CITY OF GRESHAM
NPDES ANNUAL REPORT 2026

PERMIT YEAR 31

MS4 DISCHARGE PERMIT NO. 101315 EPA REF. NO. 108013



Top Left: City Stormwater Operations crew addresses an obstructed storm drain. **Top Right**: New porous pavement installation at Mt. Hood Community College. **Lower Left**: A new grassy swale and beehive work as designed on Butler Rd. **Lower RIght**: Stormwater Utility Worker Tanner Covina shows the importance of pipe cleaning and the roots that can infiltrate the system.

CITY OF GRESHAM 1333 N.W. Eastman Parkway | Gresham, OR 97030 | 503-618-2525

October 30, 2026

Pablo Martos
Municipal Stormwater Permit Coordinator
Oregon Department of Environmental Quality
700 NE Multnomah St., Suite 600
Portland, Oregon 97232

Dear Pablo Martos:

The City of Gresham is pleased to submit the thirty-first National Pollutant Discharge Elimination System (NPDES) Stormwater Annual Report, under Permit No. 101315, File No. 108013, reissued on September 15, 2021, effective on October 1, 2021, and expiring on September 30, 2026.

The goals of the annual report are to 1) document progress on the implementation of best management practices for pollution prevention, reduction and removal; 2) evaluate program results for continuous improvement; and 3) share this information with municipal decision makers and the public. The Environmental Monitoring Plan (EMP) summary and the Gresham SWMP Report will be posted on the city website.

The raw monitoring data has been formatted into the templates provided by DEQ and is being submitted as a separate upload through YDO. The City of Gresham collects stream and stormwater data on behalf of Fairview and Multnomah County through an IGA with the two partner agencies, so the raw data being submitted to DEQ meets the requirements in our MS4 permit and detailed in our EMP. A summary of the monitoring program results is included in Section 2. Section 3 describes the Best Management Practices Program Summary and reporting metrics for Gresham.

If you have any questions regarding this report, please contact Matt Henry at (503) 618-2657 or matt.henry@greshamoregon.gov.

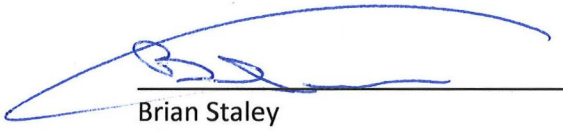
Sincerely,

Brian Staley
Assistant City Manager

cc: Torrey Lindbo, Water Quality Program Manager
Kathy Majidi, Watershed Department Director

National Pollutant Discharge Elimination System
Permit No. 101315
EPA Reference No. ORS108013
Permit Year 31 Annual Report
City of Gresham

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



Brian Staley
Assistant City Manager
City of Gresham

10/29/2026
Date



Torrey Lindbo
Water Quality Manager
NPDES MS4 Permit Duly Authorized Representative for City of Gresham

10/29/2026
Date

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Section 1: Introduction

This 31st annual report summarizes activities completed by the City of Gresham from July 1, 2025, through June 30, 2026, to meet the conditions of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit issued by the Oregon Department of Environmental Quality (DEQ).

1.1 Overview

DEQ first issued an NPDES MS4 permit to the City of Gresham and its co-permittees on September 7, 1995, under the Clean Water Act. Since then, the City has implemented a Stormwater Management Program (SWMP) that meets the requirements of each five-year permit. The current permit took effect on October 1, 2021, with the City of Fairview serving as a co-permittee.

The NPDES MS4 permit is intended to reduce pollutants entering local waterways. It requires permittees to develop and implement a comprehensive Stormwater Management Program (SWMP) that reduces pollutants to the maximum extent practicable (MEP).

The SWMP consists of best management practices (BMPs) that the City tracks and reports on annually. This process documents implementation progress, evaluates program performance, and identifies adaptive management opportunities that may improve effectiveness.

This report includes a summary of activities detailed in the City's SWMP document, as well as a summary of monitoring program results. The stream and stormwater data collected to meet permit requirements is directly uploaded to Your DEQ Online using the required template provided by DEQ.

The permit and the City's SWMP document are available on the City of Gresham website: https://www.greshamoregon.gov/Watershed-Documents-and-Forms/#PermitsandManagementPlans

1.2 Permit Requirements and Stormwater Management Program

The NPDES MS4 Permit breaks down the actions the City needs to take into seven areas:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post Construction Site Runoff for New Development and Redevelopment
6. Pollution Prevention and Good Housekeeping for Municipal Operations
7. Industrial and Commercial Facilities

The permit requirements in these areas detail how and what the City must address in our Stormwater Management Program (SWMP) document.

The current SWMP document was approved by DEQ in 2022 and serves as the City of Gresham's roadmap for meeting the seven control measures noted above that are established in the NPDES MS4 permit. Although Gresham and Fairview are co-permittees, each city maintains a separate SWMP tailored to its municipal area.

The SWMP contains a variety of best management practices (BMPs) that collectively work to remove pollutants to the MEP. Each BMP details:

- the activity to be completed;
- the method used to measure progress;
- the implementation timeframe; and
- the reporting schedule and requirements.

The BMPs work in conjunction with the Environmental Monitoring Program. Monitoring results help identify affected pollutants, evaluate program performance, and guide adaptive-management strategies that improve future BMPs.

1.3 Annual Report Requirements

The current MS4 permit requires the City to submit a report to DEQ detailing progress on the previous year's activities. At the beginning of the 5-year permit term, reports were required in paper and electronic format, but the permit explicitly requires electronic-only submission once Your DEQ Online (YDO) becomes available. DEQ had the YDO reporting template ready in 2025, so this report and other information are uploaded through that reporting template currently. This report, along with other information requested by DEQ are reported through YDO, but this document, as well as past annual reports that document Gresham's SWMP implementation progress, are posted to the City's website at GreshamOregon.gov/Watershed-Documents-and-Forms

The current MS4 permit requires the following components to be reported to DEQ annually:

Annual Report Requirement	Location
a) Status of implementing the SWMP control measures, including progress in meeting measurable goals and program tracking and assessment metrics	Table 3.1
b) Summary of adaptive management implementation and any changes or updates to programs made during the reporting year	Section 3.2
c) Any proposed changes to SWMP program elements designed to reduce TMDL pollutants	NA
d) A summary of education & outreach and public involvement activities, progress toward or achievement of measurable goals, and any relevant assessment of those activities.	Table 3.2 and 3.3

e) A summary of the number and nature of enforcement actions, inspections, and public education programs, including results of ongoing field screening and follow-up activities related to illicit discharges.	Table 3.1
f) A list of entities referred to DEQ for possible 1200-Z NPDES general permit coverage based on co-permittee screening activities, a list of categories of facilities inspected, and an overview of the results of inspections of commercial and industrial facilities.	Appendix A
g) A summary of total stormwater program expenditures and funding sources over the reporting fiscal year, and those anticipated in the next fiscal year.	Table 3.5
h) A summary of monitoring program results, including monitoring data that are accumulated throughout the reporting year and submitted in the DEQ-approved Data Submission Template, and any assessments or evaluations of that data completed by the co-permittees or an authorized third party.	Section 2
i) Any proposed modifications to the Monitoring Plan necessary to ensure that adequate data and information are collected to conduct stormwater program assessments.	An updated Monitoring Plan was submitted to and approved by DEQ in 2022
j) An overview, as related to MS4 discharges, of concept planning, land use changes, and new development activities that occurred within the UGB expansion areas during the reporting year, and those forecast for the following year, where such data is available.	Section 3.1 and Table 3.7
k) The details of all corrective actions implemented associated with Schedule A.1.b.iii during the reporting year.	None
l) Additional requirements outlined in Schedule B.3.l	All items reviewed and submitted previously

1.4 Co-Permittee Coordination Efforts

The cities of Gresham and Fairview are co-permittees under the MS4 permit. Gresham has served as the lead applicant, but each city is responsible for developing, implementing, and tracking the BMPs within its jurisdiction and for submitting its own annual report. Because Fairview contracts with Gresham to conduct monitoring on its behalf, the monitoring results are reported jointly.

Now that DEQ provides an online reporting template, each city independently completes and submits its Your DEQ Online (YDO) report with relevant attachments. Gresham also submits this traditional report, which summarizes progress in implementing the BMPs described in the SWMP document.

Gresham, Fairview, and Multnomah County share costs for report coordination, outreach, and implementation of the Environmental Monitoring Plan through intergovernmental agreements (IGAs).

1.5 Legal Authority

The City has maintained the legal authority needed to implement its NPDES permit since the permit was first issued. Chapter 3 of the Gresham Revised Code prohibits erosion and illicit discharges to the stormwater system and local waterways and establishes the City's enforcement authority. Consistent with state and federal law, Gresham may require compliance with applicable city, state, and federal standards. The City Charter was revised in November 2024.

Section 2: Environmental Monitoring Program Summary

2.1 History

The City of Gresham has continued to adaptively manage its Environmental Monitoring Plan (EMP) every few years based upon the addition of parameters and scientific inquiries to answer questions about green infrastructure pollution reduction performance. The City of Gresham submitted a revised EMP to DEQ in July 2022 which was approved in August 2022. This report reflects the fourth year of monitoring under that document.

Table 2.1 Monitoring Program Commitments. *Italicized text indicates permit requirements* and normal font indicates what Gresham has done to meet permit requirements (as outlined in the City's EMP).

Monitoring Type	Monitoring Location(s)	Monitoring Frequency	Pollutant Parameter Analyte(s)	Notes
Instream Monitoring	*Three (3) sites in the Columbia Slough basin:* 1. Fairview Lake @ Lake Shore Park (FVL1) 2. Fairview Creek @ mobile estates (FCI0) 3. Fairview Creek @ Stark (FCI1) *At least two (2) sites in the Sandy River basin:* 1. Kelly Creek @ Mt. Hood Community College Pond (KCI1) 2. Kelly Creek downstream of Detention Pond (KCI3) 3. Kelly Creek upstream of Detention Pond (KCI4) 4. Beaver Creek at canyon footbridge (BCI1) 5. Beaver Creek at Division St. triangle (BCI2) *Four (4) sites in the Johnson Creek subbasin:* 1. Johnson Creek @ Jenne Rd (JCI1) 2. Johnson Creek @ Palmblad (JCI2)	Four (4) events/year	*DO, pH, temperature, conductivity, turbidity, E. coli, hardness, BOD, TSS, Chlorophyll-a (May-Oct); nutrients (nitrate, ammonia, Total P, ortho-phosphorus);* *Total recoverable and dissolved metals (copper, lead and zinc); total mercury; legacy pesticides (JC only)*	The City of Portland collects data on the entire Columbia Slough, but based on their probabilistic sampling design, locations monitored any permit year will be reported to DEQ by Portland. The two sites in Beaver Creek are monitored through an IGA with Multnomah County to meet their permit requirements.

	3. Kelley Creek @ Pleasant Valley Grange (KI1) 4. Kelley Creek @ Rodlun Rd (KI2)			
Continuous Instream Monitoring	*Two (2) continuous monitoring stations:* 1. Johnson Creek @ Regner 2. Fairview Creek @ Glisan*	*Ongoing* 15-minute intervals	*Temperature and flow*	Flow data collected by USGS through Joint Funding Agreement #3225. *Fairview gage does not collect temperature. City of Gresham periodically collects summer temperature at Glisan location, as well as other locations throughout the city.
Stormwater Monitoring - Storm Event	*Ten (10) sites.* Monitored 10 random and spatially balanced stormwater locations (5 fixed and 5 rotating).	*One (1) event/year* Monitored 1 event at each location	*DO, pH, temperature, conductivity, turbidity, E. coli, hardness, BOD, TSS; nutrients (nitrate, ammonia, Total P, ortho-phosphorus); Total recoverable and dissolved copper, lead and zinc; total mercury; pesticides*	The City's approved monitoring approach results in 10 data points (5 fixed sites and 5 randomly selected rotating sites).
Macro-Invertebrate Monitoring	*At least one (1) site in the Columbia Slough basin:* 1. Fairview Creek @ mobile estates (FCI0) 2. Fairview Creek @ Stark (FCI1) *At least one (1) site in the Sandy River basin:* 1. Kelly Creek @ Mt. Hood	One (1) event/year during summer/low flow conditions	*Macroinvertebrates*	Generally collected during the same week as instream water quality data collection in summer.

	Community College Pond (KCI1) 2. Kelly Creek downstream of Detention Pond (KCI3) 3. Kelly Creek upstream of Detention Pond (KCI4) 4. Beaver Creek at canyon footbridge (BCI1) 5. Beaver Creek at Division St. triangle (BCI2) *Two (2) sites in the Johnson Creek subbasin:* 1. Johnson Creek @ Jenne Rd (JCI1) 2. Johnson Creek @ Palmblad (JCI2) 3. Kelley Creek @ Pleasant Valley Grange (KI1) 4. Kelley Creek @ Rodlun Rd (KI2)			The two sites in Beaver Creek are monitored through an IGA with Multnomah County to meet their permit requirements. Additional sites were collected as part of the Johnson Creek Inter-Jurisdictional Committee and the Beaver Creek Conservation Partnership.
Structural BMP Monitoring	*Two (2) sites - inlet and outlet:* 1. Panza Subsurface Gravel Pond 2. Blue Pearl Stormwater Pond	*One (1) event/year* Monitored 1 event at 2 facilities	*DO, pH, temperature, conductivity, turbidity, E. coli, hardness, BOD, TSS; nutrients (nitrate, ammonia, Total P, ortho-phosphorus); Total recoverable and dissolved metals (copper, lead and zinc); total mercury*	
Special Projects	*Two (2) sites:* 1. Beaver dams throughout the watershed 2. Hunters Highland Stormwater Pond	*One (1) event/year*	*Depends on the project. In PY31 measured 6PPD-quinone at beaver dams and DO, pH, temperature, conductivity, turbidity, E. coli, hardness, BOD, TSS; nutrients (nitrate, ammonia, Total P, ortho-phosphorus); Total recoverable metals (copper, lead,*	

			mercury, and zinc) at Hunters Highland	

2.2 Monitoring Program Summary

The raw data collected in Permit Year 31 are summarized below and have been added to the DEQ-approved Data Submission Template that has been submitted through YDO for upload into Oregon DEQ's Ambient Water Quality Management System (AWQMS) database. The instream data have been compared to the relevant DEQ water quality criteria, and values that do not meet the water quality standards are discussed below in section 2.2.1 – Instream Monitoring. Data from Stormwater (wet weather) Monitoring and Structural Best Management Practice (BMP, i.e. green infrastructure) Monitoring have not been compared to water quality standards because of the mixing that occurs in-stream. Sampling locations are shown in Figures 2.1 through 2.6.

2.2.1. Instream Monitoring

Twelve long-term instream monitoring sites were sampled in August, October, February, and April during the reporting term (Figure 2.1) and compared to relevant water quality standards (Table 2.2). The October sampling event had 0.18" and the February sampling event had 0.41" of rainfall in the previous 24 hours while the other two events had no measurable precipitation in the preceding 72 hours.

Instream monitoring results were generally within expected ranges. There were some exceedances of water quality standards for temperature, pH, dissolved oxygen, alkalinity, chlorophyll-a, total phosphorous, mercury, *E.* coli, and DDT, which are discussed below. Several related water quality standards were exceeded in Fairview Lake and they are discussed separately. The remainder of the sites are located in streams and exceedances are discussed together and listed by water quality parameter. Water quality criteria for ammonia and several heavy metals are based on additional parameters which vary throughout the season and exceedances for those parameters are given as averages of the criteria.

Pesticide screens were also conducted at long-term instream sites during PY31 to meet the requirements of Special Condition 9 of Table 2 in the NPDES permit. The samples were collected during the late April sampling event to try to capture pesticides which may have been applied in yards as the weather warmed and washed into the streams in spring storms.

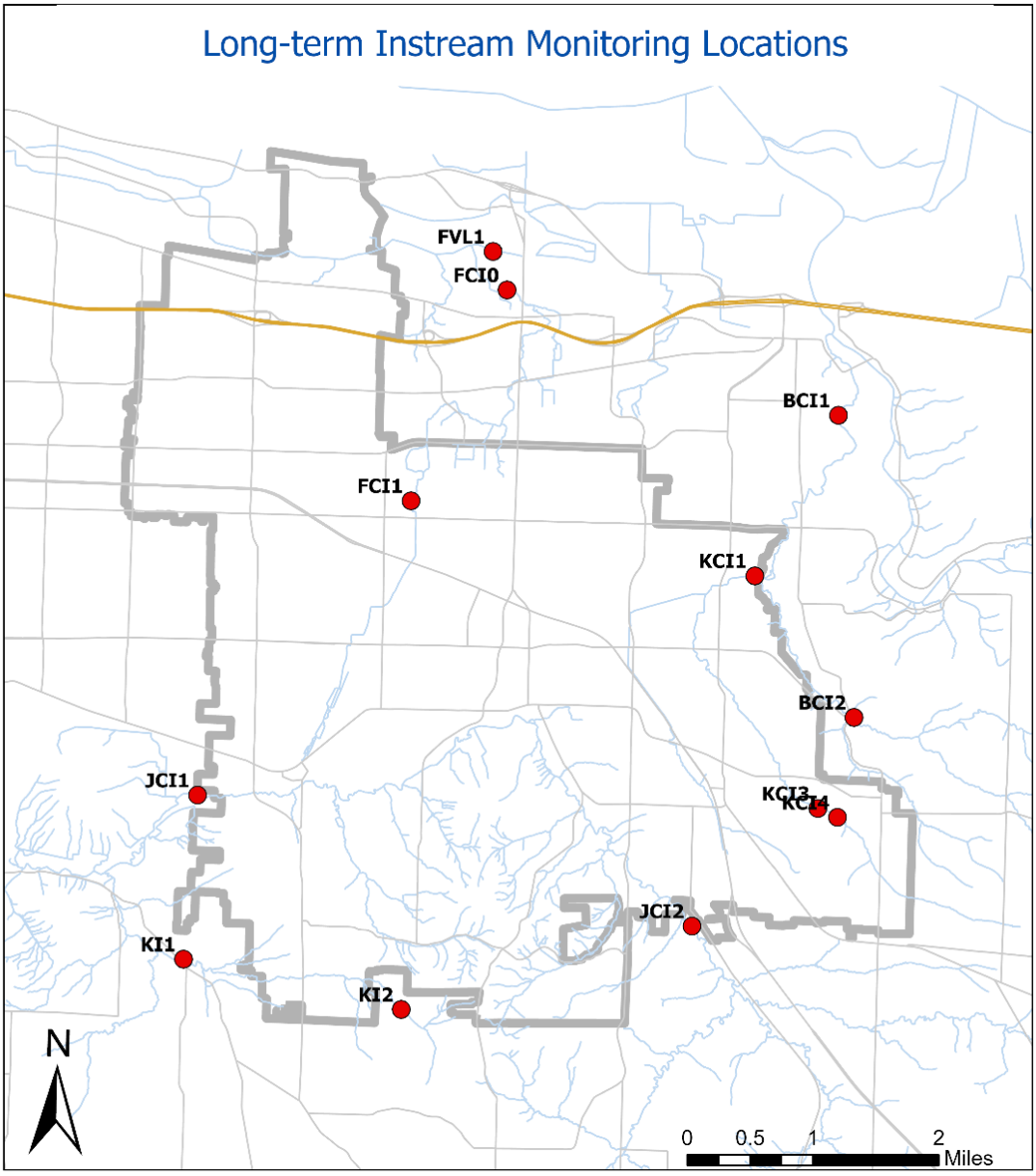


Figure 2.1 Long-term Instream Monitoring Locations. Note: BCI1 and BCI2 are monitored through an IGA with Multnomah County and FCI0 and FVL1 are monitored through an IGA with the City of Fairview to meet their permit requirements.

Table 2.2 Relevant Instream Water Quality Standards

TMDL Water Quality Constituents		
Water Body	**Constituent**	**Water Quality Criteria**
Fairview Creek	Temperature	No designated salmon and steelhead spawning use. Rearing: <18°C
	E. coli	<406 organisms/100mL (OAR 340-41)
	Phosphorus	0.1549 mg/L (Columbia Slough 1998 TMDL)
	Mercury	0.14 ng/L
Johnson Creek, including Kelley Creek tributary	Temperature	Spawning: <13°C (55.4°F) - October 15 to May 15. Rearing: <18°C
	E. coli	406 organisms/100mL (OAR 340-41)
	PCBs	Acute 2.0 ug/L, Chronic 0.014 ug/L (per Table 30)
	PAHs	Not included in Table 40 or 41. Table 30 only lists saltwater acute level of 300 ug/L
	Dieldrin	Acute <0.24 ug/L, Chronic <0.056 ug/L (per Table 30)
	DDT	Acute <1.1 ug/L, Chronic <0.001 ug/L (per Table 30)
	Mercury	<0.14 ng/L
Kelly Creek	Temperature	Spawning: <13°C (55.4°F) - October 15 to May 15. Rearing: <18°C
	E. coli	406 organisms/100mL (OAR 340-41)
Columbia Slough	Temperature	No designated salmon and steelhead spawning use. Rearing: <18°C
	E. coli	406 organisms/100mL (OAR 340-41)
	pH	between pH 6.5 - 8.5
	DO	No spawning; 6.5 mg/L: cool-water aquatic life (avg); 4.0 mg/L: absolute minimum (Columbia Slough TMDL); 5.5 mg/L: warm-water aquatic life
	Phosphorus	0.1549 mg/L (Columbia Slough 1998 TMDL)
	Chlorophyll-*a*	15 mg/m^3
	Pb	Based on hardness. Table 30 has formula
	PCBs	Acute 2.0 ug/L, Chronic 0.014 ug/L (per Table 30)
	Dieldrin	Acute 0.24 ug/L, Chronic 0.056 ug/L (per Table 30)
	DDT/DDE	Acute 1.1 ug/L, Chronic 0.001 ug/L (per Table 30)
	Dioxins	Fish tissue 0.07 ng/kg (Columbia Slough 1998 TMDL)
	Mercury	0.14 ng/L
Non-TMDL WQ Constituents from OAR 340-41 Table 30		
	Constituent	**Criteria**
	Metals	Based on hardness, formula in Table 30
	pH	Between 6.5-8.5: same for all watersheds in the permit area (OAR 340-41)
	DO	Not evaluated, since the criteria are for averages. Cold water aquatic life; spawning: >11 mg/L; nonspawning >8.0 mg/L
	Alkalinity	20 mg/L (minimum)
	Ammonia	Based on pH and temperature, formula in Table 30
	Aldrin	Acute 3 ug/L
	Endosulfan	Acute 0.22 ug/L, Chronic 0.056 ug/L

	Endosulfan Alpha	Acute 0.22 ug/L, Chronic 0.056 ug/L
	Endosulfan Beta	Acute 0.22 ug/L, Chronic 0.056 ug/L
	Endrin	Acute 0.086 ug/L, Chronic 0.036 ug/L
	Heptachlor	Acute 0.52 ug/L, Chronic 0.0038 ug/L
	Heptachlor Epoxide	Acute 0.52 ug/L, Chronic 0.0038 ug/L

Fairview Lake

During the August sampling event, Fairview Lake exceeded water quality standards for pH (standard: 6.5-8.5, value: 9.21), temperature (standard: <18°C, value: 24.5°C), phosphorus (standard <0.1549 mg/L, value: 0.405 mg/L), and chlorophyll-a (standard: < 15 mg/m^3, value: 104 mg/m^3). It also exceeded the chlorophyll-a standard in October (31.0 mg/m^3), and all samples were above the total mercury target (target <0.14 ng/L, values: 1.00-1.94 ng/L). This large, shallow lake is ringed by houses with lawns and has very little shade. These conditions generally contribute to the lake's high summer temperatures and relatively high nutrient levels, leading to algal blooms and high pH values. Gresham and Fairview participate in the regional River Starts Here campaign which gives Multnomah County residents lawn care tips for healthy water to encourage responsible lawn care maintenance.

