SEATTLE PUBLIC UTILITIES

WASTEWATER COLLECTION SYSTEM

ANNUAL REPORT | 2025

https://seattle.gov/combined-sewer-overflows-reports

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Seattle Public Utilities

Table of Contents

List of Appendices

List of Figures

List of Tables

List of Abbreviations

Term	Definition
BMP	Best Management Practice
CCTV	Closed-Circuit Television Video pipe inspection
CMOM	Capacity, Management, Operations, and Maintenance
COE	Coordinated Optimization Evaluation
CSO	Combined Sewer Overflow
DOJ	U.S. Department of Justice
DNRP	King County Department of Natural Resources and Parks
DWO	Dry Weather Overflow
DWW	Drainage and Wastewater
Ecology	Washington State Department of Ecology
EBI	King County Elliott Bay Interceptor
EPA	U.S. Environmental Protection Agency
FOG	Fats, Oils, and Grease
FSE	Food Service Establishment
GSI	Green Stormwater Infrastructure (see also NDS, LID)
Joint Plan	Joint Operations and System Optimization Plan
JOIST	Joint Operations Information Sharing Team
LID	Low Impact Development (see also NDS, GSI)
LTCP	Long-Term Control Plan
MG	million gallons
MGD	million gallons per day
N/A	not applicable
NDS	Natural Drainage Systems (see also GSI, LID)
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
Public Health	Public Health - Seattle & King County
RCM	Reliability Centered Maintenance
SCADA	Supervisory Control and Data Acquisition
SDOT	Seattle Department of Transportation
SMC	Seattle Municipal Code
SOP	Standard Operating Procedure
SPU	Seattle Public Utilities
SSO	Sanitary Sewer Overflow
TSS	Total Suspended Solids
WWPS	Wastewater Pump Station

SECTION 1

Introduction

Seattle Public Utilities (SPU) is committed to keeping our wastewater collection system safe and reliable. This annual report includes updates on the Combined Sewer Overflow (CSO) Reduction Program and the Capacity, Management, Operations, and Maintenance (CMOM) Program, ensuring SPU meets both state and federal requirements. Here's what you'll find in this report:

- Section 1: Introduction
- Section 2: Planning Activities
- Section 3: Operation and Maintenance Activities
- Section 4: Capital Activities
- Section 5: Monitoring Programs and Results

Additional information is available at seattle.gov/combined-sewer-overflows-reports.

1.1 The Wastewater Collection System

SPU manages one of the largest wastewater collection systems in Washington State. The system includes sanitary, combined, and partially separated combined sewers, as shown in Figure 1-1. In areas served by sanitary sewers, stormwater runoff flows into a separate storm drainage system, while sewage travels through City sewers to larger pipelines and treatment facilities owned and operated by King County Department of Natural Resources and Parks (DNRP). In areas of the City with combined sewers, stormwater runoff and sewage flow into the same pipes and are conveyed to DNRP facilities. In areas of the City served by partially separated combined sewers, storm drain separation projects built during the 1960s and 1970s divert street runoff to the storm drainage system, while stormwater from rooftops and private property flows into the combined sewers. Over time private property connects to separated storm drains at the time of redevelopment.

During storms, heavy rainfall can overwhelm the combined sewer system and cause overflows through permitted CSO outfalls. These wet weather overflows, known as Combined Sewer Overflows (CSOs), help prevent backups within the wastewater system. SPU's wastewater system has 82 CSO outfalls located along Lake Washington, the Ship Canal, Puget Sound, Elliott Bay, the Duwamish River, and Longfellow Creek (see Figure 1-2). SPU's CSO Reduction Program aims to limit overflows to an average of no more than one overflow per outfall per year, based on a 20-year moving average. DNRP, which owns and operates an additional 38 CSO outfalls in the City of Seattle, has a similar program to reduce CSOs.

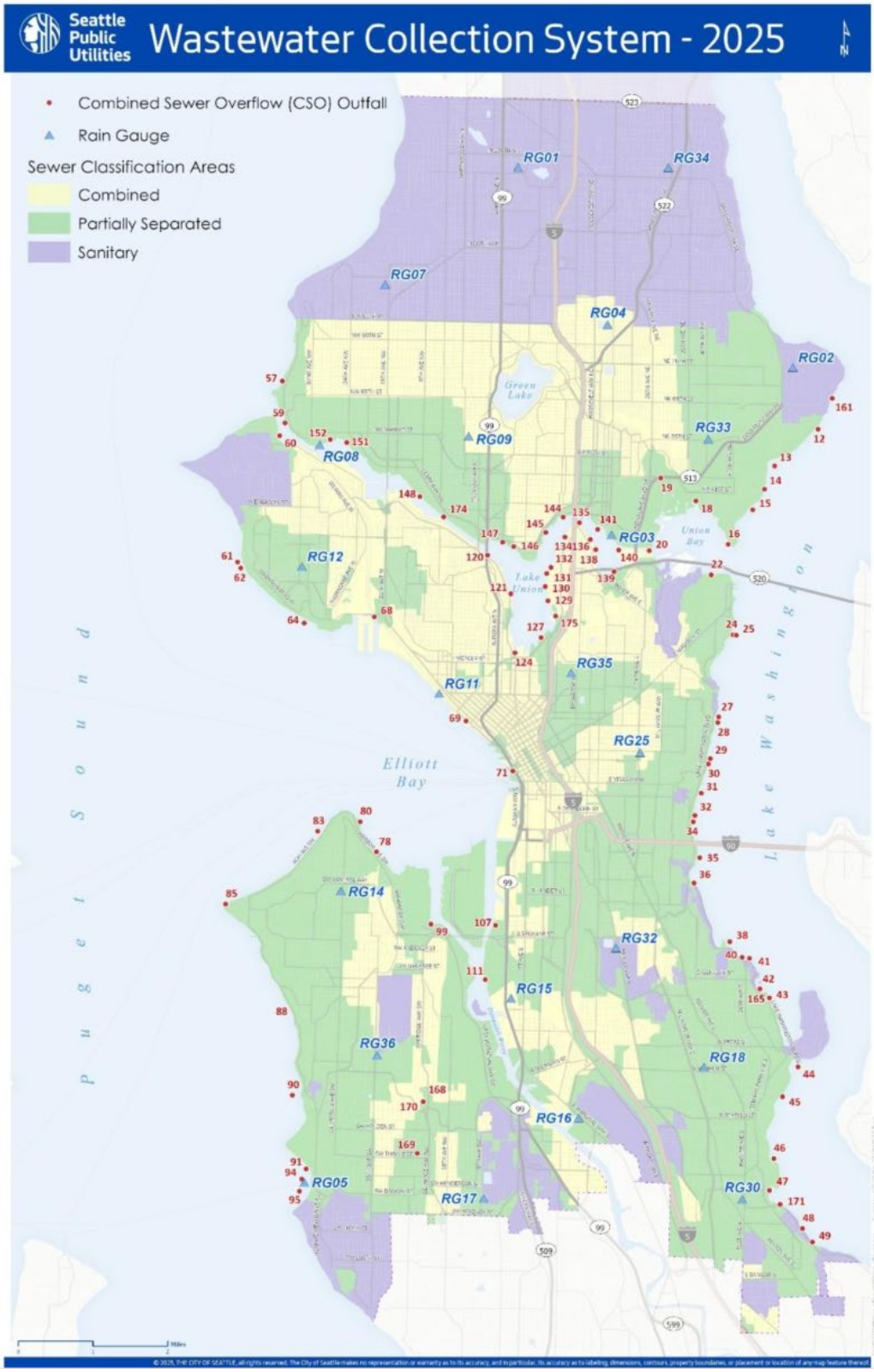

Figure 1-1. City of Seattle Sewer Classification Areas

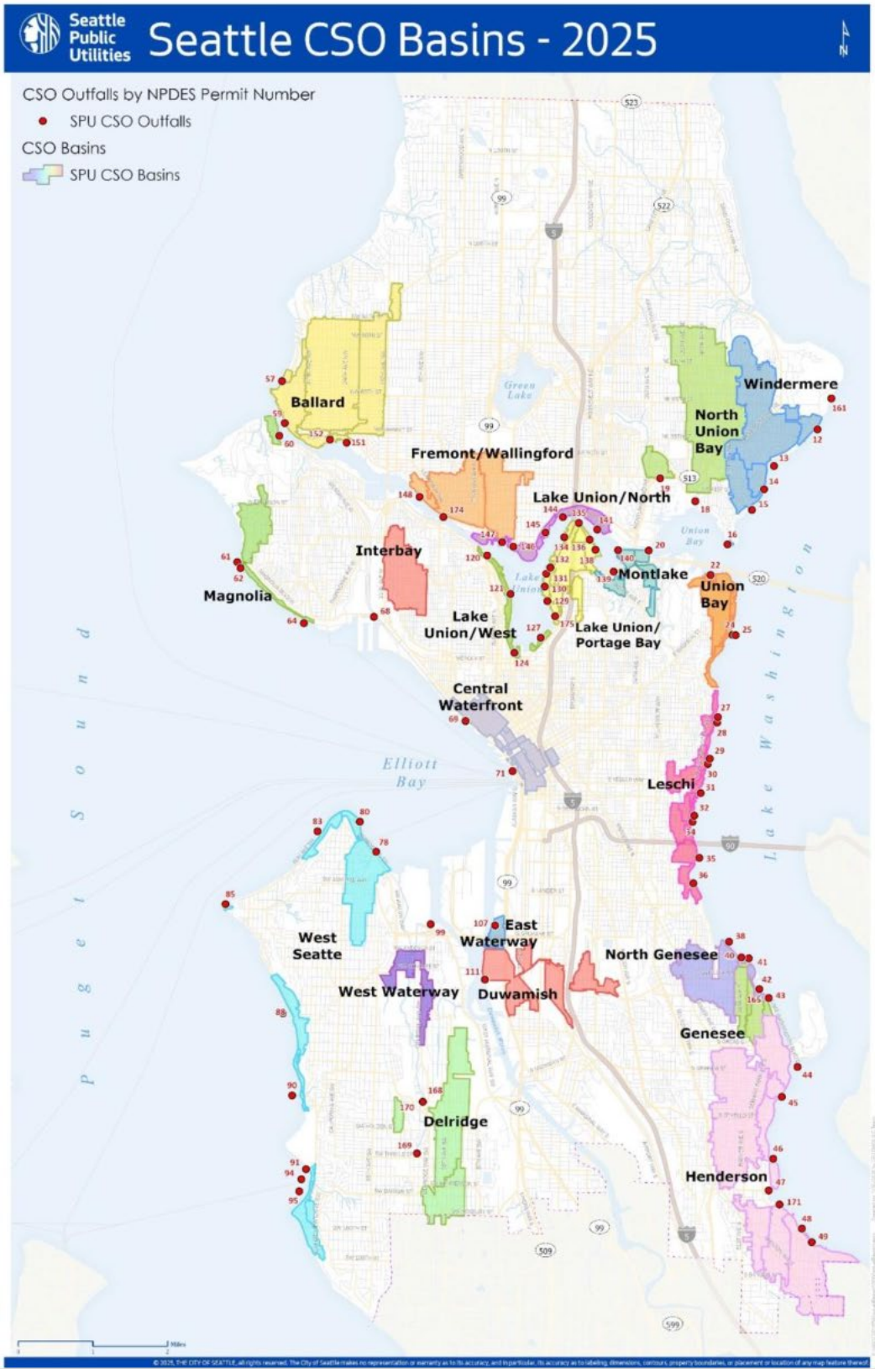

Figure 1-2. City of Seattle Combined Sewer Basins

1.2 Collection System NPDES Permit

The Washington State Department of Ecology (Ecology) regulates the City's wastewater system through a National Pollutant Discharge Elimination System (NPDES) permit. Ecology first issued this permit in 1975 to regulate CSO discharges, and it is reissued approximately every five years. The most recent permit, NPDES Permit WA0031682, was issued on October 29, 2025, and became effective on December 1, 2025.

The NPDES Permit:

- Authorizes CSOs at the 82 outfalls shown in Figure 1-1 and Figure 1-2
- Limits the number of CSOs from each controlled outfall to an average of no more than one overflow per outfall per year, based on a 20-year moving average
- Includes a compliance schedule for CSO control projects and other activities to be completed before the permit expiration date
- Prohibits dry weather overflows (DWOs) from CSO outfalls, regardless of the cause (mechanical failure, blockage, power outage, and/or human error)
    - If a wet weather overflow is worsened due to one of these issues, the event is called an exacerbated CSO, based on Ecology guidance
- Requires reporting of DWOs and sanitary sewer overflows (SSOs), including basement backups and overflows from maintenance holes or other system structures, within specific timeframes
- Requires SPU to apply for permit renewal by May 30, 2030

1.3 Collection System Consent Decree

The City also must meet the requirements of a consent decree with the United States Department of Justice (DOJ), United States Environmental Protection Agency (EPA), and Ecology (Civil Action No. 2:13-cv-678; July 3, 2013) and its modification (entered May 22, 2025). The consent decree achieves the following:

- Resolves EPA's and Ecology's complaints that the City had violated the Clean Water Act and its Wastewater NPDES Permit
- Sets a schedule for the City to come into compliance with state and federal requirements for controlling CSOs
- Requires the City to implement a performance based adaptive management approach to system operation and maintenance (O&M), to prevent DWOs and reduce the number of SSOs and exacerbated CSOs
- Requires the City to work with DNRP to jointly develop and implement a Joint Operations and System Optimization Plan
- Requires the City to report annually on consent decree required activities
- Establishes penalties for non-compliance

1.4 Collection System Reporting Requirements

SPU submits several reports as part of its NPDES permit requirements. These include:

- Monthly Discharge Monitoring Reports: Due by the 28th of the following month, these reports document the volume, duration, precipitation, and storm duration for each CSO event
- Reports of SSOs and DWOs:
    - SPU must immediately report DWOs and certain SSOs (those reaching surface waters, the municipal storm system, or public access areas) by phone to Ecology and Public Health – Seattle & King County (Public Health)
    - Other SSOs must be reported within 24 hours online or by phone to Ecology, with a written follow-up report required within five days (except for SSOs contained within buildings, which are summarized quarterly in a spreadsheet)
- Engineering and Compliance Reports: SPU must submit engineering reports, plans, specifications, construction quality assurance plans, and post-construction monitoring plan reports for specific CSO reduction projects, with deadlines specified in the permit

In 2025, SPU:

- Submitted all monthly discharge monitoring reports on time
- Met all deadlines for required engineering reports, plans, specifications, and construction quality assurance plans
- Reported all DWOs and SSOs by their respective deadlines, with all required written follow-up reports submitted on time

SPU also submits an annual report to meet the NPDES permit and consent decree requirements. This report document fulfills those requirements. Table 1-1 and Table 1-2 list the reporting requirements and where to find the related information.

Table 1-1. 2025 Annual Reporting Requirements, NPDES Permit

Source	Requirement	Report Location
S4.B	A summary of the past year's frequency and volume of combined sewage discharged from each CSO outfall	Table 5-4
S4.B	A summary of the last 20 years of number of untreated discharge events per outfall	Table 5-8
S4.B	Explain the previous year's CSO reduction accomplishments	Sections 3 and 4
S4.B	List the CSO reduction projects planned for the next year	Table 4-1, Section 4
S4.B	Document compliance with the Nine Minimum Controls	Section 3.1
S4.B	A detailed description of the pollution prevention program	Section 3.1.7
S4.B	Results of any post-construction monitoring completed over the past year	Section 5.4
S4.B	A detailed description of any corrective action projects implemented	N/A

Table 1-2. 2025 Annual Reporting Requirements, Consent Decree

Source	Requirement	Report Location
IV.9.ee (modification)	The Twenty-Year Moving Average will be calculated at least annually and reported in the City's Annual Report.	Table 5-8
V.A.11	The City shall report whether the CSO is Controlled in the next Annual Report submitted pursuant to Section VIII.	Table 5-8
V.C.26	Report the metrics regarding sewer overflow (SSO) performance included in Appendix D, Paragraph E (1-7): a. SSO performance	Section 3.2.3; Tables 3-3, 3-4, A-1
V.C.26	Report the metrics regarding sewer overflow (SSO) performance included in Appendix D, Paragraph E (1-7): b. Number of miles of sewer that were cleaned, inspected, and repaired/replaced/rehabilitated	Table 3-1
V.C.26	Report the metrics regarding sewer overflow (SSO) performance included in Appendix D, Paragraph E (1-7): c. Number of pump station inspections and the capacity of each pump station	Tables 3-1, A-2, and A-3
V.C.26	Report the metrics regarding sewer overflow (SSO) performance included in Appendix D, Paragraph E (1-7): d. Number of maintenance holes and force mains inspected and repaired/replaced/rehabilitated	Table 3-1
V.C.26	Report the metrics regarding sewer overflow (SSO) performance included in Appendix D, Paragraph E (1-7): e. Number and type of CSO regulators inspected	Table 3-1
V.C.26	Report the metrics regarding sewer overflow (SSO) performance included in Appendix D, Paragraph E (1-7): f. Summaries of inspections and cleanings of each CSO control structure	Tables 3-1 and A-3
V.C.26	Report the metrics regarding sewer overflow (SSO) performance included in Appendix D, Paragraph E (1-7): g. Summaries of Fats Oil and Grease (FOG) inspections and enforcement actions taken the preceding year	g. Section 3.4
V.D.28	Submit summaries of FOG inspections and enforcement actions taken during the previous year.	Section 3.4
VIII.43.a.i	Describe the status of any work plan or report development	Section 2
VIII.43.a.ii	Describe the status of any design and construction activities	Section 4

Source	Requirement	Report Location
VIII.43.a.iii	Describe the status of all Consent Decree compliance measures and specific reporting requirements for each program plan, including: a. The CSO control measures for the Early Action CSO Control Program (Henderson Basins 44, 45, 46, and 47/171)	Section 4.3.3
VIII.43.a.iii	Describe the status of all Consent Decree compliance measures and specific reporting requirements for each program plan, including: b. The Long-Term Control Plan	Section 2.4
VIII.43.a.iii	Describe the status of all Consent Decree compliance measures and specific reporting requirements for each program plan, including: c. The Post-Construction Monitoring Program Plan	Sections 5.4 and 5.5
VIII.43.a.iii	Describe the status of all Consent Decree compliance measures and specific reporting requirements for each program plan, including: d. The CMOM Performance Program Plan	Section 3.2
VIII.43.a.iii	Describe the status of all Consent Decree compliance measures and specific reporting requirements for each program plan, including: e. The FOG Control Program Plan	Section 3.4
VIII.43.a.iii	Describe the status of all Consent Decree compliance measures and specific reporting requirements for each program plan, including: f. The Joint Operations and System Optimization Plan between the City of Seattle and King County	Section 2.1
VIII.43.a.iv	Provide the project costs incurred during the reporting period	Table 4-1
VIII.43.a.v	Describe any problems anticipated or encountered, along with the proposed or implemented solutions	Sections 3.1.5, 4.2.1, 4.2.7 and 4.4.2
VIII.43.a.vi	Describe the status of any wastewater collection system permit applications	Section 1.2
VIII.43.a.vii	Describe any wastewater collection system reports submitted to state or local agencies	Section 1.4
VIII.43.a.viii	Describe any anticipated or ongoing collection system O&M activities	Section 3

Source	Requirement	Report Location
VIII.43.a.ix	Describe any remedial activities that will be performed in the upcoming year to comply with the Consent Decree	Section 4.3
VIII.43.a.x (modification)	The Twenty-Year Moving Average, as required by Paragraph 9 (ee)	Table 5-8
VII.43.b	Describe any non-compliance with the requirements of the Consent Decree and include an explanation of the likely cause, the duration of the violation, and any remedial steps taken (or to be taken) to prevent or minimize the violation	Sections 4.2.7 and 4.3
Appendix A (modification)	Outfall control status is reported annually in the City's CSO Annual Report	Table 5-8
Appendix D, Paragraph E	Include the listed CMOM performance metrics	Sections 3.2.3 and 3.4; Tables 3-1, 3-3, 3-4, A-1, A-2, and A-3

SECTION 2

Planning Activities

In 2025, SPU continued planning efforts to ensure compliance with the Clean Water Act, NPDES permit, and consent decree in a way that is cost-effective, community-centered, and delivers the most value to our customers.

2.1 Joint City of Seattle/King County Operations and System Optimization Plan

The City of Seattle's and King County's consent decrees require both agencies to work together to develop a Joint Operations and System Optimization Plan (Joint Plan) and the consent decree modification requires both agencies to review it every five years, updating it as needed. DNRP and SPU submitted the original Joint Plan to EPA and Ecology in February 2016. Staff identified key areas for operational optimization and developed a set of multi-basin joint commitments to improve system efficiency. These commitments were reviewed, updated, and approved by SPU's Drainage and Wastewater Line of Business Branch Executive and DNRP's Wastewater Treatment Division Director, and included in the Joint Plan Update submitted to EPA and Ecology in January 2019. The second update of the Joint Plan was submitted to EPA and Ecology on February 28th, 2022. The next update to the Joint Plan will be submitted to EPA and Ecology by March 1, 2027, pursuant to the first material modification of the City County consent decrees in 2025. Below is a summary of each commitment and progress made in 2025:

2.1.1 Joint System Event Debrief Committee Commitment

This commitment focuses on storm preparedness and response, including:

- Pre-season planning for wet weather events
- Post-storm debriefing (after major storms) to review system performance
- Reviewing and updating emergency communications protocols
- Analyzing meteorological data and CSO performance
- Assessing operational decision impacts on the combined system

In preparation for the 2025/2026 wet season, the committee held a coordination meeting on October 22, 2025, to discuss pre-season maintenance activities, system changes, meteorological information, and emergency communication protocols.

2.1.2 Data Sharing Commitment

SPU and DNRP work together to:

- Support a Joint Operations Information Sharing Team (JOIST)
- Implement a pilot project for sharing real-time SCADA data
- Develop data sharing protocols
- Improve the region's ability to forecast storms and rainfall intensities

In 2025, JOIST held two meetings (May 12th and September 9th) during which SPU and DNRP staff shared system operations updates, progress of capital projects, and coordination of Joint Plan commitments. JOIST also held a Pre-Wet Season coordination meeting on October 22, 2025.

2.1.3 Joint Modeling Coordination Committee Commitment

This committee enhances modeling coordination and efficiency between SPU and DNRP by:

- Sharing modeling tools and analysis methods
- Strengthening working relationships between modeling staff
- Improving system operation efficiencies through collaboration

The joint modeling work plan, initially developed in 2018, is periodically updated to reflect current and future work. This plan will continue to provide a framework for coordination, standardization, and communication for upcoming modeling work. Currently, all models are being transitioned to the latest version of the modeling software and tested; this has been a multi-year transition.

Key 2025 Accomplishments:

- Hosted regular meetings to review modeling results and coordinate model developments between each agency
- Continued model conversions and updates and data sharing – all SPU models were converted to the latest version of the modeling software except for two models (Ballard basins 150/151 and 152, and Magnolia basin 60) which are underway
- Collaborated on modeling efforts, including the Ship Canal Integrated Tunnel, Henderson, Montlake, University, Leschi, North Union Bay, Windermere, Interbay, Delridge 99, and the Mouth of Duwamish
- Participated in Coordinated Optimization Evaluation (COE) by attending basin workshops and providing technical support
- Participated in Annual Monitoring and Modeling (M&M) Data Review
- Collaborated on the optimization of the storage and conveyance capacity of DNRP and SPU system along the Seattle Downtown Central Waterfront
- Communicated on the differences in methodologies for estimating the effect of Climate Change on rainfall and the resulting effect on respective conveyance systems

Planned 2026 Work:

- Complete model conversions from MIKE URBAN to MIKE Plus
- Build Ship Canal Water Quality Project model expertise
- Continued coordination between KC and SPU on modeling efforts to support the Mouth of Duwamish CSO, COE, and Central Waterfront projects.

Interagency Collaboration Example:

SPU and DNRP modelers have been collaborating on reporting MIKE Plus bugs to Danish Hydraulic Institute (DHI), sharing findings with each other as they arise. This collaborative effort has been on-going since 2021, when DHI stopped supporting MIKE URBAN, and made all users transition to MIKE Plus prior to MIKE Plus being fully debugged.

