routed along a widened West Bay Drive, thereby avoiding possible environmental impacts from trail use across the lagoon, but also reducing the amount of recreational and commuter access to the shoreline.

North Park Enhancements

North Park Enhancement Alternative 1

Alternative 1 has a relatively high amount of recreational opportunities. This concept adds a picnic shelter with restroom to the existing meadow area, in addition to a nearby outdoor classroom nature play area. A large open play meadow is maintained with views to the water and close connection to the multi-use trail/interior park trail. The "West Bay Knoll" viewing mound extends off of the park's primary entrance, creating an overlook viewpoint of the habitat enhancement at the site, in addition to views of the Capitol and Mt Rainier beyond. A series of waterfront seating nodes with potential art and interpretive elements are located along the shore path. Thirty-five additional parking stalls are added.

North Park Enhancement Alternative 2

Alternative 2 proposes adding primarily passive recreational opportunities at the existing north park area. This concept adds a restroom adjacent to the Rotary Park area, along with a plaza and area for a mobile food vendor. A picnic shelter with adjoining natural meadow and outdoor classroom area are located at the south end of the open play meadow, close to the proposed habitat restoration at the mouth of Garfield Creek. Two overlooks with grand staircases at the north and south entrances to the North Park create better connections into the site from West Bay Drive and the neighborhood. A series of waterfront seating nodes with potential art and interpretive elements are located along the shore path. Twelve parking spaces are added.

North Park Enhancement Alternative 3

Alternative 3 proposes a moderate amount of recreation opportunities added to the existing north park area. This concept adds a picnic shelter with integrated restroom to the existing meadow area (with the option of separating out the restroom and locating it on the west side of the parking lot). Across from the picnic shelter, on the south side of the open play meadow, a sand volleyball court is proposed. This would bring an additional, more active recreation opportunity to the park while remaining thematic and programmatically appropriate for the site. An overlook viewpoint and grand staircase sited above the existing turnaround celebrate views of the site, Capitol and Mt Rainier while also creating a stronger pedestrian connection to the adjacent neighborhood. A series of waterfront seating nodes with potential art and interpretive elements are located along the shore path. Twenty-six parking spaces are added.

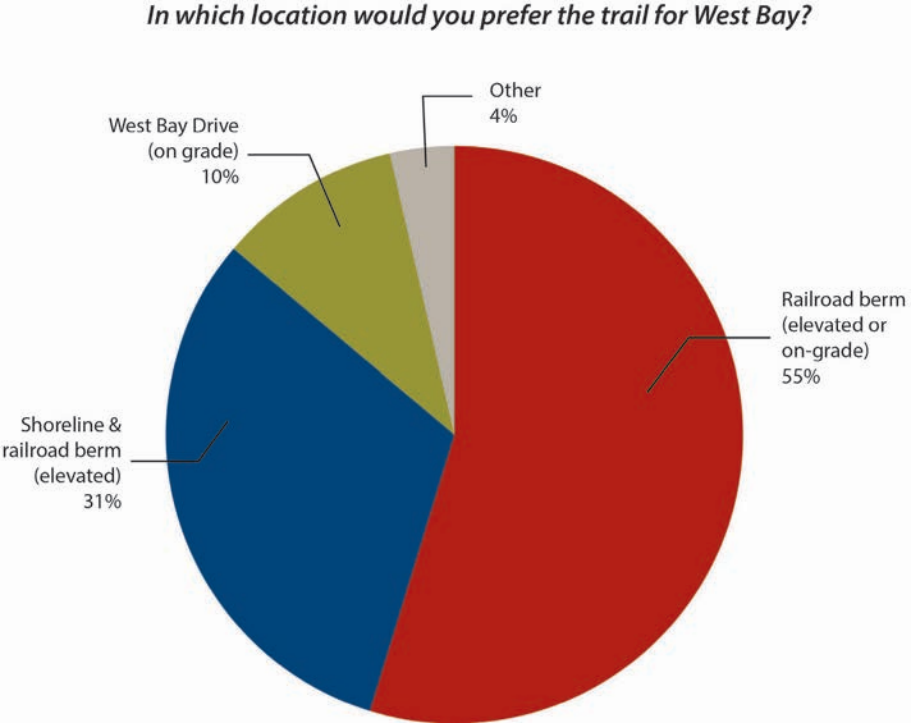
Northern Park Enhancement Alt 1

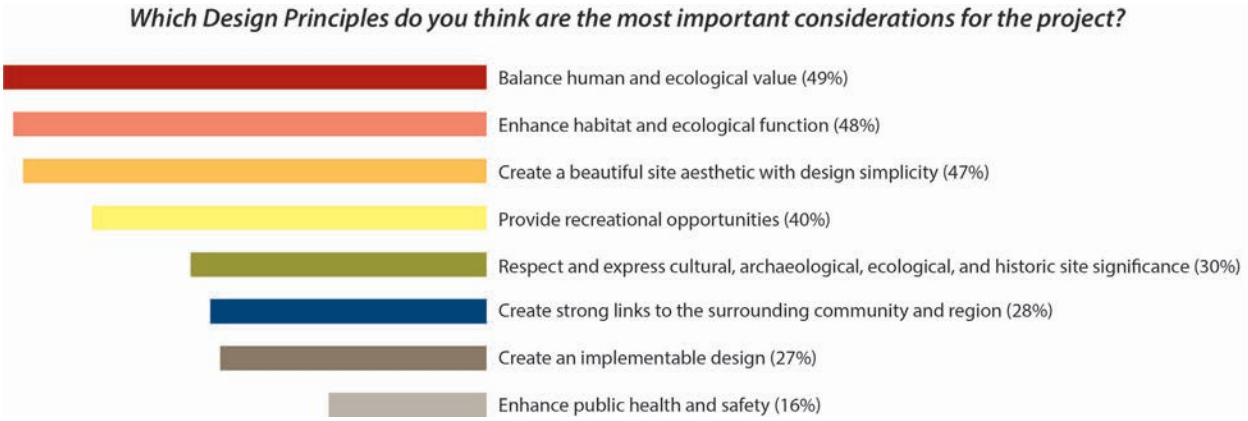
Northern Park Enhancement Alt 2

Northern Park Enhancement Alt 3

Public Input Findings

Through public meetings and online surveys, an overwhelming preference for the following emerged: routing a multi-use trail along the existing rail alignment next to the Port lagoon, restoring a pocket estuary at the mouth of Garfield Creek, daylighting the un-named southern drainage and routing it into the Port Lagoon, and adding a moderate amount of programming and recreation to the currently developed north portion of the park (see Appendix G). There was also overwhelming public support for extensive habitat restoration at the park to benefit fish and wildlife, while offering opportunities for public connection and educationIdentification of the preferred option for rail berm removal/intertidal restoration: removal of portions of the berm to form habitat islands, emerged out of review of the coastal engineering and fish and wildlife biology goals and requirements.





Alternative Screening

In an Alternative Screening Meeting held on March 1, 2018, the City Parks Director, city staff, tribal fisheries biologists and the design team gathered to discuss and screen the alternatives so that a recommendation for a preferred alternative could be made by the J.A. Brennan project team. The alternatives were screened and evaluated in the context of the design principles both in a written format prior to the meeting and collaboratively during the workshop. The design principles are elaborated on earlier within this report and in Appendix H which documents the Alternatives Screening process.

Design Principles

1. Enhance habitat and ecological function
2. Balance human use ecological value
3. Create strong links to the surrounding community and region
4. Provide recreational opportunities
5. Create a beautiful site aesthetic with design simplicity
6. Respect and express cultural, archaeological, ecological and historic site significance
7. Create an implementable design
8. Enhance public health and safety

An important segment of the screening workshop focused on concerns regarding the potential for habitat effects of the various alternatives. A primary concern is the potential for effects that an overwater structure might have on fish movements and shorebird use of the lagoon area. Another issue discussed was the preservation, restoration, and/or mitigation of salt marsh habitat within the project area. Salt marsh fringe currently exists along the berm and shoreline. If it is removed, that type of ecosystem will need to be mitigated for as part of the project. Ecological design elements of the alternatives that the screening team were supportive of included: daylighting Garfield Creek, daylighting and routing the unnamed creek into the Port Lagoon, restoring mudflat, salt and brackish marsh, restoring coastal processes, incorporating snags throughout proposed and restored habitat areas, and stormwater treatment along West Bay Drive.

See Appendix H for Alternatives Screening Memorandum and Alternatives Screening Matrix.

VI. Two Bookend Alternatives

A | Why Focus on Alternatives 1 & 5?

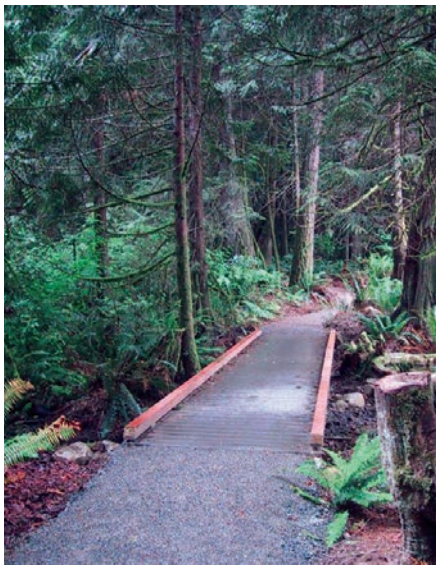
Following a rigorous public, stakeholder and tribal involvement process, as well as significant scientific, technical and design effort; the leadership of the Squaxin Island Tribe and City of Olympia favored Alternative 1 and Alternative 5 for West Bay Park. Alternative 1 rose to the top because it brings the visitor into closer proximity to the water and has a gently sloped multi-use trail. Alternative 1 also does not require land acquisition in order to integrate the multi-use trail at the required trail width. Alternative 5 rose to the top of the alternatives because it provides shoreline improvements along the southern part of the site that are un-interrupted by human use. Both bookend alternatives share the preferred habitat restoration features in their more refined versions, as detailed in the graphics and the following section of this report. In addition to sharing habitat features, the bookend alternatives also share the majority of their park and facility improvements, as guided by public feedback and site suitability. The primary difference between Alternatives 1 and 5 is the proposed location and alignment of the multi-use trail. For more detailed information on the pros and cons of the various alternatives considered, see Appendix H for Alternatives Screening Memorandum and Alternatives Screening Matrix.

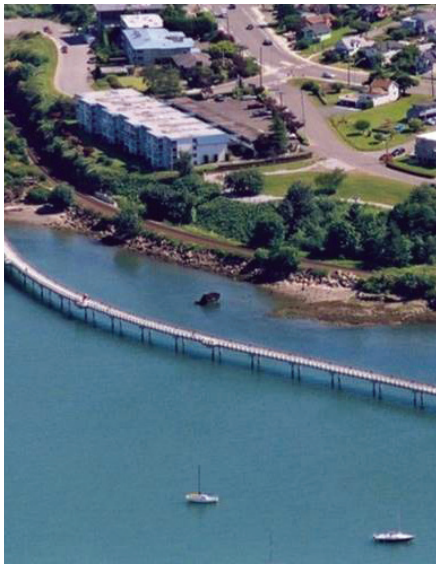
B | Park Facilities and Amenities

Multi-Use Trail

The multi-use trail is a 12' wide asphalt trail with 1' crushed rock shoulders. It is well-defined, ADA accessible, accommodates families, and encourages slow wandering, water-viewing and bicycle use. This trail type is consistent with the Thurston County Plan and designed for compatibility with Accessibility Guidelines for Outdoor Developed Areas (section T303) in accordance with the following:

- Uphill and downhill segments separated by level transition segments with slope less than or equal to 5%
- Running slope options: 1:20 for any length, 1:12 max for 200 feet, 1:10 max for 30 feet, 1:8 max for 10 feet
- Cross slope: 2%
- Trails and boardwalks will typically be located at elevation 20' MLLW or above. Shoreline restoration includes grading within the riparian zone to raise the bank to elevation 19'.





