

CITY OF BREMERTON
DEPARTMENT OF PUBLIC WORKS
AND UTILITIES

2024
COMBINED SEWER OVERFLOW (CSO)
ANNUAL REPORT

NPDES PERMIT #WA-002928-9

SUBMITTED TO DEPARTMENT OF ECOLOGY

May 30, 2024

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CERTIFICATION

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signed by:



Eric Burris, Wastewater Manager

5-30-25

Date

EXECUTIVE SUMMARY

In 2024, the City of Bremerton (City) continued to improve and update its wastewater collection system. All of the Combined Sewer Overflow (CSO) projects were completed by the end of 2009. The **16-year, \$50+ million-dollar CSO Reduction Program** achieved greater than 99% reduction in the frequency and volume of CSOs. This milestone was achieved by completing all stormwater separation, sanitary sewer system upgrades, operational changes, and private property stormwater separation projects identified in the CSO Reduction Plans.

Chapter 173-245-090 of the Washington Administrative Code (WAC) requires submittal of an annual CSO report by May 31. The following information is included in this Annual CSO Report:

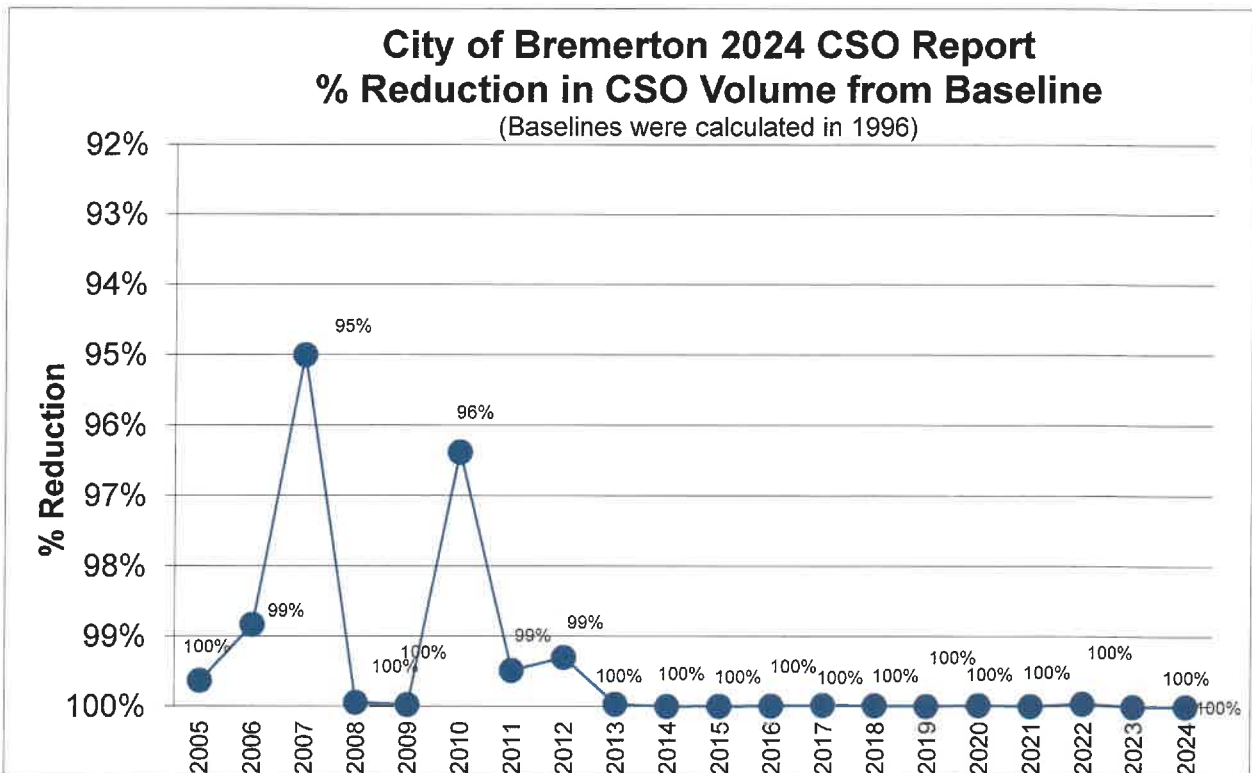
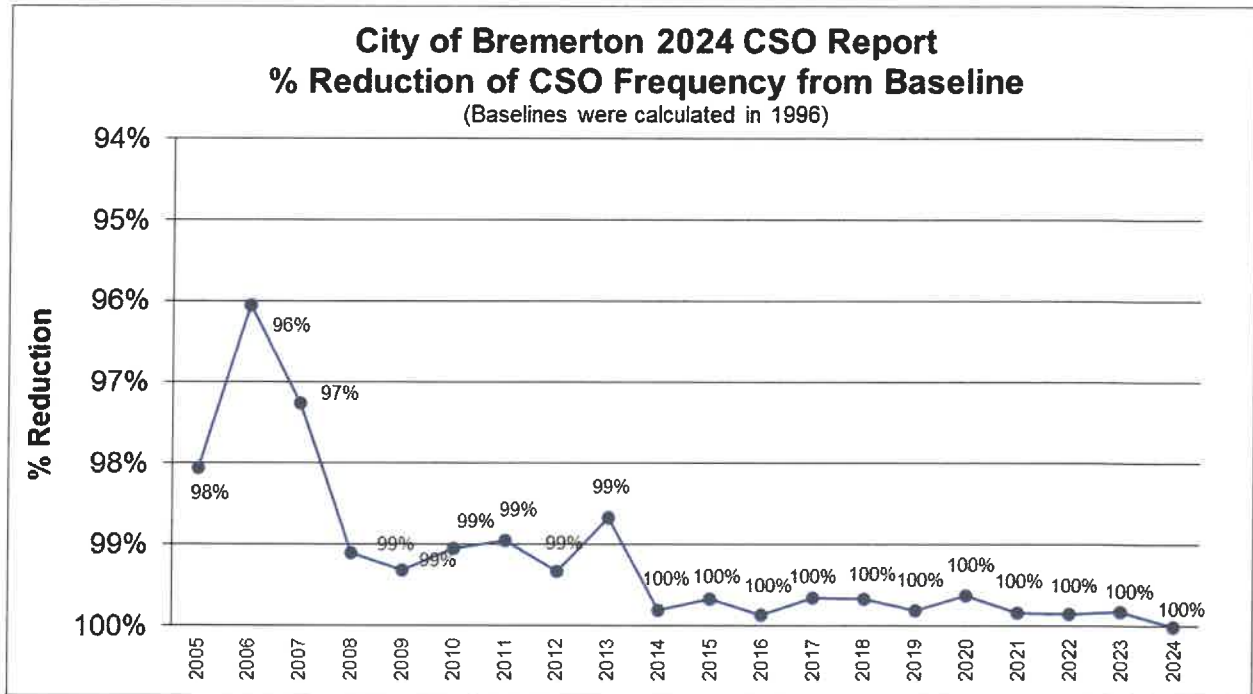
- CSO Event, Duration, Volume, Precipitation, Storm Duration
- CSO Event Volume and Frequency monitored in 2024
- Summary of CSO Reduction projects completed to meet federal and state requirements
- Eastside Treatment Plant yearly averages of TSS removal efficiency and effluent settleable solids

