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**From:** Ziegler, Jennifer (GOV) [Jennifer.Ziegler@gov.wa.gov]  
**Sent:** Monday, March 09, 2009 9:34 AM  
**To:** Paananen, Ron; Dye, Dave; Grotefendt, Amy (Consultant); Judd, Ron  
**Subject:** RE: Brightwater sinkhole/bored tunnel

Fantastic--thank you. I've given Pearse and Laura a heads-up.

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**From:** Paananen, Ron [mailto:PaananR@wsdot.wa.gov]  
**Sent:** Monday, March 09, 2009 9:33 AM  
**To:** Ziegler, Jennifer (GOV); Dye, Dave; Grotefendt, Amy (Consultant); Judd, Ron (GOV)  
**Subject:** Re: Brightwater sinkhole/bored tunnel

Jennifer - this is dave on ron's blackberry - we have a room full of national tunneling experts and will cobble some thoughts together...stand by...

-dave

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**From:** Ziegler, Jennifer (GOV)  
**To:** Dye, Dave; Paananen, Ron; Grotefendt, Amy (Consultant); Judd, Ron  
**Sent:** Mon Mar 09 09:28:25 2009  
**Subject:** FW: Brightwater sinkhole/bored tunnel

So, I have to believe we will hear about this. Are there some distinctions we can make?

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**From:** Charles Knutson [mailto:CharlesK@seattlechamber.com]  
**Sent:** Monday, March 09, 2009 8:58 AM  
**To:** dstark@smithandstark.com; Bob Donegan; Jon Scholes; pmcroberts@smithandstark.com; Ziegler, Jennifer (GOV)  
**Subject:** Brightwater sinkhole/bored tunnel

Let's prepare for possible questions about this...

## Brightwater likely caused Kenmore sinkhole

**By Kristi Heim**  
*Seattle Times staff reporter*

A sinkhole 15 feet deep, likely related to tunneling for King County's new sewage-treatment pipeline, opened up in Pauline Chihara's driveway early Sunday in Kenmore.

Chihara got up at 6:30 a.m. to walk her dogs and saw something that "looked like somebody dug up some dirt," she said. As she got closer she realized the hole encompassed the entire end of her driveway, at 61st Avenue Northeast and Northeast 195th Street. The hole widened during the day Sunday as chunks of pavement crumbled into it, she said.

When her roommate, Jeff Rochon, came home about 3:30 a.m. he drove right over the spot that would later collapse. He said he's glad he didn't get home any later.

"I'm real thankful for that," Rochon said. "It's really dark in that area. That would have been quite the wake-up to

drive right down a hole."

Engineers and construction managers with King County's Brightwater Treatment System project spent Sunday investigating the cause.

It's likely related to the construction project — which includes a 13-mile tunnel that will start at the sewage-treatment plant, being built on Highway 9 north of Woodinville, run beneath Northeast 195th Street and end in Puget Sound at Point Wells, north of Shoreline, said King County spokeswoman Annie Kolb-Nelson.

When the \$1.8 billion plant opens in 2011, it will serve mostly Snohomish County residents and will take pressure off existing sewage plants in Seattle and Renton.

The pipeline is being built in sections, and tunneling is expected to be completed this year.

A tunnel-boring machine had been operating overnight about 150 feet underground near where the sinkhole appeared, Kolb-Nelson said.

Judy Cochran, construction manager for Brightwater, said the boring machine is moving far below the surface in the groundwater layer. As the tunnel is bored, the 63-inch-diameter pipeline is built inside the cavity. A sinkhole can occur if pressure changes, but "it's pretty rare," she said.

"You have to maintain pressure against that ground surface," she said. "What happens sometimes is a machine can excavate too much ground and that creates a void bigger than the pipe we're building behind it, and that void migrates up."

Crews worked to repair the sinkhole Sunday, filling it with sand and gravel. There appeared to be no property damage other than the driveway and the sidewalk, but Chihara said a natural-gas line and a power pole near the hole had to be watched closely.

It's the first time since the Brightwater project started that a sinkhole has developed, Cochran said.

In London in 2003, dozens of people were forced to flee their homes after a large sinkhole opened up near underground boring to carve a tunnel for a new rail line.

The boring machine was stopped on Sunday, and Cochran said she was not sure whether tunneling would continue today. The tunnel is now slightly west of the sinkhole. Engineers might want to continue boring the tunnel forward to get farther from the sinkhole, she said.

"What we're going to do is install more monitoring equipment to check what's going on at all the properties," Cochran said.

Some residents have complained about a loud pulsing noise emanating through their houses when the boring passes underneath. Now they're concerned about more than noise.

"Everybody where they are drilling below is going to worry what's going to happen," Chihara said.

Updated information and assistance is available from the 24-hour Brightwater construction hotline at 206-205-5989. More information about Brightwater is available at:

[www.kingcounty.gov/environment/wtd/Construction/North/Brightwater.aspx](http://www.kingcounty.gov/environment/wtd/Construction/North/Brightwater.aspx).