Gresham and Fairview
NPDES Annual Report 2019
PERMIT YEAR 24
MS4 DISCHARGE PERMIT NO. 101315 EPA REF. NO. ORS 108013

Urban wildlife calendar produced to support local watershed councils and promote awareness of natural resources.

CITY OF GRESHAM

November 2019

National Pollutant Discharge Elimination System
Permit No. 101315
EPA Reference No. ORS108013
Permit Year 24 Annual Report
City of Gresham and City of Fairview

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Preface

The Cities of Gresham and Fairview submit this report in accordance with requirements of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit # 101315. This report is intended to provide a brief summary of the activities conducted by these agencies to prevent the entry of pollutants into their stormwater, and surface water conveyance systems.

This report has four major sections. Section 1, Overview, provides the historical background, location of required elements within the report, and a description of Gresham and Co-permittee's watersheds. Section 2, Environmental Monitoring Program, is the summary of the City of Gresham's data collection efforts conducted on behalf of the Co-permittees and includes corresponding Tables and Figures and Sections 3 through 4 consist of the Stormwater Management Plan (SWMP) implementation status reports for the City of Gresham and the City of Fairview, respectively. Additional supporting documentation for Section 3 is provided in Appendices A through E for Gresham.

Section One--Overview of Required Elements

A. History

In accordance with Clean Water Act (CWA) requirements, the Oregon Department of Environmental Quality (DEQ) issued a National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer (MS4) Permit on September 7, 1995 to the City of Gresham and co-permittees: the City of Fairview, Multnomah County, and the Oregon Department of Transportation. This permit (101315) expired on August 31, 2000. The Oregon Department of Transportation (ODOT) sought separation from their multiple joint NPDES MS4 permits and obtained approval from DEQ to implement their own statewide permit.

The Cities of Gresham and Fairview, and Multnomah County submitted a permit renewal package (for the period September 1, 2000 through August 31, 2005) as co-permittees to DEQ in March 2000. Gresham submitted an update to its portion of that package in December 2001. On March 1, 2004, DEQ issued a renewed permit. However, several interest groups requested a petition for reconsideration on the renewed permit. On May 17, 2004, DEQ granted this request and a revised permit was reissued by DEQ on July 28, 2005, subsequently followed by submittal and approval of an updated Stormwater Monitoring Plan and Stormwater Management Plans (SWMP) for Gresham and co-permittees. These documents were approved by DEQ in July 2006 (PY 12).

On August 1, 2008, Gresham and Co-permittees submitted a permit renewal package that included the required elements as stated in Schedule B 2) c) of the permit, including an updated joint Monitoring Plan and individual Stormwater Management Plans.

On December 12, 2010 DEQ issued a renewed permit with the City of Gresham and the City of Fairview as Co-Permittees and issued a separate renewed permit to Multnomah County. DEQ authorized permittees to make minor changes to their SWMPs in order to be consistent with the final permit language by April 1, 2011. This annual report is based upon the City of Gresham and Fairview's respective final SWMPs dated April 1, 2011.

The City of Gresham and Fairview's permits expired on December 29, 2015. To date, DEQ staff have been in the process of renewing the NPDES Phase II permits and therefore, have placed the Phase I renewal on administrative extension until the Phase II permits are completed. The timeframe for a renewed permit and updated SWMP for each city's program is unknown.

B. Reporting Requirements

This section summarizes the requirements for the annual report as described in Schedule B 5) Reporting Requirements of the permit and provides a reference to the location of each element within this report. As noted in the permit, this Annual report is provided to DEQ by November 1 of each year in electronic and hard copy format and is also posted on Gresham's website and cross-linked from the City of Fairview's website.

SWMP Implementation Status

The status of the SWMP best management practices implementation and measurable goals for Gresham and Fairview is described in **Section 2** Environmental Monitoring Program and in **Sections 3** and **4**, respectively.

Proposed Changes, Adaptive Management & New BMPs

The detailed description of the adaptive management process was submitted with the permit year 16 annual report which is available on the City's website at www.greshamoregon.gov/watershed in the stormwater documents section. For purposes of brevity, the ongoing annual review process consists of data intake from various staff who are responsible for the implementation of a particular best management practice (BMP). Factors examined as part of the data intake process include but are not limited to:

*Was the BMP measurable goal attained? If not, why? How will progress be made towards future attainment?
*For multi-year BMPs, were milestones or timelines met?
*Does the BMP need to be refined or improved?
*Are staffing/financial resources available to support such a BMP improvement or refinement? Proposed changes, adaptive management or addition of BMPs for Gresham and Fairview, if applicable, are described in **Section 2** Environmental Monitoring Program and in **Sections 3**, and **4**, respectively.

Summary of Fiscal Year Expenditures and Projected Annual Budgets

Previous and projected budgets for Gresham are included in **Table 3-10** and in **Section 4** for Fairview.

Summary of Monitoring Program Results/Data

Gresham and Fairview's monitoring data and summary of assessments or evaluations and any proposed changes to the monitoring plan are reported in **Section 2 Environmental Monitoring Program** and its subsequent **Tables and Figures.**

Summary of Inspections & Enforcement, Public Education Programs, and Dry Weather Screening

These annual reporting program components as described in Gresham and Fairview's approved SWMPs and are reported in **Sections 3, and 4,** respectively.

Overview of Urban Growth Boundary (UGB) Expansion Areas

A summary of activities that apply for the City of Gresham is included in **Appendix B**: UGB Summary. This requirement does not apply to the City of Fairview whose permitted area does not contain any UGB expansion area.

Legal Authority

See **Appendix A**: Adequate Legal Authority for documentation of legal authority for the Cities of Gresham and Fairview.

Permit Boundary and Map of Major Watersheds

On the following page **Figure 1-1** depicts the permit boundary of Gresham and Fairview and a map of the major watersheds within the permit area with associated acres. Minor errors in GIS calculations can cause acres to fluctuate and are not not considered precise.