2.1.4 Coordination During Startup and Commissioning of CSO Control Facilities Commitment

SPU and DNRP collaborate on:

- Conducting document review
- Attending commissioning meetings
- Sharing operational data on CSO control facilities

In 2025, SPU commissioned Wastewater Pump Stations (WWPS) 071 and provided an overview to DNRP during the May 12th JOIST meeting.

2.1.5 Real-Time CSO Notification Commitment

Both agencies updated onsite signage and website information to improve CSO event notifications and public communication. See section 3.1.8.

2.1.6 Reduce Saltwater Intrusion Commitment

This commitment involves continuing to work together on studies, data, and solutions for reducing saltwater intrusion into the wastewater system.

2.1.7 Coordinated Optimized Evaluation Effort

SPU and DNRP advanced the Coordinated Optimization Evaluation (COE) effort initiative in 2025. Refer to Section 2.2.

2.2 Coordinated Optimization Evaluation (COE)

In 2020, SPU, DNRP, and regulators began a process to modify the City of Seattle's and King County's consent decrees with state and federal agencies. The original decrees were entered on July 3, 2013, and the First Material Modifications were entered on May 22, 2025.

One key commitment of the modified consent decrees is the completion of a COE. Through this evaluation, SPU and DNRP will identify and evaluate optimization opportunities to reduce CSOs by improving system-wide or basin-specific controls and installing minor system components.

2.2.1 What is Optimization?

Optimization refers to adjustable controls, operational improvements, or capacity modifications that enhance flow management with minimal capital investment. Examples include:

- Installing or adjusting controls for gates, pump stations, or combined sewer overflow facilities
- Using additional monitoring locations to refine control settings
- Modifying weir elevations or orifice plates to improve flow regulation
- Adding conveyance capacity to address localized constraints

The primary goal is to maximize available storage and conveyance capacity more rapidly and effectively than typical capital projects.

2.2.2 Why Does Optimization Matter?

SPU and DNRP recognize that optimizing existing system capacity can reduce the size and cost of future CSO control investments. The COE will identify opportunities for prioritization in capital portfolio management and long-term control planning.

2.2.3 COE Goals

COE initiative goals include:

- Develop a shared understanding of present and future optimization opportunities in the planning areas
- Maximize wastewater system capacity by optimizing system transport, storage, and treatment infrastructure, particularly during wet weather events
- Evaluate operation of both agencies' combined systems, including potential use of real-time controls that can react and/or anticipate wet weather conditions
- Assess whether operational changes and minor system improvements can increase system capacity, improve climate adaptability, or enhance system efficiency
- Provide detailed optimization concepts for inclusion in long-term control planning activities and capital program decision-making

2.2.4 2025 Progress

SPU and DNRP continued optimization process for three priority planning areas: Montlake, University, and Henderson. The following progress was made in 2025:

- Literature Review performed in January 2025

- Peer Agency Interviews held from April to May 2025
- Brainstorming Optimization Opportunities Workshops held in February and March 2025
- Optimization Opportunities Identified
- Screened Optimization Opportunities Workshops held May 2025
- Further Developed Screened in Optimization Opportunities and Summarized in Fact Sheets
- Prioritization Optimization Opportunities Workshops held December 2025

SPU and DNRP plan to submit the COE summary report for the Montlake, University, and Henderson planning areas to regulators by March 2027.

2.3 Shape Our Water Plan

SPU's Drainage and Wastewater (DWW) Line of Business is developing Shape Our Water, a 50-year plan for Seattle's water resilience. This plan will guide future investments to improve water quality while providing the greatest community value. Shape Our Water integrates drainage and wastewater system planning, prioritizes community engagement, and leverages effective partnerships to meet Seattle's infrastructure and receiving water body challenges. More details about this initiative can be found at www.shapeourwater.org.

2.3.1 Shape Our Water: Four Key Stages

The Shape Our Water Plan consists of four interrelated stages, described below:

1. Analysis: This stage involved data collection and system analysis to identify drainage, wastewater, and receiving water body challenges and opportunities. The challenges were prioritized based on risk. Three major comprehensive analysis projects were completed in this stage:

- Wastewater System Analysis, completed in 2019
- Drainage System Analysis, completed in 2020
- Seismic Risk Assessment of drainage and wastewater systems, completed in 2022

Final reports from the analysis stage are available at: www.seattle.gov/utilities/about/reports/drainage-and-wastewater/shape-our-water

2. Visioning: SPU developed the Shape Our Water vision and goals in collaboration with the community, City departments, and partner agencies and organizations. The final Community Vision document is available on www.shapeourwater.org.

3. Planning: The planning stage identifies and sequences near- and long-term investment in partnerships, programs, and projects that:

- Improve receiving water quality

- Enhance system performance and resilience
- Optimize social and environmental benefits for the City

This stage is ongoing. In 2024, the Shape Our Water team engaged more than 250 people through 14 workshops resulting in over 800 ideas. In 2025, the team combined and refined the ideas to about 100 potential solutions for the plan. SPU staff and leadership then evaluated those solutions based on how well they solve drainage and wastewater challenges and achieve the goals of the community vision.

4. Implementation: The implementation stage will begin when the plan is complete. SPU will monitor progress, track success measures, and adaptively manage implementation to stay accountable to stakeholders. While Shape Our Water is being developed, SPU is also piloting near-term integrated projects in Seattle's neighborhoods to explore innovative approaches and refine strategies.

2.4 Seattle Overflow Action Plan

SPU developed the 2015 Long-Term Control Plan (LTCP) and Integrated Plan—together known as the Plan to Protect Seattle's Waterways—to meet the CSO reduction planning requirements outlined in the 2013 Consent Decree.

SPU is currently updating the LTCP and has selected a more community friendly name to refer to the effort. It is now called the Seattle Overflow Action Plan. The Seattle Overflow Action Plan will incorporate joint CSO planning with DNRP and develop detailed area plans for specific CSO basins. These area plans will:

- Reduce CSOs while addressing short- and long-term drainage and wastewater needs
- Support infrastructure capacity upgrades and rehabilitation
- Align future CSO investments with the community vision for Shape Our Water

The Seattle Overflow Action Plan is an important opportunity for SPU to partner with other City departments and partner agencies to deliver community benefits, including mobility, open space, and livability improvements.

2.4.1 2025 Progress

SPU completed model updates, characterized uncontrolled CSO area, refined the toolbox of CSO and drainage solutions, and launched public engagement.

2.4.2 Next Steps

- 2026: Focus on area planning, community engagement, and plan development
- Late 2026: Complete the draft Seattle Overflow Action Plan (LTCP update)

SECTION 3

Operation & Maintenance Activities

SPU conducts operation and maintenance (O&M) activities to reduce the number and volume of SSOs, DWOs, and CSOs.

3.1 Nine Minimum Control Activities

The Federal CSO Control Policy requires municipalities with combined sewer systems to implement nine control measures that help reduce sewage overflows without requiring extensive engineering studies or major construction costs. The following paragraphs outline SPU's 2025 progress on each measure.

3.1.1 Control 1: Provide System Operations & Maintenance (O&M)

Control 1: Reduce the magnitude, frequency, and duration of CSOs through proper operation and maintenance (O&M) of the combined sewer system.

SPU performs extensive system O&M activities each year to reduce preventable overflows by ensuring proper system function. Routine maintenance activities include:

- Sewer inspections, cleaning, and non-emergency point repairs
- Catch basin inspections, cleaning, and repairs
- Control and storage structure cleaning
- Valve and flap gate inspection, cleaning, lubricating, and servicing
- Pump station electrical, mechanical, and facilities inspection and servicing

2025 Progress

SPU's 2025 O&M accomplishments are summarized in Table 3-1. Notably, in 2025, SPU:

- Inspected approximately 16% of total mainline pipe (by length)
- Cleaned approximately 16% of total mainline pipe (by length)

Table 3-1. 2025 O&M Accomplishments

Activity	Quantity
Miles of WW Mainline Pipes Cleaned	222
Miles of WW Mainline Pipes CCTV'd	233
Number of WW Pump Station Inspections	1,623
Number of WW Maintenance Holes Inspected	71
Number of CSO Structure Inspections	267
Number of CSO Structure Cleanings	371

Activity	Quantity
Number of CSO Hydrobrake Inspections	243
Number of Hydrobrake Cleanings	21
Linear Feet of Pipe receiving Chemical Root Treatment	150,310
Number of WW Catch Basins Inspected	2,697
Number of Catch Basins Cleaned	1,709
Number of Catch Basins Repaired	16
Number of Catch Basin Traps Replaced	194

See tables A-2 and A-3 in appendix for pump station location, capacity, and inspection details.

Pipeline Inspection & Maintenance

SPU uses the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) defect coding system to identify and prioritize pipes for maintenance or rehabilitation. When a sewer requires maintenance, it is placed on a routine cleaning schedule to prevent future overflows. The cleaning frequency is adjusted over time based on system performance. Corrective maintenance activities include:

- Jetting: Used for light to medium debris
- Hydrocutting: Used to remove roots and grease
- Rodding: Used to clear active blockages
- Chemical Root Treatment: Used when roots are present without grease

SPU's preventive sewer maintenance schedule ranges from monthly to once every ten years, depending on system needs. The goal is to clean as frequently as necessary to maintain system capacity but no more than necessary, as excessive cleaning can shorten a sewer's functional lifespan.

CSO Control Structure Inspections

SPU inspects all 93 CSO control structures upstream of its 82 CSO outfalls one to four times per year. During these inspections, crews assess:

- Flow levels and water conditions
- Sediment, debris, and infiltration
- Structural integrity and system function

Crews perform cleaning and repairs as needed. The 2025 inspections found that all structures were in good working condition, requiring no extensive repairs.

Pump Station Maintenance & Reliability Centered Maintenance

SPU performs maintenance and replaces electrical and mechanical components at pump stations as needed. Since 2008, SPU has used Reliability Centered Maintenance (RCM) at its wastewater pump stations. RCM optimizes maintenance schedules to:

- Reduce life-cycle costs while increasing system reliability
- Ensure the right data is collected and analyzed to inform operational decisions
- Improve spare parts inventory management, maintenance strategies, and data collection

SPU continues to evaluate and adjust its RCM-based management strategies to enhance system performance and reliability.

3.1.2 Control 2: Maximize Storage of Flows

Control 2: Maximize the use of the collection system for wastewater storage, in order to reduce the magnitude, frequency, and duration of CSOs.

SPU works to maximize wastewater storage in the collection system to reduce the magnitude, frequency, and duration of CSOs.

Strategies for Maximizing Storage

- Regular collection system maintenance to ensure full use of existing capacity during storms
- Ongoing monitoring and evaluation of storage use during wet weather events
- Modifying storage facilities to improve capacity utilization
- Raising overflow weirs to increase storage capacity without causing backups
- Reducing inflow and infiltration to minimize excess stormwater entering the system

2025 Progress

SPU continued to design and construct sewer system improvements to optimize existing capacity. Details on these improvements are provided in Section 4.1. Additionally, SPU is working to optimize recently built storage facilities, as described in Section 4.7.

3.1.3 Control 3: Control Nondomestic Sources

Control 3: Implement selected CSO controls to minimize CSO impacts resulting from nondomestic discharges.

SPU implements two important programs to help control nondomestic discharges into the Seattle sewer system:

- Fats, Oils, and Grease (FOG) Control Program
- Industrial Pretreatment Program

FOG Control Program

SPU's Wastewater Source Control team administers the City's FOG Control Program, which enforces Seattle Municipal Code requirements. These regulations:

- Prohibit FOG-laden wastewater that can clog pipes
- Require pretreatment before discharge into the sewer system

When FOG reacts with calcium in wastewater, it forms hardened, soap-like deposits inside sewer pipes (known as saponification), reducing capacity and increasing the risk of blockages and overflows (Figure 3-1). SPU enforces this code on commercial and institutional kitchen facilities and other nondomestic sources through a regulatory education, inspection, and enforcement program. FOG control inspection and enforcement activities conducted in 2025, and work planned in 2026, are summarized in Section 3.4.

Figure 3-1. 2025 Mainline Image Demonstrating Visible FOG Accumulations from a Popular Fast Food Establishment Side Sewer Connection

Industrial Pretreatment Program

The King County Wastewater Treatment Division – Industrial Wastewater Program (KCIW) administers the industrial wastewater pretreatment program.

KCIW:

- Issues industrial wastewater pretreatment permits with discharge limits
- Conducts regular site inspections and periodic permit reviews

SPU:

- Reviews KCIW permits for industrial facilities
- Monitors collection system CCTV footage to assess impacts
- Refers problematic discharges to KCIW for enforcement and/or permit modification
- Collaborates with KCIW on unknown-source discharges for further investigation

3.1.4 Control 4: Deliver Flows to the Treatment Plant

Control 4: Operate the collection system to maximize flows to the treatment plant, within the treatment plant's capacity.

SPU maximizes flow to the treatment plant by implementing the measures described in Controls 1 and 2 and by providing ongoing system performance monitoring and analysis.

System Monitoring & Performance Optimization

SPU's Control Center is staffed 24 hours a day and receives real-time Supervisory Control & Data Acquisition (SCADA) information. Control Center staff respond to pump stations alarms indicating performance drops or other issues. In addition, SPU monitors pump stations, overflow structures, and outfalls to detect maintenance needs.

2025 Facility Rehabilitation & Upgrades

In 2025, SPU completed the rehabilitation Wastewater Pump Station 71 (West Seattle). Additionally, the construction contract for the rehabilitation of Wastewater Pump Station 35 (North Union Bay) was awarded in 2025, with construction to be completed in 2026. These rehabilitation projects provide critical upgrades to improve:

- Facility lifespan by replacing or lining force mains, and upgrading mechanical, electrical, and ventilation equipment to current standards
- System reliability to reduce CSO frequency and volume
- Operator safety and maintenance efficiency

Stabilization Phase for New Facilities

SPU completes a one-year stabilization phase after construction of new facilities to ensure they function as intended. Stabilization includes:

- Monitoring system performance
- Analyzing operational data
- Fine-tuning equipment settings

In 2025, SPU completed the stabilization phase for Wastewater Pump Stations 62 and 63 (Lake Union) and began the stabilization phase for Wastewater Pump Station 71 (West Seattle), which will be completed in 2026.

Figure 3-2. SW 98th Street End Improvements at Pump Station 71

Figure 3-3. Completed Installation of New Piping and Valves at Pump Station 71

3.1.5 Control 5: Prevent Dry Weather Overflows

Control 5: Prevent dry weather overflows; they are not authorized. Report any dry weather overflows within 24 hours and take prompt corrective action.

Preventative Measures

To help prevent DWOs and exacerbated CSOs, SPU:

- Uses an alarm system at each CSO location to detect potential overflow conditions
- Alerts analysts and/or field crews when an alarm is triggered, enabling rapid response
- Investigates all DWOs and exacerbated CSOs to identify the cause and implement preventative measures

2025 Exacerbated CSO Incident

SPU recorded one exacerbated CSO in 2025 at outfall 19:

- During a rain event on December 8, 2025, the CSO at Outfall 19 was exacerbated by the third pump malfunctioning due to rags. The total CSO volume was 18,258 gallons.

A summary of the DWOs and exacerbated CSOs from 2021-2025 is included in Table 3-2.

2025 Prevention Efforts

To reduce the recurrence of exacerbated CSOs, SPU implemented:

- Annual refresher training for machinists, expanded to include tabletop exercises
- Facility training for operations control center staff
- Weekly facility performance reviews for CSOs and pump stations
- System performance optimization by establishing early warning level alarms
- Pre-storm inspections and cleaning

Table 3-2. DWOs and CSOs Exacerbated by System Maintenance Issues 2021 - 2025

Year	No. of DWOs[a]	Volume of DWOs (gallons)	No. of Exacerbated Overflows[a]	Volume of Exacerbated Overflows (gallons)
2021	4	61,533	0	0
2022	1	91,599	2	197,204
2023	0	0	7	931,798
2024	1	343	0	0
2025	0	0	1	18,258

a. *DWOs and exacerbated CSOs are included in the table listing all 2025 overflows (Table 5-4). Exacerbated CSOs are also included in the table comparing 2025 CSOs with 2010 baseline (Table 5-5), the tables comparing 2021-2025 discharges (Tables 5-6 and 5-7), and the table assessing whether outfalls meet the CSO performance standard (Table 5-8).*

3.1.6 Control 6: Control Solids and Floatable Materials

Control 6: Implement measures to control solid and floatable materials in CSOs.

SPU implements several measures to reduce solid and floatable materials in CSOs.

Catch Basin Design & Maintenance

SPU's catch basins are designed to prevent floatables by allowing overflow only when the water level in the catch basin is well above the overflow pipe opening. Because floatables remain on the water surface, they are trapped in the catch basins. Regular inspections and cleaning remove debris and potential floatables. Catch basin inspection, cleaning, and rehabilitation metrics are included in Table 3-1.

2025 Public Engagement & Outreach

In 2025, SPU's wastewater engagement team continued to implement a more comprehensive drain care outreach program. This approach integrates messaging on both FOG disposal and non-flushable behaviors, aiming to protect the overall wastewater system with a key message: all drains are connected, and what goes down one drain impacts the entire wastewater system.

SPU continued to conduct outreach efforts in priority areas:

- A baseline survey assessed resident knowledge and behaviors regarding flushing and FOG disposal
- 5,000 baseline surveys, accompanied by postage-paid return envelopes, were mailed to addresses in four hot spot neighborhoods
- Online surveys were also available in multiple languages, with participants eligible for a raffle upon completion

Following the survey, SPU conducted door-to-door outreach in the four hot spot neighborhoods. SPU visited 187 single family homes and 97 multifamily properties to provide educational materials, practical resources, and guidance on better flushing and overall drain care habits. After outreach activities concluded, post-outreach surveys were sent to the same neighborhoods to measure the campaign's effectiveness (results are currently being analyzed).

The SPU wastewater engagement team continues to deliver fun, interactive learning experiences through educational games, incentives, and hands-on activities. Furthermore, the engagement team attended community events, reaching 1,395 attendees.

SPU's wastewater engagement team also collaborated with the commercial outreach team to create a refreshed bathroom stall poster (Figure 3-4). The updated design highlights the impacts of non-flushables versus flushables, reinforcing that only toilet paper should be flushed. The poster was distributed to businesses across the city.

Figure 3-4. Example of Bathroom Stall Poster Re-Design for Business Customers

In addition, the City of Seattle runs several garbage, recycling, and food and yard waste and city cleanup programs to prevent and reduce the amount of street litter, including:

- Street sweeping, including increased efforts for Fall leaf pickup
- Spring cleaning
- Storm drain stenciling
- Event recycling
- Public litter and recycling cans
- Waste free holidays
- Product bans
- Illegal dumping investigation and response

In 2026, SPU will explore expanding targeted outreach about ragging by identifying a college partnership to deliver a flushables campaign. Potential partnerships may include a local university, Greek system organizations, or off-campus multifamily properties in hotspot areas with high student populations.

3.1.7 Control 7: Prevent Pollution

Control 7: Implement a pollution prevention program focused on reducing the impact of CSOs on receiving waters.

Source Control Pollution Prevention Program

Since the early 2000s, SPU has operated a comprehensive source control program, authorized by the City of Seattle Stormwater Code and Side Sewer Code. This program implements pollution prevention measures in combined sewer basins, including:

- Spill Response: SPU provides spill response city-wide using a 24-hour per day, 7 day per week call out system. Spill responders assess, mitigate, and clean up spills to minimize environmental impact.
- Water Quality Complaint Investigations: SPU investigates water quality complaints citywide and educates residents and businesses on proper best management practices (BMPs).
- Business Inspections: SPU inspects business to assess proper BMP implementation, prioritizing inspections in combined sewer basins as resources allow.
- Stormwater Facility Inspections: SPU inspects privately-owned stormwater facilities to evaluate maintenance practices and compliance with drainage requirements, again prioritizing inspections in combined sewer basins as resources allow.
- RV Wastewater Program: SPU initiated the RV Wastewater Program as a pilot in 2020 as a response to an increase in frequency and sewage spill from RVs. The program provides monthly wastewater disposal service to RV owners parked and living on Seattle Streets. In 2025, the program provided 2,892 outreach visits offering service and 1,333 wastewater collection services. Spills of sewage from RV communities continue to decline, with 11 incidents reported in 2025, compared to 99 in 2019, prior to program implementation.
- Stormwater and Wastewater Education and Outreach: SPU implements multiple public education and behavior change programs across the City, including an Adopt-a-Drain. The wastewater education program includes side sewer maintenance, proper disposal of cooking oil, and what not to flush, as described in Sections 3.1.3. and 3.1.6.
- Street Sweeping: Street sweeping continued to reduce the amount of pollutants entering the sewer system in 2025. The Seattle Department of Transportation (SDOT) performs street sweeping. Additional information can be found in Section 4.4.4.

Legal Authority and Administrative Procedures Used for Program Implementation

SPU's pollution prevention program is implemented under the following City of Seattle Municipal Codes (SMC):

- Side Sewer Code (SMC 21.16): Regulates side sewers and prohibits improper discharges; requires repair of inoperative or inadequate sewers, drains, or natural watercourses; and regulates the

construction, alteration, repair, and connection of side sewers and service drains. The Side Sewer Code was last substantially amended in 2010, signed by the Mayor on December 20, 2010, and effective on January 5, 2011.

- Stormwater Code (SMC 22.800-22.808): Grants the City with the legal authority to address discharges into the combined sewer system owned and operated by Seattle Public Utilities (SMC 22.800.030.C). The Stormwater Code was revised and became effective July 1, 2021.

Appropriate BMPs

The City of Seattle Stormwater Manual, Volume 4: Source Control, outlines BMPs required under the Stormwater Code for properties and businesses citywide. Key BMPs include:

- BMP1: Eliminate Illicit Connections - All properties must inspect systems, obtain permits, and eliminate illicit connections
- BMP2: Perform Routine Maintenance - All properties are required to perform annual inspections and maintenance of drainage systems
- BMP 3: Dispose of Fluids and Wastes Properly - All properties must properly dispose of solid and liquid wastes and contaminated stormwater and sediment
- BMP 4: Proper Storage of Solid Wastes - All properties must implement proper solid waste storage and disposal practices
- BMP 5: Spill Prevention and Cleanup - Businesses and real properties that load, unload, store, or manage liquids or erodible materials (e.g., stockpiles) must maintain spill plans, equipment, and practices to prevent and clean spills, and must follow notification procedures for spills to the drainage and sewer systems
- BMP 6: Provide Oversight and Training for Staff - Businesses and public entities that have activities requiring BMPs must train employees on pollution prevention BMPs
- BMP 7: Site Maintenance - Businesses and public entities that involve materials or wastes that may come into contact with stormwater are required to implement proper housekeeping and contamination prevention practices. Such practices include inspections, avoidance measures (containment, covering, or locating activities away from drainage systems), and sweeping and cleaning procedures.
- BMP 8: Rooftop Dog Runs – Rooftop dog runs must be sized to minimize stormwater discharges to the sanitary sewer or combined sewer systems

Additionally, Volume 4 of the Source Control Manual (SDCI 10-2021/DWW200) includes minimum requirements for all businesses and public entities for specific activities in Seattle's drainage basins. These activities require source controls to prevent prohibited discharges and contamination of drainage water, the public combined sewer, or receiving waters:

- BMP 9: Fueling at dedicated stations, for new or substantially altered fueling stations
- BMP 10: Mobile fueling of vehicles and heavy equipment
- BMP 11: In-water and over-water fueling
- BMP 12: Maintenance and repair of vehicles and equipment
- BMP 13: Concrete and asphalt mixing and production
- BMP 14: Concrete pouring, concrete/asphalt cutting, and asphalt application
- BMP 15: Recycling, wrecking yard, and scrap yard operations
- BMP 16: Storage of liquids in aboveground tanks

Source controls include segregating or isolating wastes to prevent contact with drainage water; enclosing, covering, or containing the activity to prevent contact with drainage water; developing and implementing inspection and maintenance programs; sweeping; and taking management actions, such as training employees on pollution prevention.

3.1.8 Control 8: Notify the Public

Control 8: Implement a public notification process to inform the citizens of the when and where CSOs Occur.

Improving Public Awareness

CSOs occur when heavy rainfall overwhelms the combined sewer system, causing overflows into local waterways. Overflows can also result from equipment failures, blockages, or maintenance activities.

SPU operates a CSO Notification and Posting Program as a joint project with DNRP and Public Health-Seattle & King County. This program includes signs at publicly accessible CSO locations, an information phone line, websites, and other public outreach activities.

