ASTORIA COMBINED SEWER OVERFLOW INTEGRATED PLAN

City of Astoria, Oregon

Public Works Department

Adopted October 6, 2025

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RESOLUTION NO. 25 - 34

A RESOLUTION OF THE CITY OF ASTORIA ADOPTING THE ASTORIA COMBINED SEWER OVERFLOW INTEGRATED PLAN

BE IT RESOLVED:

WHEREAS, the City of Astoria (City) has prepared an Integrated Plan (Plan) to provide a comprehensive strategy for the purpose of extending the implementation schedule for the City Combined Sewer Overflow (CSO) Program, meeting regulatory obligations, prioritizing capital improvements, and protecting community health and the environment; and

WHEREAS, on January 7, 1993, the City entered into a Stipulation and Final Order (SFO) WQMW-NWR-92-247, which was replaced on November 23, 2010, with an Amended Stipulation and Final Order (ASFO); and

WHEREAS, on January 13, 1993, Department of Environmental Quality (DEQ) issued a National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit Number 101028 (Permit) to the City, pursuant to Oregon Revised Statute (ORS) 468B.050 and the Federal Water Pollution Control Act Amendments of 1972, P.L.92-500 as amended.

WHEREAS, the purpose of the order was to establish a timeline in which a number of CSO outfalls would be controlled in phases by certain dates; and

WHEREAS, over the past 32 years, the City has implemented four of five phases of our CSO Program as outlined in our CSO Facilities Plan and Plan Updates significantly reducing our overflows in an amount estimated to be 85-90 percent by volume; and

WHEREAS, the first four phases of construction have resulted in the construction of significant stormwater infrastructure, including two large CSO detention facilities and many miles of new dedicated stormwater piping and appurtenances; and

WHEREAS, the financial burden of implementing the SFO/ASFO requirements is excessive, and existing requirements along with our high level of deferred maintenance and age of infrastructure have been shown to be a substantial burden on Astoria ratepayers; and

WHEREAS, Astoria is a financially disadvantaged community (Justice 40) with a limited ratepayer base to distribute the high cost of the CSO Program; and

WHEREAS, implementation of the Plan will extend the current Phase 5 completion date from 2028 to 2044; and

WHEREAS, implementation of the Plan will reduce the CSO surcharge rate burden as past loans are paid off and no new debt is incurred, allowing a reduction in the CSO surcharge and the development of a stormwater rate to fund the operation, maintenance and replacement of the City stormwater infrastructure; and

WHEREAS, an unfunded Stormwater Division within the Public Works Department was established in 2012 using existing sewer rates; and

WHEREAS, implementation of the Plan will allow the City to complete current infrastructure projects and allow time to develop the scope of Phase 5 of our CSO Program in a manner that will meet our CSO reduction goals and reduce landslide susceptibility in the project area. The current concept is a large-scale stormwater collection and conveyance project in the Uppertown area (Irving Avenue between 23rd & 38th Streets) that would meet CSO removal objectives while providing landslide hazard reduction thereby potentially qualifying for FEMA grant funding,

NOW, THEREFORE, IT BE RESOLVED by the Council of the City of Astoria:

1. That the Council hereby expresses support for the new Integrated Planning process that is intended to bring a balanced approach to infrastructure investments in Astoria so that the City can achieve long-term implementation of our CSO Program meeting regulatory obligations in a cost-effective manner while also reducing the financial burden on the ratepayers.

2. That the Council hereby expresses support for the recommendations of the Plan and the appropriate ASFO modifications required to implement the Plan. At this time, it is understood that the ASFO may be terminated and all of its terms incorporated into the City's NPDES Permit renewal.

3. That Council recognizes the financial hardship that the implementation of the CSO Program has had to date on other public works programs, particularly the replacement of critical infrastructure, but also including staffing levels, equipment procurement and level of service of our maintenance programs.

4. That Council recognizes that the Plan includes a Phase 5 project concept to scope a win-win project for the Uppertown area that would meet the objective of the CSO mandate while also qualifying as a Pre-Disaster Landslide Mitigation Project, and potentially qualifying for FEMA grant funding, thereby reducing the future financial burden on the City ratepayers. And that Council hereby expresses support to implement this goal.

5. The City will make a final copy of the Astoria Combined Sewer Overflow Integrated Plan available to the public on the City website and provide a copy to the DEQ for their records.

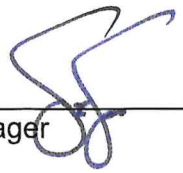
EFFECTIVE DATE: The Resolution shall be in force and effective immediately upon its adoption by the City Council.

ADOPTED BY THE CITY COUNCIL THIS 6 DAY OF October, 2025.

APPROVED BY THE MAYOR THIS 6 DAY OF October, 2025.

Mayor

ATTEST:



City Manager

ROLL CALL ON ADOPTION		YEA	NAY	ABSENT
Councilor	Davis	X		
	Mazzarella	X		
	Adams	X		
	Lump	X		
	Mayor Fitzpatrick	X		

Astoria Combined Sewer Overflow Integrated Plan

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Executive Summary

The City of Astoria has prepared this plan to help guide our approach to managing our complex dilemma of funding priorities that come from both regulatory requirements and over a century of deferred infrastructure replacement. Our objective, as a small city in a natural resource-based community that depends on these resources, is to protect human health and the environment. These objectives match that of the EPA and Clean Water Act. We appreciate the holistic approach of the Integrated Plan concept to help inform our competing infrastructure priorities.

Astoria faces some unique challenges such as our high rainfall, which is currently documented at 70 inches per year on average, with a wettest average of 114 inches and driest average of 42 inches. Another unique challenge is our geologic setting where over 50 percent of our built environment and infrastructure is located in geologic hazard areas where earth movement and landslides occur frequently. Our most crippling challenge is our economic situation due to overwhelming deferred maintenance, unfunded mandates associated with increased Federal and State regulations and our lack of growth having remained at a population near 10,000 for the past 100 years. Astoria is the oldest settlement west of the Rockies and is an economically disadvantaged community. Astoria is in what can legitimately be referred to as an "infrastructure funding crisis" with a reactive vs. proactive approach to managing infrastructure replacement and repair.

The EPA Federal Register Combined Sewer Overflow (CSO) Control Policy, Part VII, dated April 19, 1994, identifies Small System Considerations stating that the policy may be difficult for some small systems (populations under 75,000) to comply with the program, recognizing that financial considerations are a major factor affecting the implementation of CSO controls. For that reason, the policy allows consideration of a permittee's financial capacity in connection with the long-term CSO control planning effort, water quality standards (WQS) review, and recognition of enforceable schedules. The City of Astoria is in exactly the situation that this language was referring to. The policy also refers to characterizing the CSO events through monitoring and modeling, which Astoria has, and the impact to receiving waters and their intended uses. As described later in this document, Astoria discharges into receiving waters at the end of the system where impacts from many larger cities have already taken place and into an environment that is not conducive to public uses such as swimming.

Our strategies to meet the challenges are as follows:

- Complete the construction of our Wastewater Treatment Plant (WWTP) Improvement Project that is projected to meet our wastewater treatment needs for at least the next 20 years.
- Make wise choices regarding the new debt that we must incur to remain compliant with regulatory requirements. Currently, we are facing an approximate $5 million cost overrun on our WWTP Project due to inflation. In addition, we are applying for an approximately

$4 million loan, of which 50% is forgivable, to rehabilitate three critical sewer lift stations essential to our collection system.

- Pay down our CSO debt to allow us to take on new debt without substantially raising our CSO surcharge. Our goal is to keep the CSO surcharge rate under 100 percent of our sewer charge. It is currently at 97 percent. This priority would be assisted by extending our next CSO project due date in our compliance schedule.
- Continue to seek grant funding to complete the most urgent infrastructure projects, hopefully reducing our maintenance financial burden.
- Continue to accumulate public works reserve funds to avoid the need for adding future debt service and to help leverage grant funds by having match funding available when needed.
- Continue using cost-effective stormwater quality management strategies such as street sweeping, hoping for legislative actions that reduce or eliminate the sources of pollutants where treatment options are cost-prohibitive.
- Develop an innovative plan to combine a CSO goal with a landslide mitigation goal by creating project and funding solutions, such as a landslide stormwater mitigation project that also meets the goals of our CSO reduction program in the Uppertown portion of our CSO Program Phase 5 area.

As long as the City of Astoria Public Works Enterprise Fund is impacted by the CSO debt service and the remaining program costs, we will not have the financial capacity to 1) implement a Capital Improvement Plan, 2) have an adequate reserve fund, or 3) develop a realistic path toward infrastructure and financial sustainability.

CSO Program Phase 5 Benchmarks

Benchmark	Tentative Schedule
Gather monitoring data, historic documentation, and potential project site investigation	2025-2026
Develop scope of Uppertown CSO Project	2027-2028
Determine Funding Strategy *Option A* – Utilize FEMA Hazard Mitigation grant funds (75%) with a loan for City required 25% match repaid by CSO surcharge rate. *Option B* – Loan for full project repaid with CSO surcharge rate.	2027-2029
Develop Project Design for Uppertown CSO Project	2030-2032
Bid & Construct Uppertown CSO Project	2033-2036
Take on new debt service ($20 million +/-) after 4 existing loans are paid off in 2032	2034
Monitor effectiveness of Uppertown CSO Project and determine if Portway and/or Columbia Avenue Projects are necessary	2037-2039
Complete additional separation and/or storage projects as necessary	2039-2044

The Plan Elements

Following the EPA's integrated planning framework, the City of Astoria's Integrated Plan includes six major elements: a discussion of regulatory requirements; a description of the existing system; a public involvement process; a selection of projects with implementation plans; a way to measure success; and a way to adapt the plan for the future. Below is a summary of each of these elements.