Secondary Park Trail

Secondary park trails are asphalt paths, typically 6' to 8' wide, used primarily for pedestrian access, but may also be used by park maintenance vehicles (pick-up trucks/similar).

Boardwalk

Two types of boardwalk structure are proposed, with widths and slopes consistent with the adjoining multi-use trail or smaller pedestrian-only trail and meet ADA requirements.

- Boardwalk Over Wetlands: This type of boardwalk is constructed with pin-pile footings, steel framing, light penetrative grating and a wooden railing, where necessary. Typical width: 6 feet. The pin-pile footings minimize disturbance of marsh habitat and allow installation in poor quality soils.
- Overwater Multi-Use Trail (Applies to Alternative 1 Only): This structure is an elevated walkway constructed with steel or concrete piles, robust steel framing, durable decking (including light penetrative types of grating) and railing. Typical width: 12 feet.
- Elevated Multi-Use Trail (Applies to Alternative 5 only): This structure is an elevated walkway constructed with steel or concrete piles, robust steel framing, durable decking and railing. Typical width: 12 feet.

View Deck at Overwater Trail

Associated with an over-water boardwalk, a large view deck is a widened portion of the boardwalk that provides space for groups to gather to enjoy the view or for a teacher to incorporate as part of an outdoor classroom program about natural systems or site and regional history. A large view deck could be approximately 20 feet long and 6 to 8 feet wide with two benches for seating.

Small View Deck

Associated typically with a wetland boardwalk, a small view deck is a widened portion of a low-boardwalk that provides a place for a few people to stop and enjoy the view and sit on a bench. A small view deck is approximately 10 feet long and 6 feet wide with the option of 1 bench for seating.

Viewpoint/Plaza

Viewpoint plazas extend off of the asphalt multi-use trail in locations with interesting or beautiful views where visitors might like to stop, rest and enjoy the view and possibly see wildlife making use of the restored habitat areas. A view point plaza is approximately 400 to 500 square feet with a wooden railing and a bench. These locations may also be a place for beach access.

Interpretive Signage

Interpretive signs at a series of locations along the shoreline can be used to tell a story about the natural systems, wildlife, and history of West Bay. Interpretive

signs are constructed of high pressure laminated panels (24" x 36" size or smaller) printed with colorful images and text and mounted on a powder-coated steel frame with concrete embedded steel post(s).

Gathering Areas

Outdoor gathering areas are soft or hardscape spaces that are flexible for a variety of events. These areas can be used as outdoor classrooms or for community events. A gathering area would include a landform and landscape plantings that define the gathering space and seating on natural elements (wood or stone) or picnic tables and benches. A small group of three or four picnic tables can be set into a grassy open space.

Kayak Launch and Landing Sites

Kayak/hand-carry boat launch opportunities are found where there is parking access in close proximity to a gently sloped beach. Currently, there are a couple locations in West Bay Park where kayak launching from existing beaches is possible. An additional location in the Park is feasible at a small pocket beach adjacent to the proposed central picnic shelter. Kayak/hand-carry boat landings for day-use consist of any gently-sloped beach that is accessible by kayak during a wide array of tidal elevations. Kayakers that launch beyond the Bay or within the Bay can find a rest spot on beaches that provide protection from wind and waves. No infrastructure is needed for this type of landing, although beach logs are often welcomed as a place to sit.

Overlooks

An overlook is proposed at the northern park area, extending off of the proposed sidewalk along West Bay Drive. This provides views across the site, Budd Inlet and spectacular views of Mount Rainier. The overlook leads to stairs creating a more direct pedestrian entry into the heart of the northern park area from the adjacent neighborhood and street.

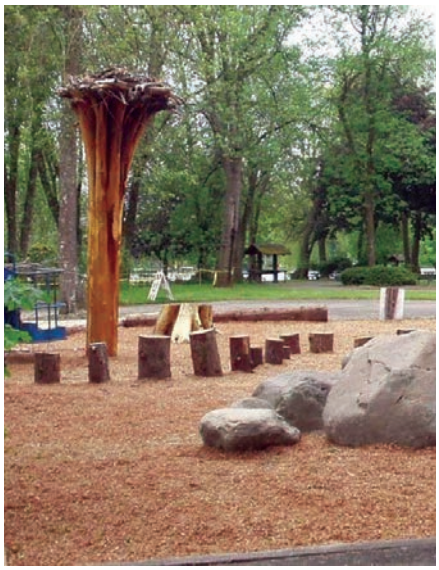
Another overlook is proposed at the northern park area on a prominent berm landform, south of the large meadow open space. This landform defines the outdoor gathering spaces of the northern park area and provides views across the habitat restoration areas in the southern park area, in addition to views towards downtown Olympia and Mount Rainier beyond.

Food Truck Area

The central paved gathering area of the existing West Bay Park includes a wide plaza with flexibility for events. This space could be used for a mobile food truck area. A power outlet would be provided.

Restroom & Picnic Shelters

A restroom building will update the park's current portable toilet facilities with unisex stalls that can accommodate ADA accessibility requirements. Architectural themes will be consistent and cohesive across the park. The architectural character can be more rustic or more modern, depending on the desire of the City. To fit within the context of City's park architecture portfolio, the buildings should be grounded in a traditional Pacific Northwest style that complements and elevates outdoor recreation within the Olympia recreation area. The new picnic shelters and restroom would further encourage rentals and allow visitors to stay longer at West Bay Park. The design proposal includes two picnic shelters, one restroom, group picnicking areas, and park furniture such as picnic tables, trash receptacles, and benches.



Nature Playground

The nature playground would be located near gathering areas, the restroom, parking, picnic shelters, and the shoreline. Nature playground design uses elements and textures from the earth such as tree logs, tree stumps, boulders, plants. Encouraging visitors to climb a rock, play in leaves, and plant plants. Natural playgrounds enable children to move freely around the environment allowing them to explore, run, jump, climb, crawl, feel, and smell.

Multi-Use Trail Alignment

The primary difference between Alternative 1 and Alternative 5 is the routing of the multi-use trail.

Alternative 1 routes the trail alongside the Port lagoon within the former rail trestle right of way, while adding a gently flowing curve to the over-water walk. This alignment will slow bicycles and pedestrians down and enhance the experience of crossing the lagoon. Opportunities abound for touch-points and view overlooks where the travelers can experience a closeness to the water and intertidal areas of West Bay.

Alternative 5 routes the trail up a steep embankment on an elevated structure north of the 4th Avenue Bridge and along West Bay Drive and streamlines the bicycle and walking paths near the paved roadway, allowing separation between human use and the natural restoration areas along the shores of West Bay.

Graphic Plans and Cross-sections

The following graphics depict the design recommendations for the two bookend alternatives. Alternative 1 and Alternative 5 include the recreation and restoration design elements described earlier in this section. The plans and cross-sections work together to give further clarity to the intent of the design recommendations. The plan graphics are divided into three zones moving from the south to the north. Zone A stretches from the 5th Ave SW bridge, across half the lagoon. Zone B stretches from the middle of the lagoon to the new salt marsh estuary and the unnamed creek. Zone C starts at the unnamed creek daylighting and stretches to the north, encompassing Garfield Creek daylighting and the northern park zone which includes the driveways and current circulation paths of West Bay Park.

Site Plan Zones - Key

THIS DRAWING UTILIZES
MLLW VERTICAL DATUM

DATUM CROSSWALK TABLE
ALL UNITS IN FEET

	MLLW	NAVD88
HIGHEST OBSERVED	17.94	13.91
MHHW	14.56	10.53
MSW	13.55	9.52
MSL	8.35	4.32
MTL	8.31	4.28
NGVD29	7.47	3.44
NAVD88	4.03	0.00
MLW	3.07	-0.96
MLLW	0.00	-4.03
LOWEST OBSERVED	-4.33	-8.36

HABITAT ZONES

- RIPARIAN *(EL. 16.5' to 19', 3:1 SLOPE)*
- FRESH WATER WETLAND *(EL. 15.5' to 19', 8:1 SLOPE)*
- SALT WATER MARSH *(EL. 12' to 15.5', 8:1 SLOPE)*
- INTERTIDAL BEACH *(EL. 6' to 12', 7:1 SLOPE)*

HARRISON AVE NW
WEST BAY DRIVE
5TH AVE W
4TH AVE W
OLYMPIC WAY SW
OLYMPIC WAY
CITY OF OLYMPIA
MATCHLINE - SEE ZONE B
PARK OF THE SEVEN OARS
PRIVATE
R.O.W.
A
BURLINGTON NORTHERN
CITY OF OLYMPIA
OLYMPIC ST W
SALT WATER MARSH
MHHW 14.56'
HIGHEST OBSERVED WATER 17.94 '
PROPOSED MHHW 14.56'
LAGOON
SALT WATER MARSH, TYP.
GRAVEL BEACH FILL FOR SHORE STABILIZATION & MARSH MITIGATION, TYP.
B
CAPITOL LAKE
WA STATE
COBBLE OR MULCH BELOW BRIDGE
STORMWATER POND
POTENTIAL FUTURE SHORELINE WITH CAPITOL LAKE RESTORATION
OLYMPIA YASHIRO FRIENDSHIP BRIDGE
WA STATE
R.O.W.
REMOVE EX. RAIL ROAD BERM '
ELEVATED MULTI-USE TRAIL
WEST BAY
BRIDGE ABOVE
MATCHLINE- SEE ZONE B

