

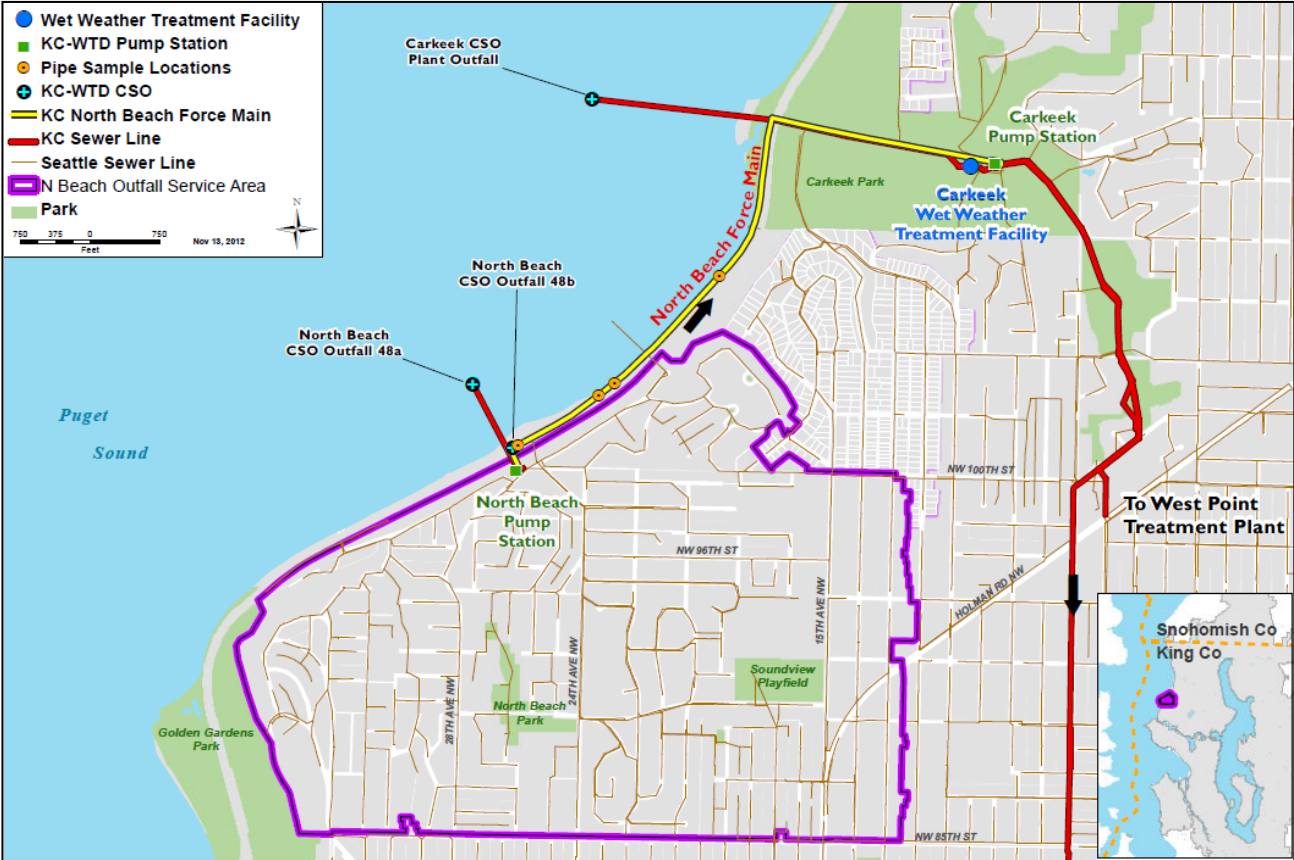
Understanding the sewer system in North Beach Winter 2014

King County’s North Beach Pump Station is only one part of a regional wastewater system that serves 1 million customers throughout the Puget Sound area. If you live in the North Beach service area, your wastewater makes quite a journey from your home to where it gets treated!

In North Beach, wastewater is conveyed from privately owned “side sewers” that extend from structures to the City of Seattle’s sewer pipelines. As a regional wastewater treatment provider, the County collects this wastewater from the City at the North Beach Pump Station. From here, the wastewater is conveyed through a pressure pipe, or force main, to the Carkeek Park Pump Station and Wet Weather Facility. During dry weather, flows are pumped from Carkeek to the West Point Treatment Plant in Magnolia.

During wet weather, wastewater management in the area becomes more complex, when stormwater fills the system and reduces capacity in the pipes for wastewater. During these times, the Carkeek facility can provide primary treatment to flows exceeding system capacity. These treated flows may be released to Puget Sound through a permitted combined sewer overflow (CSO) outfall.

