



# NORTH MERCER ISLAND/ENATAI Sewer Upgrade Project

King County is upgrading four miles of sewer pipeline across north Mercer Island and south Bellevue. It is a big project that has been years in the making and will involve years of construction. Project work will be in heavily used public spaces, and in some residential areas. While the work to get there may involve temporary inconveniences, the upgrade will provide great public benefit.

We are committed to keeping you informed about what's happening and why. This is one of a series of fact sheets that explain the North Mercer/Enatai (NME) Sewer Upgrade Project and what the public can expect—during construction and after the work is done.

## Mercer Island Boat Launch and work across the East Channel of Lake Washington

The pipeline crossing the East Channel of Lake Washington between Mercer Island and Bellevue, alongside the I-90 bridge, is a key component of the project. The pipeline extends from East Mercer Way on Mercer Island to Enatai Beach Park in Bellevue. The design of the pipeline took into consideration commercial and recreational boat traffic in the lake, nearby shoreline property owners, and use of the Mercer Island Boat Launch and Enatai Beach Park.

### What's happening... and why

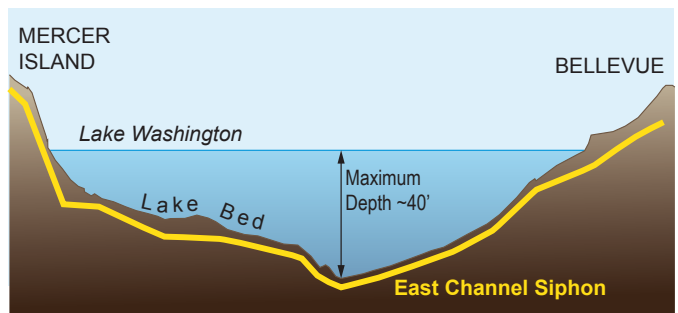
The new pipeline crossing the East Channel will be an "inverted siphon" – a U-shaped pipeline with high ends on the shorelines, and a low point in the middle along the lake bottom. The new East Channel Siphon will consist of three parallel pipes buried just below the lake bottom on the north side of the I-90 bridge. It will replace the pipeline on the south side of the bridge, which is aging and too small to carry the amount of sewage expected to meet future population growth in the area.

The three new pipes (one 12-inch and two 16 inches in diameter) will have plenty of capacity for future sewer flows. The pipeline's position on the north side of the bridge moves it out of the way of other utilities. This helps to better line up the pipe to connect with a tunneled pipeline that will be installed between the Bellevue shoreline and the Sweyolocken Pump Station near the Mercer Slough.

Work on the tunneled pipeline, called the Enatai Siphon, will have an impact on the use of the East Channel. Its 3,000 feet of pipe will be assembled into a single unit at Enatai Beach Park, temporarily floated out onto the water, and pulled back through a drilled hole under the Enatai hill to reach the pump station on the far side.



ENATAI SIPHON FLOAT



SIPHON PROFILE

# What to Expect During Construction

Construction of the East Channel Siphon is currently expected to start later in 2022. The final schedule will be set after a construction contractor for the work is selected. Generally, the flow of work will be as described below.

Like any major public infrastructure project, this work will generate noise and additional traffic on surrounding streets. All work will be in full compliance with local noise regulations.

## Installing the East Channel Siphon across the Lake

The work to install the East Channel Siphon's three parallel pipes across the lake bottom will start at Enatai Beach Park and move west across the channel. This work will take place during daylight hours.

The "fish window" (see the sidebar on the back page) on the east side of the channel is roughly mid-summer. The contractor will start work along the shore as soon as the fish window opens; the work closest to the shoreline will be finished before the east-shore fish window closes. The entire in-water pipeline installation is expected to take approximately six months.

The contractor will maintain navigable channels for boat traffic at all times and take steps to be sure the work does not interfere with in-lake activities during Seafair.

## Floating the long pipe for the Enatai Siphon

The Enatai Siphon will use about 3,000 feet of pipe, installed underground from Enatai Beach Park to the Sweyolocken Pump Station through horizontal directional drilling (HDD). A hole will be drilled from one end to the other, and the full length of pipe will be pulled through the hole in one continuous pull. To make it work, the entire 3,000 feet of pipe will be assembled in advance. Workers will weld 300-foot segments at a time and float each segment from Enatai Beach Park out onto the lake. Crews will continue to attach the 300-foot pieces until the full pipeline is floating on the lake. Then the line will be pulled through the completed drill-hole.