ELEMENT #1: Regulatory Requirements

This Integrated Plan allows the City of Astoria to meet its regulatory requirements related to the protection of the waterways surrounding the City, including the Columbia River and Young's Bay. The City is subject to regulation under the Clean Water Act, including a National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit #102397 and an Amended Stipulation and Final Order (ASFO) WQMW-NWR-92-247. The City is expected to meet the NPDES Permit requirements for at least the next 20 years through the construction of Wastewater Treatment Plant (WWTP) upgrades currently under construction and ASFO requirements through the continuation of the City's CSO Program. The implementation of the city's proposed benchmarks will improve water quality, human health and meet the city's regulatory requirements.

The focus of this plan is the financial capacity of the City to fund the last phase of our CSO program while continuing to meet the essential functions of the Public Works Department. The funding of the CSO projects to date and the CSO surcharge that is added to our utility billing have suppressed the water and sewer rate increases of the City, negatively impacting our ability to properly fund our infrastructure, compounding the already deferred maintenance of our infrastructure. The expenditure of approximately $32 million on our CSO program to date has removed an estimated 90 percent of our overflow by volume. The removal of the remaining estimated 4 percent CSO volume is estimated to cost in excess of $20 million, placing a severe burden on our department's limited funding.

This plan will free up funds for the Wastewater Treatment Plant Improvements Project, helping the City meet its NPDES Permit limits at the treatment plant's discharge outfall. Our first CSO program loan, taken out in 2006, will be fully paid off in June 2026, reducing annual loan payments by $251,013. This payoff will allow the City to assume new debt, a $4,959,232 loan for the WWTP project, while requiring a smaller sewer rate increase than originally anticipated. This is the first example of how implementing the Integrated Plan will create capacity to address critical infrastructure needs, particularly those tied to permit compliance.

The second project that will benefit from the Integrated Plan implementation is our critical Sanitary Sewer Lift Stations Rehabilitation Project. This system is the backbone of our sewer collection system and has been in service for over 50 years. The new debt for this project is estimated at $1,542,054.

ELEMENT #2: Existing System

The City of Astoria wastewater system consists of a vast network of pipes and appurtenances of varying size, material type and age. The City operates and maintains a total of 72 miles of sanitary sewer lines. The system includes manholes, lift/pump stations, an interceptor system and pipe outfalls terminating in a lagoon wastewater treatment facility before being treated and discharged into the Columbia River. The entire system is generally in poor condition due to its age.

With this plan, the City will be able to address a long-standing infrastructure maintenance backlog that has accumulated as a result of funding our CSO program over the past 20+ years. The first 4 phases of CSO control projects have created a debt service that limits our ability to fund much-needed infrastructure.

The first four phases of the CSO control program included a combination of separation and storage projects. All outfalls addressed in these phases have been successfully controlled, as verified through CSO monitoring. While exact pre-control volumes and frequencies are not available, we estimate that 85–90 percent of CSO volume has been removed. Upon completion of Phase 5, we estimate achieving approximately 96 percent removal by volume.

ELEMENT #3: Public Involvement Process

In general, the City uses our City website and Facebook page to communicate with the public. Educational materials are shared periodically and a more comprehensive effort is made annually during National Public Works Week. Staff frequently presents projects to City Council for approval with in-depth presentations and project details. It is typical for council meetings to be covered by the local newspaper, The Astorian, with follow-up interviews with staff prior to publication.

The plan was presented to City Council during a work session on January 27, 2025, where it was well received. After the plan is adopted, then it will be shared with the public through the City's website and Facebook page. The existing CSO Fact Sheet, which is provided to residents when they set up a new utility service account, will be updated to include a summary of the Integrated Plan and a link to its location on the City's website. In addition, the updated Fact Sheet may be distributed annually as part of the City's National Public Works Week outreach on Facebook.

ELEMENT #4: Selecting Projects & Plans for Implementation

With a Capital Improvement Plan (CIP) with approximately $180 million in unfunded projects, the current CSO implementation schedule places a significant hardship on the City. Our implementation plan is as follows:

1) Focus on completing recent projects:
    a. Wastewater Treatment Plant Improvements ($10 million) – This project includes the upgrades to our WWTP identified in our Wastewater Facilities Plan prepared in 2010, which considered alternatives for improvements needed to meet future needs and compliance requirements. Public Works Operations will then need to evaluate the staffing needs of the new infrastructure.
    b. FEMA Pre-Disaster Landslide Storm Drainage Project ($1 million) – Five site options were evaluated, scoped, and cost-estimated in the city's most slide-prone areas on the north slope. Of these, two of the most critical sites were selected for the project.
    c. CSO Monitoring Equipment Upgrades ($400,000) – This project involves the long-overdue replacement of the City's CSO monitors. The replacement process will include issuing a Request for Proposals to multiple manufacturers and conducting a careful evaluation of available alternatives and appropriate installation timeline.
2) Focus on new grant opportunities with low or no match since we are limited in our match funding capacity. The following are projects identified for immediate grant/loan efforts:
    a. Sewer Lift Stations Rehabilitation Project ($4 million) - This project is planned to be funded through a DEQ loan with a 50% forgivable component. Alternatives were evaluated; however, because this is a rehabilitation project, replacement in kind of the existing screw pump system was determined to be the most feasible option.
    b. Sewer Collection System Assessment & Master Plan ($2 million) - This plan will consider multiple alternatives to address deficiencies in the City's aging collection system, which is primarily composed of clay pipe that continues to fail on an ongoing basis.
    c. West Craig Creek Stormwater Project ($1 million) - This project includes replacing a 24-inch polyethylene storm pipe originally constructed through the old landfill. The pipe has experienced damage due to settlement of underlying garbage layers. One alternative under consideration, and previously examined, is daylighting the pipeline to the west of its current alignment.
    d. CSO Phase 5 Projects ($18+ million) - As this project is developed, alternatives will be analyzed in detail to maximize effectiveness in meeting CSO reduction goals while also reducing landslide susceptibility in the area known as Uppertown. This historic neighborhood has experienced multiple large landslides and ongoing ground settlement that have plagued water, sewer, storm drainage, and roadways. A project that collects and conveys stormwater directly to the Columbia River, removing it from the sanitary sewer system, will provide significant long-term benefits.
3) Develop a strategy for a win-win project concept for Phase 5 (see 6.4.3 below) of our CSO program that meets our CSO reduction objective and meets the natural hazard (landslide) pre-mitigation need for the landslide-prone Uppertown area of Astoria.

All of the projects listed above are priorities in the City's CIP. While priorities may shift over time, each project is critical to the operation of the storm and sanitary sewer systems and must be completed within a timeframe that supports both operations and regulatory requirements. Collectively, these projects are expected to improve environmental outcomes by reducing the risk of sanitary sewer overflows and combined sewer overflows. In addition, dewatering perforated pipes have been incorporated into the base of CSO project trenches to help mitigate landslide-prone areas.

ELEMENT #5: Measuring Success

The City is committed to measuring the success of this plan. The City has been monitoring our CSO frequency and volume and maintaining/replacing our monitor probes since they were originally installed. We have had HDR Engineering, Inc. under contract to analyze the data, prepare monthly monitoring reports, and model our CSO program since July 2012. They continue to model and help City staff plan for the final phase of the CSO Program. This effort will help ensure that we meet our goals and design the final phase (Phase 5) in the most effective way.

The most critical element in measuring CSO reduction success is our monitoring program. This work has been challenging due to the harsh conditions where the sensors are located. Changes in technology, particularly cellular networks that improved performance through faster data transmission, have required equipment replacement, and battery life limitations continue to present difficulties. The future success of the monitoring program will rely on the use of high-quality equipment, and the City is preparing to move forward with replacing the current, obsolete system.

ELEMENT #6: Adapting for the Future

This Integrated Plan allows the City to adapt to changing conditions. Primarily, it allows the City time to reduce CSO debt before taking on new debt, and it provides the opportunity to find much needed grant funding allowing us to leverage funds to reduce our future debt burden. With reduced debt, we will be able to head towards a financially sustainable future instead of financial hardship. Unlike many other cities that are experiencing growth, we have limited growth potential due to lack of developable land, reducing our need to plan for increased CSO volumes. However, we will have to monitor for potential increased stormwater runoff due to climate change.

In reviewing other integrated plans in larger cities throughout the country, it appears that additional CSO control measures are tied to growth and expansion of the built environment that can potentially create more overflow potential. In the case of Astoria, growth is limited due to limited available land. The more likely scenario for Astoria to meet future housing goals is in-fill redevelopment, which provides an opportunity for separating storm from sewer during the redevelopment process. Most in-fill redevelopment also involves the re-use of impervious surfaces such as parking lots and roofs that can be directed to the stormwater system if currently

connected to sanitary sewer. If there is no stormwater system at the redevelopment site, then we could consider using system development funds to extend the stormwater system if feasible.