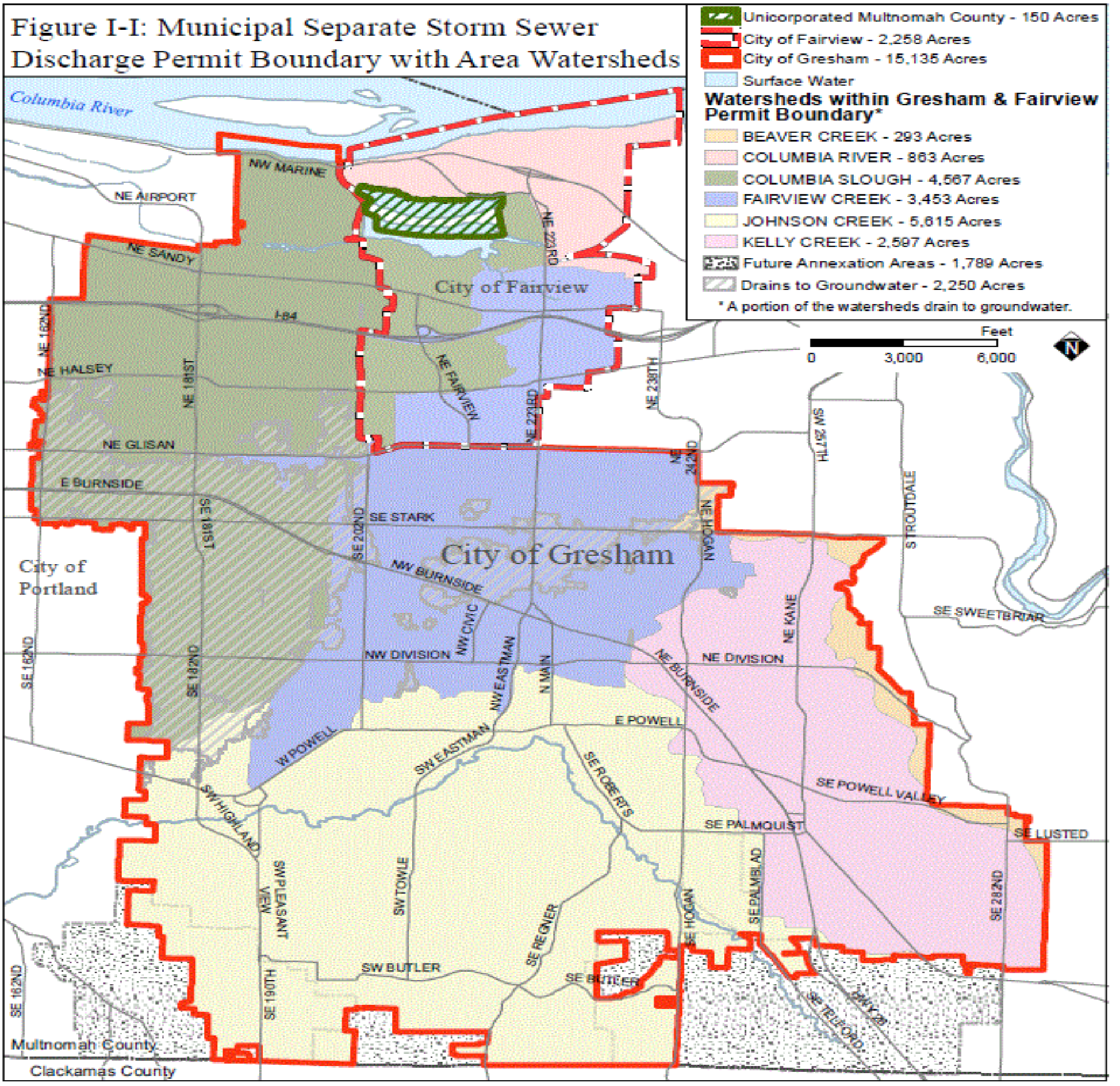
Figure I-I: Municipal Separate Storm Sewer Discharge Permit Boundary with Area Watersheds
Unicorporated Multnomah County - 150 Acres
City of Fairview - 2,258 Acres
City of Gresham - 15,135 Acres
Surface Water
Watersheds within Gresham & Fairview Permit Boundary*
BEAVER CREEK - 293 Acres
COLUMBIA RIVER - 863 Acres
COLUMBIA SLOUGH - 4,567 Acres
FAIRVIEW CREEK - 3,453 Acres
JOHNSON CREEK - 5,615 Acres
KELLY CREEK - 2,597 Acres
Future Annexation Areas - 1,789 Acres
Drains to Groundwater - 2,250 Acres
* A portion of the watersheds drain to groundwater.
Feet
0
3,000
6,000
N
Columbia River
City of Fairview
City of Gresham
City of Portland
Multnomah County
Clackamas County
NW MARINE
NE AIRPORT
NE SANDY
I-84
NE HALSEY
NE GLISAN
E BURNSIDE
SE STARK
NW BURNSIDE
NW DIVISION
NE DIVISION
E POWELL
W POWELL
SE POWELL VALLEY
SE PALMQUIST
SE LUSTED
SE TELFORD
HWY 26
NE 223RD
NE 181ST
NE 182ND
NE FAIRVIEW
NE 238TH
NE 242ND
SW 257TH
S TROUTDALE
SE SWEETBRIAR
NE KANE
NE BURNSIDE
NW CIVIC
NW EASTMAN
N MAIN
SW EASTMAN
SE ROBERTS
SE HOGAN
SE PALMBLAD
SE 282ND
SE 202ND
SE 181ST
SE 182ND
SE 162ND
SW HIGHLAND
SW PLEASANT VIEW
SW TOWLE
SW BUTLER
SE BUTLER
SE REGNER
HWY 26

Gresham and Fairview Stormwater Monitoring Report

2019

PERMIT YEAR 24

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

CITY OF GRESHAM

Section Two:
Cities of Gresham & Fairview Environmental Monitoring Program Annual Report

A. History

Background

The data reported in this Annual Report reflects the Cities of Gresham and Fairview's implementation of the Environmental Monitoring Plan that was approved by DEQ and became effective in August 2008. Revisions to the original plan were submitted to DEQ in August 2010, November 2011, October 2012, November 2015 and July 2016.

The City of Gresham collects data for Multnomah County under an Interjurisdictional Agreement and that data is included in this report.

B. Required Elements

This section of the Annual Compliance Report summarizes the Environmental Monitoring Plan implementation and permit requirements contained in the Stormwater permit. Schedule B) 5. states: the annual report must include:

f. A summary of monitoring program results, including monitoring data that are accumulated throughout the reporting year and/or assessments or evaluations.

g. Any proposed modifications to the monitoring plan that are necessary to ensure that adequate data and information are collected to conduct stormwater program assessments.

The environmental monitoring requirements specified in Table B-1 of the NPDES permit are summarized below in **Table 2-1**. Elements required by the permit are *italicized* text.

Table 2-1 Environmental Monitoring Requirements Summary

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) *Two (2) sites in the Sandy River basin:* 1. Kelly Creek @ Mt. Hood Community College Pond (KCI1) 2. Kelly Creek @ Detention Pond (KCI4) *Four (4) 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)	*Four (4) events/year*	*DO, pH, temperature, conductivity, turbidity, E. coli, hardness, BOD, TSS, Chlorophyll-a (May-Oct); nutrients (nitrate, ammonia, Total P, ortho-phosporus); Total recoverable and dissolved metals (copper, lead and zinc); 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.
Continuous Instream Monitoring	*Two (2) continuous monitoring stations:* 1. Johnson Creek @ Regner 2. Fairview Creek @ Glisan*	*Ongoing* 15-minute interval	*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 city.