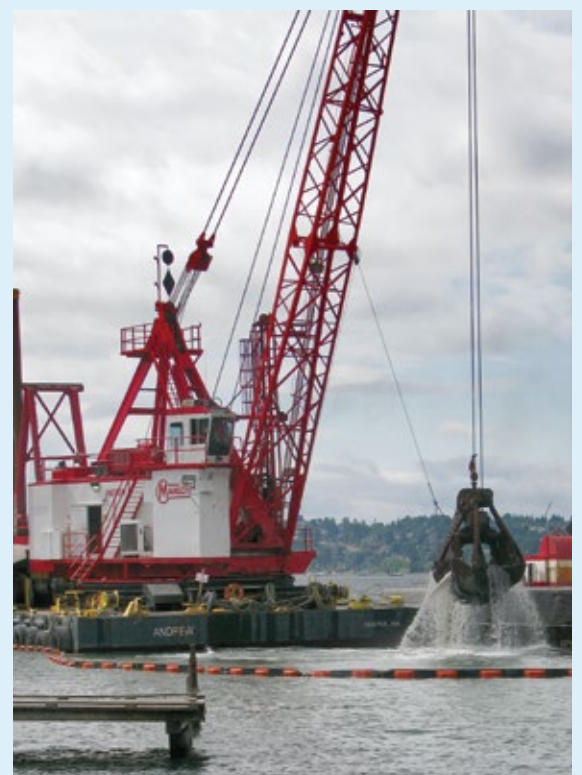
The assembled pipe will extend along the eastern shoreline far enough offshore to allow homeowners uninterrupted access to their docks. The timing of this work is not yet certain however, crews will work around the clock to get the pullback done as quickly as possible. Crewed barges will be in place until the pipe is successfully installed.

## How do you bury a pipe across the bottom of a lake?

Installation of a new siphon across the East Channel will use well-tested "cut and cover" construction methods, involving divers underwater and work crews on barges on the surface.

First, divers will locate any utilities on the lake bottom that the new pipeline will have to cross. They'll use precision methods to dig out the soil around these utilities, then build a sort of bridge over the dug-out area and attach the utilities to that bridge to support them as the new sewer pipeline is installed underneath them.

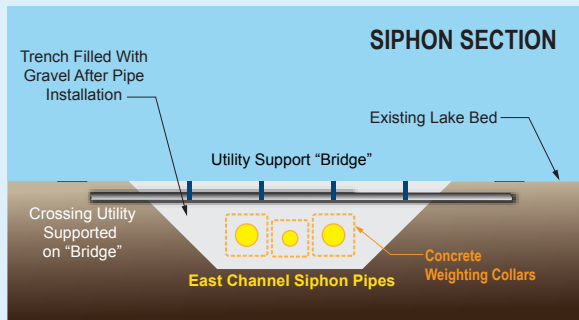
Following the divers' work with existing utilities, a barge on the lake surface with a clamshell dredge will move across the channel digging a trench in the lake bottom that's about 10 feet wide at its bottom. The dredge will dump the soil it excavates onto another barge to be hauled away. With the trench dug, workers will place gravel (carried in a third barge) into the trench to make a bed for the pipes to lie on.



CLAMSHELL DREDGE

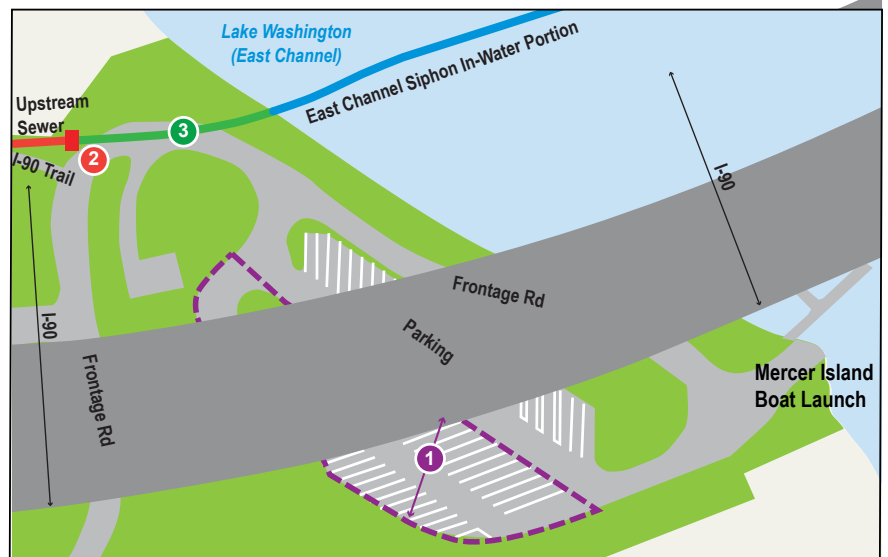
Crews on the surface will float segments of the new pipeline above the trench and let them fill with water. The weight of the water, along with concrete collars that will be wrapped around the pipes at regular intervals, will let the pipe sink to the bottom.

Once it's lying in the trench, divers will bolt together the individual segments. Finally, the clamshell dredge will drop more gravel into the trench to fill it back up to the original level of the lake bottom. The gravel will be composed of rocks and pebbles that will provide good habitat for fish and other aquatic life.