Based on the determination above, we do not anticipate any major CSO projects after Phase 5 is complete. The one exception would be the trend of state housing legislation that may override our current zoning. An example would be legislation requiring open space of forestry zones to be converted to residential. This scenario would require a reexamination of our CSO program based on the impact of the change.

1. | Introduction

The City of Astoria is located in the northwest corner of the state of Oregon on the south shore and at the mouth of the Columbia River. Astoria was founded in 1811 and incorporated as a city in 1856. The City is approximately 10 square miles in size with a population of 10,141. Astoria's population has hovered around 10,000 for over 100 years. Like many other older cities in the country, Astoria faces many complex infrastructure challenges. Aging infrastructure is failing, and our deferred maintenance liability is consistently growing. Astoria is plagued with land movement and other natural disasters caused by landslide terrain and large Pacific storms with high rainfall. Changing precipitation patterns and land-use pressures further exacerbate existing infrastructure challenges.

Where many cities have raw sewage discharged onto public waters during overflows, Astoria has a very low concentration of sewage compared to stormwater (about 95 percent stormwater) when overflows occur. Overflows are also rare during dry weather when our public waters are being used and primarily occur during wet weather flow when our public waters are not used for fishing or swimming.

2. | City Objectives

2.1 Protect Columbia River and Young's Bay

The Columbia River and Young's Bay are the two water bodies that surround the City of Astoria. Both water bodies receive stormwater from outfalls around the City, and the City's wastewater treatment plant discharges to the Columbia River. Being located near the mouth of the Columbia River means that the water quality of the river is the result of runoff from many other sources, including the larger cities of Longview, Portland and Vancouver, along with vast agricultural runoff sources. The City limits front the Columbia River for approximately 4.7 miles and Young's Bay for approximately 2.7 miles. It is in the best interest and therefore is a priority for the City to protect both water bodies from unnecessary pollutants as a part of our operations. The City has developed a set of environmental goals outlined in Section 3.4 below to guide our operations toward a healthier environment.

2.2 Manage CSO Debt Service and Future Debt Service

The City of Astoria has been burdened with an unfunded mandate to control our sewer overflows under an Amended Stipulation and Final Order (ASFO) with the schedule as outlined in the CSO Schedule below under Section 3.2. We have accumulated a CSO debt service to date that is paid through a utility bill surcharge. The surcharge is currently set at 97 percent of a ratepayer's sewer bill. With an average monthly water bill of $56, a sewer bill of $56 and a corresponding CSO surcharge of $54, an average customer pays a monthly utility bill of $166.00.

This has suppressed our ability to raise water and sewer rates to cover our much-needed infrastructure maintenance and replacement costs. With only $32 million of the CSO program completed and approximately $18 million remaining, we would need to take on more debt to move on to Phase 5, taking out new loans before our existing loans are paid off. Even as our original loans are paid off, they will not offer much relief since they are relatively small. Implementing the remaining program will require a CSO surcharge on the order of 110 percent, further impacting our ability to raise water and sewer rates to where they need to be. In addition to the debt service for the CSO program, the City is also carrying debt service (20-year term) for other infrastructure projects, such as our mandated reservoir covers installed approximately 13 years ago.

With our current debt service, we are very limited in our ability to take on more debt without impacting our operating funds. Therefore, our strategy is to avoid taking out new loans unless absolutely necessary. Extending our schedule for Phase 5 will give us the opportunity to reduce our debt before taking on more debt and also allow us to find grant funding assistance.

2.3 Balance Infrastructure Priorities While Meeting Regulatory Requirements

The City currently has a higher-than-average level of deferred maintenance due to the age of our infrastructure and the impacts of our steep landslide-prone topography. The landslide hazard for Astoria poses the biggest natural hazard risk to the community. Over half of the community is within areas deemed either high or very high susceptibility to landslide hazard according to the 2021 Multijurisdictional Hazard Mitigation Plan. Since over half of our infrastructure is located within landslide-prone areas, much of our maintenance effort goes into infrastructure repairs caused not only by aged pipe but aged pipe subject to land movement and abnormal earth pressures due to multidirectional slide blocks within complex landslide masses.

Our infrastructure priorities are in direct conflict with priorities established by regulatory requirements. While we must maintain an aging, deferred system, we also need to comply with regulations such as the CSO program, finished drinking water reservoir covers, landfill closure, and seismic studies of our high-hazard dams.

3. | Current Activities Protecting Public Health and Enhancing Watershed Health

3.1 Description of Collection System

The City of Astoria wastewater collection system consists of a vast network of pipes and appurtenances of varying size, material type and age. The City operates and maintains a total of 72 miles of sewer lines. The collection system originally discharged directly into the river and bay

until 1974 when the interceptor system and WWTP were constructed. The existing system includes manholes, pump stations, lift stations, an interceptor system and pipe outfalls terminating in a lagoon wastewater treatment facility before being treated and discharged into the Columbia River. The entire system is generally in poor condition due to its age. Operation and maintenance of this system is funded through sewer rates.

The City also receives wastewater from the Miles Crossing Sanitary Sewer District. The discharge from the Miles Crossing Sanitary Sewer District is designed to stop pumping and store their wastewater in a tank during potential City CSO events in an effort to eliminate the possibility of their discharge overflowing into Young's Bay.

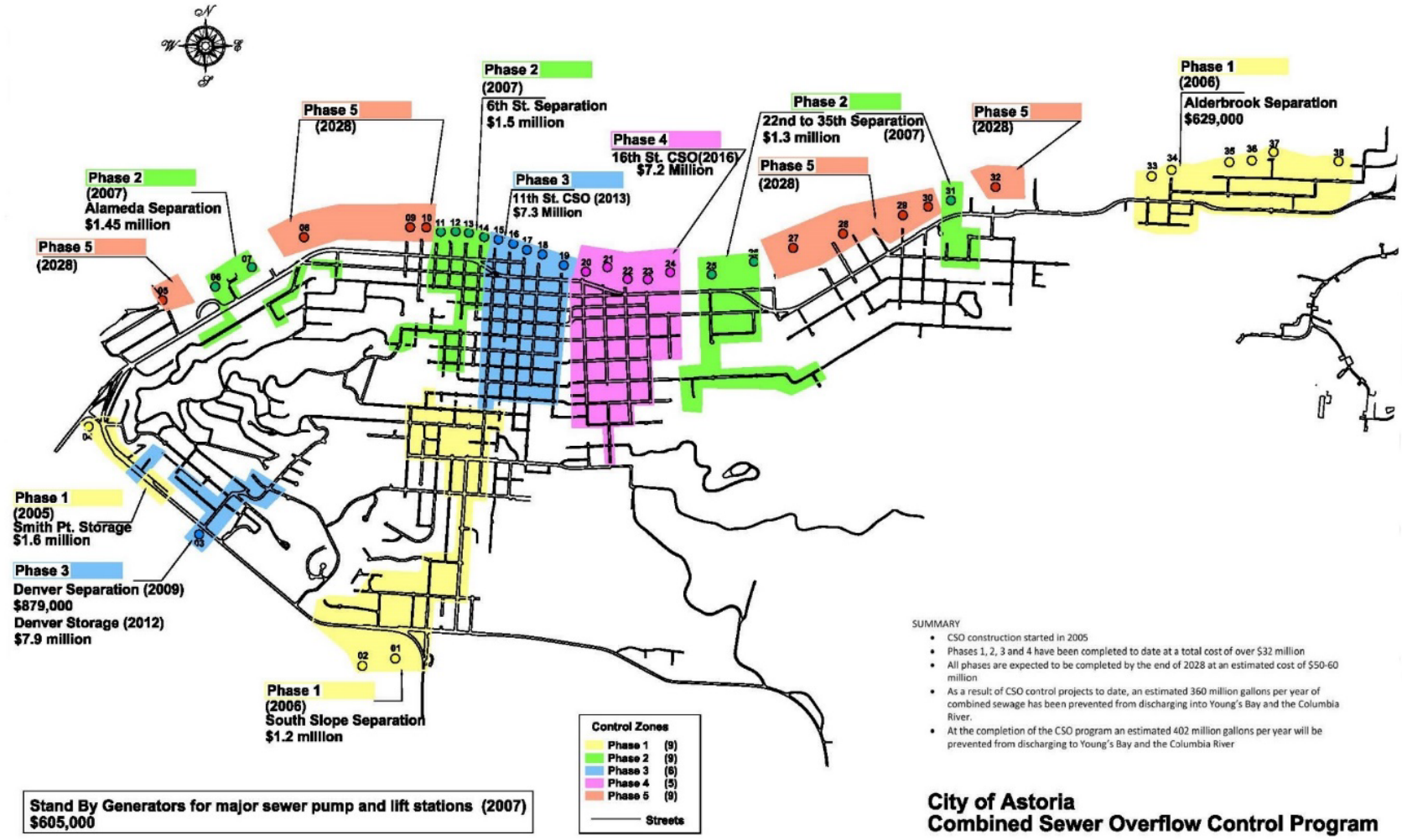
3.2 CSO Program

The City of Astoria CSO program has been estimated to ultimately cost $50-60 million and started with a CSO Facilities Plan completed in 1998 with the first construction project beginning in 2004. Four of the five phases of the CSO Program are complete. The current mandated CSO Program compliance date is in 2028. To date, approximately $32 million has been spent on the CSO Program with an anticipated $18+ million remaining; the last 3 large capital projects are not yet scheduled (shown under section 6.3 in CSO Program Final Outfalls – Phase 5 graphic). Our current debt service is approximately $18 million and our CSO surcharge rate is currently 97 percent of a customer's sewer bill.

