

Nomination for Annual Best Restored Beaches Award 2019 Waypoint Park Beach, Bellingham, WA

Prepared for: the American Shore and Beach Preservation Association

Nominated by: Jim Johannessen, LEG, MS
Coastal Geologic Services, Inc.



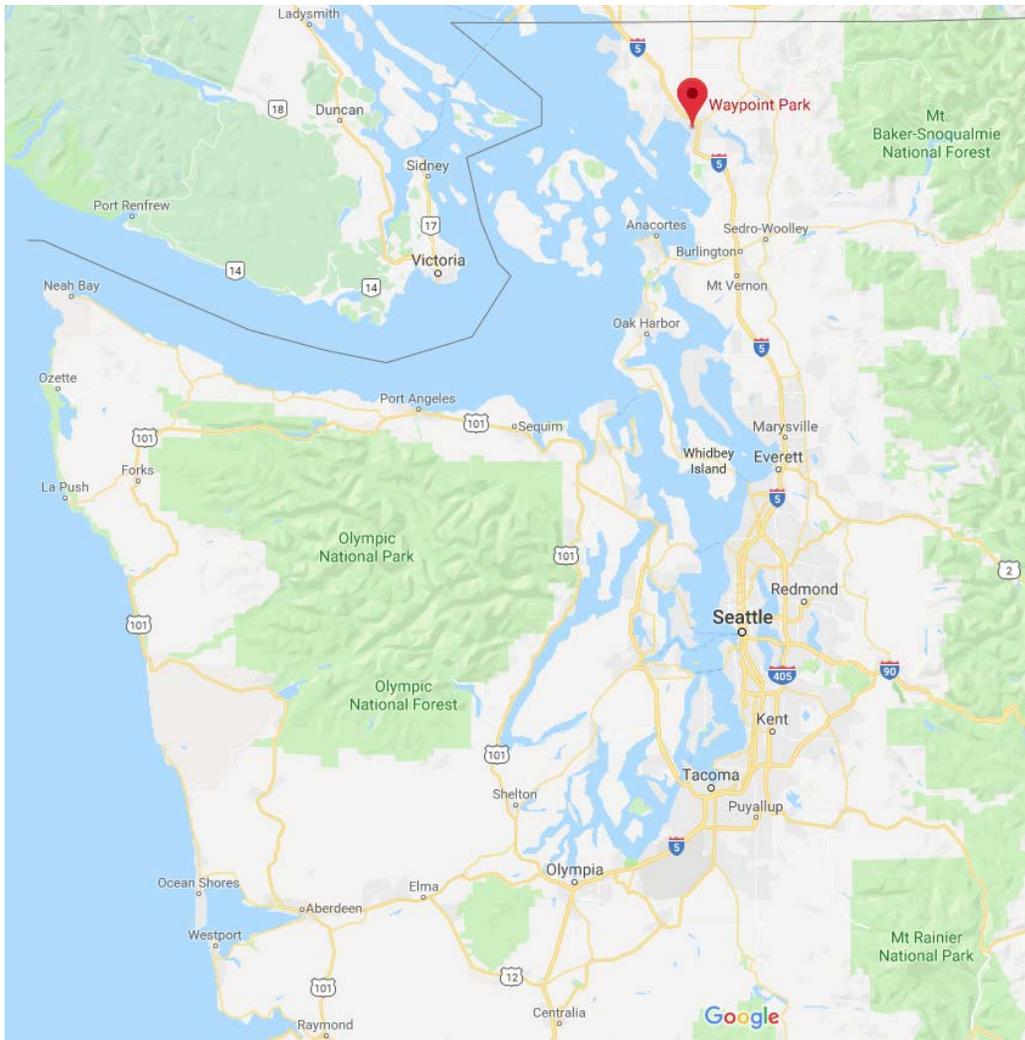
April 5, 2019

A. Overview

Project Name:	Waypoint Park
Location:	Bellingham, Washington
Date Completed:	July 2018
Estimated Project Cost (beach):	\$214,310
Nominated By:	Jim Johannessen, MS and LEG (Washington) Coastal Geologic Services, Inc. 1711 Ellis Street, Suite 103 Bellingham, WA 98225 jim@coastalgeo.com 360-647-1845
Project Owner:	City of Bellingham, Parks Department Gina G. Austin, PE, MSCE gaustin@cob.org , 360-778-7000
Contact:	Jim Johannessen, (contact above)
Project Team:	Coastal Geologic Services – Beach designer KPF Consulting Engineers – Lead Consultant and civil engineering Walker Macy – Landscape architect Aspect Consulting – Geotechnical engineering (park) Strider Construction, Inc. – Contractor

