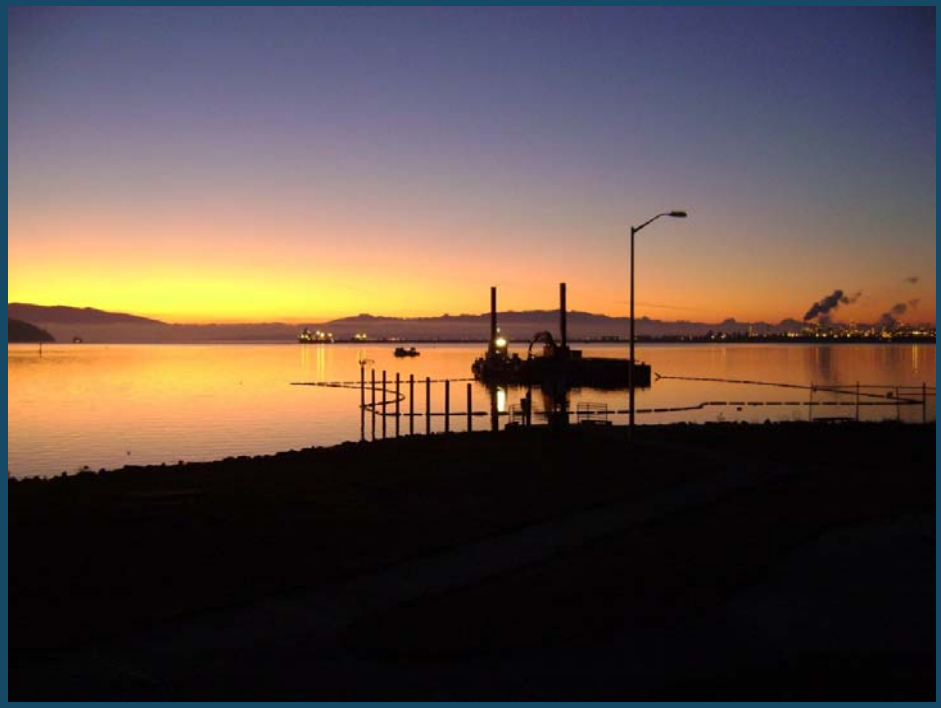

Dredging Activities at the Former Scott Paper Mill Cleanup Project

Chris Bailey, John Herzog, Abhijit Joshi, Robert Trahan

Western Dredging Association Pacific Annual Chapter Meeting

October 27, 2011

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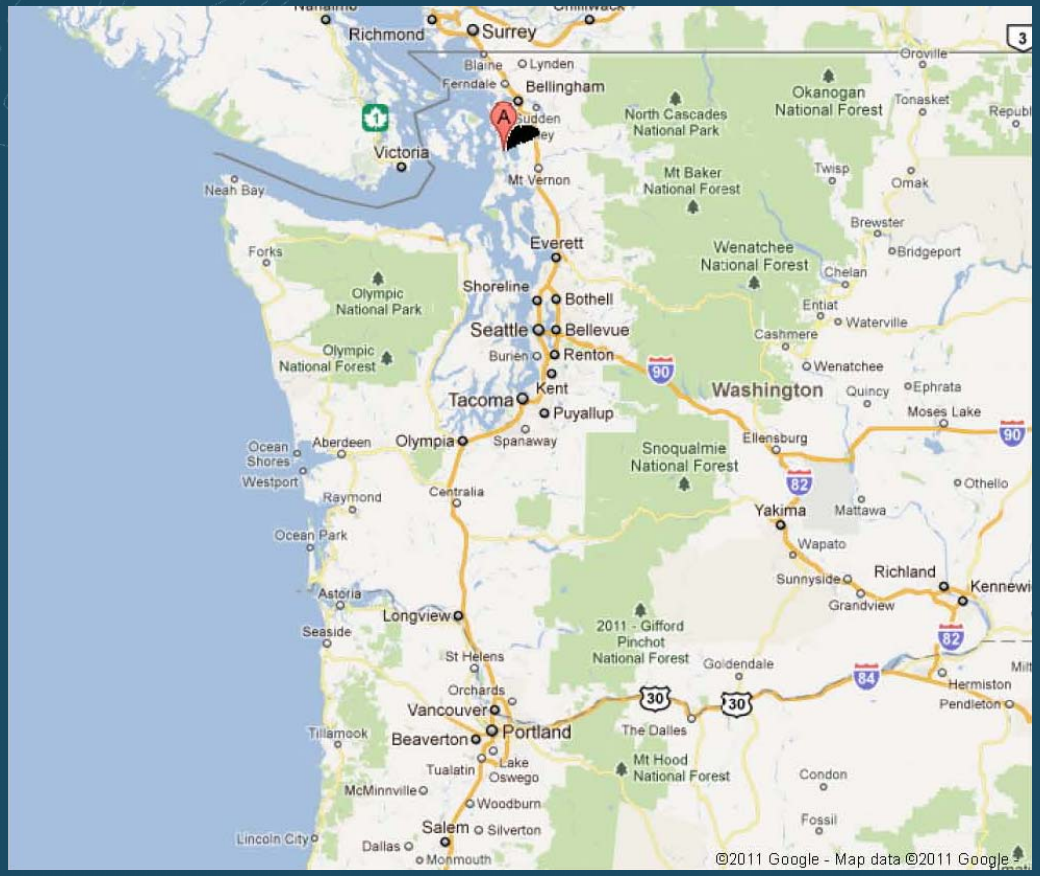

