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ODOT Using Soil to Improve Oregon's Water Quality

What's the tool the Oregon Department of Transportation (ODOT) uses most often to keep Oregon's rivers and streams clean? Dirt. Lots and lots of dirt.

In the past, stormwater mitigation was more about keeping drivers' tires on the road during inclement weather and less about keeping waterways clean. Scuppers were strategically placed on bridge decks to prevent water from pooling and causing drivers to hydroplane. However, scuppers do nothing to remove the pollutants gathered by water as it drains off a bridge surface into the water below.

As part of the $1.3-billion Oregon Transportation Investment Act III State Bridge Delivery Program, ODOT has found that one of the most effective tools to maintaining and improve water quality in lakes, rivers, and streams flowing under bridges is bioswales.

The Coast Fork Willamette River Bridge on Interstate 5 near Creswell is an OTIA III State Bridge Delivery Program replacement bridge with bioswales and specialized inlets that help remove strormwater pollutants.

Bioswales are layers of soil, plants, and other natural vegetation that trap and remove silt and pollution from surface runoff water. One of the earliest examples of a successful bioswale in the United States was the installation at the Willamette River Park in Portland, OR, in 1996. More than 2,300 ft of bioswale was installed to capture pollutant runoff before it entered the Willamette River. Six years later, studies showed that solid pollutant levels in the river had been reduced by 50 percent.

ODOT is using bioswales on two major projects: between Eugene and Roseburg on Interstate 5—Sutherlin to Roseburg, Bundle 353; and on Clarks Branch to Tunnel Mill Race, Bundle A02. CH2M HILL (www.ch2m.com), the contractor on both bundles, is replacing inefficient scuppers that merely drain water off the bridge surface with specialized inlets on the bridge deck. The specialized inlets are grated boxes, just like a storm drain. They are located flush with the bridge deck and have pipes running under the bridge that channel the stormwater to the edge of the bridge and into the bioswales underneath the bridge. The bioswales being used on these projects include native grasses and, of course, lots of dirt.

ODOT is developing a list of approved options for stormwater engineers—known as batch performance standards—to streamline the bridge design process. By identifying the most effective and cost-efficient ways to treat stormwater on bridge program projects, the agency is making clean water a priority.