Brownfields
Success Story

Going With the Flow to Prevent Flooding
Tillamook County, Oregon

In Tillamook County and other areas of northern Oregon, timber, dairy production and outdoor recreational activities like fishing are integral to the local economy. But these industries and the region's ecological stability are under constant threat of devastating floods. Major flooding in 1996 caused $53 million in damages in Tillamook, the highest per capita loss in the history of Oregon and equivalent to 148% of the county's annual budget. Subsequent floods in 1998, 1999, 2006 and 2007 prompted state and local officials to create the Southern Flow Corridor Project, a broad plan to protect flood plain and tidal marsh habitats through anti-flooding measures.

The Opportunity

The Southern Flow Corridor Project's goal was to restore 522 acres of tidal marsh habitats by eliminating man-made barriers to floodwaters. This was accomplished in two ways: removing faulty levees and excavating soil to allow for a more natural flow.

The project brought together a remarkable number of stakeholders—more than 100 federal, state and local partners signed on to find ways to help reduce flooding. Karen Homolac, brownfields specialist for the Oregon Business Development Department, says this unique dynamic created synergy.

"I called it 'alphabet soup'," says Homolac, referring to all the acronyms on the itinerary at project meetings. "But having such a diverse array of expertise and funding sources ultimately served the project well."

The U.S. Environmental Protection Agency (EPA) joined the fold after Tillamook County purchased land with excess soil next to Tillamook Bay as part of the project. Over time, the site had been home to two former veneer mills, where workers applied thin slices of wood to flat panels to create products like doors, cabinets and parquet floors. County officials suspected that the operation had left the soil contaminated in areas associated with the former mill buildings.

EPA
United States Environmental Protection Agency

EPA Grant Recipient:
Tillamook County, Oregon

EPA Grants:
Brownfields Cleanup Grant

Former Use:
Veneer Mill

Current Use:
Protected Wetlands

A shuttered veneer mill left behind high concentrations of contaminants.

In some areas, workers had to remove trees to access the contaminated soil.

The soil containment cell helped the project team avoid making costly trips to the landfill.

"Working on the Southern Flow Corridor Project was incredibly rewarding. Despite some short-term challenges, it was all worth it in the long run, because the entire region benefits from it."

Karen Homolac, Brownfields Specialist, Oregon Business Development Department

For more information:
Visit the EPA Brownfields website at www.epa.gov/brownfields or contact Susan Morales at 206-553-7299 or Morales.Susan@epa.gov.

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The county received $105,974 in state Brownfields Assessment Grant funding to analyze the site, and their suspicions were confirmed. About 12,600 cubic yards of soil and groundwater contained heavy oil, polycyclic aromatic hydrocarbons, asbestos and metals like cadmium, lead and mercury. Years of illegal dumping had resulted in a high volume of debris on the site, as well.

The Cleanup

Tillamook County received a nearly $700,000 Brownfields Cleanup Grant—representing a combination of just under $500,000 in state funding and $200,000 in federal funding—to remediate the area, which was no easy task. "The veneer mills left quite a footprint," Homolac says. "The high concentrations of contaminants exceeded the state's criteria for clean fill, which really limited the county's options for reusing the material off-site." (Clean fill refers to construction waste materials eligible for recycling on other projects.)

Still, the cost of hauling away and disposing of the material to a suitable landfill was prohibitively expensive. Instead, workers placed 11,500 cubic yards of contaminated material in a containment cell. The 1.5-acre cell was capped with clean topsoil and uses a methane ventilation system to prevent cross-contamination. This helped achieve the Southern Flow Corridor Project's goal to remove any potential barriers to the natural flow of floodwaters and saved the project workers from making approximately 575 landfill trips. Workers capped any soil they could not place in the containment cell with topsoil and tree berms, protecting wildlife from contamination while enhancing their habitat.

The Benefits

The Southern Flow Corridor Project began as a flood-control initiative, but its benefits extend far beyond that. Reduced flooding helps protect local industries that rely on the surrounding lands. By avoiding flood damages, the community will save an estimated $9.2 million over 50 years. Wildlife stands to benefit as well—the Oregon Department of Fish and Wildlife estimates that the restored wetland will produce an additional 6,000 to 9,000 adult coho salmon annually.

In 2017, the project received the prestigious Phoenix Award, which honors groups and individuals who transform contaminated sites.

"So many people dedicated so much time to seeing this project through," says Homolac. "I'm proud EPA's Brownfields Program could be a part of it."