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### **Edge Sand & Gravel's "warm mix" asphalt process helps save money and the environment**

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What a difference a little water makes.

Asphalt manufacturers have found that injecting H<sub>2</sub>O into the traditional paving mix allows the manufacturing process to proceed at a cooler temperature that is better for the environment and may produce a longer-lasting product.

Edge Sand & Gravel has pioneered this new "warm mix" locally in addition to its traditional "hot mix," thanks to encouragement from Eugene Public Works employees, who had learned of its successful use in Europe, said Dale Fortner, environmental and land use manager for Edge Sand & Gravel and Eugene Sand & Gravel. Oldcastle Materials Group owns both local companies.

Asphalt paving is made by combining hot rock and liquid asphalt, the rocks heated in a massive rolling drum by a big burner spurting a monstrous flame.

Hot mix requires temperatures of 320 to 325 degrees Fahrenheit, Fortner said. Adding water to the liquid asphalt before it hits the hot rock creates a foam that coats the rock at about 270 to 275 degrees.

That consumes less fuel, releases fewer emissions and saves Edge money, Fortner said. Installing the additional equipment cost less than \$100,000 but uses between 15 percent and 20 percent less fuel, he said.

So far Edge has produced more than 20,000 tons of warm mix.

The company produces about 125,000 tons of asphalt annually, he said.

Warm mix asphalt is new to the West Coast, said Matt Rodrigues, Eugene's pavement preservation program manager. It has been used for a decade in Europe, while Texas has laid more than a half-million tons of it, Rodrigues said.

Warm mix offers three benefits, Rodrigues said.

Because it uses less energy, the plants mixing it reduce their greenhouse gas emissions.

The lower temperature mix doesn't burn off the light oils in the petroleum, which also drastically reduces volatile organic compound emissions, providing a health benefit for those working around it as well as an environmental benefit, Rodrigues said.

The warm mix compacts more easily than conventional asphalt, reducing water penetration that can lead to cracking, he said.

"We've allowed it to be used on all projects, and we specified it on some," he said. The city has seven paving projects, either completed or planned for this summer, that will use 36,000 tons of warm mix, he said.

While the Oregon Department of Transportation isn't actively pushing its use, the state agency allows contractors who have access to it to put it down on state roadways, said ODOT spokesman Monte Turner.

EGGE has several paving projects coming that will use warm mix, including work for Lane and Douglas counties and on Highway 242, the old McKenzie Highway, under a contract with the Forest Service.

More Oregon manufacturers are adding warm mix to their product lineup, said Jim Huddleston, executive director of the Asphalt Pavement Association of Oregon.

Statewide, six contractors have invested in the technology, and all three of Eugene's suppliers will have it by the end of the summer, Huddleston said.

"It is very exciting, and I anticipate it will become standard practice in the next few years with very significant and measurable environmental, performance and economic benefits," Huddleston wrote in an e-mail.

While the warm mix is a little more challenging for construction workers to rake, it makes up for that in cooling more quickly, which allows cars and trucks to drive on it sooner, said Eugene Sand & Gravel paving foreman Don Mercer, who was supervising a crew working with the new mix on Royal Avenue this week.

Mercer estimated that in four hours on Tuesday morning, his crews rolled out about 600 tons of warm mix.

"I've been doing this 30 years, and I was skeptical at first, but I'm impressed with it," he said.

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