CSO Program Milestones
1972 – Clean Water Act
1975 – Built sewer system interceptor, diversion structures and wastewater treatment plant
1993 – DEQ Stipulation and Final Order to reduce CSOs
1998 – CSO Facility Plan completed
2006 – Phase 1 CSO construction projects completed (3 projects)
2007 – Phase 2 CSO construction projects completed (3 projects)
2013 – Phase 3 CSO construction projects completed (3 projects)
2015 – Stipulation and Final Order was amended
2016 – Phase 4 CSO construction project completed (1 project)
TBD – Estimated 3-4 major projects remaining to control 9 outfalls
2028 – Current mandated deadline for CSO control

Astoria CSO Schedule

Completed	Phase	Current Timeline Completion Deadline	Requested Completion Deadline	Number of Outfalls Controlled
✓	1	Dec 1, 2006	Dec 1, 2006	9
✓	2	Dec 1, 2007	Dec 1, 2007	9
✓	3	Dec 1, 2013	Dec 1, 2013	6
✓	4	Dec 1, 2016	Dec 1, 2016	5
	5	Dec 1, 2028	Dec 1, 2044	9
		TOTAL		38


Phase 1
(2006)
Alderbrook Separation
$629,000
Phase 2
(2007)
6th St. Separation
$1.5 million
Phase 5
(2028)
Phase 4
16th St. CSO(2016)
$7.2 Million
Phase 3
11th St. CSO (2013)
$7.3 Million
Phase 2
22nd to 35th Separation
$1.3 million
(2007)
Phase 5
(2028)
Phase 5
(2028)
Phase 2
(2007)
Alameda Separation
$1.45 million
Phase 5
(2028)
Phase 1
(2005)
Smith Pt. Storage
$1.6 million
Phase 3
Denver Separation (2009)
$879,000
Denver Storage (2012)
$7.9 million
Phase 1
(2006)
South Slope Separation
$1.2 million
Control Zones
Phase 1 (9)
Phase 2 (9)
Phase 3 (6)
Phase 4 (5)
Phase 5 (9)
Streets
SUMMARY
CSO construction started in 2005
Phases 1, 2, 3 and 4 have been completed to date at a total cost of over $32 million
All phases are expected to be completed by the end of 2028 at an estimated cost of $50-60 million
As a result of CSO control projects to date, an estimated 360 million gallons per year of combined sewage has been prevented from discharging into Young's Bay and the Columbia River.
At the completion of the CSO program an estimated 402 million gallons per year will be prevented from discharging to Young's Bay and the Columbia River
Stand By Generators for major sewer pump and lift stations (2007)
$605,000
City of Astoria
Combined Sewer Overflow Control Program

3.3 Wastewater Treatment Plant (WWTP) Headworks Improvement Project

The WWTP Headworks Improvement Project includes new flow measurement, screening, influent grit removal, pond baffles, and removal of existing accumulated solids. A concept plan was finalized in 2012, then updated in 2019 for this project and it has Oregon Department of Environmental Quality (DEQ) support. The construction contract was recently awarded to Big River Construction with the majority of construction activity anticipated in summer 2025 after receiving long-lead time materials. Construction must be completed by the end of 2026 to comply with funding requirements. The City received a grant from the American Rescue Plan Act (ARPA) in the amount of $4,860,000 to fully fund this project. Then, due to recent construction cost escalation, the City has had to secure additional funding in the form of $425,000 grant funds and $4,524,232 loan, bringing the total project cost to $9,809,232.

3.4 Public Works Established Environmental Goals

The following environmental goals are identified in the Astoria Public Works Strategic Management Plan:

- Protect the City watershed and City drinking water supply
- Minimize the use of chemicals in all City systems
- Minimize the use of power to run City infrastructure
- Maximize the prevention of contaminated stormwater from entering the natural environment
- Optimize the treatment of wastewater before discharge to the river
- Minimize the transfer of elicit waste into the City sewer system
- Minimize the impact on non-invasive vegetation while carrying out City operations and remove invasive species when possible
- Monitor for the impacts of climate change and adjust our operations accordingly
- Promote the reduced use of petroleum-based products and promote the use of bio-based products

3.5 Industrial Waste Management through Industrial Pre-Treatment Program

The City has recently completed the development of an Industrial Pre-treatment ordinance and all breweries are now under permit, including the two largest producers, Fort George Brewery and Buoy Beer Co. The implementation of this program was an unexpected challenge for staff and the fermentation beverage industry, but was necessary due to the high levels of biochemical oxygen demand (BOD) generated as a result of the growth of the fermentation beverage cluster industry in Astoria. Through a collaborative approach, the BOD levels at our WWTP have been reduced and all threats of permit exceedances from industrial BOD have been eliminated. The larger breweries have recently implemented on-site BioGill treatment systems that will further help reduce BOD to the WWTP. When funding allows, the City plans to hire an environmental specialist to monitor the industrial permits.

3.6 Acceptance of Miles Crossing Sanitary Sewer District Sewage

On June 30, 2004, the City of Astoria entered into an intergovernmental agreement to accept and treat sewage collected within the Miles Crossing Sanitary Sewer District, which will terminate on June 30, 2044. The agreement stipulates that future rate adjustments shall not reflect any charges or surcharges related to the City's combined sewer overflow reduction program. Annual rate increases will align with in-city rate adjustments as per the latest City Sewer Resolution. The sewage volume from the District accounts for approximately 1-2 percent of the total volume treated at our WWTP. The District plans to build out to 1,000 Equivalent Dwelling Units (EDUs) and handle up to 300,000 gallons of sewage per day, with 409 service connections currently in place. To our knowledge, accommodating the Miles Crossing Sanitary Sewer District does not impose any financial burden on the City. According to the agreement, the District is responsible for a proportional share of the costs associated with WWTP improvements. Initially, the City did not anticipate a need for cost sharing, as the project was expected to be fully grant-funded. However, due to the volatility in the current construction and bidding climate, bids have come in significantly higher than expected, nearly doubling project costs. As a result, the City may need to explore cost-sharing options to manage debt service repayments.

Astoria Wastewater Treatment Plant

3.7 Stormwater Management Practices

The City currently has a grading and erosion control permitting process that includes permitting, inspection and monitoring of grading activities from both construction and smaller residential activities. The review of grading for all projects is subject to geologic review in landslide areas.

In anticipation of potential stormwater quality permitting through the EPA's Municipal Separate Storm Sewer Systems (MS4) Program, our staff has been voluntarily conducting first-flush water quality sampling. The results, along with the levels of heavy metals found during our landfill site assessment, suggest that our street sweeping efforts, combined with a lower level of point source pollutants, result in minimal heavy metals entering our waterways compared to larger cities upriver. It is our hope that future state and federal legislative policies will reduce the source metals (especially lead, zinc, and copper) that contribute to contamination levels in the City of Astoria. Our current lack of resources limits our ability to develop a more formal testing protocol at this time.

Some more popular stormwater treatment techniques, such as on-site infiltration, are not appropriate for Astoria due to our landslide risks. While on-site treatment facilities can be designed to be impervious, infiltration into the ground and the corresponding added landslide risk has led us to a decision to discourage on-site infiltration treatment facilities. We currently require stormwater treatment for new commercial and industrial developments.

3.8 Landfill Closure Monitoring

The City-owned Astoria Landfill opened in 1965 and ceased operation in 1985 when a transfer station was constructed to replace it. The site accepted general household waste and select commercial and industrial wastes. The primary sources of the site's industrial waste were from fish and seafood processing plants, and the Crown-Zellerbach paper pulp mill located in Wauna. Currently, the transfer station is privately operated through a franchise agreement with the City on property leased from the City.

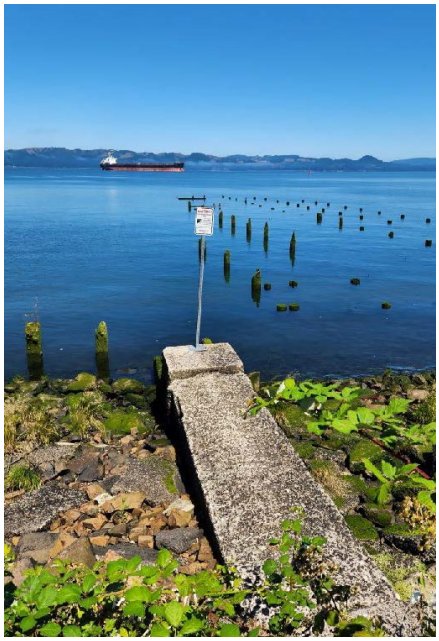
The City developed a Landfill Closure Plan and the landfill went through the formal closure process in 2014, which included a landfill liner, a gas management system, a gas alarm system and a leachate monitoring system. The landfill cap is covered with a 160,000 square foot, all-weather multi-use sports complex operated by the Astoria School District. Monitoring is reported to DEQ annually by a consultant on behalf of the City and the Astoria School District. The design and implementation of this closure incorporated protective measures to minimize the potential impacts to the adjacent wetland property below the landfill and the portion of Young's Bay downstream from the wetland property. All property has been kept in City ownership to provide future City control and protection.