Monitoring Type	Monitoring Location(s)	Monitoring Frequency	Pollutant Parameter Analyte(s)	Notes
Stormwater Monitoring - Storm Event	*Three (3) sites.* Monitored 10 random and spatially balanced stormwater locations.	*Three (3) events/year* Monitored 1 event at each location (totaling 10)	*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; pesticides*	The permit requirements as described by Schedule B)2)e)ii) would result in 9 data points annually. The City's approved monitoring approach results in 10 data points (5 fixed sites and 5 randomly selected rotating sites).
Macro-Invertebrate Monitoring	*One (1) site in the Columbia Slough basin:* 1. Fairview Creek @ mobile estates (FCI0) 2. Fairview Creek @ Stark (FCI1)	One (1) event/year during summer/low flow conditions	*Macroinvertebrates*	Collected during same week as instream water quality data collection occurred in summer.
	One (1) site in the Sandy River basin: 1. Kelly Creek @ Mt. Hood Community College Pond (KCI1) 2. Kelly Creek @ Detention Pond (KCI4)			
	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)			
Structural BMP Monitoring	*One (1) site - inlet and outlet:* 1. Columbia Slough Water Quality Facility 2. Brookside Regional Facility 3. Hayden's Meadows filtration stormwater planters 4. Kane Road pervious pavement	*Two (2) events/year through Dec. 31, 2013.* Monitored 1 event at 3 facilities, and 2 events at Kane Road	*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)*	

C. Summary of Monitoring Program Results

The raw data collected in PY 24 are described and illustrated in **Tables 2-1 thru 2-6 and Figures 2-1 thru 2-4** of the monitoring report. The instream data have been compared to the relevant DEQ water quality criteria. Values that do not meet the water quality standards are highlighted. Data from Stormwater (wet weather sampling) and Structural BMP (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 thru 2-4.**

The raw data from the City's Illicit Discharge Detection and Elimination program monitoring is included in **Table 3-5**. A map showing the sampling site locations for fixed and rotating sites are shown **Figure 3-6** and the discussion of the findings is included in **Section 3 BMP ILL 2&3.**

Instream Monitoring

Instream monitoring results are generally within expected ranges. There were some exceedances of water quality standards for dissolved oxygen, pH, temperature, total phosphorus, chlorophyll-a, E. coli, and DDT. The greatest number of exceedances was for stream temperature.

Dissolved oxygen was below standards in Fairview Creek and Fairview Lake during the summer sampling event. This is likely related to high water temperatures during that time. Additionally, much of the water in Fairview Creek during this time of year is from groundwater pumping from the Knife River Sand and Gravel pit. Groundwater is naturally low in dissolved oxygen. The low oxygen in the lake may be related to high amounts of algae which are apparent from the chlorophyll-a measurements. We continue to work to shade our streams and outreach to the community about only fertilizing lawns in fall and only using slow release forms to protect our water.

Stream pH results were above the 8.5 standard at Fairview Lake during summer sampling and below the 6.5 standard in Johnson and Kelley Creeks during fall and winter sampling. The high pH in Fairview Lake was likely related to photosynthesis from the abundant algae. The low pH readings may be related to recent rain events which delivered water with low pH into the streams (typical pH of rainwater ~5.6). Additionally, these sites are always sampled in the mornings, which generally have lower pH levels. We plan to take some afternoon measurements at these sites in the next permit year to investigate daily fluctuations.

Stream temperature was above the 18°C salmon rearing standard in most streams in the summer. The City continues to focus efforts on increasing shade along streams, identifying other sources of heat (such as inline ponds), and working to reduce the impacts from those sources. We worked with the Johnson Creek Watershed Council this past year to study and identify privately-owned inline ponds which contribute substantial heat loading to the streams. In the past year, one pond has been removed on Mitchell Creek (a tributary to Kelley Creek), three additional ponds on Mitchell and Kelley Creek are in the planning stages for removal, and a pond at Johnson Creek headwaters is under discussion.

Fairview Creek and Fairview Lake exceeded both the chlorophyll-a standard and the Columbia Slough TMDL level for total phosphorus. High phosphorus levels have been noted here before, particularly during the summer when planktonic algae is common throughout the water column in the lake. Cyanobacteria (a.k.a. blue-green algae) has frequently been noted in the lake in mid to late summer when the presence of phosphorus and their ability to fix nitrogen allow them to thrive in the warm lake water. We continue efforts to educate the public on the effect of fertilizers on water quality.

Two sites exceeded the 406 E. coli/100ml standard for bacteria - one on Kelley Creek and one on Johnson Creek. The site on Johnson Creek was at the location of a large homeless camp which may have led to the high level. This camp is located just outside of the City of Gresham boundary. The City of Gresham recognizes the impacts that camps can have on natural areas and water quality. The City undertook a new program this year directed at reducing homelessness in the City. Within the first year, over 90% of homeless residents have been placed into housing and camps have been cleaned.

Both Johnson Creek sites had potential exceedances of the chronic standard for DDT; exceedances cannot be verified since the minimum reporting level of the analysis on several dates was higher than the water quality criterion. This legacy pesticide is thought to enter the creek through erosion of contaminated soil and resuspend during disturbances such as storm events. The City continues to implement a rigorous Erosion Prevention and Sediment Control Program for development to reduce soil erosion. The levels of DDT and total suspended solids are generally higher in the long-term site upstream of Gresham than in the site downstream of Gresham, indicating that much of the sediment and DDT in the creek is originating in the upper watershed where historic and ongoing farming has been observed causing sediment-laden runoff.
One site in upper Kelly Creek was completely dry during our 7/31/2018 sampling. This was the first occurrence in our 20-year dataset of one of our long-term sites being dry. It was likely related to the hot, dry summer.

Continuous Instream Monitoring

The City of Gresham collected continuous instream temperature data at several sites within the city and collaborated with other jurisdictions to collect data at several sites upstream and downstream of the city. The locations are shown in Table 2-2. Together with USGS, Multnomah County, and East Multnomah Soil and Water Conservation District, continuous temperature data was collected at 17 stream sites, representing Beaver, Kelly, Fairview, and Johnson Creek basins. Table 2-3 and Figure 2-1 show summaries of the number of days that the 7-day average of the maximum daily temperature (7DADM) at each site exceeded the salmon rearing temperature standard of 18°C, as well as the highest 7DADM temperature reached at each site.