SITE PLAN ZONE A - ALT 1 DRAFT

WEST BAY RESTORATION & PARK MASTER PLAN

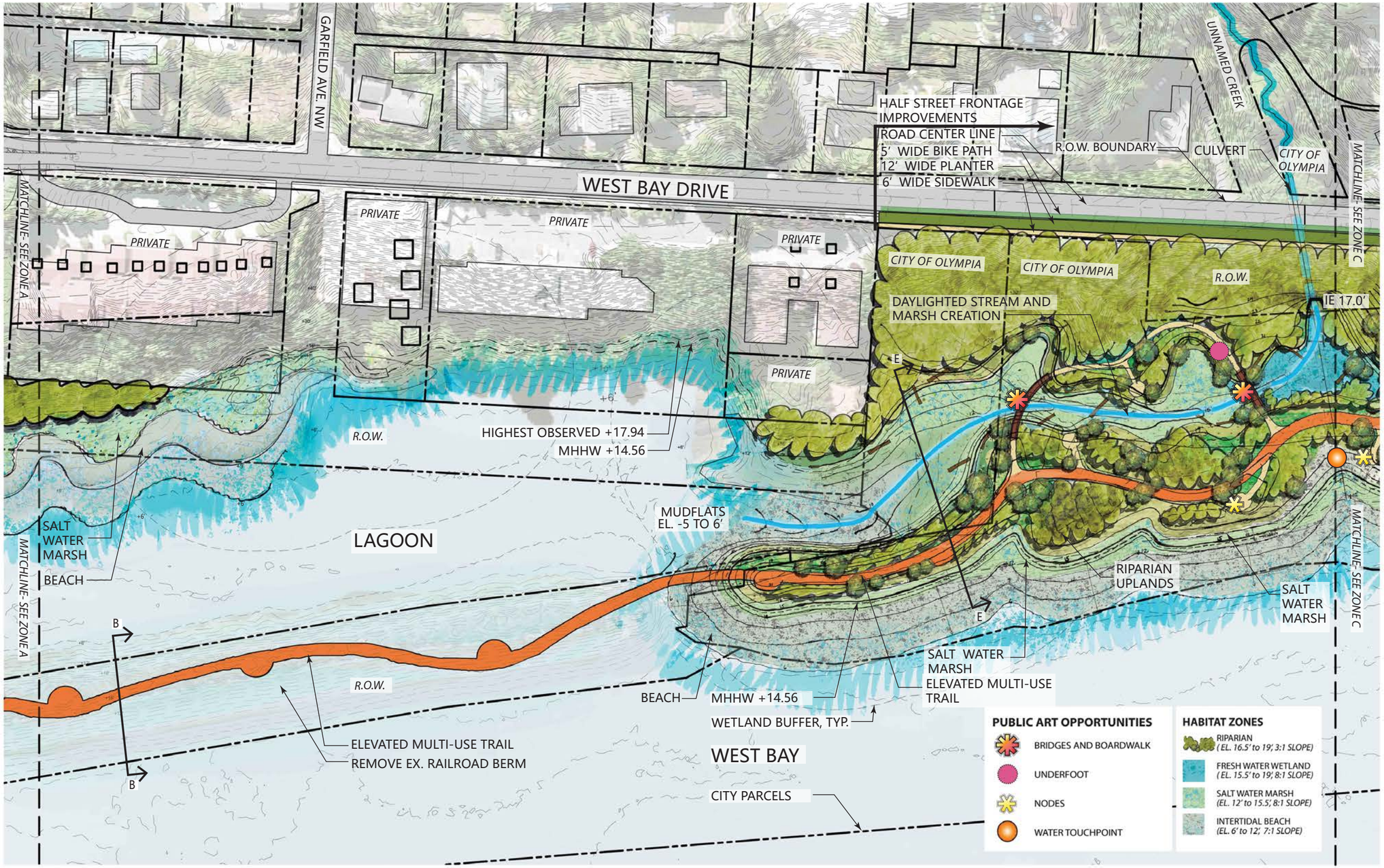
Olympia

j.a. brennan associates PLLC
Landscape Architects & Planners

IN ASSOCIATION WITH: Mott MacDonald, Carolyn Law, Confluence Environmental, SWCA, Davido Consulting Group, R.W. Droll, Landau Associates

SCALE: 1" = 40'
0' 40' 80'

DATE:
SEPTEMBER 12, 2019



SITE PLAN ZONE B - ALT 1 DRAFT

WEST BAY RESTORATION & PARK MASTER PLAN

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SCALE: 1" = 40'
0' 40' 80'

DATE:
SEPTEMBER 12, 2019

NOTE:
- NEW BUILDINGS SET BACK MINIMUM 30' FROM O.H.W
- FRONTAGE IMPROVEMENTS TO INCLUDE UNDERGROUNDING OF UTILITIES PER CITY OF OLYMPIA
- FRONTAGE IMPROVEMENTS WILL TRIGGER STORMWATER TREATMENT

SITE PLAN ZONE C - ALT 1 DRAFT

WEST BAY RESTORATION & PARK MASTER PLAN

Olympia

j.a. brennan associates PLLC
Landscape Architects & Planners

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0' 40' 80'

DATE:
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THIS DRAWING UTILIZES MLLW VERTICAL DATUM

DATUM CROSSWALK TABLE
ALL UNITS IN FEET

	MLLW	NAVD88
HIGHEST OBSERVED	17.94	13.91
MHHW	14.56	10.53
MSW	13.55	9.52
MSL	8.35	4.32
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HARRISON AVE NW
HALF-STREET FRONTAGE IMPROVEMENTS
WEST BAY DRIVE
5TH AVE W
4TH AVE W
OLYMPIC WAY SW
OLYMPIC WAY
OLYMPIC ST W
CITY OF OLYMPIA
MATCHLINE - SEE ZONE B
PARK OF THE SEVEN OARS
PRIVATE
R.O.W.
BURLINGTON NORTHERN
CITY OF OLYMPIA
CAPITOL LAKE
WA STATE
OLYMPIA-YASHIRO FRIENDSHIP BRIDGE
LAGOON
WEST BAY
SALT WATER MARSH
MHHW 14.56'
HIGHEST OBSERVED WATER 17.94'
ELEVATED MULTIUSE TRAIL
PROPOSED MHHW 14.56'
SALT WATER MARSH, TYP.
GRAVEL BEACH FILL FOR SHORE STABILIZATION & MARSH MITIGATION, TYP.
COBBLE OR MULCH BELOW BRIDGE
VIEW DECK
BRIDGE ABOVE
REMOVE EX. RAIL ROAD BERM
STORMWATER POND
POTENTIAL FUTURE SHORELINE WITH CAPITOL LAKE RESTORATION

SITE PLAN ZONE A - ALT 5 DRAFT

WEST BAY RESTORATION & PARK MASTER PLAN

Olympia

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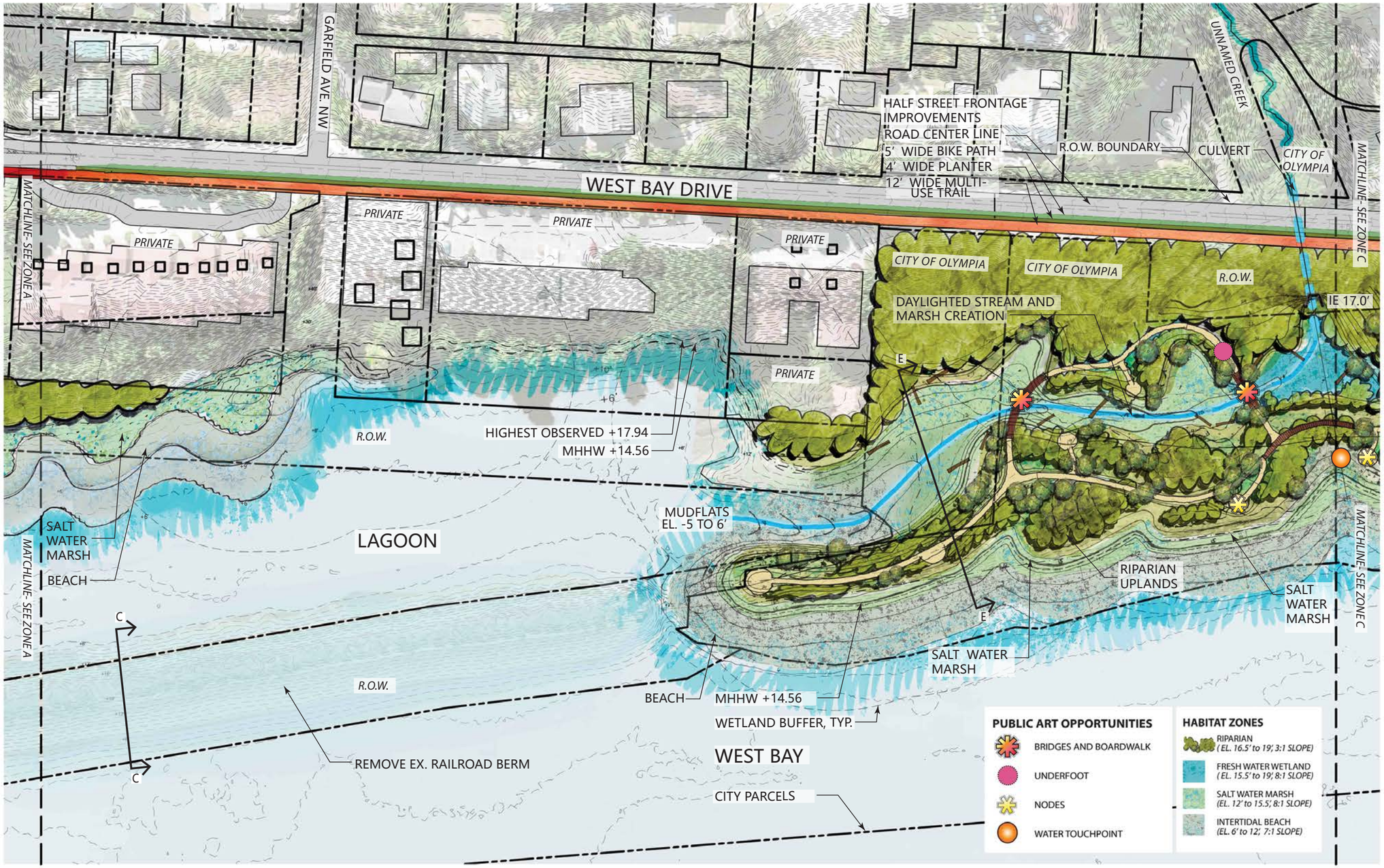

SITE PLAN ZONE B - ALT 5 DRAFT

WEST BAY RESTORATION & PARK MASTER PLAN

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0' 40' 80'

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SEPTEMBER 12, 2019

SITE PLAN ZONE C - ALT 5 DRAFT

WEST BAY RESTORATION & PARK MASTER PLAN

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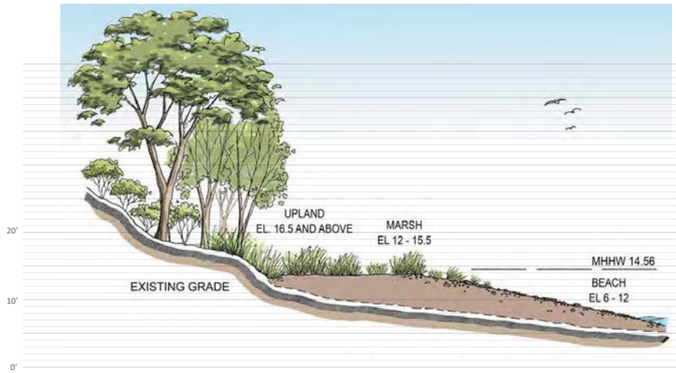
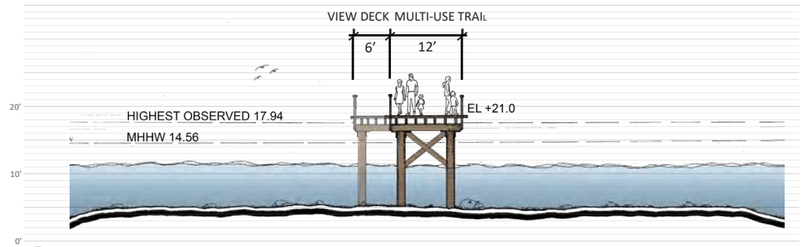


A WEST BAY PARK CONCEPTUAL SECTION AT GARFIELD CREEK ESTUARY AND BEACH (ALT 1 & 5 APPLY)

SCALE: 1/8" = 1' - 0"

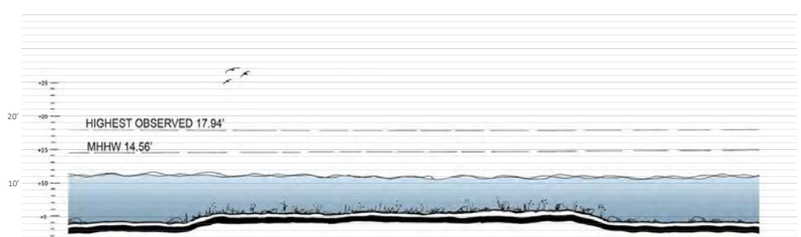
0' 8' 16'