Location

The project site is located within the Port of Anacortes on Fidalgo Island in northern Washington State

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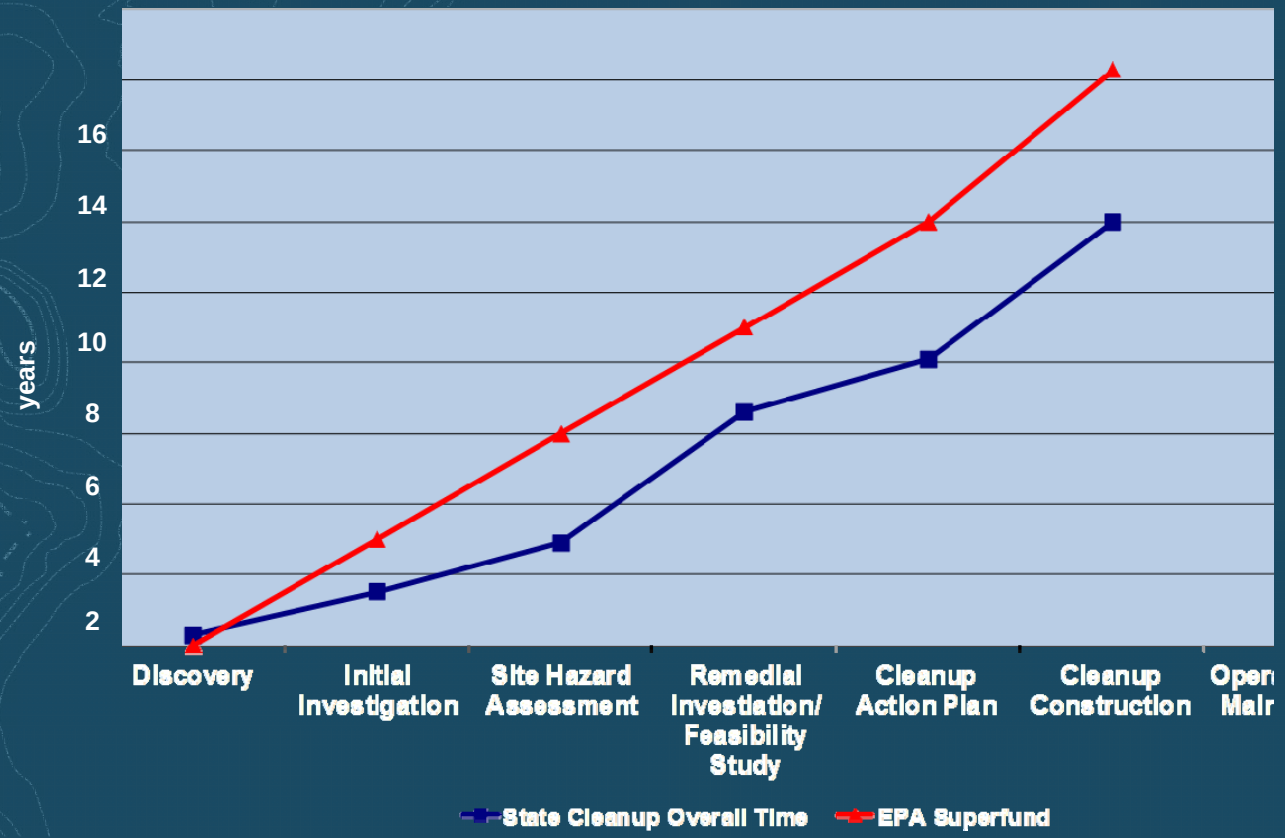
Background