Only one site had no exceedances (highlighted in blue), while several sites exceeded the standard for more than 100 days (highlighted in red). The site with no exceedances was in the forested headwaters of Kelley Creek. Many of the sites with >100 days of exceedances were on the mainstem of large creeks and/or close to the outlet of an inline human-created pond. The City is aware of the impact in-line ponds can have on temperature - Fujitsu Pond is a highly ranked Natural Resource CIP project, and the City is also studying ways to reduce temperature loading from public and private ponds on Butler and Hogan Creeks.

Several beaver dams were studied this permit year for their effects on stream temperature. Consistent with previous years, beaver dams tended to have little effect on stream temperature, and might even reduce temperature as cool water from the stratified ponds seep through the dams. However, effects varied greatly depending on the starting stream temperature and pond depth, surface area, and shading.

Stormwater Monitoring

Stormwater raw data is included in **Table 2-4** and site locations are shown in **Figure 2-4**. Similar to previous years, stormwater monitoring data revealed that higher traffic sites (>1000 vehicle trips per day) have higher pollutant concentrations for many pollutants in comparison to residential streets (<1000 trips/day), especially for heavy metals and PAHs. Also similar to previous years, relatively high levels of several heavy metals (including mercury, copper, and especially zinc) were found at several sites. Cars are likely a major source of these pollutants. The City has conducted a special monitoring study which indicated that tires, including outdoor storage of used tires, likely represent a major source of heavy metals in stormwater. The results have been provided to DEQ in the form of a Technical Memo.

Structural BMP Monitoring

The structural BMP (green infrastructure) monitoring consisted of monitoring one storm at three facilities (Columbia Slough, Hayden's Meadow and Brookside) and two storms at the Kane Rd pervious pavement installation. See Figure 2-3 for locations.

Hayden's Meadow is a newly constructed neighborhood with street-side vegetated stormwater planters which were constructed in the fall of 2016. This is year three of five for sampling these facilities to assess pollutant removal performance. They were constructed with two different amended soil blends to study any differences in pollutant removal or plant survival between the two common mixes. The two mixes are: Gresham's 3-way mix of equal parts topsoil, compost, and sand and Portland's 40% compost and 60% sand mix. To date, the data indicate that both soil blends exported several pollutants during a rain event immediately after soil placement including nutrients, heavy metals, and suspended solids. However, after the initial export, the facilities are reducing many pollutants, especially suspended solids and PAHs.

The **Columbia Slough Regional Water Quality Facility** is a large constructed stormwater wetland which treats water from almost 1,000 acres of mostly commercial and industrial land. It has been monitored each year since 2011, shortly after it was built. The facility initially was not performing as well in pollutant removal as another similar facility in the City. Factors that may have contributed to lower pollutant removal include: 1) lack of emergent vegetation in portions of the facility because of design variations and 2) lower pollutant levels coming into the facility. However, the performance of this facility has increased over the past several years such that it is now generally removing pollutants at a similar rate to the other facility as reported in the PY23 Annual Report. Management actions taken by staff to improve vegetation establishment may be improving facility performance. Additionally, beavers have established themselves in this facility and are being monitored to understand how they impact the facility's performance. Our observation is that their dams appear to increase water filtration during low and moderate flow events and that they are having an overall positive impact on the facility. A comparison of pollutant removal efficiency in several storms with and without beaver dams present indicates that the facility is more effective at removing pollutants when the dams are present. This facility has been noted for its wildlife habitat value for many birds, insects, and amphibians, most of which have noticeably increased after the arrival of the beavers. Results of this study have been shared at several regional conferences.

The **Brookside Regional Facility** is a constructed stormwater wetland which treats stormwater from ~80 acres of residential land. It was constructed in 2015 and this is the fourth storm monitored at this location. The results show that pollutant loads entering this facility are generally lower than we find in areas with higher car traffic. The facility generally reduces most pollutants of concern. It appears to remove pollutants more effectively during small storms when water can flow through the emergent vegetated than during large storms when the basin fills up like a bathtub. The facility has been noted to provide recreation value for residents who can view it from the nearby bike path as well as wildlife habitat for local wetland species. This year was the first year that red-legged frogs, a species of conservation concern in Oregon, were seen successfully reproducing in the facility in substantial numbers.

Kane Rd. is a large arterial road in Gresham which also functions as a truck route. A section of this road was repaved in 2008 with two types of pervious asphalt even though the underlying soil was not able to infiltrate much water. One section was paved with a full-depth layer of pervious asphalt which drains to an underdrain connecting to the stormwater pipe system. Another section is comprised of a base layer of impervious asphalt with a 3” layer of pervious asphalt on top which drains to the gutter line (this type is often referred to as a permeable friction course, or PFC). Initial water quality sampling of runoff from Kane Drive occurred in 2017 and indicated that both of these types of permeable pavement may have substantial water quality benefits. This year we monitored two additional storms on this road. The dramatic results were very clear that both types of permeable pavements substantially clean heavy pollutant loads from this arterial road. Several pollutants were more effectively removed that we generally see in any other stormwater BMP, including total suspended solids, total heavy metals, total nutrients, and PAHs. Results of this study have been shared at several regional conferences.

Macroinvertebrate Sampling

Macroinvertebrates were collected at all of the instream monitoring locations, except Fairview Lake and KCI3 (see Macroinvertebrate data in Table 2-6 and illustrated in Figure 2-2). Results are similar to previous years with possible notable improvements in the Johnson Creek watershed. The Benthic Index of Biological Integrity (B-IBI) scores indicate a level of impairment.

Kelley Creek location (KI2) showing the least amount of impairment (i.e., the greatest abundance and highest number of sensitive species) with a B-IBI category of No Impairment. This site is predominantly surrounded by an undeveloped forested area. All of the other locations have biological communities that indicate slight, moderate, or severe impairment.

B-IBI scores for sites on Johnson Creek mainstem were several points higher than previous years, moving from a category of Severe Impairment to Moderate or even Slight Impairment. This shift may be fleeting or a product of the particular micro-locations of the samples. However, the upstream site was the location of the field duplicate, where samples were collected in slightly different nearby locations, and both of these locations produce the same relatively high score. Therefore, these scores may reflect real changes in the macroinvertebrate communities. Continued monitoring at these locations will help to elucidate if the scores are improving over time.

D. Adaptive Management

We propose one adaptive management change. We propose allowing the option to shift monitoring resources for one storm from BMP sampling to sampling our long-term instream sampling sites during a storm.

We currently sample four storms at BMP sites and sample long-term instream sites at four pre-determined dates each year which generally do not fall during storm events. This proposal is to change this to allow sampling three storms at BMP sites, one storm at long-term instream sites, and continue to sample at four pre-determined dates at long-terms sites in a given year.

