King County
Brightwater
TREATMENT SYSTEM

June 16, 2009

Information about King County's tunnel machine repairs and work that is proposed at Maywood Hills Elementary School in Bothell

What is being proposed and why?

One of the three tunnel boring machines being used to build a 13-mile tunnel as part of the Brightwater project is now stopped approximately 330 feet underground, beneath the parking lot area at Maywood Hills Elementary School. Workers need to perform repairs on the machine so it can complete the two-mile segment of tunnel between Kenmore and Bothell.

To simplify repairs and enable crews to work under normal atmospheric pressure, the contractor is proposing to install five groundwater dewatering wells and a monitoring well in the south access road to the school, located near the intersection of 104th Avenue Northeast and Northeast 195th Street in Bothell. The wells will be about 8 inches in diameter. Two additional contingency wells will be drilled but pumps will not be installed unless it is later determined that these wells are needed.

Because of the machine's current location and depth, repairing the machine in place is the only feasible option. ***The current proposal is one that will have the fewest impacts,*** especially at the surface above the machine. Other options—including ground freezing or repairing the machine from the surface—would cause far greater impacts to the surrounding community.

All repairs to the machine will be done below ground and will be accessed from the tunnel entrance in Kenmore.

No adverse or long-term surface impacts are expected. When repairs are done, the wells will be removed in accordance with state guidelines and the work site fully restored.

When will work start and how long will the work take?

The contractor would like to start work in late June, after the school term is finished. It will take about six to eight weeks to drill and install the wells, which are then expected to be in operation for a few months. We don't know exactly how long it will take to complete repairs, but both the county and the contractor want to complete the work as quickly and safely as possible so we can resume our normal construction schedule and minimize disruptions to the school and surrounding community.

What is involved in drilling the wells?

A truck-mounted drill rig and several support vehicles will be parked at the work site, located in the school access road. As drilling takes place, ***soil cuttings and drilling material will be removed from the site for proper disposal at an off-site facility.*** Drilling work will be done during construction hours allowed by the City of Bothell.

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What is involved in dewatering?

After the wells are drilled, pumps and monitoring equipment will be installed at the bottom of each well, deep underground. Water that is pumped to the surface will be treated if necessary and disposed of through the sanitary sewer system. ***It will not be put in local streams or creeks.***

What will people see at the surface?

People will see a drill rig and support vehicles while the wells are being drilled. After this the wells and discharge pipes will be capped at the surface and covered with a metal plate. On the surface there will be a pump, water tank, generator and fuel tank located near the staff parking area on the school grounds. This area will be securely fenced and checked regularly. The generator will be muffled and shielded to minimize noise. The contractor is trying to get temporary power to the site, in which case the generator will only be for back-up power.

Will dewater affect stream, wells, aquifers or water supplies?

Although the term "dewatering" is being used, what is actually intended is to depressurize the layer of thick earth (called an aquitard) where the tunneling machine is located. This layer contains relatively low quantities of water and is not part of the local aquifer—the water-bearing layer that lies above this layer.

The county gathered geotechnical information during the environmental and design phases for this project which indicates that the layers where the wells will withdraw water have only limited hydraulic connection with the overlying aquifer. This means that that ***our activities will be localized*** to the immediate area surrounding the tunneling machine.

We expect little to no impacts to the groundwater levels in the overlying aquifer and ***no impacts to surface waters such as streams, creeks and lakes.***

Initially, it is expected that a total of about 50 gallons of water per minute will be pumped to the surface by all the wells. This will slow to a total of about five gallons per minute for all the wells after one week of pumping. Five gallons per minute is about the same rate as running your kitchen faucet or garden hose. It is far less than any pumping that might be done for a private well or municipal water supply.

There are some private wells and the City of Bothell's William Penn Park wells located within a half mile of the site. However, these wells withdraw water from the overlying aquifer and are not expected to be affected by the proposed wells. Currently the city's wells are inactive and the municipal water system is supplied by pipeline through the Seattle Public Utilities water system.

Is there a danger of a sinkhole?

The dewatering activities being done on this site are very different than tunnel construction which can result in sinkhole formation. ***The dewatering activities will not cause a sinkhole to form.***

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How will the County ensure that any unexpected impacts are identified and promptly addressed?

A monitoring well will be installed at the work site and all dewatering work will be monitored on a continual basis. In addition, the county has eight other groundwater monitoring wells within a half mile of the dewatering wells. We will also be monitoring groundwater levels at one nearby private well and at the City of Bothell's William Penn Park wells. The county maintains a 24-hour information line where construction related issues can be reported and responded to immediately.

Contact us if you need more information

For construction-related questions contact the 24-hour construction information line at 206-205-5989 (remember to dial 911 for emergencies).

For general questions and information call 206-263-9453, or 711 for TTY access, or email us at: brightwater@kingcounty.gov

You can also call or email us to request regular updates on this work.