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Dig the Big Pipe's progress

City shows off its work as boring under Portland pauses

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One-hundred-and-twenty feet below Montage restaurant, a 1,000-ton beast is eating its way through Portland.

She has a cute name. But Rosie is insatiable, with teeth that can grind stones and the guts to guzzle 7 gallons of grit a second. In six months, she has munched her way from the Oregon Museum of Science and Industry to the Morrison Bridge. Now she's resting between courses.

Rosie is a \$12 million tunnel-boring machine built to chew through Portland's soils like a bookworm through Powell's Blue Room. She's the main machine working to keep sewage from spilling into the Willamette River. She's the reason our sewer bills are so high.

And she has just finished the first leg of the Eastside Big Pipe project, having tunneled nearly a mile from a deep shaft near OMSI to another shaft near Montage at Southeast Alder Street.

Rosie rested Monday so politicians and news crews could tour her subterranean lair. The city wants people to see the hole their money is going into, said City Commissioner Sam Adams.

"We're spending \$1.4 billion on infrastructure that's 100 to 160 feet underground," said Adams, who oversees the sewer-running Bureau of Environmental Services.

The reasons for that big bill often pass with as little notice as the machine 20 fathoms down, but they're simple and unavoidable: It rains a lot here. Portland was built without wastewater plants. In the 1950s, Portland built its first wastewater plant too small to handle runoff from rain, Director of Environmental Services Dean Marriott said.

Last year, the city opened a 14-foot-wide Westside Big Pipe between Southwest Clay Street and Swan Island to help hold runoff from storms before it gets treated. That pipe "performed better than we expected" in last week's deluge, Adams said, though it did eventually spill some waste into the river.

At 22 feet across, the Eastside Big Pipe will hold 83.1 million gallons, enough space to fit every Oregonian with room left for all the folks from Clark County, Wash. Still, a rain like last week's "will come close to filling the tunnel," Marriott said.

Police Chief Rosie Sizer christened her namesake in March. In May, the machine descended 115 feet into the 67-foot-wide "Opera Shaft" near the Portland Opera headquarters.

The shaft flooded, and the machine immediately fell a month behind schedule. But crews have been working six-day weeks, around the clock. And Rosie's 88-ton cutter head, customized for our soils, has been more efficient than expected. So the project is back on schedule and budget, said Paul Gribbon, the city's chief engineer for the tunnels.

Next, Rosie will head to the Rose Garden, where workers are sinking a third shaft. By 2011, the Eastside Big Pipe should stretch from Southeast McLoughlin Boulevard and 17th Avenue to Swan Island, where pumps will send both big pipes' contents to the Columbia Boulevard Wastewater Treatment Plant.

When finished, Portland should go from about 100 river-fouling overflows a year to four, Adams said. The city is about two-thirds of the way toward that goal, he said.

"Every time there was a rainstorm, it used to always overflow into the river," Adams said. "So this is a very, very significant change. And mostly underground. And very expensive."

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