The reasoning for this proposed change is that we feel that it will better inform us about the effect of stormwater on in streams while maintaining the total amount of time, resources, and effort allocated to the monitoring program.

Section 2 - Gresham and Fairview Program Raw Data

Table 2-1: Water Quality Monitoring Site Locations & Criteria

Instream-Longterm & Macroinvertebrate Site Locations (See Fig. 2-2)	
FCI0	Fairview Creek @ West of Blue Lake Rd in Trailer Park
FCI1	Fairview Creek @ Conifer Park Subdivision, N of Stark
FVL1	Fairview Lake @ Public Dock on NE 217th
JCI1	Johnson Creek @ 174th Ave (Jenne Rd)
JCI2	Johnson Creek @ 252nd Ave. (Palmblad)
KI1	Kelley Creek @ Foster Rd. (tributary of JC)
KI2	Kelley Creek @ Rodlun Rd (tributary of JC)
KCI1	Kelly Creek @ Mt. Hood Community College Pond Outflow
KCI3	Kelly Creek @ Detention Pond Outflow
KCI4	Kelly Creek @ Detention Pond Inflow
BCI1	Beaver Creek @ Lower Bridge (Monitored on behalf of Multnomah County, not shown on Gresham Map of Instream Sites)
BCI2	Beaver Creek @ Division X Troutdale Rd. (Monitored on behalf of Multnomah County, not shown on Gresham Map of Instream Sites)
Stormwater Monitoring Site Locations (See Fig. 2-4)	
Fixed locations	5 sites monitored every year
Panel 9	5 randomly selected rotating sites monitored in PY24

Structural BMP Evaluation Monitoring Locations (See Fig. 2-3)	
CSWQF-1	Columbia Slough Water Quality Facility - Stormdrain Creek
CSWQF-2	Columbia Slough Water Quality Facility - East Inlet
CSWQF-3	Columbia Slough Water Quality Facility - Outlet
CSI	Columbia Slough Water Quality Facility - outfall of cells 1 and 2
CSUSB-1	Columbia Slough Water Quality Facility - upstream of beaver dam
CSDSB-1	Columbia Slough Water Quality Facility - downstream of beaver dam
BrookBub-1	Street runoff at Brookside
BRF1-1	Brookside Regional Facility - Inlet
BRF2-1	Brookside Regional Facility - Outlet
HMPB121-1	Hayden's Meadow rain garden B12 Portland blend - Inlet
HMPB122-1	Hayden's Meadow rain garden B12 Portland blend - Outlet
HMGA71	Hayden's Meadow rain garden A7 Gresham blend - Inlet
HMGA72	Hayden's Meadow rain garden A7 Gresham blend - Outlet
HMPA21	Hayden's Meadow rain garden A2 Portland blend - Inlet
HMPA22	Hayden's Meadow rain garden A2 Portland blend - Outlet
HMGB111	Hayden's Meadow rain garden B11 Gresham blend - Inlet
HMGB112	Hayden's Meadow rain garden B11 Gresham blend - Outlet
HMPB121-2	Hayden's Meadow rain garden B12 Portland blend - Inlet
HMPB122-2	Hayden's Meadow rain garden B12 Portland blend - Outlet
HMGB151	Hayden's Meadow rain garden B15 Gresham blend - Inlet
HMGB152	Hayden's Meadow rain garden B15 Gresham blend - Outlet
KanePP_1	Kane Road Full Pervious
KanePO_1	Kane Road Pervious Overlay
KaneIP_1	Kane Road Impervious
KaneIC_1	Kane Road Impervious with Contech filter cartridges
KanePP_2	Kane Road Full Pervious
KanePO_2	Kane Road Pervious Overlay
KaneIP_2	Kane Road Impervious
KaneIC_2	Kane Road Impervious with Contech filter cartridges
KanePP_3	Kane Road Full Pervious
KanePO_3	Kane Road Pervious Overlay
KaneIP_3	Kane Road Impervious
KaneIC_3	Kane Road Impervious with Contech filter cartridges
MHCC_EH	Mt. Hood Community College Retrofit
MHCC_QU	Mt. Hood Community College Control

TMDL Constituent	**Water Quality Criteria**
Fairview Creek & Lake	
Temperature	No designated salmon and steelhead spawning use. Rearing: 18 degrees Celsius
E. coli	406 organisms/100mL (OAR 340-41)
Phosphorus	0.1549 mg/L (Columbia Slough 1998 TMDL)
Mercury	Aquatic life: 2.4 ug/L acute; 0.012 ug/L chronic. MCL: 2 ug/L
Johnson Creek (including Kelley Creek tributary in Portland)	
Temperature	Spawning: 13 degrees Celsius (55.4 F) - October 15 to May 15. Rearing: 18 degrees Celsius
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	Acute 2.4 ug/L, Chronic 0.012 ug/L (per Table 30)

Kelly Creek (in Gresham)	
Temperature	Spawning: 13 degrees Celsius (55.4 F) - October 15 to May 15. Rearing: 18 degrees Celsius
E. coli	406 organisms/100mL (OAR 340-41)

Columbia Slough	
Temperature	No designated salmon and steelhead spawning use. Rearing: 18 degrees Celsius
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	Acute 2.4 ug/L, Chronic 0.012 ug/L (per Table 30)

Non-TMDL WQ Constituents from OAR 340-41 Table 30	
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

Analysis Coding for the Reported Data

Bold = < than detection value or an Estimated value for bacteria

NA = constituents not sampled due to equipment failure or other extenuating circumstance

NM= not measured **ND**= not detected

Dup = Duplicate Sample **MRL** = method reporting limits are included at the top of each data set where they are constant. For parameters were no MRL is included, this means they vary by sample.

FD = Field Duplicate Sample

Blank = Deionized Water Sample

Exceedance of TMDL or other water quality criteria

Chronic exceedance of metal (Table 30)

Acute exceedance of metal (Table 30)

