Project

Contaminated waterfront transformed through our sustainable remediation solutions

4,400 feet

of beachfront restored

12,000 square feet

of new wetlands and other habitat built

75,000 tons

of toxic soil and sediment removed

Summary

- The Washington State Department of Ecology trusted Haley & Aldrich to lead the remediation of a coastal site contaminated from a century of sawmill operations — the largest state-funded cleanup to date.
- Coordinating with a team of scientists, engineers, archaeologists, and specialized subcontractors, we led remedial design and construction, creating a transformative plan that would not only clean up the site but also ensure long-term ecological and economic productivity.
- We prepared plans and specifications in less than three weeks to facilitate construction in the same calendar year, and we completed the cleanup on time and within budget.
- Our approach successfully balanced effective remediation with challenging Endangered Species Act requirements and the needs of local tribes and government agencies.
- The revitalized area is now home to thriving businesses and ecological communities.

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Client challenge

The Washington State Department of Ecology sought to fund the cleanup of an expansive, ecologically sensitive contaminated site to restore its shoreline and marine habitat and get the upland property back into economic use. The former Custom Plywood site, located in Fidalgo Bay, and prioritized for environmental cleanup as part of the state's Puget Sound Initiative, contained 100 years of contamination from several sawmill operations. Decomposing wood waste was stealing oxygen from the bay ecosystem. Creosote-treated piles, industrial debris, and the remnants of two substantial fires at the site left behind a toxic environment.

After standing vacant for two decades, public interest was high, and multiple stakeholders, including the Samish Nation tribe, City and Port of Anacortes, the property owner, Ecology, and resource agencies, were eager to see the site cleaned up; however, state funds were limited.

Additional factors contributed to the site's complex challenges. The remediation work would require a strong lead environmental and engineering firm to coordinate a large multidisciplinary team of environmental, geotechnical and civil engineers, wetland and fisheries biologists, coastal geomorphologists, and cultural resource/archaeological professionals. The team was faced with removing contamination in an ecologically sensitive area without impacting the essential habitat, including one of the largest eelgrass beds in the U.S. However, traditional options for dealing with the contamination would likely destroy the eelgrass. Further, time of year limitations and weather restricted in-water work and construction from July through October. Any complications or permitting delays would therefore greatly extend the project's timeline.

For years, Ecology has relied on our environmental consultants to employ a holistic approach, bring stakeholders together, and build an integrated team of experts, so they asked us to lead the charge on the Custom Plywood site cleanup.

Our approach

Our goal for the project was not to simply clean up the site, but rather to completely transform the site to ensure long-term ecological and economic productivity. To do so, and to manage the complexity and totality of the cleanup, our environmental engineers used both traditional and new approaches focused on reducing the highest pockets of toxic risk and taking advantage of the natural tendency of the environment to heal itself. The work has occurred over three interim remedial phases to address upland, in-water, and deep-water impacts, the last of which is still underway. Our team has led the remedial design and construction for both the upland and in-water cleanup.

To satisfy the wide range of stakeholders, we led a well-integrated, multidisciplinary team, relying on our decades of expertise aligning, sequencing, and executing complex remediation projects. We involved specialized subcontractors to perform work with areas of expertise critical to the cleanup, including an eelgrass dredging expert, and we effectively coordinated work among the complex group of subcontractors.

Project phases:

- **Upland remedy:** Demolished structures, excavated and disposed of contaminated soil/waste, removed creosote piles, constructed estuarine wetland complex
- **In-water remedy:** Removed creosote piles, construction debris, and contaminated sediment; demolished in-water structures and placed new habitat substrate; tripled habitat-friendly shoreline and restored vital forage fish and salmonid habitat
- **Deep-water dredging:** Remediation design, remediation, relocation of .5-acre eelgrass

To account for in-water work that was bound by limitations, the integrated team proactively planned and executed remedial actions to meet the tough milestones and avoid delays. In another scenario, we designed a minimal-impact remedy to protect eelgrass by leaving the existing habitat in place with an innovative solution – applying a cap on the eelgrass in multiple thin layers. A thin layer cap pilot study showed that eelgrass was not negatively affected by thin layer capping. As part of phase 3 we will implement this sustainable solution and will also transplant almost .5-acre of eelgrass (60,000 shoots) impacted by the remediation.

As the primary permitting partner for Ecology, we helped them balance the need to comply with extremely challenging Endangered Species Act requirements and satisfy the local tribes and governmental agencies, while effectively remediating the site. We sought early review and feedback from agencies regulating endangered species, avoiding delays that would hinder completing work within the required timeline. We also sought communication early on from tribes and other committees to get feedback and consensus on our approach and ultimately expedite the permit review timeline.

> *"We appreciate Haley & Aldrich's efforts and the good consulting work. The construction project went a lot smoother and more cost-effectively than we expected, and the team completed the project on time and on budget."*
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> Washington State Department of Ecology

Our remediation approach to the site also delivered social, economic, and sustainability benefits for the City of Anacortes. We converted part of the site into a stormwater drainage and bioswale system for the city to reduce demand on its existing systems, also reducing stormwater impacts on the marine environment. We also expanded the habitat area to accommodate more fish and wildlife. The restored areas allowed an influx of new businesses that contributed to the tax base and increased the community's recreational activity.

The extent of the cleanup:

- Removed 2,500 creosote piles, 2,600 tons of construction debris
- Excavated over 75,000 tons of toxic soil and sediment
- Built 12,000 square feet of new wetlands and habitat

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- Restored 4,400 feet of beachfront

Overall, the myriad habitat enhancements — including construction of a new estuarine wetland complex, an aquatic spit and protective jetty extension to protect the wetland and shoreline enhancements from winter storms, forage fish habitat restoration, and upland plantings — will ensure long-term ecological and economic productivity.

Value delivered

- Transformed a severely degraded waterfront industrial property back to a productive nearshore and upland habitat, and a thriving economic and ecological community
- Completed the largest state-funded cleanup to date on time and within budget
- Effectively remediated contaminated soil, groundwater, and sediment
- Prepared plans and specifications under an extremely tight deadline (less than three weeks) to facilitate construction in that same calendar year
- Together with Ecology, won American Council of Engineering Companies (ACEC) Gold Engineering Excellence Awards in Washington (Social/Economic Stability category) and Oregon (Grand Award)

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