SPU and DNRP collaborated to redesign CSO warning signs to improve visibility and accessibility:

- Increased sign size with high-contrast yellow and black lettering for better readability
- Information in four languages to improve accessibility for diverse communities
- Website and phone number for reporting issues
- Placement for both boaters and pedestrians, aligned with CSO outfall pipe locations as feasible

Since 2019, SPU has replaced at least 28 damaged or missing signs. In 2025, SPU installed 41 additional signs (two per post). SPU carpenters prioritized accessible CSO outfalls as well as CSO outfalls along their typical routes. SPU will continue to install the signs until completed. To ensure continued sign visibility and accuracy, SPU added CSO warning sign inspections to its regular facility maintenance schedule. DWW crews now inspect for missing or damaged signs and create follow-up work orders as needed for repairs or replacements.

Figure 3-5. CSO Outfall 139 - Facing Towards Water with Highway 520 in Background

Real-time notification of recent and current CSO discharges is available via a mobile-friendly website maintained by King County (kingcounty.gov/en/dept/dnrp/waste-services/wastewater-treatment/sewer-system-services/cso-status.aspx). The website presents a map with overflow status for the majority of Seattle and the County's CSOs, with links to each agency's independent websites. In 2026, signs will be updated to cover up outdated information.

3.1.9 Control 9: Monitor CSOs

Control 9: Monitor CSO outfalls to characterize CSOs and the effectiveness of CSO controls.

SPU monitors all CSO outfalls to detect sewage overflows. SPU also tracks flow, precipitation, and flow monitor performance to ensure consistent, high-quality measurements. Monitoring program details and results are summarized in Section 5 of this report.

3.2 CMOM Performance Program Activities

SPU develops and implements program plans that identify program work and improvements for multi-year periods. The last plan was completed in 2020, and a new five-year plan was developed in 2021. The plans include initiatives in the following core program areas:

- Sewer cleaning
- Sewer condition assessment
- Sewer rehabilitation

3.2.1 Sewer Cleaning Initiatives

SPU's sewer cleaning initiatives aim to improve cleaning efficiency and effectiveness by standardizing procedures, measuring and tracking cleaning quality, receiving input from field crews, and using technology to optimize cleaning frequency. Work completed in 2025 and planned for 2026 includes:

- High-Risk Preventive Maintenance Schedules Review: SPU continues work initiated in response to Ecology's 2023 request for a comprehensive review of high-risk preventive maintenance schedules, including validating short frequency cleaning needs, addressing past due work, and refining schedules to optimize cleaning frequency with a focus on completing the highest risk work first. SPU staff are also implementing internal process improvements to resolve planning and scheduling challenges.
- Chemical Root Control Program Evaluation: SPU staff are actively reviewing and refining the chemical root control program to improve how treatment locations are selected, strengthen application processes, and increase overall efficiency and effectiveness. This work includes confirming that all practices align with current industry standards for chemical root control. Because root intrusion remains the leading cause of SSOs in SPU's system, this focused evaluation is an important step in reducing risk and improving system reliability.
- Operations & Maintenance Resource Evaluation: SPU is assessing whether current staffing levels align with the workload required to meet cleaning and condition assessment program goals. Since nominal staffing counts do not always reflect actual operational capacity, managers need to better understand staff availability and determine whether additional resources may be warranted. This evaluation reflects ongoing due diligence to ensure that staffing capacity keeps pace with operational needs.

3.2.2 Sewer Condition Assessment Initiatives

SPU conducts condition assessments to reduce sewer overflow risks and make data-driven decisions about maintenance and rehabilitation. Work completed in 2025 and planned for 2026 includes:

- Condition Assessment Strategy: In 2017, SPU developed a 10-year inspection plan for the entire wastewater collection system. The system was divided into 100 management areas, based on system hydraulics, design and flow, and discharge points to the DNRP system. SPU then developed and applied prioritization criteria and adjusted for practical implementation factors. Work was delayed in 2020 due to COVID-19 staffing shortages but resumed in 2021. In 2023, SPU completed the first full inspection cycle of the wastewater collection system.
- Condition Assessment Strategy Update (2023-2033): SPU completed planning for the second 10-year cycle of the Condition Assessment Strategy in 2023. Inspections are critical to the Sewer Rehabilitation Strategy, as discussed in section 3.2.3. The Sewer Rehabilitation Strategy relies on accurate, up-to-date pipe condition data to support rehabilitation project planning and delivery. The risk-based schedule for systematically renewing the pipe system from the Rehabilitation

Strategy heavily influenced the update of the Condition Assessment Strategy. Implementation of the second 10-year cycle began in 2023 and will continue, with yearly adjustments as needed, through 2033.

3.2.3 Sewer Rehabilitation Initiatives

SPU prioritizes sewer rehabilitation initiatives to maintain system reliability in a timely, efficient, and cost-effective manner. Work completed in 2025 and planned for 2026 includes:

- Rehabilitation Strategy: In 2017, SPU began developing a comprehensive wastewater collection system rehabilitation strategy that documents SPU's priorities, our approach to making system rehabilitation investments, and process improvements to improve efficiency. As a part of this effort, SPU has implemented a new risk management software, adopted project delivery process improvements, and completed a long-term capital investment forecast. In 2022, SPU initiated a rehabilitation strategy to prioritize capital projects based on risk and equity and establish a planning level capital portfolio. SPU plans to continue increasing investment in sewer renewal, spending up to $40 million per year by 2041.
- Adaptive Management of the Rehabilitation Strategy: SPU regularly reassesses elements of its Rehabilitation Strategy to ensure alignment with evolving system needs and industry best practices. In 2025, SPU initiated an effort to evaluate several key factors influencing the rehabilitation program. This work includes assessing the impacts of rising construction costs, incorporating emerging and expanded renewal technologies, evaluating alternative contracting approaches to improve project delivery, and addressing ongoing resource constraints. The Adaptive Management Plan is intended to refine program priorities, improve cost effectiveness, and ensure that SPU's rehabilitation investments remain responsive to changing conditions and long-term asset management goals.
- Addressing an Increase in Reactive Work: With the completion of the first 10-year Condition Assessment Strategy cycle in 2022, SPU continues to identify emergency rehabilitation needs. As new high-risk pipe conditions emerge, these become priority projects for the Sewer Rehabilitation Program. SPU will continue to balance urgent unplanned work with long-term planned rehabilitation projects.

3.2.4 SSO Performance

In 2025, SPU recorded 30 SSOs, summarized by cause in Table 3-3. The leading cause was root intrusion, accounting for 13 events.

Table 3-3. 2025 SSOs by Category

Category	Primary Cause of Sewer Overflows	Number of 2025 Sewer Overflows
1	Roots	13
2	FOG	3
3	Debris	0
4	Structural Failure – Gravity	7
5	Structural Failure – Force Main	2
6	Capacity – Gravity	1
7	Pump Station – Mechanical	0
8	Pump Station - Capacity	0
9	Power Outage	0
10	Operations Error	0
11	Maintenance Error	0
12	Pressure Release	0
13	City Construction	3
14	New Facility Startup	0
15	Private Side Sewer Issue	0
16	Capacity – King County	0
17	Private Construction	1
18	Other Agency Construction	0
19	Vandalism	0
20	Extreme Weather Event (≥25year)	0
Total for Categories 1 – 20		30
Total for Categories 1 – 15		29

SSO Performance (2013-2025)

SSO performance for 2013 through 2025 is summarized in Table 3-4. SSO performance measures the effectiveness of SPU's CMOM Program and helps ensure SPU is focusing its efforts on activities that help prevent sewer overflows. To ensure accurate performance tracking, the calculation excludes overflows beyond SPU's control, such as those caused by:

- Extreme weather events (for example, rainfall exceeding a 25-year recurrence interval)

- Construction activities by other agencies or private developers
- King County capacity constraints
- Vandalism

For more than a decade, SPU has met and exceeded its performance target of no more than 4 SSOs per 100 miles of sewer per year, based on a 2-year moving average.

Table 3-4. 2013-2025 SSO Performance

Year	Number of SSOs[1]	SSOs/100 Miles of Sewer[2]	2-Year Average SSOs/ 100 Miles of Sewer
2013	40	2.8	3.3
2014	36	2.5	2.7
2015	72	5.1	3.8
2016	38	2.7	3.8
2017	41	2.9	2.8
2018	14	1.0	1.9
2019	22	1.5	1.3
2020	44	3.1	2.3
2021	43	3.0	3.1
2022	38	2.7	2.9
2023	27	1.9	2.3
2024	23	1.6	1.8
2025	29	2.0	1.8

1. *Numbers in this column include only the sewer overflows included in the SSO performance calculation and exclude sewer overflows caused by extreme weather events, other agency construction, private construction, King County capacity constraints, and vandalism.*
2. *SPU has 1,420 miles of sewers.*

Ongoing Performance Improvements

To maintain high performance and further reduce SSOs, SPU takes the following actions:

- Analyzes each SSO to determine root causes and preventive measures
- Identifies necessary system modifications or increased maintenance
- Reviews SSO data trends to support adaptive management of the CMOM Program

3.3 Outfall Inspections and Repair

3.3.1 Outfall Rehabilitation Plan

SPU's 2016-2021 NPDES Permit required submission of an Outfall Rehabilitation Plan by October 30, 2020. The plan included:

- A list of outfalls to be repaired or replaced during the next permit cycle
- A desktop evaluation of CSO outfalls to determine the total number of discharge points
- An assessment of outfalls sharing a hydraulic connection to a common control structure

SPU submitted the 2021-2026 Outfall Rehabilitation Plan to Ecology on October 26, 2020. The plan recommended:

- Cleaning eight outfalls (Outfalls 13, 25, 38, 40, 41, 43, 139, and 140)
- Lining one outfall (Outfall 169)
- Cleaning and slip lining one outfall (Outfall 59)

Amended 2021-2026 CSO Outfall Rehabilitation Plan

In May 2022, SPU submitted an amended plan, which included:

- Cleaning eight CSO outfalls by 2024
- Repairing or rehabilitating two CSO outfalls by December 2026

3.3.2 2025 Progress & 2026 Plans

SPU completed inspection and cleaning for seven of the eight outfalls in the plan (Outfalls 25, 38, 40, 41, 43, 139, and 140). An additional SPU-operated CSO outfall located at King Street was cleaned and inspected in 2024, meeting the requirement to clean eight CSO outfalls by December 31, 2024.

In addition to cleaning and inspection, the SPU-operated CSO outfall located at King Street was also repaired in 2024. In 2025, SPU also completed repair of CSO outfall 139, meeting the requirement to repair or rehabilitate two CSO outfalls by December 2026.

Outfall 13 required the installation of an access structure before it can be cleaned or inspected. The access structure was installed in 2025, and the outfall will be cleaned and inspected in 2026.

3.4 FOG Control Program Activities

In 2025, SPU continued to prioritize inspections and compliance activities. Inspections conducted in 2025 reflected a return to routine regulatory oversight, with enforcement used as a reasonable option when necessary to achieve compliance and address ongoing FOG related impacts to the sewer system.

3.4.1 FOG Control Program Overview

The FOG Program aims to reduce FOG-related SSOs through a structured approach. The program consists of:

1. Implementing the FOG Management Plan
2. Managing the Food Service Establishment (FSE) Inventory Management Plan
3. Updating and implementing Standardized Operating Procedures (SOPs) and Engagement Plan
4. Conducting FOG Inspector Training.

Work completed in 2025 and planned for 2026 is described in the following sections.

3.4.2 FOG Management Plan

Data analysis of FOG hotspots indicates that FOG-related impacts are evenly distributed between residential and commercial sources. To address these sources, the FOG Management Plan focuses on:

Residential – Community Engagement

SPU's residential FOG program is designed to support behavior change by:

- Raising awareness of the impacts of improper FOG disposal
- Providing clear disposal guidance

In 2025, SPU continued refining its FOG messaging by gathering feedback from residents to better understand behaviors, motivations, and barriers. SPU also tested new outreach strategies, including expanded digital advertising, to enhance community engagement. Key accomplishments in 2025 include:

- Conducted four focus groups to better understand interpretations of SPU messaging and residents' behaviors:
    - Two in Vietnamese for Vietnamese-speaking households
    - Two in Mandarin for Mandarin-speaking households
- Piloted a FOG media campaign in conjunction with the 2025 FIFA Club World Cup matches in Seattle that:
    - Combined the messages of soccer and teamwork with reducing FOG clogs (Figure 3-6)
    - Generated 3,823,106 impressions across digital media
    - Generated 120 pledges committing to proper FOG disposal

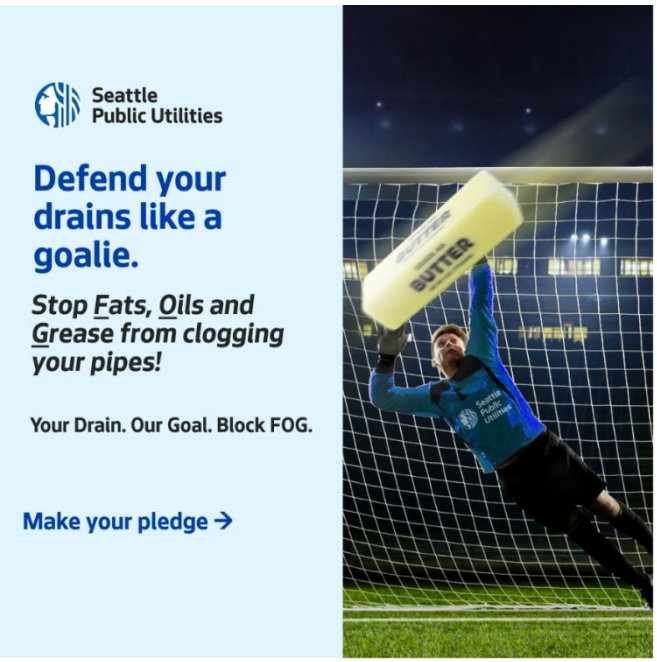

Figure 3-6. Static Ad Run During the 2025 FIFA Club World Cup Campaign

- Ran a "FOG Isn't Festive" holiday digital campaign November 25 through December 31, 2025, to increase awareness about proper FOG disposal that:
    - Included video and static ads
    - Garnered over 1,200 clicks to the SPU website (Figure 3-7)

Figure 3-7. Static Ad Run During the 2025 "FOG Isn't Festive" Digital Campaign

- Conducted targeted outreach to residents in neighborhoods impacted by FOG-related SSOs
- Conducted wastewater hotspot outreach to:
    - 97 multifamily properties
    - 187 single family properties
- Distributed 3,300 FOG educational flyers, 667 sink strainers, 696 food scrapers, and 2,132 door hangers to single family and multifamily properties

Commercial - Regulatory FOG Program

SPU's commercial FOG program focuses on reducing FOG from food service establishments (FSEs) by using a risk-based approach to prioritize inspections and enforcement efforts. The commercial FOG program includes restaurant outreach, site assessments, inspections, and enforcement.

Aquatic Informatics Platform

In 2025, SPU continued to promote early adoption of the Aquatic Informatics (AQI) grease interceptor maintenance reporting platform through contractor-led outreach. The goal of the outreach is to increase awareness and familiarity with the program ahead of any future reporting requirements.

The SPU Green Business conducted outreach visits to food service establishments from July through October 2025:

- In Ballard, Capitol Hill, Downtown, and the University District
- Throughout the work week, both morning and afternoon
- Engagement with 10-15 businesses per day

Challenges identified include:

- Businesses were reluctant to adopt the platform, as self-reporting is not yet required by code
- Time constraints, staffing availability, or technical challenges with the platform
- Slow system loading times (up to 5 minutes) made it difficult to keep business owners and managers engaged

In 2026, SPU will transition AQI onboarding efforts internally to inspection program staff due to these challenges, as well as relatively low adoption rates during contractor led outreach. SPU expects that integrating outreach into routine inspections will provide:

- More consistent engagement
- Clearer communication about future reporting
- Identification of technical barriers affecting platform usability

Grease Interceptor Training Program

In 2025, SPU continued to advance the Grease Interceptor Training Program (GITP) to support small business service providers and improve grease interceptor maintenance in Seattle food service

establishments. As part of this effort, SPU and Cascadia Consulting Group conducted targeted outreach to 15 businesses in the Chinatown International District (CID) and provided:

- FOG Best Management Practices (BMPs) information
- Pan scrapers
- A list of GITP trained service providers

To better engage the CID businesses, SPU and Cascadia focused on Mandarin and Korean speaking food service establishments to clearly communicate grease interceptor maintenance requirements and identify barriers to compliance. The focused outreach provided brochures explaining grease interceptor maintenance requirements (in Korean and Chinese).

The outreach also gathered information on:

- Cleaning practices
- Service provider use
- Language support needs

SPU will use this information to inform future program activities and inspection referrals. SPU continued to provide ongoing support to GITP through regular check-ins and new materials, like the brochures in Korean and Chinese. SPU is also developing a new pilot "train-the-trainer" program, where certified GITP participants will provide refresher training on grease interceptor cleaning and disposal best practices to food service establishment representatives. The pilot will be promoted through SPU inspections and Green Business Team outreach, with coordination from community-based organizations in selected neighborhoods.

Other 2025 Highlights

- Completed 919 FSE FOG discharge risk assessments and regulatory compliance inspections, including:
    - 241 high-priority facility inspections
    - FOG education, data collection, risk evaluation, and regulatory compliance checks
- Enhanced plan review collaboration with the King County Plumbing and Gas Piping Program and better enforcement of plumbing codes
- Cascadia Consulting Group:
    - Conducted FOG site assessments for 449 businesses, including providing FOG maintenance logs, kitchen posters, and sink strainers
    - Delivered free spill kits to 121 facilities, including FSEs, as part of a Seattle EnviroStars Program

- Provided site visits to 109 foodservice businesses to introduce them to the Aquatic Informatics platform and provide FOG BMPs and resources

2026 Goals and Planned Efforts

2026 goals and efforts will include the following activities (subject to staffing availability; adjustments will be made as needed):

- Conduct regulatory compliance inspections on a minimum of 90% of all Priority 1 and 2 facilities as identified in the Aquatics Informatics Platform
- Conduct regulatory compliance inspections on 90% of facilities scheduled in 2025 per the periodicity set in Aquatics Informatics Platform.
- Continue initial risk assessments for new FSEs and facilities connected to Category 3, 4, 5, and 6 mainlines
- Conduct follow-up inspections for facilities identified as having a "no" or "inadequate" pretreatment
- Conduct notice of Violation enforcement to achieve SMC compliance
- Collaborate with King County Plumbing and Gas Piping Program and Plumbers and Pipe Fitters Training Center
- Perform community engagement efforts with business districts, neighborhood organizations, and area restaurant associations to collaborate on maintenance reporting and other FOG Program project rollouts
- Craft a Director's Rule to support and expand existing SMC enforcement (deferred from 2021)
- Launch and pilot online FSE registration and maintenance reporting project (deferred from 2022)
- Establish a Preferred Pumper Program for companies who install, repair, and maintain grease interceptors (deferred from 2022)

3.3.2 FSE Inventory Management Plan

SPU's FSE Inventory Management Plan outlines our approach for collecting, using, and managing FSE data. SPU uses Aquatics Informatics Platform software to store and maintain FSE-related data. In 2025, SPU updated the FSE database by uploading an updated listing of FSEs permitted through Seattle & King County Public Health. Automated quarterly reports from the Public Health database ensure current and accurate FSE records.

3.3.3 Standard Operating Procedures (SOPs) and Engagement Plan

SPU's FOG inspectors conduct an annual review of all FOG SOPs to:

- Ensure field staff familiarity and compliance with SOPs

- Confirm that SOPs accurately reflect current field procedures
- Encourage inspectors input in program process development

2025 SOP Review & Updates

SPU maintains the following FOG SOPs:

- FOG Regulatory Inspection SOP
- Aquatics Informatics Platform User's Manual and Data Entry SOP (in progress)
- FOG Enforcement SOP
- FOG GIS and Hotspot SOP
- FOG Violation and Enforcement SOP
- FOG Characterization and Risk Assignment SOP
- FOG Remote Inspector User's Manual and SOP

In 2026, SPU will review all the FOG SOPs to improve workflows and update terminology.

3.3.4 FOG Inspector Training

Ongoing education and training for FOG Inspectors remains a fundamental component of SPU's FOG Program. Training ensures that inspectors remain up to date on:

- Regulatory requirements
- Best practices for inspections and enforcement
- Advancements in technology and program improvements

2025 Training Activities

- Full-day retreat and in-house FOG inspector training to reinforce inspection techniques and program policies
- Monthly discussions on procedural changes due to technology upgrades and program improvements
- Participation in regional and national forums, including:
    - APWA Pre-FOG Sub-Committee meetings
    - International Association of Plumbing and Mechanical Officials Northwest Washington Chapter meeting (September)
    - American Society of Plumbing Engineers Seattle Chapter meeting (November)

2026 Training Plans

SPU will continue the above activities while expanding training resources and opportunities.

3.5 Annual Review of Operations and Maintenance Manuals

SPU regularly reviews and updates its operations and maintenance (O&M) manuals to ensure they remain relevant and accessible. Manuals are stored on a dedicated SharePoint site for wastewater facility documentation. Equipment specific operations and maintenance instructions and procedures are maintained as job plans in SPU's computer maintenance management system. New and updated manuals are submitted as required, including:

- 2015: SPU submitted O&M manuals to Ecology and EPA for the new operable CSO storage facilities at Windermere and Genesee
- 2016: SPU reviewed and updated the O&M Manuals for Windermere and Genesee. The updates mainly consisted of modifications to control logic made to the facilities operations during the stabilization phase.
- 2018: SPU submitted an O&M Manual for the Henderson North CSO storage facility
- 2019: SPU reviewed and updated the control logic for the Windermere, Genesee, Henderson and Delridge facilities
- 2020: SPU submitted an O&M Manual for the Portage Bay (Basin 138) sewer system improvement project
- 2022: SPU completed review of the 60% Draft O&M Manual for the Ship Canal Water Quality Project
- 2023: SPU submitted the draft O&M Manual for the Central Waterfront CSO Reduction Project to Ecology

SECTION 4

Capital Activities

This section describes SPU's capital improvement activities to reduce the number and volume of sewage overflows and implement the Plan to Protect Seattle's Waterways. During 2025, SPU monitored and controlled scope, schedule, and budget across major capital projects. In addition, SPU applied lessons learned from previous projects to enhance future capital improvements. 2025 project spending is summarized in Table 4-1.

Table 4-1. 2025 Plan Implementation Spending

Project Name	Amount Spent
Ship Canal Water Quality Project	$69,753,310
Central Waterfront CSO Reduction Project (70,71,72)	$34,679
Delridge 168/169 CSO Control	$1,287,006
Vine St (69) CSO Reduction Project	$678,915
111H CSO Project	$332,265
MDCSO (99,107,111) Project	$757,312
Sewer System Improvement Projects (Retrofits)	$3,234
Pump Station Rehabilitation	$4,313,827
Outfall Rehabilitation	$220,295
Sewer Renewal	$34,965,097
RainWise	$1,059,994
NDS Partnering	$245,082
South Park Water Quality Facility	$3,186,528
Expanded Street Arterial Sweeping	$8,939,646
Total	**$125,777,192**

4.1 Sewer System Improvement Projects

No new sewer system improvement projects have been completed in recent years; therefore, no monitoring was conducted in 2025.

4.2 Capital Improvement Projects

4.2.1 Ship Canal Water Quality Project (Basins 147, 151, 152, and 174)

The Ship Canal Water Quality Project (SCWQP) is a joint SPU-DNRP project designed to control CSOs from:

- SPU outfalls: Wallingford, Fremont, and Ballard areas (Outfalls 147, 151, 152, and 174)
- DNRP outfalls: 3rd Ave West (DSN 008) and 11th Ave Northwest (DSN 004)

Project Agreement and Oversight

On July 27, 2016, the City of Seattle and King County signed a Joint Project Agreement (JPA) to guide implementation, operation, and cost-sharing of the SCWQP. SPU is the lead for construction and implementation of the storage tunnel, and will own, operate, and maintain the storage tunnel and its related structures. DNRP retains ownership of its two outfall structures. SPU and DNRP have also chartered both the Joint Oversight and the Project Review and Change Management Committees to provide policy guidance and senior level management oversight, support, and direction to the project.