B. Project Location

Waypoint Park beach is located in downtown Bellingham in northwest Washington, north of Seattle and Puget Sound on the shores of the Salish Sea. The 1.5 acre park is in northern Bellingham Bay and provides the first public waterfront access point in an ongoing reclamation and redevelopment project on the site of a historic and now derelict industrial pulp mill. The beach is adjacent to the working waterfront known as the Whatcom Waterway channel which is near the mouth of Whatcom Creek, an important wild salmon-bearing stream and the location of a state fish hatchery. The beach covers approximately 175 linear feet along the waterway shore and provides the only direct waterfront access to the public within the downtown district of the city of Bellingham.



C. Project Objective and Description

The objective of the Waypoint Park beach was to restore a long-underutilized portion of downtown Bellingham’s waterfront district in a way that strengthened the public’s relationship to the water and benefitted fish and bird species. In addition, the project aimed to accommodate the projected 2.4 FT of sea level rise projected for the area by building a resilient beach structure that could withstand waves and high water.

As the first phase of the highly anticipated Bellingham Waterfront redevelopment project, Waypoint Park, through the beach and other amenities, sets the stage for a reclaimed waterfront after years of inactivity and environmental cleanup of a former 137-acre superfund site. Waypoint Park and its beach were an early action project sponsored by the City of Bellingham to provide public access and a cornerstone for additional redevelopment of the larger site. The project serves as a testament to public investment in urban renewal of an abandoned industrial property, honoring the history of the site while reimagining the values of an urban waterfront that is accessible to the public and safe for all living things.

Waypoint Park beach restoration consisted of two parts: removal of the old creosote-treated wood bulkhead, and fill excavation, capping, and nourishment to create the pocket beach and backshore.

Bulkhead Removal

The Whatcom Waterway shores are sediment starved due to the continuous seawall, former industrial wharves, scores of acres of fill, or other shore armor that line the waterway. By removing 156 feet of the old creosote-treated wood bulkhead and associated fill, the project improves the nearshore conditions. Creosote is a preservative that contains a large number of harmful chemicals including carcinogens that slowly leach into the water and shore environment over time. Removal of the bulkhead not only allowed for the creation of a more natural beach, it removed a portion of the treated wood to prevent further contamination. Removing the bulkhead also enriches the aquatic habitat through allowing the exchange of terrestrial and aquatic nutrients, insects, invertebrates, and organic material which was otherwise restricted by the armor structure and lack of vegetation.

The land immediately landward of the old bulkhead contained low level contaminants and uncontaminated industrial fill. The area has had extensive testing for containments, and the adjacent land just to the southwest contained high levels of dioxin and other contaminants. This area had a new rock revetment installed several years ago to contain material. The revetment and contaminants limited the length of the new pocket beach.

Beach Creation

Coastal Geologic Services helped navigate the many challenges of creating a new beach directly over a contaminated site. By removing the existing creosote-treated wood bulkhead that lined Whatcom Creek Waterway, space was made for a more natural sloping gravel beach. Careful design was necessary to minimize disruption of the pre-existing lower intertidal environmental cap and the new cap placed below grade landward of the removed bulkhead. Analysis of a recent bay-wide wave model using nearshore extraction points was included in the design process to determine beach geometry (alignment) and sediment sizes in order to limit the off-site transport of the new beach gravel. A rock containment structure (groin; locally know as a drift sill) was built out of large rock on the northeast end of the pocket beach to maintain the imported beach material from being transported north under the Central Avenue Pier while also protecting the fill soil slope with un-engineered rock beneath the pier to withstand marine forces such as waves and estuarine/stream currents.

The beach provides the benefit of enhancing the native habitat for the sediment starved shores of Whatcom Waterway. Imported beach nourishment material was also of suitable size for forage fish spawning habitat. Though no forage fish spawning has been observed at the site in recent decades, several nearby pocket beaches similar to this newly-created one have documented evidence of both surf smelt and sand lance spawn.

For more information visit the project sites below:

City of Bellingham: <https://www.cob.org/gov/projects/Pages/Parks/whatcom-waterway-park.aspx>

Port of Bellingham: <https://www.portofbellingham.com/524/Waterfront-District>

Bellingham Herald: <https://www.bellinghamherald.com/news/local/article214089004.html>

D. Project Success

The beach has become a popular spot in the downtown area. Bellingham residents now have a park and beach in which to recreate, in an area that had previously been a brownfield contaminated site that offered no public access to the waterfront. The beach serves as an entrance into Bellingham Bay for kayakers and other boaters, and features a playground, historic GP pulp mill features (acid ball), benches, bike racks and winding pathways.