- In 2005 the Port of Anacortes approached the Washington Department of Ecology with an integrated cleanup and redevelopment program and aggressive schedule that would result in several early successes for the Puget Sound Initiative
- "Focus Fidalgo" – the Port's integrated environmental cleanup program for their waterfront properties is a partnership with Ecology to expedite cleanup, restore habitat, and enhance public access
- The Former Scott Paper Mill Site is the third major cleanup completed under Focus Fidalgo



Perspective for cleanup timeframes

Historically, the average time to complete a major cleanup in Washington State is 12 to 16 years

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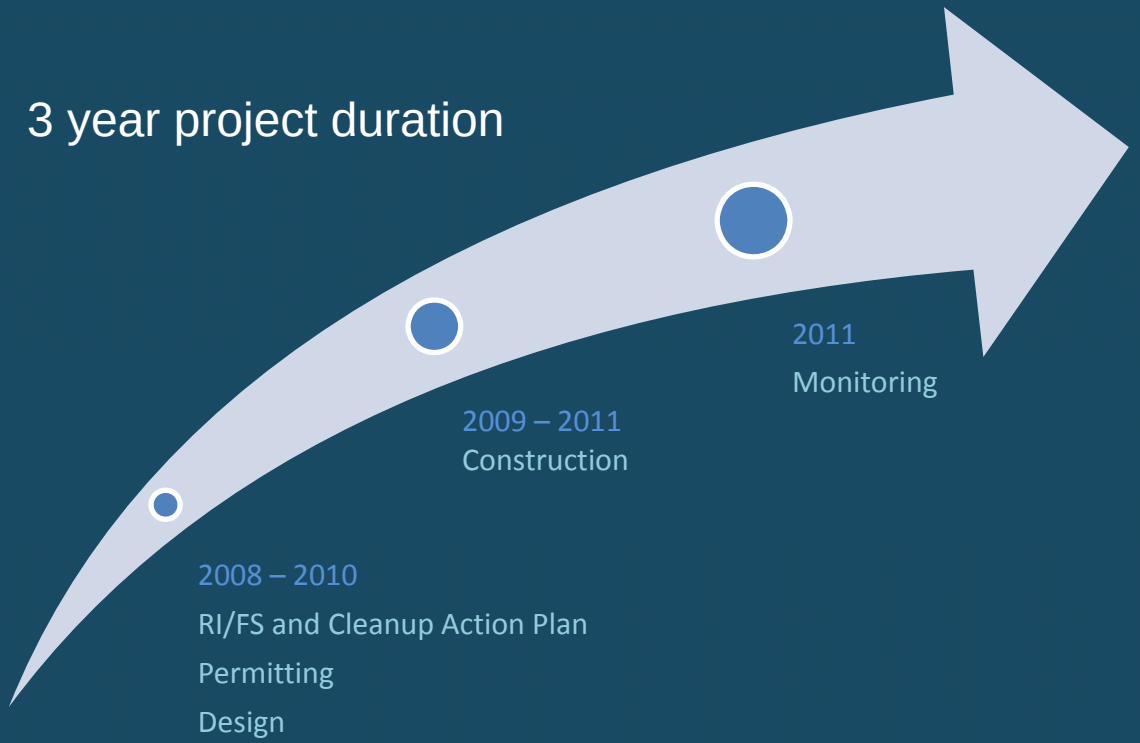
Project timeline

3 year project duration



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History

The project site was developed at the turn of the century and used for industrial purposes including lumber milling and pulp and paper manufacturing through the 1970s

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Port involvement

The Port acquired the property in 1979 from Scott Paper and initially used the property for log storage before developing a public park space and selling parts of the property

Pre-construction condition

Parts of the Site had been developed and cleaned up – the remaining areas remained contaminated and the marine habitat degraded

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Project vision

The Port worked collaboratively with regulatory agencies, community, and special interest groups to develop a concept for the property uses after cleanup

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Cleanup plan

The project was divided into four phases to accommodate ongoing site uses and construction sequencing

Phases 1, 2, and 3 were completed by the Port and Phase 4 was completed by the Kimberly-Clark Corporation

