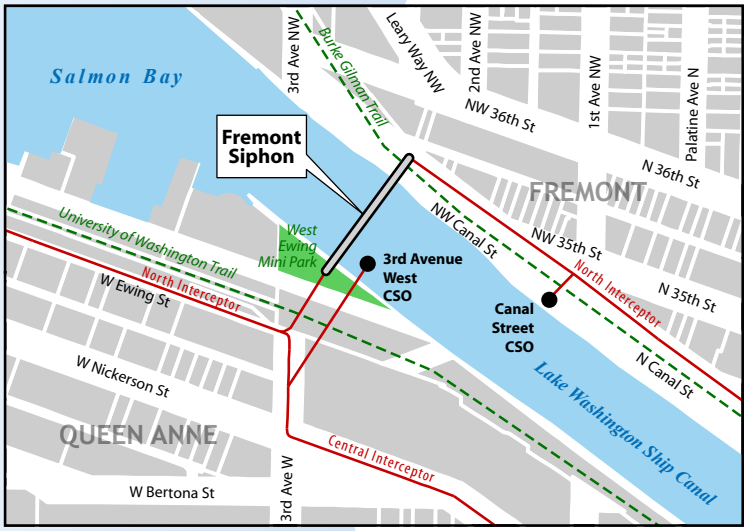


FREMONT SIPHON sewer project

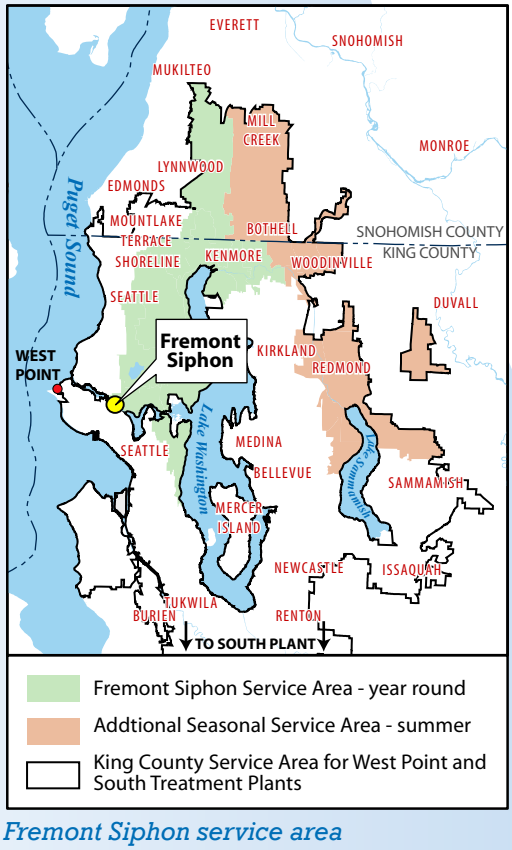
King County
Department of
Natural Resources and Parks
Wastewater Treatment Division

Project Newsletter FALL 2010

King County proposes projects to update the Fremont Siphon



Fremont Siphon location



Fremont Siphon service area

King County protects public health and the environment by conveying and treating the region's wastewater at two award-winning treatment plants, South Plant in Renton, and West Point, located in Seattle's Discovery Park.

The Fremont Siphon is a critical conveyance line that carries wastewater from the county's northeastern service area (see map to the left) to the West Point Treatment Plant. The Fremont Siphon conveys wastewater from a service area of about 60 square miles year round, with an additional area of about 54 square miles during the summer. The siphon pipelines, which may convey up to 220 million gallons per day during storms, are located under the Lake Washington Ship Canal, west of the Fremont Bridge. The siphon was installed in the early 1900's and has provided wastewater conveyance service for almost 100 years. King County is in the early stages of evaluating plans for rehabilitating and replacing the siphon to provide safe, reliable wastewater conveyance for years to come.

Project Approaches

King County's project team developed options for Fremont Siphon project with careful consideration to maintaining wastewater conveyance during construction and existing capacity during operations. Construction is expected to begin in 2014.



Building the Fremont Siphon Tunnel, 1913. Photo provided by Seattle Municipal Archives.

Rehabilitate the existing siphon pipes

This approach incorporates the existing pipes, using restoration methods to initiate a new service life cycle.

Replace the existing siphon pipes

This approach involves replacing the existing siphon pipes in the same tunnel location.

Establish a new pipeline crossing under the Ship Canal

Several methods can be used to install new siphon pipes under the Ship Canal outside of the existing tunnel. These pipes will have to be extended on land to connect to the existing wastewater conveyance systems in Fremont and Queen Anne.

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The Burke-Gilman trail passes over the north end of the Fremont Siphon.

How King County will identify project alternatives

The Fremont Siphon project team will evaluate alternatives based on the approaches described above, considering a range of factors for each alternative:

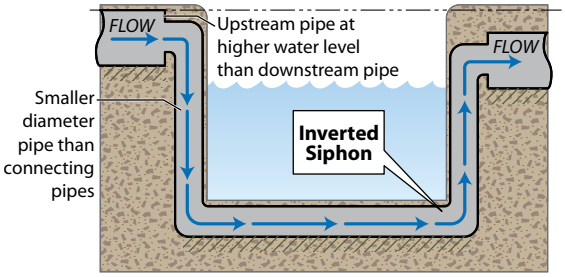
- Land Use and Permitting
- Environmental
- Design and Construction
- Operations and Maintenance
- Neighborhood
- Cost
- Schedule
- Risk

The Fremont community will have opportunities to provide feedback during fall 2010. Once an alternative is proposed, King County will work closely with the Fremont community throughout design and construction.

What is a siphon and how does it work?

The Fremont Siphon is an *inverted siphon*. An inverted siphon is used to pass flow through a valley or under a waterway. King County's Fremont and Ballard siphons run under the Lake Washington Ship Canal.

Inverted siphons take advantage of the basic rule that water flows downhill. Wastewater is pushed through the siphon by the upstream flow that is at a higher water level than the downstream level.



In a wastewater system, inverted siphon pipes are smaller diameter than the connecting pipes upstream and downstream. This "pinch point" increases the speed of flow to help keep solids moving through and avoid plugging the siphon pipe.

Community Meeting

November 30, 2010, 6-7:30 p.m.
Fremont Library
731 N 35th St.
For special accommodations call 206-263-7301

For more information

Visit the project Web page at http://www.kingcounty.gov/environment/wtd.aspx

Contact Monica Van der Vieren at Monica.vandervieren@kingcounty.gov or 206-263-7301

King County
Department of
Natural Resources and Parks
Wastewater Treatment Division

Alternative Formats
206-684-1207 (voice) or 711 (TTY)

Save the Date! Save the Date! Save the Date! Save the Date! Save the Date! Save the Date! Save the Date!

Community Meeting
November 30, 2010
6-7:30 p.m.
Presenting Fremont Siphon project proposals!

Learn about:
- King County's sewer system in the Fremont area.
- Project proposals to update the siphon.
- How King County works with communities during project design and construction.

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Department of Natural Resources and Parks
Wastewater Treatment Division
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