Temperature

Sites in each watershed exceeded the water quality standard of <18°C for fish rearing during the August sampling event, with temperatures ranging from 18.5-19.9°C. There is further discussion of temperature exceedances in the continuous monitoring section below. The City continues to concentrate efforts on reducing stream temperatures including riparian restoration, consideration of future in-channel pond projects, and protection and enhancement of riparian buffers and wetlands adjacent to streams (as access and cooperation allows).

Dissolved Oxygen, pH, and alkalinity

Dissolved oxygen ranged from 5.15-16.98 mg/L. These grab samples are not typically compared to the water quality standard for dissolved oxygen because the standard is developed for average values over time. pH values ranged from 6.15-7.99, with one sample being below the water quality standard range of 6.5-8.5. The low pH sample was in Fairview Creek at FCI1 which is largely made up of groundwater. One sample in upper Kelley Creek was below the minimum alkalinity water quality standard of 20 mg/L at 16.9 mg/L. This location is in the forested headwaters on Bliss Butte with very little urban runoff input.

Metals

All samples exceeded the instream water quality target established by the 2019 TMDL of 0.14 ng/L for total mercury with values ranging 0.37-4.76 ng/L. Generally, the major sources of mercury are atmospheric deposition from natural sources (ocean and volcanoes) and anthropogenic sources like industrial emissions, coal combustion, and mining. The primary contribution of mercury in Gresham streams is understood to be atmospheric deposition carried to the streams in runoff. Mercury is correlated with total suspended solids due to its affinity with organic matter. The City continues to prioritize stormwater treatment BMPs which remove suspended sediment and implement our erosion control program. Samples at both sites in Beaver Creek exceeded the average water quality standard values for dissolved copper during the October sampling (12.5 and 37.0 ug/L). These samples were taken during a runoff event where copper may be washing into the stream from brake pads and pesticides. The

City continues to prioritize retrofits on high-traffic roads which would reduce these metals in the streams.

E. coli Bacteria

Four sites exceeded the *E. coli* water quality standard of 406 MPN/100 ml at some point during the year; about half of the exceedances occurred during events with stormwater runoff. No samples were above our action level of 5,000 MPN/100 mL and all exceedances were within typical ranges (470-1,800 MPN/100 mL). Past follow-up monitoring indicates that they are likely due to wildlife use and/or biofilms. The City continues to implement doggie bag stations across its parks to reinforce the norm of picking up after pets.

DDT Legacy Pesticide

The two sites on Johnson Creek were sampled for DDT and its degradates with no sample exceeding the chronic water quality criterion of 1.1 ug/L. However, samples could not be evaluated against the acute criterion of 0.001 ug/L because detection limits were 0.002-0.004 ug/L. The City continues to prioritize stormwater treatment BMPs which remove suspended sediment and implement our erosion control program.

Pesticide Screens

In addition to regular instream sampling, PY31 included a screen for emerging pesticides in the spring. Instream sites were screened for 310 pesticides using methods Mod EPA 547 (LC-FLD), Mod EPA 8151A (GC-MS/MS), Mod EPA8270D (GC-MS/MS), and Mod EPA 8321B (LC-MS/MS). Detection limits for pesticides were 0.060-0.30 ug/L, with the exception of glyphosate and AMPA at 10 ug/L. The vast majority of parameters were non-detects; however, most sites had detections of some pesticides. Eight pesticides were detected in at least one site: dieldrin, 2,4-D, dimethenamid, dithiopyr, boscalid, diuron, indaziflam, and isoxaben (Table 2.3). Only three sites had no detections (FCI1, KI1, and KI2). All samples that had detections were below 1 ug/L. The only pesticide detected in these screens with an aquatic life criterion is dieldrin, and detections were below the chronic level of 0.056 ug/L.

Table 2.3 Detections of pesticides at long-term instream sites during spring pesticide screen

	Pesticides (ug/L)							
Site ID	**Dieldrin**	**2,4-D**	**Dimethenamid**	**Dithiopyr**	**Boscalid**	**Diuron**	**Indaziflam**	**Isoxaben**
FCI0	<0.060	<0.080	<0.060	0.16	<0.060	<0.060	<0.060	<0.060
FCI1	<0.060	<0.080	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
JCI1	0.0023	0.100	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
JCI2	0.0030	<0.080	<0.060	0.064	<0.060	<0.060	<0.060	<0.060
KCI1	<0.060	<0.080	<0.060	<0.060	<0.060	0.230	<0.060	<0.060
KCI3	<0.060	<0.080	<0.060	<0.060	<0.060	0.240	0.069	0.085
KCI4	<0.060	<0.080	<0.060	0.068	<0.060	0.180	<0.060	<0.060
KI1	<0.060	<0.080	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
KI2	<0.060	<0.080	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
BCI1	<0.060	0.081	0.064	0.150	0.061	0.150	<0.060	<0.060
BCI2	<0.060	0.120	0.250	0.410	0.210	0.071	<0.060	<0.060

2.2.2. Continuous Temperature Instream Monitoring

The City measured continuous hourly temperature at long-term instream monitoring sites from July 2025-June 2026. This is the second year of data since switching from summer-only monitoring at many sites to year-round monitoring at fewer sites. Loggers were lost at some sites during the year, and new locations and protocols will be used for future years to reduce loss. The sites with a full year of data are shown in Figure 2.2. The logger at JCI2 was out of the water for one week in May, and those data have been deleted from the dataset. A summary of the maximum values and exceedances is found below in Table 2.4. Similar to previous years, most sites exceeded the temperature standard of 18°C for the 7-day average of the daily maximum (7DADM) at some point during the summer. All six sites with year-round data exceeded the 18ºC standard; five of those sites with a spawning standard exceeded the 13°C standard during April and May.

The City is aware of the impact of in-line ponds and the lack of riparian vegetation on stream temperature. The City runs a comprehensive restoration program which focuses on riparian vegetation and is studying ways to reduce temperature loading from public and private ponds on Butler, Hogan, and Fairview Creeks.

Table 2.4 Summary of Temperature Exceedances by Location.

Watershed	Creek	Location	Max 7DADM temp (˚C)	Exceedances (# of days)
Beaver Creek	Beaver Creek	BCI2 Beaver Creek canyon	22.0	79
Beaver Creek	Kelly Creek	KCI3 downstream KCD pond	20.3	66
Beaver Creek	Kelly Creek	KCI4 upstream KCD pond	20.4	71
Johnson Creek	Johnson Creek	JCI1 Jenne Rd.	25.9	131
Johnson Creek	Johnson Creek	JCI2 Palmblad Rd.	24.7	111
Johnson Creek	Kelley Creek	KI1 Foster Rd.	21.3	81

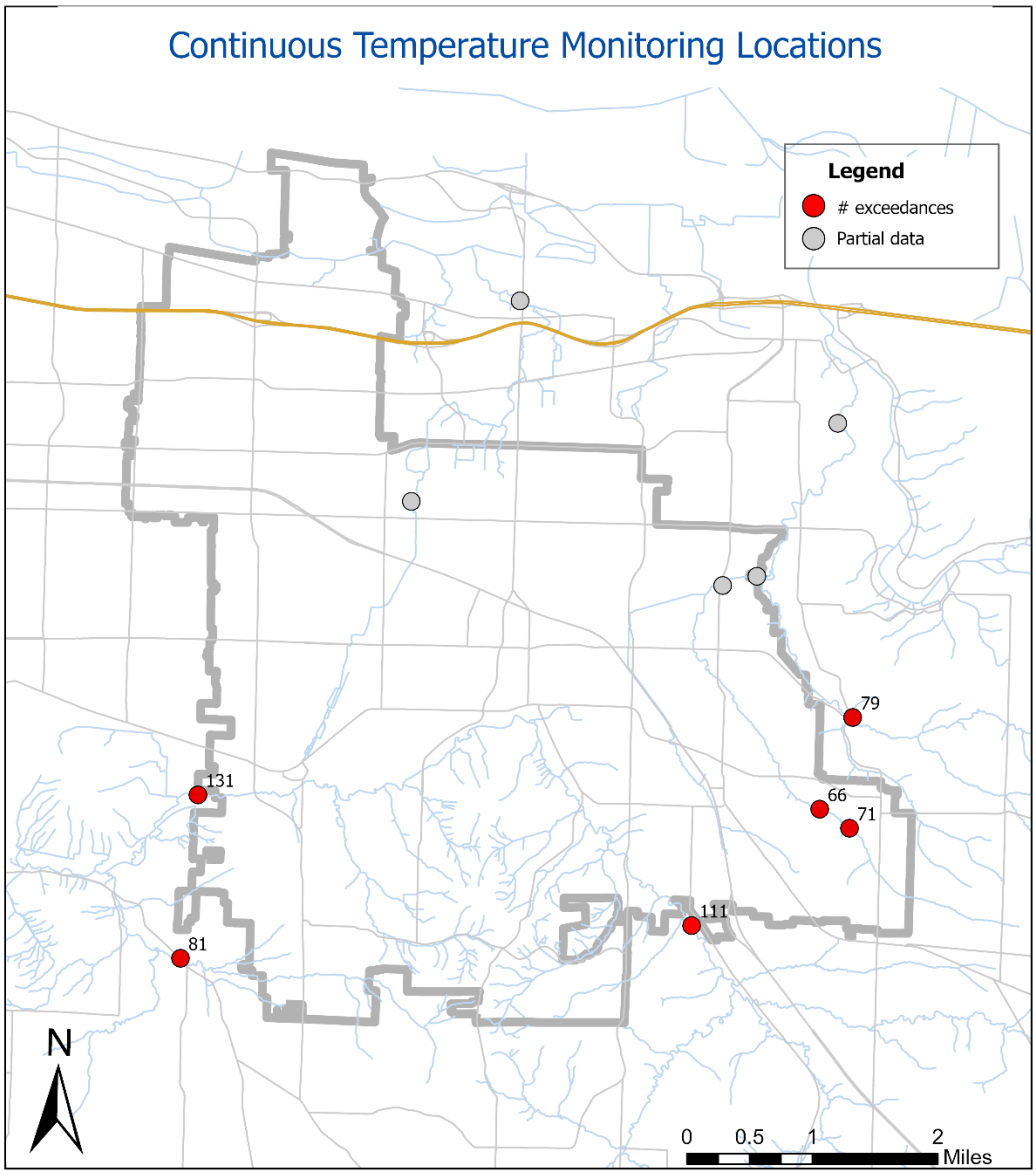


Figure 2.2 Continuous temperature monitoring locations

2.2.3. Wet Weather Stormwater Monitoring

Wet Weather Stormwater sampling was conducted at ten sites with small drainages to assess land use. Five of these sites are long-terms sites (Fixed) which are sampled every year and five are rotating sites (Panel 5) which are selected based on watershed and stratified for traffic volume such that half of the samples drain roads with >1,000 vehicle trips per day.

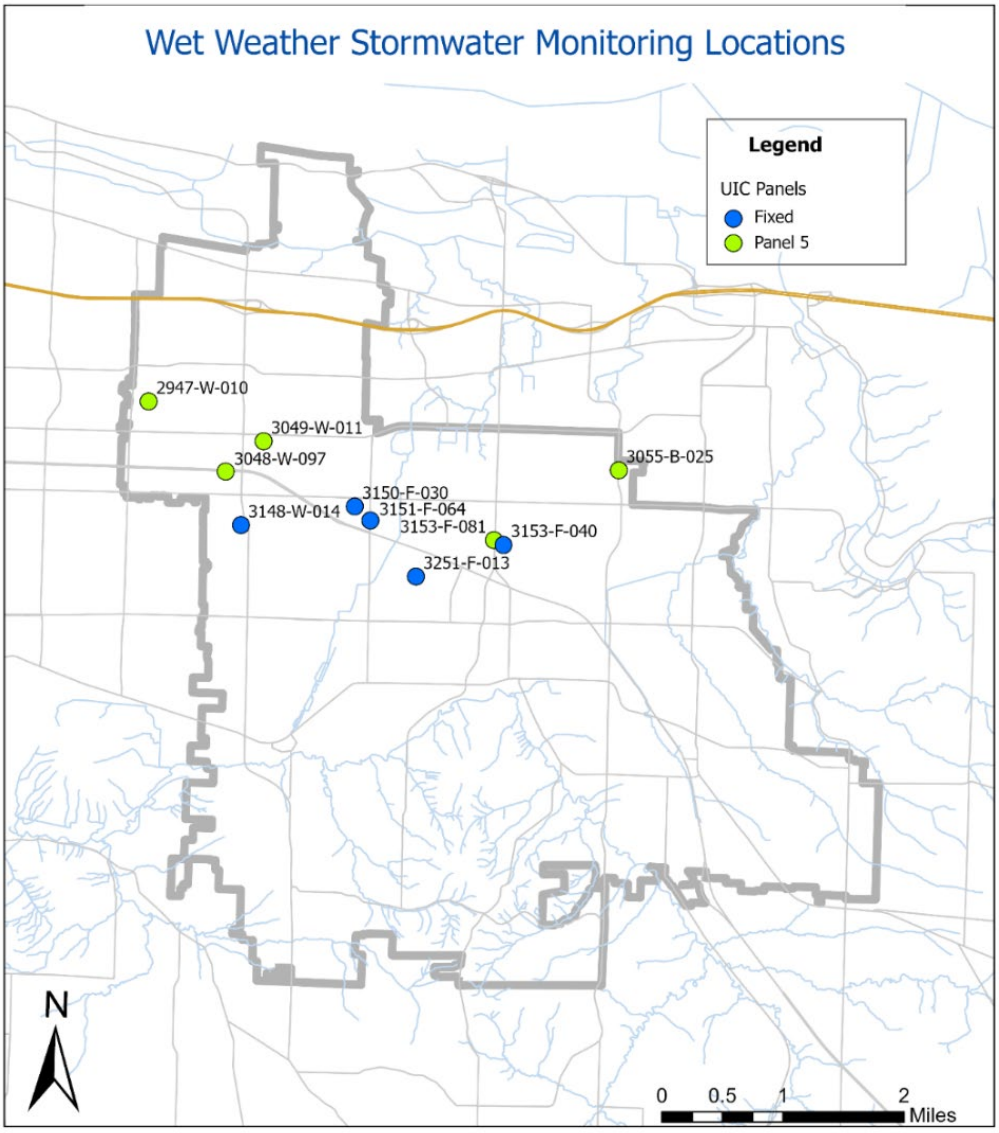


Figure 2.3 Wet weather stormwater monitoring locations

Similar to previous years, stormwater monitoring data revealed that higher traffic sites (>1,000 vehicle trips per day) have higher pollutant concentrations for many pollutants in comparison to residential streets (<1,000 vehicle trips per day). This was especially true for total suspended solids, E. coli, nitrogen, antimony, and several PAHs and phthalates. Also similar to previous years, relatively high levels of several heavy metals, including lead and zinc, were found at some sites. Cars are known to be major sources of these metals. Somewhat surprisingly, total and dissolved copper, lead, and zinc were all higher at lower traffic sites than at higher traffic sites. These heavy metals can also come from galvanized metal and moss treatments for roofs.

2.2.4. Structural Stormwater Facility Best Management Practice (BMP) and Special Projects Monitoring

Storm samples were collected at structural stormwater BMP facilities in addition to special project sampling, described below (Figure 2.4).

Structural BMP Monitoring
Storm samples were collected at the inlets and outlets of two water quality facilities (Panza Pond and Blue Pearl Pond). These facilities are constructed stormwater ponds/wetlands in new developments with different designs and the monitoring aimed to inform stormwater management requirements for upcoming developments.

The Panza Pond was constructed in 2022 as a trial of a submerged gravel wetland where there is a layer of gravel with an underdrain beneath the vegetated surface. The gravel layer is designed to always be inundated. In practice, the pond itself always holds a few inches of water because of shallow groundwater in this area. This is the fourth year that the Panza pond was monitored. The Blue Pearl Pond was constructed in 2024 to Gresham's standards for wet ponds as detailed in the Stormwater Management Manual. The drainage areas of these two ponds are similar, and this sampling was meant to provide a comparison of the submerged gravel wetland with a typical wet pond. This information was combined with data from previous years and a tech memo detailing the results is included in Appendix B. Overall, the submerged gravel wetland didn't perform as well as the wet pond for nutrient removal and had export of some nutrients, likely leaching from the compost component of the bioretention soil mix. It performed similarly to the wet pond for reduction of sediment and organic pollutants. It performed similarly or somewhat better for reduction of most heavy metals and *E. coli*. Most instream water quality standards were met at the inlets to both pond types, and all standards except *E. coli* were met at the outlets of both ponds. All samples were taken within the first few years of construction and continued functionality may change over time. Apart from water quality, the long-term maintenance of subsurface gravel ponds remains a question.

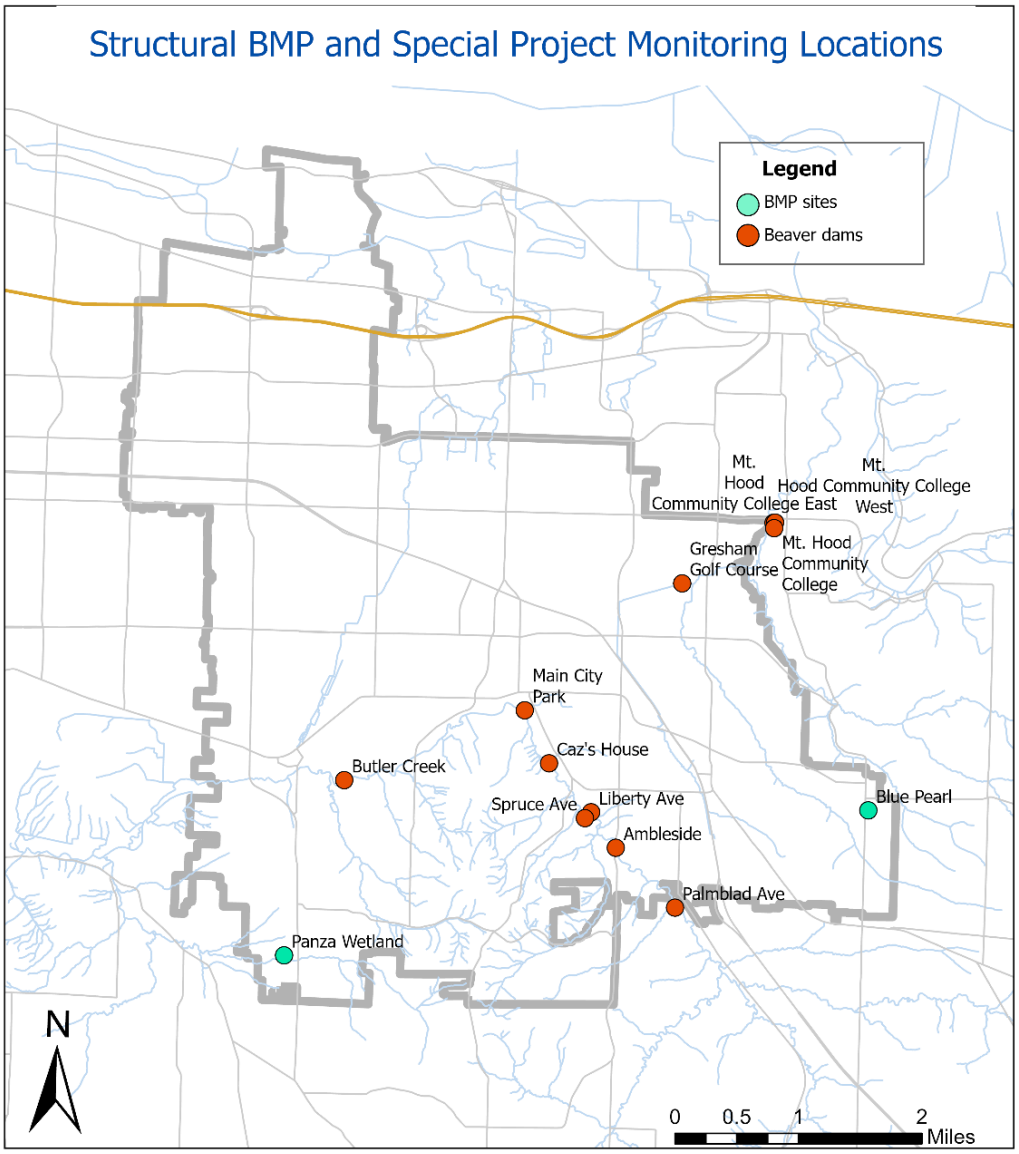


Figure 2.4 Structural BMP and special project monitoring locations

Special Projects

Two events were sampled as special projects in PY31. One was at a failing stormwater pond for use as pre-data before a retrofit and the other was related to looking for the tire chemical 6PPD-q in streams near beaver dams.