Phase 1

- Upland excavation
- Infrastructure modification in preparation for Phase 2

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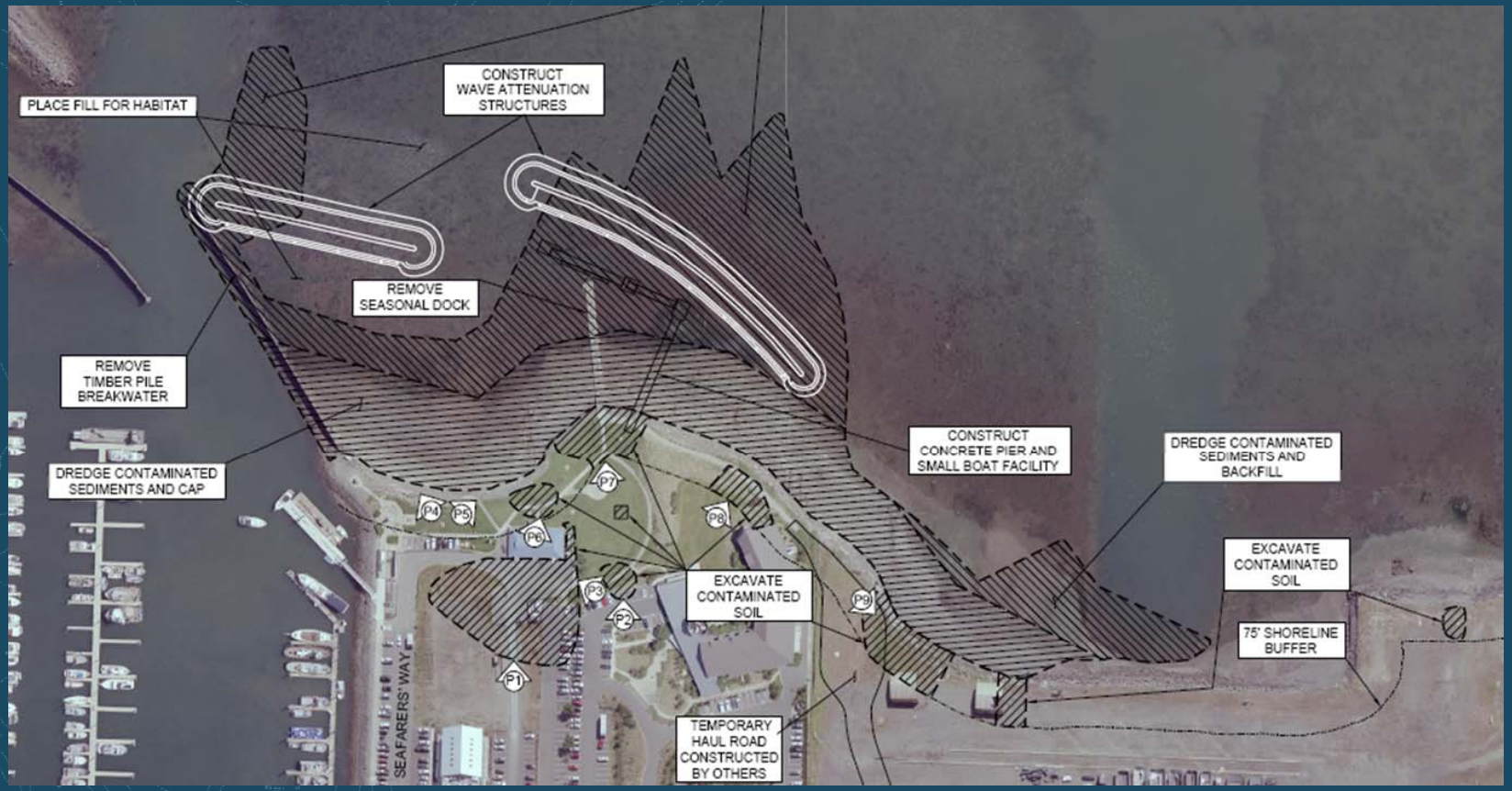

Phase 2

- Shoreline excavation
- Dredge, cap, backfill offshore areas
- Construct breakwater and pier structures