Table 2-2 Longterm Instream Data

Sample ID	Site ID	Date	Time	24-hr Rainfall	Field DO	Field pH	Field Temp	Conductivity	Turbidity	BOD5	DOC	TSS	NH3-N	Chloro-phyll-a	NO3-N	O-PO4	TKN	Total-P	Hardness	Hg-Total	Cu-Total	Pb-Total	Zn-Total
				inches	mg/L		C	µS/cm	NTUs	mg/L	mg/L	mg/L	µg/L	mg/M3	µg/L	µg/L	µg/L	µg/L	mg CaCO3/L	µg/L	µg/L	µg/L	µg/L
Test Method										SM 5210B	SM 5310B	SM 2540D	EPA 300.0	SM 10200H	EPA 300.0	EPA 365.1	EPA 351.2	EPA 365.4	SM 2340B CAL	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
Method Reporting Limit										2	1	2	20	2	100	20	20	30	1	0.001	0.2	0.1	0.5
W18G213-01	FCI0	7/31/2018	14:30	0.00	5.58	8.4	22.7	181.1	6.04	**2**	2.96	**3**	27	**2**	640	140	300	156	69.4	**0.00100**	1.24	0.219	8.2
W18G213-02	FCI1	7/31/2018	15:10	0.00	5.01	6.82	15.9	136	1.88	**2**	1	**3**	**20**	**2**	2500	81	200	90	62.6	**0.00100**	0.433	0.251	4.4
W18G213-03	JCI1	7/31/2018	9:47	0.00	5.31	6.54	23.1	153.7	4.62	**2**	4.34	4	42	8.8	160	42	360	74	52.7	0.00191	1.54	0.143	3.6
W18G213-04	JCI2	7/31/2018	11:08	0.00	6.95	7.33	21.3	150.2	10.4	**2**	4.41	6	30	**2**	560	65	440	78	43.3	0.00234	1.55	0.205	2.0
W18G213-05	KCI1	7/31/2018	12:33	0.00	6.72	7.65	13.9	205.7	4.96	**2**	4.4	**3**	23	**2**	400	45	300	99	91.6	0.00239	2.26	0.582	30.7
W18G213-06	KCI3	7/31/2018	11:43	0.00	1.81	6.76	18.8	232.6	104	8	9.82	91	631	5.3	**100**	61	2040	391	85.8	0.00579	4.48	1.95	48.4
W18G213-07	KCI4	7/31/2018	NA - dry	0.00																			
W18G213-08	KI1	7/31/2018	10:10	0.00	2.62	6.28	19.6	171	7.32	**2**	4.54	5	52	**2**	640	227	480	312	75.9	0.00105	2.03	0.19	2.2
W18G213-09	KI2	7/31/2018	10:32	0.00	7.83	6.65	16.3	153.5	14.1	**2**	1.94	6	**20**	**2**	260	31	200	36	74.8	**0.00100**	0.736	0.199	4.9
W18G213-10	BCI1	7/31/2018	13:25	0.00	4.24	7.63	22.3	215.8	3.24	**2**	1.67	**3**	24	**2**	1200	74	200	74	88.5	**0.00100**	0.764	0.1	3.0
W18G213-11	BCI2	7/31/2018	12:12	0.00	5.29	7.34	20.8	169.3	15.1	7	5.86	21	26	94.5	220	49	940	208	66	0.00385	1.83	0.131	2.2
W18G214	FVL1	7/31/2018	14:00	0.00	3.63	8.94	28.1	210.7	53.7	20	7.12	31	38	84.1	**100**	361	3320	685	71.5	0.00160	1.79	0.29	2.23
W18G213-12	FD-KI2	7/31/2018		0.00						**2**	1.8	14	**20**	**2**	260	35	340	43	75.4	0.00139	0.807	0.216	6.5
W18J260-01	FCI0	10/30/2018	14:31	0.03	6.69	7.23	13.5	115.3	5.04	**2**	3.54	**3**	35	6.4	590	52	500	72	53.7	0.00141	1.19	0.171	8.4
W18J260-02	FCI1	10/30/2018	14:52	0.03	7.06	7.02	13.5	117.5	1.99	**2**	1.72	**3**	**20**	**2**	1900	80	280	83	52.2	0.00111	1.84	0.219	27.4
W18J260-03	JCI1	10/30/2018	9:54	0.03	10.4	5.51*	11.5	63.2	21.5	**2**	5.69	9	35	**3**	1200	44	600	99	33.7	0.00332	3.2	0.524	23.3
W18J260-04	JCI2	10/30/2018	11:06	0.03	11.24	6.51*	10.7	72.5	13.7	**2**	4.96	4	**20**	**2**	2300	66	490	98	34.4	0.00237	1.97	0.271	3.2
W18J260-05	KCI1	10/30/2018	13:04	0.03	8.39	7.01	12.9	43.8	9.59	**2**	4.27	4	31	**2**	490	33	360	62	22.2	0.00288	2.95	0.376	23.6
W18J260-06	KCI3	10/30/2018	11:57	0.03	6.35	6.67	11.6	68.2	4.81	**2**	4.42	**3**	30	**2**	960	42	300	51	38.6	0.00216	1.91	0.059	47.9
W18J260-07	KCI4	10/30/2018	12:15	0.03	10.07	6.67	12.1	81.2	5.45	**2**	4.23	**3**	24	**2**	1300	44	350	55	45.8	0.00190	1.93	0.115	34.3
W18J260-08	KI1	10/30/2018	10:19	0.03	6.78	6.20*	11.5	85	7.07	**2**	6.27	**3**	32	**2**	1000	74	630	96	47.3	0.00206	2.26	0.135	5.6
W18J260-09	KI2	10/30/2018	10:41	0.03	12.73	6.34*	10.1	102.4	13.3	**2**	3.24	13	20	**2**	290	33	420	78	66.9	0.00369	1.54	0.581	11.1
W18J260-10	BCI1	10/30/2018	13:44	0.03	7.57	6.93	12.1	99.6	7.39	**2**	4.09	**3**	**20**	**2**	960	54	510	64	44.7	0.00167	1.74	0.104	8.2
W18J260-11	BCI2	10/30/2018	12:36	0.03	9.87	6.69	11	9.85	9.74	**2**	5	**3**	24	2.4	1800	88	640	114	40.9	0.00223	2.67	0.113	3.5