The Hunters Highland stormwater pond was constructed several decades ago as a stormwater detention pond in a new development. The area contains steep slopes which have begun failing, threatening nearby private property. A retrofit of the area is planned and samples were taken upstream and downstream of the pond as pre-project data. Constituents monitored included field measurements, total suspended solids, E. coli, phosphorus, heavy metals, PAHs, and phthalates. Overall, the current pond appears to be providing some reduction in some heavy metals (e.g. Pb and Sb) but otherwise does not

appear to provide much water quality treatment. The retrofit plans will take this into account and aim to improve water quality treatment through increased vegetation and residence time.

The streams samples for 6PPD-q were taken during a storm upstream and downstream of twelve beaver dams throughout the City. The data didn't show a conclusive pattern of reduction, likely because the storm event was smaller than predicted and runoff volumes and 6PPD-q concentrations were low. The one site with high concentrations saw levels drop by more than 50%. Beaver dams are hypothesized to reduce levels of 6PPD-q in streams because the chemical is known to bind to organic matter which is found in the dams, but little data currently exists.

2.2.5. Macroinvertebrate Sampling

Macroinvertebrate samples were collected in July and August at long-term stream monitoring sites, as well as several locations of interest throughout the Johnson Creek and Beaver Creek watersheds – those additional sites were monitored in conjunction with the Johnson Creek Inter-Jurisdictional Committee and the Beaver Creek Conservation Partnership (Figure 2.5). Trends in macroinvertebrate communities were not assessed this year, and the last assessment can be found as an attachment to the PY30 Annual Report.

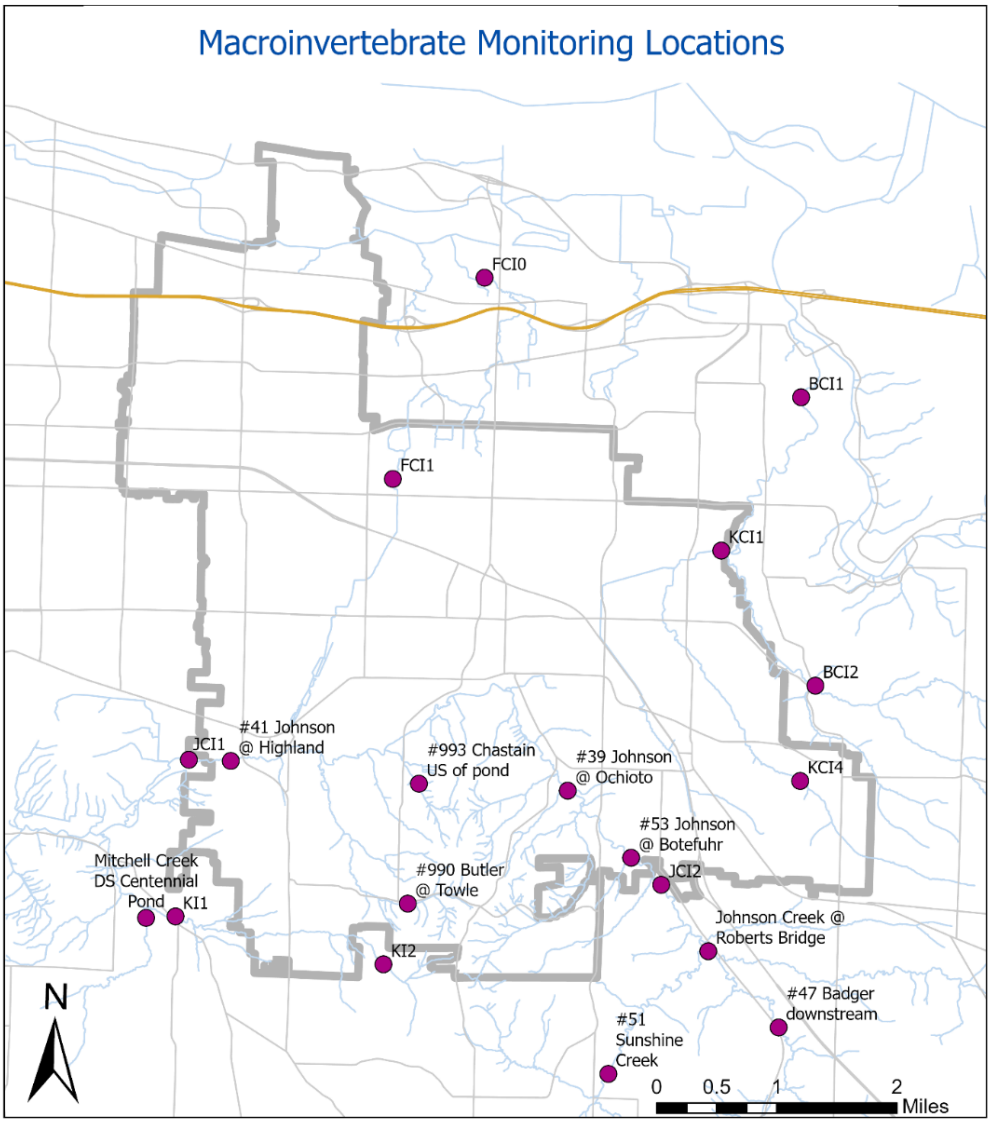


Figure 2.5 Macroinvertebrate Monitoring Locations. Sites BCI1 and BCI2 were monitored for Multnomah County through an IGA and FCI0 are monitored through an IGA with the City of Fairview to meet their permit requirements.

2.3. Illicit Discharge Detection & Elimination Program

A total of 30 outfalls were assessed during dry weather screening monitoring: 8 long-term high-priority sites and 22 rotating sites (see Figure 2.6). Flow was present at 9 sites (4 long-term sites and 5 rotating sites), and the screening parameter results for those sites are presented in Table 2.5. The only parameters which exceeded action levels were chlorine (one site) and turbidity (two sites). The site with chlorine seemed to have matrix interference in the field sample and was resampled with no detection of

chlorine. The two sites with turbidity above the action level of 15 NTU had muck from the pipe stirred up in the sample and no other parameters indicated an illicit discharge. Investigations of the drainage areas did not reveal any illicit discharges.

The City's illicit discharge enforcement response procedures are described in Section 7 of the Environmental Monitoring Plan.

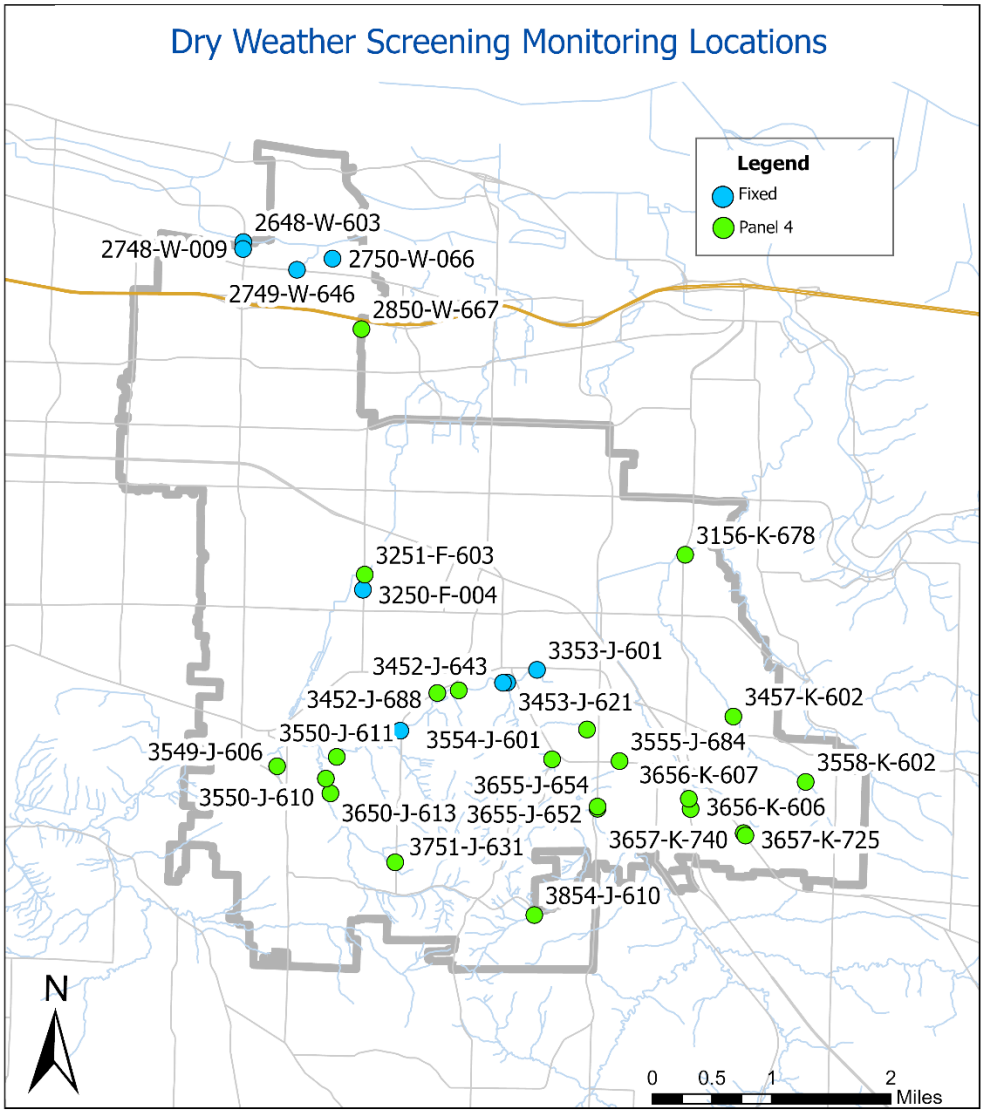


Figure 2.6 Dry Weather Screening Monitoring Locations

Table 2.5 Dry Weather Screening Flow Sampling Results. Action level exceedances are shown in red text.

Site Code	Date	Chlorine (mg/L)	Ammonia (mg/L)	pH	Temp (°C)	Conductivity (uS/cm^3)	Turbidity (NTU)
3156-K-678	8/14/2025	0	0	7.72	19.1	172.4	3.84
3251-F-603	8/13/2025	0.7	0.2	6.65	19.8	235.5	12.5
3454-J-741	9/8/2025	0	0	7.55	19.8	220.8	11.0
3549-J-606	8/14/2025	0	0	6.93	21.1	177.3	2.38
3550-J-611	8/14/2025	0	0	7.59	23.4	199.2	16.2
2748-W-009	8/13/2025	0.2	0.4	7.24	19.9	170.6	14.1
2749-W-646	8/13/2025	0	0	7.78	19.3	213.2	1.34
2750-W-066	8/13/2025	0	0	7.8	19.8	199.2	40.0
3250-F-004	8/13/2025	0	0	7.68	19.3	306.6	8.16

2.4. EMP Adaptive Management

No adaptive management changes to the Environmental Monitoring Program (EMP) are proposed at this time.

Section 3: Stormwater Best Management Practice (BMP) Summary

The activities, descriptions, and metrics detailed in this section are the BMPs that address the Stormwater Program Management Control Measures (see Table 3.1). The heading of each subsection of BMPs addresses any applicable pollutants.

Other tables included in this section provide added detail to the BMP summary in Table 3.1. Those additional tables include:

Table 3.2	Educational Outreach Activities for Residents
Table 3.3	Education and Outreach Activities for Businesses
Table 3.4	Water Quality and Natural Resources Projects
Table 3.5	Watershed Department Budget
Table 3.6	City-led TMDL Restoration Projects
Table 3.7	Total New and Redeveloped Acres
Table 3.8	Integrated Pest Management Program (Pesticide Applications)

3.1 Land Use Changes

As shown in Figure 3.1, the City of Gresham has 15,210 acres, 2,518 drain to groundwater through UICs (which are covered under the City's WPCF UIC permit), so 12,782 of MS4 are currently within City of Gresham boundaries; however, the NPDES permit provides coverage for all areas in Pleasant Valley, Springwater, and the Kelley Creek Headwaters that are within the Urban Growth Boundary (UGB) and slated to be part of Gresham as those areas are annexed.

Over the past year, the following new development projects have been developed within the City (all Pleasant Valley, except as noted):

- Since the end of 2020, the City has been processing the proposed Veranda subdivision on SE 190th Ave (across from SE Richey Rd). The current proposal is a 180-lot (the number has varied) subdivision in Pleasant Valley. Construction temporarily on hold.
- The Sycamore Vista Subdivision (SE 182nd Ave, north of SE Giese Rd – recorded as Highlands @ Pleasant Valley) was approved in 2018 and was completed in FY 25-26.
- Construction of the last phase of Sunset Village. Expected to finish in FY 26-27.
- Construction of Terrace @ Pleasant Valley (Giese Rd), home construction continuing.
- Construction of Butler Creek Subdivision (Pleasant Valley adjacent – Middle Housing), home construction continuing.

The following planning-related activities that will impact how development occurs within new plan areas or the existing city occurred over the past year:

- Pleasant Valley Plan District Update — Completed 2025
    - The City updated the original Plan to reflect current market conditions and make adjustments that support the original vision for the area, including planned growth and development.
- Springwater Plan Area Updates — Ongoing
    - Updates to the Springwater Plan Area are currently underway.
- Urban Services Boundary Update — Completed 2025
    - The City worked with City of Portland to update the boundary between the two cities in areas where there were gaps or overlaps in service areas.
- Transportation System Plan Update — Updated 2026
    - The City completed a minor update to the TSP, including updates related to planned growth areas (PV and Springwater) and the transportation infrastructure needed to support future development.

There are two annexations in process, though the formal date of annexation may be in the 26-27 reporting year, those are:

- 17231 SE McKinley Rd.
- 7518 SE Hogan Rd.

3.2 SWMP Adaptive Management

As described in the NPDES MS4 permit in Schedule B.2.b and Schedule D.4, the City follows an annual adaptive management process to assess and modify, as necessary, program elements to achieve reductions in stormwater pollutants to the maximum extent practicable (MEP). This includes consideration of available technologies and practices, analysis of the City's monitoring data, review of SWMP measurable goals and tracking measures, and evaluation of City resources available to implement the technologies and practices to determine signals for additional effort or other modifications.

To ensure the on-going effectiveness of the City's SWMP, the BMPs are evaluated annually during the preparation of this annual report to DEQ.

The City recently conducted a thorough analysis of our SWMP as part of the MS4 Permit Renewal Submittal, which was submitted to DEQ in spring 2026 and is available on the City's website. As part of that evaluation, as well as review of data being submitted as part of this annual report, the City feels that the current program is removing pollutants to the MEP, so does not propose any adaptive management to the SWMP at this time.

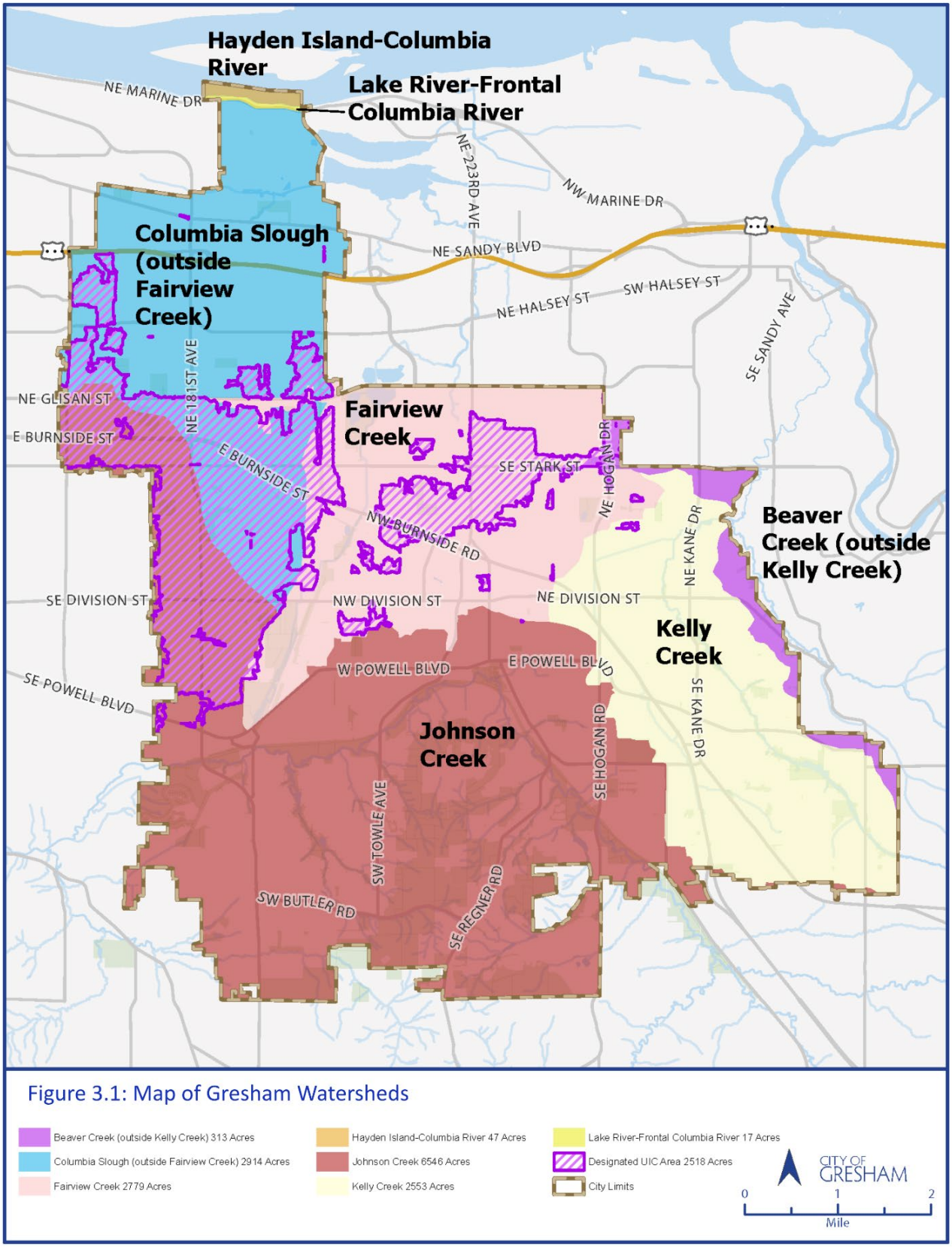


Figure 3.1: Map of Gresham Watersheds

Table 3.1 Best Management Practices

Stormwater Assets Maintenance Program (SMP) A-L.
BMP Owner: Stormwater Operations & Maintenance Group, supported by GIS, Water Quality & Watershed Engineering

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
A. Pipe Cleaning	The City's stormwater system currently consists of approximately 242 miles of pipes that drain to both surface and groundwater. The City inspects a portion of its existing pipes each year for assets management that record the condition and repair needs in the near and long term. Pipes are cleaned to remove excessive buildup, if the SOP threshold for cleaning is met.	Inspect 10 to 15 miles, clean if SOP threshold is met	Inspect: annually/ongoing Cleaning projected to be an average of 1-5 miles over permit cycle	13.59 miles of pipe cleaned. 818 hours spent pipe cleaning
B. CCTV Pipes (new/existing)	Inspect new development pipe systems to ensure proper connections. CCTV inspect existing city pipes for repair, cleaning, asset management rating, resident concerns, illicit discharge investigation. This serves as part of the City's asset management program and also as a proactive measure to ensure there are no cross connections from new development, and also finds can find cross connections as efforts to inspect and clean pipes move about the city.	CCTV 100% of new pipe (reported metric also contains cctv miles for existing pipe as miles are not tracked separately)	annually/ongoing	CCTV: 3,180 hours, 13.76 miles inspected (includes new developoment and existing pipes which are not tracked separately, investigations, paving, CIP requests) 2 new NASSCO Certified employees
C. Storm Drain Cleaning	The City's stormwater system currently consists storm drains that drain to both surface and groundwater. Arterial drains are priority due to higher pollutant loads than lower traffic streets and residential are also a priority due to potential for clogging and minor flooding. Inspection of all drains is a goal, but due to parked cars (even after notices are given) 100% is not attainable. Note that drain inventory has historically grown by 50-100/yr. Studies have shown that drains tend to remobilize trapped sediment once 2/3 or more full, and at this time is the City's SOP cleaning threshold. Typically, the City cleans all drains regardless of reaching the threshold, which is a higher performance standard. The range quoted allows flexibility in work load shifting to address other significant water quality facility rehabilitation activities in the future, as needed, while still meeting objectives over the permit cycle.	Inspect 90% of all drains, at a minimum clean if SOP threshold is met. Sediment removal from 5,000 to 8,000 drains/yr.	annually/ongoing	91% Cleaned & Inspected (8,402/9,251) Residential: 6,936 drains cleaned/inspected Arterial: 1,466 drains cleaned/inspected Total cleaned: 8,402 (3,466 hours) (9,251 public drains; including off-road drains which are not maintained as part of the yearly cleaning)
D. Maintain Green Infrastructure	Inspect and maintain vegetated facilities. Staff inspects and maintains as needed publicly owned: detention ponds & swales, rain gardens, plus private multiple owner facilities: detention ponds & swales. Maintenance activities include control of noxious weeds that are threats to public land and sediment removal. Plant removal over time is beneficial, as some plants uptake pollutants in their roots and leaves (phytoremediation). The smaller neighborhood ponds require sediment removal based on capacity for accumulation (varies from 5-12 year lifecycle). Staff maintains larger regional facilities designed with forebays to capture large amounts of sediment annually. The inventory of rain gardens has grown significantly and represent the highest work load because they are managed three times/year (vegetation, overflow drain & scupper cleaning). Lastly, a smaller portion of annual hours are utilized for misc. stream vegetation/woody debris support work, off road system management, culvert checks/maintenance after storms is important for street safety and flood prevention.	Inspect pond facilities, rehab/remove sediment based on facility capacity. Maintain regional facilities and remove forebay sediment. Inspect 100% rain gardens/swales/ditches. Maintain vegetation and control weeds using Integrated Pest Management techniques. Remove sediment build up per SOP.	Sediment removal projected to be annually for rain gardens, and most swales and ditches. Annually/ongoing Sediment removal from approx. 2-5 ponds annually	<u>Operations Hours:</u> Ditches: 501/501 Inspected, 9 Cleaned (703 hours) Roadside mowing ditches: (979 hours) Stormwater Planters (Rain gardens): 937 maintained (516 hours) Ponds/Swales: 69/69 Inspected: 6 Excavated (1,266 hours-swales, 572 hours-regional facilities) Culverts: 349 inspected/maintained (340 hours) Creeks/Streams: 631 hours <u>Contractor Hours:</u> 6,390 *(Provide maintanance on public swales and rain gardens)*