In 2024 the City of Bremerton:

- Is in compliance with CSO reduction requirements at all 15 sites
- Over the last 20 years, reduced event overflow volume by more than 99%
- Over the last 20 years, reduced event frequency by more than 99%
- Continued its public education and assistance program to involve citizens of Bremerton with CSO Reduction and provided education on water pollution prevention
- Had no CSO events
- Began updating its General Sewer Plan (also known as Wastewater Comprehensive Plan) with Kennedy Jenks. The plan is updated every 10 years, the last update being in 2014 by HDR.
- Developed a GIS-based sewer model using Aqua Twin Sewer software. City staff will be trained by the consultant that developed the model in 2025 in model use.

The following charts illustrate the percent reduction of frequency and overflow volume as a result of CSO improvements by comparing the baseline frequency and volume with recorded CSO data. CSO frequency and volume baselines were calculated in 1996 using several years of monthly CSO data as measured at each CSO site. Baselines are used to monitor the progress and effectiveness of Bremerton's CSO reduction

program. Percent reduction from baseline is calculated by comparing the CSO frequency and volume baselines with 2024's annual CSO event count and volume measured for all events.



INTRODUCTION AND BACKGROUND

In 2024, the City of Bremerton continued to improve and update its wastewater collection system. All CSO reduction projects were completed by the end of 2009. The **19-year, \$50+ million-dollar CSO Reduction Program** achieved greater than 99% reduction in the frequency and volume of CSOs. Compliance with Chapter 173-245 WAC has been accomplished for all CSO sites.

This was achieved by completing all stormwater separation, sanitary sewer system upgrades, operational changes, and private property stormwater separation projects identified in the CSO Reduction Plans.

WAC 173-245-090 requires the submittal of an annual CSO report by May 31 of the following year. The following information is included in this Annual CSO Report:

- CSO Event, Duration, Volume, Precipitation, Storm Duration
- CSO event volume and frequency monitored in 2024
- Summary of CSO Reduction projects completed to meet federal and state requirements
- Eastside Plant yearly averages of TSS removal efficiency and effluent settleable solids

In 2024, the City of Bremerton's wastewater collection system contained 15 CSO sites. These structures are in the older portion of the City's wastewater collection system and some predate the first wastewater treatment plant built in 1946. CSO site locations are shown in **Figure 1**. All sites have outfall numbers assigned in the City's wastewater treatment plant (WWTP) National Pollutant Discharge Elimination System (NPDES) permit.

Although the City has continually improved the wastewater collection system, a focus on CSO reduction planning began in 1989 in response to Department of Ecology (Ecology) regulations to limit CSOs into state waters. Ecology approved Bremerton's first CSO Reduction Plan in November 1992. A CSO Plan Update was completed in 2000 detailing recommended improvements for the City's wastewater collection system to reduce CSOs implemented through 2009. Ranking of improvement projects considered public health, cost effectiveness, safety concerns, overflow frequency, and infrastructure conditions. All proposed CSO reduction projects are identified in the City's CSO Reduction Plan Update and associated facility plans for wastewater collection system drainage basins.

Ecology issued an Order on Consent to the City in 1993 formalizing the schedule set forth in the City's CSO Reduction Plan. Also in 1993, the City settled a citizen's lawsuit with the Puget Soundkeeper Alliance (PSA), resulting in an agreement that included additional requirements such as CSO water quality monitoring and an accelerated construction schedule. CSO baselines and the implementation schedule were modified in an amended order in 2000.

On February 17, 2011, Ecology determined that all projects listed in the "Order on Consent" were completed and the agreement was terminated. On April 26th, 2011, the Puget Soundkeeper Alliance (PSA) released the City from the "Consent Decree," and on May 11, 2011, the US District Court terminated the "Consent Decree" as requested by the City and PSA.

On June 29th, 2011, the City and PSA celebrated the end of the very successful CSO Reduction Program by inviting the public, local officials, program participants, and elected officials to a summary presentation

of the program’s accomplishments. The celebration was well attended and received by all. **Figure 1** and the following table show the location, water body and coordinates for each of the 15 CSO site.

