Seattle Public Utilities | King County

Ship Canal WATER QUALITY PROJECT

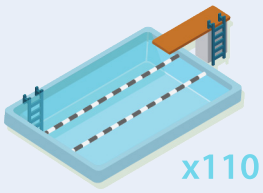
Ground Monitoring Fact Sheet

Project background

Seattle Public Utilities (SPU) and King County's Wastewater Treatment Division are constructing a new storage tunnel, which will span from Ballard to Wallingford, to help keep more than 75 million gallons of polluted stormwater and sewage out of Lake Washington, the Ship Canal, Salmon Bay, and Lake Union each year. Construction on this 2.7-mile, 18-foot-10-inch-diameter tunnel is anticipated to begin in early 2020.

The tunnel will be about 80 feet underground and is designed with many considerations, including balancing earth pressures during tunneling to minimize or eliminate impacts at the surface. While no significant ground movement is anticipated, as a precaution, crews will be monitoring over 200 structures along the tunnel path before, during, and after tunnel construction.

Fun fact: ***When completed, this project will keep more than 75 million gallons of polluted water out of the Ship Canal, Salmon Bay and Lake Union each year. That's enough water to fill more than 110 Olympic-sized swimming pools!***

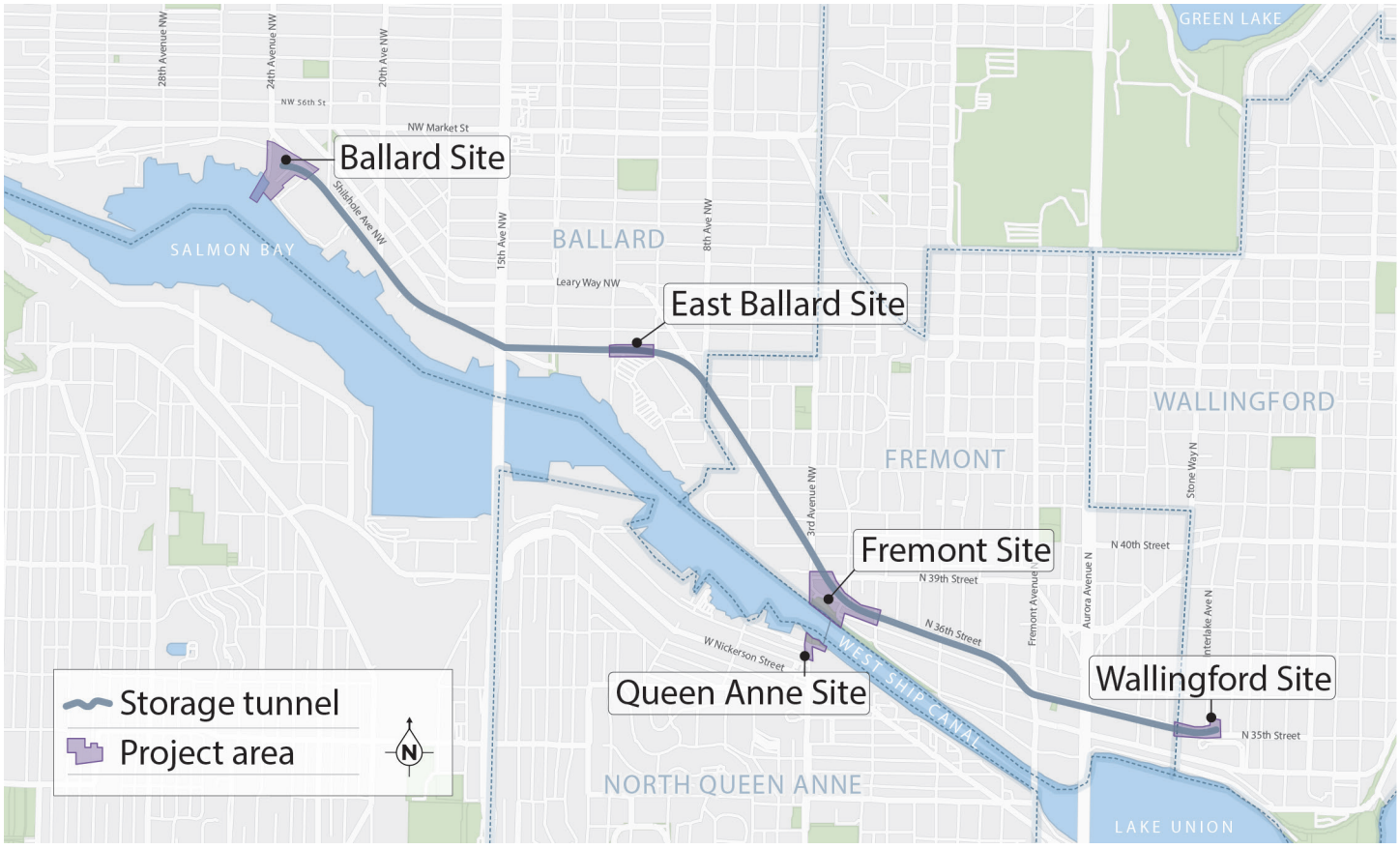


What is ground monitoring?

Ground monitoring is a robust system of instruments that help crews measure ground movement due to tunneling or excavation. Crews will install monitoring instruments at fixed points on pavement, utilities, and structures so that they can measure movement throughout the project.

Why are you monitoring the ground during tunneling?

It is standard practice in tunneling to implement a comprehensive program to monitor for ground movement. This monitoring acts as a safeguard to help alert SPU and the contractor of any changes so that they can prevent damage to utilities or structures, if needed. It can also provide helpful data for operating the tunneling machine.



The Ship Canal water quality tunnel will span from Ballard to Wallingford.

August 2019

Survey point in a concrete foundation.

Optical target on a retaining wall.

What type of monitoring equipment will be used?

Several types of instruments could be used to measure structural and ground movement, including survey points or optical targets and automated equipment.

A survey point is typically a small, stainless steel nail that is anchored into a concrete foundation. An optical target is a small, plastic reflector that is glued to a building's surface. This data is manually recorded by crew members, who will monitor structures daily while the tunneling machine is within 250 feet of a structure. Automated equipment will record data and will report conditions up to hourly during active construction.

Monitoring instruments will be removed after tunneling is complete and the structures will be restored to their original condition.

Where will the monitoring equipment be installed?

Most of the instruments will be installed in the right-of-way along the tunnel path, and on the exterior of structures adjacent to the tunnel path, once approved by the property owner.

In addition to ground monitoring, SPU will do a condition assessment of buildings adjacent to the path of the tunnel before and after construction to verify that damage has not occurred. These assessments will include both the inside and outside of buildings and require permission from property owners.

Questions or concerns?

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Call: 206-386-9778

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