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
E. Maintain Grey Infrastructure*	Inspect and maintain underground (grey) structures. There are sedimentation manholes which are very cost effective for capture and removal of sediment. The Flow Control Manholes (FCMH) are inspected annually. Detention lines that vary from 30' to 96' long. Detention manholes, which have minimal sumped areas and are of less water quality benefit. Follow SOP thresholds for determining sediment removal.	Inspect 100% of sedimentation/inlet MH Clean per SOP criteria Inspect 100% FCMH Clean per SOP criteria Inspect 50% Detention lines Clean per SOP criteria Inspect 50% Detention MH Clean per SOP criteria	Annual inspection; cleaning typically results in: Sediment removal from approx. 50-60 Sedimentation MH/yr; 25-35 FCMH over permit cycle; Detention lines, if meets threshold; 1-5 Detention MH/yr	All structures were inspected following the BMP description and the following were cleaned: Sedimentation Manholes Cleaned: 102/530 Flow Controls/ Detention Manhole/Diversion Structure Cleaned: 36/431 Detention Lines Cleaned: 12/238 Total Hours: 772
F. Proprietary Devices (grey)	There are Proprietary Devices with multiple filter cartridges (varies 1-78 per device) which are maintained at the frequency recommended by the manufacturer.	Inspect 100% of Proprietary Devices Clean based on Manufacturers threshold rec. (about 150-300 cartridges replaced/yr.)	Annual inspection, cleaning typically includes Sediment removal from about 50-60 proprietary devices annually	138 structures inspected. 97 assets cleaned; *~260 cartridges exchanged* -47 Filter CB's cleaned -22 proprietary water quality devices cleaned *(Stormceptor and CDS)* -25 sites cleaned and exchanged *(Filter vaults & manholes): 3 sites cleaned only)* -180 private assets inspected. 758 Hours
G. System Repair & Maintenance	Maintain and repair pipes, ditches, culverts, inlets, off road systems, etc. to ensure proper function and limit impacts to surface water, as well as underground injection control devices and appurtenances that drain to groundwater.	Maintain and repair based upon SOP criteria.	annually/ongoing	Inspection of new construciton/customer concern call hours: 599 Mapping Updates: 1,719 hours (Increase in time due to addition of Asset Specialist position. All hours coded to this) High Frequency Areas 1,205 hours. Repairs & Maintenance: 1,899 hours. Utility Locates: 1,955 hours
H. Spills, Illicit Discharge Investigation, Emergency Response	Respond to community reports of spills or illegal dumping & emergency flood concerns. Investigate and/or assist with spill response, illicit discharge concerns, emergency stormwater controls for other department assistance, natural disaster response (flooding, downed trees, etc.)	Follow City Spill Response and Illicit Discharge Investigation procedures Conduct Spill Response all Department training and procedure review twice during the permit cycle	annually/ongoing	Emergency Response: 330 hours. Every emergency response involves a visual inspection of the nearby stormwater infrastructure to identify any contamination or deficiences.
I. Construction Inspections and Plan Review, Resident Concerns (O&M)	O&M staff plan review and construction site inspections of connections to the public system.	Conduct reviews and inspections to ensure compliance with Code	annually/ongoing	General administration time includes staff time spent reviewing construction plan reviews and conducting new facility inspections 42 MyGresham online reports of drainage, flooding, vegetation, irrigation, and stormwater facility concerns were addressed in addition to spill/dumping response. 4,877 hours* *Also includes staff meetings, supervisory duties, and budgeting, taking equipment for repair or maintenance. Does not include assistance from Outreach, Enforcement, Parks, Water, or Transportation staff whom also support some investigations.

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
J. Good Housekeeping: O&M Yard	Manage the Operation yard, shop, and equipment in cooperation with other city departments to clean up spills, keep sediment from entering drains. The yard has a covered decant station and equipment wash area to prevent pollutants from entering the stormwater system. Runoff from the yard also enters a stormwater facility prior to release to the stream.	Follow City best practices for storage, repair, dumping, washing, etc.	annually/ongoing	Shop Duties: ~350 hours *The activities described in this BMP are actions taken by the Watershed Department only and do not include instances of collaboration amongst other departments*
K. Underground Injection Controls (UICs) Maintenance & Cleaning	Maintain the City's active UICs to ensure function and comply with the WPCF permit requirements.	Document and report maintenance and cleaning.	annually/ongoing	UICs cleaned as needed 6/1005 Hours 74
L. Proper Waste Disposal (O&M)	Ensure the debris collected from City O&M activities are handled and disposed of in a safe and responsible manner. The City has three locations that it can stockpile facility maintenance debris: Powell Loop, Hogan Building (Operations yard), and the Wastewater Treatment Plant. All debris is stored in a manner to prevent erosion and to dry out the debris to make the hauling more cost effective. Composite samples of debris from all types of activities are tested and are classified as "special waste" but not "hazardous." There are two facilities in the region approved to take special waste: Waste Management in Hillsboro and the Wasco County landfill in the Dalles. The City is currently contracted with Dietrich trucking to haul its debris to these facilities.	Follow City best practices for handling, storing, and disposing of O&M generated debris. Retain debris testing results per file retention standards	annually/ongoing	Debris is tested annually Dietrich trucking hauls to Wasco disposal facility Grey Maintenance: 307 tons Green Maintenance: 361 tons *Debris amounts for all projects are combined in this metric
Public Land Management (PLM A-E) **BMP Owner: Watershed Department**				
A. Master Planning	In 2022, the City completed a City-wide Stormwater Master Plan that focused on pipe capacity limitations. The projects identified will become CIP expenditures over this permit cycle. In 24-25, the Watershed Engineering Team made substantial progress in the creation of a sub-basin plan (the Kelley Creek Watershed Master Plan) that identifies opportunities to address hydomodification, stream and floodplain improvements, and water quality and detention facilities through multiple-objective investments. An updated project list was also completed for the City's Natural Resources Master Plan which identifies and prioritizes stream, riparian, wetland, and floodplain improvement projects across the city.	Plan, design, and build CIPs.	annually/ongoing	This FY the City developed a detailed basin master plan for the Kelley Creek Watershed, which is a tributary of Johnson Creek. The plan integrates stream resiliency and upland regional stormwater management to address hydromodification in this urbanizing watershed where the creek has already been impacted by agriculture, logging, and rural residential development. Funding strategies are being explored prior to implementation of projects, with a goal to finalize a preferred strategy during this FY. Revisions to the draft Natural Resources Master Plan (NRMP) were developed for Kelly Creek at Salquist, Chastain Creek and Kelly Creek Greenway.
B. Water Quality Projects	Stormwater infiltration or treatment is a component of City funded projects are required by the Stormwater Manual. Occasionally, the City also conducts projects in partnership with private development and/or grant funding. This BMP reports retrofit projects.	Implement Stormwater Manual requirements.	annually/ongoing	**See Table 3.4**

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
C. Integrated Pest Management	Limit the number of pesticides and fertilizers from city operations by implementing an Integrated Pest Management Plan to manage public land.	Update the Plan at least once during the permit cycle. At least biennially discuss land management strategies with staff. Applicators are licensed and complete licensure renewal schedule.	Update goal: FY23-24	Facilities contracts with Relay Resources to manage City Building Properties Transportation has 2 applicator Wastewater has 0 applicators Stormwater has 5 applicators Water has 1 applicator Parks has 5 applicators Natural Resources has 2 applicators, but generally contracts these services **See Table 3.8**
D. Urban Canopy Program	This BMP is supported by Parks Planning staff and coordinated with other departments as needed. Enhance the urban canopy relative to Parks properties and street trees to support the City's Climate Action Plan.	Code enforcement of tree removal violations Annual replacement of dead/dying street trees Urban Forestry Subcommittee (public participation)	annually/ongoing	<u>Events/Plantings:</u> Community Tree Planting Event West Gresham: 82 trees planted, 94 volunteers. Friends of Trees Nadaka Nature Park ~750 trees & shrubs planted. Black Heritage Month w/ Urban Forestry Library and Mayor. Arbor Day Event: 50 volunteers. Friends of Trees Nature walk. Rockwood Tree Well Event BRANCH Coalition Meetings Fees for "in-leiu of" totaling ~$36K No tree violations reported
E. Natural Resource Program	The Watershed Department and Natural Resources Program focus on enhancing & preserving the health of 688 acres or riparian area and 54 miles of stream corridors through restoration efforts reported here in tables 4.4 and 4.6	Implement NR CIPs Actively manage and restore on average ~100 acres/yr. Track volunteers and community organizations engaged.	annually/ongoing	See **Table 3.2** for Natural Resources Education & Outreach See **Table 3.4** for CIPs See **Table 3.6** for Restoration Activities
Pollution Prevention from City Activities (PPCA A-F) **BMP Owner: Multiple as described in each Activity Description**				
A. O&M for Public Roads, bridges: sweeping	The City's Transportation Department oversees street sweeping and winter road safety measures and manages some of the vegetated right of ways following the Integrated Pest Management Plan. For road maintenance, staff follow ODOT's Standard Operating Procedure for Road Maintenance to limit impacts to stormwater and buffers.	Prioritize sweeping of arterial roads Conduct 8-10 sweeps/yr.	annually/ongoing	10 residential sweeps 12 arterial sweeps ~6800 miles swept City additional routine/emergency sweeps and leafy season included ~1400 hours 2,300 tons of debris collected & disposed at Wasco landfill (city/contractor combined)

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
B. O&M for Public Roads, bridges: deicing	The Transportation Department oversees the application of winter road safety chemicals follows the City's Winter Road Plan to minimize risk to the environment while achieving safe driving conditions. The Winter Road Operating Plan is available on the City's website GreshamOregon.gov Transportation page	Remove winter road traction materials, as soon as practical post storm	annually/ongoing	0 gallons of Magnesium Chloride used for anti/deicing on priority roads 0 sanding rock used No winter events
C. Limit Releases from Fire Training Activities	The Fire Department Training Center follows a procedure to implement storm drain protection during training activities that may result in runoff. Watershed staff support ongoing informational check-ins to update Fire on stormwater technology and research, as applicable.	Deploy storm drain protection techniques during training that cause runoff	annually/ongoing	Fire follows SOPs related to protecting the stormwater system at the training center.
D. Water Line Flushing	The Water Operations Division is responsible for minimizing impacts to the stormwater system by implementing an SOP for water line flushing, which involves using a dechlorination injector and applicable treatment chemicals. Staff deploy sweeping or drain protection to limit debris from entering the nearest stormdrains because of flushing.	Use of dechlorination	annually/ongoing	Staff conducted flushing of 33,962,625 gallons of water using the dechlorination SOP. The significant increase in flushing was a result of the city's transition from Bull Run to groundwater.
E. Limit Wastewater Pipe Seepage	The Wastewater Department is responsible for overseeing the system maintenance. This includes ongoing asset management with a CIP that repairs aging pipes that are more prone to seepage.	Implement wastewater pipe repairs as approved by the City budget.	annually/ongoing	Main line pipe replaced ~816 linear feet Laterals replaced ~214 linear feet Manhole grouting 0
F. Staff Training	DEQ requests to understand how staff are trained or continue ongoing training as needed to oversee and/or conduct the work of their program areas. The City of Gresham provides a variety of professional development and industry specific training opportunities for staff to ensure safe and effective delivery of programs and services for the public's benefit. This includes internal and external trainings, as well as new staff orientation of programs, policies, and procedures. In many cases, staff are trained on equipment and procedures by senior staff where specific professional trainings are not readily available, such as business inspections.	Document staff trainings in required program areas for permit compliance. Train new staff on all good housekeeping procedures, chemical storage, stormdrain protection procedures for outdoor work and management of the Operations yard within six months of hire.	annually/ongoing	Training of New staff on Housekeeping by Dept: Parks: 1 Transportation: 5 Stormwater: 5 Water: 1 Wastewater: 0
Public Reporting, Engagement, Outreach & Behavior Change (PREOB A-F) **BMP Owner: Multiple as described included in each Activity Description**				
A. Spills & Illicit Discharges & Public Reporting	Coordination and oversight for this BMP is conducted by the Water Quality group. The City typically receives information about spills or unusual discharges in the following ways: phone calls to City Hall or Operations Dept, Code Enforcement voicemail hotline, email, or the My Gresham App (~7,000 concerns per year reported across all departments). Staff on or off duty may also report observations. Calls to Police Non-Emergency line are connected to the On-call after hours O&M staff, as applicable. For concerns that constitute threats to human health, welfare, or the environment, staff must respond within 24 hours or as soon as possible upon becoming aware (if delayed because of voicemail, weekend report, etc.) For all other types or concerns, respond within 1-4 days (average 2).	Document spill and illicit discharge reports and investigations and outcomes in City's database.	annually/ongoing	61 Incidences reported, 17 were residential, 15 vehicle related incidents, 20 were businesses, 9 were unknown sources 49 incidences included educational instructions, outreach, or notices of violation to the responsible party (RP) or to a neighborhood or surrounding area regarding future expectations. 11 incidences were cleaned up by the City with no RP or assisted the RP 3 incidents were taken care of by the RP or billed to the RP by the City for its cleanup work 5 incidences resulted in known releases to the stream. The Operations staff uses booms to absorb pollutants from streams or stormwater facilities to the maximum extent practicable. ~43 concerns were reported thru MyGresham: 31 were concerns about street drainage or blockage of inlets addressed by Operations staff, 2 involved an illicit discharge report, 4 were general questions, 2 were private drainage issues, and 4 were other stromwater related issues.

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
B. Litter/Hazardous Waste Control (Residents)	The City's Solid Waste & Sustainability group offers special collections events that vary by type and quantity over the permit cycle. The SW&S team also oversees residential garbage, recycling, and yard debris hauling and used oil is collected at curbside and reported to the City. Examples include bulky waste, Styrofoam, or hazardous materials. The program also support permitted events occurring related to recycling collection such as the Farmer's Market and City Festivals.	Document events offered and supported. Track residential used oil collected by haulers	annually/ongoing	22 tons of electronic waste collected at Spring event. Free geek repair, reuse, recycler oversees best use and final disposal, as needed. 1 ton of batteries were collected with the new battery collection program Haulers reported collecting about 43 tons of used oil.
C. Business Outreach	The Solid Waste & Sustainability group offers outreach to businesses and apartments with services that help reduce litter and illegal dumping (includes stormdrain marking) and increase the recycling of materials and composting of food waste. The City also collaborates with EcoBiz to offer technical assistance to the Automotive sector to implement more sustainable and environmentally protective actions. Staff also conduct direct outreach via fact sheets, posters, and direct mail to specific key sectors periodically.	Document businesses and apartments served.	annually/ongoing	**See Table 3.3**
D. Schools and youth outreach	The Watershed Department has limited staff for offering formal (planned/ongoing) curriculum to classrooms. However, staff occasionally teach classrooms or lead field trips, support camps or events, etc. and also partner with local watershed councils to deliver some services to Gresham youth. Staff believe that exposing youth to natural systems, science, local water resources and wildlife has the potential to have a lasting impact on their perception of the importance of pollution reduction actions they can take within their lives. ***(Added in FY 24-25 under Adaptive Management)***	Document staff activities to deliver water protection, nature & wildlife education & experiences to youth.	annually/ongoing	**See Table 3.2**
E. Regional adult outreach	Because outreach is very labor intensive and advertising is so financially expensive, the Watershed Department's approach is to invest a large portion of the budget and effort to leverage dollars and staffing using collaborative approaches to deliver stormwater pollutant reduction and water protection messaging to adults. Examples include a $60K-$70Kannual Public Service Announcement campaign on television cost shared by 15+ agencies. Other campaign work includes the Metro area Regional Coalition for Clean Rivers and Streams, the Statewide Clean Rivers Coalition's "Follow the Water" and directed support of watershed council work to engage the public.	Educate key adult audiences as described in the E&O strategy with key pollutant reduction messages and positive actions they can take within their lives. Prioritize behavior change methods. Measure and evaluation, when possible.	annually/ongoing	**See Table 3.2**
F. Public Involvement & Participation: City outreach	The City uses a variety of communication channels to reach its residents which includes notification of public comment opportunities for City Plans, Budgets, Rates, Capital Projects, Events, etc. Examples include its website, print and electronic newsletter, social media, earned media etc. Staff also conduct outreach via direct mail to specific key audiences periodically (e.g., dog waste, RV dumping letters).	Utilize City channels to deliver 3-5 messages to residents	annually/ongoing	**See Table 3.2**
Control Impacts from Development and Business Activities (CIDBA A-G) **BMP Owner: Water Quality**				
A. Stormwater Management Manual (SWMM)	This manual contains the regulatory development thresholds that necessitate stormwater controls, the prioritization of green infrastructure, the design standards, plan review process, and long term maintenance requirements.	Review SWMM at least once within the permit cycle. Update, if necessary	Review FY 24-25: Council approved	The updated SWMM was adopted by city council in May 2025 and became effective on June 1, 2025. Additional revisions were made to the 2025 adopted version of the SWMM that were approved by city council on May 1, 2026 and became effective on July 1, 2026.

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
B. Private Stormwater Facilities Tracking & Inspection	The Watershed Department ensures proper installation, planting, and GIS mapping of private stormwater facilities required by the SWMM. The types of facilities installed and the catchment areas that drain to them are recorded for future pollutant reduction modeling and also to ensure the long-term maintenance and function as required by Gresham Code. Private facility owners are recorded in the City's database and property owners are made aware of their ownership and maintenance requirements. The City has a Private Stormwater Facility Handbook which is available on its website and is utilized to support private maintenance technical assistance. Staff have inspected all private facilities and required maintenance, as needed, historically. In the past few years, staff have categorized and prioritized the private inspection program based on available staffing time and overall potential impact to the public stormwater system from the facility based on adaptive management feedback loops on how long a facility's lifecycle has been observed over time. Facilities that treat stormwater prior to draining to groundwater or that infiltrate and don't flow to the City's public system are not part of the inspection program. Additionally, one Gresham neighborhood was built with on lot rain gardens with single family homes. These rain gardens are not inspected, but residents are given direct mail outreach on rain garden maintenance, at least once per permit cycle. Therefore, after the facility determination the criteria for inclusion is as follows: larger detention ponds are a higher priority (annual inspection) and other smaller facilities that have moderate potential for negative impacts will be inspected at least once every five years. The current inventory is one larger private facility inspected annually (not including the 30 multiowner facilities already included in the City's public maintenance annual program) and 33 smaller ponds & smaller vegetated facilities and 60 proprietary device locations. Proprietary device owners must submit documentation that their devices are maintained or still clean every two years on a 50% inventory rotating basis.	Document and inspect new private stormwater facilities and associated treatment areas. Conduct QA/QC of GIS recording of these facilities at least once per year Inspect major structural controls Oversee proprietary device maintenance	annually/ongoing	The Watershed Department hired an additional Environmental Specialist 2 to focus on the private stormwater facility tracking and inspections, in addition to erosion control and other assigned duties. Gresham has ~60 commercial or multi-family sites with proprietary underground vaults that are required to provide biennial documentation of inspection and maintenance. During FY 25-26 there were 30 sites that provided the required inspection and maintenance documentation. 151 Private green stormwater infrastructures were inspected. *A "location" is one address or owner and can include multiple different assets in a single location, such as swales and ponds.*
C. Erosion Prevention & Sediment Control (EPSC) Plan	The City's EPSC Manual was reviewed as part of the process for the updated SWMP. The Manual functions well for the EPSC Plan Review and Inspection Program needs. Staff attend industry specific trainings and stay attune to new technology developments that may provide additional program requirement updates or further the pollution reduction efficacy.	Review EPSC Manual at least once within the permit cycle. Update, if necessary	Goal for review FY 25-26	Updates completed in FY 25-26. No changes to the EPSC Manual this PY
D. EPSC Inspection Program & New (Post Construction) Stormwater Facility Inspections	Water Quality staff coordinate with the City's Permit & Business Licensing Department staff for this BMP. Ensure development permitted within the City obtains a DEQ's 1200-C permit, when applicable and apply the City's EPSC Manual requirements to sites to ensure sediment laden runoff is not entering the City's stormwater system or waterways. The EPSC manual is provided to contractors during the permitting process. Contractors provide information to the City about which EPSC BMPs will be utilized and the specific site locations for BMPs, as required. This information is available at all times to Public Works Inspectors and the Water Quality team providing oversight via a digital software permit system. At construction project final, staff inspect the site to ensure that all vegetated facilities are properly planted or hydroseeded, per SWMM requirements. Sites are checked to ensure underground facilities do not contain construction sediment and that bare soil is covered before protective storm drain filters can be removed.	Conduct active site inspections and QA/QC oversight as described in the SOP. Ensure large sites obtain a DEQ 1200-C permit Assist DEQ with inspections if requested	annually/ongoing	A total of 251 construction sites were inspected. 230 single family sites, 13 commercial construction projects, 6 grading projects, and 2 multi-family sites 25 total acres were disturbed for development At least three erosion control inspections are completed per site: a pre-construction inspection, an interim erosion control inspection, and a final erosion control inspection at the end of the project. There were 64 failed inspections requiring corrections for deficiencies such as installing/maintaining perimeter control, providing adequate cover for bare soil, protecting stockpiles, improving construction entrances, and sweeping streets. All deficiencies were corrected within the requested period. See **Table 3.7** for facilities installed and inspected.