## Work at the Mercer Island Boat Launch

The East Channel Siphon work will partially affect the Mercer Island Boat Launch for up to two years. However, the work will never close off user access to the launch. The diagram below shows the main work components that will affect this area.



### 1 STAGING AREA

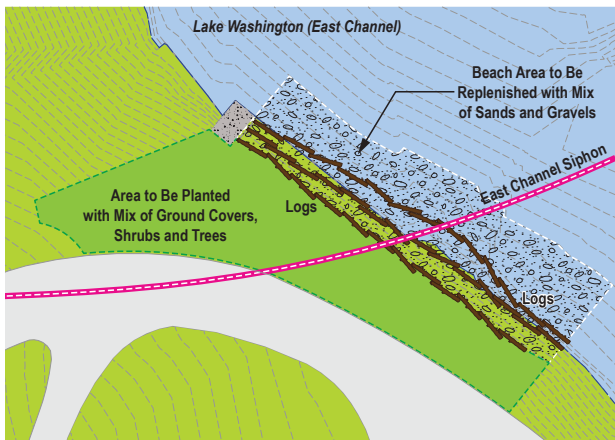
Contractor will use the parking lot for staging (storage of equipment and materials) construction. This will reduce the number of boat and trailer spaces. Access to remaining spaces will be maintained. Estimated duration is two years.

### 2 MAINTENANCE VAULT

A vault for future maintenance access will be installed adjacent to the frontage road. The upstream sewer to the west will connect to this vault. Access to the boat launch will be maintained during installation. Flaggers will direct traffic when intermittent access for construction equipment across the frontage road is required. Estimated duration is three months.

### 3 FRONTAGE ROAD

Siphon pipe installation in the frontage road will take about two weeks. One lane of traffic will be maintained, with traffic control at all times. This work will take place outside peak boating season. A concrete bulkhead will be removed and replaced with anchored logs and plantings for shoreline protection. Work outside the roadway, including restoration, will take about three months.



MERCER ISLAND BOAT LAUNCH SHORELINE RESTORATION

## Restoring the work sites

The bottom of the lake, the east and west shorelines, and some paved surfaces at the Mercer Island Boat Launch will all require restoration after the pipeline is installed.

The gravel used to refill the pipeline trench will be of a type that improves fish habitat on the lake bottom.

On the shorelines, crews will rebuild areas affected by construction with logs, heavy gravel, and plantings to improve habitat conditions. On the Mercer Island side, crews will replace a deteriorating concrete bulkhead with more natural logs and plantings.

At the boat launch, surfaces disturbed by construction—the frontage road where the pipeline crosses and the parking area that will be used for staging—will be repaved.

# What's Next

King County is currently bringing contractors onboard. Once all documents and paperwork are finalized, construction is expected to begin early 2022. Overall, construction will take four years, though most work locations will see shorter durations.

Our team will share information so neighbors know what to expect during construction and beyond. Here is what you can expect from us moving forward:

- Attendance at community events\*
- Project newsletters, fact sheets, and field work notifications
- Monthly project web updates
- Online/in-person open houses\*
- Briefings online/in-person for interested community groups\*

We are committed to continuing to be a good neighbor during construction. We will share information about construction on our website, in project emails, and through posted information at the park.

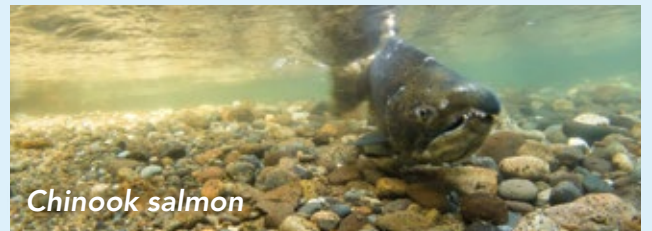
*\*In accordance with Seattle/King County Public Health guidelines.*

## ***Fish windows—timing is everything***

Regulatory agencies require work that could affect fish in Lake Washington to be completed during a “fish window” – a period of time when spawning or migrating fish are less likely to be in the area. In Lake Washington’s East Channel, the fish window is different on the eastern and western shorelines.

On the east side along Enatai Beach Park, the window is in the summer to early fall only. On the west side, at the Mercer Island Boat Launch, a much longer fish window allows work in summer, fall, or winter.

We are working with natural resource agencies to plan this work to protect fish species that migrate through the area, while minimizing as much as possible any work that will impact park and lake users during the popular summer season.



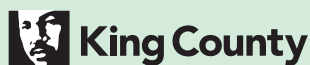
## **NORTH MERCER ISLAND/ENATAI** Sewer Upgrade Project

**Talk to us!** For more information, or to schedule a virtual meeting, please contact:

The community services team at **425-305-3578** or **NMEsewer@kingcounty.gov**

Visit the project Web page at **www.kingcounty.gov/MercerEnataiSewer**

Sign up for email and text alerts on the project Web page.



Alternative formats available  
206-477-5371 or TTY replay: 711

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