The closure process places a minimal financial burden on the City, as it utilizes revenue generated from franchise fees for the local garbage collection and recycling provider.

4. | Effectiveness of Actions in Meeting Objectives

4.1 CSO Overflow Reduction to Date

It is estimated that our CSO projects to date, which include multiple projects as part of the first 4 phases of our 5-phase program, have removed approximately 85-90 percent of the overflow volume. This equates to an estimated 300+ million gallons of combined sewer annually. Our program is estimated at approximately $50-60 million, of which we have completed approximately $32 million in both separation and storage projects. Our target is 94 percent CSO reduction. One benefit of our lack of growth and very limited available buildable lands is the lack of additional flows due to additional impervious area. The lack of increased flow should allow us to meet our objective and not need to accommodate additional future flows. If the planned reduction in overflows is not achieved through the currently planned program, flow can be further reduced by implementing residential and commercial on-site stormwater separation.



Combined Sewer Overflow Outfall, Columbia River

4.2 Stormwater to Wastewater Ratio in CSO

Based on our dry weather flows of approximately 1 million gallons per day (MGD) and wet weather flows of up to 18 MGD, we estimate that during an overflow, our discharge is roughly 95 percent stormwater and 5 percent wastewater. In addition, our wastewater is high in groundwater volume, further supporting the concept that our overflows are diluted. We have rarely received any complaints of visible sewage and visual inspection of the outfalls shows no evidence of solids. All CSO outfalls have warning signage.

4.3 Grant Funding

The City has aggressively sought grant funding and has been relatively successful. Recent ARPA funding has allowed our approximately $9 million WWTP Improvements Project to move ahead by reducing the need to incur debt and reducing rate increases to cover the debt service. The City has also received approximately $7 million for three water line replacement projects identified in our Water System Master Plan (2021). The plan identifies approximately $80 million in needed improvements to our water system. Our current CSO funding to date was primarily loans with some small grant funding (see table below under Section 5.1). It is our hope that grant funds will become available to assist with the remainder of the CSO program to reduce our future debt service and corresponding CSO surcharge.

5. | Challenges the City Faces

5.1 Economic Hardship Caused by CSO Program to Date

The CSO program was an unfunded mandate that caused a financial burden on the utility ratepayers in a City that was already plagued with an extreme infrastructure maintenance and replacement backlog. Waterlines from the 1895 era are still in service throughout parts of the City. Water system reservoirs and building facilities are from the same era and our sewer works, including the wastewater treatment plant, sewage lift stations and our interceptor system, were built in 1974. Additionally, all facilities lack seismic hardening and retrofit.

CSO Program Costs to Date

Funding Source	Loan Amount	Grant Amount	Interest Rate	Pay-off Year
DEQ CWSRF Loan (11790)	$3,640,000		3.14%	2026
DEQ CWSRF Loan (11791)	$2,700,000		3.06%	2027
DEQ CWSRF Loan (11792)	$4,300,000		2.85%	2028
DEQ CWSRF Loan (11793)	$3,375,436		2.95%	2031
ARRA Loan (R06117)	$2,000,000		0.00%	2031
ARRA Principle-forgiven Loan (Grant)		$2,000,000		
IFA Loan (Y12004)	$6,745,532		1.94%	2038
IFA Grant (Y12004)		$500,000		
ODOT Quick Fix Grant		$100,000		
IFA Loan (Y14006)	$6,562,236		2.09%	2042
IFA Grant (Y14006)		$525,000		
TOTAL	**$29,323,204**	**$3,125,000**		

In addition to a financial hardship on ratepayers living in a disadvantaged economy, the CSO surcharge has limited the ability to increase water and sewer rates, resulting in the following negative impacts:

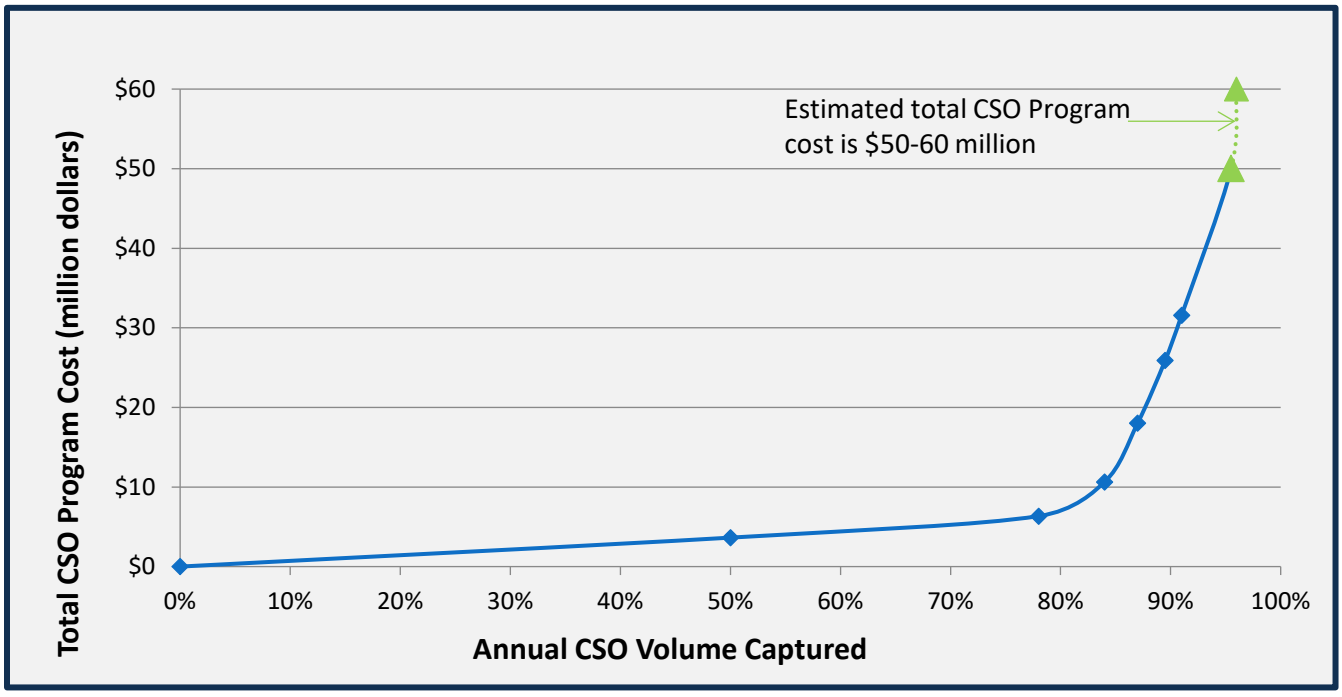
1) Lack of funding to adequately replace aging infrastructure.
2) Insufficient funds to rebuild infrastructure in a resilient manner.
3) Lack of funding to hire additional public works staff to operate and maintain additional infrastructure mandated by increased environmental regulation and standards, such as drinking water quality, wastewater effluent quality and stormwater quality.

4) Lack of funding to increase employee wages to a competitive level, leading to higher staff turnover and difficulty in finding qualified replacement staff. Public Works invests significant time and money into developing well-trained and educated employees who must possess and maintain legally required licenses and certifications. Losing these staff members results in a financial loss for the City and our community.
5) Inability to invest staff time in emergency preparedness and proactive maintenance, which will hinder recovery following a natural disaster.
6) Limits the ability to build reserve funds to ensure the long-term fiscal resiliency of the infrastructure.

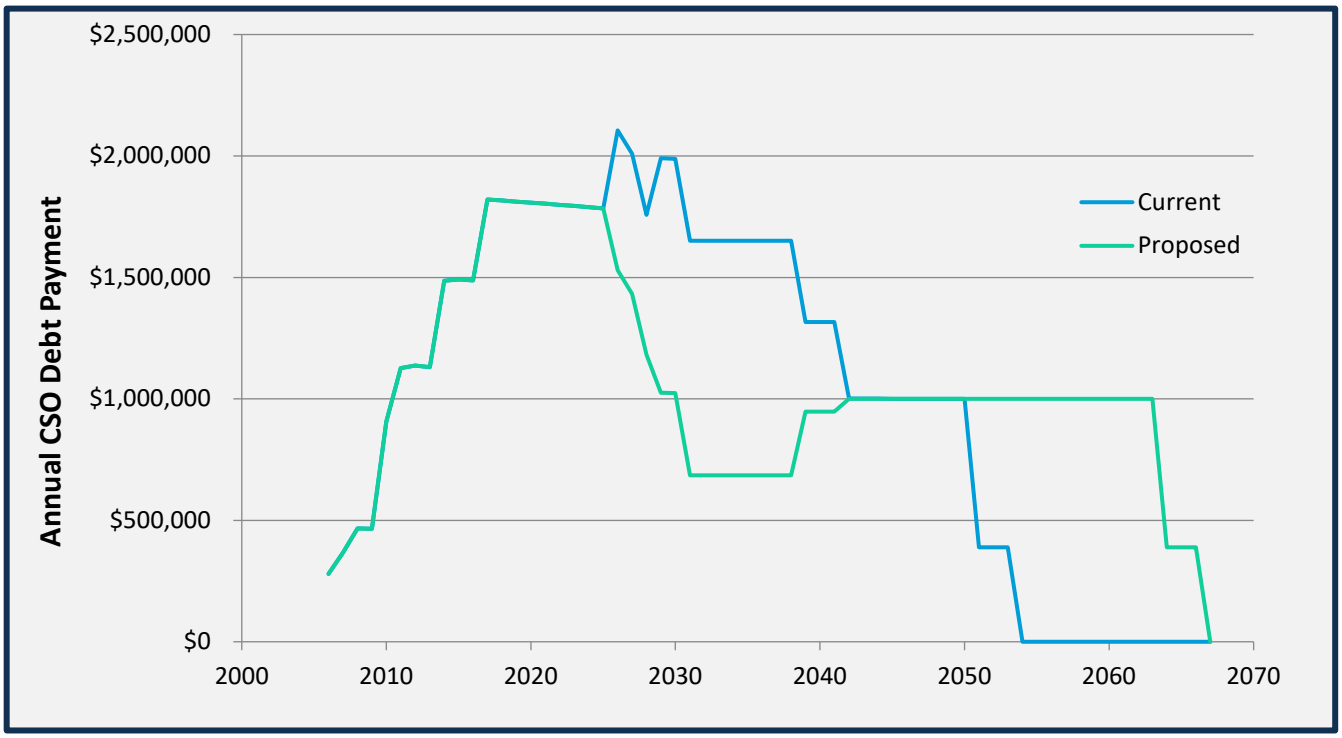
5.1.1 High Cost for Last 10-15% CSO Volume Removal