B WEST BAY PARK SECTION AT RESTORED LAGOON AND OVER-WATER WALK (ALT 1 APPLIES ONLY)

SCALE: 1/8" = 1' - 0"

0' 8' 16'



C WEST BAY LAGOON CONCEPTUAL SHORELINE SECTION (ALT 5 APPLIES ONLY)

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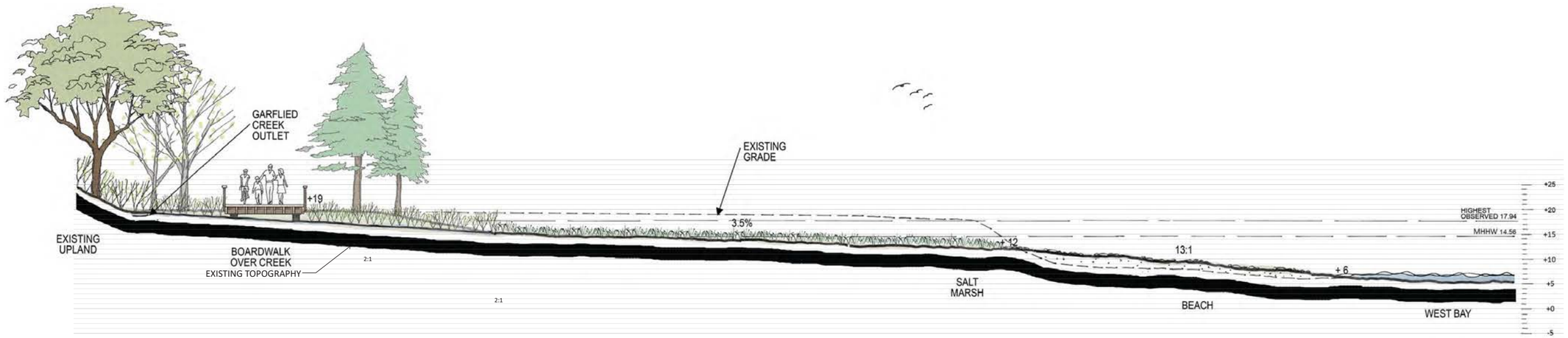


D WEST BAY PARK SECTION D AT MARSH AND BEACH CREATION (ALT 1 & 5 APPLY)

SCALE: 1/8" = 1' - 0"

0' 8' 16'

ALT 1 AND ALT5 SECTIONS 1

WEST BAY RESTORATION & PARK MASTERPLAN

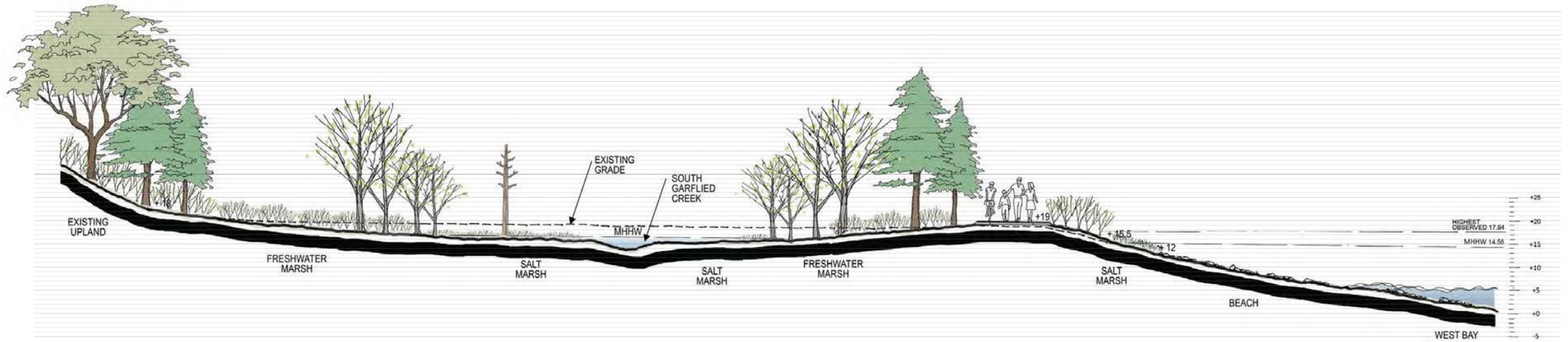
08/30/2019

Olympia

IN ASSOCIATION WITH:

MOTT MCDONALD
CONFLUENCE ENVIRONMENTAL
DAVIDO CONSULTING GROUP
LANDAU ASSOCIATES
CAROLYN LAW
SWCA
R.W. PROU

j.a. brennan associates PLLC



E WEST BAY PARK SECTION AT DAYLIGHTED CREEK AND MARSH CREATION (ALT 1 & 5 APPLY)

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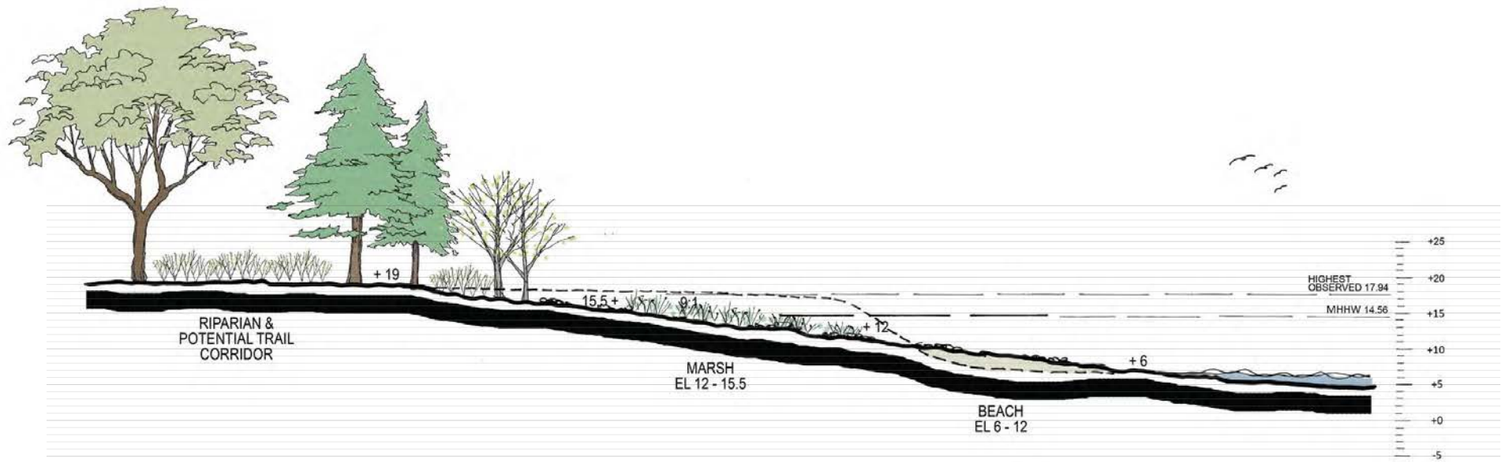
0' 10' 20'



F WEST BAY PARK SECTION F AT MARSH AND BEACH CREATION (ALT 1 & 5 APPLY)

SCALE: 1/8" = 1' - 0"

0' 8' 16'

ALT 1 AND ALT5 SECTIONS 2

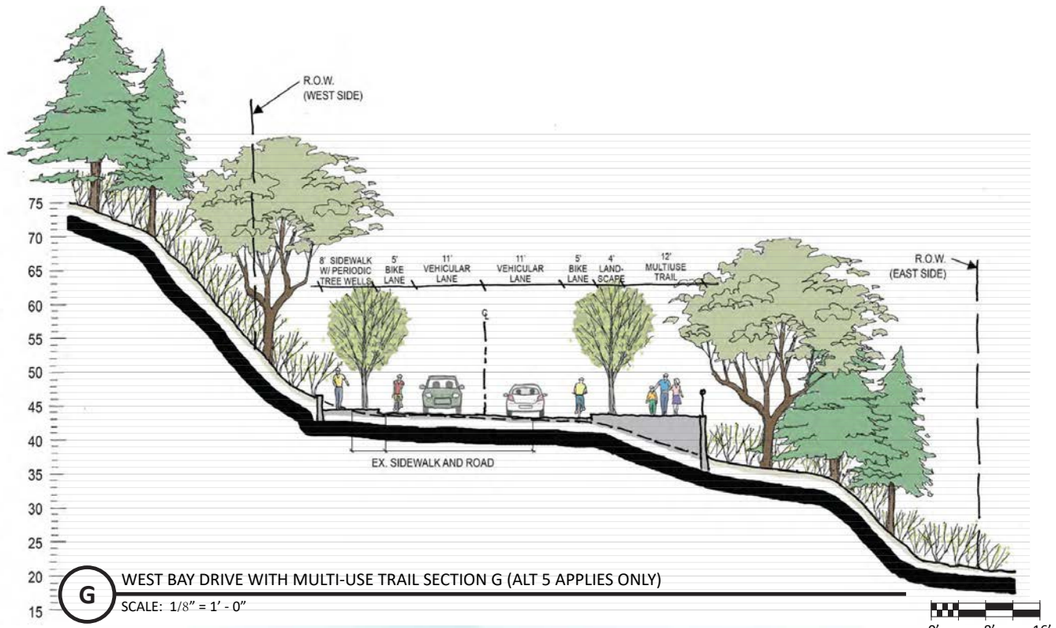
WEST BAY RESTORATION & PARK MASTERPLAN

08/30/2019

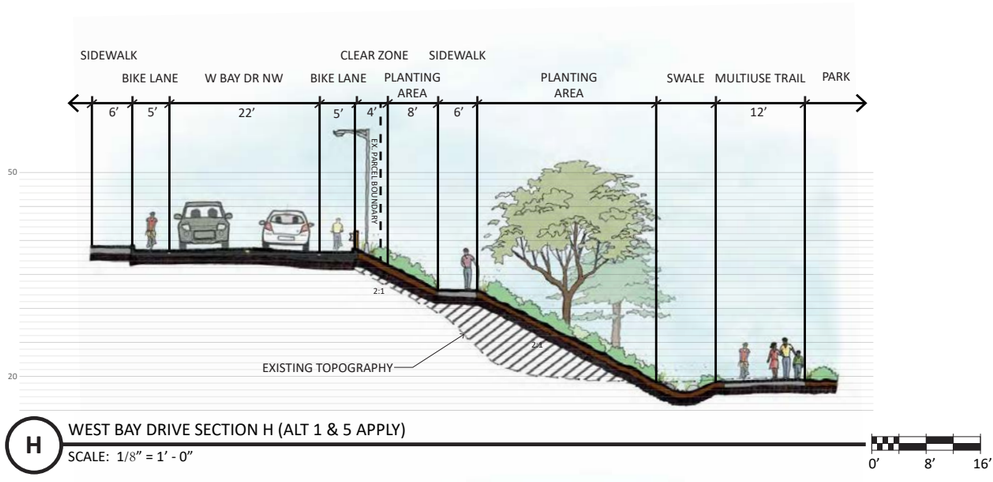
IN ASSOCIATION WITH:

MOTT MCDONALD
CONFLUENCE ENVIRONMENTAL
CAROLYN LAW

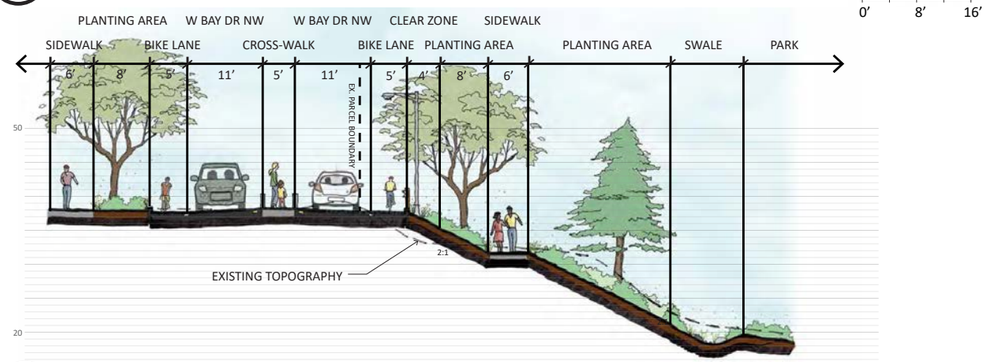
j.a. brennan



G WEST BAY DRIVE WITH MULTI-USE TRAIL SECTION G (ALT 5 APPLIES ONLY)
SCALE: 1/8" = 1' - 0"

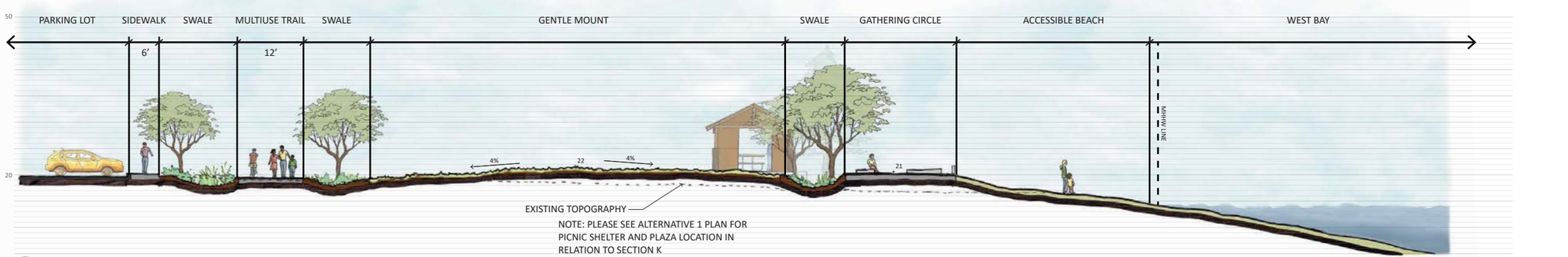


H WEST BAY DRIVE SECTION H (ALT 1 & 5 APPLY)
SCALE: 1/8" = 1' - 0"



I WEST BAY DRIVE SECTION I (ALT 1 & 5 APPLY)
SCALE: 1/8" = 1' - 0"

J WEST BAY DRIVE SECTION J (ALT 1 & 5 APPLY)
SCALE: 1/8" = 1' - 0"



K WEST BAY DRIVE SECTION K (ALT 1 & 5 APPLY)
SCALE: 1/8" = 1' - 0"

ALT 1 AND ALT5 SECTIONS 3

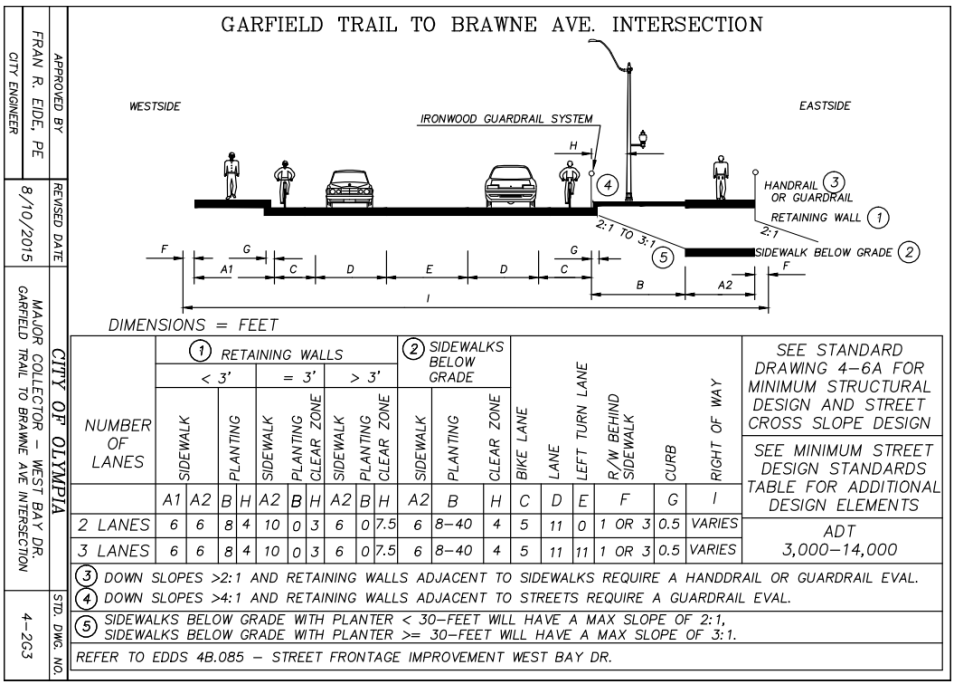
08/30/2019

C | Frontage Improvement Requirements

Civil engineers analyzed the West Bay Drive Corridor roadway improvements that would likely be required when the Parks department implements the West Bay Park trail, park, and restoration improvements. For both alternatives, the City of Olympia's Engineering Design and Development Standards (EDDS) (Section 4B.085) sets forth the frontage improvement requirements for West Bay Drive. The EDDS presents typical cross sections for West Bay Drive for several different segments of the road.

Applying the EDDS standards to the design alternatives resulted in the following assumptions and conclusions:

1. The Parks Department would be responsible for half of the street improvements (on the east side of the road, adjacent to West Bay Park). The other half of the street improvements will be completed at a later date by other entities.
2. The lane-widths of the proposed east-side West Bay Drive street improvements are as follows:
   - 5.5' (½) of Left-hand turning lanes (where applicable). The full 11' lane will be completed by the future addition of the 5'5 width on the west side of the center of the road during a future project.
   - 11' Northbound Car Lane
   - 5' Northbound Bike Lane
   - 8' Planting Strip
   - 6' Sidewalk
3. Left-hand turning lanes with 50' length left turn pocket, and 150' tapers/transitions are requested at two locations: (1) West Bay Park entrance and (2) Brawne Ave NW.
4. Pedestrian crossings with 6' wide pedestrian crossing islands are requested at two locations: (1) the Garfield Nature Trail and (2) Brawne Ave NW.
5. Tapers/transitions for the pedestrian crossing islands will be the following lengths:
   a. 100' transition south of pedestrian crossing at Garfield Nature Trail
   b. 150' transition north of pedestrian crossing at Brawne Ave NW
6. Traffic-counts were provided by David Smith at the City of Olympia on May 3rd, 2018, as follows:
   a. 95 left-hand turns onto Brawne Ave NW from northbound lanes
7. The street section exhibits were dimensioned assuming no retaining walls will be installed along the east side of the frontage improvements. At this stage of the design, no in-depth investigation has been done related to the grading needs or retaining wall needs along the street improvements. This will need to be further investigated in the next phase of design. It is assumed that the shoulder can be graded to avoid a wall higher than 3' feet.
8. There are a few alternatives that may help avoid a retaining wall and have less impacts on the park area. These options were not investigated at this stage of the design, and will need to be further investigated in the next phase of design:



NUMBER OF LANES	(1) RETAINING WALLS < 3' SIDEWALK		PLANTING		= 3' SIDEWALK	PLANTING	CLEAR ZONE	> 3' SIDEWALK	PLANTING	CLEAR ZONE	(2) SIDEWALKS BELOW GRADE SIDEWALK	PLANTING	CLEAR ZONE	BIKE LANE	LANE	LEFT TURN LANE	R/W BEHIND SIDEWALK	CURB	RIGHT OF WAY	SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN
	A1	A2	B	H	A2	B	H	A2	B	H	A2	B	H	C	D	E	F	G	I	SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS
2 LANES	6	6	8	4	10	0	3	6	0	7.5	6	8–40	4	5	11	0	1 OR 3	0.5	VARIES	ADT 3,000–14,000
3 LANES	6	6	8	4	10	0	3	6	0	7.5	6	8–40	4	5	11	11	1 OR 3	0.5	VARIES	

(3) DOWN SLOPES >2:1 AND RETAINING WALLS ADJACENT TO SIDEWALKS REQUIRE A HANDDRAIL OR GUARDRAIL EVAL.
(4) DOWN SLOPES >4:1 AND RETAINING WALLS ADJACENT TO STREETS REQUIRE A GUARDRAIL EVAL.
(5) SIDEWALKS BELOW GRADE WITH PLANTER < 30–FEET WILL HAVE A MAX SLOPE OF 2:1, SIDEWALKS BELOW GRADE WITH PLANTER >= 30–FEET WILL HAVE A MAX SLOPE OF 3:1.
REFER TO EDDS 4B.085 – STREET FRONTAGE IMPROVEMENT WEST BAY DR.

Table 4: West Bay Drive Streetside Improvements

West Bay Drive Street Section		Westside of Right-of-Way	Eastside of Right-of-Way
From	**To**		
Roundabouts	Southern Park Border	Maintain existing sidewalk location and re-stripe centerline east to provide bicycle lanes north and southbound. (Standard Drawing 4-2G1.)	Maintain existing sidewalk location and re-stripe centerline east to provide bicycle lanes north and southbound. (Standard Drawing 4-2G1.) Existing on-street parking will be removed.
Southern Park Boundary	Garfield Nature Trail	Maintain existing sidewalk location and re-stripe centerline east to provide bicycle lanes north and southbound. (Standard Drawing 4-2G2.)	Maintain existing sidewalk on the east side of ROW. Re-stripe centerline east to provide bicycle lanes north and southbound. Provide on-street pocket parking/planter. (Standard Drawing 4-2G2.)
Garfield Nature Trail	Brawne Avenue	Maintain existing sidewalk location and re-stripe centerline east to provide bicycle lanes north and southbound. (Standard Drawing 4-2G3.)	Maintain existing sidewalk on the eastside of ROW. Re-stripe centerline east to provide bicycle lanes north and southbound. Bicycle lanes will remain next to the vehicle travel lanes. Sidewalks can be either at street level or below grade. (Standard Drawing 4-2G3.)
Brawne Avenue	Park Property North Border	Variable retaining wall, sidewalk and planter strip. (Standard Drawing 4-2G4.)	The railroad right-of-way will be used for combined trail-sidewalk facility wherever practical and safe. Park trail and sidewalk will be combined in a 10-foot multi-use facility. (Standard Drawing 4-2G4.)
Park Property North Border	Schneider Hill Base	Variable retaining wall, sidewalk and planter strip. (Standard Drawing 4-2G5.)	Bicycle lanes will remain next to the vehicle travel lanes. Sidewalk will be below street grade. If land use remains industrial, trail will be incorporated into the sidewalk. (Standard Drawing 4-2G5.)

a. Utilize the recessed sidewalk option to lower the grade of the sidewalk
b. *and/or* consider no planting strip along segments of the ROW, as the width of the planting strip widens the improvements, and thus may be the trigger for a retaining wall
    i. Since the EDDS Standard Drawings (i.e: 4-2G3) allows omitting the planting strip if a retaining wall greater-than 3' is needed, it seems that the logic is there for omitting the planting strip in order to preclude the retaining wall

D | Stormwater Management

Stormwater management issues for the bookend alternatives are similar. Both design proposals will require treatment for expanding the parking lot in West Bay Park and frontage enhancements along West Bay Drive uphill of the park.