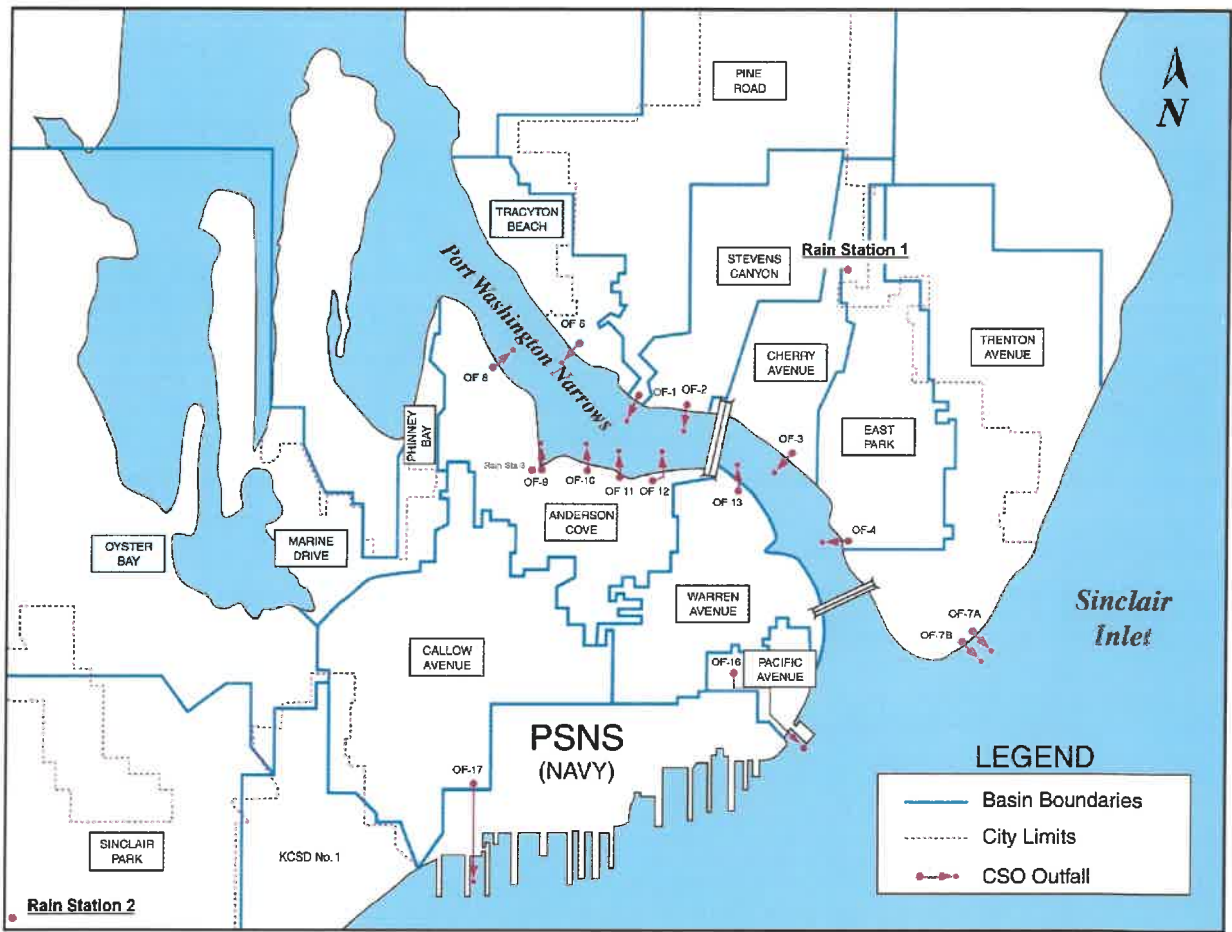


Figure 1 – City of Bremerton CSO Location Site Map

LIST OF CITY OF BREMERTON CSO OUTFALLS PER SECTION S.9 OF NPDES PERMIT NO. WA0029289			
OUTFALL NUMBER	BASIN	LOCATION	RECEIVING WATER
OF-1	Pine Road Basin	47.581490° -122.636958°	Port Washington Narrows
OF-2	Stevens Canyon Basin	47.580579° -122.635489°	Port Washington Narrows
OF-3	Cherry Avenue Basin	47.578031° -122.625189°	Port Washington Narrows
OF-4	Eastpark Basin	47.571662° -122.619867°	Port Washington Narrows
OF-6	Tracyton Beach Basin	47.585558° -122.646475°	Port Washington Narrows
OF-7A	Trenton Avenue Basin	47.568998° -122.606821°	Port Washington Narrows
OF-7B	Trenton Avenue Basin	47.568998° -122.606821°	Port Washington Narrows
OF-8	Anderson Cove Basin	47.584747° -122.650852°	Port Washington Narrows
OF-9	Anderson Cove Basin	47.580463° -122.645788°	Port Washington Narrows
OF-10	Anderson Cove Basin	47.578889° -122.640556°	Port Washington Narrows
OF-11	Anderson Cove Basin	47.578889° -122.639444°	Port Washington Narrows
OF-12	Anderson Cove Basin	47.578611° -122.636389°	Port Washington Narrows
OF-13	Warren Avenue Basin	47.578205° -122.630167°	Port Washington Narrows
OF-16	Pacific Avenue Basin	47.561667° -122.625278°	Sinclair Inlet
OF-17	Callow Avenue Basin	47.554167° -122.651111°	Sinclair Inlet
Note: ¹ OF-12, in Anderson Cove basin, is included as one of the 15 CSO sites. However, it was demolished when CW-4 was upgraded in 2020 since it was no longer necessary. This will be reflected in the next permit cycle			

2024 CSO EVENTS AND MONITORING

CSO Events

There were no CSO events in 2024.

Event Date	Outfall	Duration (hrs.)	Volume (gallons)	Estimated 24-hour Precipitation
n/a	n/a	n/a	n/a	n/a
TOTAL			n/a	
Note: Estimated precipitation is calculated based on rainfall data approx. 12-hours before and after the event				

20-Year Rolling Average of CSO Events

The following table shows the running 20-year average of overflow events at each site. At no site does the rolling average exceed 1 event per year, except at OF-11 it's exactly 1 event per year. This should decrease since the City upgraded Pump Station CW-4 at the end of Ohio Avenue in 2020. Also, at the location of OF-10 (end of Pennsylvania Avenue), the City is increasing the size of the CSO/stormwater outfall. This outfall is undersized and surcharged back into the sanitary sewer via the OF-10 weir during heavy storm events, which may have been contributing to CSO events at OF-11. Increasing the size of the outfall will prevent that reversal of flow from happening and thus decrease pressure on the combined sewer system.

CSO Site	Completion yr.	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CSO events 20yr AVG
OF1	2000	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0.10
OF2	2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
OF3	2005	0	0	1	1	0	0	0	1	3	1	0	0	1	1	0	0	0	0	0	0	0.45
OF4	2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
OF6	2005	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0.25
OF7A	2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
OF7B	2004	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15
OF8	1999	0	2	1	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0.35
OF9	2008	0	0	1	0	0	1	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0.45
OF10	2008	1	1	1	1	1	1	1	1	2	0	0	0	0	1	0	2	0	0	1	0	0.70
OF11	2008	1	1	1	1	1	1	1	2	1	1	1	2	3	0	1	0	0	1	1	0	1.00
OF12	1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
OF13	2002	1	0	1	1	1	1	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0.40
OF16	2009	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15
OF17	2003	1	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0.35

CSO Baseline Review

CSO baselines provide volume and frequency levels for the system prior to implementing improvements. This allows Ecology to monitor the progress and effectiveness of Bremerton's CSO reduction program as set forth in Chapter 173-245 WAC.