2025 Project Accomplishments

The project team completed the design phase of work for the program and made significant progress on construction:

- Storage Tunnel Construction: Testing and commissioning was completed for all sites. All project artwork was installed. Substantial Completion was achieved at the end of 2025.
- TEPS/BC Construction: Structural concrete reached the maximum height for the TEPS tower, while the internal walls and floor are still under construction. For Ballard Conveyance, the contractor completed design and received permits for all remaining maintenance holes (MHs) and tunnel shafts. Shoring system construction was completed for all the MHs and tunnel shafts, except for the upstream diversion structure.
- Wallingford Conveyance Work Package: Construction achieved physical/final completion.
- SCWQP Program: a 60% draft Operations & Maintenance Plan was completed and reviewed. The O&M Plan will document how SPU and DNRP will work together during operation of the new facility.
- 2026 SRF Loan Application: SPU was formally notified that it has been offered a 2026 SRF loan for the SCWQP.

2025 Challenges and Issues

- TEPS/BC Contract Delays:
    - Delays in third party utility relocations and additional time required to respond to contaminated soil caused a 17-day delay

  - This delay impacted the critical path, and confidence in meeting the Construction Completion milestone by the date proposed in the Consent Decree Modification is now below 10%

- Storage Tunnel Contractor Dispute:
  - A formal mediation session was held to negotiate the Storage Tunnel Contractor's Claims 5 and 6. A negotiated settlement was not reached at mediation; negotiations with the Contractor are ongoing.
  - The Storage Tunnel Contractor submitted a new Claim 7, negotiations are ongoing.
- Interim Operations and Maintenance:
  - SPU took ownership and began maintaining new assets constructed in the Wallingford Conveyance and Storage Tunnel contracts, even though most of the assets are not yet in operation. In addition to maintaining warranties, this "Interim O&M" period will help O&M staff familiarize themselves with the new assets, access, etc. prior to the facility being operational.

Figure 4-1. Ballard Conveyance Construction of MH3

2025 Community Outreach Highlights

SPU delivered project briefings and updates to:

- Community groups, business associations, and nonprofits

- Seattle Mayor's Office, Seattle City Council members, Ecology, and EPA
- Residential and business stakeholders along the Ballard Conveyance tunnel alignment and construction areas
- Over 2,000 listserv subscribers with monthly construction progress updates on the Storage Tunnel and TEPS/BC work
    - A new listserv was created for the Ballard neighborhood
- Residents near the Ballard Conveyance diversion structure site every six weeks
- Professional organizations, including the American Society of Civil Engineers, American Public Works Association, and a government delegation from South Korea, to share project information and lessons learned

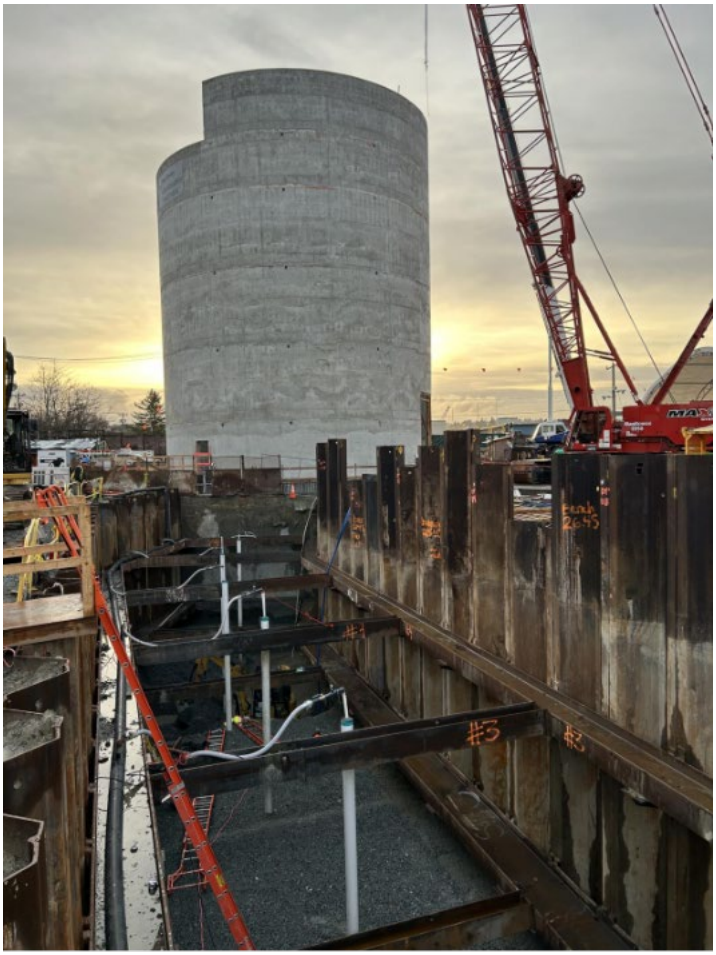

Figure 4-2. TEPS Tower at Full Height

2026 Projected Activities and Outreach Plans

SPU will continue SCWQP construction in 2026, with the following activities and accomplishments anticipated:

- Storage Tunnel:
    - Physical/final construction completion, but the system will not be placed into service until the TEPS/BC work package is finished
    - SPU will continue interim O&M to monitor equipment and alarms, and perform equipment maintenance until full system activation
- TEPS/BC Work Package: Continue construction of the TEPS facility as well as launch the microtunnel boring machine for Ballard Conveyance
- Property Acquisition: Complete purchase of the Storage Tunnel site in the Wallingford neighborhood from another City Department
- Program: Execute a 2026 SRF loan to support the SCWQP

SPU's planned 2026 outreach activities include:

- Deliver project briefings to organizations focused on the project need, lessons learned, and potential community impacts due to project construction
- Continue listserv updates, notices, meetings, and mailers to inform communities affected by construction
- Continue stakeholder briefings and attend community meetings with a focus on the TEPS/BC work package.

4.2.2 Central Waterfront CSO Reduction Project (Basins 70, 71, 72)

To control CSOs from the south end of the Central Waterfront, SPU:

- Installed approximately 2,000 linear feet of new 24- to 36-inch sewer
- Connected combined sewer basins 70, 71, and 72
- Eliminated Outfalls 70 (University Street) and 72 (Washington Street)
- Limited CSOs from Outfall 71 (Madison Street) to an average of one overflow per year

Project Coordination and Timeline

SPU coordinated construction with the Seattle Office of the Waterfront as part of the Waterfront Seattle Alaskan Way-Elliott Way (S King St to Bell St) project.

- The CSO control project could not begin until the Alaskan Way Viaduct was demolished
- SPU originally planned construction to begin in 2017 (complete in 2020), aligning with the expected Washington Department of Transportation (WSDOT) completion of SR-99 and the viaduct removal

- October 22, 2015: WSDOT and its contractor notified the Washington State Legislature's Joint Transportation Committee that SR-99 tunneling was delayed
- SPU immediately submitted a force majeure notification due to impacts on the project timeline
- Late 2019: Viaduct demolition was completed
- 2019-2020:
    - The CSO reduction project was bid, awarded and construction commenced
    - SPU completed the final measures to mitigate impacts of the completed project on our customers
- April 24 and May 26, 2020: Outfalls 70 and 72 were permanently removed from CSO service
- 2023: SPU completed construction of the Madison Ave Outfall Weir Structure, the final operational system component
- November 4, 2024: SPU submitted a notice of project completion to Ecology

2025 Completed Activities and 2026 Planned Activities

SPU continued monitoring the wet seasons (October 1 – April 30) following construction completion in 2024. The second wet season will end April 30, 2026. Since construction completion, there have been 0 overflows from Outfall 71. In 2026, SPU will complete the second wet season monitoring and report the controlled status in the 2026 annual report.

4.2.3 Vine CSO Project (Basin 69)

The Vine CSO Project addresses CSO Basin 69 in north downtown Seattle along the waterfront. The 150-acre basin is generally bounded by Denny Way to the north, Bay Street to the northwest, 4th and 5th Avenues to the north and east, and Alaskan Way to the south and west.

Flows from the basin are conveyed to King County's Elliott Bay Interceptor (EBI) and Denny Way Interceptor for treatment at West Point Wastewater Treatment Plant or the Elliott West Wet Weather Treatment Station. The basin includes permitted CSO outfall NPDES-069, which discharges to Elliott Bay during large storm events when system capacity is exceeded. The project's objective is to bring Basin 69 into regulatory compliance by reducing CSO volume and frequency in accordance with the NPDES permit and consent decree requirements.

Figure 4-3. NPDES-069 CSO Outfall

2025 Completed Activities and 2026 Planned Activities

In 2025, SPU completed an options analysis and selected construction of a new combined sewer along Elliott Avenue to transfer additional flows to the EBI and achieve regulatory control. The selected alternative was documented in a Q2 2025 Engineering Report (ER) Amendment, superseding the Ecology-approved 2020 ER based on updated information from King County WTD. The ER Amendment was revised and resubmitted in Q4 2025 to address Ecology comments. SPU initiated 30% design in Q2 2025, including survey, utility verification, community engagement, plan and specification development, and CCTV inspection.

In 2026, SPU will complete 30% design in Q2 2026 and advance to 60% design thereafter. The project remains on schedule to meet regulatory milestones, with bidding complete by May 30, 2028.

4.2.4 Basin 111H CSO Project

SPU sub-basin 111H is a subset of CSO Basin 111 located in Seattle between Interstate 5 (I-5), Jefferson Park, and Maple Wood Playfield. SPU plans to bring this sub-basin into regulatory control through construction of in-basin storage.

2025 Completed Activities and 2026 Planned Activities

In 2025, SPU continued flow monitoring within sub-basin 111H. The flow metering data were used to recalibrate the hydrologic and hydraulic (H&H) sewer model to support options analysis. While calibration results were reasonable, 2025 was a relatively dry year, with fewer significant storm events than preferred for robust model calibration.

To address this data gap, SPU will continue flow monitoring in Q1 2026. The additional data will be used to confirm the 2025 calibration or further refine the model, as needed.

SPU initiated options analysis in 2025 to evaluate storage siting and sizing within the sub-basin, as well as potential flow transfer to downstream sub-basins within CSO Basin 111. SPU will complete and document the options analysis in an Engineering Report (ER) to meet the regulatory milestone of December 31, 2026.

4.2.5 Mouth of Duwamish CSO (MDCSO) Project (Basins 99, 107, 111)

The MDCSO CSO Project includes SPU CSO basins 99, 107, and 111, and is being developed in coordination with King County's Mouth of Duwamish Wet Weather Facilities Program, which controls five DNRP CSO basins adjacent to SPU's three basins. The MDCSO CSO project objective is to bring basins 99, 107, and 111 into regulatory compliance through a combination of flow transfers, hydraulic grade line (HGL) reduction, and/or in-basin storage in accordance with NPDES permit and consent decree requirements.

Basin 99

Basin 99 is located in West Seattle, generally bounded by the West Seattle Golf Course, Delridge Playfield, SW Andover Street, and 21st Avenue SW. SPU plans to control this basin by transferring additional wastewater flows to WTD's Chelan Basin for storage in the Chelan CSO storage tank.

Basin 107

Basin 107 is located east of the Duwamish East Waterway, generally bounded by S Hanford Street, East Marginal Way S, and the Ash Grove Seattle Plant. This basin is expected to achieve control through lowering the hydraulic grade line in the Elliott Bay Interceptor as a result of construction of DNRP's Mouth of Duwamish South of Downtown (SODO) Wet Weather Treatment Station.

Basin 111

Basin 111 includes six sub-basins (A, B, C, D, G, and H), with sub-basins E and F sealed. Although control measures for sub-basin 111H influence overall Basin 111 performance, 111H is addressed under a separate capital project (see Section 4.2.4). SPU is evaluating two alternatives to bring Basin 111 into control: (1) partnership with DNRP to pump CSO flows to the SODO Wet Weather Treatment Station, or (2) construction of in-basin storage.

2025 Completed Activities and 2026 Planned Activities

In 2025, SPU continued options analysis for basins 99, 107, and 111, including coordination with DNRP to align project approaches, agreement documentation, and interagency hydraulic modeling assumptions.

In 2026, SPU will finalize the options analysis and formalize partnership agreements with DNRP. SPU anticipates that DNRP's Engineering Report (ER) will satisfy SPU's ER requirement for basins 99, 107, and 111, with final documentation completed in 2026. SPU plans to submit a letter referencing DNRP's ER and providing any additional project-specific information necessary to meet SPU's ER regulatory milestone of December 31, 2026.

4.2.6 Longfellow Starts Here Project (Basins 168, 169)

The Longfellow Starts Here (LSH) project is a community driven, long-term initiative to control CSOs from Delridge Basins 168 and 169. The project aims to:

- Identify the best CSO reduction strategies to bring basins 168 and 169 into compliance
- Improve Longfellow Creek's water quality while aligning with the community needs and vision
- Use a racial equity lens to guide planning and decision-making

Options Analysis Phase

LSH is currently in the Options Analysis phase, focused on identifying potential solutions that align with community and other City Family priorities. Multiple solutions will be identified and evaluated for each basin, looking at cost, performance, maintainability, and benefit to community. A combination of solutions will be grouped into alternatives to meet the performance goals by the compliance deadline, while providing other co-benefits beyond CSO reduction. Alternatives will be evaluated against each other using EPA's Augmented Alternatives Analysis process to determine a preferred option to include in the Seattle Overflow Action Plan (SOAP) and to move into design.

2025 Project Focus and Community Engagement

SPU made progress on identifying area or opportunity solution development, advancing I&I early action projects, and continuing to strengthen community relationships and support City Family collaboration, including:

- Coordinating with the team managing the other SOAP basins on tool assumptions for design, cost, and performance to ensure consistency.
- Developing and updating mapping layers to support solution development by identifying overlapping system and community needs with feasibility for various tools.
- Enhancing system understanding and modeling by:
    - Refining CSO control volumes to meet compliance requirements
    - Updating system models for improved performance analysis
- Advancing I&I early action projects by:

  - Developing work order for mainline lining rehabilitation of 45 high or critical risk pipe segments
  - Outlining a program for side sewer repair, including policy, procedure, delivery, and resourcing needs
- Hosting two Opportunity Workshops to bring together staff and community with different expertise and perspectives to identify areas of opportunity for further exploring different tools for developing into solutions.
  - One workshop was hosted in the South Delridge community and brought over 20 community members together with City staff from SPU, SDOT and SPR to gather input on community priorities (Figure 4-4).
  - The second workshop was hosted in SPU office space with primarily SPU staff but including several community members and SDOT and SPR staff to brainstorm technical solutions that considered the priorities from community (Figure 4-5).
- Holding regular meetings with the project's Innovation Team, a group of community members that provide input and guidance to the project team on how to best engage with community and how to think about the impacts of solutions on the community.
- Holding regular meetings with interdepartmental staff to coordinate on outreach and engagement events to reduce potential burden on community.

Figure 4-4. Opportunity Workshop in South Delridge with Community, SPU, and other City Staff

2026 Project Plans

SPU will further refine the data gathered from the Opportunity Workshops to develop several solutions that will be grouped together to develop alternatives for managing CSO control volumes in Basins 168 and 169. This work will continue to be done in collaboration with City Family and community stakeholders to identify CSO reduction approaches that align with South Delridge's community vision. The preferred alternative will be included in the SOAP. Work in 2026 will also include advancing early action projects for I&I reduction toward implementation.

Figure 4-5. Opportunity Workshop in City office space with Community, SPU, and other City Staff

4.2.7 Leschi (Basins 26 - 36)

The Leschi area, located in east Seattle along Lake Washington, includes Basins 26 through 36. SPU implemented more than a dozen individual sewer system improvements in this area in two phases:

- Phase 1, which was completed in 2015 and detailed in the 2014 Annual Report
- Phase 2, which was completed in 2016 and detailed in the 2016 Annual Report

As part of these improvements, Outfalls 26 and 33 were sealed and removed from service.

Post-Construction Flow Monitoring and Performance Findings

SPU's flow monitoring and modeling data (2018-2025) indicate that:

- Outfalls 27, 34, 35, and 36 meet CSO performance standards
- Outfalls 28, 30, 31, and 32 do not meet CSO control standards (see Table 5-8)
    - As of 2025, Outfall 29 does not meet CSO control standards; Outfall 29 met CSO performance standards in 2018-2024

The flow characteristics of the Leschi Area have changed because of the construction improvements and recent changes in precipitation patterns, and the improvements did not reduce CSOs as much as expected. Due to these changes and because the location of the CSO control issue had shifted (for example, Basin 30 was not previously identified in the "if needed" Leschi CSO Control Project), SPU will reevaluate control options before implementing the originally planned off-line storage pipes. SPU is working with DNRP to explore collaboration on DNRP's Montlake (DSN 014) CSO control project. This analysis will be completed as part of DNRP's future LTCP update.

Regulatory and Coordination Updates

- June 14, 2018: SPU submitted a Notification of Potential Milestone Violation to Ecology and EPA, indicating potential delays in the Leschi CSO Control Project Engineering Report
- June 26, 2019: SPU formally requested an Engineering Report Milestone modification to allow time for control alternatives development and partnership opportunities with DNRP
- June 12, 2024: The DOJ pre-approved the City and the County's Consent Decree modifications, establishing a new Engineering Report submittal milestone for Outfalls 28, 30, 31, 32, and 24 (now included in the City's Consent Decree modification)
- 2024: SPU and DNRP continued to collaborate. The Leschi/Montlake basin is one of the three priority areas identified for joint evaluation as part of the COE. See Section 2.2 for details.
- May 22, 2025: First Material Modification of the consent decree entered; Appendix G notes opportunity for coordination with DNRP's Montlake CSO control project.

4.3 CSO Control Supplemental Compliance Plans

4.3.1 Windermere Supplemental Compliance Plan

In 2015, SPU completed construction of a 2.05 million-gallon (MG) storage tank near Magnuson Park on the south side of NE 65th St to reduce the number of overflows from Outfall 13. Hydraulic modeling to assess facility performance was completed in Summer 2016. Modeling showed that, although the project significantly reduced overflows from Basin 13, the 20-year average was 1.6 CSOs/year. On October 4, 2016, SPU submitted a Supplemental Compliance Plan to Ecology and EPA outlining the steps SPU plans to take to meet the CSO standard. Ecology and EPA approved the plan on January 5, 2017.

Per the approved plan, in 2017, SPU evaluated operational adjustments to the recently constructed control structures and submitted a technical memorandum summarizing its findings on December 28, 2017. SPU found that the two main control gates in the Windermere Area needed to be reprogrammed and recalibrated to better respond to changes in flow. The evaluation also found that Basin 15 was barely exceeding the CSO standard (at 1.1 CSO per year based on modeling), so SPU submitted a Supplemental Compliance Plan for Basin 15 on April 17, 2018.

In 2018, SPU implemented the recommended gate programming changes. In 2019, the system was updated from step control logic to a proportional integrative and derivative (PID) control logic to reduce gate

oscillations. In 2021, the control point was relocated to a structure with improved hydraulics and accessibility. Since then, SPU has continued to monitor their performance. In 2025, SPU continued to work with DNRP, through the COE, to identify other short-term system operational improvements. SPU's SOAP will include a comprehensive review of Windermere outfalls to identify if further control measures are required and what additional long-term control projects are needed.

4.3.2 Genesee Supplemental Compliance Plan

In 2015, SPU completed the construction of a 380,000-gallon storage tank and a 120,000-gallon storage tank to reduce overflows from Outfalls 40, 41, and 43. The project was constructed in two parking lots along Lake Washington Blvd S at 49th Ave S and at 53rd Ave S. Each has a facility vault, diversion sewer, and a force main with motor-operated gates to control the flow of wastewater like the Windermere storage facility.

In June of 2018, SPU submitted a Revised Supplemental Compliance Plan to Ecology, noting that the storage tanks had significantly reduced overflows in the Genesee Area but Basins 40, 41, 42 and 43 were still exceeding one CSO per year. Similar to the steps taken in the Windermere Area, SPU evaluated possible operational improvements in the Genesee Area, which led to the recommendation to revise the programming of two control gates and install a new gate controller on CSO Storage Facility 9. In 2019, SPU implemented these operational improvements. SPU began to monitor those improvements in 2020, and several program refinements have been made. Monitoring continued throughout 2021 – 2025 and will continue in 2026. SPU's SOAP will evaluate long-term CSO control strategies for the Genesee outfalls.

4.3.3 South Henderson Supplemental Compliance Plan

In 2015-2016 SPU constructed the following improvements to the combined system in the South Henderson Area:

- The 52nd Ave S Conveyance Project (Basins 47B and 171): New diversion system and pipeline to convey peak flows to DNRP's Henderson Pump Station
- Pump Station 9 Upgrade (Basin 46): Pumping and mechanical upgrades to better handle peak flows from the sewer lake line
- Henderson 47C Retrofit (Basin 47C): New higher weir in the 47C control structure to optimize upstream storage and improve overflow monitoring

In late 2016, hydraulic modeling assessing the improvement performance showed that Basin 46 meets the CSO performance standard and Basins 47 and 171 do not. Prior to construction of these improvements, Basin 47 averaged 15.7 CSOs per year and Basin 171 averaged 7.4 CSOs per year. Based on 2016 modeling, the completed projects decreased the average frequency to 4.1 CSOs per year from Basin 47 and 3.3 CSOs per year from Basin 171.

Because the two basins were not yet meeting the CSO performance standard, on March 22, 2017, SPU submitted a Supplemental Compliance Plan to Ecology and EPA, describing the additional steps to control CSOs from Basins 47 and 171. Ecology and EPA approved the plan on May 19, 2017.

In 2017, SPU evaluated these basins and identified operational adjustments to the recently constructed control structures. SPU submitted a Technical Memorandum summarizing the evaluation on September 29, 2017. The main recommendation was to remove an orifice plate in Sub-Basin 47B to achieve the desired design flowrate, and this adjustment was implemented by December 29, 2017.

SPU then conducted flow monitoring and hydraulic modeling to assess the effectiveness of the orifice plate removal. In March 2019, SPU submitted a technical memorandum summarizing results. Orifice plate removal reduced Basin 47 overflows to 3.1 CSOs/year and Basin 171 overflows to 2.5 CSOs/year. However, both outfalls still exceed the one CSO per year standard. In 2020, SPU identified and modeled potential operational adjustments.

In 2021 through 2024, SPU coordinated with DNRP to evaluate the impact of the operational adjustments on downstream DNRP infrastructure. The basin is reviewed annually at modeling and monitoring meetings with King County. In 2025, SPU continued to coordinate with DNRP on potential operational adjustments through COE. Outfalls 47 and 171 are included in SPU's SOAP to identify if further control measures are required and what additional long-term control projects are needed.

4.4 Stormwater Projects

Green Stormwater Infrastructure (GSI) refers to measures that use soil and vegetation to absorb, slow, or retain stormwater before it enters the sewer system. By controlling stormwater at its source, GSI reduces pollution, prevents runoff into nearby waterways, and minimizes CSOs. SPU and King County WTD have partnered for the last decade to develop nature-based solutions to manage stormwater and a joint GSI program for their respective CSO reduction and flow control objectives. GSI facilities are also referred to as Natural Drainage Systems (NDS) and are a type of Low Impact Development (LID).

Examples of GSI include:

- RainWise Program: Offers private property owners' rebates for installing rain gardens and cisterns on their own property
- Roadside Bioretention: Features deep-rooted native plants and grasses planted in shallow depressions within the public right-of-way, such as planting strips next to homes

SPU and DNRP continued to work together to ensure a consistent approach to GSI projects in the City. Key 2025 efforts included:

- Finalizing design and guidance for retrofitting steep slope conveyance swales
- Working closely with SDOT to better define acceptable edge treatments along informal streets
- Starting an overhaul of the GSI Design and Options Analysis Guidance Manuals to streamline them and make them more accessible and user friendly

- Advertising for and getting a new consultant contract to continue to support this collaborative work on GSI and drainage policies, procedures and standards
- Promoted meeting the target to manage 700 MG of stormwater annually using GSI in the City

In 2026, planned collaborative work includes:

- Finalizing the updates to the GSI Design and Options Analysis Guidance Manuals

4.4.1 RainWise Program

Since 2010, the RainWise program has offered rebates for rain gardens and cisterns to property owners in the combined sewer areas of Seattle. Eligible property owners are alerted to the program through regular mailings, public meetings, and media events. By visiting the RainWise website at https://www.700milliongallons.org/rainwise/, property owners can learn about green stormwater technologies and are presented with solutions appropriate for their property. Through this site, they are also able to find trained contractors.