The new parking area proposed for West Bay Park is approximately 4,900 square feet. A total of 33 parking stalls are included in the alternative design plans. Due to the limited fall of the site topography, stormwater treatment using bio-filtration swales will likely be infeasible. Therefore, a below-ground treatment facility is proposed. A StormFilter® cartridge system is recommended for the stormwater catchment basins in the parking lot. Further design consideration should be expected in future phases to manage the stormwater flowing directly from the existing outfall to West Bay.

E | Stream Daylighting

The design alternatives propose daylighting at the mouth of Garfield Creek and the unnamed creek 1,020 feet north of Garfield Ave NW to naturalize the outfall of the waterways into West Bay. This is an opportunity to improve the water quality, enhance existing site wetlands and expand the salt marsh estuary at the north end of the lagoon. Daylighting the mouth of Garfield Creek into a pocket inter-tidal estuary restores a portion of the creek and enhances near-shore habitat for fish and wildlife. The creek designs will also need to be considered for additional stormwater management.

F | Coastal Engineering

The existing sediment sizes in the project area are highly variable depending on localized hydrodynamic conditions such as existing lake outlet flows, wind and waves, lagoon outlet flows, and future Capitol Estuary outlet flows. West Bay bathymetry analysis shows that the lake outlet channel is deeper than the lagoon project area. Within the project area, waves are present but low and they still influence the bottom substrate type and size within the lagoon. Wave refraction occurs at the berm and will need to be considered if the berm is removed and those waves reach the shore. North winds are typically less frequent but have longer duration events.

Post project implementation and berm removal, localized erosion of silt

bottom would be expected throughout the lagoon. The ongoing (separate) Capitol Lake Project will have impacts for West Bay Park and the lagoon. Future Deschutes estuary flows will be concentrated in deep channel areas. Discharge flows from the future estuary will be more sensitive to lagoon flows within the southern half of the project area. Eddy flows are less likely after the lake restoration occurs. Adjustment and suspension of bay mud should be expected in short term after the railroad berm is removed. Beach nourishment is recommended along the west lagoon shoreline after the berm is removed to ensure stabilization, habitat enhancement, and sea level rise resiliency.

G | Art Concept "Ecological Wonder"

West Bay Park is a rare opportunity to merge culture, arts and science with the design of an environmental restoration park project.

Arts & Culture Approach: Seeking Nature's Spirit

As a public space in close relation to water, this area lends itself naturally to a park. The park land entwines diverse cultural histories with an intricate natural environment that has been utilized by people for hundreds of years. As development of this park unfolds, careful attention will be paid to restoring the land and aquatic environments with an eye to the future. This transformation will provide a rare window for the public to watch a as the site's ecology evolves.

Much is at play in developing this wonderful natural site as a park on the edge of downtown Olympia's built environment. There is a broad array of ecologically complex natural conditions; multiple disciplines collaborating to combine function, aesthetics and habitat restoration; integrating indigenous cultural use and understanding; impending sea level rise and climate crisis impacts; referencing past/present/future stories and hopes; and illuminating the understanding and appreciation of the intricate relationship between people and nature.

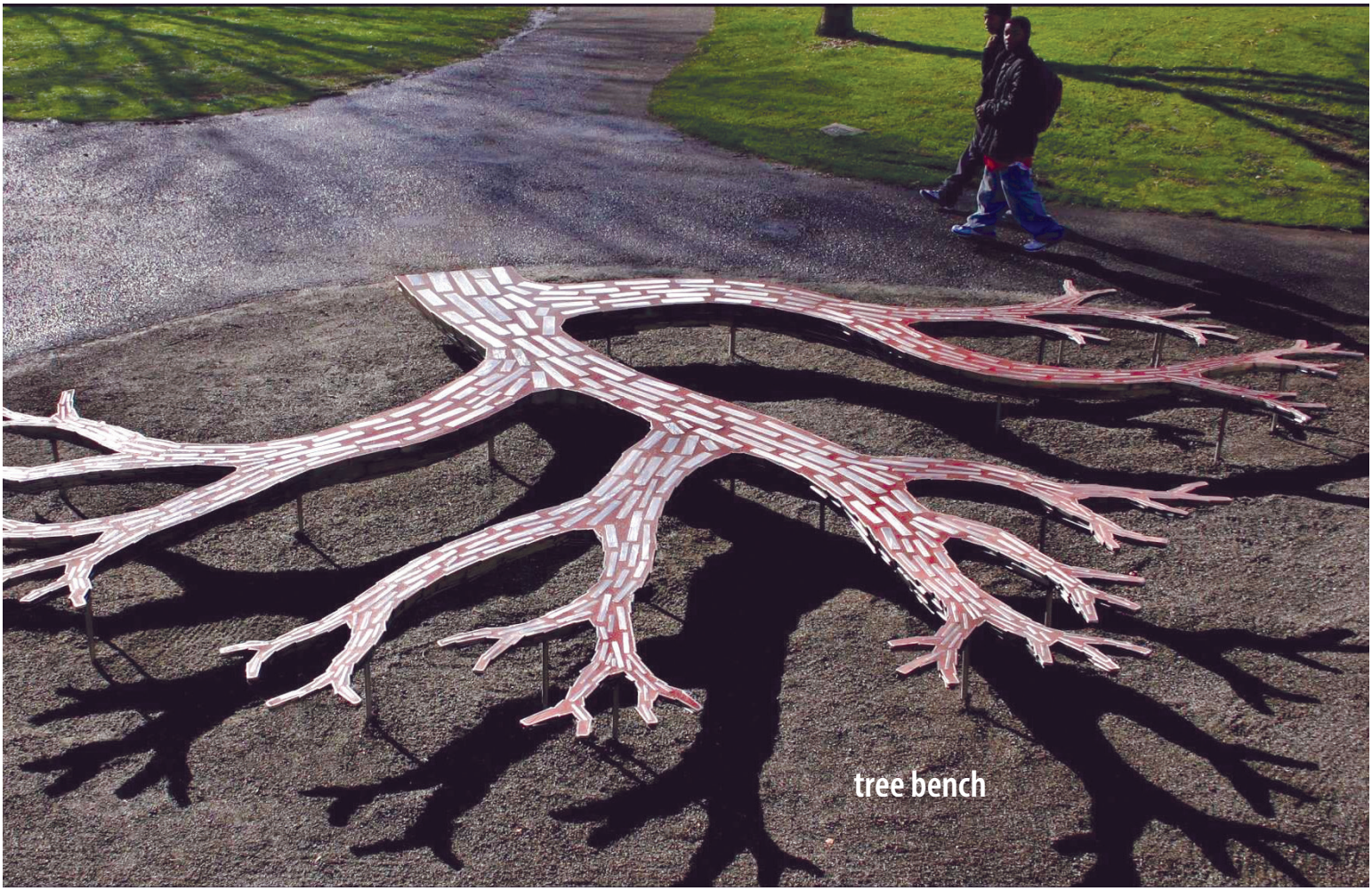
This project provides a platform for the arts to work collaboratively with science, the Squaxin Island Tribe, and the community to conceive a rich set of artistic and aesthetic expressions and experiences. The result effectively creates a place for deepening human experiences in nature. Upon achieving this, West Bay Park will profoundly influence the emotional, physical and sensory ways people can come towards and embrace this special environment, enabling them to see more clearly the striking shifts and interplays taking place in nature.

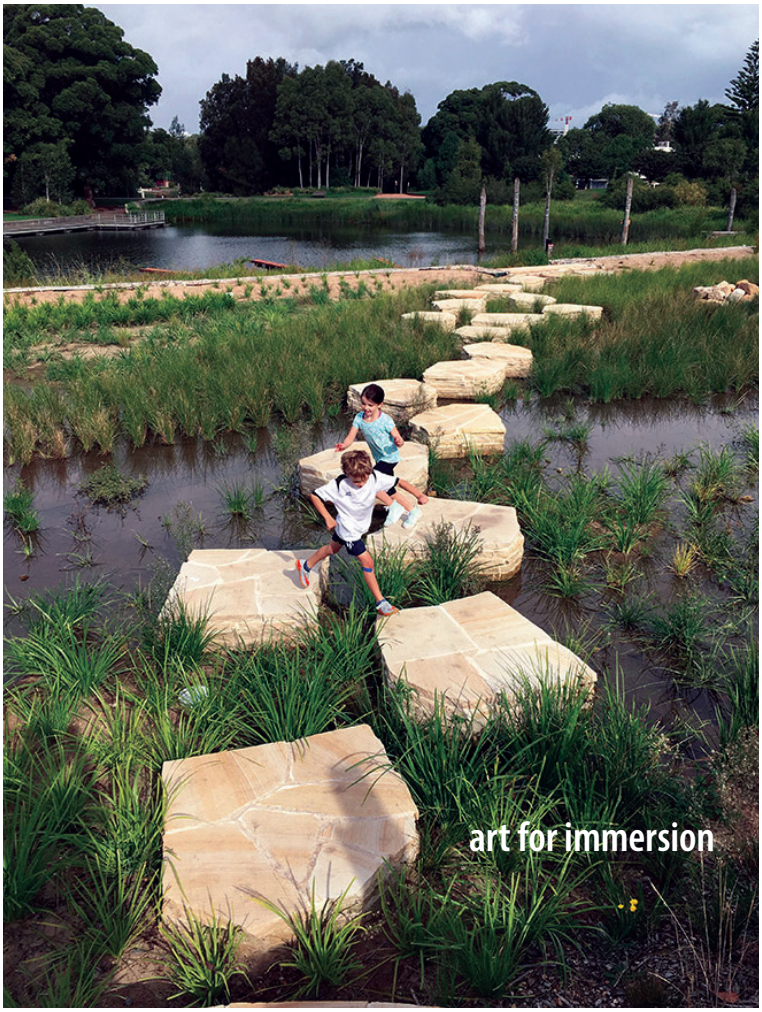
Olympia has a special relationship to Puget Sound. When this park becomes a destination for experiencing this particular aquatic environment, it strengthens visitors' appreciation and understanding of not only the West Bay environment, but also Olympia's large, interconnected shoreline habitats.

History: Complexity in the Making

Historically, West Bay has provided habitat for many fish and wildlife species including great blue heron, grebes, cormorants, ducks, raptors, gulls, forage fish, flatfish, salmonids, harbor seals, Dungeness crab and numerous other birds, fish,


impacting the pathways


tree bench


art for immersion

sensory art

art node on path

art node on path

mammals and shellfish. The vast mudflats of West Bay supported key shellfish species including Olympia oysters, clams and crabs.

The bluff-backed shorelines were densely forested with coniferous species and likely a dense under-story of smaller trees and shrubs, which provided overhanging vegetation for refuge habitat, shading, erosion control, detritus/ nutrient export, and foraging opportunities on land animals.

Development of West Bay and the surrounding vicinity over the last 150 years degraded the ecological functions and processes of the bay in numerous ways. Riparian habitat became disconnected from the shoreline along much of the shore of West Bay. Therefore, this effort of developing a major part of the shoreline and adjacent land into restored habitat will allow the community to watch the recovery of land and water within a stone's throw of the downtown.