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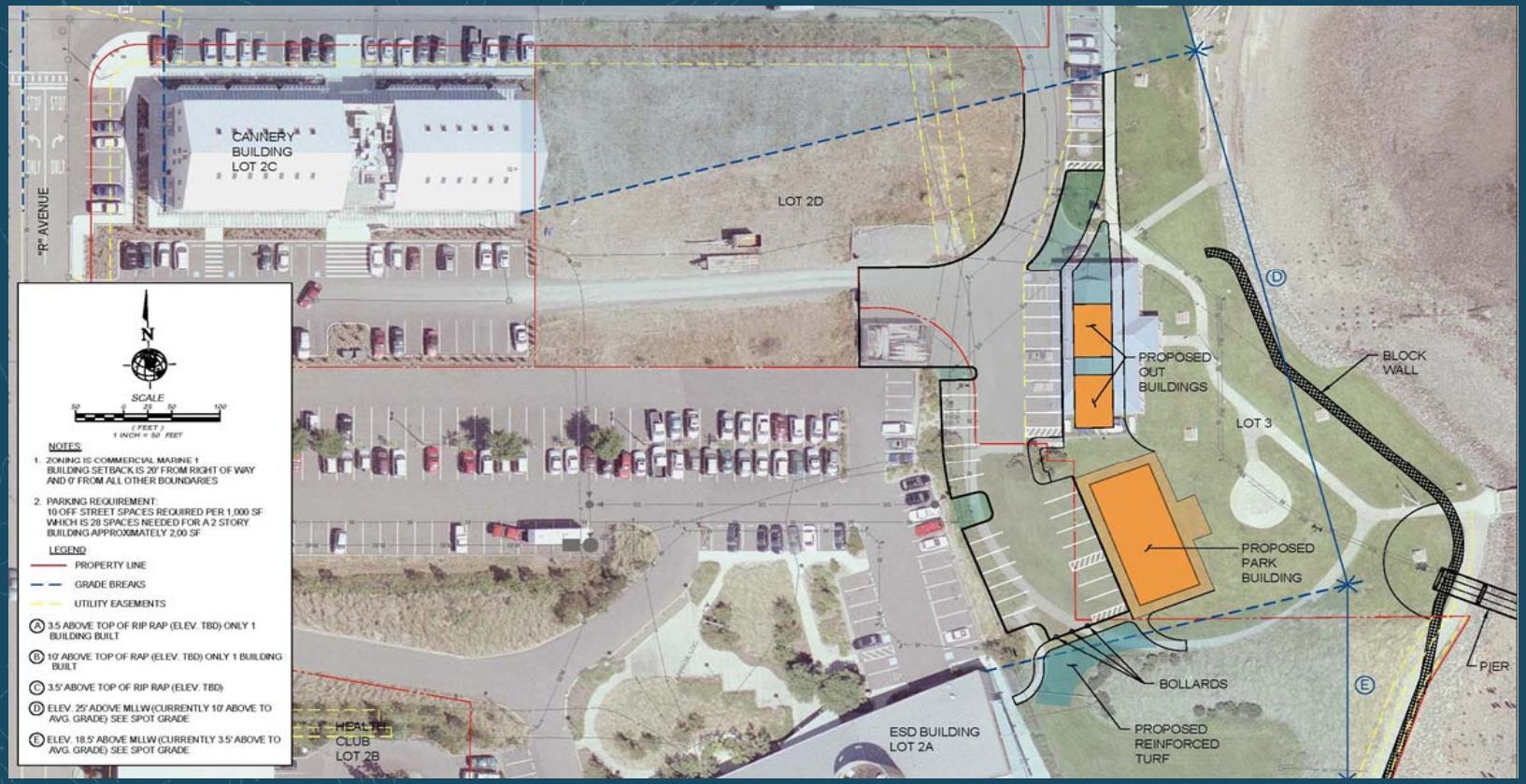