W18J261-01	FVL1	10/30/2018	14:16	0.03	6.81	7.08	14.4	124.5	19.1	7	4.64	14	51	36	160	50	1080	150	59.8	0.00238	1.92	0.443	5.44
W18J260-12	FD-JCI2	10/30/2018		0.03						**2**	4.87	6	**20**	**2**	2300	66	510	91	34.4	0.00310	2.15	0.311	4.8
W19B041-1	FCI0	2/6/2019	14:12	0.18	15.3	7.02	4.7	81.7	6.87	**2**	1.82	**3**	**20**		1100	38	370	44	54.3	**0.00167**	1.35	0.217	25.0
W19B041-2	FCI1	2/6/2019	14:31	0.18	11.6	6.8	9.1	125.4	3.06	**2**	**1**	**3**	**20**		2200	62	200	60	59.5	**0.00167**	0.955	0.138	31.5
W19B041-3	JCI1	2/6/2019	9:30	0.18	16.93	5.76*	3	52.2	11.4	**2**	1.76	3	**20**		2200	**20**	260	29	29.3	**0.00167**	1.25	0.213	22.3
W19B041-4	JCI2	2/6/2019	10:46	0.18	13.7	6.54	3.5	47.6	10.4	**2**	1.45	**3**	**20**		2900	**20**	200	26	23.9	**0.00167**	0.822	0.178	3.9
W19B041-5	KCI1	2/6/2019	12:50	0.18	13.09	6.11	3.5	59.9	8.7	**2**	2.51	**8**	82		1400	**20**	410	47	55.8	0.00173	4.57	0.477	40.0
W19B041-6	KCI3	2/6/2019	11:49	0.18	10.39	6.73	4	62.9	4.22	**2**	1.9	**3**	**20**		3600	**20**	390	19	47.2	**0.00167**	1.01	**0.111**	9.8
W19B041-7	KCI4	2/6/2019	12:05	0.18	10.75	6.63	4.6	65.7	4.25	**2**	1.84	**3**	28		3800	**20**	200	17	47	**0.00167**	0.758	**0.111**	6.3
W19B041-8	KI1	2/6/2019	9:52	0.18	14.91	6.41	4.3	50.3	6.3	**2**	2.76	3	32		1100	29	260	46	34.4	0.00178	1.18	0.255	5.3
W19B041-9	KI2	2/6/2019	10:12	0.18	10.83	6.76	5.3	409.5	18.4	**2**	1.04	**3**	**20**		1600	**20**	220	11	29.8	**0.00167**	0.378	**0.111**	2.4
W19B041-10	BCI1	2/6/2019	13:23	0.18	13.48	6.67	3.4	49.1	7.42	**2**	1.94	**3**	**20**		2900	23	310	34	46.1	**0.00167**	1.73	0.134	8.9
W19B041-11	BCI2	2/6/2019	12:28	0.18	14.49	7.07	4	72.2	7.59	**2**	1.71	**3**	**20**		3800	**20**	360	33	34.2	**0.00167**	1.23	**0.111**	3.0
W19B042-01	FVL1	2/6/2019	13:56	0.18	17.52	7.1	4	76.3	12.7	**2**	2.43	8	95		640	36	590	67	63.8	**0.00167**	1.35	0.373	8.17
W19B041-12	FD-JCI2	2/6/2019		0.18						**2**	1.4	**3**	**20**		2900	**20**	240	28	23.8	**0.00167**	0.785	0.171	3.5
W19D274-01	FCI0	4/30/2019	13:51	0.00	8.85	7.76	13.7	127.2	2.41	**2**	1.83	**3**	32		1280	50	210	63	62.4	**0.00150**	0.844	**0.1**	7.9
W19D274-02	FCI1	4/30/2019	14:11	0.00	9.67	7.64	12.4	122	1.36	**2**	**1**	**3**	**20**		2550	78	200	84	57	**0.00150**	0.295	**0.1**	10.0
W19D274-03	JCI1	4/30/2019	8:58	0.00	10.65	7.32	11.3	74.5	10.6	**2**	2.09	19	29		1380	25	400	40	35.8	**0.00150**	1.19	0.308	6.8
W19D274-04	JCI2	4/30/2019	10:15	0.00	10.02	7.21	9.9	54.4	5.82	**2**	1.52	**3**	**20**		2080	**20**	210	22	23.4	**0.00150**	0.745	**0.1**	1.7
W19D274-05	KCI1	4/30/2019	11:43	0.00	6.82	7.66	14	125.3	7.11	**2**	3.28	4	21		790	29	280	36	57.8	**0.00150**	1.64	0.18	14.4
W19D274-06	KCI3	4/30/2019	10:35	0.00	8.52	7.12	10	106.2	3.98	**2**	3.39	**3**	**20**		770	28	240	40	51.1	**0.00150**	2.02	**0.1**	10.3
W19D274-07	KCI4	4/30/2019	10:50	0.00	9.19	7.29	10.9	59.7	3.47	**2**	2.64	**3**	**20**		970	23	200	39	53.2	**0.00150**	1.67	**0.1**	7.1
W19D274-08	KI1	4/30/2019	9:20	0.00	9.03	7.06	11.7	86.6	11	**2**	2.99	6	58		250	58	290	86	38.7	0.00229	1.16	0.244	18.9
W19D274-09	KI2	4/30/2019	9:47	0.00	12.36	7.34	8.5	71.7	12.3	**2**	1.18	**3**	**20**		710	**20**	200	15	38.8	**0.00150**	0.383	0.121	4.6
W19D274-10	BCI1	4/30/2019	12:59	0.00	7.51	7.61	13.4	132.8	3.69	**2**	2.47	**3**	**20**		2000	25	200	29	56.9	**0.00150**	1.23	**0.1**	4.1
W19D274-11	BCI2	4/30/2019	11:15	0.00	8.23	7.4	11.3	84.9	9.72	**2**	3.06	4	34		3160	67	380	109	38.9	0.00222	2.47	0.142	4.8
W19D275	FVL1	4/30/2019	13:13	0.00	7.7	8.18	18.2	141	17.5	7	3.42	22	**20**		**100**	**20**	1360	142	62.2	**0.00150**	1.45	0.358	3.82
W19D274-12	FD-KI1	4/30/2019		0.00						**2**	3.1	6	52		250	56	360	88	40.6	0.00198	1.2	0.257	20.3