In 1996, Bremerton established CSO baselines for each outfall. CSO frequency and volume baselines were calculated with a linear regression using several years of monthly rainfall and CSO data as measured at each CSO site. From this data, both the mean and upper 95% confidence intervals were established. Baselines are compared to measured overflow volume and frequency in the attachments to this CSO Report. Percent reduction from baseline is calculated by comparing CSO frequency and volume baselines with 2024's annual CSO event count and volume measured for all CSO events.

Figure 2 illustrates the reduction of overflow frequency as a result of combined sewer system improvements by comparing the frequency baseline with recorded cumulative annual CSO data over the past 20 years of the program.

Figure 3 illustrates reduction of overflow volume as a result of combined sewer system improvements by comparing volume baseline with recorded cumulative annual CSO data

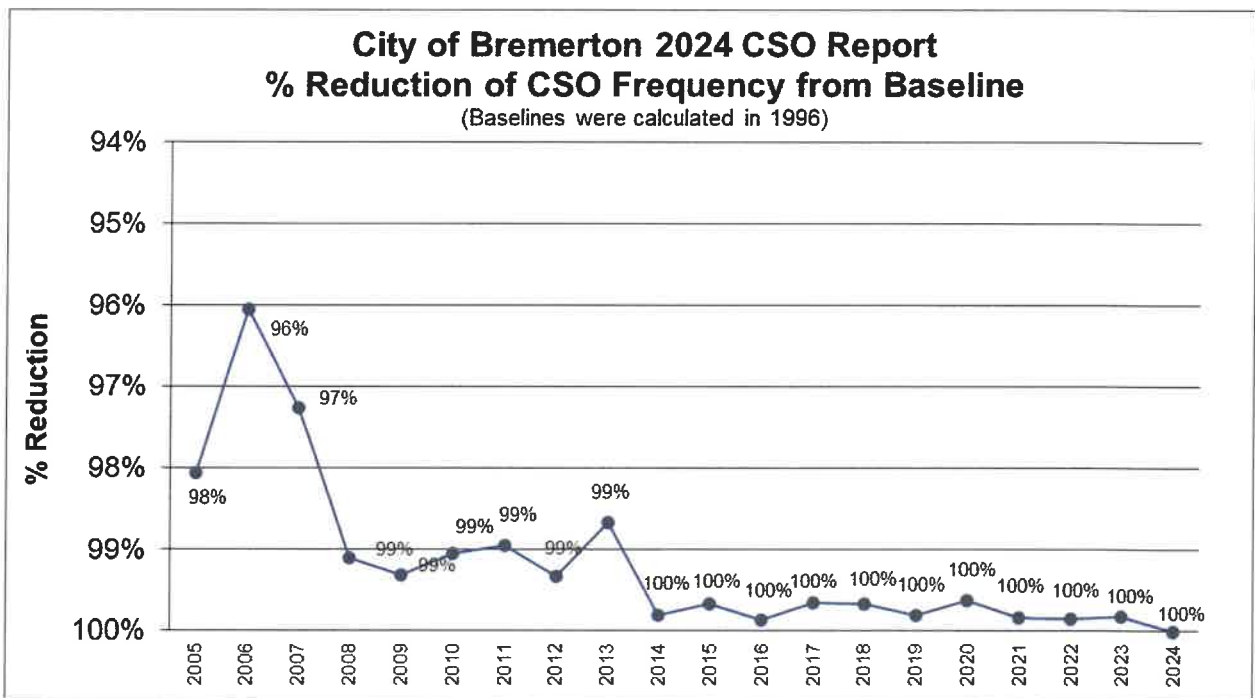
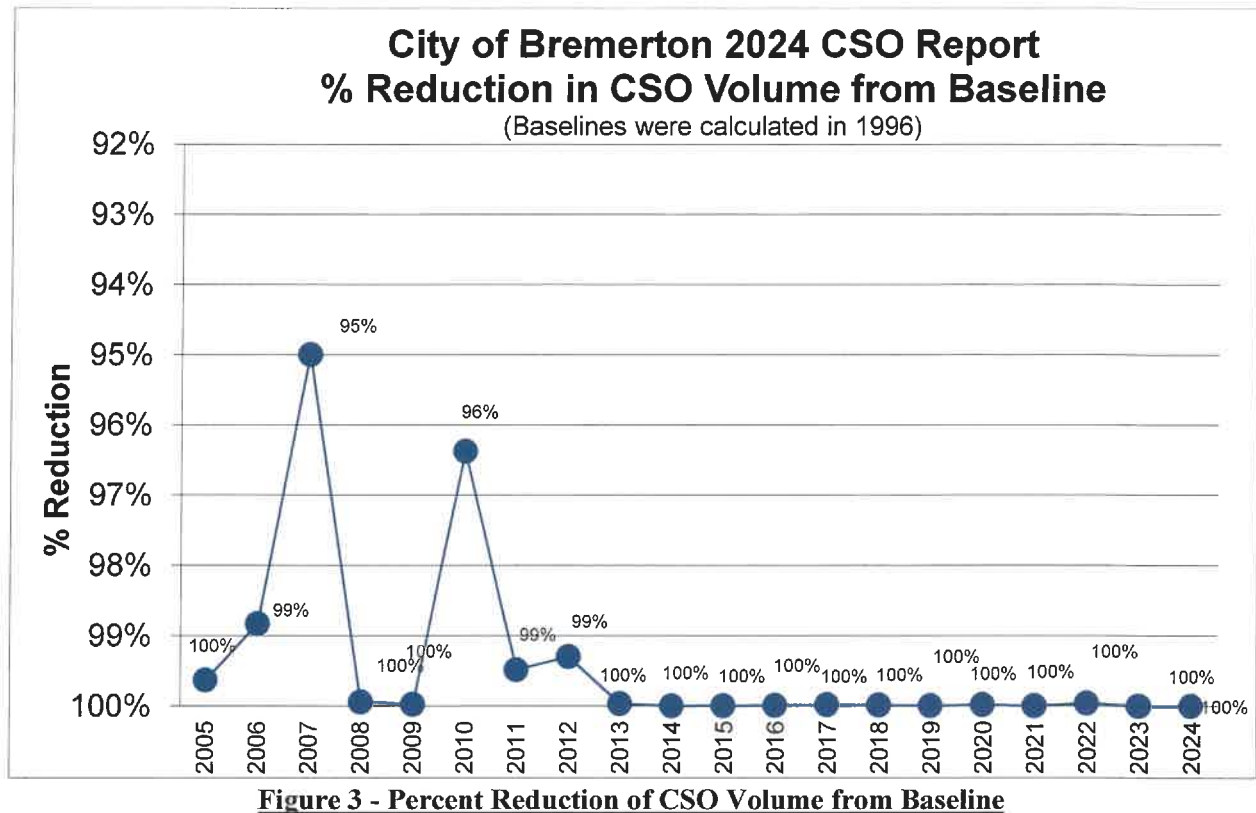