Activity Name	Description	Measurable Goal	Timeframe	Reporting Metrics FY 25-26
E. Business Screening & Inspection Program	Implement the Business Inspection Program to address sectors that have high potential to contribute to stormwater pollution in runoff from their site. This program also includes the implementation of the Wellfield Protection Program and the Wastewater Fats, Oils, Grease (FOG) program. The City's Business Inspection program focuses on businesses with hazardous waste, manufacturing, outdoor storage that can cause stormwater pollution. Issue Notice of Violation if time frames for corrections are not met and enforce as needed to gain compliance.	Conduct routine and follow up inspections as described in the SOP, typically projected to be 100-200/year Conduct screen of City's businesses for DEQ 1200Z permit evaluation, based upon industry types included by that permit Review the City's new business list to determine additions to the program	Screen all businesses for potential 1200-Z permit referral at least annually Screen new businesses at least quarterly	**Business & Groundwater Inspections:** Total: 252: (84 automotive related businesses, 168 Groundwater Protection) 71 inspections with non-compliant items 8 recorded spill responses 1 critical violation; outside washing using soaps-stopped immediately ~55 businesses made corrections ~25 pending revisit inspection *(Revisit time frame 24 hours to 60 days depending on corrections needed)* *At the time of this report submittal; 6 businesses are pending reinspection due to operation/scheduling, 3 have closed, 6 are compliant, 2 consolidated their materials to be below regulatory thresholds, 8 remain non-compliant and have made progress toward compliance (majority of which are missing the annual hazardeous material inventory report)* **Fats, Oils, and Grease (FOG) Program Inspections:** Total: 144 1 Notice of Violation (NOV); 1 corrected: 21 Informal notices; 1 corrected **Non-compliant inspections related to stormwater include, but not limited to; non-compliant items, secondary containment, spills, storm infrastructure repair/maintenance.* *A vast majority of 1200Z qualifying businesses have already been referred during this permit cycle or have been part of a focused effort from DEQ in the Columbia Slough Watershed to apply for a permit. Gresham staff are working to incorporate their current database to assist in the evaluation and referral of any future and current businesses to DEQ that would have the potential to need a 1200Z.
F. Private Storm Drain Maintenance Program	The City created and has managed and reported efforts related to this program since 2004. Drain cleaning is an effective way to control stormwater pollution. Originally, it was strictly a voluntary outreach program called the Stormdrain Cleaning Assistance Program (SCAP), which resulted in cleaning 200-400 drains per year. During the last permit cycle, the Water Science staff began a focused effort with summer interns to update the City's private storm drain inventory in the GIS system. Drain conditions and levels of sediment were also recorded. This effort led to staff launching a mandatory drain cleaning notice for the drains full of debris as noted by the interns. This effort will continue during this permit cycle. Due to limited staffing levels related to this effort, staff will methodically select small portions of the city each year to request drain cleaning compliance documentation, in addition to continuing the SCAP program, which functions to lower the cost for cleaning to affordable rates for small businesses to participate.	Implement the SCAP program Select additive portions of the City's business areas to request drain cleaning documentation.	Offer SCAP annually Document drain cleaning for 10-20 non-SCAP participating businesses annually	In Gresham: 285 businesses ~980 drains cleaned ~160 cy of debrs removed Total across partnered cities: (Fairview, Wood Village, Troutdale) ~315 businesses ~1,086 drains cleaned ~177 cy of debris removed
G. Retrofit/Hydromodification Assessment Update	City will provide an assessment of how the reports previously provided have been considered, updated, or implemented, remaining gaps of knowledge, if applicable, new goals, tools, priorities for future improvement.	Provide DEQ an assessment with outcomes related to the creation of the original reports.	Third year of the permit term (FY 22-23)	Submitted in PY 28 Report Appendix B.

Table 3.2 Education & Outreach Programs

Programs with an emphasis on Residents

Program/Event and Partner(s)	Focused Watershed	Stats	Focus of Program/Event
Backyard Wildlife Habitat Home Visits (BHCP)	All	22 site visits in Gresham and 2 in Fairview: with 8 certifications and 8 recertifications. BHCP staff engaged in 14 Gresham outreach activities. E-news: ~18,800 individuals Facebook: ~15k followers	Through a partnership with Bird Alliance of Oregon and Columbia Land Trust, consultation visits help homeowners qualify for Backyard Wildlife Habitat status. The program covers stormwater management, pesticide reduction, tree education, and related topics, with ongoing education and outreach available through online resources.
Johnson Creek Watershed Council (JCWC)	Johnson Creek Watershed	Supports outreach JCWC E-list to over 6K Gresham contacts Instagram: ~2900 followers Facebook: ~3500 followers City supported 12 events that involved ~200 and ~1000 volunteer hours.	Assists the City and Natural Resource Department with stream restoration, plantings, and invasive plant removal. Events include Dragonfly Days and Amphibian egg mass surveying.
Columbia Slough Watershed Council (CSWC)	Fairview Creek & Columbia Slough	38 Classroom lessons and 19 Field Trips to the Columbia Slough Stormwater Facility, Wastewater Treatment Plant, Salish Ponds, and Southwest Community Park for Reynolds	General education for school aged kids focusing on Title 1 Schools within the Columbia Slough watershed; offer areas of watershed protection, water science, native plants, wildlife, ecosystems, and stormwater pollutant treatment with vegetative facilities; Slough School

		School Districts youth, serving Gresham and Fairview Grade 2-5 Students	
Regional Coalition for Clean Rivers and Streams: The River Starts Here	All	58K Impressions 4.2K Followers 3.1K Engagements 166 Posts 2.8K Video views	A multi-agency collaboration using branded campaigns featuring monthly videos, digital advertising and organic posts that promote the work of local watershed councils and community volunteer events as well as tips and news articles that inform the public about actions they can take to reduce pollution.
City of Gresham and Regional partners with KPTV- "It's Our Water" Campaign	All	Clean Waters Campaign: www.kptv.com/water page was visited ~2800 times. 12 months of residential water protection messaging that aired 533 times over the year. Total impressions: ~8.6M (TV, social, web)	A multi-agency collaboration to contract with KPTV to include educational and informational snippets regarding car washing, water conservation, lawn care/watering, debris cleaning, water runoff, and being rain ready.
Clear Rivers Coalition: Follow the Water - Level Up Your Lawn- What's Your Lawn Style- Pesticide Reduction Campaign-	All	Follow the Water: 448K Impressions Level Up Your Lawn: 1.7K views What's Your Lawn Style: 420K views Pesticide Reduction Campaign: 50.1K Impressions	A regional group with over 60 partners of municipalities, watershed councils and state & federal agencies focusing on protecting local rivers using social media campaigns, videos, and other outreach work.

Public Involvement: City Website & Stormwater Pages	All	Environmental Services Page: ~1000 annually, Water Resources: ~2500 (drinking water, stormwater, wastewater pages) Most Popular Stormwater/Watershed Webpages: Stormwater Docs: ~1100, SCAP: ~850, Volunteer/Education Tours: ~400, Natural Resource Program: ~500, Groundwater: ~500, Watershed Residential Program: ~200, Pollution Prevention: ~150. Car Wash Tips: ~200, SW Tree Wells: ~300.	The City Website provides information and resources to residents and businesses.
City Social Media Sites	All	Facebook: ~18k Instagram: ~6k Twitter (X): ~3k	The city maintains social media accounts to share information with residents and businesses, to include watershed specific events, programs, partnerships, and information.
Doggie Bag Distribution	All	37 Distribution boxes	Doggie Bag Distribution Boxes are maintained and stocked at all City of Gresham Parks
Gresham and Fairview School Classroom Presentations	All	-5 schools in three districts and 4 classes within a home school Co-op. -22 Classes -490 Students	Classroom presentations are offered to Gresham and Fairview school districts for kindergarten through fifth-grade students. Topics include water quality, “Who Dirtied the Water,” and “My Streets to Our Streams,” using stories, visuals,

			and demonstrations such as Tree Well vs. Storm Drain.
Adopt-a-Drain Program	All	-54 drains adopted -39 participants -377 lbs. of debris cleaned off grates	In partnership with Hamline University, the Adopt-a-Drain Program supports community stewardship of storm drains and tracks program impacts through or.adopt-a-drain.org.
Water Science Education	All	~675 residents	Dr. Katie Holzer provides water science education for students from elementary through college, as well as watershed councils and community organizations. Programs include field trips, trainings, public talks, and classroom visits on topics such as water quality, beavers, porous pavement, amphibians, and invertebrates.
City Newsletters	All	Neighborhood Connections (e-newsletter, bimonthly) ~2,500 subscribers GRESHAM (print newsletter, quarterly) ~55k residents and businesses	The City's newsletters cover seasonal stormwater and nature topics, including best practices, tips, programs, and calls to action.
Stormwater Awareness Week Video Series	All	~17,000 Impressions across FB, IG, X. ~600 Engagements 75 Shares	Social media videos focused on stormwater pollution: Stormwater Awareness Week and three accompanying videos; "Drips & Drops", "Sweep it, Scoop it, Dump it" and "Poopy Scoopy"
Mt. Hood Movie Theatre Ad Campaign	All	~5500 patrons	A static ad featured in a loop 20 minutes prior to the movie previews starting. Messaging focused on "Only Rain Down the Drain"

Natural Resources Outreach & Education	All	~10 organized field trip ~500 students, ~360 hours of volunteer work ~10 students from Reynolds Learning Academy, ~40 service hours	Gresham's Natural Resources Staff work with area schools to host field trips involving riparian planting, invasive weed removal, and habitat restoration. School Work Program with Reynolds Learning Academy to provide guided work experience in Gresham riparian areas for high school students

Table 3.3 Education & Outreach Programs

Programs with an emphasis on Businesses

Program/Event and Partner(s)	Focused Watershed	Stats	Focus of Program/Event
City of Gresham Green Business E-Newsletter	All	6 issues/yr. ~2000 subscribers.	Stormdrain Cleaning Assistance Program (SCAP), General Best Practices, Hazardous Waste Training, Sustainability, recycling, safer cleaners
City of Gresham Stormdrain Cleaning Assistance Program (SCAP)	All	285 businesses participated, ~980 drains cleaned. 160 yds of debris removed.	Implemented in the months leading up to Spring and Fall to offer businesses an affordable service through multiple vendors to clean private stormdrains. Outreach is done through emails, mailers, E-news; GreenBiz, City E-news, website, and social media
Stormwater Video Series: SCAP	All	9368 impressions across FB, IG, X. 563 engagements 21 shares	Social media video focused on promoting SCAP to Gresham and partnering communities.
Green Biz Technical Assistance	All	820 total assisted 235 businesses are composting food waste 11 Green Business Evals; 3 newly certified; 1 recertified	A City run and operated program to assist businesses with leaks, spills, pollution prevention, drain maintenance, food grease, & green cleaners; offered in English and Spanish. Collaborated with Metro to promote Green Cleaners to the Latin Community and cultural grocery stores. Promote commercial composting.
EcoBiz Program with Pollution Prevention Resource Center (PPRC)	All	Worked with 15 area automotive businesses and certified 2	The program provides technical assistance in recycling, energy, waste reduction, stormwater management and clean practices for automotive, landscape, and manufacturing businesses. Providing criteria and eventual certification and recertification.

Multiple City Department Outreach; “Maintain your Private Stormdrain”	All	~50 property managers of multifamily complexes Businesses during inspections when applicable	Outreach material utilized by Solid Waste and Sustainability in multifamily homes and Groundwater Protection and FOG Inspectors with businesses to educate and inform the need and responsibility of their private stormdrains, to include promotion of SCAP.

Table 3.4 Water Quality and Natural Resources Projects 2025-2026

Project Name/Watershed	Watershed	Project Status	Stormwater Mitigation Measures/Area Treated	Funding Mechanism
The City's Capital Projects Plan is located at: https://greshamoregon.gov/Capital-Improvement-Program/				
Riparian and adjacent upland planting	**Johnson Creek TMDL Watershed:** Johnson Creek, Botefuhr Creek, Brick Creek, Butler Creek, Cedar Creek, Thompson Creek, Nechakokee Creek, Heiney Creek, Highland Creek, Hogan Creek, Meadow Creek, Miller Creek, Jenne Creek, Chastain Creek, Kelley Creek and multiple unnamed seasonal/ephemeral creeks originating from our buttes. **Kelly Creek TMDL Watershed:** Kelly Creek and Burlingame Creek **Columbia Slough TMDL Watershed:** Columbia Slough **Fairview Creek TMDL Watershed:** Fairview Creek	Restoration of riparian, wetland, and adjacent upland areas. The City is currently working on 26 restoration sites, covering approx. 331 acres. Johnson Creek TMDL Watershed: Johnson Creek (8 sites), Kelley Creek (1 site), Butler Creek (1 site), Meadow Creek (2 sites), Chastain Creek (1 site), Hogan Creek (2 sites), and 2 sites on unnamed tributaries to Johnson Creek. Kelly Creek TMDL Watershed: Kelly Creek (3 sites) and Burlingame Creek (1 site). Columbia Slough TMDL Watershed: Columbia Slough (2 sites). Fairview Creek TMDL Watershed: Fairview Creek (3 sites).	Water quality, stream shade, invasive control, forest health, stream function, wetland function, and habitat improvements.	Watershed (Natural Resources) Operating Fund: $120K City Special Purpose "Tree Fund" (from development fees): $33K
Invasive Weed Survey & Control	**Willamette River Watershed**: Johnson Creek and Jenne Butte	Active, ongoing invasive control. Early detection rapid response (EDRR) categorized or other invasive species are addressed as they are reported or discovered that could harm infrastructure or public property. This year, interns hired by Johnson Creek Watershed Council completed garlic mustard, Japanese knotweed, and small-flowered impatiens invasive species surveys along Johnson Creek. The City completed it's 3rd year of garlic mustard control on Jenne Butte (80 acres). The City also cut and treated 21 acres of Himalayan blackberry and 4 acres of reed canarygrass.	Spot treatment for controlling aggressive invasive plant species that lead to bank failures, loss of native vegetation, reduce water quality and/or increase public risk. Species include: Japanese knotweed, Himalayan blackberry, purple loosestrife, English holly, English ivy, garlic mustard, hogweed, reed canarygrass, and yellow flag iris. See Gresham Invasive Species list for more information.	Collective public works annual contributions from the Operating Funds of Parks, Transportation, Stormwater, Wastewater, and Water: $62.5K
Local Roads Repair	All	The Transportation Division has embarked upon a deferred maintenance repair project that will last several years. The Utility Departments are collaborating to ensure pipes are inspected and repaired, if needed, prior to repaving work. This is protection of the rate payer's investment in infrastructure. This past year our work included: 615 linear feet of stormwater pipe replaced 3,840 linear feet of pipe was cured in place 19 stormdrains were replaced	Stormwater conveyance system updated	Watershed CIP funding $747,000

Project Name/Watershed	Watershed	Project Status	Stormwater Mitigation Measures/Area Treated	Funding Mechanism
In-stream and near-stream slope stabilization projects	**Willamette River Watershed:** Johnson Creek, Butler Creek, Jenne Creek, and Kelley Creek **Sandy River Watershed:** Kelly Creek and Burlingame Creek	Within the **Johnson Creek Watershed**, staff efforts were focused on (1) Planning, permitting, and contracting for stream stabilization on **middle Nechacokee Creek @ Cleveland**. Construction Summer 2025. (2) **Hunter's Highland Outfall Stabilization and Drainage Improvements**: Staff began a preliminary assessment of the Hunters Highland Outfall Stabilization and Drainage Improvement project. This project will focus on repairing eroded areas caused by unprotected storm outfalls that ultimately drain to Johnson Creek. The area has shown signs of potential for larger slope failures if left unaddressed. Drainage will be rerouted to a safer discharge point, slopes and outfalls will be repaired and stabilized, and maintenance access will be improved for inspections and ongoing maintenance operations. Initial field assessments began in 2025, with design and permitting starting in 2026. Construction anticipated Summer 2027. **Kelly Watershed**: (1) **Kelly Creek along Greenway @ Powell.** Following Greenway landslide repair in 22-23, the area closest to the landslide area had additional restoration (100 trees added this winter on floodplain terrace and at toe of slide repair). Overall Greenway along Wendy Court assessed for larger stream improvement/slope stabilization project. New concept plan added to City's Natural Resources Master Plan. (2) **Kelly Creek along 16th @ Ironwood**. Design and encroachment resolution for upcoming construction that will provide improvements to access of water quality features, bank stabilization, removal of existing culvert and enhancement of the creek. Project will also add pre-treatment (sedimentation manhole). Projects will be constructed in 2027.	Water quality, riparian function, erosion control/preventing hydromodification	Watershed CIP funding: * Hunters Highland Outfall Stabilization and Drainage Improvements. Design and construction estimated to be $1.8M * Kelly Creek along Greenway @ Powell * Kelly Creek along 16th @ Ironwood. Design and construction estimated to be $1.1M. Wastewater CIP funding: * Nechacokee Stream Stabilization.
Chastain Creek CIPP-UV Rehab at Towle	**Willamette River Watershed:** Johnson Creek Basin	Lined 476LF stormwater pipe that runs through the landfill in spring 2026 to keep any potential leachate from migrating into the storm system and receiving body (Johnson Creek).	Water Quality	Watershed CIP funding. Design and construction approximately $150K
Rockwood Stormwater Tree Well Retrofits	**Groundwater recharge area**	Project was designed in 2025 and completed in early spring 2026. Constructed 35 stormwater tree wells and added 8 trees to existing stormwater planters to increase shade and reduce the heat island effect. The new stormwater tree wells treat and infiltrate runoff that would otherwise go to Underground Injection Controls.	Stormwater tree well retrofits will provide water quality treatment for arterial roadway runoff and increase shade to reduce the urban heat island effect. This project will construct approx. 40 stormwater tree wells in the Rockwood neighborhood.	Design is funded by the City's Special Purpose funds. Construction funding anticipated by an awarded federal FEMA grant for $380K

Project Name/Watershed	Watershed	Project Status	Stormwater Mitigation Measures/Area Treated	Funding Mechanism
Burnside Stormwater Tree Well Retrofits	**Columbia River Watershed:** Fairview Creek **Sandy River Watershed:** Kelly Creek	Construction begins October 2026 and will be complete by the end of March 2027. We will construct at least 31 stormwater tree wells to treat runoff and remove 6PPDQ from one of the City's busiest arterial roadways.	Stormwater tree well retrofits will provide water quality treatment for arterial roadway runoff and increase shade to reduce the urban heat island effect. This project will construct approx. 30-40 stormwater tree wells on Burnside Road.	Design and construction are primarily funded by a grant from the Oregon Community Green Infrastructure Program, administered by the Department of Land Conservation and Development. Supplemental funding from the City. Design and Construction cost approx. $750K
Powell Blvd. Stormwater Tree Well Retrofits	**Willamette River Watershed:** Johnson Creek Basin	In design phase. Identified for construction in summer of 2027.	Stormwater tree well retrofits will provide water quality treatment for arterial roadway runoff and increase shade to reduce the urban heat island effect. This project will construct approx. 50 stormwater tree wells on Powell Blvd. It is targeting removal of 6PPD-Q.	Design is funded by a 100% forgivable loan from Oregon DEQ state revolving loan fund. Construction will be funded by an Oregon DEQ OSG grant. Design contract is for up to $95K Construction cost will be approx. $500K
WQ Retrofit Master Plan	**All**	Master plan was updated in 2025 to include an analysis of prioritization of facilities and their locations based on arterial road locations. Projects identified will be considered for future implementation as part of the City's Low Impact Development Practices Retrofit Program.	Water Quality	Watershed CIP Funding
Kelley Creek Watershed Master Plan	**Johnson Creek Watershed:** Kelley Creek Basin	Master plan was created to analyze likelihood and location of development in the coming years that would occur within the Kelley Creek watershed. The project identified areas where the City could prioritize regional solutions to protect stream health in anticipation of development. Master plan was developed in 2025/2026, and is expected to be adopted in spring of 2027	Hydromodification	Watershed CIP Funding. Planning effort cost approx. $215K
Regner Reservoir Seismic Improvements	**Johnson Creek Watershed:** Nechacokee Creek	Water Department is leading seismic upgrades to the reservoir on Regner Road. Portion of the project includes a filtration swale to treat some site runoff that was previously not treated. Construction starting in fall of 2026.	Water Quality	Water Department funding through BRIC Grant Program
Kirk Park Pump House	**Columbia Slough Watershed**	The Water Department installed a pump house as part of the Cascade Groundwater Alliance Project. A portion of the project included a swale and detention pond to treat the runoff from the pump house, access road and walkway that was previously pervious surfaces	Water Quality	Jointly funded by City of Gresham and the Rockwood Water District. Gresham's portion was a CIP that included a WIFIA loan.
NE Cleveland Ave: SE Stark St to NE Burnside	**Fairview Creek**	Road enhancements for pedestrian and vehicle safety. Project will retrofit one existing UIC, add a new piped conveyance system and add 19 new street trees. Approximately 1.34 acres of impervious surface will be added by the project in the form of new concrete sidewalk and sections of widened road pavement.	A summary of the amount of impervious area that is replaced, as well as the amount treated, will be provided next PY.	Transportation CIP

Table 3.5: City of Gresham Watershed Department
Stormwater Budget Allocation (including staff and operating)

Program Area	PY 30 Budget FY 25-26	PY 31 Budget FY 26-27 (Projected)
Water Quality: Policy Development Stormwater/Erosion Manual Oversight Permit Compliance Monitoring and Analysis Spill Response Public Education & Outreach Private Water Quality Facility Program Business Inspection & Enforcement Erosion Control Inspection & Enforcement TMDL Compliance Data QA/QC Training	$ 1,276,733	$ 1,409,421
Natural Resources: Restoration Encroachment Response Streambank Failure Response Capital Improvements Master Plan Updates Invasive Species Control TMDL Compliance Green Space Acquisition	$ 992,378	$ 995,115
Engineering: Capital Improvements Minor Drainage/Flood Control Public Works Standards Stormwater Manual Oversight Master Plan updates Mapping Stormwater Assets Management Training	$1,032,290 $16.64M CIP*	$947,548 $20.97M CIP*
Operations & Maintenance: Systems Maintenance & Repair Equipment Repair & Replacement Spill Response Inspection IMP implementation Mapping Training	$ 5,510,285	$ 5,957,640
Infrastructure Development (Development Engineering, Surveying, Public Works Inspections, Commercial Erosion Control Inspections)	$ 527,000	$ 561,000
City Admin Support, GIS Support, Management, Overhead	$ 3,159,572	$ 3,401,833
Total	**$12.68M Operating/Salary $16.64M CIP (includes $9.48M for FY24/25 projects still in progress)**	**$13.27M Operating/Salary $20.97M CIP (includes $12.48M for FY25/26 projects still in progress)**

Table 3.6: City led TMDL Restoration

Project Site	Creek Name	NRMP Reach	Unit Names and Acreage	Total Site Area (acres)	Preparation Area (acres)	Planting Area (acres)	Maintenance Area (Acres)	Monitoring Area (acres)	Invasive Species Control (acres)	Linear Stream (feet)	Plants Installed	Notes
Johnson Creek TMDL Watershed												
Ochioto Complex	Johnson Creek and Hogan Creek	JC14 JC15	Unit 1 (2.7 ac) Unit 2 (1.0 ac) Unit 3 (2.9 ac) Unit 4 (2.6 ac) Unit 5 (4.0 ac)	13.2	0.0	2.6	10.6	0.0	13.2	3,136.0	1,875	Site is in year 10 of a multi-year and multi-unit restoration. Of the 5 units, 3 are under restoration in different phases. This past years work focused on site maintenance and interplanting of bareroot shrubs and trees. Herbicide treatments of invasive weeds occurred through the entirety of the site and interplanting of 1875 bare root native trees/shrubs in unit 4.
Springwater Woods Complex	Johnson Creek and Hogan Creek	JC14 JC15	Woods (5.2 ac) Island (0.7 ac) Hogan 1 (2.7 ac) Hogan 2 (4.8 ac) Hogan 3 (4.8)	18.2	4.8	3.9	9.5	0.0	18.2	4,784.0	5,000	Site is in year 4 of a multi-year and multi-unit restoration. Site has 5 units in different phases. This past years primary work was focused on preparation, maintenance and planting phases. This included an additional 4.8 acres of Himalayan blackberry removal; invasive species control on the entirety of the site; and the planting of bare root and container stock over 3.9 acres the Woods Unit and Hogan Unit 1.
Wisteria Site	Johnson Creek	JC11	Unit 1 (1.2 ac)	1.2	0.0	0.0	0.0	1.2	1.2	730.0	0	Site is in the monitoring phase and is not reviewed yearly. This past year we completed two rounds of herbicide treatments that focused on garlic mustard, blackberry, and wisteria control.
7th Street Bridge Complex	Johnson Creek	JC06 JC07 JC08	Unit 1 (1.3 ac) Unit 2 (1.6 ac) Unit 3 (3,8 ac) Unit 4 (1.6 ac) Unit 5 (1.9 ac) Walter (3.1 ac) Horse trail (3.6 ac)	16.9	0.0	5.5	11.4	0.0	16.9	7,605.0	7,775	Site is in year 8 of a multi-year and multi-unit restoration. Site has 7 restoration units in different phases of restoration. This past year work included maintenance herbicide treatment over the entirety of the 16.9 acres and planting of bareroot native shrubs and trees over 5.5 acres (Unit 5 and Horse trail). Volunteer event at Walters added 300 container plants.
Main City Park Site	Johnson Creek	JC09	Unit 1 (1.7 ac) Unit 2 (2.3 ac) Unit 3 (0.9 ac)	4.9	0.0	0.0	2.9	2.0	4.9	2,780.0	800	Site is in year 5 of a multi-unit and multi-year restoration. Site has 3 restoration units. Work this past year included herbicide treatment of a broad list of invasives over the 4.9 acres. The city held Springwater Trail High School Day of Service for the 3rd year at Main City Park. A total of 175 kids and teachers participated in a plant, mulch and education event. They installed 800 container plants in the open space. These plants were predominantly herbaceous ground cover plants.