Habitat Value

Beach nourishment sediment included appropriate habitat for Pacific sand lance and surf smelt, which comprise a large portion of the Chinook salmon diet. Seasonal topographic monitoring of the beach surface sediments has revealed a natural pattern of sediment dispersion including the formation of several small berms, including just above the mean higher high water (MHHW) line. Ideal forage fish spawning substrate has been observed just under the surficial pebble layer; some of these finer sands and gravels were present at the beach surface.

Stormwater Improvements

The project also improved stormwater conditions by installing a new stormwater management system including piping that routes runoff away from the site prior to its deposition into the bay. The new beach surface and riparian plantings also help to filter and slow the process of stormwater runoff into the Bay.

Public Reviews

The project has received numerous positive reviews from the public. A few are paraphrased and highlighted below (from Google Reviews):

- “Super sweet park! The playground is really cool and there is even water access. This is definitely a place to come hang out and take in the beautiful days in Bellingham.”
- “A great place to launch a kayak or SUP. I expect to see lots of boards and boats launching here over the summer. This very much reminds me of Gasworks Park in Seattle with the abandoned industrial containers in all their rusted glory.”
- “It’s wonderful to finally have access to the water at the mouth of Whatcom Creek!”
- “This is everyone’s favorite park in Bellingham. Happy to see it.”

E. Obstacles Overcome

A large obstacle faced by the creation of the Waypoint Park beach was its location: the beach was constructed directly over a former superfund site. This involved careful treatment and capping of contaminated materials, and required large armor stones to contain the beach nourishment sediment.

The beach also had to be designed to accommodate a projected 2.4-foot sea level rise by the year 2100. The site was raised between 3 and 8 feet to help mitigate the long-term effects of rising sea level elevations in Bellingham Bay. Imported fill and top soil were brought in to build up grade and tie the sloping beach and uplands directly into the adjacent Granary Avenue roadway being constructed at the same time. All pedestrian paths and utilities were designed to be located above the current Ordinary High Water Mark (OHWM) and after sea level rise in the future.

Working within a cleanup site was a challenging aspect of the project, and timing the work to coincide with environmental permitting restrictions added to project complexity. The project had many consultants on board and strict inspection and observation protocols in place to oversee the work. Other challenges included the uncertainty of what was located below ground. Coordinating historic and as-built information into the design was also a formidable task.

One of the largest permitting hurdles was obtaining an individual permit from the US Army Corp of Engineers. This was a time-consuming process that included more administrative work and reporting than a typical project. Working in a Model Toxics Control Act (MTCA) cleanup site as well as a sensitive nearshore area was challenging from a permitting standpoint. This required close coordination with several different state and federal agencies to ensure project success.

F. Public Outreach

The City of Bellingham conducted several public meetings, provided updates to the City Council during regularly scheduled meetings, and formed a steering committee to guide the design. During the project, the city issued several mailers, press releases and installed signage on site. A well-attended opening ceremony was held by the City; attendees included the mayor and other prominent city leaders. The park and beach have received high reviews and are becoming increasingly recommended as a must-see destination on local and social media sites. The site also features a marine-themed playground for children, making it popular among families.

G. Funding and Sponsors

The Waypoint Park beach nomination focuses on the beach within the context of the park – costs and project team information do not include those associated with the surrounding redevelopment that are not related to the beach design and construction.

This project was funded by the following:

- Real Estate Excise Tax
- Washington State Department of Commerce Grant
- Greenway Levy
- Park Impact Fees
- Washington State Department of Ecology Grant

Habitat and Restoration staff from the City of Bellingham Public Works Department, Natural Resources Division, provided additional funds to Bellingham Parks and Recreation to include habitat features including fine sand-gravel mix, large logs and native backshore plantings.

Collaborating sponsors and project partners include the City of Bellingham (COB), the Port of Bellingham, and Bellingham Parks and Recreation (COB), Public Works Department (COB), and the Department of Natural Resources (COB).

H. Why Choose this Beach?

Bellingham's Waypoint Park, named for the iconic industrial art piece located in the park (the Acid Ball), provides an opportunity for everyone in the community to enjoy otherwise very limited access to the waterfront via the new beach. It provides waterfront access in an urban environment that contains reminders of the industrial past in a setting that inspires connection to nature and natural resources.