During large storms, it is not always possible to get all the wastewater and stormwater in the North Beach system to the Carkeek facility. To prevent backups that could damage the sewer system and result in backups onto public and private property, excess flows are released, untreated, from two outfalls—one that extends into Puget Sound, and a storm drain that discharges at the beach.



North Beach basin system and connections

Did you know?

The County’s North Beach Pump Station has a special status in the City of Seattle. In Seattle, many areas have combined sewers that handle both stormwater and wastewater. The North Beach area is actually a separated system. However, the North Beach system behaves like a combined system, with stormwater filling the sewer pipes during heavy rains. Therefore, the Washington State Department of Ecology (Ecology) recognizes and permits the County’s North Beach Pump Station as a combined sewer facility.

How does stormwater get into the North Beach sewer system?

As far back as the 1950s, the sewer systems in the area were known to be “subject to considerable ground water infiltration and to direct inflow from roof drains.” (www.kingcounty.gov/environment/wtd/About/History/PlanningSystem/1958Plan).

Residents can reduce their impact to the sewer system by regularly inspecting and maintaining their side sewers and disconnecting their stormwater connections to the sewer.

The North Beach system at a glance

- 1. Drains and side sewers.** Wastewater from drains in houses and businesses first enters pipes on private property called “side sewers” or “sewer laterals.” These pipes are maintained by property owners.
- 2. City of Seattle pipes.** Seattle Public Utilities owns and maintains the local sewer pipes in North Beach. These pipes collect wastewater and send it downhill using gravity to the County’s North Beach Pump Station.
- 3. North Beach Pump Station.** During most types of weather, the North Beach Pump Station collects wastewater in a *wet well* and pumps it through a pressure pipe, or force main, to Carkeek Pump Station and Wet Weather Facility.



Wait! There’s a heavy rain event. Heavy rain events can cause flows to exceed pump station capacity. Today, these flows go directly into Puget Sound through two outfalls located at North Beach. When the new North Beach CSO storage facility is built, excess wastewater and stormwater will be diverted to the underground tank and stored until the storm passes. Then stored flows will be pumped out of the tank to the North Beach Pump Station and on to Carkeek.

- 4. Through the North Beach Force Main to the Carkeek Wet Weather Facility.** Under most weather conditions, Carkeek pumps sewage to the **West Point Treatment Plant** for secondary treatment. During large storms, when flows exceed pumping capacity, wastewater is treated at the Carkeek facility and released to Puget Sound through a permitted outfall.

How will King County reduce CSO events at North Beach?

The County is building an underground storage tank in the right-of-way adjacent to the North Beach Pump Station at 9921 Triton Drive Northwest. This facility will store excess flows during large storms until the storms have passed and then return stored flows to the North Beach Pump Station.

The North Beach CSO Control Project is driven by state and federal regulatory requirements. Ecology administers regulations established by the federal Environmental Protection Agency. Ecology’s current standard allows no more than one untreated CSO event per year on a long term average. The North Beach CSO Control Project is designed to reduce CSO events from the current long term average of 10 per year to meet this standard.

North Beach system elements

North Beach Pump Station

The North Beach Pump Station serves a 633-acre service area. The pump station has two service pumps for daily use, and two large pumps for wet weather use. The pump station can convey up to 3 million gallons per day of wastewater to Carkeek Pump Station and Wet Weather Treatment Facility.

North Beach CSO Outfalls

At North Beach, CSO discharges can occur from two discharge pipes, or outfalls: one located on the beach and one extending into Puget Sound. The deeper outfall was in service when the North Beach Sewer District operated a wastewater treatment facility at the current pump station location. The second outfall is a City of Seattle storm pipe that was added to the system in the 1970s to prevent backups in homes during large storms.

North Beach Force Main

In 2012, the County evaluated the remaining service life of the pipeline and identified a conservative estimate of 20 additional years. The report can be viewed on the project Web page, or a hard copy obtained by contacting Monica Van der Vieren at Monica.vandervieren@kingcounty.gov or 206-477-5502.

For more information

North Beach CSO Control Project or King County’s regional wastewater facilities:

Monica Van der Vieren
Phone: 206-477-5502
Email: monica.vandervieren@kingcounty.gov

Project construction hotline

206-296-7372

Project website

www.kingcounty.gov/environment/wtd/Construction/Seattle/NBeachCSOStorage

King County’s CSO Control Program

www.kingcounty.gov/environment/wastewater/CSO

To find out when a CSO is occurring at North Beach

<http://www.kingcounty.gov/environment/wastewater/CSOstatus/Overview/NWSeattle.aspx>

**ALTERNATIVE FORMATS AVAILABLE
206-477-5371 / TTY 711**