Contractor Training

Over 800 contractors, landscape designers, and similar professionals have been trained in the program since 2009. In 2025, 56 individuals engaged in the online training modules launched in 2024. Additionally, 12 new contractors completed both the online training and the required in-person site tour, along with licensing requirements, to become RainWise contractors (installers) who are eligible to construct rebate-eligible rain gardens and cisterns.

There are currently 26 active contractors listed on the RainWise website available to bid and install systems for RainWise customers. Of them, ten are multilingual. In 2025, SPU continued to update the list to include only those contractors that have current state and local business licenses and have completed installations in the last two years.

Community Engagement and Outreach

The RainWise program and its community partners held five informational webinars and eight in-person events for potential RainWise customers to learn about the program, talk with satisfied participants, and meet contractors. The RainWise team staffed informational tables or provided educational materials at 41 community events to talk to residents in eligible basins (Figure 4-6).

Figure 4-6. Earth Day Tabling Event at the Park Place Building in Downtown Seattle led by SPU and King County KCWTD Staff

In 2025, the RainWise program resumed virtual pre-consultations in which residents in eligible basins can meet with the RainWise Outreach Lead to discuss parcel-specific considerations to determine their eligibility and feasibility for a rain garden or cistern on their property. SPU completed 65 pre-consultations in 2025.

Upon completion, RainWise installations are inspected by an inspector, and property owners apply for a rebate that reflects the value to the utility of the stormwater being diverted or slowed from entering the combined system. In 2025, RainWise increased rebate rates to reflect annual inflation. The program now offers up to $7.90 per square foot of roof area controlled for rain gardens and up to $6.36 per square foot for cisterns.

2025 Project Details and 2026 Planned Activities

In 2025, SPU provided rebates for 24 projects in the Genessee, Henderson, Highland Park, North Union Bay, Portage Bay, Queen Anne, and Windermere basins. Since the program's inception, 1,339 installations have been rebated in combined sewer basins managed by SPU. These installations control over 41 acres of impervious roof area and an estimated 19.9 MG per year of stormwater, and they provide an estimated 366,910 gallons of CSO control volume.

The RainWise Program continues to operate under a memorandum of agreement with DNRP to make RainWise rebates available to customers whose properties are located in the City of Seattle and within CSO

basins served by DNRP, in University, Green Lake, Montlake, Capitol Hill/ Central District, Highland Park, Barton, South Park, Chelan, and Rainier Valley.

SPU will continue to offer the joint RainWise Program in 2026.

4.4.2 NDS Partnering

In 2015, the NDS Partnering Program developed the methodology, budget, and schedule required to achieve the program commitments in the approved Plan to Protect Seattle's Waterways.

30th Ave NE Sidewalk and NDS Project

In 2018, the program began construction of the 30th Ave NE Sidewalk and NDS Project, the first partnership project with the Seattle Department of Transportation (SDOT), meeting the NDS Partnering regulatory milestone of issuing construction NTP by July 2019. Construction was completed in early 2019.

12th Ave NE Sidewalk and NDS Project

In 2020, the second partnership project with SDOT was constructed, the 12th Ave NE Sidewalk and NDS Project. Similar to the 30th Ave NE project, this project constructed sidewalk and NDS along two blocks within the Thornton Creek Basin. The NDS provides separation between the street and the new sidewalk and treats stormwater runoff from 12th Ave NE.

Longfellow NDS Project

In 2023, SPU continued construction of the Longfellow NDS Project. This project includes three sites, two with a significant partnership with SDOT for pedestrian improvements. This project's construction was delayed due to poor contractor performance and a water main break over Longfellow Creek at the Kenyon site. In 2025, the Sylvan site of the Longfellow NDS project was constructed, providing bioretention to treat arterial water from Sylvan Way SW. Flow monitoring at the Longfellow NDS sites continues to be delayed due to a delay in constructing the final piece of the project at the Kenyon site as a result of poor contractor issues under the original construction contract.

South Thornton NDS Project

Construction of the South Thornton NDS Project began in Q4 2023 and will address localized flooding issues and improve pedestrian mobility through construction of bioretention cells and walkways at four project sites. This project will also include the piloting of the Bioretention Kit of Part, which are small art elements that will be incorporated into this project's right-of-way bioretention facilities. In 2025, the South Thornton NDS project mostly completed construction (Figure 4-7) and began preliminary monitoring at a couple sites to collect site performance data for the first year after construction (in addition to the Integrated Plan monitoring requirements).

North Thornton NDS Project

In 2025, the North Thornton NDS Project completed 90% design.

Broadview NDS Project

In 2025, the Broadview NDS project completed design and was advertised for construction. Broadview NDS started construction in Q4 of 2025 and will build bioretention along three blocks to improve water quality to Pipers Creek.

Holden NDS Projects

In 2025, the Holden NDS project also completed design and was advertised for construction. Holden NDS was also planned to start constuction at the end of 2025, however, issues with the low bid contractor qualifications held up awarding the project and issuing NTP and the project will have to be readvertised. The Holden NDS project will construct bioretention along two blocks to narrow the roadway, provide traffic calming where SDOT and the community identified a need, and also treat arterial water from an adjacent street.

Pipers NDS Project

In 2024, the Pipers NDS Project kicked off Options Analysis, looking at options to address localized flooding and collaborate with the SDOT New Sidewalk program.

Figure 4-7. Constructed bioretention cell on the South Thornton NDS project

2026 Planned Activities

In 2026, work will include construction completion of the Broadview NDS project and the Kenyon site on the Longfellow NDS project, which will bring the Longfellow NDS project to completion. SPU will begin construction of the Holden NDS project. The North Thornton NDS Project will complete design. Flow and water quality monitoring will continue at the Longfellow NDS and South Thornton NDS projects.

4.4.3 South Park Water Quality Facility

The South Park Water Quality Facility is one of the stormwater improvement projects included in the approved Plan to Protect Seattle's Waterways. The intent of the facility is to treat stormwater runoff from the existing 7th Ave S drainage basin, a highly industrial basin in the City's South Park neighborhood, and discharge treated water to the Lower Duwamish Waterway. The South Park Water Quality Facility will work in conjunction with the South Park Pump Station, which completed construction in 2023, and will enable the existing stormwater collection system and outfall to function during all tidal conditions in the Lower Duwamish Waterway.

In 2025, SPU engaged with the community to develop and evaluate different site plans for the treatment facility and programming options for the area set aside for community benefit space (Figure 4-8). Site planning was an iterative process that included multiple opportunities for the community to provide feedback. SPU is in the process of selecting a final site plan. SPU also completed soil and groundwater investigations on the property and is in the process of developing a Remedial Investigation Report. Lastly, the former tenant, a gypsum recycling business, ceased operations on-site and removed all equipment and materials at the end of 2025.

Figure 4-8. Project Team Soliciting Feedback at the South Park Summer Party

In 2026, SPU will begin the design phase. SPU also plans to demolish the existing structures on-site and stabilize the site in preparation for future construction. The site cleanup process will continue with development of a feasibility study.

The project is currently on schedule to be complete by the consent decree deadline of December 31, 2030.

4.4.4 Expanded Arterial Street Sweeping Program

This program expanded the City's arterial street sweeping program, per commitments in the Plan to Protect Seattle's Waterways.

2025 Program Implementation

In 2025, the team continued implementing the expanded program, with SDOT street sweeping crews covering:

- Nearly 14,000 broom-miles (provisional estimate) in the municipal separate storm sewer system area
- More than 122 dry tons of total suspended solids (TSS) equivalent, exceeding the Integrated Plan target

Key tasks included:

- Continued to utilize overtime staffing to address crew shortages caused by a tight labor market and high turnover
- Implemented year one of a three-year study to measure street 6PPDQ load reductions under Ecology's Stormwater Action Monitoring (SAM) program.

2026 Planned Tasks and Program Adaptations

During 2026, the team will continue to implement the expanded program and adapt as needed to meet the regulatory targets. The key tasks planned for this year include:

- Continue sweeping established routes
- Implement year two of the three-year SAM study
- Continue to incorporate protected bike lanes into the program

The City remains on schedule to meet the annual commitment of capturing 122 tons of TSS equivalent in 2026.

SECTION 5

Monitoring Programs and Results

This section provides a brief overview of SPU's precipitation and flow monitoring programs and presents 2025 results, including CSO overflow details, 5-year average overflow frequencies, and a summary of the outfalls meeting the CSO control standard.

5.1 Precipitation Monitoring Program

SPU collects precipitation data from a network of 22 rain gauges located throughout the City of Seattle, as shown in Figure 1-1. No changes to the network of permanent rain gauges were made in 2025.

Two tables summarizing 2025 precipitation monitoring results are included in this report:

- Table 5-1 provides precipitation by gauge and by month
- Table 5-2 summarizes the last five years of precipitation monitoring results by year and month

5.2 Flow Monitoring Program

In 2025, SPU's flow monitoring consultant operated and maintained 69 monitoring points while SPU staff managed an additional 24 monitoring points, for a total of 93 continuous monitoring sites.

Dedicated monitoring program staff regularly review flow monitoring results, assess data quality, and evaluate flow monitor performance. If emerging problems are identified—such as slow drainage in storage tanks or missing data—they are quickly addressed through:

- Field service requests to the monitoring consultant or SPU Drainage and Wastewater crews
- Site-specific troubleshooting by consultant and SPU staff

Each month, the consultant's lead data analyst and senior engineer, along with SPU monitoring staff, review and analyze apparent overflows from the previous month, considering rainfall, site hydraulics, and the best available monitoring data. When needed, SPU and consultant staff meet to make a final determination on overflow events. Any required follow-up actions are documented.

5.3 Summary of 2025 Monitoring Results

Several tables summarizing 2025 flow monitoring and flow monitor performance are included in the following pages of this report:

- Table 5-3 shows the 2025 flow monitor performance by outfall and month
- Table 5-4 provides the details of all 2025 discharges by outfall and date
- Table 5-5 includes the most recent five-year overflow frequency for each outfall and compares 2025 and baseline CSO conditions

- Table 5-6 compares 2021-2025 CSOs by outfall
- Table 5-7 compares 2021-2025 CSOs by receiving waterbody
- Table 5-8 shows which outfalls met the CSO performance standard for controlled outfalls in 2025
- Exacerbated CSOs and DWOs are included in the table listing all 2025 overflows (Table 5-4)

Observations and conclusions from these tables include:

- System-wide, flow monitors were in service an average of 100 percent. Each SPU flow monitoring station was in service over 98 percent of the time.
- There were 162 CSOs in 2025, totaling 18.0 MG
- As noted in Section 3.1.5, there was one exacerbated CSO at Outfall 19
- Approximately 36 percent of the 2025 CSO volume was discharged from Outfall 152 (Ballard), which serves the largest combined sewer area of any of the City of Seattle combined sewer basins
- The four outfalls that will be controlled by the Ship Canal Water Quality Project (Outfalls 147, 151, 152, and 174) contributed 60 percent of the 2025 CSOs (98 of the 162 CSOs) and 89 percent of the 2025 CSO volume (16.1 of the 18.0 MG).
- Outfall 29 moved from controlled to uncontrolled as of this annual report. This is the first year that Outfall 29 does not comply with the performance standard. Outfall 29 and the surrounding Leschi area outfalls are being reviewed as part of the Coordinated Optimization Evaluation (Section 2.2) and the Seattle Overflow Action Plan (Section 2.4).

5.4 CSO Control Post-Construction Monitoring

Post-Construction Monitoring Program (PCMP) Quality Assurance Project Plan (QAPP) development and monitoring activities are conducted in accordance with the requirements of the CSO NPDES permit and schedule for CSO outfall monitoring presented in the PCMP. No monitoring activities were conducted in 2025. In 2026, SPU will begin updating its Post-Construction Monitoring Program plan.

5.5 Integrated Plan Post-Construction Monitoring

The Integrated Plan, Volume 3 of the Plan to Protect Seattle Waterways, included a commitment to monitor the individual performance of the three Integrated Plan projects (NDS Partnering, South Park WQF, and Expanded Arterial Street Sweeping) as data is available and to monitor overall performance once data is available from all three projects. Table 5-9 summarizes the Integrated Plan performance targets and the data that is available to date. As noted, overall performance is not assessed because performance data is not yet available on the South Park WQF and NDS Partnering.

City staff completed the Expanded Arterial Street Sweeping Program post-construction monitoring sampling activities on December 20, 2018. A final report on the Street Sweeping Program post-construction monitoring was submitted with the 2018 Annual Report. As described in Section 4.7 and Section 4.8.2, the

South Park Water Quality Facility and many of the NDS Partnering projects have not completed construction, so no post-construction monitoring was conducted during 2025.

Table 5-1. 2025 Precipitation by Gauge and by Month (inches)

Rain Gauge	January	February	March	April	May	June	July	August	September	October	November	December
RG01	2.08	4.23	3.63	1.95	2.17	0.22	0.01	0.76	1.14	3.46	5.96	5.64
RG02	2.22	4.19	3.95	2.26	2.04	0.23	0.00	1.12	0.95	3.91	6.13	6.80
RG03	2.06	3.91	4.17	2.46	2.12	0.16	0.01	0.99	0.92	4.44	5.76	6.45
RG04	2.16	4.15	3.90	2.23	2.31	0.24	0.00	0.97	1.10	3.55	5.97	6.22
RG05	2.05	3.25	3.97	2.18	0.95	0.24	0.00	0.63	0.72	2.88	5.76	6.15
RG07	1.97	3.77	3.59	1.87	2.31	0.21	0.01	0.84	1.00	3.34	5.91	5.64
RG08	1.98	3.76	3.76	1.75	1.70	0.21	0.01	0.84	1.03	3.20	6.29	6.12
RG09	2.19	4.16	4.16	2.12	2.26	0.22	0.02	1.15	1.17	4.00	6.65	6.67
RG11	1.96	3.42	3.84	2.26	1.56	0.17	0.00	0.82	0.83	3.27	5.51	5.83
RG12	1.82	3.58	3.54	1.85	1.64	0.16	0.02	0.82	1.00	3.56	5.87	5.65
RG14	2.51	4.16	4.56	2.83	1.35	0.23	0.03	0.86	1.02	3.85	6.40	8.02
RG15	2.15	3.24	4.00	2.27	1.09	0.19	0.00	0.81	0.91	3.54	5.48	6.71
RG16	2.08	3.27	4.51	2.37	1.00	0.22	0.00	0.78	0.71	3.27	5.62	6.93
RG17	2.04	3.33	4.84	2.60	0.99	0.27	0.01	0.87	0.77	3.17	5.68	6.92
RG18	2.17	3.38	4.63	2.78	1.19	0.24	0.01	0.87	0.69	3.40	5.49	7.09
RG25	2.35	3.81	4.53	2.65	1.82	0.22	0.00	1.05	1.00	4.50	5.62	7.29
RG30	2.29	3.71	5.23	2.90	1.07	0.27	0.00	0.94	0.73	3.66	5.74	8.46
RG32	2.55	3.73	4.69	2.88	1.54	0.24	0.01	0.96	0.78	3.76	6.12	7.69
RG33	2.27	4.20	4.31	2.45	2.14	0.24	0.00	1.04	1.01	4.00	6.24	6.90

Rain Gauge	January	February	March	April	May	June	July	August	September	October	November	December
RG34	2.19	4.07	3.76	2.07	3.03	0.22	0.00	0.85	1.21	3.34	5.92	5.75
RG35	2.20	4.36	4.50	2.65	1.60	0.23	0.02	1.24	0.89	4.30	6.09	7.17
RG36	2.34	3.91	4.96	2.62	1.26	0.29	0.02	0.84	0.88	3.49	6.14	7.88
Monthly Average	**2.16**	**3.80**	**4.23**	**2.36**	**1.69**	**0.22**	**0.01**	**0.91**	**0.93**	**3.63**	**5.92**	**6.73**

Table 5-2. 2021-2025 Average Precipitation by Month (inches)

Month/Year	2021	2022	2023	2024	2025
January	8.51	7.21	4.23	6.45	2.16
February	3.87	3.98	2.58	3.65	3.80
March	3.13	2.97	2.92	2.80	4.23
April	0.84	2.93	3.46	1.62	2.36
May	1.04	3.73	0.83	1.96	1.69
June	2.03	2.75	1.15	1.31	0.22
July	0.02	0.27	0.09	0.19	0.01
August	0.20	0.12	0.41	2.09	0.91
September	2.99	0.10	3.74	0.83	0.93
October	4.71	2.54	2.72	3.49	3.63
November	8.44	6.10	4.79	5.55	5.92
December	5.19	8.29	8.63	6.63	6.73
Annual Total	**40.96**	**40.98**	**35.56**	**36.59**	**32.60**

Table 5-3. 2025 Flow Monitoring Performance by Outfall and Month

Outfall Number	Jan Downtime (hrs)	Jan Uptime (%)	Feb Downtime (hrs)	Feb Uptime (%)	Mar Downtime (hrs)	Mar Uptime (%)	Apr Downtime (hrs)	Apr Uptime (%)	May Downtime (hrs)	May Uptime (%)	Jun Downtime (hrs)	Jun Uptime (%)	Jul Downtime (hrs)	Jul Uptime (%)	Aug Downtime (hrs)	Aug Uptime (%)	Sep Downtime (hrs)	Sep Uptime (%)	Oct Downtime (hrs)	Oct Uptime (%)	Nov Downtime (hrs)	Nov Uptime (%)	Dec Downtime (hrs)	Dec Uptime (%)	2025 Total Downtime (hrs)	2025 Total Uptime (%)
12	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
13	0.0	100.0	0.0	100.0	0.0	100.0	1.7	99.8	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	1.6	99.8	3.3	100.0
14	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
15	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	6.5	99.1	0.0	100.0	0.0	100.0	6.5	99.9
16	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
18	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
19	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
20	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
22	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
24	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
25	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
27	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
28	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
29	0.0	100.0	0.0	100.0	0.0	100.0	47.9	93.3	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	47.9	99.4
30	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	5.9	99.2	5.9	99.9
31	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
32	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
34	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
35	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0

Outfall Number	Jan Downtime (hrs)	Jan Uptime (%)	Feb Downtime (hrs)	Feb Uptime (%)	Mar Downtime (hrs)	Mar Uptime (%)	Apr Downtime (hrs)	Apr Uptime (%)	May Downtime (hrs)	May Uptime (%)	Jun Downtime (hrs)	Jun Uptime (%)	Jul Downtime (hrs)	Jul Uptime (%)	Aug Downtime (hrs)	Aug Uptime (%)	Sep Downtime (hrs)	Sep Uptime (%)	Oct Downtime (hrs)	Oct Uptime (%)	Nov Downtime (hrs)	Nov Uptime (%)	Dec Downtime (hrs)	Dec Uptime (%)	2025 Total Downtime (hrs)	2025 Total Uptime (%)
36	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
38	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
40	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
41	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
42	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
43	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
44	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
45	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
46	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	26.2	96.5	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	26.2	99.7
47	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
48	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	6.8	99.1	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	6.8	99.9
49	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
57	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
59	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
60	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
61	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
62	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
64	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
68	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
69	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0

Outfall Number	Jan Downtime (hrs)	Jan Uptime (%)	Feb Downtime (hrs)	Feb Uptime (%)	Mar Downtime (hrs)	Mar Uptime (%)	Apr Downtime (hrs)	Apr Uptime (%)	May Downtime (hrs)	May Uptime (%)	Jun Downtime (hrs)	Jun Uptime (%)	Jul Downtime (hrs)	Jul Uptime (%)	Aug Downtime (hrs)	Aug Uptime (%)	Sep Downtime (hrs)	Sep Uptime (%)	Oct Downtime (hrs)	Oct Uptime (%)	Nov Downtime (hrs)	Nov Uptime (%)	Dec Downtime (hrs)	Dec Uptime (%)	2025 Total Downtime (hrs)	2025 Total Uptime (%)
71	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
78	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
80	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
83	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
85	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
88	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
90	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
91	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	2.3	99.7	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	2.3	100.0
94	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
95	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
99	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
107	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
111	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	33.4	95.4	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	33.4	99.6
120	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
121	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
124	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
127	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
129	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
130	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
131	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0

Outfall Number	Jan Downtime (hrs)	Jan Uptime (%)	Feb Downtime (hrs)	Feb Uptime (%)	Mar Downtime (hrs)	Mar Uptime (%)	Apr Downtime (hrs)	Apr Uptime (%)	May Downtime (hrs)	May Uptime (%)	Jun Downtime (hrs)	Jun Uptime (%)	Jul Downtime (hrs)	Jul Uptime (%)	Aug Downtime (hrs)	Aug Uptime (%)	Sep Downtime (hrs)	Sep Uptime (%)	Oct Downtime (hrs)	Oct Uptime (%)	Nov Downtime (hrs)	Nov Uptime (%)	Dec Downtime (hrs)	Dec Uptime (%)	2025 Total Downtime (hrs)	2025 Total Uptime (%)
132	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
134	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
135	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
136	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
138	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
139	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
140	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
141	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
144	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
145	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
146	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
147	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
148	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
150/151	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
152	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
161	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
165	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
168	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	35.6	95.2	0.0	100.0	0.0	100.0	35.6	99.6
169	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
170	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	13.4	98.1	0.0	100.0	13.4	99.8

Outfall Number	Jan Downtime (hrs)	Jan Uptime (%)	Feb Downtime (hrs)	Feb Uptime (%)	Mar Downtime (hrs)	Mar Uptime (%)	Apr Downtime (hrs)	Apr Uptime (%)	May Downtime (hrs)	May Uptime (%)	Jun Downtime (hrs)	Jun Uptime (%)	Jul Downtime (hrs)	Jul Uptime (%)	Aug Downtime (hrs)	Aug Uptime (%)	Sep Downtime (hrs)	Sep Uptime (%)	Oct Downtime (hrs)	Oct Uptime (%)	Nov Downtime (hrs)	Nov Uptime (%)	Dec Downtime (hrs)	Dec Uptime (%)	2025 Total Downtime (hrs)	2025 Total Uptime (%)
171	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
174	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0
175	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	0.0	100.0	4.7	99.4	10.0	98.7	0.0	100.0	112.7	84.9	0.0	100.0	0.0	100.0	127.4	98.6
TOTAL:	**0.0**	**100.0**	**0.0**	**100.0**	**0.0**	**100.0**	**49.6**	**99.9**	**0.0**	**100.0**	**40.2**	**99.9**	**7.0**	**100.0**	**36.2**	**99.9**	**0.0**	**100.0**	**154.8**	**99.7**	**13.4**	**100.0**	**7.5**	**100.0**	**308.7**	**100.0**

Notes:

1. Downtime refers to the number of hours that the CSO monitor was out of service, and therefore, no overflow data is available.