Bellingham residents have long supported the redevelopment of the waterfront. This project fulfills the community's goal of reconnecting the waterfront to downtown. The newly created beach also adds a natural element to the once fully-armored and sediment-starved shorelines along Whatcom Waterway as it approaches the mouth of Whatcom Creek, a stream that runs through the heart of the city and has been the focus of significant investments in riparian habitat improvements along its length.

As the beach was created to withstand projected sea level rise, it offers improved storm damage protection due to its higher elevation backshore and upland, stabilizing rock groin, logs, and gently sloping profile. The entire ecological community benefits from this project, which added native plantings in the riparian zone to create habitat and improve aesthetics.

Recreation is underway along the waterfront in this location, with the beach offering a safe access point for boaters. The beach is used as a kayak launch site with plans in the works for an adjacent restaurant, public market and small boat rental facility. The park incorporates non-motorized access for bikers and pedestrians, as well as ADA-approved paths, allowing community members of all abilities to enjoy the waterfront.

I. Specifications

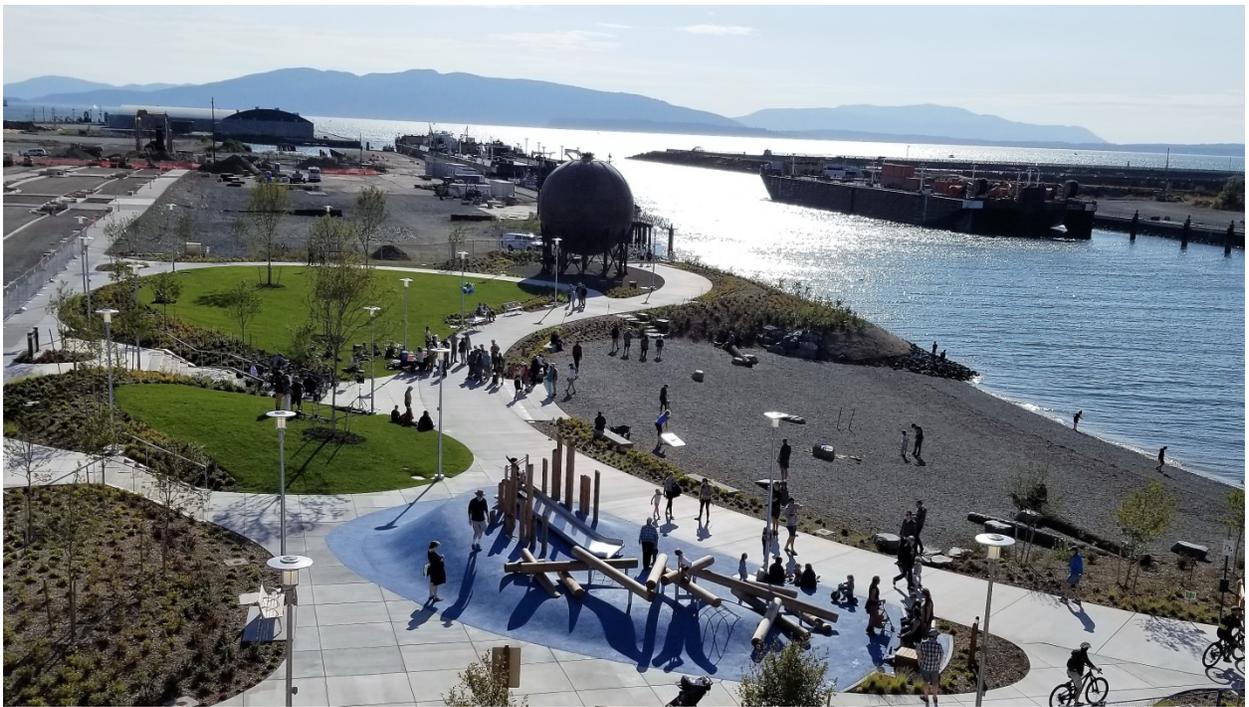
Quantities and costs for the beach construction portion of Waypoint Park are outlined in the table below. These numbers represent the final totals. The total cost for the entire park project, including the beach element, was \$3.3 million.