Figure 2 - Percent Reduction of CSO Frequency from Baseline



CSO Flow and Precipitation Monitoring

Combined sewer overflow sites are continuously monitored with ultrasonic level monitoring equipment and CSOs are recorded as they occur. The overflow sites are connected to the Wastewater Treatment Plant and Supervisory Control Data Acquisition system (WWTP SCADA) so an overflow event can be monitored in real-time. This allows an operator or the SCADA system to adjust the wastewater collection system and maximizes the use of storage and pumping/treatment capacity. Continual improvements to the flow monitoring system have made it more reliable and versatile. The City has connected all of the CSO flow meters to the WWTP SCADA system to complete a full integration of functions into one system. CSO flow meters are part of the associated wastewater pump station control system via WWTP SCADA. The operation of each station is monitored by SCADA and will notify an operator as soon as a station goes into an alarm state, such as a “high wetwell”, which will occur prior to a CSO event. If a CSO occurs, the system will again notify an operator and other City staff so that corrective actions can be taken.

Average annual precipitation for 2024 was 53.95 inches as measured by a data logging tipping bucket rain station, located in Central Bremerton. This instrument records the date and time of every 0.01” of rain fall as it occurs.

Figure 4 and **Figure 5** present the CSO volume and frequency relative to precipitation from 2005 to 2024.