2. Uptime refers to the percentage of time during the month that the CSO monitor was in service and therefore, overflow data is available

Table 5-4. 2025 CSO Details by Outfall and Date

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
12	Lake Washington	12/17/25	2,628	0.57	70.63	2.50
12	Lake Washington	Total	2,628	0.57	70.63	2.50
12	Lake Washington	Average	2,628	0.57	70.63	2.50
13	Lake Washington	12/17/25	51,455	0.68	70.48	2.50
13	Lake Washington	Total	51,455	0.68	70.48	2.50
13	Lake Washington	Average	51,455	0.68	70.48	2.50
14	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
15	Lake Washington	11/14/25	2	0.03	48.78	1.60
15	Lake Washington	12/08/25	428	2.87	43.35	1.52
15	Lake Washington	12/16/25	9,422	6.30	51.50	2.16
15	Lake Washington	Total	9,852	9.20	143.63	5.28
15	Lake Washington	Average	3,284	3.07	47.88	1.76
16	Union Bay	12/8/25	2,689	0.63	40.92	1.21
16	Union Bay	12/15/25	54	0.93	6.00	0.64
16	Union Bay	Total	2,743	1.57	46.92	1.85
16	Union Bay	Average	1,371	0.78	23.46	0.93
18	Union Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
19	Union Bay	12/8/25	18,258	1.47	44.27	1.55
19	Union Bay	Total	18,258	1.47	44.27	1.55
19	Union Bay	Average	18,258	1.47	44.27	1.55

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
20	Union Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
22	Union Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
24	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
25	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
27	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
28	Lake Washington	10/12/25	846	0.10	19.90	0.62
28	Lake Washington	10/24/25	1,005	0.07	5.28	0.33
28	Lake Washington	12/08/25	58,491	0.67	41.62	1.11
28	Lake Washington	12/15/25	1,562	0.13	20.62	0.25
28	Lake Washington	Total	61,904	0.97	87.42	2.31
28	Lake Washington	Average	15,476	0.24	21.85	0.58
29	Lake Washington	11/14/25	124,100	4.33	38.58	1.70
29	Lake Washington	12/08/25	138,274	3.93	45.65	1.59
29	Lake Washington	12/15/25	28,217	1.03	22.62	0.68
29	Lake Washington	12/16/25	53,280	4.77	65.55	2.12
29	Lake Washington	Total	343,871	14.06	172.40	6.09
29	Lake Washington	Average	85,968	3.52	43.10	1.52
30	Lake Washington	11/14/25	37,663	4.75	39.10	1.73
30	Lake Washington	12/08/25	53,948	4.55	46.25	1.59
30	Lake Washington	12/15/25	6,103	0.83	22.53	0.68
30	Lake Washington	12/16/25	23,677	5.08	65.55	2.12

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
30	Lake Washington	Total	121,391	15.21	173.43	6.12
30	Lake Washington	Average	30,348	3.80	43.36	1.53
31	Lake Washington	03/15/25	3,124	0.22	21.60	0.63
31	Lake Washington	11/14/25	169,041	4.60	38.58	1.70
31	Lake Washington	12/08/25	213,039	4.50	46.15	1.59
31	Lake Washington	12/15/25	36,160	0.97	22.48	0.68
31	Lake Washington	12/16/25	98,131	5.03	65.55	2.12
31	Lake Washington	Total	519,495	15.32	194.37	6.72
31	Lake Washington	Average	103,899	3.06	38.87	1.34
32	Lake Washington	12/08/25	8,155	2.80	44.82	1.58
32	Lake Washington	12/16/25	8,235	0.70	62.48	1.93
32	Lake Washington	Total	16,390	3.50	107.30	3.51
32	Lake Washington	Average	8,195	1.75	53.65	1.76
34	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
35	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
36	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
38	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
40	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
41	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
42	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
43	Lake Washington	11/14/25	91,107	8.07	45.45	1.75
43	Lake Washington	12/08/25	130,315	7.23	51.40	1.60
43	Lake Washington	12/16/25	66,126	7.00	243.50	4.86
43	Lake Washington	Total	287,548	22.30	340.35	8.21
43	Lake Washington	Average	95,849	7.43	113.45	2.74
44	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
45	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
46	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
47	Lake Washington	12/08/25	10,262	1.63	44.70	1.71
47	Lake Washington	Total	22,711	1.63	44.70	1.71
47	Lake Washington	Average	11,356	1.63	44.70	1.71
48	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
49	Lake Washington	12/09/25	46,885	1.43	45.80	1.74
49	Lake Washington	12/17/25	28,969	1.17	69.45	2.11
49	Lake Washington	Total	75,854	2.60	115.25	3.85
49	Lake Washington	Average	37,927	1.30	57.62	1.93
57	Puget Sound - Central	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
59	Salmon Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
60	Salmon Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
61	Elliott Bay	11/05/25	7,144	0.23	23.58	1.31
61	Elliott Bay	Total	7,199	0.23	23.58	1.31
61	Elliott Bay	Average	7,199	0.23	23.58	1.31
62	Elliott Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
64	Elliott Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
68	Elliott Bay	10/19/25	3,228	0.40	14.15	0.65
68	Elliott Bay	11/05/25	14,204	1.00	23.95	1.35
68	Elliott Bay	Total	17,432	1.40	38.10	2.00
68	Elliott Bay	Average	8,716	0.70	19.05	1.00
69	Elliott Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
71	Elliott Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
78	Elliott Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
80	Puget Sound	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
83	Puget Sound	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
85	Puget Sound	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
88	Puget Sound	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
90	Puget Sound	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
91	Puget Sound	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
94	Puget Sound	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
95	Puget Sound	03/15/2025	23	0.03	22.74	0.66
95	Puget Sound	Total	23	0.03	22.74	0.66
95	Puget Sound	Average	23	0.03	22.74	0.66
99	Duwamish River	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
107	Duwamish River	11/14/25	5,483	1.07	36.95	1.55
107	Duwamish River	12/09/25	1,143	0.23	57.57	1.41
107	Duwamish River	Total	6,626	1.30	94.52	2.96
107	Duwamish River	Average	3,313	0.65	47.26	1.48
111	Duwamish River	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
120	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
121	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
124	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
127	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
129	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
130	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
131	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
132	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
134	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
135	Lake Union	03/26/25	260	0.33	0.95	0.20
135	Lake Union	05/17/25	41	0.75	22.08	1.04
135	Lake Union	10/12/25	4,492	1.42	22.27	0.85
135	Lake Union	10/19/25	54	0.33	24.90	0.78
135	Lake Union	10/26/25	259	0.42	56.52	1.65
135	Lake Union	11/01/25	28	0.75	15.80	1.01
135	Lake Union	11/05/25	3,259	6.25	24.37	1.10
135	Lake Union	11/14/25	3,710	4.17	49.78	1.70
135	Lake Union	12/08/25	3,474	3.58	43.60	1.54
135	Lake Union	12/15/25	1,795	3.33	7.70	0.78
135	Lake Union	12/16/25	1,310	5.75	46.12	1.91
135	Lake Union	Total	18,682	27.08	314.08	12.56
135	Lake Union	Average	1,698	2.46	28.55	1.14
136	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
138	Portage Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
139	Portage Bay	12/08/25	48,042	0.75	41.02	1.23
139	Portage Bay	Total	48,042	0.75	41.02	1.23
139	Portage Bay	Average	48,042	0.75	41.02	1.23
140	Portage Bay	10/12/25	3,675	0.25	22.02	0.82
140	Portage Bay	10/19/25	691	0.08	25.65	0.81
140	Portage Bay	11/05/25	354	0.08	22.03	0.77
140	Portage Bay	11/14/25	72,637	3.67	51.03	1.80
140	Portage Bay	12/08/25	95,062	3.50	43.68	1.54
140	Portage Bay	12/15/25	31,991	2.17	7.62	0.78
140	Portage Bay	12/16/25	6,897	0.42	46.03	1.91
140	Portage Bay	Total	211,307	10.17	218.07	8.43
140	Portage Bay	Average	30,187	1.45	31.15	1.20
141	Portage Bay	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
144	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
145	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
146	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
147	Lake Union	01/03/25	88,819	30.30	54.50	0.73
147	Lake Union	01/10/25	119,895	2.30	3.45	0.38
147	Lake Union	01/30/25	72,179	37.83	40.57	0.86
147	Lake Union	02/06/25	3,093	1.67	27.07	0.83
147	Lake Union	02/19/25	2,572	0.43	84.82	0.67

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
147	Lake Union	02/21/25	424,255	83.47	88.05	2.15
147	Lake Union	03/04/25	59,676	1.57	3.33	0.25
147	Lake Union	03/09/25	36,600	4.90	5.35	0.47
147	Lake Union	03/12/25	2,825	0.37	12.23	0.15
147	Lake Union	03/15/25	31,624	13.27	15.28	0.37
147	Lake Union	03/17/25	212,192	7.50	7.82	0.53
147	Lake Union	03/21/25	2,944	0.33	38.07	0.40
147	Lake Union	03/26/25	116,448	3.42	3.87	0.47
147	Lake Union	03/28/25	3,713	0.73	32.20	0.75
147	Lake Union	04/06/25	124,925	44.67	53.93	1.20
147	Lake Union	04/10/25	4,238	0.43	1.13	0.09
147	Lake Union	04/29/25	8	0.07	20.82	0.25
147	Lake Union	05/17/25	229,922	12.77	24.17	1.01
147	Lake Union	05/19/25	2	0.03	2.05	0.16
147	Lake Union	05/21/25	106,333	4.00	11.25	0.61
147	Lake Union	08/07/25	45	0.10	30.45	0.36
147	Lake Union	08/14/25	55,851	24.23	25.35	0.73
147	Lake Union	09/21/25	136,278	7.27	8.10	0.73
147	Lake Union	09/30/25	4,225	5.23	47.02	0.52
147	Lake Union	10/11/25	1,292,079	21.70	23.45	0.67
147	Lake Union	10/18/25	198,263	17.93	24.85	0.64
147	Lake Union	10/24/25	146,797	51.97	56.55	1.60
147	Lake Union	10/28/25	2,888	4.20	5.30	0.26
147	Lake Union	10/31/25	236,993	16.70	17.85	1.26
147	Lake Union	11/05/25	841,613	39.27	43.90	2.06
147	Lake Union	11/14/25	763,653	13.97	43.53	2.09
147	Lake Union	11/27/25	5,863	0.53	110.37	0.74
147	Lake Union	12/04/25	110	0.20	7.23	0.23

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
147	Lake Union	12/07/25	45,946	0.90	5.45	0.27
147	Lake Union	12/08/25	478,023	7.07	44.22	1.41
147	Lake Union	12/10/25	41,240	25.33	99.75	2.33
147	Lake Union	12/15/25	324,226	4.07	24.58	0.83
147	Lake Union	12/16/25	755,526	12.57	68.22	2.41
147	Lake Union	12/18/25	54	0.10	99.55	2.56
147	Lake Union	12/20/25	11,401	55.07	66.13	0.66
147	Lake Union	12/25/25	40,123	1.77	35.30	0.43
147	Lake Union	Total	7,023,460	560.24	1417.10	35.12
147	Lake Union	Average	171,304	13.66	34.56	0.86
148	Lake Washington Canal	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
150/151	Salmon Bay	01/10/25	76	0.33	2.88	0.30
150/151	Salmon Bay	02/01/25	13	0.60	40.13	0.84
150/151	Salmon Bay	02/22/25	27,202	45.97	69.78	1.53
150/151	Salmon Bay	03/17/25	243	5.47	7.37	0.45
150/151	Salmon Bay	03/26/25	63	10.60	16.22	0.64
150/151	Salmon Bay	05/17/25	2,307	1.33	22.67	0.76
150/151	Salmon Bay	05/20/25	34,060	8.30	10.13	0.33
150/151	Salmon Bay	10/24/25	56,117	48.50	49.03	1.36
150/151	Salmon Bay	10/28/25	458	4.17	5.55	0.26
150/151	Salmon Bay	10/31/25	88,739	13.53	17.22	1.17
150/151	Salmon Bay	11/05/25	6,152	39.00	43.93	1.90
150/151	Salmon Bay	11/14/25	56,636	8.53	39.00	1.85
150/151	Salmon Bay	11/17/25	17,540	0.63	119.87	2.55
150/151	Salmon Bay	12/07/25	443	0.27	5.33	0.27
150/151	Salmon Bay	12/08/25	179,300	2.93	42.70	1.21

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
150/151	Salmon Bay	12/15/25	258,245	3.90	8.02	0.82
150/151	Salmon Bay	12/16/25	158,044	11.33	51.38	2.39
150/151	Salmon Bay	12/22/25	760	0.03	64.28	0.39
150/151	Salmon Bay	Total	886,398	205.42	615.50	19.02
150/151	Salmon Bay	Average	49,244	11.41	34.19	1.06
152	Salmon Bay	01/03/25	273,930	31.50	48.87	0.68
152	Salmon Bay	01/10/25	256,439	2.17	3.37	0.33
152	Salmon Bay	01/30/25	303,229	37.43	40.37	0.84
152	Salmon Bay	02/05/25	8,208	17.47	25.12	0.62
152	Salmon Bay	02/09/25	249	0.77	22.05	0.14
152	Salmon Bay	02/19/25	11,939	0.80	2.70	0.15
152	Salmon Bay	02/21/25	579,237	83.57	87.95	2.00
152	Salmon Bay	03/04/25	55,617	1.78	3.77	0.22
152	Salmon Bay	03/09/25	43,400	4.57	4.85	0.40
152	Salmon Bay	03/12/25	464	15.65	30.90	0.35
152	Salmon Bay	03/15/25	12,979	13.18	19.18	0.30
152	Salmon Bay	03/17/25	84,375	8.23	8.70	0.49
152	Salmon Bay	03/20/25	351	0.63	16.63	0.24
152	Salmon Bay	03/26/25	78,831	32.75	38.48	0.78
152	Salmon Bay	03/30/25	654	0.33	1.22	0.07
152	Salmon Bay	04/06/25	46,225	44.47	54.27	1.02
152	Salmon Bay	05/17/25	239,979	7.20	24.43	0.83
152	Salmon Bay	05/19/25	13	0.03	1.88	0.14
152	Salmon Bay	05/20/25	181,179	8.33	10.47	0.36
152	Salmon Bay	08/14/25	28,418	1.80	3.53	0.40
152	Salmon Bay	09/21/25	65,730	7.27	8.42	0.62
152	Salmon Bay	09/29/25	6,860	0.55	1.30	0.14

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
152	Salmon Bay	10/18/25	22,654	7.43	14.18	0.47
152	Salmon Bay	10/24/25	300,948	46.30	50.10	1.42
152	Salmon Bay	10/28/25	28,614	4.57	5.75	0.26
152	Salmon Bay	10/31/25	381,609	21.97	22.88	1.31
152	Salmon Bay	11/05/25	611,538	39.92	44.40	1.90
152	Salmon Bay	11/13/25	468,830	33.23	43.47	2.01
152	Salmon Bay	11/17/25	61,354	1.00	119.90	2.55
152	Salmon Bay	11/27/25	12,244	20.15	55.92	0.53
152	Salmon Bay	12/04/25	1,717	7.93	13.57	0.33
152	Salmon Bay	12/07/25	545,627	39.60	43.67	1.28
152	Salmon Bay	12/10/25	82,003	25.77	100.33	2.10
152	Salmon Bay	12/15/25	1,664,779	52.58	56.52	2.39
152	Salmon Bay	12/18/25	8,642	2.25	83.60	2.53
152	Salmon Bay	12/22/25	14,754	3.33	65.73	0.46
152	Salmon Bay	12/25/25	25,261	2.15	37.52	0.41
152	Salmon Bay	Total	6,508,880	628.66	1215.98	31.07
152	Salmon Bay	Average	175,916	16.99	32.86	0.84
161	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
165	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
168	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
169	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a
170	Lake Washington	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a

Outfall Number	Receiving Water	CSO Event Starting Date	Volume (gallons)	CSO Event Duration (hours)	Storm Duration (hours)	Precipitation (inches)
171	Lake Washington	12/08/25	128,520	1.83	44.70	1.71
171	Lake Washington	Total	128,520	1.83	44.70	1.71
171	Lake Washington	Average	128,520	1.83	44.70	1.71
174	Lake Washington Canal	10/12/25	66,630	0.57	22.75	0.64
174	Lake Washington Canal	10/19/25	6,129	10.60	24.65	0.64
174	Lake Washington Canal	11/05/25	465,576	1.93	25.13	1.51
174	Lake Washington Canal	11/14/25	437,608	4.83	39.43	1.93
174	Lake Washington Canal	12/08/25	267,596	3.40	43.95	1.41
174	Lake Washington Canal	12/15/25	47,055	1.53	23.95	0.82
174	Lake Washington Canal	12/16/25	362,201	5.77	63.48	2.14
174	Lake Washington Canal	Total	1,652,795	28.63	243.35	9.09
174	Lake Washington Canal	Average	236,114	4.09	34.76	1.30
175	Lake Union	*No CSOs in 2025*	*No CSOs in 2025*	*No CSOs in 2025*	n/a	n/a

Note: All outfalls under NPDES Permit #WA0031682, City of Seattle

Table 5-5. Comparison of 2025 and Baseline Flows by Outfall

Outfall Number	2021 - 2025 Average CSO Frequency (#/yr)	2025 CSO Event Frequency #	2025 CSO Event Duration (hours)	2025 CSO Event Volume (MG)	Receiving Water	2010 Baseline CSO Event Frequency (#/year)	2010 Baseline CSO Event Volume (MG/year)	2025 CSOs Compared to 2010 Baseline CSOs
12	1.0	1	0.57	0.0026	Lake Washington	0	0.0	Above
13	3.0	1	0.68	0.0515	Lake Washington	12	6.7	Below
14	0.4	0	0.00	0	Lake Washington	0	0.0	Equals
15	2.4	3	9.20	0.0099	Lake Washington	1.2	0.3	Frequency Above, Volume Below
16	0.6	2	1.57	0.0027	Lake Washington	0	0.0	Above
18	1.2	0	0.00	0.0000	Union Bay	6.6	0.5	Below
19	0.2	1	1.47	0.0183	Union Bay	0.2	0.0	Above
20	0.6	0	0.00	0	Union Bay	2.6	0.1	Below
22	0.0	0	0.00	0	Union Bay	0.7	0.1	Below
24	0.4	0	0.00	0	Lake Washington	0.2	0.0	Frequency Below, Volume Equals
25	0.4	0	0.00	0	Lake Washington	2.8	1.6	Below
27	0.0	0	0.00	0	Lake Washington	0	0.0	Equals
28	4.6	4	0.97	0.0619	Lake Washington	15	0.4	Below
29	2.6	4	14.06	0.3439	Lake Washington	4.7	0.3	Frequency Below, Volume Above
30	2.0	4	15.21	0.1214	Lake Washington	5.4	0.7	Below
31	3.4	5	15.32	0.5195	Lake Washington	9.3	0.5	Frequency Below, Volume Above
32	1.8	2	3.50	0.0164	Lake Washington	8.4	0.3	Below
34	0.4	0	0.00	0	Lake Washington	1.4	0.5	Below

Outfall Number	2021 - 2025 Average CSO Frequency (#/yr)	2025 CSO Event Frequency #	2025 CSO Event Duration (hours)	2025 CSO Event Volume (MG)	Receiving Water	2010 Baseline CSO Event Frequency (#/year)	2010 Baseline CSO Event Volume (MG/year)	2025 CSOs Compared to 2010 Baseline CSOs
35	0.2	0	0.00	0	Lake Washington	2	0.3	Below
36	0.2	0	0.00	0	Lake Washington	2.7	0.1	Below
38	1.4	0	0.00	0	Lake Washington	0.7	0.4	Below
40	1.2	0	0.00	0	Lake Washington	6	0.8	Below
41	1.2	0	0.00	0	Lake Washington	7.5	0.9	Below
42	1.4	0	0.00	0	Lake Washington	0.6	0.0	Frequency Below, Volume Equals
43	2.2	3	22.30	0.2875	Lake Washington	7	0.7	Below
44	1.6	0	0.00	0	Lake Washington	13	9.3	Below
45	1.0	0	0.00	0	Lake Washington	5.9	1.1	Below
46	0.2	0	0.00	0	Lake Washington	6.5	0.9	Below
47	3.6	1	1.63	0.0103	Lake Washington	5.6	1.8	Below
48	0.0	0	0.00	0	Lake Washington	0	0.0	Equals
49	3.6	2	2.60	0.0759	Lake Washington	1.6	0.8	Frequency Above, Volume Below
57	0.2	0	0.00	0	Puget Sound	0	0.0	Equals
59	0.8	0	0.00	0	Salmon Bay	0.2	0.4	Below
60	0.2	0	0.00	0	Salmon Bay	1.7	0.8	Below
61	1.6	1	0.23	0.0071	Elliott Bay	0	0.0	Above
62	0.6	0	0.00	0	Elliott Bay	0.7	0.0	Frequency Below, Volume Equals
64	0.0	0	0.00	0	Elliott Bay	0.1	0.0	Frequency Below, Volume Equals

Outfall Number	2021 - 2025 Average CSO Frequency (#/yr)	2025 CSO Event Frequency #	2025 CSO Event Duration (hours)	2025 CSO Event Volume (MG)	Receiving Water	2010 Baseline CSO Event Frequency (#/year)	2010 Baseline CSO Event Volume (MG/year)	2025 CSOs Compared to 2010 Baseline CSOs
68	1.6	2	1.40	0.0174	Elliott Bay	1.4	1.3	Frequency Above, Volume Below
69	1.8	0	0.00	0	Elliott Bay	4.4	1.4	Below
71	0.0	0	0.00	0	Elliott Bay	4.3	1.3	Below
78	0.0	0	0.00	0	Elliott Bay	0.3	0.2	Below
80	0.0	0	0.00	0	Elliott Bay	0	0.0	Equals
83	0.0	0	0.00	0	Puget Sound	0	0.0	Equals
85	0.0	0	0.00	0	Puget Sound	0	0.0	Equals
88	0.2	0	0.00	0	Puget Sound	0.3	0.2	Below
90	0.0	0	0.00	0	Puget Sound	0.2	0.0	Frequency Below, Volume Equals
91	0.4	0	0.00	0	Puget Sound	0	0.0	Equals
94	0.0	0	0.00	0	Puget Sound	0.1	0.0	Frequency Below, Volume Equals
95	1.8	1	0.03	0.00002	Puget Sound	3	0.4	Below
99	0.8	0	0.00	0	W Waterway - Duwamish River	0.5	2.8	Below
107	2.8	2	1.30	0.0066	E Waterway - Duwamish River	3.8	1.9	Below
111	1.4	0	0.00	0	Duwamish River	3	7.9	Below
120	0.0	0	0.00	0	Lake Union	0	0.0	Equals
121	0.0	0	0.00	0	Lake Union	0.1	0.0	Frequency Below, Volume Equals
124	0.0	0	0.00	0	Lake Union	0	0.0	Equals
127	0.0	0	0.00	0	Lake Union	0.7	0.1	Below

Outfall Number	2021 - 2025 Average CSO Frequency (#/yr)	2025 CSO Event Frequency #	2025 CSO Event Duration (hours)	2025 CSO Event Volume (MG)	Receiving Water	2010 Baseline CSO Event Frequency (#/year)	2010 Baseline CSO Event Volume (MG/year)	2025 CSOs Compared to 2010 Baseline CSOs
129	0.0	0	0.00	0	Lake Union	0.1	0.0	Frequency Below, Volume Equals
130	0.4	0	0.00	0	Lake Union	0	0.0	Equals
131	0.0	0	0.00	0	Lake Union	0.1	0.0	Frequency Below, Volume Equals
132	0.8	0	0.00	0	Lake Union	0.7	0.0	Frequency Below, Volume Equals
134	0.0	0	0.00	0	Lake Union	0	0.0	Equals
135	5.0	11	27.08	0.0187	Lake Union	0.3	0.0	Above
136	0.0	0	0.00	0	Lake Union	0	0.0	Equals
138	1.6	0	0.00	0	Portage Bay	2.3	2.0	Below
139	2.0	1	0.75	0.0480	Portage Bay	0.7	1.4	Frequency Above, Volume Below
140	4.0	7	10.17	0.2113	Portage Bay	4.1	0.3	Frequency Above, Volume Below
141	0.0	0	0.00	0	Portage Bay	0.1	0.0	Frequency Below, Volume Equals
144	0.0	0	0.00	0	Lake Union	0.1	0.2	Below
145	0.0	0	0.00	0	Lake Union	0	0.0	Equals
146	0.0	0	0.00	0	Lake Union	0	0.0	Equals
147	38.8	41	560.24	7.0235	Lake Union	33	19.0	Frequency Above, Volume Below
148	0.4	0	0.00	0	Lake Washington Ship Canal	0	0.0	Equals
150/151	24.8	18	205.42	0.8864	Salmon Bay	15	2.0	Frequency Above, Volume Below
152	45.0	37	628.66	6.5089	Salmon Bay	15	9.7	Frequency Above, Volume Below
161	0.0	0	0.00	0	Lake Washington	0	0.0	Equals

Outfall Number	2021 - 2025 Average CSO Frequency (#/yr)	2025 CSO Event Frequency #	2025 CSO Event Duration (hours)	2025 CSO Event Volume (MG)	Receiving Water	2010 Baseline CSO Event Frequency (#/year)	2010 Baseline CSO Event Volume (MG/year)	2025 CSOs Compared to 2010 Baseline CSOs
165	1.0	0	0.00	0	Lake Washington	1.1	0.0	Frequency Below, Volume Equals
168	1.2	0	0.00	0	Longfellow Creek	3.9	1.6	Below
169	1.4	0	0.00	0	Longfellow Creek	2.2	49.0	Below
170	0.0	0	0.00	0	Longfellow Creek	0.4	0.1	Below
171	3.6	1	1.83	0.1285	Lake Washington	4.1	0.8	Below
174	7.4	7	28.63	1.6528	Lake Washington Ship Canal	11	5.9	Below
175	0.6	0	0.00	0	Lake Union	0.7	0.0	Frequency Below, Volume Equals
Total	**195.0**	**162**	**1555**	**18.031**	**n/a**	**251**	**140.3**	**n/a**