Project Site	Creek Name	NRMP Reach	Unit Names and Acreage	Total Site Area (acres)	Preparation Area (acres)	Planting Area (acres)	Maintenance Area (Acres)	Monitoring Area (acres)	Invasive Species Control (acres)	Linear Stream (feet)	Plants Installed	Notes
Johnson Creek TMDL Watershed												
Butler Creek Corridor Site	Butler Creek	BU01 BU02 BU03 BU07	NA	18.9	0.8	0.0	0.0	18.1	0.8	1,205.0	0	Most of Butler Creek is in the monitoring phase (BU01, BU02, BU03). Creek corridor is in good health with pockets of invasive vegetation and tree dieback. No work was done in the monitoring area. New area added this year at BU07. A total 0.8 acres of Himalayan blackberry was removed and herbicide treatments completed.
Jenne Butte Site	Multiple unnamed tributaries to Johnson Creek	JC01a JB01	NA	81.0	3.5	0.0	81.0	0.0	81.0	5,405.0	0	Site has two different projects. City is in year 5 of a multi-year treatment of garlic mustard. This past year the site had 3 herbicide treatments and a single hand pull completed to control garlic mustard over the 81 acres. The City is in year 3 of a multi-year holly and blackberry removal project. Holly is a prevalent invasive weed in the city open space because of past agriculture practices. Several large (1.0 acre) blackberry patches were cut and treated at the headwaters of several unnamed tributaries.
Gresham Woods Complex	Johnson Creek	JC03 JC04 JC05 CH01	Unit 1 (2.9 ac) Unit 2 (4.5 ac) Unit 3 (0.7 ac) Unit 4 (4.7 ac) Unit 5 (5.8 ac) Unit 6 (4.0 ac) Unit 7 (7.7 ac) Unit 8 (7.1 ac) Meadow (3.9 ac)	41.3	0.0	17.9	19.5	3.9	41.3	6,786.0	3,575	Site is in year 6 of a multi-year and multi-unit restoration. Site has 9 restoration units in different phases of restoration. This past years effort included herbicide treatments for a broad list of invasive weeds over the 41 acres and interplanted 3175 bare root native plants (Unit 4, 5, 6, 7, and 8). City had a student training program, Reynolds Learning Academy, perform stinky bob geranium removal and herbaceous species planting (400 containers) in two small locations within the Gresham Woods complex (0.5 acres total). This is year 2 of that effort.
Regner Road Complex (formerly called Meadow Creek Confluence)	Meadow and Johnson Creek	JC12 JC13 JC14 JC15	Meadow Creek Confluence (0.75 ac); Regner Unit 1 (1,3 ac); Regner Floodplain (4.3 ac)	6.3	4.3	1.3	0.7	0.0	6.3	2,383.0	1,475	City has expanded the restoration into adjacent units (2) from the CIP project (Meadow Creek Confluence). This past year the city removed an additional 4.3 acres of Himalayan blackberry in preparation of planting, treated the entry of the units for invasive weeds and planted 1475 bare root native shrubs and trees (in Regner Unit 1).
Brookside Development Site	Kelley Creek	KE06 KE07	Unit 1 (2.3 ac) Unit 2 (2.2 ac)	4.5	0.0	0.0	4.5	0.0	4.5	2,300.0	0	Site is in year 9 of a multi-unit and multi-year restoration. Funding for this project is supported by Development Permit fees for mitigation of Natural Resource Overlay impact area. Two separate units are under restoration. Both units are in maintenance phases. This past year the city completed 2 separate rounds of invasive species control.

Project Site	Creek Name	NRMP Reach	Unit Names and Acreage	Total Site Area (acres)	Preparation Area (acres)	Planting Area (acres)	Maintenance Area (Acres)	Monitoring Area (acres)	Invasive Species Control (acres)	Linear Stream (feet)	Plants Installed	Notes
Johnson Creek TMDL Watershed												
Meadow Creek Headwater Area	Meadow Creek	ME02 ME03	Unit 1 (7.1 ac) Unit 2 (7.1 ac)	14.2	6.0	1.9	6.3	0.0	14.2	1,170.0	1,625	The project is in year 5 of a multi-year restoration of the Meadow Creek headwater area. This area had a large die-off of red alder that resulted in the formation of a monoculture of Himalayan blackberry. Work completed at this site included an additional 6 acre cut of blackberry, herbicide treatments for a broad list of invasive weeds on 14.2 acres and planting of bare root native shrubs and trees on all 1.9 acres.
Chastain Creek Headwater Area	Chastain Creek	CH05	Unit 1 (4.6 ac)	4.6	0.0	0.0	4.6	0.0	4.6	432.0	0	The project is in year 5 of a multi-year restoration of the Chastain Creek headwater area. This area had a large die-off of red alder that resulted in the formation of a monoculture of Himalayan blackberry. Work completed at this site included herbicide treatments for a broad list of invasive weeds over the 4.6 acres.
Gabbert Hill	Butler Creek	BU11	NA	1.7	1.7	0.0	0.0	0.0	1.7	205.0	0	New area opened up in a headwater of an unnamed tributary to Butler Creek. This past years work included the removal of 1.7 acres of Himalayan blackberry and reed canarygrass and follow-up herbicide treatments.
Johnson Creek Subtotal				**226.9**	**21.1**	**33.1**	**151.0**	**25.2**	**208.8**	**38,921.0**	**22,125**	
Columbia Slough TMDL Watershed												
Columbia Slough Water Quality Facility	Columbia Slough	CS08	NA	14.8	0.0	0.0	0.0	14.8	14.8	155.0	0	Site is a regional water quality facility. Site monitoring is ongoing for invasive weeds. Invasive weed control in facility will help water quality treatment and overall site conditions.
Columbia Slough Wastewater Parcel	Columbia Slough	CS06	NA	2.1	0.0	0.0	2.1	0.0	2.1	1,090.0	175	Site is in year 5 of a multi-year restoration. Baseline condition was a mowed agriculture area along the south bank of the Columbia Slough. City is restoring a 50-foot corridor next to the Columbia Slough. Work this past year included herbicide treatments for a broad list of invasive species and mulching to improve survival using a student group. This site had two different student groups complete education/volunteer activities. Students mulched and planted live stakes.
Columbia Slough Subtotal				**16.9**	**0.0**	**0.0**	**2.1**	**14.8**	**16.9**	**1,245.0**	**175**	

Project Site	Creek Name	NRMP Reach	Unit Names and Acreage	Total Site Area (acres)	Preparation Area (acres)	Planting Area (acres)	Maintenance Area (Acres)	Monitoring Area (acres)	Invasive Species Control (acres)	Linear Stream (feet)	Plants Installed	Notes
Fairview Creek TMDL Watershed												
Fairview Creek Regional Water Quality Facility	Fairview Creek	FC05	NA	9.0	0.0	0.0	9.0	0.0	9.0	0.0	0	Site is a regional water quality facility. Site maintenance is ongoing for invasive weeds. Invasive weed control in facility will help water quality treatment and overall site conditions.
Birdsdale Mitigation Site	Fairview Creek	FC05	NA	8.5	0.0	0.0	8.5	0.0	8.5	1,470.0	0	Site maintenance of invasive weeds on a compensatory wetland mitigation site. Species sprayed for a broad list of invasive species. This location is the home of a large beaver family that resulted in multiple dams that have changed the site conditions from a stream with floodplain to an inundated floodplain wetland. City installed multiple beaver structures to minimize the area of 100-year floodplain being permanently inundated.
Fairview Creek Headwaters/SW Community Park	Fairview Creek	FC06	NA	40.0	5.0	2.2	10.2	22.6	10.2	1,050.0	1,250	Site is part of an ongoing restoration of a 40 acres of open space that contains a mixture of wetland, forest, and grassland. 21.0 acres of the site is within SW Community Park boundaries. The city is undertaking a development of the park. It includes the restoration of 12 acres of upland forest. This past year work consisted of preparing 8 acres for planting and controlling invasives throughout the 12 acres of forest restoration. City had a student training program, Reynolds Learning Academy, perform reed canarygrass cutting and mulching with city leaves to suppress growth. They also planted native shrub live stakes and herbaceous plants in the wetland area. City had Centennial High School AP Science class plant native shrubs and trees in the forest area.
Fairview Creek Subtotal				**57.5**	**5.0**	**2.2**	**27.7**	**22.6**	**27.7**	**2,520.0**	**1,250**	

Project Site	Creek Name	NRMP Reach	Unit Names and Acreage	Total Site Area (acres)	Preparation Area (acres)	Planting Area (acres)	Maintenance Area (Acres)	Monitoring Area (acres)	Invasive Species Control (acres)	Linear Stream (feet)	Plants Installed	Notes
Kelly Creek TMDL Watershed												
Kelly Creek Complex	Kelly Creek	KC12 KC13 KC15	Unit 1 (2.2 ac) Unit 2 (1.3 ac) Unit 3 (3.0 ac) Unit 4 (3.3 ac) Unit 5 (10.5 ac)	19.9	0.0	0.0	19.9	0.0	19.9	1,825.0	0	Site is in year 6 of a multi-year restoration of 19.9 acres of riparian and upland forest and emergent wetland. Site has 5 restoration units. This past years work focused on riparian and forest area herbicide treatments of invasive weeds.
Palmquist Culvert Site	Burlingame Creek	BUR03 BUR04	NA	1.0	0.0	0.0	0.0	1.0	1.0	685.0	0	Restoration activity at this location resulted from a CIP transportation/stormwater project to replace existing culvert in 2020. Site is in its 6th year and is monitoring. Work this past year included a single herbicide treatment for a broad list of invasive plant species.
Kelly Creek Water Quality Facility	Kelly Creek	KC12	NA	9.0	0.0	0.0	0.0	9.0	9.0	0.0	0	Site maintenance is ongoing on invasive weeds at this regional stormwater facility. Invasive weed control in facility will help water quality treatment and overall site conditions.
Kelly Creek Subtotal				**29.9**	**0.0**	**0.0**	**19.9**	**10.0**	**29.9**	**2,510.0**	**0**	
City of Gresham 2026 Total				**331.2**	**26.1**	**35.3**	**200.7**	**72.6**	**283.3**	**45,196.0**	**23,550**	

Table 3.7 Total New and Redevelopment Acreage

Project Name	Land Use Type	Development Type	Location	WQ Treatment	Ownership*	Watershed	Project Size/Area Treated (acres)	Construction Disturbance (acres)	Percent Impervious
Butler Creek Estates	Low Density Residential	Single Famy and Multi Family Residential	SW Binford Way and SW Bulter Creek	12,483 sq. ft. Grassy Swales and 1 Detention Pond	Private and Public	Johnson Creek	10.10	18.66	54%
Bank of America	Downtown Commerial Low Rise	Commercial	1655 NE Division	1 Sedimentation Manhole, 2 Contech Filter Catch Basins and 1 R-Tank Detention System	Private	Kelly Creek	0.13	0.47	28%
Multnomah County Library	Civic Neighborhood Transit High Density	Commercial	1297 NW Eastman Parkway	1 Contech Filter Catch Basin and 1 Detention Pond	Private	Fairview Creek	2.90	3.34	86%
7-11 Fuel Station	Moderate Commercial	Commercial	2751 NE 181st Ave	1 Filter Manhole, 3 cartridges	Private	Columbia Slough	0.58	0.79	74%
Taco Bell	Moderate Commercial	Commercial	2301 NE 181st Ave.	Vegeatative Filter Strips and 1 Detention Pond	Private	Columbia Slough	0.52	0.68	76%
Danilov Subdivision	Low Density Residential	Multi Family Residential	3243-3262 SE 27th St.	12 Streetside Planters nad 4 lot level Rain Gardens	Private and Public	Kelly Creek	0.78	1.24	63%
Habitat for Humanity	Corridor Multi Family	Multi Family Residential	17640 NE Glisan St.	1 Drywell	Private	Columbia Slough	0.94	1.45	65%

Project Name	Land Use Type	Development Type	Location	WQ Treatment	Ownership*	Watershed	Project Size/Area Treated (acres)	Construction Disturbance (acres)	Percent Impervious
Whitebeam Estates Phase 1 and 2	Low Density Residential	Multi Family Residential	SE Chase and 282nd Ave.	Street Side Planters and 1 Detention Pond	Private	Kelly Creek	7.07	14.96	47%
My Father's Place/ The Journey	Corridor Mixed Use	Commercial	5003 W Powell	1 Contech Filter Catch Basin, Infiltration 2 Drywells and 1 Swale	Private	Johnson Creek	0.61	0.84	73%
Powell Crest	Transition Residential	Single and Multi Family Residential	SE Powell Valley Rd and Mimosa	5 Streetside Planters and 1 Detention Pond	Private and Public	Kelly Creek	2.31	4.76	49%
Kevin Trieu Duplex	Corridor Multi Family	Multi Family Residential	SE Division St and 176th	1 Drywell and 2 Streetside Planters	Private and Public	Johnson Creek	0.15	0.26	58%
Total Disturbed Acreage								**47.45**	

**Public ownership is City of Gresham only. Private refers to all projects owned by entities other than City of Gresham.*

Table 3.8 Integrated Pest Management Program (Pesticide Applications)

Department	Product Utilized	Quantity	
Facilities Maintenance	Ranger Pro (glyphosate)	13	oz.
	Weed Zap (clove oil, cinnamon oil)	0	oz.
	Scythe (pelargonic acid)	20.7	oz.
	Pronto (imazapyr)	0	oz.
	Crew (dithiopyr, isoxaben)	0	lbs.
	Casoron 4G (dichlobenil)	60	lbs.
	Spray on Blue (non-toxic blue dye)	0	oz.
	Spray 007 (surfactant adjuvant)	0	oz.
	Spray-Wet (surfactant adjuvant)	0	oz.
	Spray-Rite (spray adjuvant)	2	oz.
	Spreader Sticker (wetting agent adjuvant)	0	oz.
	Gallery (isoxaben)	0.5	oz.
	Roundup Power Max (glyphosate)	57.3	oz.
	Dimension 2EW (A.I. dithiopyr)	1.5	oz.
	Snapshot 2.5TG	5	lbs.
	SpeedZone	0.75	oz.
Transportation	Gallery (isoxaben)	61.25	oz.
	Round up (glyphosate)	280	oz.
	Crossbow (2,4-D and Triclopyr)	440	oz.
	Dimension 40W (dithiopyr)	159	oz.
	Vista XRT	11.83	oz.
	Kill-Zall	241.5	oz.
Watershed	Rodeo (glyphosate)	156	oz.
	Garlon 3A (triclopyr)	23	oz.
Natural Resource Program	Aquaneat (glyphosate)	1,763	oz.
	Element 3A (triclopyr)	504	oz.
	Vastlan (triclopyr)	3,415	oz.
	Garlon 3A (triclopyr)	2848	oz.
	Copperhead (imazapyr)	2	oz.
	Agridex (surfactant adjuvant)	2,415	oz.
	Competitor (surfactant adjuvant)	1,414	oz.
	BroncMax (surfactant adjuvant)	46	oz.
	Hi-Light (blue dye)	1,815	oz.
Water	Roundup pro (glyphosate)	225	oz.
	SureGuard (flumioxazin)	29	oz.
Parks	Roundup Power Max (glyphosate)	989	oz.
	Ranger Pro (glyphosate)	0	oz.
	Crossbow (2,4-D and Triclopyr)	0	oz.
	Scythe (pelargonic acid)	0	oz.
	Dimension 40W (dithiopyr)	0	lbs.
	Casoron 4G (dichlobenil)	0	lbs.
	Signature Weed and Feed (2,4D, MCPP-p and Dicamba)	1,800	lbs.
Wastewater	*Currently no applicators*	0	oz.
	Liquid Totals	**11,397**	**oz.**
		minus adjuvants and dyes	
	Dry Totals	**1,865**	**lbs.**

Appendix A

1200Z Permitted Businesses & Businesses Referred to DEQ

Businesses Inspected by Type

1200Z Permitted Businesses in Gresham			Business Referred to DEQ for 1200Z
Business Name	**Address**	**Applied For**	
Albertsons Distribution Center	17505 NE San Rafael St, Portland OR 972320		
AMARK Inc **(No Exposure)**	31848 SE Pipeline Rd. Gresham OR 97080		
Boeing of Portland	19000 NE Sandy Blvd, Portland OR 97230		
Bridgestone **(No Exposure)**	18555 NE Riverside Pkwy. Portland OR 97230		
Cantel Sweeping	1709 NW Eleven Mile Ave, Gresham OR 97030		
Cascade Corp	2201 NE 201st Ave, Fairview OR 97024		
Cascade Distributuion Center	20078 NE Sandy Blvd, Portland, OR 97230		
Celestica	18870 NE Riverside Pkwy, Portland OR 97230		
City of Gresham WWTP	20015 NE Sandy Blvd, Portland OR 97230		
Coast Aluminum Inc	17625 NE Sandy Blvd, Portland OR 97230		
Columbia Brick	2300 SE Hogan Rd, Gresham OR 97080		
Dateline Exports Warehouse	18408 NE San Rafael Ave, Portland OR 97230		
Denton Plastics	18811 NE San Rafael Ave, Gresham OR 97230		
DHL Warehouse	23800 NE Glisan St, Gresham OR 97030		
Dirt & Aggregate Interchange	20905 NE Sandy Blvd, Fairview OR 97024		
Ditch Witch Gresham	17217 NE Sandy Blvd. Gresham OR 97230		
Eastside Paving	1702 NW Eleven Mile Ave, Gresham OR 97030		
EquipmentShare.com	17311 NE Halsey St, Portland OR 97230		
Ferguson Fire & Fabrication	19099 NE San Rafael Ave, Portland OR 97230		
First Student	1625 SE Hogan Rd, Gresham OR 97080		
Frita-Lay Portland	4300 NE 189th Ave, Portland OR 97230		
Grainger Distribution Center	3675 NE Hogan Dr, Gresham OR 97030		X
Imperial Brown Inc	198 SE 223rd Ave, Gresham OR 97030		
John Deere Parts	2100 NE 181st Ave, Portland OR 97230		
Lineage Portland Sacramento	17400 NE Sacramento St, Portland OR 97230		
Lineage Portland San Rafael	19450 NE San Rafael St, Portland OR 97230		
McDonald & Wetle	2020 NE 194th Ave, Portland OR 97230		
McDonald & Wetle Storage	2188 NE 194th Ave, Portland OR 97230		
Medline Industries	92 SE 223rd, Gresham OR 97030	X	
Microchip Technology **(No Exposure)**	21015 SE Stark St,		
Multnomah County Yeon Facility	1620 SE 190th Ave. Portland OR 97233		X
Owens Corning Foam Insulation	18456 NE Wilkes Rd, Gresham OR 97230		
PacWest Machinery	19255 NE Sandy Blvd, Portland OR 97230		
Pella Vinyl	18600 NE Wilkes Rd, Portland OR 97230		
Penske Truck Leasing Co	18900 NE San Rafael St, Portland OR 97230		
Performance Food Service	19606 NE San Rafael St, Portland OR 97230		
Pioneer Sheet Metal	19591 NE San Rafael St, Portland OR 97230		
Portland Container	1601 NE 192nd Ave, Portland OR 97230		
Purcell Tire	19004 NE San Rafael Ave, Portland OR 97230		
Quality Harvest Foods	3434 NE 170th Place, Portland OR 97230		
R.S. Davis Recycling	28425 SE Orient Dr, Gresham OR 97080		
R2M2 Rebar & Stressing Inc	2255 NE 194th Ave, Portland OR 97230		
Refrigeration Contractors	17246 NE San Rafael St, Portland OR 97230		
Rick's Custom Fencing & Decking	17855 NE Halsey St, Portland OR 97230		
S3 Manufacturing Inc **(No Exposure)**	29690 SE Orient Dr. Gresham OR 97080		
Scenic Fruit Company	7510 SE Altman Rd. Gresham OR 97080		
Shamrock Foods	18332 NE San Rafael Ave, Gresham OR 97230		
Subaru of America-Gresham	3873 NE Hogan Dr. Gresham OR 97030	X	
Terzo Enterprises	23680 NE Glisna St, Gresham OR 97030		
Tri-Met Ruby Junction	2222 NW Eleven Mile Ave, Gresham OR 97030		
Westech Construction	2204 NE 194th Ave, Portland OR 97230		