Infusing Arts & Culture: Deepening Understanding and Stories

This outlined approach to incorporating artistic, cultural layers into the park works particularly with three of the overall design goals:

1. Respect and express cultural, archaeological, ecological & historic site significance
2. Create a beautiful site aesthetic with design simplicity
3. Balance human use and ecological value

The overall goal of artwork in the park is to create an inter-related series of artworks that are developed collaboratively by artists working with designers and scientists. The intention is to have all artwork work hand-in-hand with the applicable science, the environmental conditions and the park's landscape design to generate a place that embraces visitors and offers them a full complement of experiences specific to West Bay Park. This approach also provides a springboard for linking to greater Puget Sound as an interconnected environmental system. This exciting combination of art, science and design will fully bring each visitor, every time they come, into the every-changing and wonderful aspects of the land, the water and the changing conditions of weather, season, time of day -- in a holistic way. This enhances a deeper understanding of the environment as dynamic and continually changing.

The artwork would be integrated and interwoven into the parkland and placed at very selective sites within the park. All of the artistic components are intended to work seamlessly with the aquatic and climate change science and natural vibrancy/beauty of the place. This supports setting up a process where involved artists will collaborate with each other, but also importantly, with the environmental science and scientists who are working on important aspects of the overall final design. This approach has the potential to impact park users'

understanding and appreciation of the complex environment of the park, deepen the diversity of experiences of the land and water paired with the shifting daily and seasonal natural forces and the impending impacts of a changing climate every time they visit.

Another intention in the development of the cultural component is to continue to forge a cultural collaboration between the Squaxin Island Tribe and the project artist(s) to deeply explore ways to creatively imbue the site with an interweaving of tribal culture and environmental knowledge with non-tribal culture and knowledge. As well, this approach can enhance a moment-to-moment experience and support a connection that can lead to an ethic of care and advocacy on behalf of land and water and all biologic life that they support.

To date regionally there have been few environmental science & art, or native and non-tribal artists' collaborations for public spaces in our region. This project presents a true opportunity to initiate and support a thought-provoking collaborative approach.

Rationale for Siting Art: Ah-Ha's! & Cherished Places

To have the deepest impact, the primary focus for siting art is integrating art into a set of carefully chosen locations that will elicit unique experiences within West Bay's environment for visitors. Ideally, they would be both "Ah ha! moment" locations, as well as become sought out places to check up on when visiting.

- First is to create an overall experience by strategically placing artistic components within the park environment, in the pathway system, specific viewpoint nodes, and bridges to provide prompt being "in the moment" with multiple senses engaged.
- Second is to draw people deeply into the park to explore this particular environment by creatively offering various entry points to examine different inter-tidal aquatic habitats (lagoon, mudflat, estuary, and marsh) and their important inter-relationship to salmon; indigenous plants; waterfowl; and tidal changes and wind impacts.
- Third, special attention is paid to expressively illuminating the science and physical impacts of sea level rise through a focused interweaving of art and science -- discovering ways to powerfully merge these two and find engaging expressive forms to understand what is happening.

Locations to Consider: An Experiential System

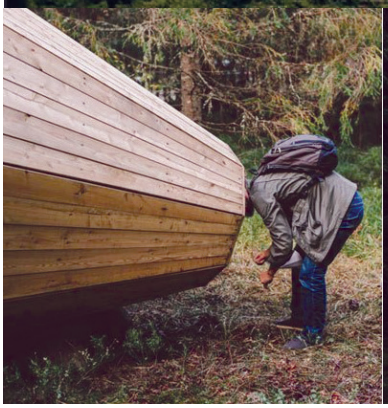
Artworks would be strategically located and interlinked to achieve a sense of place and direct awareness to diverse aspects of the environment. The primary area of the park that will be focused on for artworks is the dedicated natural expanse where the land to water ecological relationship is pronounced. This would be south of the more active northern area that has parking, picnic shelter, hand boat launch, gathering space, etc.

Depending on the overall budget for artwork, careful consideration would have to be made during the final design process, in collaboration with involved artists, to determine the strongest set of locations for artwork that achieves the goals and intent of the public art portion of the master plan.

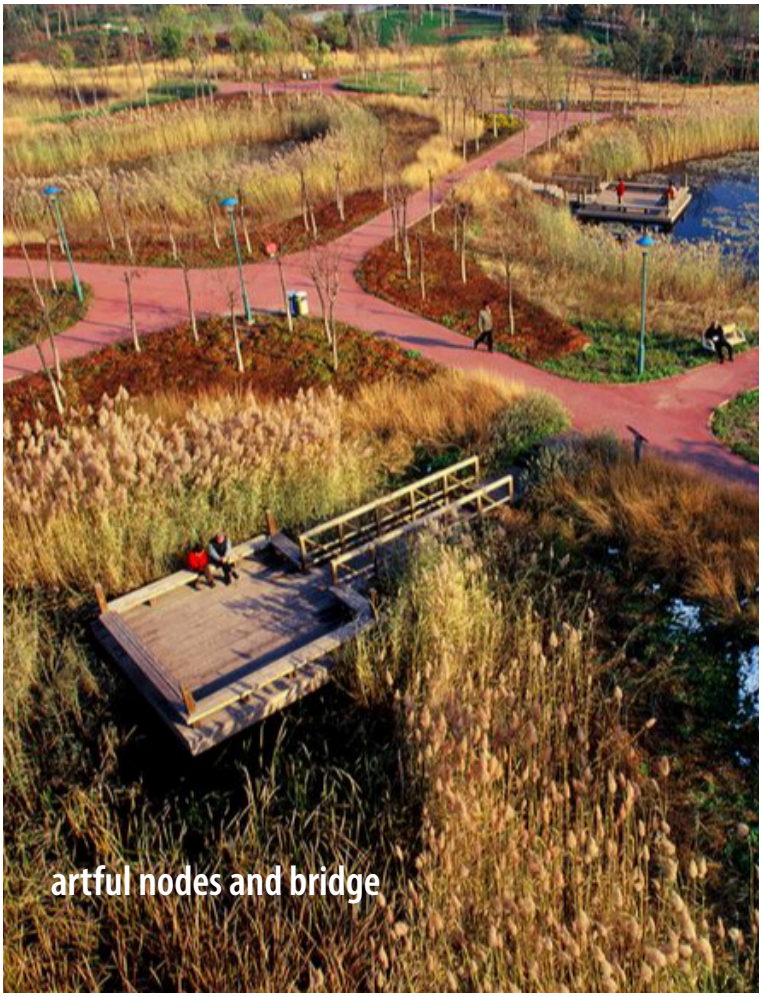
transition marker

wood megaphones

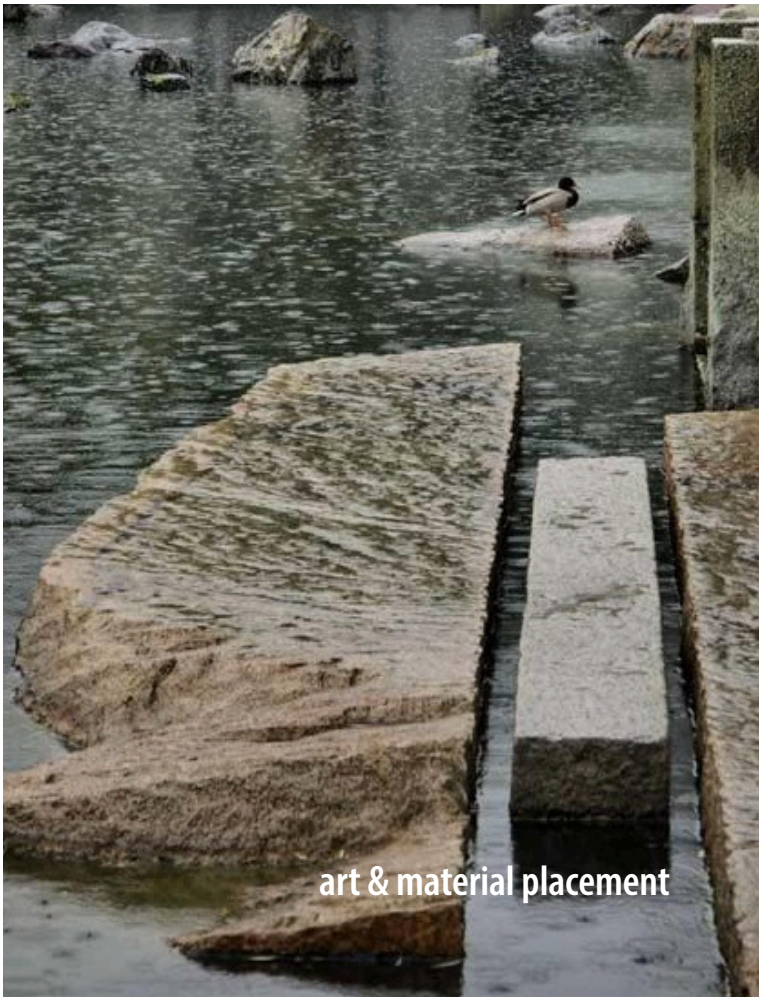
disappearing house



ephemeral presence

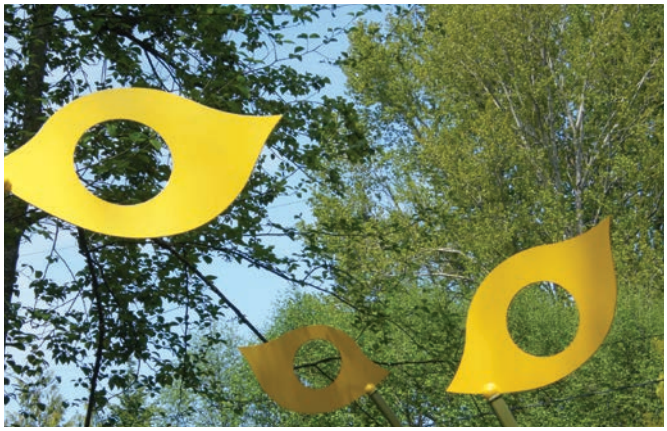


artful nodes and bridge



art & material placement

sensory art interactive with weather



As for budget, with a collaborative process taking place during final design, there is the potential to merge public art dollars with materials and construction budgets for the overall park design. It would be beneficial to explore this possibility in order to infuse as much of the park as possible with a cultural, arts layer.

Potential locations in the public art focus area and rationales for choosing them include:

1. *Transition locus: Entering/leaving the southern public art focus area*

   A suggestive, gestural mark to alert visitors they are transitioning into and out of a "special" area. An artful expression that alludes to the type of environment West Bay offers.

2. *Underfoot: A complement of locations within the pathway system including hard and soft surfaces at grade, including immediately adjacent edges*

   Builds an enticing narrative and visuals that connect people to this place and ecology. Provides a subtle, delightful undercurrent that interfaces and engages the mind and eye, bringing people into experiencing linked moments of being in the park.

3. *Enhanced views highlighting land and/or water inter-relationship: Nodes at path ends*

   Quiet points to pause, be immersed in and absorb the environment and surroundings. Enhance the physical space of the nodes making them unique and specifically tied to the particular ecological condition being highlighted.

4. *Inland water: Bridges and boardwalk over daylighted waterways*

   Bring awareness to the intricate wetlands, marshes, and fresh water sources that exist between land and water and interact with the salt water environment of Puget Sound.