According to our CSO modeling estimates, we believe we have eliminated approximately 85 to 90 percent of our CSO volume through the first four phases of our CSO program. However, this significant investment has resulted in a high annual debt service, which affects our capacity to fund maintenance, repairs, and capital improvements for all of our infrastructure. Phase 5 of our CSO program will address the remaining 5-10 percent of our overflow volume, with an estimated cost of $18 million before accounting for inflation. Considering inflation and the current construction and bidding climate, it's reasonable to expect that Phase 5 could cost upwards of $25 million. This projected cost is disproportionately high compared to the expenses of the first four phases of the program.

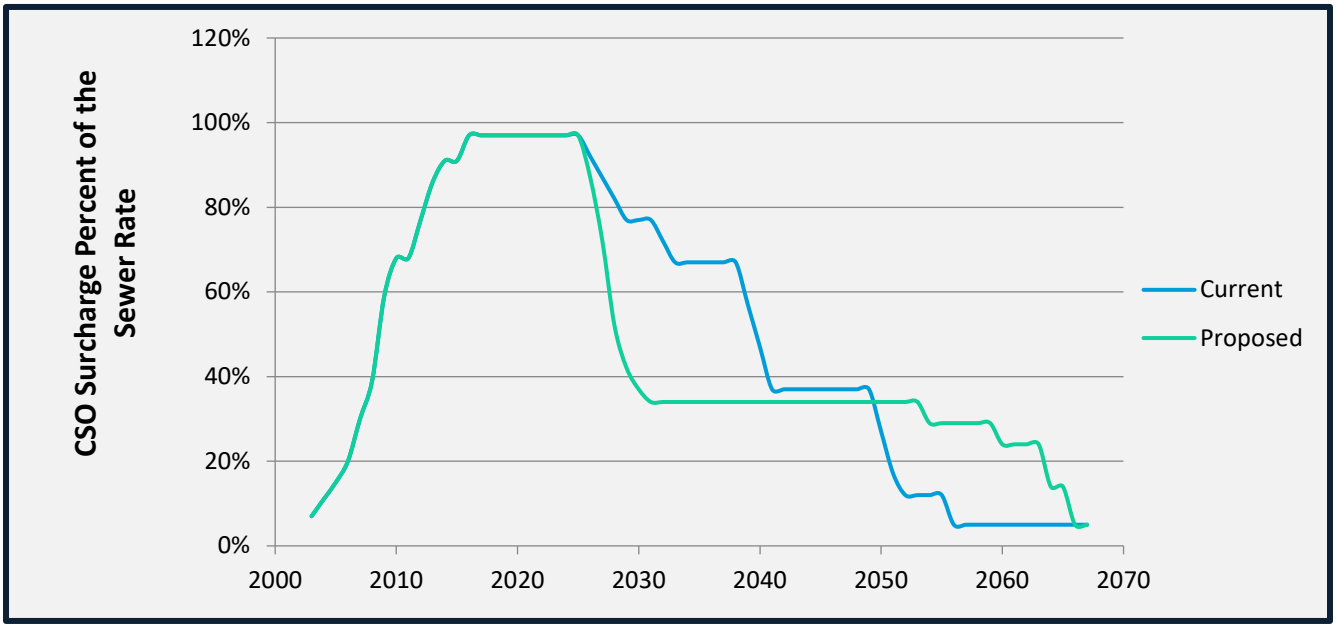
CSO Volume Captured vs. Cost



CSO Annual Debt Service



Current vs. Proposed CSO Surcharge Rate



A time extension on CSO controls would allow the City to focus on paying off existing loans and decreasing the CSO surcharge for utility customers in the near future. A more sustainable, reduced CSO surcharge could be maintained for a longer period of time. Approval of this plan also allows for more time to pursue grant funding, which would lessen the financial burden.

5.2 Ratepayer Considerations (Water, Sewer & CSO Surcharge Combo)

While most cities manage billing for water, sewer, and sometimes stormwater, Astoria also includes a Combined Sewer Overflow (CSO) Program billing, which is currently set at 97 percent of the sewer rate. This has led to suppressed increases in water and sewer rates.

As part of our research for the industrial pretreatment program, we reviewed water and sewer ordinances from 1973 to 2019. Over the past 47 years, we've identified a consistent pattern of rejecting necessary water and sewer rate increases. Rates have rarely been raised by more than a few percent, attempting to keep pace with inflation but failing to address increasing regulatory demands or the backlog of infrastructure maintenance.

After taking on the responsibility of maintaining a new wastewater treatment plant and sewer interceptor system in 1973, rates were only minimally increased for two years (1975) before a poor economic climate halted all increases until 1982, when a small adjustment was finally made. From 2001 to 2010, the average water rate increase was 7.6 percent. Then, with the introduction of the CSO surcharge, the average rate increase from 2011 to 2020 dropped to just 1.9 percent. In the past four years, rates have increased by 2.5 percent, 4.5 percent, 4.5 percent, and 3 percent, respectively. This trend has left us significantly behind in generating adequate revenue to address our substantial deferred maintenance needs.

The following are some details regarding utility rates:

Current approximate utility billing for a residential customer with about 7,500 gallons of water consumption/month:

Water bill - $56/month
Sewer bill - $56/month
CSO Surcharge - $54/month
Total billing - $166/month

Average rate increases

1975-1982: no increases
1983-2000: small increases
2001-2010: 7.6% average
2011-2020: 1.9% average
2021-2024: 3.6% average

The Public Works Fund currently lacks funds for capital improvement projects, relying entirely on grants and loans at this time. Our ability to take on additional debt service is limited. The concept of the CSO surcharge can be challenging for ratepayers to understand. Additionally, the City bills on a bi-monthly basis, resulting in an average bill of $332 ($166 x 2 months). We believe that switching to monthly billing would make the total utility bill more manageable and easier for ratepayers to budget for. We are exploring options to implement monthly billing alongside a full rollout of an automated meter reading (AMR) system.

With our Fiscal Year 2024/25 rate increase of 3 percent for both water and sewer, Astoria's total utility bill, including the CSO surcharge, is among the highest in the region, while our individual water and sewer bills are the lowest. For a residential ¾" meter using 7,500 gallons per month, Astoria's total billing rate is approximately $166 per month with the CSO surcharge and $113 without it. In comparison, neighboring cities have total billing rates ranging from $118 to $192 per month.

Based on feedback from residents and businesses within our community, we know that high utility rates are a major concern.

5.3 Regulatory Requirements

Like most small cities, Astoria has been experiencing an increase in regulatory requirements disproportionate to our staffing ability to take on the new work. Unfortunately, most regulatory requirements are mandated without funding or additional resources, so other customary work must be set aside as regulatory requirements take priority. The following are some of the regulatory requirements that have increased in the recent past:

- Wastewater regulations – NPDES permit and CSO Program Amended Stipulation & Final Order (ASFO)
- Stormwater regulations – possible MS4 requirements now that our population has tipped over 10,000
- Drinking water regulations – new testing and reporting requirements
- State transportation – fuel tax reporting
- OSHA/safety requirements and CDL licensing – training requirements
- Sanitation and recycling requirements – reporting

5.4 Climate Change Impacts

The City of Astoria has recently completed a Multijurisdictional Natural Hazards Mitigation Plan in partnership with Clatsop County (2021). The plan identified a change in weather patterns as our most significant impact. With predicted drier summers and wetter winters due to climate change, the City anticipates two distinct problems that will require additional funding and staff time. The first is the impact that wetter winters will have on our geologic stability throughout town. More rain means more earth movement, potentially resulting in infrastructure and property damage. Astoria has a history of landslides and earth movement-related infrastructure damage. Dryer summers mean potentially less drinking water supply and a higher likelihood of water shortage. Astoria's economy, especially the fishing industry, the breweries and tourist-related facilities such as lodging, relies on a dependable water supply. Reduced water supply during the dry months could result in water curtailment that will impact industry and jobs. Additional raw water storage in our watershed would not be cost-effective, especially considering all of our other infrastructure needs. Any curtailment would result in temporary water revenue reduction.