List of Businesses Inspected by Type

Industrial / Manufacturing Businesses	Automotive Related Businesses (ARB)	Food Service Establishment (FSE)
AGC Heat Transfer	76 Station	174th Street Market & Deli
Allwood Recyclers	3C Automotive Repair	2nd Street Bar
Arnprior Aerospace Portland	76 Station - 181st	7 Eleven Store #2353-17033C - Burnside
Ashby Machine & Hydraulics Llc	76 Station - Burnside	7 Lucky
Barnhart	A to Z Auto Wrecking	Albertsons #564
Bestdock Llc	AD Trucking	Alejandro's Mariscos & Bar
Blue Lake Auto and RV Repair	American Honda Motor Co Inc.	Alexander's Deli & Pub
Bud Bellamy & Son Inc	ARCO Station - Burnside	Bar 33
Cal Portland	ARCO Station - Stark	Baskin Robins Ice Cream
Calef Machine Tool	Auto Repair Specialties	Beyond Black Cdc
Cantel Sweeping	Autozone #3755	Birrias Tamazula
Cascadia Canning	Bon Motors	Birrias Tamazula
Dirt and Aggregate	Bridgestone Firestone	Black Bear Diner
Eastside Paving Inc	Chevron Service Station	Blue Pine Grill -282nd
Eclectic Institute Inc	Chevron Station - Division	Boccelli's Ristorante
Element Six Technologies	Clancy Transport	Chepe's
ENVIRONMENTAL WORKS	Classic Collision	Chick-Fil-A - Burnside
EXEL, INC â€¢ DHL SUPPLY CHAIN	Cleveland Auto Repair	Country Coffee #5
Fairview Chevron	Daytona Transmission	Dave's Hot Chicken
Ffe Transportation Services In	DHI Fleet Services	Dave's Hot Chicken
Fully	E & B Motors	Domino's Pizza #7224 - Halsey
GCC (formerly Valin)	Eco Car Wash Inc	Don Kamaron
Heritage Crystal Clean	Edy's Auto Shop	Don Pedro #VI
Hyster - Yale Group Inc.	Emilyâ€™s Garage	Don Pedro #VI
Imperial Yeast	Epic Auto Detailing	Don Pedro #VI
Interlaken Inc	Firestone	Dragon Palace
Interlaken-Eastwood	First Student	El Porvenir Mini Market
Iron Eagle Trailers	Fix 4 Less Auto Repair	El Taquito Authentic Mexican Food
JW Underground	Fleet Services	Eve's Deli
Kelly Spicers	Gateway Tire Center	Farmington Square Gresham
Knights Transportation	Gills Tire Service	Frenzi Frozen Yogurt
LandCare	Gonyea's Automotive	Gresham Burrito Shop
Lineage Logistics - Sacramento	Gresham Autobody Pros	Gresham Post Acute Care & Rehab
Lineage Logistics - San Rafael	Gresham B & P Auto	Halsey Market
McDonald and Wetle Inc	Gresham Chrysler Dodge Inc	Huntington Terrace Senior Living
Moore Excavating Inc.	Gresham Ford	iCandy
Multi-Tek Inc	Gresham Muffler	Jacksons Food Stores
Mutual Materials Co Inc	Gresham Subaru	Jay Minit Mart
Operations Center-Transportation	Gresham Toyota	Jay Minit Mart
Outside Van - Riverside	Honest 1 Auto Care	Jimmy's
Pacific Air Compressors	I5 RV SALES LLC	JM Banh Mi
Performance Food Group Inc	Jiffy Lube #2527	Joy Teriyaki - Highland
Performance Food Service (PFG)	Jiffy Lube of Gresham	Kelly Creek Superette
Portland Rock & Landscape Supply	JK Autobody	Killer Burger
Priestley & Sons	Johnâ€™s Affordable Auto Repair	Killer Burger
Pro Met Machining	Leathers Shell #12	La Cocina Oaxaca
Raymond Handling Concepts Corp	Leo Auto Services	La Tienda De Guadalupe
Richâ€™s Tree Service	Lewis Automotive Inc	La Tienda De Guadalupe
Samuel Son & Co	LOMELI AUTO REPAIR & SALES INC	La Tienda De Guadalupe
SAS Transportation	M&M Auto and Tire	Legacy Coffee & Books
Scandia USA Midwest LLC	Magic City Garage	Lighthouse Deli - 182nd
Six A's Painting LLC	Master Tech Automotive Inc	Lucky 7
Summit Contracting	Menoâ€™s Auto Detail	Lucky Deli Express
Superior Tape & Label	Midas Muffler Shop	M & M Restaurant & Lounge
Thermo King	Mobil Station	Margarita Factory
Townsend Farms	Moen Machinery Co	Mariscos La Costera
Tri Coat Painting Inc	Mountain View Auto Body	McDonald's - Highland

Industrial / Manufacturing Businesses	Automotive Related Businesses (ARB)	Food Service Establishment (FSE)
Wesco	One Fine Mechanic	McMenamins Highland Pub & Brewery
Wildish	O'Reilly Auto Parts #2514	Mi Pueblo Taqueria #2
Wright Business Forms	O'Reilly Auto Parts #3542	Cabaret II
Yamaha Sports Center	Pape Machinery Inc	Miniute Mart Express
Yeon Building Multnomah County - Facilities and Property Management	Peregrine Motorsport llc	MOD Pizza
Ziply	PNW motors	Mt. Hood Lanes
	Purcell Tire NW Inc	Multicultural Adult Day Care and Services
	Referral Automotive	Muteki Ramen and Izakaya
	RYAN'S AUTO REPAIR INC	My Bar
	Safeway Fuel Station #1070	Nicholas Restaurant
	Sanders Mobile Truck Repair, Inc.	Oregon Child Development Coalition
	SCRUBBY'S Express Lube	Our Coffee House
	Shell Station - Orient	Papa Murphy's - 182nd
	Shell Station - Sandy	Papa Murphy's - Burnside
	Shell Station - Stark	Platinum Pub #3- 182nd
	Signature Automotive	Polar King
	Space Age Fuel #8	Portland Quality Meats
	Sprinterpost	Pulperia La Catrachita Market
	Superior Auto Body	Red Robin Burgers & Spirits #351
	Trans Medic Transmissions Inc	Red Robin Burgers & Spirits #351
	Valvoline Instant Oil Change	Rockwood Market Hall
	Washman Car Wash	Rockwood Tavern
	Weston Buick -22555	Safeway #1070 - Highland
	Weston Kia - 22309	Stomping Grounds
	Xpress Tire & Auto Service	Stop N Shop Food Mart
	Zoom Transportation	Subway #14914 - 182nd
		Sugar Cubed Cake Creations
		Taco Bell - 182nd
		Taco Bell #881 - Burnside
		Thai Curry
		The Local Cow
		The Quad on Burnside (Food Cart Pod)
		US Market #325 - Orient
		Village Health Care
		Wall Street Pizza
		Walmart Neighborhood Market #5627 - W Powell
		White's Country Meats
		Wingstop - Highland
		Yami Sushi & Teriyaki

Appendix B

Tech Memo: Water Quality Study of a Subsurface Gravel Pond vs. Wet Ponds in Gresham

Water Quality Study of a Subsurface Gravel Pond vs. Wet Ponds in Gresham

Katie Holzer, Senior Environmental Specialist, City of Gresham
February, 2026

Executive Summary

Water quality was evaluated at the inlets and outlets of stormwater ponds during storm events to compare pollutant reduction performance between a subsurface gravel pond and wet ponds in Gresham. The subsurface gravel pond generally performed worse for nutrients where it showed frequent nutrient export, likely from leaching in the compost component of the bioretention soil mix. The subsurface gravel pond performed similarly to wet ponds for reduction of sediment and organic pollutants. It performed similarly or somewhat better for reduction of most heavy metals and *E. coli*. Most applicable water quality standards were met at the inlets to both pond types tested, and all standards except *E. coli* were met at the outlets of both types of ponds. This study indicates that subsurface gravel ponds that are designed and function similarly to the pond studied may be detrimental where reduction in nutrient levels are desired, they may offer no additional water quality benefit when compared to wet ponds where reduction of sediment and organic pollutants are desired, and they may be a beneficial for water quality treatment where reduction in heavy metals and *E. coli* are desired. All samples were taken within the first few years of construction and continued functionality may change over time. Apart from water quality, the long-term maintenance of subsurface gravel ponds remains a question.

Background

Most new stormwater ponds in Gresham are designed as either “dry ponds” or “wet ponds”. A different design of pond, termed a “subsurface gravel pond”, was proposed in two new developments in Gresham. This pond design is a hybrid of dry and wet ponds because it has a permanent pool beneath the surface of the dry detention basin. Two subsurface gravel ponds were designed and constructed as pilot projects in Gresham: the Panza and Telford ponds. Of note, both ponds tend to have permanent water levels above the soil surface even though the design was for the surface to be dry; this may be due to abundant groundwater in the areas. The City of Gresham (hereafter: City) was interested in understanding the benefits and challenges of this alternative design in terms of water quality and maintenance. This memo summarizes the water quality findings. Additional questions regarding maintenance will be addressed elsewhere.

Methods

The City collects stormwater samples from the inlet and outlet of two stormwater Best Management Practices (BMPs) during each wet season to meet National Pollutant Discharge Elimination System (NPDES) permit obligations. These BMPs can include ponds, bioretention planters, porous pavement, regional-scale constructed wetlands, or other facilities that would inform the City’s Stormwater Management Program. The City uses these BMP monitoring events to learn about the effectiveness of stormwater BMPs and to improve the efficiency and effectiveness of their stormwater program. Since the completion of the first experimental subsurface gravel pond, the City has prioritized learning about this technology and has collected stormwater BMP samples at this site every wet season, representing 50% of the annual BMP monitoring permit obligation for the City over the past five years.

The City attempted to sample the Panza pond immediately after planting was completed in November 2021; however, the overflow pipe was always engaged and very little water was being released from the perforated pipe in the gravel layer which carries treated water to the outlet, so samples were not collected to avoided getting data that would not accurately reflect the designed performance. In December 2022, it was discovered by the City that the flow control structure was clogged by plastic plant pots which had been left on-site during planting. The pots were removed by the City and the pond was sampled in the next storm in January 2023. It has been sampled during each subsequent wet season: October 2023, April 2025, and January 2026. The Telford facility was constructed after Panza, and attempts were made to sample this pond, but the water level from Johnson Creek backs up into the outlet structure during storm events does not allow for uncontaminated sampling of the outlet.

Storms were targeted for sampling when ≥0.5" of rainfall were predicted in 24 hours following at least 48 hours of dry weather. During each storm event, three grab samples were taken at the inlet and outlet of a facility targeting the rising, the peak, and the falling portions of the hydrograph. Samples were analyzed for sediment (total suspended solids: TSS), heavy metals (total and dissolved copper, lead, and zinc, as well as total mercury), nutrients (total nitrogen, nitrate, ammonia, total phosphorus, and phosphate), *E. coli*, and panels of the organic pollutant categories poly-cyclic aromatic hydrocarbons (PAHs), phthalates, and chlorinated herbicides.

Results were compared to samples taken at other stormwater ponds. Brookside is a swale-bottomed dry pond, Madeline Place is a wet pond completed in 2019 using recent stormwater standards, and Blue Pearl Phase 1 is a wet pond completed in 2025 using the current stormwater standards. After discussions with All County Surveyors in December 2025, it was decided that the best comparison would be between Panza and Blue Pearl due to the similarity in drainage areas and use of current design specifications. These two ponds were sampled during the same storm event in January 2026 to provide a direct comparison. This storm event also provided a good comparison for stormwater standards because the storm size (0.96"/24-hrs) was close to the water quality design storm (1.2"/24-hrs) whereas the other three storms sampled at Panza were smaller (0.30-0.63"/24-hrs).

Results

Tables 1 & 2 and figures 1-14 below show the water quality data from storm sampling at the ponds with reference to water quality standards as well as average percent reductions of pollutant concentrations in the water column. These results are presented for the last storm alone (comparing a storm similar to the water quality event between Panza and Blue Pearl), as well as for the entire dataset (four storms at Panza, one storm at Blue Pear, six storms at Brookside, and one storm at Madeline Place).

Overall, the Panza subsurface gravel pond appeared to export most nutrients and tended to perform worse for nutrient reduction than the other ponds. It appeared to remove sediment at a similar level to the other ponds. All organic pollutants were reduced to below detection limits at all ponds and therefore pollutant reduction could not be compared among ponds. Panza appeared to somewhat improve reduction of heavy metals and *E. coli* compared to wet ponds.

Sediment
Sediment reduction at Panza was similar to the other ponds sampled (Tables 1 & 2, Figure 1). Outlet concentrations were generally low at all of the ponds, with Brookside being about twice as high as the others. The percent reduction of sediment was substantially lower at Panza than at Blue Pearl in the final storm; this is likely due to turbid runoff entering Blue Pearl during a portion of the storm while outlet concentrations stayed relatively consistent.

Heavy Metals
Results were somewhat mixed for heavy metals, but Panza generally reduced heavy metals to a somewhat greater extent than the other ponds (Tables 1 & 2, Figures 2-8). Most heavy metals had similar or lower outlet concentrations at Panza than at Blue Pearl during the last storm, although inlet concentrations were also lower. Percent reductions were sometimes higher at Panza (total copper and mercury, dissolved copper and zinc) and sometimes at Blue Pearl (total lead and zinc). When comparing across all ponds and storms, outlet concentrations at Panza were generally in the middle or near the lower end and percent reductions were generally in the middle or near the higher end. The heavy metals with applicable water quality standards were mostly below the standards at the inlet for all ponds, and all were below the standards at the outlets.

Nutrients
Panza tended to export the nutrients measured (Tables 1 & 2, Figures 9-13). Other ponds also exported some of the nutrients. During the last storm, outlet concentrations were lower and percent reductions were higher for some nutrient species at Panza (total nitrogen, nitrate) and for others at Blue Pearl (ammonia, total phosphorus, phosphate). Over all storms and ponds, Panza tended to have some of the highest nutrient exports. This may be because the water runs through a bioretention soil mix which includes compost and has been shown to export nutrients in other systems, at least over the first several years.

Bacteria
Outlet concentrations of *E. coli* at Panza were in the middle when compared to other ponds, and percent reductions were higher than at other ponds (Tables 1 & 2, Figure 14). Average percent reductions for *E. coli* were calculated as medians instead of means due to extreme outlier values with a few highly negative numbers. Blue Pearl and Madeline Place showed negative percent reductions, indicating export, but inlet values were quite low. Average outlet concentrations were below water quality standards for all ponds except Brookside.

Organic Pollutants
All PAHs, phthalates, and herbicides were reduced to below detection limits in all ponds during all storms. These facilities effectively remove these pollutants at the levels seen on the landscape and the relative effectiveness cannot be evaluated.

Table 1 Average outlet concentrations from ponds during storms. Results are given separately for the last storm sampled in January 2026 because it was considered to be the best direct comparison of a subsurface gravel pond with a wet pond built to current standards. The reported N is the total number of storms sampled at a given pond. Numbers in brackets indicate that all values were below the detection limit and that limit is reported.

Pollutant		**Last storm**		**All storms**			
Category	**Specific**	**Panza**	**Blue Pearl**	**Panza** (N=4)	**Blue Pearl** (N=1)	**Brook-side** (N=6)	**Mad. Place** (N=1)
Sediment (mg/L)	**TSS**	4.0	4.3	4.3	4.3	9.4	3.3
Heavy Metals (µg/L)	**Cu**	1.84	2.86	2.67	2.86	4.25	1.55
	Hg	0.0008	0.0012	0.0013	0.0012	0.0035	0.0013
	Pb	0.14	0.16	0.13	0.16	0.43	0.11
	Zn	3.14	3.99	2.83	3.99	13.49	29.37
	Cu-d	0.91	1.10	1.79	1.10	2.88	1.03
	Pb-d	[0.10]	[0.10]	[0.10]	[0.10]	[0.10]	[0.10]
	Zn-d	1.70	1.07	1.65	1.07	7.04	27.27
Nutrients (µg/L)	**N**	229	297	327	297	480	329
	Nitrate	280	720	300	720	653	460
	Ammonia	61	49	66	49	27	46
	P	91	41	189	41	94	36
	Phosphate	84	22	164	22	50	24
Bacteria (MPN /100-mL)	**E. coli**	97	34	215	34	1543	167
Organic Compounds (µg/L)	**PAHs**	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]
	Phthalates	[1.0]	[1.0]	[1.0]	[1.0]	[1.0]	[1.0]
	Herbicides	[0.25]	[0.25]	[0.25]	[0.25]	[0.25]	[0.25]

Table 2 Average percent reduction of stormwater pollutants during storm events. Results are given separately for the last storm sampled in January 2026 because it was considered to be the best direct comparison of a subsurface gravel pond with a wet pond built to current standards. The * indicates that the number may be inflated due to particularly turbid construction runoff entering the pond during a portion of the storm. The following number in parentheses indicates the percent reduction excluding the outlier. The reported N is the total number of storms sampled at a given pond. All values are means except for *E. coli* which was calculated as medians because of outlying extreme values.

Pollutant		**Last storm**		**All storms**			
Category	**Specific**	**Panza**	**Blue Pearl**	**Panza** (N=4)	**Blue Pearl** (N=1)	**Brook-side** (N=6)	**Mad. Place** (N=1)
Sediment	**TSS**	37	70* (40)	22	70* (40)	12	5
Heavy Metals	**Cu**	55	29	45	29	21	1
	Hg	37	1	23	1	23	12
	Pb	32	65	29	65	26	9
	Zn	58	70	67	70	24	1
	Cu-d	42	-41	34	-41	17	-9
	Pb-d	0	0	0	0	0	0
	Zn-d	45	12	55	12	24	-2
Nutrients	**N**	6	-20	-17	-20	14	0
	Nitrate	-62	-512	-62	-512	-6	0
	Ammonia	-21	11	-38	11	19	5
	P	-210	39	-316	39	21	3
	Phosphate	-332	3	-505	3	16	5
Bacteria	**E. coli**	96	-100	54	-100	46	-57
Organic Compounds	**PAHs**	0	8	6	8	2	0
	Phthalates	0	0	0	0	-1	-1
	Herbicides	1	0	3	0	1	1

Figures

Figures 1-14 demonstrate the inlet and outlet concentrations during storm events at various ponds. The left panel in each figure represents samples taken during the last storm event in January 2026 with bars representing average values and diamonds representing individual data points. The right panel in each figure represents all samples taken at all ponds during all storms with boxes representing the data quartiles, whiskers representing data ranges, diamonds representing individual samples, and stars representing outliers. Red-dashed lines mark WQS indicate applicable water quality standards.