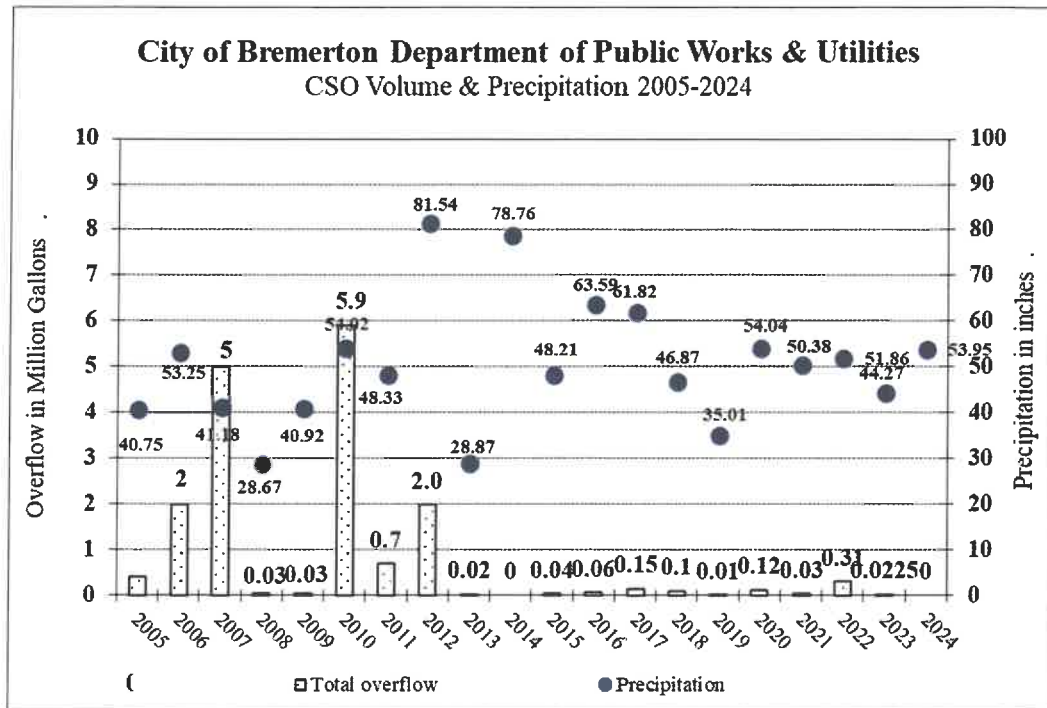


Figure 4 - CSO Volume and Precipitation for 2005-2024

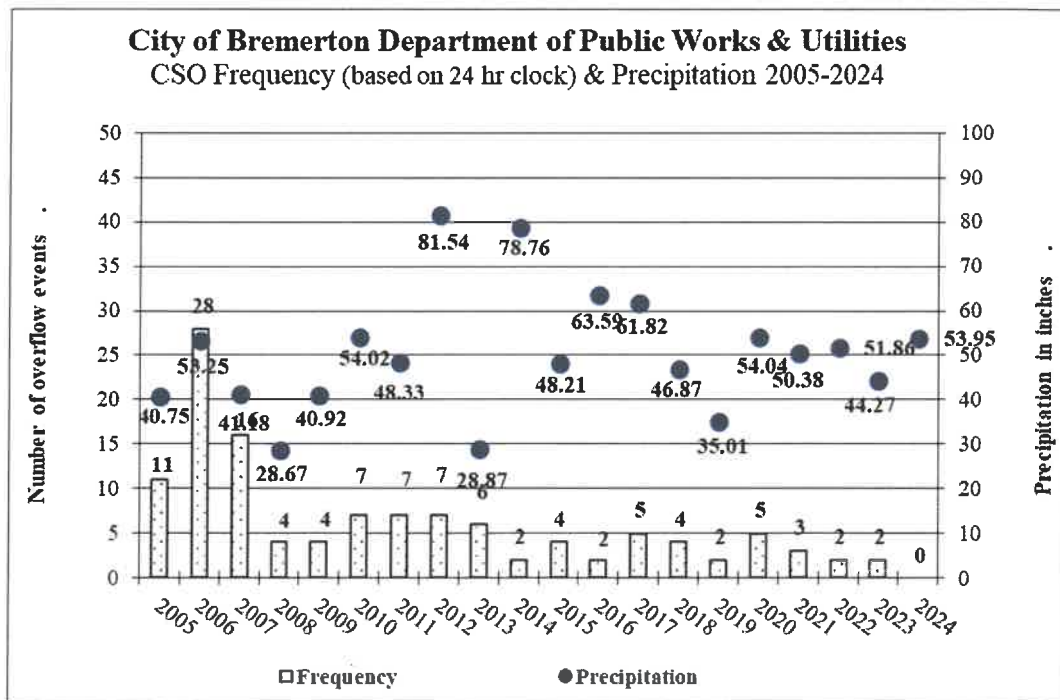


Figure 5 - CSO Frequency and Precipitation for 2005-2024

Wastewater System Upgrades and Improvements

All required collection system improvements to reduce CSOs were completed by the end of 2009.

These projects have reduced and, at some locations, eliminated CSO events. These projects included: installation of new stormwater sewer mains, stormwater separation on private property, increased pumping and treatment capacity, increased wastewater treatment plant capacity, and a wet weather treatment facility. Bremerton is continually making upgrades to its collection and treatment systems, to ensure our ongoing CSO compliance. An important part of the reduction effort has been public relations and outreach to Bremerton's citizens and customers.

Bremerton is continually making upgrades to its collection and treatment systems to ensure ongoing CSO compliance. In 2024:

- During the capital project 2024 Sewer Rehabilitation, performed cure-in-place-pipe (CIPP) of 7,100 lineal feet of sewer mains to prevent infiltration and inflow. Performed video inspection of 6600 lineal feet.
- City operations and maintenance staff continues to line sewer laterals using City-owned equipment. All sewer mains are cleaned on a 3 to 4-year cycle.

Eastside Treatment Plant Yearly Averages

Listed below are the yearly averages of TSS removal efficiencies and effluent settleable solids for the 2024 reporting period. This is a requirement of the NPDES Waste Discharge Permit.

Eastside Plant Yearly Information for 2024														
Parameter	BOD5	TSS	DISCHARGE	FLOW	DISCHARGED	DISCHARGE	BOD5	TSS	TSS	SETTLEABLE	PH	FECAL	STORM	RAINFALL
Unit	mg/L	mg/L	EVENTS	MGD	VOLUME	DURATION	mg/L	mg/L	Percent	SOLIDS *	Std.Unit	COLIFORM	DURATION	INCHES
Frequency	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.	1/Def.Ev.
Type	COMP	COMP	MEAS	METER	CALC	MEAS	COMP	COMP	CALC.	COMPOSITE	GRAB	GRAB	MEAS	MEAS/CAL
Date	OSITE	OSITE					OSITE	OSITE						C
1/8/2024	83	136	1	0.1	0.120	1.17	36	14	90	0.050	7.60	10	5.00	0.86
1/27/2024	65	124	1	0.6	0.012	4.98	LE	4	97	0.100	7.58	10	10.00	2.70
2/28/2024	118	162	1	0.2	1.752	9.00	16	10	94	0.100	7.30	10	16.00	1.65

Meeting NDPES Permit Requirements for Controlling CSOs

Ecology issued Bremerton its National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit, No. WA-0029289, with an effective date of December 1, 2018. Section S9, COMBINED SEWER OVERFLOWS, established reporting and compliance requirements as described in the following table. The list of regulated CSO sites is included with this report. The City meets these permit requirements.

Paragraph	Description
S9.D.a	Based on monitoring data, meet the requirement of “greatest reasonable reduction” as defined in WAC 173-245-020(22). Frequency of overflow events at these CSO outfalls, as a result of precipitation events, must continue to meet the performance standard.
S.9.D.b	The performance standard for each controlled CSO outfall is not more than one discharge event per outfall per year on average, due to precipitation. Ecology evaluates compliance with the performance standard annually based on a 20-year moving average. The Permittee must report the running 20-year average number of overflow events per year during this permit term from these CSO outfalls in the CSO Annual Report required in Special Condition S9.C.
S.9.D.c, d, and e	Implement a post construction compliance monitoring program, plan, and reporting to demonstrate compliance with water quality standards and protection of designated sites.

HISTORICAL CSO COMPLIANCE SCHEDULE AND EFFORTS

The following is a summary of activities that were completed to achieve CSO reduction compliance in 2009.

Pine Road Basin

OF-1 was completed in 2000 with the construction of in-line storage and separation projects.

Stevens Canyon Basin

OF-2, with separation, in-line storage and the East Side Wet Weather Treatment Facility completion in 2002.

Cherry Avenue Basin

OF-3 is influenced by flows that come from **OF-7A** and **OF-7B** and a restriction in the beach main just downstream from the **OF** site. The Cherry Avenue CSO reduction improvements included replacement of a portion of the gravity pressure main to eliminate a capacity bottleneck, and installation of cleaning access structures on the beach. This construction was completed in 2005.

East Park Basin

OF-4 projects included separation and flow diversions that were completed in 2003. The 18" sewer pipe from Wheaton Way was plugged in 2003, so the only flow currently going through the **OF**-vault is from 68 apartment units and 2 single family residence properties.

Tracyton Beach Basin

OF-6 CSO reduction improvement for the Tracyton Beach Basin included an upgrade to pump station **EB-6**. Construction of this project began in 2004 and was completed in February, 2005.

Trenton Avenue Basin

OF-7A and OF-7B, CSO Reduction was completed in the Trenton Avenue Basin by upgrading two pump stations, replacing a section of the beach force main, along with several flow diversions and stormwater separation. All necessary project components required to increase the capacity from this basin were completed in 2004.