Phase 3

- Restore infrastructure and public access

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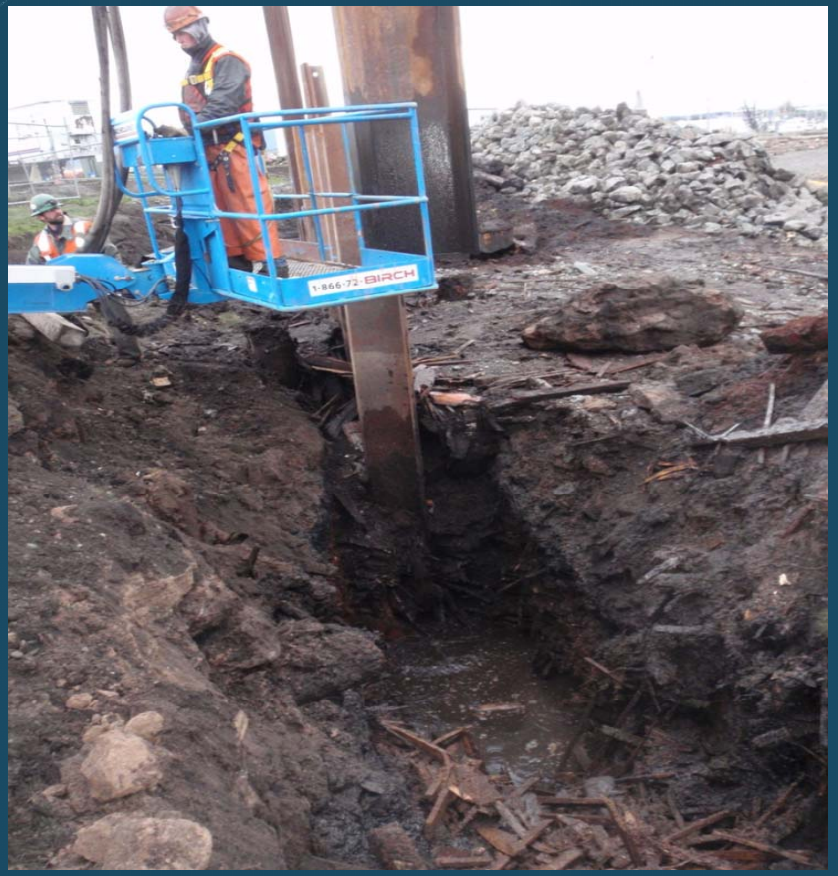

Excavation shoring

Extensive shoring was required to allow the shoreline excavations to be completed outside of the in-water work window and to assist dewatering


FedEx

Shoreline and upland excavation

Approximately 93,000 cubic yards of contaminated soil, wood, and debris was excavated from the site for landfill disposal

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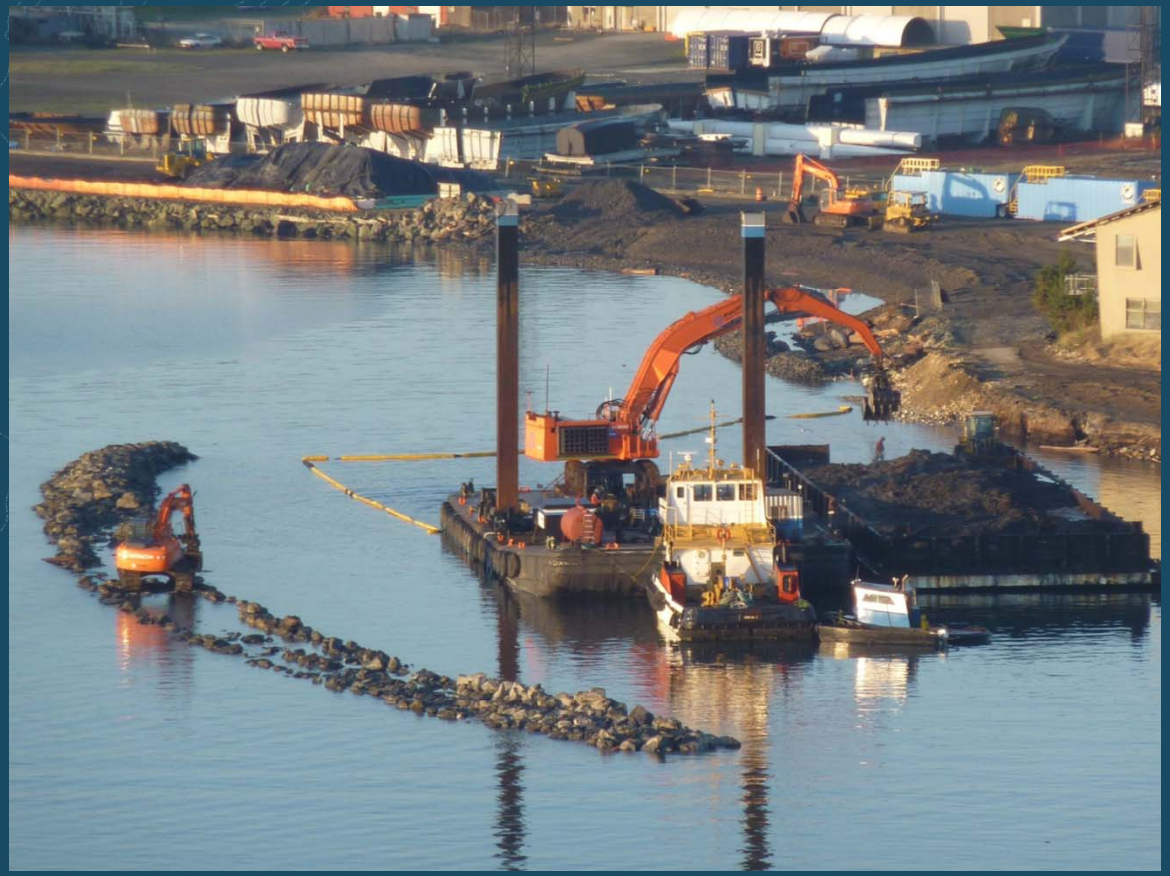
HITACHI