Figure 1

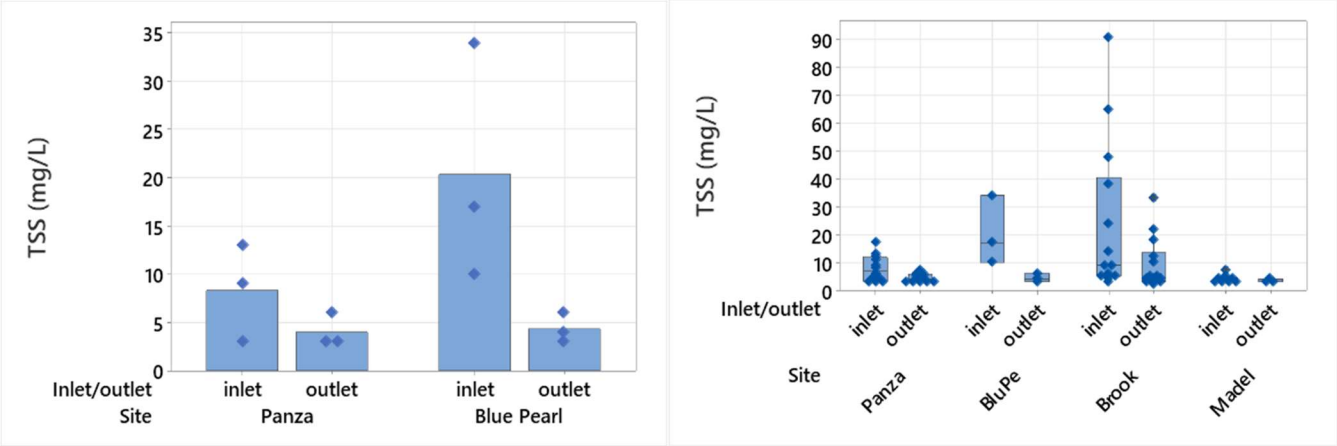


Figure 2

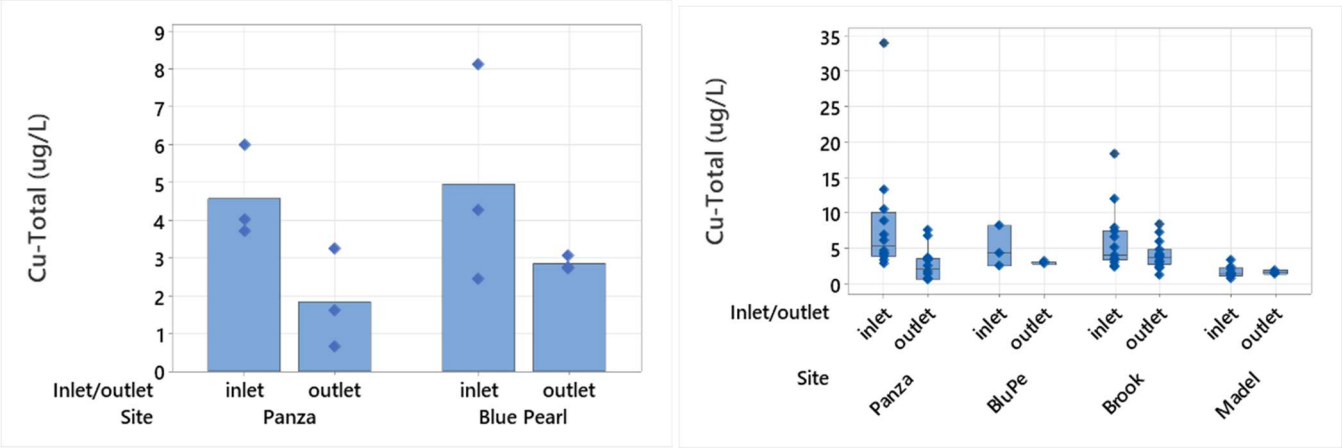
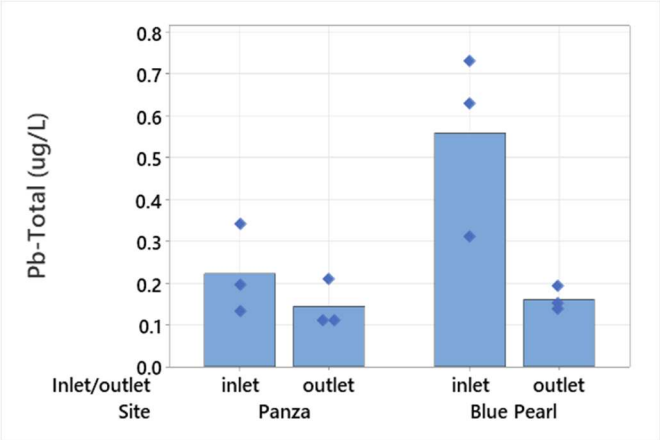


Figure 3



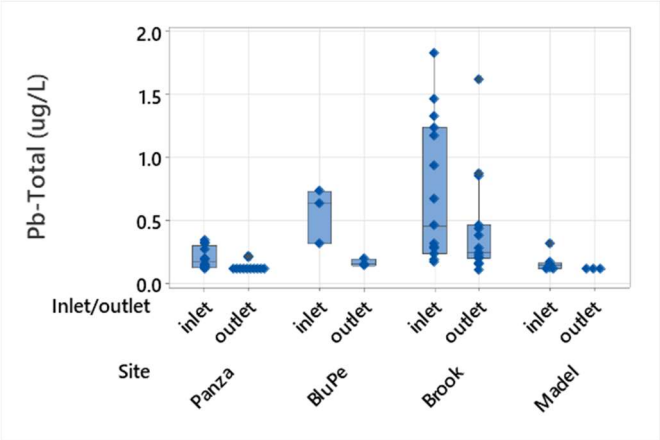
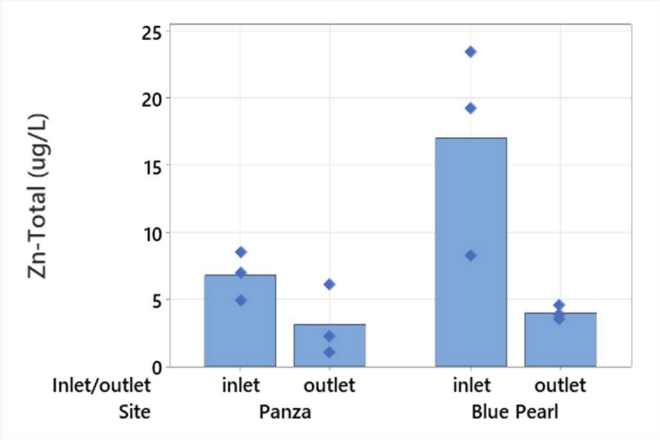


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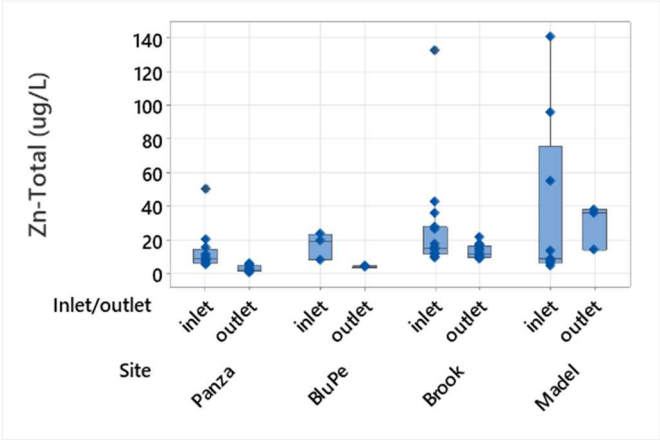
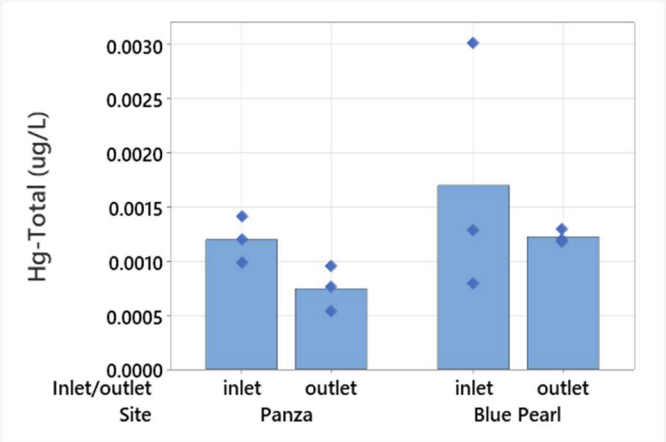


Figure 5



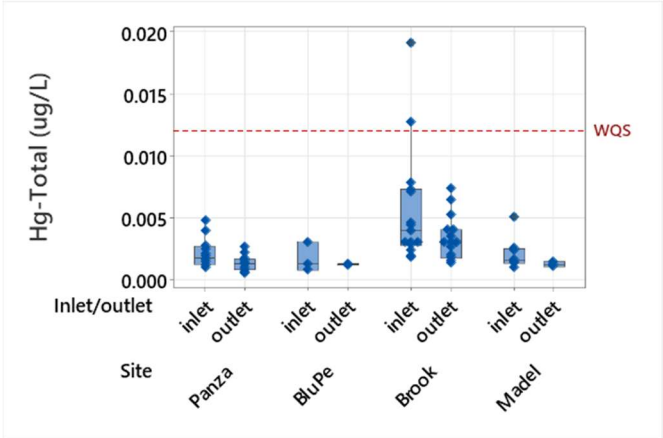
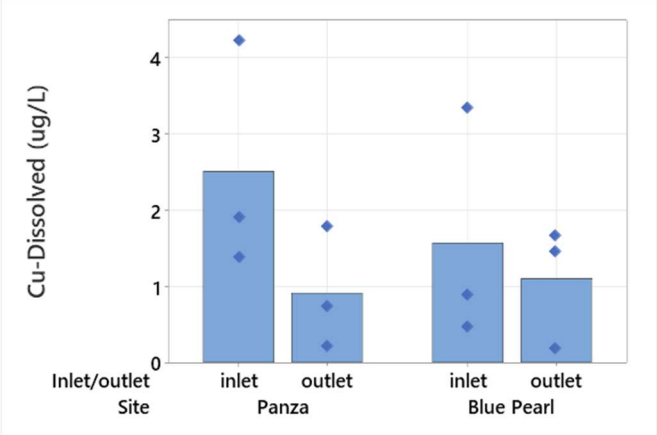


Figure 6



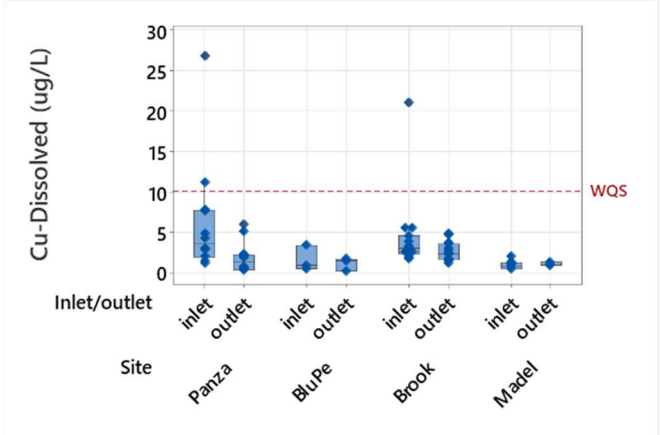
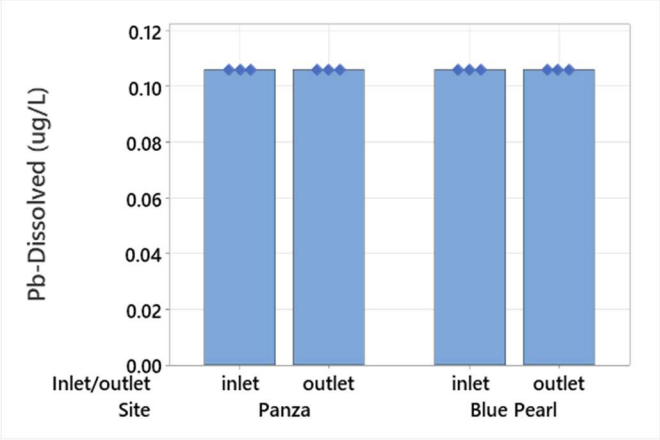


Figure 7



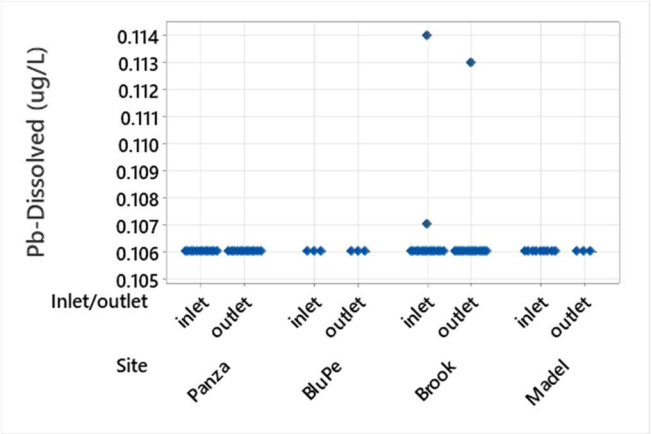
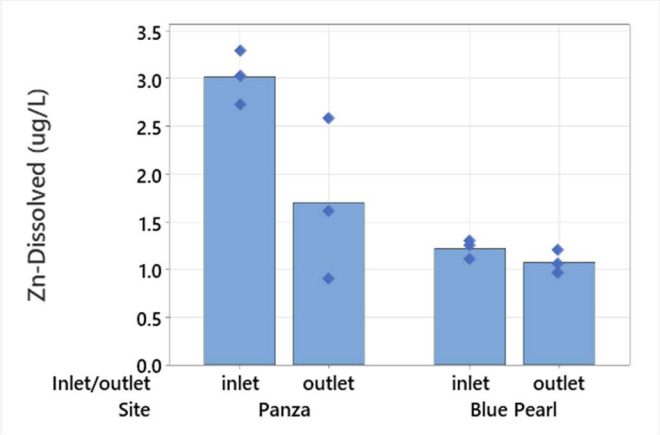


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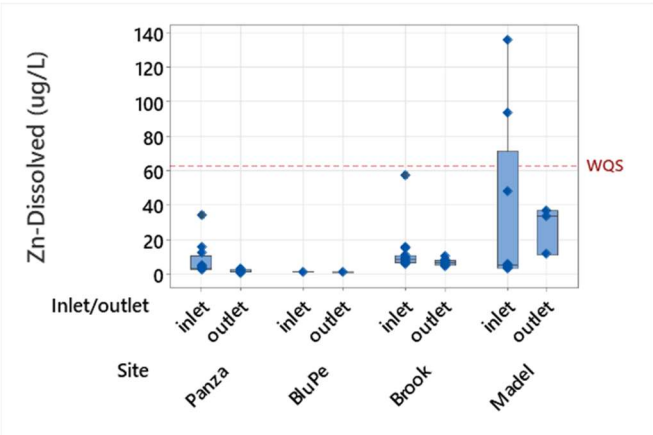
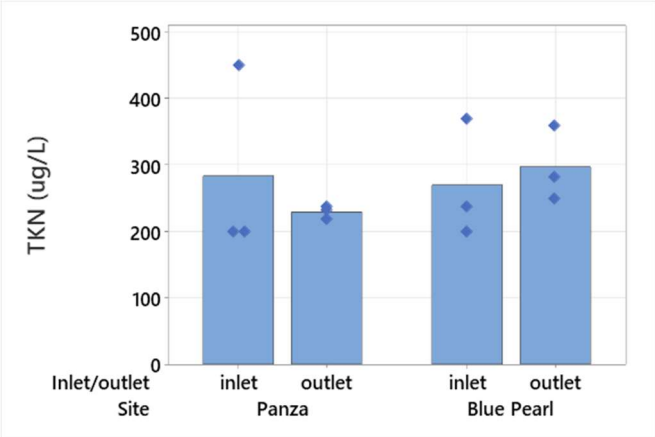


Figure 9



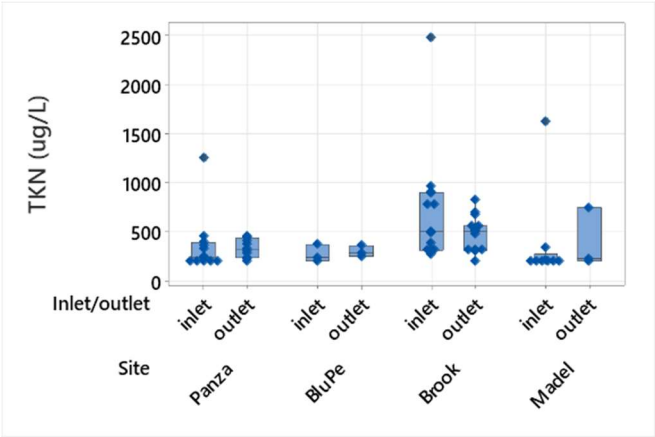
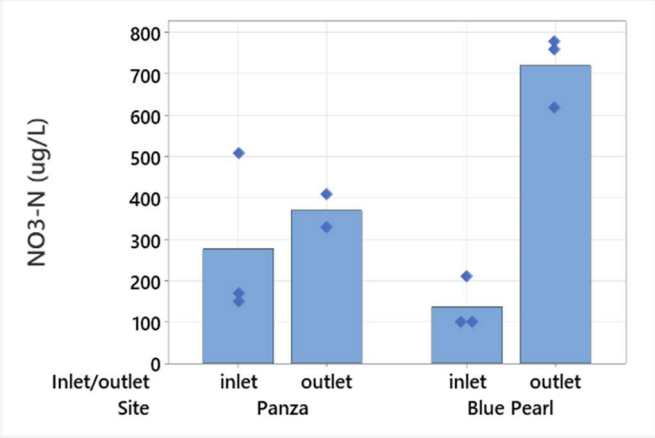


Figure 10



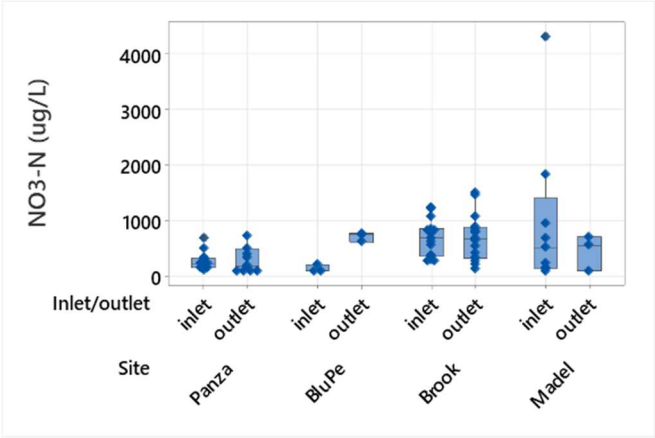
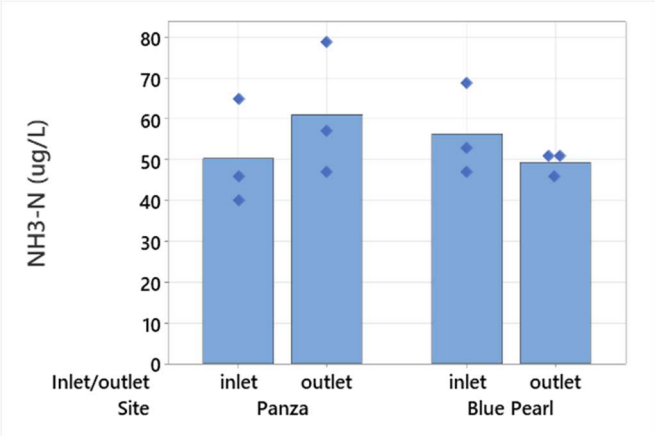


Figure 11



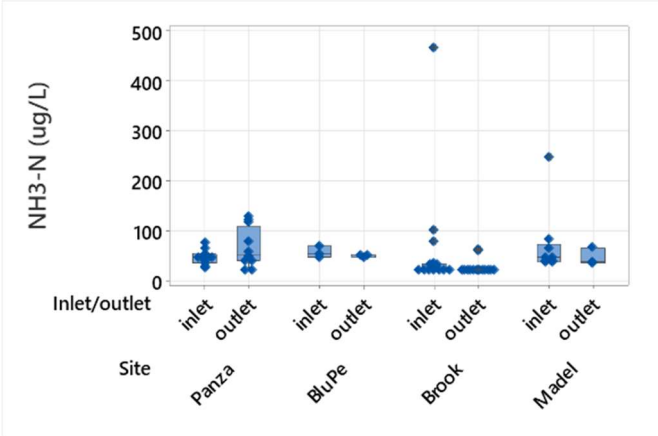
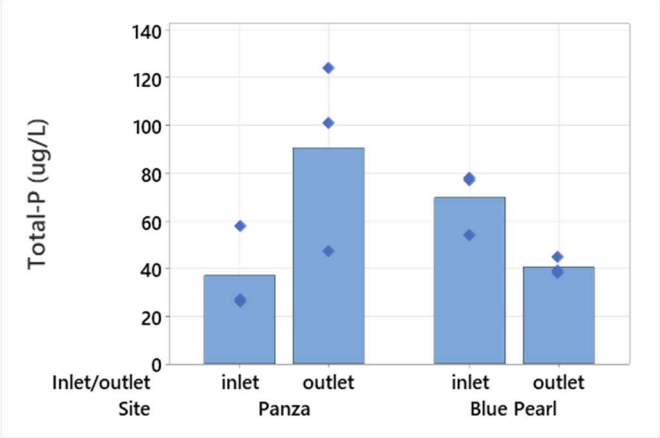


Figure 12



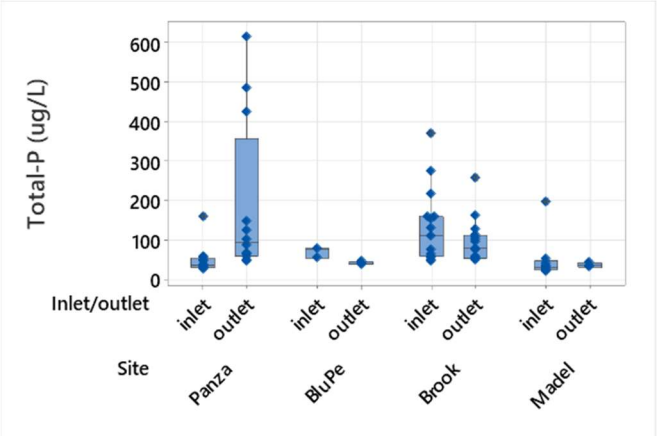
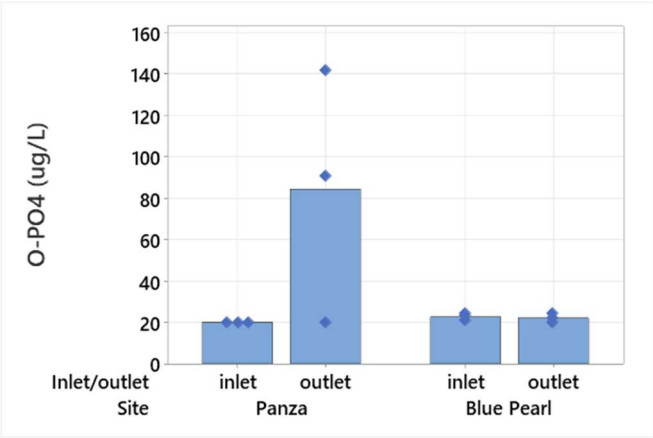


Figure 13



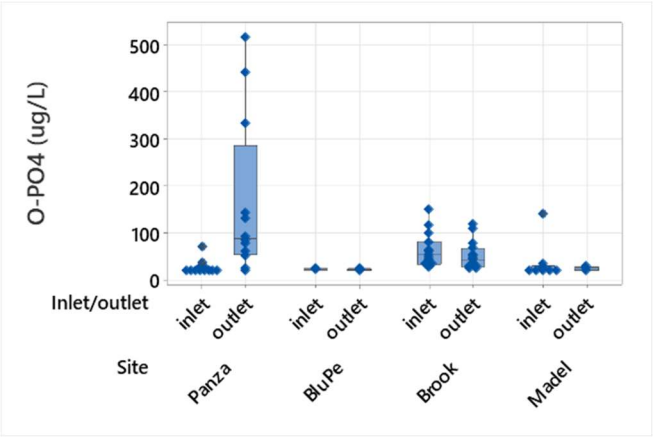


Figure 14