Anderson Cove Basin

Upgrades at pump stations **CW-1**, **CW-2**, and **CW-4** reduced CSOs at **OF-8**, **OF-9**, **OF-10**, and **OF-11**. An upgrade at **CW-4** in 2019-20 directed flow out of Anderson Cove basin, further reducing potential CSOs in this basin, particularly at **OF-11**. **OF-12** was taken out of service with the **CW-4** upgrade, though formal documentation of this removal is pending.

Warren Avenue Basin

OF-13, the Warren Avenue basin CSO controls included decommissioning of **OF-14** and stormwater separation that were constructed in 1996. **OF-13** was still affected by high flow rates during storms until the East Side Wet Weather Treatment Facility was constructed and on-line in 2002.

Pacific Avenue Basin

OF-16, the Pacific Avenue basin, separation projects were completed in 2009. OF-15 was abandoned by the US Navy/PSNS in 1999.

Callow Avenue Basin

OF-17 projects were constructed in 5 phases beginning in 1997. The site was in compliance in 2004.

Figure 6 shows the impact of money spent over time. As funds increased and improvements were completed, CSO volume and frequency decreased.

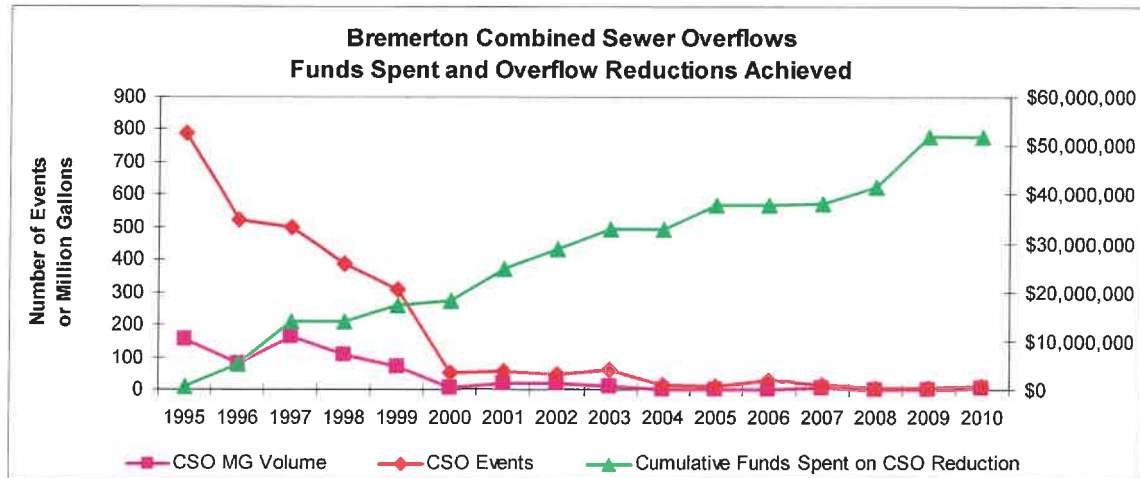


Figure 6 - Cost comparison per million gallons of CSO reduced

Bremerton achieved a 90% reduction in CSO events by 2000 at a cost of \$18 Million. By 2004 a 97% reduction of CSO events was achieved for an additional \$14.7 Million. The remaining \$19.2 Million was spent to reduce the remaining 3% of CSO events to the regulatory limit and to build in extra system capacity to collect and treat storm events greater than the design storm.

The City expended over \$50 Million dollars to complete the CSO Reduction program from 1990 to 2009. Outside sources of funds were obtained wherever possible, and included the following:

- 12 Public Works Trust Fund Loans totaling \$19,700,000,
- 20 State Revolving Fund Loans totaling \$13,900,000,
- 3 Centennial Grants totaling \$294,000,
- 4 State and Tribal Assistance Grants totaling \$7,200,000.

CMOM PROGRAM

The City of Bremerton is complying with capacity, management, operation, and maintenance (CMOM) requirements for the wastewater collection system. The collection system consists of sanitary sewer laterals, sanitary sewer mains, wastewater pump stations, and the Eastside CSO Treatment Facility.

The City has completed smoke testing in older areas of Bremerton and documented deficiencies on private property and City right-of-way pipelines. Corrective action has included contact with property owners and repair/replacement within the City's area of responsibility.

Sanitary sewer main inspections including smoke testing, hydraulic pressure, and TV camera are regularly completed. Serious deficiencies are corrected as they are found with subsequent actions addressed in the City's Wastewater Comprehensive Plan.

Wastewater pump station improvements have significantly increased the reliability of the conveyance system. Improvements include construction upgrades to existing pump stations, installation of new control systems, dry-pit submersible pumps, emergency power generation systems, and new telemetry hardware and software systems. The City's pumping capacity to the WWTP has increased by 10,000 gpm. The Eastside CSO Treatment Plant (ESTP) activates during high precipitation events. Completed system improvements will help reduce the number of startup events at the ESTP.

ENVVEST AND CSO WATER QUALITY MODELING

The City partnered with the Puget Sound Naval Shipyard and other stakeholders (Suquamish Tribe, Department of Health, Kitsap County Public Works, Kitsap County Health District, EPA, and Department of Ecology) to be part of the Navy's ENVVEST project in Sinclair and Dyes Inlets. Bremerton shared CSO, rainfall, water quality and stream flow data and assisted with the modeling, CSO and stormwater sampling efforts. Following is an excerpt from the Executive Summary of the Technical Master Plan (November 26, 2001) detailing the purpose of the agreement:

"The U.S. Navy Puget Sound Naval Shipyard (PSNS), Region X of the U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology) have entered into an agreement to protect and improve the health of surface waters of Sinclair and Dyes Inlets and surrounding watershed by developing a more environmentally protective strategy for managing pollutant sources in the Inlets than the regulatory framework that is currently in place. This technical work master plan defines the goals, objectives, and technical approach planned for Phase I of the PSNS Project ENVironmental InVESTment (ENVVEST). Based on inputs from regulatory requirements, stakeholder involvement, community concerns, and available resources, the technical work master plan has been developed to meet the project goals and milestones defined by the ENVVEST Project Management Team.