Dredging

Approximately 54,000 cubic yards of sediment, wood, and debris were dredged at the Site for open water and upland disposal and 37,000 cubic yards of material were dredged from a nearby navigation channel and used on Site as fill

Demolition

A section of the existing breakwater required demolition to complete the dredging and construction of the new wave attenuator structures



Water depth

Most of the dredge prism was located above -14 feet MLLW requiring shallow draft equipment for over-water work and land based equipment for the intertidal areas

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Wood debris

The dredge prism contained buried dimensional lumber and cut off pile from the historical mill


Pacific
Pile & Marine
EX1200


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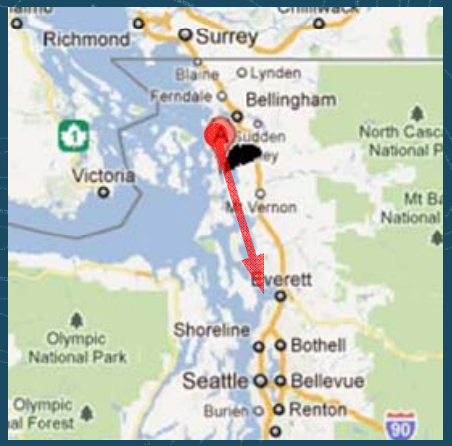

Open water disposal

Approximately 21,000 cubic yards of material were eligible for open water disposal at the Port Gardner, Washington open water disposal site – about a 12 hour round trip from the Site

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Wood debris segregation

In parts of the open water dredge prism wood debris prevented the barge from opening – as a result, some loads were returned to the site where the wood was separated and the sediment reloaded for disposal

Dredged material handling

The dredged material for upland disposal and parts of the open water dredge prism were offloaded to a nearby marine terminal and processed in a facility constructed by the Port


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Dredged material processing

Screening machines were used to separate the wood and rock from the fine grain sediments – diatomaceous earth was used to amend the material for shipment

Recycling

Reclaimed rock was washed and returned to the Site for use as backfill – effectively lowering the overall disposal and materials purchase costs

Transport

Approximately 37,000 tons of contaminated sediment and wood debris transported from the site by truck for landfill disposal

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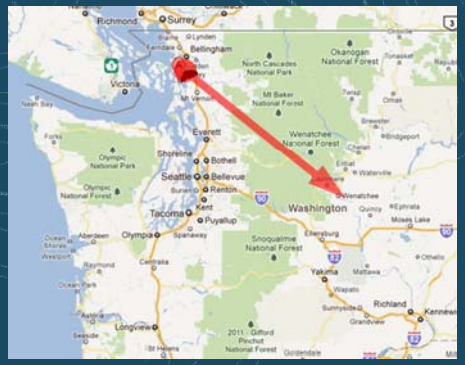

Disposal

The contaminated dredged material was transported to the Wenatchee Regional Landfill

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Beneficial use material

Approximately 37,000 cubic yards of material were dredged from the Swinomish Channel for use as backfill and to construct eelgrass beds at the Site

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Acknowledgement

Owner/Contract Agent

- Port of Anacortes

Contractors

- Ram Construction – Phase 1
- Pacific Pile and Marine – Phase 2
- Strider Construction – Phase 3

Technical

- GeoEngineers
- Coast and Harbor Engineering
- Grette Associates
- WH Pacific
- HBB Landscape Architects