Natural disasters will also make Astoria susceptible to isolation when roads are closed due to landslides or flooding. This will make it difficult for help to make it to the coast along with materials and parts for critical repair of infrastructure. To prepare for such disasters and the isolation that comes with them, we need to build our inventory. Without adequate funding, this will be difficult to achieve.

Another significant impact of climate change that is already impacting the City is shoreline erosion along the Columbia River and Young's Bay. This erosion impacts three distinct City resources. The first is damage to infrastructure that is located directly adjacent to the waterfront. Typical examples would be outfall pipes, street ends and utility piping. The second is damage to City-owned property, which would be funded through the general fund and should not impact infrastructure funding. The third is damage to our River Trail system, which is also funded through the general fund.

5.5 Economic Issues

5.5.1 Lack of Capital Improvement Program

Limited financial resources represent a significant challenge for meeting all the City's infrastructure needs. There is an existing gap between needs and resources of the department and capital improvements, in general, with almost all infrastructure improvement projects being funded through debt service and grants. Fortunately for the City, grants have been readily available, and interest rates have been relatively low. City public works staff have done a great job of keeping our infrastructure serviceable despite most of it being well past its intended service life. Staff have also been very successful at obtaining grant funding. Continuous investments need to be made in City infrastructure to ensure delivery of vital services and to maintain compliance with the ever-increasing complex regulatory requirements. Our goal is to eventually get to a sustainable funding level, but at this time the gap is too great. As a result, the City can only identify critical infrastructure needs and continue to look for alternative funding resources.

System Development Charges (SDC's) have never been implemented in the City of Astoria, although the concept has been brought before City Council multiple times over the last few decades. It is our understanding that there was a fear that the charges would place a hardship on developers and create a disincentive to development. The lack of implementation of SDC's has resulted in lost infrastructure revenue in the millions if not tens of millions of dollars. The City is now finally implementing SDC's after most neighboring cities have had them in place for quite some time. This revenue is expected to improve our financial situation going into the future.

5.5.2 Limited Staff Capacity

The Astoria Public Works Department currently has maintained around the same number of staff for the past 30 years. With increased maintenance demands, increased regulatory requirements, and more infrastructure in service, we are struggling to perform many of our basic duties. Examples include the lack of staffing to regularly exercise water valves and inspect sanitary sewer lines. With additional resources, we could reduce the time needed to make waterline repairs and prevent sewer lines from collapsing by proactively identifying problem areas. Our inability to assess sewer lines is also one of the key reasons why we have not been able to move forward with preparing a Sanitary Sewer Collection System Master Plan or a Stormwater Master Plan.

Our CSO surcharge has suppressed our ability to increase water and sewer rates to not only hire additional needed staff, but it has also limited our ability to increase wages to compete with higher-paying agencies such as Clatsop County and the Oregon Department of Transportation. Staff leave for higher wages after we invest in their training, leaving us with a less experienced team and a loss of institutional knowledge. Safety training and general training also suffer from a lack of funding.

Infrastructure in poor condition results in many emergency repairs requiring overtime pay and contractor assistance, impacting our bottom line and resulting in less funding for replacement. The City currently averages two to four waterline breaks per month, with more frequency experienced in the wet winter season when earth movement is more prevalent. We also experience about two to three sewer line failures per month, with more in the wet winter season due to earth movement pulling pipe joints apart.

5.5.3 High Debt Service Relative to Revenue/Debt Service Limitations

The added debt service from the CSO program, currently at approximately $18 million, requires a CSO surcharge that reduces our ability to increase water and sewer rates to fund debt for critical infrastructure needs. This makes us dependent on grant funding, forcing needed projects to be delayed and adding maintenance costs, further limiting our ability to get ahead on deferred maintenance. This puts the City in a downward spiral as maintenance is further deferred and inflation results in higher-priced repair and replacement costs in the future.

5.5.4 Aging Infrastructure and Severely Deferred Maintenance

Astoria was founded in 1811 and incorporated in 1856, making it the oldest establishment and second oldest city in Oregon. Waterlines from the 1890's are still in service (5% of total waterlines in service). Our sewer treatment works, interceptor and lift stations were built in 1974. Most of our infrastructure is 50–120 years old, with about 50% of the infrastructure located in slide-prone areas. All infrastructure in Astoria is subject to a future Cascadia Subduction Zone Earthquake along with multiple other natural hazard risks.

The City recently completed a Water System Master Plan. The plan identified $70 million in needed improvements. The City does not have a Sewer Collection System Master Plan, but we suspect that similar findings and recommendations would result. The following is a list of our highest priority projects from our Capital Improvement Plan:

Highest Priority Projects – Next 10 years

Capital Improvement Project	Class	Total Project Cost	Funded Yes/No
Pipeline Road Waterline Resilience Project	Water	$2,930,000	Yes
16th St Distribution Waterline Replacement Project	Water	$2,790,000	Yes
Irving Ave. (20th - 28th St.) Waterline Resiliency Project	Water	$1,894,662	Yes
Spur 14 Intake	Water	$600,000	No
Clearwell and Laboratory at the Water Treatment Plant	Water	$6,000,000	No
Little Bear Creek Waterline Resilience Project	Water	$3,400,000	No
16th & Jerome to 18th & Irving Waterline Resilience Project	Water	$1,000,000	No
Bear Creek Dam Emergency Spillway Project	Water	$3,878,000	No
WWTP Headworks Improvements Project	Wastewater	$9,869,232	Yes
Sewage Lift Stations Rehabilitation Project	Wastewater	$3,670,000	Yes
Wastewater Collection System Assessment & Master Plan	Wastewater	$1,500,000	No
Sanitary Sewer Pipe Interceptor Comprehensive Evaluation (including cleaning) and Replacement/Rehabilitation Project	Wastewater	$10,000,000	No
Pre-disaster Landslide Storm Drainage Project (FEMA project)	Storm	$901,875	Yes
11th Street Tunnel Repair Project	Storm	$500,000	No
West Craig Creek - rehab, replace or reroute	Storm	$2,000,000	No
Replace Street End Corrugated Steel Outfall Pipes	Storm	$1,500,000	No
7th & Clatsop Stormline Extension	Storm	$300,000	No
Irving & 38th Storm Inlet and Stormline Relocation Project	Storm	$1,000,000	No
Paving Project (every 2 years)	Transportation	$500,000	Yes
Irving at 33rd Street Bridge Replacement	Transportation	$14,200,000	No

The following is a summary of our funded and unfunded project costs from our CIP:

Summary of Capital Improvement Project Funding

System	Funded Projects	Unfunded Projects	Total
Water	$7,614,662	$92,168,000	$99,782,662
Wastewater	$13,539,232	$59,525,000	$73,064,232
Storm	$901,875	$10,550,000	$11,451,875
Transportation	$500,000	$67,640,400	$68,140,400
Grand Total	**$22,555,769**	**$229,883,400**	**$252,439,169**

Note: All cost estimates are subject to increase due to inflation and time lapse since the date the estimates were prepared.

5.6 Industrial Pre-Treatment Program Management and Staffing Needs

The City has voluntarily implemented an industrial pre-treatment program to address BOD issues at our WWTP due to the rapid growth of our fermented beverage industry. With very limited funds used to hire consultants for the most specialized aspects of the effort, staff managed to fully implement a program that has brought our BOD issues under control and set standards and industry discharge limits for the future. We are in need of a staff member (at least one full-time employee) to run the program and allow other staff to return to their normal duties. We hope to fund this position using revenue from the implementation of new sewer rates based on loadings in lieu of volume. The new rates went into effect on January 1, 2024, and only affect commercial and industrial customers.

6. | Strategies to Address Challenges

6.1 Focus on Priorities

In order to work towards achieving a goal of sustainable wastewater and stormwater infrastructure funding, we have identified the following approach for the next 5-year period (2030):

1) Focus on successfully completing recent grant-funded projects:
    a. Wastewater Treatment Plant Headworks Improvements ($10 million)
    b. Pre-Disaster Landslide Storm Drainage Project ($1 million)

2) Focus on new grant opportunities with low or no-match funds since we are limited in our match capacity. The following are projects identified for immediate grant efforts:
    a. Sewer Lift Stations Rehabilitation Project ($4 million)
    b. Sewer Collection System Master Plan ($2 million)
    c. West Craig Creek Stormwater Project ($1 million)
    d. CSO Phase 5 Projects ($18+ million)
3) Develop a strategy for a win-win project concept for Phase 5 (see 6.4.3 below) of our CSO Program that meets our CSO reduction objective and meets the natural hazard (landslide) pre-mitigation need for the Uppertown area of Astoria. If the City can qualify for FEMA Pre-hazard Mitigation Funding, we would only have to fund the 25 percent match, reducing our future debt level. This strategy would require extending our CSO program deadline to give the City time to develop a scope and apply for funding. This would help prevent the need to increase CSO surcharge above the current rate of 97%. If the win-win project concept works, in 2030, when our first four CSO loans are paid off, we could start to reduce our CSO surcharge and allow water and sewer rates to be increased to a more appropriate funding level.
4) Work towards financially sustainable funding:
    a. Advocate for consistent utility rate increases of at least 3% annually to prevent our funding from slipping further backward.
    b. Continue to build reserve funds for projects funded by the Oregon Infrastructure Finance Authority (IFA), Slow Sand Filter Reconstruction (maintenance needed every 5-7 years), and eventually set aside reserve funding for other critical capital improvement projects.
    c. Increase Public Works Improvement Fund sewer and stormwater repair and maintenance services budget line items to deal with increasing sewer and storm pipeline failures occurring due to old age.