An approach to develop multiparameter and multimedia TMDLs and assess ecological risk at the watershed scale is being conducted to develop and demonstrate alternative strategies for protecting and improving the ecological integrity of Sinclair and Dyes Inlets. The watershed-based assessment is evaluating environmental problems at the proper scale, providing an

integrated framework for cooperative studies with stakeholders and partners, and developing linkages between problems and management options. The studies are providing data to address key issues identified by the working groups, improving the understanding of how the ecosystem functions, and increasing the ability to solve environmental problems. The Technical Working Groups are fostering partnering among stakeholders and establishing the technical and scientific basis to better protect and improve the health of the watershed.”

Project ENVVEST developed a water quality model that defined the impacts of CSOs and other inputs on local water quality in Sinclair and Dyes Inlets. The model shows that potential impact of CSOs to shellfish beds in Dyes Inlet is minimal. **This modeling effort provided the Washington State Department of Health with information needed to reopen several shellfish beds in Dyes Inlet to harvesting in 2003.** The model was calibrated using data collected in the field, which involved a drogue study, current/flow monitoring, general water quality analysis, and a dye release study from the ESTP. The model shows that shellfish beds are not impacted during a CSO event.

COMPLIANCE WITH NINE MINIMUM CONTROLS

Compliance with the Nine Minimum Controls, required by the EPA CSO Policy, is determined by professional judgment of the NPDES control authority, the Department of Ecology. The City’s efforts to comply with these controls are described below.

Proper Operation and Maintenance

The City’s WWTP has a written operations and maintenance manual and a computerized maintenance management program. Adequate funding is budgeted for these activities. An emergency response procedure is in place. The City is in compliance with the CMOM regulations.

Maximization of Collection System Storage

Collection system components are properly operated, maintained, and inspected to ensure adequate capacity and reliability. In 1996, the City started an on-going evaluation and optimization program that started when overflow weirs were raised to increase use of available storage in the collection system. The City inspects and maintains sewer lines to reduce flow obstructions and continually upgrades and optimizes lift stations to improve pumping capacities.

Review of Pretreatment Requirements

Ecology administers the City’s industrial pretreatment program. In 1996, Ecology finalized local limits for metals and coordinated the issuance of a waste discharge permit for the Puget Sound Naval Shipyard. PSNS is currently the only significant discharger identified by Ecology in the City’s system. The City monitors and samples the influent flows from PSNS and in manholes in commercial areas to track non-domestic discharges.

Maximization of Flow to the WWTP

The Bremerton Westside Wastewater Treatment Plant is able to process all of the wastewater it receives. The Westside WWTP received approval from Ecology and has been rerated to a maximum month capacity

of 15.5 MGD during the wet season months (November – April) and 11.0 MGD during the dry season months (May – October). It has been implemented into the new 2018 NPDES Permit. Pump station reliability has been improved with the integration of new control systems, scheduled cleaning and maintenance of the wetwells, and systematic replacement of existing long shaft pump assemblies with close-coupled dry-pit submersibles. The initial replacement effort was on smaller stations, and the City has begun to replace pump assemblies in the larger stations.

Elimination of Dry-Weather CSO Events

Bremerton has no issues with dry weather CSOs. A few CSO locations also serve as emergency overflows for wastewater pump stations.

Floatable Control

No evidence exists to indicate issues with floatables from Bremerton CSO sites. The City has greatly improved catch basin and street cleaning activities over the past several years. All major City streets are swept every 6 to 10 weeks with special attention to commercial areas once each week. All City catch basins are cleaned annually.

Pollution Prevention Programs

The City, in addition to state and other local agencies, uses public education programs and materials to provide customer outreach on pollution prevention. Businesses are contacted through the ongoing cross connection and Stormwater IDDE (Illicit Discharge & Detection & Elimination) programs. Bremerton responds to reports of improper waste disposal into the storm and sanitary sewer systems and coordinates these activities with Ecology. The City has an active grease trap and water conservation program. The above-mentioned catch basin and street cleaning program also reduce contaminants in CSOs and stormwater discharges.

Kitsap County has an effective pollution prevention program through the Solid Waste Division of the County Public Works Department and the Solid Waste Program at the Bremerton-Kitsap County Health District. Most residents and businesses are actively recycling. In 1996 the County opened its Moderate Risk Waste Facility to handle dangerous waste from homes and small generators. Bremerton is an active participant in the “West Sound Stormwater Outreach Group” (WSSOG), since 2001, that provides pollution prevention information through brochures, web page information, and newspaper ads. The purpose of the WSSOG is to work collaboratively to ensure compliance with the stormwater NPDES Phase II permit requirements targeting public outreach and involvement.

The WSSOG surveyed Kitsap Peninsula residents to generate a baseline of awareness and behaviors that will assist with the prioritization of outreach campaigns. The City and County both publicize hotline telephone numbers for public reporting of spills and other illicit discharges.

Bremerton maintains an internet website located at bremertonwa.gov that provides pollution prevention, CSO, and water conservation information to a wide variety of interested cities, organizations and people. In 2015 there were more than 70,000 visits from more than 25 different countries and various agencies.

Public Notification

CSO discharge to marine waters is the main public health concern for shellfish harvesting. To meet the needs of the Washington State Department of Health & Shellfish program, a notification procedure was

implemented in 2003 after several beds in Dyes Inlet were re-opened for harvesting. The Bremerton-Kitsap County Health District also posts these areas when a CSO event occurs. The City's "Cooperative Approach to CSO Reduction" program educates residents through a multi-media approach using brochures and the web site, bremertonwa.gov that explains CSO's with detailed animations.

Monitoring to Characterize CSO Impacts

CSO Water Quality Monitoring began in 1995 and ended in 2010. Samples were collected, analyzed and logged based on the water year, October to September. The City also coordinated monitoring efforts with the Navy ENVVEST project described above.

REFERENCES

1. City of Bremerton CSO Plan, 1992, and Update, 2000
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4. EPA Guidance for Nine Minimum Controls, 1995
5. Washington Department of Ecology Guidance for Chapter 173-245 WAC, 1990
6. Puget Sound Naval Shipyard Project ENVVEST Technical Work Master Plan, May 2002
7. NOAA Atlas 2, Precipitation, Western United States, Volume IX, Washington
8. City of Bremerton Wastewater Comprehensive Plan Update, 2014

Date