King County WTD: **Combined System Current Conditions**

What is the Combined Sewer System?

Combined sewer systems exist in many parts of older cities across the nation, dating back to when all stormwater and wastewater was conveyed and discharged in a single conveyance system. Most sewer systems built after the 1950s convey sewage and stormwater in separate pipes.

What is a CSO?

Combined Sewer Overflows (CSOs) are relief points designed into combined sewers that discharge excess stormwater and wastewater into water bodies when the system is at capacity. These wet weather discharges protect downstream infrastructure from being overwhelmed with too much flow, which can reduce the plant's treatment capacity or cause damage at the plant, and prevent sewer backups into homes, businesses, and streets during periods of heavy rain.

Cities that still have combined systems are required to treat both the wastewater and rainwater at their treatment plants under the Clean Water Act. In most smaller storm events, this results in a higher level of treatment for stormwater flows, which are often otherwise discharged without treatment. During periods of intense rainfall, when treatment plants and sewers in combined systems can become overwhelmed, discharges of approximately 10 percent wastewater and 90 percent stormwater can protect infrastructure and communities.

CSO events pollute bodies of water with combined sewage mixed with rainwater. They can be prevented by separating the system, building more treatment plants, or adding capacity to store the combined wastewater to be treated later (after a storm subsides).

History of King County and Seattle CSOs

The majority of King County WTD's service area has separate pipes. However, about 75% of Seattle (the Region's oldest city built mostly prior to 1950's) is served by a combined sewer system.

In 1958 voters created King County Metro, and in so doing developed a Regional Wastewater system. With the creation of Metro's Regional system, King County WTD's responsibility inside Seattle begins where the City's pipes have collected sewage from areas greater than 1,000 acres and convey the sewage to WTD's system. WTD conveys most of the flow from Seattle (including most of the combined sewage flows) to the West Point Treatment Plant.

When large storms occur and flows exceed the capacity of the County's combined conveyance system, overflows may occur at any of the 38 County CSO locations that discharge to Lake Washington, Lake Union, the Lake Washington Ship Canal (Ship Canal), the Duwamish River, Elliott Bay, and Puget Sound.

CSOs may also occur at Seattle Public Utilities' (SPU) 82 CSO locations in their local sewer system. SPU is responsible for separately managing and reporting on those locations.

Controlling CSOs in King County

CSOs are subject to the National Pollutant Discharge Elimination System (NPDES) permitting program, which was established as part of the U.S. Clean Water Act in 1972. King County is also under a legal Consent Decree with the EPA and WA State to control all 38 CSO locations to an average of one event per year by 2037. SPU has a separate Consent Decree for their 82 CSOs with the EPA and WA State.

King County has made significant progress over time in controlling CSOs, reducing annual overflow volume from over 2.3 billion in 1979 to 1 billion in 2024. King County has controlled 20 of 38 CSOs to the standard of event per year at each location and has plans to control the remaining out of control CSOs by 2037.

<u>Completed CSO Consent Decree Control Projects</u>
Ballard Siphon Project (2014)
Barton CSO Control Project (2016)
North Beach CSO Control Project (2016)
South Magnolia Control Project (2016)
Murray CSO Control Project (2017)
Rainier Valley Wet Weather Storage Project (2019)
Georgetown Wet Weather Treatment Station (2022)

<u>Current CSO Control Projects</u>
Elliot West Wet Weather Treatment Station Upgrade (2028)
Ship Canal Water Quality Project (joint project with SPU) (2027)
West Duwamish Wet Weather Storage Facility (2029)
Mouth of Duwamish Wet Weather Facilities (2034)

<u>Remaining CSO Control Projects</u>
East Ship Canal CSO Control (2037)
Supplemental Compliance Projects – Barton, South Magnolia, and Hanford #1
Corrective Action Projects if and when previously controlled CSOs trend out of control