5. *Puget Sound: Water touch points*

   Highlight the daily shifts of the Sound – shoreline zone, tides, wind, waves, light, etc.

Additional locations related to specific alternatives could be considered in any final mix of locations comprising the total art program.

Alternative 1

A great location for high-impact public art in Alternative 1 would be along the elevated trail over West Bay's inter-tidal area. The integrated art components described above could be designed into the decking underfoot, the railings at periodic insertion points, and at nodes along the trail. Art elements on the railing could also be used to provide screening for wildlife viewing.

Alternative 5

Alternative 5 design concepts show the pathway at a much higher elevation and the public art components could reflect that unique view by highlighting a comprehensive view of the park's land and water as well as context of Puget Sound. It would be appropriate to include art at a viewpoint node under the bridge looking north.

The path separation from the water also provides an opportunity for public art to help create a connection to the park. New art components could be integrated into the trail alignment at the street in paving and other structures and build from a relationship with the existing public art project on the west side of West Bay Drive.

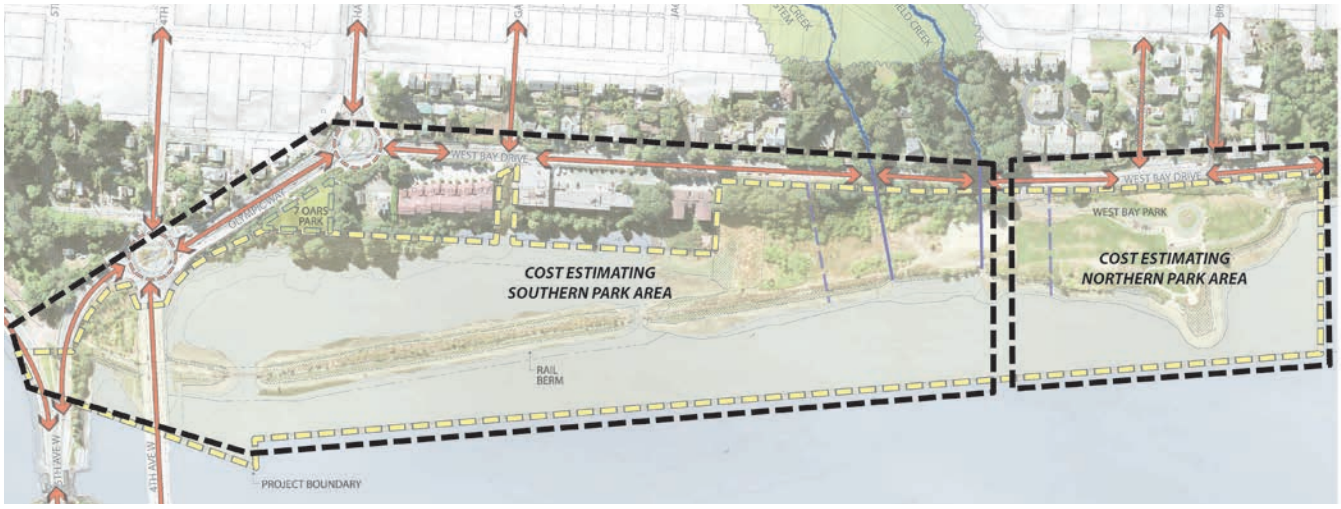
VII. Cost Estimates

The cost estimates are meant to be a tool for guiding implementation of the West Bay Park recreation and restoration improvements and are meant to be revised and adjusted as the design develops over time. Large public projects like this are usually implemented with a phased approach that is dependent on refined budget planning to reflect grant availability from the State and City funding priorities. Public needs may change over time, which may necessitate revisions to the implementation strategy.

The opinion of probable costs for the construction of each alternative are estimates based on anticipated construction costs, sales tax (9.3%), design and construction contingencies (40%), architectural and engineering design and construction management fees (32%), and permitting fees ($100,000/area). The estimates do not include annual escalation assumptions or costs related to MTCA cleanup. Actual construction cost may vary and the estimate should be reviewed and updated as the design is further developed.

- Alternative 1: Southern Park Area - $XX,XXX,XXX
- Alternative 1: Northern Park Area - $XX,XXX,XXX
- Alternative 5: Southern Park Area - $XX,XXX,XXX
- Alternative 5: Northern Park Area - $XX,XXX,XXX

The 2016 West Bay Environmental Restoration Assessment (attached to this report as Appendix J) describes additional cost assumptions that are still



consistent with this analysis and require additional research as the design moves further through design towards an implementation phase. Stormwater improvement costs along West Bay Drive may not be fully captured in the Frontage Improvement analysis assumptions for this report. Because stormwater improvement costs vary widely, a range of costs was developed from low to high. In total, stormwater improvement opportunities may range from $11.75 million to $17.1 million in construction cost.

Alternative 5 uses the City Public Works Engineering department's conceptual estimate of probably construction cost based on Section 14 for a trail along West Bay Drive. The conceptual cost estimate range is $9.6 million to $11.2 million and includes right of way purchase, sales tax, engineering contingency, and overall contingency. The conceptual cost estimate includes a 12-foot multi-use trail on the east side of West Bay Drive, two 5-foot bike lanes, two 11-foot vehicle lanes, an 8-foot sidewalk on the west side of the road, and associated miscellaneous road elements for a total width of 56 feet. In order to build the conceptual roadway cross section, right-of-way would need to be purchased along both sides of the existing roadway. This may impact businesses, condos, and homes adjacent to the road. The sidewalks on both the east and west sides of the road will require shoring and concrete walls to ensure the high bank with homes above remains stable. Driveways and access points would need to be reconfigured and potentially rerouted to alternative streets to maintain feasible vehicular and pedestrian access.

VIII. Next Steps

Initial Phase

While much of the Park improvements are still undecided or need further study, refinement, and funding; the City can begin to progress the proposed design in the northern park area identified in both Alternatives 1 and 5. The City can prioritize park updates such as the restroom, water access points, picnic facilities, parking, and pathways.

Project Next Steps

The project implementation will require careful consideration of the following items as the design and planning process moves forward:

a. State Shoreline Management Program (SMP) & City Shoreline regulations:

The proposed elements must be consistent with and approved by State Department of Ecology and City code reviewers for compliance with Shoreline Management policies. Some requirements include vegetated shoreline buffer distances and stormwater management considerations.

b. Contaminated Soils Remediation

The site analysis for the railroad berm indicates that there are contaminated soils located within the project development area. Special consideration for cost and safety during removal of those contaminated materials will need to be included in the construction planning process.

c. Protecting Cultural Resources

West Bay Park and the proposed trail is situated in a culturally significant place and special coordination will need to be planned with Tribes as the project moves forward.

d. Balancing Cut and Fill

One design technique that will limit some construction cost is to refine the proposed landforms to balance the materials being removed from the bay with the fill needed for shoreline restoration, new rolling hillside viewpoints, accessible pathways, and landscape planting areas. Responsible detailed design will consider how the soils removed in one part of the property can be reused in another portion of the project.

e. Land Acquisition and Slope Challenges for Multi-Use Trail on West Bay Drive

Alternative 5 locates the multi-use trail along the roadway and will require widening beyond the width of the existing right-of-way. Steep slopes in combination with existing residential and commercial development along West Bay Drive poses geotechnical challenges for widening the right-of-way and preserving safe access for the existing development. The City will have to consider the costs and practicality of acquiring additional property for the trail

and modifying the frontage improvement requirements to allow for flexibility in the width and feature requirements along West Bay Drive.

f. Tribal Consultation

Working closely with Tribes is important for the project moving forward towards implementation of either design alternative and many of the individual element pieces.

g. Port lagoon Easement & USFW Concurrence

The Port of Olympia owns the adjacent parcels near the railroad berm (Port lagoon) and any changes to that berm material (whether it is removed for a trail and/or environmental enhancement) will need to be coordinated with the Port and US Fish and Wildlife to create an agreement consenting to any actions on the lagoon parcel or adjacent areas that would affect the habitat value of the lagoon, see Appendix D.

Regulatory Next Steps

Several natural resources have been identified that will require regulatory compliance for the project as it moves forward in design and development, including: shorelines, streams, wetlands, landslide hazards, and important species and habitats.

The following table summarizes the environmental regulatory issues observed at the project site and lists which regulations will need to be addressed during future development. Detailed field surveys including delineations will need to be conducted to quantify the regulated resources and any potential project-related impacts within the project area.

Table 1. Summary of Regulated Environmental Conditions at Project Site

Regulated Resource	*Regulatory Summary*
Shorelines	Shoreline use and development standards evaluated per OMC Chapter 18.20. Effects to marine waters and shoreline of Budd Inlet evaluated per OMC 18.32.400, RCW 77.55, and Section 404 of CWA.
Streams	Effects to streams evaluated per OMC 18.32.400, RCW 77.55, and Section 404 of CWA.
Wetlands	Effects to wetland mosaic and estuarine fringe marshes evaluated per OMC 18.32.500, and Sections 404 and 401 of CWA.
Landslide Hazards	Effects to landslide hazard areas evaluated per OMC 18.32.600.
Important Species and Habitats	Effects to important species and habitats evaluated per OMC 18.32.300 and Section 7 of the ESA.

See Appendix B – West Bay Park Environmental Conditions Memo, Confluence

Future permitting requirements will likely include:

a. US Army Corps of Engineers Permit for work below Mean Higher-High Water (MHHW)
b. City permits for land use and construction (Shoreline Permit, Grading Permit, Building Permit)
c. State permits from WA Dept of Ecology for in-water work (Hydraulic Project Approval/HPA) and shoreline management program compliance

These permits can take up to two years to receive and require outreach with adjacent landowners and review of all pertinent environmental, geological, and coastal design elements.

Confirmation of Outstanding Design Issues

This report is a summary of work completed throughout 2017-2019 but additional design issues must be explored in future project implementation phases.

One item that needs confirmation is if the unnamed drainage feature located approximately 1,020-feet north of Garfield Avenue (just south of Garfield Creek) is fish-bearing or not. This determination will impact the required design detailing, particularly around the proposed culvert. If the stream is fish-bearing, regulatory agencies will require additional review of design proposals and construction procedures.

Further refinement on the frontage improvement requirements is also needed as the project moves forward. It's recommended that the Public Works and Parks Departments determine if a trail on Park property can serve as the sidewalk and perhaps also the bike lane to fulfill the EDDS standard requirements along the park property frontage. In addition, perhaps a planting zone may be eliminated near the driveway entrance to West Bay Park so that the crosswalk would be visible to drivers but this type of modification to the EDDS standards would require special review with Public Works.

Project Contact

For up-to-date information on this project, visit the website www.olympiawa.gov/westbaypark or contact the City Parks Department.

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Appendix A

Site Inventory & Analysis

- Existing Utilities
- Creek Pipe Profiles
- Environmental Conditions
- Environmental Contamination
- Geotechnical Conditions
- Arts and Culture

Appendix B

Environmental Conditions Technical Memo

Appendix C

US Army Corps of Engineers Permitting Site Visit Notes

Appendix D

USFWS Letter on Lagoon Habitat Enhancement

Appendix E

Permitting Agency Meeting Notes

Appendix F

Tribal Meeting Notes

Appendix G

Public Involvement Survey Results & Meeting Notes

Appendix H

Conceptual Alternative Details

- Screening Memo
- Screening Matrix
- Graphics

Appendix I

Archaeological and Cultural Resources Alternatives Analysis

Appendix J

West Bay Environmental Restoration Assessment Report