Table 5-6. 2021 - 2025 Summary Comparison of CSOs by Outfall

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Outfall 12 (Lake Washington)					
Frequency	0	2	2	0	1
Duration (hours)	0.00	3.37	13.83	0	0.57
Volume (gallons)	0	9,543	92,967	0	2,628
Outfall 13 (Lake Washington)					
Frequency	4	6	3	1	1
Duration (hours)	25.35	86.98	38.72	1.18	0.68
Volume (gallons)	4,068,045	7,979,211	7,452,928	35,009	51,455
Outfall 14 (Lake Washington)					
Frequency	0	0	1	1	0
Duration (hours)	0.00	0.00	0.17	0.08	0.00
Volume (gallons)	0	0	1,777	566	0
Outfall 15 (Lake Washington)					
Frequency	2	4	2	1	3
Duration (hours)	24.37	12.83	22.42	0.67	9.20
Volume (gallons)	47,778	284,941	284,807	9,781	9,852
Outfall 16 (Lake Washington)					
Frequency	0	0	1	0	2
Duration (hours)	0.00	0.00	0.23	0.00	1.57
Volume (gallons)	0	0	605	0	2,743
Outfall 18 (Union Bay)					
Frequency	2	3	1	0	0
Duration (hours)	4.08	20.83	20.42	0.00	0.00
Volume (gallons)	986,572	3,397,459	4,224,779	0	0
Outfall 19 (Union Bay)					
Frequency	0	0	0	0	1
Duration (hours)	0.00	0.00	0.00	0.00	1.47
Volume (gallons)	0	0	0	0	18,258

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Outfall 20 (Union Bay)					
Frequency	1	2	0	0	0
Duration (hours)	1.33	4.50	0.00	0.00	0.00
Volume (gallons)	27,907	142,943	0	0	0
Outfall 22 (Union Bay)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 24 (Lake Washington)					
Frequency	0	2	0	0	0
Duration (hours)	0.00	13.00	0.00	0.00	0.00
Volume (gallons)	0	100,808	0	0	0
Outfall 25 (Lake Washington)					
Frequency	0	2	0	0	0
Duration (hours)	0.00	12.86	0.00	0.00	0.00
Volume (gallons)	0	105,746	0	0	0
Outfall 27 (Lake Washington)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 28 (Lake Washington)					
Frequency	7	5	4	3	4
Duration (hours)	9.15	5.16	11.06	0.73	0.97
Volume (gallons)	214,831	34,487	33,484	7,637	61,904
Outfall 29 (Lake Washington)					
Frequency	2	4	2	1	4
Duration (hours)	26.86	25.70	22.47	0.37	14.06
Volume (gallons)	199,900	291,733	263,444	1,722	343,871
Outfall 30 (Lake Washington)					

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Frequency	2	3	1	0	4
Duration (hours)	26.73	23.00	17.75	0.00	15.21
Volume (gallons)	69,534	83,495	95,416	0	121,391
Outfall 31 (Lake Washington)					
Frequency	3	5	2	2	5
Duration (hours)	47.67	56.83	25.83	3.24	15.32
Volume (gallons)	918,527	2,277,912	1,147,385	41,687	519,495
Outfall 32 (Lake Washington)					
Frequency	2	3	2	0	2
Duration (hours)	29.50	32.27	19.07	0.00	3.50
Volume (gallons)	191,926	286,718	537,581	0	16,390
Outfall 34 (Lake Washington)					
Frequency	1	1	0	0	0
Duration (hours)	1.25	1.00	0.00	0.00	0.00
Volume (gallons)	15,606	4,552	0	0	0
Outfall 35 (Lake Washington)					
Frequency	0	0	1	0	0
Duration (hours)	0.00	0.00	0.23	0.00	0.00
Volume (gallons)	0	0	4,787	0	0
Outfall 36 (Lake Washington)					
Frequency	0	0	1	0	0
Duration (hours)	0.00	0.00	0.08	0.00	0.00
Volume (gallons)	0	0	586	0	0
Outfall 38 (Lake Washington)					
Frequency	2	4	1	0	0
Duration (hours)	5.48	34.80	20.87	0.00	0.00
Volume (gallons)	256,102	1,008,881	616,118	0	0
Outfall 40 (Lake Washington)					
Frequency	2	3	1	0	0

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Duration (hours)	48.05	53.52	26.03	0.00	0.00
Volume (gallons)	684,204	1,838,620	983,920	0	0
Outfall 41 (Lake Washington)					
Frequency	2	3	1	0	0
Duration (hours)	48.05	53.52	26.03	0.00	0.00
Volume (gallons)	684,204	1,838,620	983,920	0	0
Outfall 42 (Lake Washington)					
Frequency	3	3	1	0	0
Duration (hours)	33.61	32.50	17.33	0.00	0.00
Volume (gallons)	335,339	347,470	294,165	0	0
Outfall 43 (Lake Washington)					
Frequency	3	3	2	0	3
Duration (hours)	96.92	79.00	35.75	0.00	22.30
Volume (gallons)	1,018,332	1,475,969	436,608	0	287,548
Outfall 44 (Lake Washington)					
Frequency	3	3	2	0	0
Duration (hours)	90.12	81.23	61.35	0.00	0.00
Volume (gallons)	5,115,155	8,944,053	3,911,285	0	0
Outfall 45 (Lake Washington)					
Frequency	2	2	1	0	0
Duration (hours)	22.63	2.07	0.28	0.00	0.00
Volume (gallons)	68,754	55,260	15,137	0	0
Outfall 46 (Lake Washington)					
Frequency	0	0	1	0	0
Duration (hours)	0.00	0.00	1.80	0.00	0.00
Volume (gallons)	0	0	57,186	0	0
Outfall 47 (Lake Washington)					
Frequency	5	8	2	2	1
Duration (hours)	54.61	82.83	32.72	1.40	1.63

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Volume (gallons)	1,532,159	3,140,221	1,676,388	22,711	10,262
Outfall 48 (Lake Washington)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 49 (Lake Washington)					
Frequency	6	7	2	1	2
Duration (hours)	60.43	107.39	33.23	1.57	2.60
Volume (gallons)	5,315,419	8,514,038	4,173,992	18,489	75,854
Outfall 57 (Puget Sound)					
Frequency	0	1	0	0	0
Duration (hours)	0.00	2.03	0.00	0.00	0.00
Volume (gallons)	0	307,223	0	0	0
Outfall 59 (Salmon Bay)					
Frequency	0	2	2	0	0
Duration (hours)	0.00	2.07	0.30	0.00	0.00
Volume (gallons)	0	40,806	10,713	0	0
Outfall 60 (Salmon Bay)					
Frequency	0	1	0	0	0
Duration (hours)	0.00	0.07	0.00	0.00	0.00
Volume (gallons)	0	15	0	0	0
Outfall 61 (Elliott Bay)					
Frequency	1	3	2	1	1
Duration (hours)	0.17	3.54	0.90	0.17	0.23
Volume (gallons)	2,113	36,680	51,298	7,199	7,144
Outfall 62 (Elliott Bay)					
Frequency	0	1	1	1	0
Duration (hours)	0.00	0.07	0.17	0.03	0.00
Volume (gallons)	0	133	5,126	41	0

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Outfall 64 (Elliott Bay)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 68 (Elliott Bay)					
Frequency	1	2	2	1	2
Duration (hours)	1.43	5.85	11.90	1.27	1.40
Volume (gallons)	24,184	477,574	279,756	171	17,432
Outfall 69 (Elliott Bay)					
Frequency	1	4	2	2	0
Duration (hours)	0.08	5.68	0.40	0.70	0.00
Volume (gallons)	2,345	432,472	55,462	134,683	0
Outfall 71 (Elliott Bay)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 78 (Elliott Bay)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 80 (Elliott Bay)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 83 (Puget Sound)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Outfall 85 (Puget Sound)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 88 (Puget Sound)					
Frequency	0	1	0	0	0
Duration (hours)	0.00	1.95	0.00	0.00	0.00
Volume (gallons)	0	42,430	0	0	0
Outfall 90 (Puget Sound)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 91 (Puget Sound)					
Frequency	0	2	0	0	0
Duration (hours)	0.00	2.08	0.00	0.00	0.00
Volume (gallons)	0	18	0	0	0
Outfall 94 (Puget Sound)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 95 (Puget Sound)					
Frequency	3	3	2	0	1
Duration (hours)	29.99	3.67	0.28	0.00	0.03
Volume (gallons)	42,394	12,505	3,453	0	23
Outfall 99 (West Waterway Duwamish River)					
Frequency	0	3	1	0	0
Duration (hours)	0.00	26.55	16.05	0.00	0.00
Volume (gallons)	0	1,087,950	801,303	0	0
Outfall 107 (East Waterway Duwamish River)					

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Frequency	1	9	2	0	2
Duration (hours)	1.60	60.56	14.93	0.00	1.30
Volume (gallons)	14,358	186,131	104,254	0	6,626
Outfall 111 (Duwamish River)					
Frequency	2	4	1	0	0
Duration (hours)	4.91	11.38	15.17	0.00	0.00
Volume (gallons)	309,788	444,498	138,803	0	0
Outfall 120 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 121 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 124 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 127 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 129 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 130 (Lake Union)					
Frequency	0	1	1	0	0

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Duration (hours)	0.00	0.20	0.07	0.00	0.00
Volume (gallons)	0	36,864	9,400	0	0
Outfall 131 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 132 (Lake Union)					
Frequency	2	1	1	0	0
Duration (hours)	0.34	0.43	0.20	0.00	0.00
Volume (gallons)	64,169	165,695	45,368	0	0
Outfall 134 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 135 (Lake Union)					
Frequency	1	1	2	10	11
Duration (hours)	0.42	0.43	12.90	36.57	27.08
Volume (gallons)	5,065	6,225	49,494	2,724	18,682
Outfall 136 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 138 (Portage Bay)					
Frequency	2	4	2	0	0
Duration (hours)	25.70	10.53	7.60	0.00	0.00
Volume (gallons)	329,070	634,607	147,266	0	0
Outfall 139 (Portage Bay)					
Frequency	3	5	1	0	1
Duration (hours)	6.92	10.92	0.08	0.00	0.75

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Volume (gallons)	265,003	399,154	4,633	0	48,042
Outfall 140 (Portage Bay)					
Frequency	2	6	3	2	7
Duration (hours)	27.00	32.50	17.50	18.08	10.17
Volume (gallons)	401,757	850,854	561,609	72,978	211,307
Outfall 141 (Portage Bay)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 144 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 145 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 146 (Lake Union)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 147 (Lake Union)					
Frequency	40	42	28	43	41
Duration (hours)	573.00	372.67	263.78	415.48	560.24
Volume (gallons)	6,380,778	9,849,427	5,528,196	4,803,529	7,023,460
Outfall 148 (Lake Washington Ship Canal)					
Frequency	0	2	0	0	0
Duration (hours)	0.00	2.87	0.00	0.00	0.00
Volume (gallons)	0	137,907	0	0	0

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Outfall 150/151 (Salmon Bay)					
Frequency	31	35	14	26	18
Duration (hours)	236.11	272.30	148.42	138.77	205.42
Volume (gallons)	1,422,363	2,672,440	1,814,626	1,196,313	886,398
Outfall 152 (Salmon Bay)					
Frequency	41	44	50	53	37
Duration (hours)	733.78	554.73	510.65	642.49	628.66
Volume (gallons)	33,277,406	42,006,279	18,725,811	12,310,884	6,508,880
Outfall 161 (Lake Washington)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0
Outfall 165 (Lake Washington)					
Frequency	2	1	2	0	0
Duration (hours)	1.33	1.75	1.00	0.00	0.00
Volume (gallons)	1,806	446	5,741	0	0
Outfall 168 (Longfellow Creek)					
Frequency	2	3	1	0	0
Duration (hours)	19.12	52.55	30.27	0.00	0.00
Volume (gallons)	1,798,523	7,576,097	2,760,242	0	0
Outfall 169 (Longfellow Creek)					
Frequency	2	4	1	0	0
Duration (hours)	35.18	66.93	26.10	0.00	0.00
Volume (gallons)	2,416,798	7,159,239	3,439,765	0	0
Outfall 170 (Longfellow Creek)					
Frequency	0	0	0	0	0
Duration (hours)	0.00	0.00	0.00	0.00	0.00
Volume (gallons)	0	0	0	0	0

Outfall Number (Receiving Water)	2021	2022	2023	2024	2025
Outfall 171 (Lake Washington)					
Frequency	5	8	2	2	1
Duration (hours)	55.00	83.26	32.83	1.42	1.83
Volume (gallons)	2,673,547	6,115,060	3,223,120	127,088	128,520
Outfall 174 (Lake Washington Ship Canal)					
Frequency	11	7	5	7	7
Duration (hours)	81.46	56.59	39.66	41.33	28.63
Volume (gallons)	7,401,924	8,651,075	3,765,160	715,827	1,652,795
Outfall 175 (Lake Union)					
Frequency	0	1	1	1	0
Duration (hours)	0.00	0.40	0.37	0.13	0.00
Volume (gallons)	0	78,276	62,003	229	0
Total					
Frequency	207	279	166	161	162
Duration (hours)	2,490	2,470	1,599	1,306	1,555
Volume (gallons)	78,583,685	131,570,761	68,881,868	19,509,268	18,030,960

Table 5-7. 2021-2025 Summary Comparison of CSOs by Receiving Water

Receiving Water	2021	2022	2023	2024	2025
Duwamish River					
Frequency	2	4	1	0	0
Duration (hours)	5	11	15	0	0
Volume (gallons)	309,788	444,498	138,803	0	0
East Waterway					
Frequency	1	9	2	0	2
Duration (hours)	2	61	15	0	1
Volume (gallons)	14,358	186,131	104,254	0	6,626
Elliott Bay					
Frequency	3	10	7	5	3
Duration (hours)	2	15	13	2	2
Volume (gallons)	28,642	946,859	391,642	142,094	24,576
Lake Union					
Frequency	43	46	33	54	52
Duration (hours)	574	374	277	452	587
Volume (gallons)	6,450,012	10,136,487	5,694,461	4,806,482	7,042,142
Lake Washington					
Frequency	58	82	40	14	33
Duration (hours)	707	885	461	11	89
Volume (gallons)	23,411,168	44,737,784	26,293,348	264,690	1,631,913
Lake Washington Ship Canal					
Frequency	11	9	5	7	7
Duration (hours)	81	59	40	41	29
Volume (gallons)	7,401,924	8,788,982	3,765,160	715,827	1,652,795
Longfellow Creek					
Frequency	4	7	2	0	0
Duration (hours)	54	119	56	0	0
Volume (gallons)	4,215,321	14,735,336	6,200,007	0	0

Receiving Water	2021	2022	2023	2024	2025
Portage Bay					
Frequency	7	15	6	2	8
Duration (hours)	60	54	25	18	11
Volume (gallons)	995,830	1,884,615	713,508	72,978	259,349
Puget Sound					
Frequency	3	7	2	0	1
Duration (hours)	30	10	0	0	0
Volume (gallons)	42,394	362,176	3,453	0	23
Salmon Bay					
Frequency	72	82	66	79	55
Duration (hours)	970	829	659	781	834
Volume (gallons)	34,699,769	44,719,540	20,551,150	13,507,194	7,395,278
Union Bay					
Frequency	3	5	1	0	1
Duration (hours)	5	25	20	0	1
Volume (gallons)	1,014,479	3,540,402	4,224,779	0	18,258
West Waterway					
Frequency	0	3	1	0	0
Duration (hours)	0	27	16	0	0
Volume (gallons)	0	1,087,950	801,303	0	0
Total					
Frequency	207	279	166	161	162
Duration (hours)	2,490	2,470	1,599	1,306	1,555
Volume (gallons)	78,583,685	131,570,761	68,881,868	19,509,268	18,030,960

Table 5-8. Outfalls Meeting Performance Standard for Controlled CSOs Based on Flow Monitoring Results and Modeling

Outfall Number	2006 Over-flows	2007 Over-flows	2008 Over-flows	2009 Over-flows	2010 Over-flows	2011 Over-flows	2012 Over-flows	2013 Over-flows	2014 Over-flows	2015 Over-flows	2016 Over-flows	2017 Over-flows	2018 Over-flows	2019 Over-flows	2020 Over-flows	2021 Over-flows	2022 Over-flows	2023 Over-flows	2024 Over-flows	2025 Over-flows	2025 Average Annual Frequency[1]	Meets Performance Standard (2025)[2]	Long-Term Simulation Source	Notes
12	N/A	0	0	0	1	0	1	1	2	1	0	1	1	1	3	0	2	2	0	1	0.9	Yes	N/A	3
13	2	1	0	2	1	0	1	1	4	5	2	4	1	2	5	4	6	3	1	1	2.3	No	Mike URBAN results, March 2017	6
14	N/A	1	0	1	0	0	0	0	0	1	1	1	0	0	1	0	0	1	1	0	0.4	Yes	N/A	3
15	3	1	0	2	1	1	1	2	6	7	3	4	2	1	1	2	4	2	1	3	2.4	No	Mike URBAN results, March 2017	6
16	N/A	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	2	0.3	Yes	N/A	3
18	0	3	1	0	0	1	0	1	0	1	1	0	1	1	2	2	3	1	0	0	0.9	Yes	Mike URBAN results, October 2019	7
19	N/A	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0.2	Yes	N/A	3
20	1	1	0	0	1	0	1	1	0	3	0	0	0	1	1	1	2	0	0	0	0.7	Yes	SWMM5 results, December 2022	8
22	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0.2	Yes	EPA-SWMM results, February 2019	9
24	4	1	0	1	1	0	1	1	0	0	1	1	0	1	1	0	2	0	0	0	0.8	Yes	LTCP Long Term Simulation Results February 2013	5
25	3	1	1	2	1	0	1	1	0	0	1	1	0	1	1	0	2	0	0	0	0.8	Yes	LTCP Long Term Simulation Results February 2013	10
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	Mike URBAN results, January 2019	11
28	1	1	1	0	0	0	0	2	2	2	2	3	1	5	4	7	5	4	3	4	2.4	No	Mike URBAN results, January 2019	11
29	1	0	0	0	0	0	0	0	0	1	1	2	1	2	2	2	4	2	1	4	1.2	No	Mike URBAN results, January 2019	11
30	4	1	1	2	1	1	3	3	5	5	3	4	1	1	3	2	3	1	0	4	2.4	No	Mike URBAN results, January 2019	11
31	4	1	1	5	2	2	4	3	9	9	6	7	3	1	6	3	5	2	2	5	4.0	No	Mike URBAN results, January 2019	11
32	1	1	1	0	0	0	1	2	2	2	2	1	3	1	3	2	3	2	0	2	1.5	No	Mike URBAN results, January 2019	11
34	2	1	1	0	1	1	1	1	2	1	1	1	1	1	1	1	1	0	0	0	0.9	Yes	Mike URBAN results, January 2019	11
35	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0.2	Yes	Mike URBAN results, January 2019	11
36	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.1	Yes	Mike URBAN results, January 2019	11
38	2	1	0	1	1	1	1	1	0	0	0	3	1	1	1	2	4	1	0	0	1.1	No	Mike URBAN results, June 2018	12
40	5	1	0	3	1	2	2	1	2	3	1	3	1	1	2	2	3	1	0	0	1.7	No	Mike URBAN results, June 2018	12
41	5	1	0	3	1	2	2	1	2	3	1	3	1	1	2	2	3	1	0	0	1.7	No	Mike URBAN results, June 2018	12
42	3	1	1	1	1	1	1	1	0	3	0	2	1	1	1	3	3	1	0	0	1.3	No	Mike URBAN results, June 2018	12
43	6	1	1	5	3	2	5	2	4	5	4	5	3	3	4	3	3	2	0	3	3.2	No	Mike URBAN results, June 2018	12
44	0	1	0	0	1	0	1	0	0	3	0	0	0	1	1	0	3	2	0	0	0.7	Yes	Mike URBAN results, February 2025	13

Outfall Number	2006 Over-flows	2007 Over-flows	2008 Over-flows	2009 Over-flows	2010 Over-flows	2011 Over-flows	2012 Over-flows	2013 Over-flows	2014 Over-flows	2015 Over-flows	2016 Over-flows	2017 Over-flows	2018 Over-flows	2019 Over-flows	2020 Over-flows	2021 Over-flows	2022 Over-flows	2023 Over-flows	2024 Over-flows	2025 Over-flows	2025 Average Annual Frequency[1]	Meets Performance Standard (2025)[2]	Long-Term Simulation Source	Notes
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.1	Yes	Mike URBAN results, February 2025	13
46	1	1	0	3	1	1	2	0	1	2	0	0	0	0	2	0	0	1	0	0	0.8	Yes	InfoWorks results, December 2016	14
47	5	3	2	6	4	2	5	3	4	6	4	2	1	3	2	5	8	2	2	1	3.5	No	Mike URBAN results, December 2018	15
48	N/A	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	4
49	8	3	1	4	5	4	7	3	6	5	4	5	3	2	4	6	7	2	1	2	4.1	No	Mike URBAN results, February 2018	16
57	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.1	Yes	N/A	3
59	N/A	1	0	0	0	1	2	1	0	0	1	8	4	1	1	0	2	2	0	0	1.3	No	N/A	3
60	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0.1	Yes	N Magnolia Mike Urban Model results, December 2025	17
61	1	1	0	0	0	1	2	1	0	2	0	0	0	1	2	1	3	2	1	1	1.0	Yes	EPA-SWMM results, February 2021	18
62	1	1	0	0	0	0	1	1	0	2	0	0	0	0	2	0	1	1	1	0	0.6	Yes	EPA-SWMM results, February 2021	18
64	N/A	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	4
68	1	1	0	1	1	0	1	1	2	4	1	2	1	2	2	1	2	2	1	2	1.4	No	LTCP Long Term Simulation Results February 2013	5
69	2	1	1	3	1	2	2	3	3	4	4	2	0	1	2	1	4	2	2	0	2.0	No	LTCP Long Term Simulation Results February 2013	5
71	1	1	0	1	1	0	1	1	2	3	0	1	0	1	1	0	0	0	0	0	0.7	Yes	CWF SWMM Model results, December 2025	19
78	N/A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	Yes	N/A	3
80	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
83	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
85	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
88	N/A	2	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0.3	Yes	N/A	3
90	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
91	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.1	Yes	N/A	3
94	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
95	2	1	1	2	1	0	1	1	0	0	0	2	0	2	2	3	3	2	0	1	1.2	No	EPA-SWMM results, February 2019	20
99	0	1	0	0	1	0	1	0	0	0	0	1	0	0	2	0	3	1	0	0	0.5	Yes	SWMM5 results, December 2022	21
107	9	3	1	9	11	4	4	2	4	5	5	5	2	1	1	1	9	2	0	2	4.0	No	EPA-SWMM results, February 2019	22
111	2	1	0	1	1	0	1	3	2	3	0	2	1	1	1	2	4	1	0	0	1.3	No	EPA-SWMM results, February 2019	23
120	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3