Other non-sewer/stormwater needed projects:

a. Pipeline Road Transmission Main Resiliency Project ($3 million – grant funded)
b. 16th Street Distribution Waterline Replacement ($3 million – grant funded)
c. Irving Avenue Waterline Replacement Project ($2 million – grant funded)
d. Bear Creek Dam Emergency Spillway ($4 million)
e. Replace Finished Water Reservoir Covers ($4 million)
f. Water Clearwell Tank at WTP Project ($6 million)
g. Pipeline Road Transmission Main Little Bear Creek Section Replacement ($5 million)

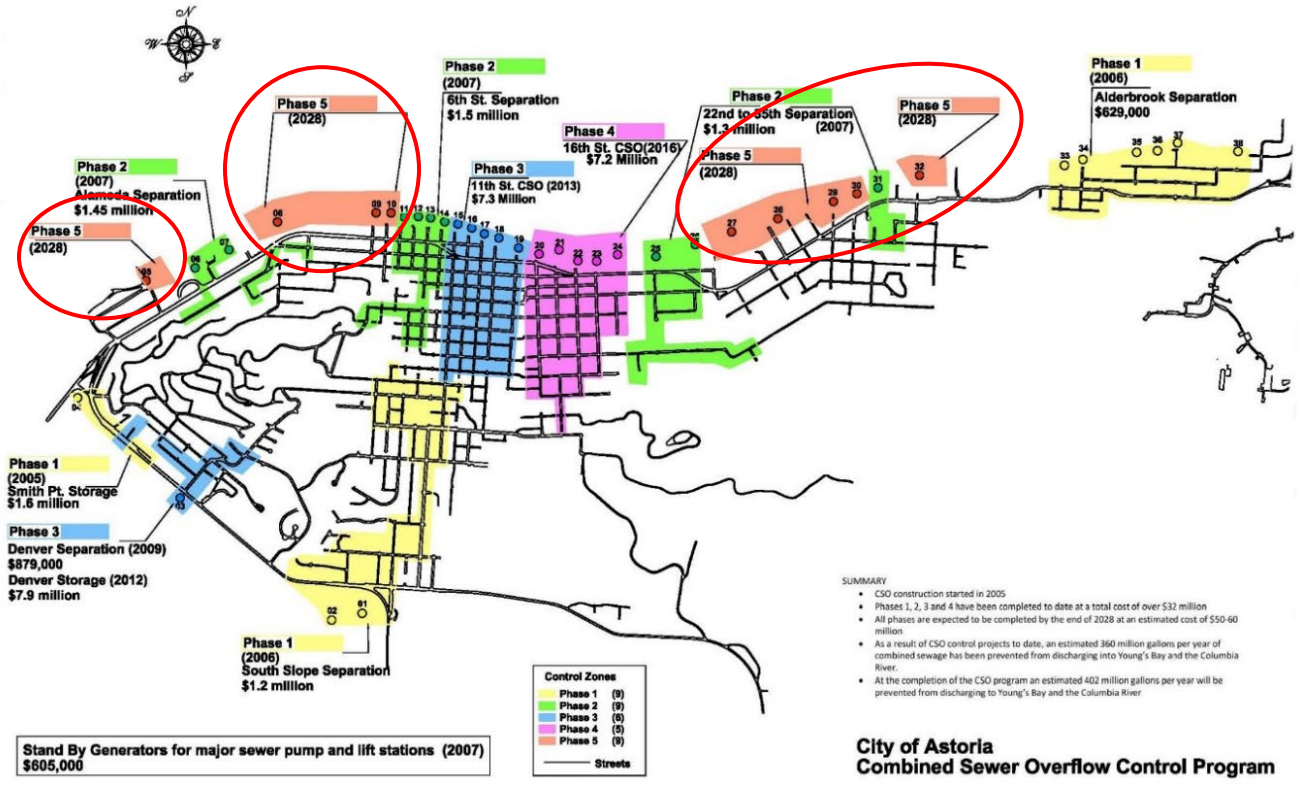
6.2 Optimize Funding Opportunities (Grant vs. Debt)

The City would prefer to pay down our CSO debt in order to allow us to take on new debt without substantially raising our CSO surcharge. We would like to keep our CSO surcharge rate as low as possible. It is currently at 97 percent. This priority could be realized by extending our next CSO Phase 5 due date in our compliance schedule. We will have more capacity to secure additional loan funding for Phase 5 (currently estimated at $18 million) after our first 5 loans are paid off.

6.3 Utilize Modeling over Time to Optimize Final Phase of CSO Program

The City has annual modeling updates that incorporate all projects to date and all monitoring and weir adjustment results. The more monitoring that takes place over time, the more accurately we can plan and design our final Phase 5 projects, assuring that we meet our removal objectives and do not overdesign or overbuild our final phase.

CSO Program – Final Outfalls (Phase 5)



6.4 Work with DEQ to Balance Priorities

6.4.1 Keep CSO Surcharge <100%

In order to keep the CSO surcharge as low as possible, we need to have the opportunity to pay off some of the existing debt before taking on new debt. Our initial loans were smaller loans, and they will be paid off in 2030. Larger loans were necessary for later, more complex projects, which are scheduled to be paid off in 2039 and 2041.

6.4.2 Need for Additional Funding for WWTP Due to Inflation

The City has been fortunate enough to have received $4,860,000 in American Rescue Plan Act (ARPA) funds to pay for our WWTP Headworks Improvements Project. We have now bid the project only to find that the total project cost is over $9 million. Most of the additional funding that was available for this project came in the form of a low-interest loan. This will substantially increase our overall debt service. We anticipate similar cost overruns on our two other ARPA-funded projects. We have also recently determined that our sewer lift stations are in dire need of rehabilitation at an estimated cost of $4 million. The City has received a Clean Water State Revolving Fund (CWSRF) loan through the EPA for this project.

6.4.3 Innovative Project Ideas – Joint Benefit of Stormwater Separation and Landslide Mitigation for Next CSO Phase

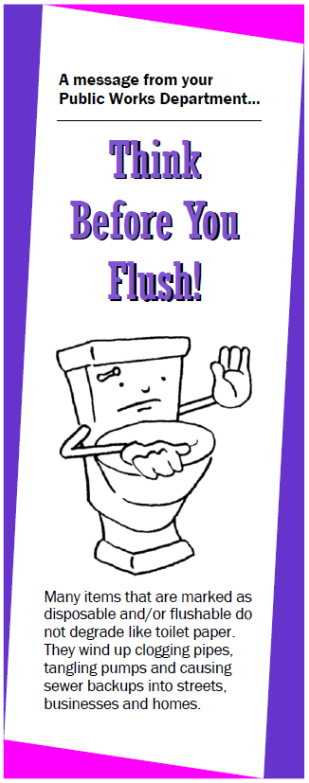
The City has a strategy in place for reducing the probability of landslides in our most landslide-prone areas. It just so happens that one of the most landslide-prone areas of our City is also the target of our largest Phase 5 CSO project. The area is Irving Street between 22nd and 35th Street. We have recently received a FEMA Pre-hazard Mitigation Grant in the amount of $902,000 for stormwater improvements within the 22nd Street slide area that will help dewater the area, reducing the probability of land movement. This area has a history of large land movement, the most significant of which was a large landslide in January of 1954 that destroyed or damaged 50 homes. The area has continued to move to date.

Our innovative project idea is to combine the need for landslide pre-hazard mitigation with the need for stormwater separation in that area. In order to determine if this strategy would work, we would need a detailed study of the mutually beneficial aspects of both strategies and the shared financial benefits. Can we accomplish both objectives with the same project? The project would need to meet the CSO separation objective and also provide dewatering in the susceptible landslide areas. At first glance, the benefit of designing a project with both objectives in mind seems practical and efficient. While in general the dewatering project would collect stormwater that currently enters the ground, that should be the same water that infiltrates our sewer pipes, contributing to overflow issues. Both projects would involve new stormwater piping and likely a new stormwater outfall to the Columbia River.

7. | Public Outreach and Stakeholder Involvement

In general, the City uses our City website and Facebook to communicate with the general public. Educational material is shared frequently, and a more comprehensive effort is made annually during National Public Works Week. Staff frequently take projects to City Council meetings for approval with in-depth presentations and project details. It is typical for Council meetings to be covered by the local newspaper, The Astorian, with follow-up interviews with staff prior to publication. Public Works staff also volunteer at local schools to help teach students about the importance of infrastructure and the protection of our environment.

Staff presented this plan along with our Capital Improvement Plan (CIP) at a City Council Work Session on January 27, 2025. City Council was very supportive of the plan and the strategies identified in the Plan. It was agreed upon that we would proceed with formally submitting the draft document to DEQ for review and comment. Since January, City staff have worked with DEQ to finalize the Integrated Plan, which was presented to City Council again at their Work Session on September 29, 2025. City Council formally adopted the Integrated Plan by Resolution 25-34 at their October 6, 2025, meeting. The adopted Integrated Plan has been submitted to DEQ and is available to the public on the City's website.



Educational Brochure
"Think Before You Flush"