Item Number	Description	Quantity & Unit		Amount
	SCHEDULE B - BEACH (NON STREET RELATED ITEMS OF WORK)			
	Other Items - Beach			
S-2000	Mobilization	1.00	LS	\$8,000.00
S-2001	Beach Gravel	1,952.93 (1,502)	TN (CY)	\$52,729.11
S-2002	Beach Cobble	1,251.68 (962.8)	TN (CY)	\$33,795.36
S-2003	Habitat Gravel	1,440.51 (1,108)	TN (CY)	\$38,893.77
S-2004	Hard Armor Rock Beach Containment	155.97 (120)	TN (CY)	\$8,890.29
S-2005	Slab Like Rock Shore Stabilization	85.01 (65.4)	TN (CY)	\$7,225.85
S-2006	Beach Quarry Spall	155.93 (120)	TN (CY)	\$4,989.76
S-2007	Beach Shot Rock	60.29 (46.4)	TN (CY)	\$1,688.12
S-2008	Dunegrass	3,500.00	EA	\$9,975.00
S-2009a	Beach Excavation - Reuse on Site	1.00	LS	\$11,000.00
S-2009b	Beach Excavation - Unsuitable - Metal Recycle	11.48	TN	\$86.10
S-2009c	Beach Excavation - Unsuitable - Haul to Subtitle D	0.00	TN	
S-2010	Beach Foundation/Concrete Slab Removal	1.00	LS	\$2,400.00
S-2011	Beach Bulkhead Removal	175.00	LF	\$19,250.00
S-2012	Separation Geotextile	1,155.00	SY	\$2,887.50
S-2013	Beach Geotextile	200.00	SY	\$500.00
S-2014	Habitat Log	3.00	EA	\$6,000.00
S-2015	Beach Demolition	1.00	LS	\$3,000.00
S-2016	Beach Concrete Retaining Wall Removal	1.00	LS	\$3,000.00
	Total - Beach			\$214,310.86

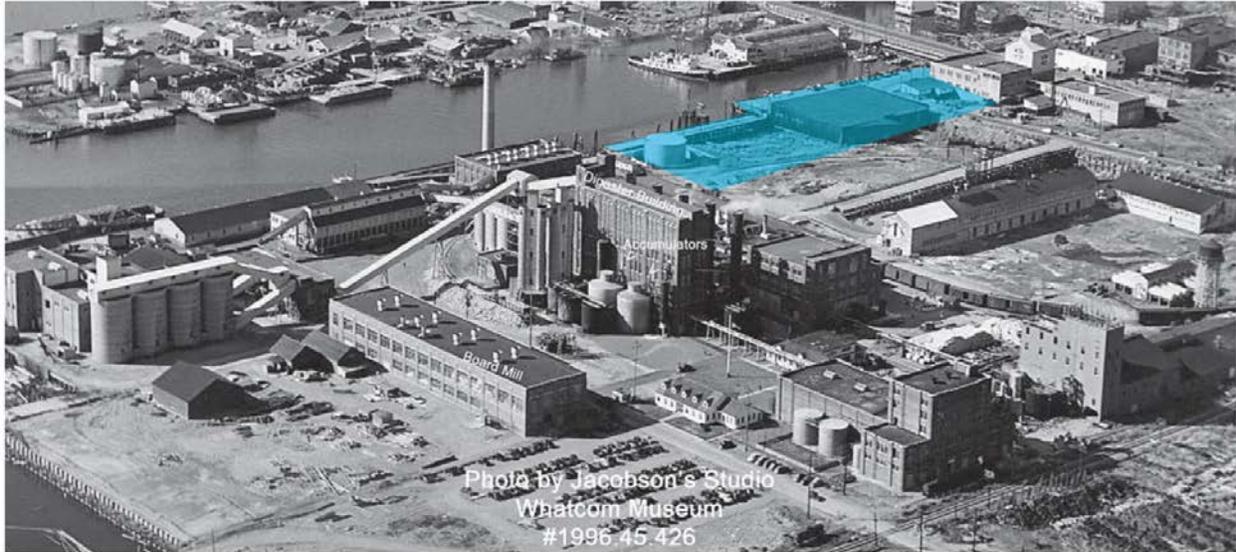
J. Photographs



Waypoint Park beach, before (top) and after (bottom) construction, looking northeast (photos from Gina Austin, City of Bellingham).



Waypoint Park beach before (top) and after (bottom) construction, looking southwest. Photos by Josh Neyman, City of Bellingham.



Georgia Pacific (GP) pulp mill with highlighted area of the new beach and park (Whatcom Museum).



Aerial image of the park, looking northeast (photo by Port of Bellingham)



Beach construction including nourishment import of sand-gravel “habitat sediment” over rounded gravel base layer (top) and large log placement (2018 photos by Coastal Geologic Services).