Outfall Number	2006 Over-flows	2007 Over-flows	2008 Over-flows	2009 Over-flows	2010 Over-flows	2011 Over-flows	2012 Over-flows	2013 Over-flows	2014 Over-flows	2015 Over-flows	2016 Over-flows	2017 Over-flows	2018 Over-flows	2019 Over-flows	2020 Over-flows	2021 Over-flows	2022 Over-flows	2023 Over-flows	2024 Over-flows	2025 Over-flows	2025 Average Annual Frequency[1]	Meets Performance Standard (2025)[2]	Long-Term Simulation Source	Notes
121	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.0	Yes	N/A	3
124	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
127	N/A	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.1	Yes	N/A	3
129	N/A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.0	Yes	N/A	3
130	N/A	N/A	0	0	0	0	0	0	0	3	0	0	0	0	1	0	1	1	0	0	0.3	Yes	N/A	4
131	N/A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	Yes	N/A	3
132	N/A	N/A	0	0	0	1	0	2	0	3	0	0	0	0	2	2	1	1	0	0	0.7	Yes	N/A	4
134	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
135	N/A	N/A	0	1	0	0	0	0	0	2	0	0	0	0	3	1	1	2	10	11	1.7	No	N/A	4
136	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
138	1	1	0	1	1	0	1	1	0	3	0	0	0	1	1	0	4	2	0	0	0.9	Yes	SWMM5 results, December 2022	24
139	1	1	0	1	1	0	1	4	0	3	0	3	3	3	2	3	5	1	0	1	1.7	No	EPA-SWMM results, February 2019	25
140	5	1	1	7	8	2	4	5	13	10	10	7	4	5	3	2	6	3	2	7	5.3	No	LTCP Long Term Simulation Results February 2013	5
141	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
144	N/A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	Yes	N/A	3
145	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
146	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
147	45	35	50	45	63	40	47	27	49	32	58	42	37	34	47	40	42	28	43	41	42.3	No	LTCP Long Term Simulation Results February 2013	5
148	N/A	0	0	0	1	2	0	0	0	1	0	0	0	1	0	0	2	0	0	0	0.4	Yes	N/A	3
150/151	23	11	2	22	29	25	31	14	34	28	31	29	22	9	21	31	35	14	26	13	22.5	No	LTCP Long Term Simulation Results February 2013	5,26
152	42	43	11	29	63	48	57	44	53	34	63	50	45	33	49	41	44	50	53	37	44.5	No	LTCP Long Term Simulation Results February 2013	5
161	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Yes	N/A	3
165	1	2	0	0	2	1	2	2	0	2	0	2	1	1	1	2	1	2	0	0	1.1	No	Mike URBAN results, June 2018	12
168	5	2	0	1	1	0	2	0	2	2	0	2	1	1	2	2	3	1	0	0	1.4	No	EPA-SWMM results, February 2019	27
169	5	2	1	1	2	2	3	0	2	3	1	3	0	1	2	2	4	1	0	0	1.8	No	EPA-SWMM results, February 2019	27
170	N/A	N/A	0	2	1	0	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0.4	Yes	N/A	4

Outfall Number	2006 Over-flows	2007 Over-flows	2008 Over-flows	2009 Over-flows	2010 Over-flows	2011 Over-flows	2012 Over-flows	2013 Over-flows	2014 Over-flows	2015 Over-flows	2016 Over-flows	2017 Over-flows	2018 Over-flows	2019 Over-flows	2020 Over-flows	2021 Over-flows	2022 Over-flows	2023 Over-flows	2024 Over-flows	2025 Over-flows	2025 Average Annual Frequency[1]	Meets Performance Standard (2025)[2]	Long-Term Simulation Source	Notes
171	5	2	1	6	4	2	4	2	4	6	3	1	1	3	2	5	8	2	2	1	3.3	No	Mike URBAN results, December 2018	15
174	21	6	6	14	13	10	17	7	20	15	12	7	6	2	6	11	7	5	7	7	10.1	No	LTCP Long Term Simulation Results February 2013	5
175	N/A	N/A	0	1	0	0	0	2	0	4	0	0	1	0	1	0	1	1	1	0	0.7	Yes	N/A	4

Notes:

1. Per Section S4.B of the NPDES Permit, the determination of whether an outfall meets the performance standard for controlled outfalls has been made based on up to 20 years of data and modeling. Numbers in the unshaded cells were obtained from flow monitoring. Numbers in shaded cells were obtained using precipitation data and basin-specific models and are used in the long-term average annual overflow calculation for years when flow monitoring data either is not available, or the accuracy of the flow monitoring data cannot be confirmed.
2. Responses in this column are "Yes" if the calculated Average Annual Overflow Frequency is no more than 1 per year and "No" if the calculated Average Annual Overflow Frequency is more than 1 per year.
3. The flow monitoring configuration prior to 2007 cannot be confirmed and the pre-2007 data accuracy is questionable, so the calculated Average Annual Overflow Frequency uses data from flow monitoring conducted between **2007 and 2025**.
4. The flow monitoring configuration prior to 2008 cannot be confirmed and the pre-2008 data accuracy is questionable, so the calculated Average Annual Overflow Frequency uses data from flow monitoring conducted between **2008 and 2025**.
5. The flow monitoring configuration prior to 2008 cannot be confirmed and the pre-2008 data accuracy is questionable. Hydraulic modeling data is used prior to **2008** and flow monitoring data is used thereafter.
6. **Basin 13 & 15:** The **Basin 13** storage tank was operationally complete on **July 21, 2015**. Due to the hydraulic connectivity between Basin 13 and Basin 15 via the Lake Line, hydraulic modeling data is used from both basins prior to this date and flow monitoring data is used thereafter.
7. **Basin 18:** In **October 2012**, SPU completed sewer system improvements in Sub-Basin 18A. Flow modeling is used to predict Sub-Basin 18A overflows prior to this date and flow monitoring data is used thereafter. In **April 2017**, SPU completed sewer system improvements in Sub-Basin 18B. Flow modeling is used to predict Sub-Basin 18B overflows prior to this date and flow monitoring data is used thereafter.
8. The **Basin 20** sewer system improvement project was completed in **July 2021**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
9. **Basin 22:** Pump Station 50 improvements were completed on **December 20, 2016**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
10. **Basin 25**: SPU raised the weir at Outfall 25 in early **2008.** Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
11. **Basins 27-36:** The weir at Outfall 34 was lowered on **February 15, 2017**. Due to the hydraulic connectivity of the Leschi basins along the Lake Line, hydraulic modeling data is used for all Leschi outfalls prior to this date and flow monitoring data is used thereafter.
12. **Basins 38-43 & 165:** The Lake Line connecting the Genesee CSO basins was jet cleaned on **March 17, 2016**. Due to the hydraulic connectivity of the Genesee basins along the Lake Line, hydraulic modeling data is used for all Genesee outfalls prior to this date and flow monitoring data is used thereafter.
13. **Basin 44 & 45:** Pump Station 10 impeller improvements completed **July 2022**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
14. **Basin 46:** Pump Station 9 Rehabilitation Project completed in **2016**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
15. **Basin 47 & 171:** Orifice removed in the 52nd Avenue South flow control structure on **November 9, 2017**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
16. **Basin 49:** SPU replaced a HydroBrake in South Henderson Basin 49 with an orifice plate on **July 19, 2013**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
17. **Basin 60:** Pump Station 22 retrofit project was substantially complete on **October 1, 2021**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter. Modeling results are draft and will likely change when model recalibrated.
18. **Basin 61 & 62:** The Basin 62 overflow weir was raised on August 27, 2018. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
19. **Basin 71:** Central Waterfront retrofit project was substantially complete on **February 10, 2023**. Flow modeling was run through 12/31/2021, is used prior to this date and flow monitoring data is used thereafter. Modeling results are draft and will likely change when model recalibrated.
20. The **Basin 95** retrofit project was substantially complete on **April 4, 2013**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
21. The **Basin 99** sewer system improvement project was completed in **November 2021**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
22. **Basin 107**: The backwater valve retrofit was completed on **August 19, 2017**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
23. **Basin 111:** The last hydraulic modification in Basin 111 was performed on **December 1, 2014**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
24. The **Basin 138** sewer system improvement project was completed in **December 2021**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
25. The **Basin 139** sewer system improvement project was completed in **July 2016**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.
26. **Basin 150:** SPU removed Outfall 150 from service on **February 27, 2019**. Any Basin 150/151 CSOs now discharge from Outfall 151.
27. **Basin 168 & 169:** SPU completed the valve retrofit for Basins 168 and 169 on **November 5, 2015**. Hydraulic modeling data is used prior to that date and flow monitoring data is used thereafter.

Table 5-9. Integrated Plan Performance Targets and Results to Date

Status	Project Name	Average volume treated or removed (MG/year)	Fecal coliform (billion CFU/year)[1]	PCB (g/year)[1]	Total phosphorus (kg/year)[1]	Total copper (kg/year)[1]	TSS (kg/year)[1]	Total zinc (kg/year)[1]
Performance Target	NDS Partnering	32[1]	10,649	1.3	11	1.1	6,478	9.2
Performance Target	South Park Water Quality Facility	67[1]	31,000	5.2	38	3.8	20,935	25
Performance Target	Expanded Arterial Street Sweeping	1,477[1,2]	1,380	2.0	14	3.3	20,700	6.3
Performance Target	**Total**	**1,576**	**43,029**	**9**	**63**	**8.2**	**48,113**	**41**
2017 Interim Results	Expanded Arterial Street Sweeping[3,4]	1,900	1,464	4.0	44	9.1	59,000	20
2018 Interim Results	Expanded Arterial Street Sweeping[3,4]	1,700	801	2.6	41	8.4	53,000	18
Average Interim Results	Expanded Arterial Street Sweeping[3,4]	1,800	1,133	3.3	43	8.8	56,000	19

Notes:

1. These values represent the 95 percent lower confidence limits (LCL) from the Integrated Plan pollutant load model (PLM) results.
2. Volume of runoff from swept streets.
3. Provisional.
4. Data is only available for the Expanded Arterial Street Sweeping Program for the required two water years of monitoring (2017 & 2018). NDS Partnering and South Park WQF monitoring has not begun. Post-construction monitoring results will not be compared to the total performance monitoring targets until monitoring has been completed for all three stormwater projects, because the goals are based on the total load reductions for the three projects combined.

Appendix A: Additional CMOM Information

Table A-1. 2025 SSO Details

Event Number	ERTS Number	Location	Event Date and Time	Estimated Total Overflow Volume (gallons)	Estimated Volume to Receiving Water (gallons)	Receiving Water, if applicable	Primary Cause
25001	736175	12250 Greenwood Ave N	01/05/2025 3:07 PM	2,000	0	N/A	FOG
25002	736357	2916 SW Avalon Way	01/14/2025 11:01 AM	525	200	Duwamish West Waterway	Roots
25003	736439	2236 Fairview Ave E (Units A,B,C,D)	01/16/2025 12:08 PM	500	0	N/A	Roots
25004	737077	4916 SW Hinds St	02/20/2025 6:01 PM	750	0	N/A	Structural Failure - Force Main
25005	737241	4755 35th Ave SW	02/25/2025 2:46 PM	200	0	N/A	City Construction
25006	737221	1350 N Northlake Way	02/25/2025 3:29 PM	10	0	N/A	Structural Failure - Force Main
25007	737448	226 NW 50th St	03/07/2025 1:04 PM	20	0	N/A	Roots
25008	737653	2434 5th Ave W (2443, 2428, 2423)	03/17/2025 5:13 PM	8,810	0	N/A	Roots
25009	738428	909 NW 92nd St	04/22/2025 4:35 PM	120	0	N/A	Roots
25010	738685	13316 11th Ave NE	05/02/2025 1:51 PM	1,000	0	N/A	Roots
25011	738969	2001 & 2007 Eastlake Ave E	05/18/2025 9:10 PM	13,400	0	N/A	City Construction
25012	738971	8068 9th Ave NW	05/19/2025 3:27 PM	317	0	N/A	Roots
25013	739300	12534 15th Ave NE	06/05/2025 12:57 AM	1,500	0	N/A	Roots
25014	739746	1309 13th Ave S	06/25/2025 2:23 PM	79	0	N/A	Structural Failure - Gravity
25015	740955	2344 Shoreland Dr S	08/20/2025 11:23 AM	2,250	1,250	Lake Washington	Structural Failure - Gravity
25016	741110	6203 28th Ave NE	08/26/2025 3:54 PM	145	0	N/A	Roots
25017	742508	2870 S Hanford St	10/27/2025 10:29 AM	100	100	Lake Washington	FOG
25018	742514	1970 Harvard Ave E	10/27/2025 11:25 AM	100	0	N/A	Structural Failure - Gravity
25019	742550	10502 North Park Ave N	10/28/2025 3:46 PM	700	0	N/A	FOG
25020	743058	2715 25th Ave S	11/18/2025 7:24 PM	900	0	N/A	Roots
25021	743067	4109 SW Bradford St	11/19/2025 8:51 AM	0	0	N/A	City Construction

Event Number	ERTS Number	Location	Event Date and Time	Estimated Total Overflow Volume (gallons)	Estimated Volume to Receiving Water (gallons)	Receiving Water, if applicable	Primary Cause
25022	743156	4225 7th Ave NE	11/23/2025 4:03 PM	1,000	0	N/A	Roots
25023	743399	1424 4th Ave	12/03/2025 7:55 AM	590	0	N/A	Structural Failure - Gravity
25024	743414	95th Ave NW/24th Ave NW	12/07/2025 11:28 AM	10	0	N/A	Capacity - Gravity
25025	743463	6249 S Fountain St	12/08/2025 8:26 PM	1,450	0	N/A	Structural Failure - Gravity
25025.1	743463	6303 S Fountain St	12/08/2025 11:08 PM	10	0	N/A	Structural Failure - Gravity
25026	743567	1028 NE 94th St	12/09/2025 9:56 PM	20	0	N/A	Roots
25027	743731	1424 4th Ave	12/15/2025 10:17 AM	1,500	0	N/A	Structural Failure - Gravity
25028	743993	5523 29th Ave NE	12/28/2025 8:06 PM	500	0	N/A	Private Construction
25029	744020	SW Willow St/34th Ave SW	12/29/2025 3:22 PM	60	0	N/A	Roots

Table A-2. Pump Station Location and Capacity

Number	Name	Address	Type [1]	Basin Area (acres)	Average Annual Inflow (gpm)	Number of Pumps and Rating	Static Head (feet)	Average Annual Storage Time (hours)
1	Lawton Wood	5645 45th Ave West	WW/DW	31.8	10	2 at 170 gpm each	61	25.7
2	Charles Street	901 Lakeside Dr	WW/DW	108.1	180	2 at 950 gpm each	20	7.6
4	South Director Street	5135 South Director St	Air Lift	3.1	33	2 at 130 gpm each	29	2.1
5	46th Avenue South	3800 Lake Washington Blvd	WW/DW	198.2	250	2 at 1000 gpm each	14	4.7
6	South Alaska Street	4645 Lake Washington Blvd	WW/DW	10.2	24	2 at 350 gpm each	14	3.0
7	East Lee Street	4214 East Lee St	WW/DW	227	373	2 at 1300 gpm each	47	11.8
9	South Grattan Street	8400 55th Ave South	WW/DW	422.2	372	2 at 2700 gpm each	14	2.8
10	South Holly Street	5711 South Holly St	WW/DW	188.4	201	2 at 1100 gpm each	14	1.7
11	North Sand Point	63rd Ave NE and NE 78th St	Submersible	32.8	45	2 at 400 gpm each	37	6.9
13	Montlake	2160 East Shelby St	WW/DW	64.9	49	2 at 1500 gpm each	30	44.2
17	Empire Way	42nd Ave South and South Norfolk St	WW/DW	395	546	2 at 2000 gpm each	28	4.5
18	South 116th Place	6700 South 116th Pl	Submersible	2.5	2.8	2 at 100 gpm each	45	21.7
19	Leroy Place South	9400 Leroy Pl South	Submersible	6.84	4.3	2 at 100 gpm each	45	14.9
20	East Shelby Street	1205 East Shelby St	WW/DW	48.6	94	2 at 650 gpm each	45	20.5
21	21st Avenue West	2557 21st Ave West	Submersible	3.55	6.7	2 at 150 gpm each	45	9.8
22	West Cramer Street	5400 38th Ave West	WW/DW	26.9	44	2 at 750 gpm each	62	6.0
25	Calhoun Street	1812 East Calhoun St	WW/DW	52.2	123	2 at 650 gpm each	36	2.9
28	North Beach	9001 View Ave NW	Submersible	4.8	2.7	2 at 150 gpm each	41	17.5
30	Esplanade	3206 NW Esplanade St	Submersible	5.7	8.7	2 at 150 gpm each	63	14.0

Number	Name	Address	Type [1]	Basin Area (acres)	Average Annual Inflow (gpm)	Number of Pumps and Rating	Static Head (feet)	Average Annual Storage Time (hours)
31	11th Avenue NW	12007 11th Ave NW	Submersible	2	0.81	2 at 150 gpm each	20	41.0
35	25th Avenue NE	2734 NE 45th St	WW/DW	71	170	2 at 600 gpm each 1 at 900 gpm	40	1.2
36	Maryland	1122 Harbor Ave SW	Air Lift	12.2	60	2 at 150 gpm each	10	5.0
37	Fairmont	1751 Harbor Ave SW	WW/DW	281.5	275	2 at 4600 gpm each	13	5.1
38	Arkansas	1411 Alki Ave SW	WW/DW	46.5	108	2 at 300 gpm each	10	5.4
39	Dawson	5080 Beach Dr SW	WW/DW	55	114	2 at 1000 gpm each	37	5.4
42	Lincoln Park	8617 Fauntleroy Way SW	WW/DW	6.5	18	2 at 200 gpm each	56	6.3
43	Seaview No. 1	5635 Seaview Ave NW	WW/DW	177.4	82	2 at 2750 gpm each	40	19.7
44	Boeing No. 1	6820 Perimeter Rd S	WW/DW	168.5	196	2 at 800 gpm each	19	2.4
45	Boeing No. 2	7609 Perimeter Rd S	WW/DW	133.5	92	2 at 350 gpm each	17	3.8
46	Seaview No. 2	6541 Seaview Ave NW	Air Lift	52.6	64	2 at 150 gpm each	15	1.9
47	Seaview No. 3	7242 Seaview Ave NW	Air Lift	11	14	2 at 150 gpm each	10	6.8
48	Brooklyn	3701 Brooklyn Ave NE	WW/DW	31.4	91	2 at 1000 gpm each	53	3.8
49	Latona	3750 Latona Ave NE	WW/DW	22.4	20	2 at 250 gpm each	33	19.0
50	39th Avenue East	2534 39th Ave East	Submersible	10.6	5.3	2 at 120 gpm each	201	19.6
51	NE 60th Street	6670 NE 60th St	WW/DW	44.5	38	2 at 325 gpm each	126	3.5
53	SW Hinds Street	4951 SW Hinds St	WW/DW	10.6	7.1	2 at 150 gpm each	66	10.9
54	NW 41st Street	647 NW 41st St	WW/DW	24.5	50	2 at 350 gpm each	27	5.1
55	Webster Street	3021 West Laurelhurst NE	Air Lift	2.4	5.6	2 at 150 gpm each	31	1.1

Number	Name	Address	Type [1]	Basin Area (acres)	Average Annual Inflow (gpm)	Number of Pumps and Rating	Static Head (feet)	Average Annual Storage Time (hours)
56	Bedford Court	10334 Bedford Ct NW	Air Lift	1.6	4.8	2 at 150 gpm each	30	0.62
57	Sunnyside	3600 Sunnyside Ave North	WW/DW	16.3	12	2 at 300 gpm each	32	14.3
58	Woodlawn	1350 North Northlake Way	WW/DW	33.4	34	2 at 685 gpm each	30	8.0
59	Halliday	2590 Westlake Ave North	WW/DW	21.2	8.5	2 at 325 gpm each	18	25.7
60	Newton	2010 Westlake Ave North	WW/DW	57.6	65	2 at 250 gpm each	67	4.4
61	Aloha	912 Westlake Ave North	WW/DW	26.3	13	2 at 450 gpm each	19	15.8
62	Yale	1103 Fairview Ave North	WW/DW	12.2	27	2 at 300 gpm each	18	6.0
63	East Blaine	140 East Blaine St	WW/DW	33.1	103	2 at 600 gpm each	31	2.4
64	East Lynn Street No. 2	2390 Fairview Ave East	WW/DW	9.4	63	2 at 300 gpm each	16	2.4
65	East Allison Street	2955 Fairview Ave East	WW/DW	19.2	23	2 at 200 gpm each	47	10.4
66	Portage Bay No. 1	3190 Portage Bay Pl East	WW/DW	6.5	20	2 at 200 gpm each	12	7.2
67	Portage Bay No. 2	1209 East Shelby St	WW/DW	14.7	30	2 at 250 gpm each	17	5.0
69	Sand Point	6451 65th Ave NE	WW/DW	15.5	44	2 at 300 gpm each	79	2.0
70	Barton No. 2	4890 SW Barton St	WW/DW	73	37	2 at 290 gpm each	29	12.5
71	SW 98th Street	5190 SW 98th St	WW/DW	36.3	26	2 at 460 gpm each	16	6.2
72	SW Lander Street	2600 13th Ave SW	WW/DW	203.5	98	2 at 2200 gpm each	23	12.2
73	SW Spokane St	1190 SW Spokane St	WW/DW	336.5	96	2 at 2400 gpm each	16	9.5
74	26th Avenue SW	2799 26th Ave SW	Submersible	144	26	2 at 300 gpm each	30	12.3
75	Point Place SW	3200 Point Pl SW	Air Lift	4.9	N/A	2 at 150 gpm each	12	N/A
76	Lowman Park	7025 Beach Dr SW	WW/DW	20.4	15	2 at 100 gpm each	34	18.8

Number	Name	Address	Type [1]	Basin Area (acres)	Average Annual Inflow (gpm)	Number of Pumps and Rating	Static Head (feet)	Average Annual Storage Time (hours)
77	32nd Avenue West	1499 32nd Ave West	WW/DW	206.5	84	2 at 1400 gpm each	48	21.0
78	Airport Way South	8415 Airport Way South	Air Lift	18.4	11	2 at 150 gpm each	15	4.5
80	South Perry Street	9724 Rainier Ave South	Air Lift	4.6	4.8	2 at 150 gpm each	22	14.1
81	72nd Avenue South	10199 Rainier Avenue South	WW/DW	11	10	2 at 200 gpm each	53	19.0
82	Arroyo Beach Place	11013 Arroyo Beach Pl SW	Air Lift	6	4.5	2 at 150 gpm each	20	16.2
83	West Ewing Street	390 West Ewing St	Air Lift	6.1	44	2 at 150 gpm each	19	1.4
84	28th Avenue NW	5390 28th Ave NW	WW/DW	691.4	81	2 at 500 gpm each	24	3.9

1. WW/DW = Wet Well/Dry Well

Table A-3. 2025 Pump Station Work Order Summary

WWPS Number	Inspection	Maintenance	Total Work Orders
WWPS001	20	11	31
WWPS002	14	14	28
WWPS004	29	17	46
WWPS005	29	5	34
WWPS006	15	6	21
WWPS007	54	24	78
WWPS009	22	10	32
WWPS010	16	10	26
WWPS011	13	13	26
WWPS013	34	8	42
WWPS017	23	36	59
WWPS018	20	12	32
WWPS019	20	35	55
WWPS020	33	18	51
WWPS021	26	12	38
WWPS022	18	3	21
WWPS025	18	11	29
WWPS028	24	7	31
WWPS030	7	14	21
WWPS031	18	11	29
WWPS035	27	16	43
WWPS036	23	6	29
WWPS037	15	12	27
WWPS038	35	14	49
WWPS039	40	23	63
WWPS042	30	7	37
WWPS043	24	25	49
WWPS044	15	8	23
WWPS045	54	16	70
WWPS046	33	17	50

WWPS Number	Inspection	Maintenance	Total Work Orders
WWPS047	32	5	37
WWPS048	19	16	35
WWPS049	17	37	54
WWPS050	28	13	41
WWPS051	24	36	60
WWPS053	15	21	36
WWPS054	64	16	80
WWPS055	26	13	39
WWPS056	43	7	50
WWPS057	24	25	49
WWPS058	24	10	34
WWPS059	26	5	31
WWPS060	31	5	36
WWPS061	36	4	40
WWPS062	25	10	35
WWPS063	24	15	39
WWPS064	21	10	31
WWPS065	17	15	32
WWPS066	11	5	16
WWPS067	10	4	14
WWPS069	23	13	36
WWPS070	15	9	24
WWPS071	23	16	39
WWPS072	21	3	24
WWPS073	23	4	27
WWPS074	27	16	43
WWPS075	20	12	32
WWPS076	23	37	60
WWPS077	38	24	62
WWPS078	14	8	22
WWPS080	20	20	40

WWPS Number	Inspection	Maintenance	Total Work Orders
WWPS081	11	11	22
WWPS082	16	9	25
WWPS083	22	4	26
WWPS084	25	6	31
WWPS114	17	12	29
WWPS118	18	7	25
Grand Total	**1,622**	**904**	**2,526**