Analysis Coding for the Reported Data

Bold = < than detection value
NA = constituents not sampled
NM= not measured
ND= not detected
Dup = Duplicate Sample
MRL = method reporting limits are included at the top of each column if constant.

FD = Field Duplicate Sample
For parameters where no MRL is included, this means they vary by sample.

Exceedance of TMDL or other water quality criteria
Chronic exceedance of metal (Table 30)
Acute exceedance of metal (Table 30)
Exceedance of City WPCF Permit action level

Table 2-2 Longterm Instream Data

Sample ID	Site ID	Date	Cu-Diss	Pb-Diss	Zn-Diss	E. coli	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	Alpha-BHC	beta-BHC	gamma-BHC	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Endrin Ketone
			µg/L	µg/L	µg/L	MPN/100ml	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
Test Method			EPA 200.8	EPA 200.8	EPA 200.8	SM 9223B	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081
Method Reporting Limit			0.2	0.1	0.5	10	0.5-various	0.5-various	0.5-various	0.5-various	0.5-various	1.0-various	0.5-various	0.5-various	0.5-various	0.5-various	0.5-various	0.5-various	0.5-various	0.5-various	0.5-various	0.5-various
W18G213-01	FCI0	7/31/2018	0.935	**0.105**	3.85	250																
W18G213-02	FCI1	7/31/2018	0.219	**0.105**	3.12	110																
W18G213-03	JCI1	7/31/2018	1.02	**0.105**	1.59	85	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	3.8	**5**	**5**	**5**	**5**	**5**	**5**
W18G213-04	JCI2	7/31/2018	1.15	**0.105**	0.882	160	**5**	1.5	**5**	**5**	**5**	**5**	**5**	**5**	**5**	3.5	**5**	**5**	**5**	**5**	**5**	**5**
W18G213-05	KCI1	7/31/2018	1.34	**0.105**	10.1	**10**																
W18G213-06	KCI3	7/31/2018	0.403	**0.105**	1.28	290																
W18G213-07	KCI4	7/31/2018																				
W18G213-08	KI1	7/31/2018	1.53	**0.105**	1.1	650																
W18G213-09	KI2	7/31/2018	0.378	**0.105**	0.824	200																
W18G213-10	BCI1	7/31/2018	0.616	**0.105**	1.51	86																
W18G213-11	BCI2	7/31/2018	1.6	**0.105**	1.1	30																
W18G214	FVL1	7/31/2018	1.15	**0.11**	**0.527**	**10**																
W18G213-12	FD-KI2	7/31/2018	0.354	**0.105**	0.813	160																
W18J260-01	FCI0	10/30/2018	0.922	**0.105**	5.18	160																
W18J260-02	FCI1	10/30/2018	1.64	**0.105**	27.2	230																
W18J260-03	JCI1	10/30/2018	2.35	0.121	18.8	340	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**
W18J260-04	JCI2	10/30/2018	1.59	**0.105**	1.64	140	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**	**0.011**
W18J260-05	KCI1	10/30/2018	2.33	**0.105**	16.6	180																
W18J260-06	KCI3	10/30/2018	1.71	**0.105**	44.9	20																
W18J260-07	KCI4	10/30/2018	1.6	**0.105**	29.2	150																
W18J260-08	KI1	10/30/2018	1.99	**0.105**	2.17	85																
W18J260-09	KI2	10/30/2018	0.585	**0.105**	1.46	75																
W18J260-10	BCI1	10/30/2018	1.48	**0.105**	6.19	41																
W18J260-11	BCI2	10/30/2018	2.33	**0.105**	1.8	160																
W18J261-01	FVL1	10/30/2018	1.25	**0.11**	1.64	140																
W18J260-12	FD-JCI2	10/30/2018	1.56	**0.105**	1.54	200																
W19B041-1	FCI0	2/6/2019	0.805	**0.105**	15.1	20																
W19B041-2	FCI1	2/6/2019	0.768	**0.105**	30.6	110																
W19B041-3	JCI1	2/6/2019	0.769	**0.105**	13.2	1800	**1**	3.3	**1**	**1**	**1**	**1.2**	**1**	**1**	**1**	**3.4**	**1**	**1**	**1**	**1**	**58**	**1**
W19B041-4	JCI2	2/6/2019	0.561	**0.105**	2.58	63	**1**	5.3	**1**	**1**	**1**	**1.3**	**1**	**1**	**1**	3.1	**1**	**1**	0.98	**1**	**3.1**	**1**
W19B041-5	KCI1	2/6/2019	3.09	**0.105**	30.6	31																
W19B041-6	KCI3	2/6/2019	0.855	**0.105**	19.5	52																
W19B041-7	KCI4	2/6/2019	0.641	**0.105**	5.58	100																
W19B041-8	KI1	2/6/2019	0.939	**0.105**	3.93	52																
W19B041-9	KI2	2/6/2019	0.309	**0.105**	1.46	52																
W19B041-10	BCI1	2/6/2019	1.36	**0.105**	6.44	31																
W19B041-11	BCI2	2/6/2019	1	**0.105**	2.12	130																
W19B042-01	FVL1	2/6/2019	0.918	**0.11**	4.94	10																
W19B041-12	FD-JCI2	2/6/2019	0.539	**0.105**	2.55	63																
W19D274-01	FCI0	4/30/2019	0.617	**0.105**	5.04	97																
W19D274-02	FCI1	4/30/2019	0.237	**0.105**	9.5	120																
W19D274-03	JCI1	4/30/2019	0.732	**0.105**	3.16	10	0.55	0.79	0.49	**1**	**0.51**	**0.51**	**0.51**	**0.51**	**0.51**	2.4	**2**	**2**	0.2	**2**	**2**	**1**
W19D274-04	JCI2	4/30/2019	0.525	**0.105**	0.837	110	0.25	0.44	0.27	**1**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	2.9	**2**	**2**	0.19	**2**	**2**	**1**
W19D274-05	KCI1	4/30/2019	1.17	**0.105**	5.43	10																
W19D274-06	KCI3	4/30/2019	1.77	**0.105**	8.27	52																
W19D274-07	KCI4	4/30/2019	1.35	**0.105**	5.42	31																
W19D274-08	KI1	4/30/2019	0.798	**0.105**	13.3	200																
W19D274-09	KI2	4/30/2019	0.248	**0.105**	1.33	**10**																
W19D274-10	BCI1	4/30/2019	1.01	**0.105**	2.17	10																
W19D274-11	BCI2	4/30/2019	1.86	**0.105**	2.09	52																
W19D275	FVL1	4/30/2019	0.808	**0.11**	**0.527**	52																
W19D274-12	FD-KI1	4/30/2019	0.807	**0.105**	13.8	120																

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For parameters where no MRL is included, this means they vary by sample.

Exceedance of TMDL or other water quality crite
Chronic exceedance of metal (Table 30)
Acute exceedance of metal (Table 30)
Exceedance of City WPCF Permit action level

Table 2-2 Longterm Instream Data

Sample ID	Site ID	Date	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene
			ng/L	ng/L	ng/L	ng/L	ng/L
Test Method			EPA 8081	EPA 8081	EPA 8081	EPA 8081	EPA 8081
Method Reporting Limit			1.0-various	0.5-various	1.0-various	0.5-various	50-various
W18G213-01	FCI0	7/31/2018					
W18G213-02	FCI1	7/31/2018					
W18G213-03	JCI1	7/31/2018	**5**	1.1	**5**	**5**	
W18G213-04	JCI2	7/31/2018	**5**	**5**	**5**	**5**	**84**
W18G213-05	KCI1	7/31/2018					**53**
W18G213-06	KCI3	7/31/2018					
W18G213-07	KCI4	7/31/2018					
W18G213-08	KI1	7/31/2018					
W18G213-09	KI2	7/31/2018					
W18G213-10	BCI1	7/31/2018					
W18G213-11	BCI2	7/31/2018					
W18G214	FVL1	7/31/2018					
W18G213-12	FD-KI2	7/31/2018					
W18J260-01	FCI0	10/30/2018					
W18J260-02	FCI1	10/30/2018					
W18J260-03	JCI1	10/30/2018	**0.011**	**0.011**	**0.011**	**0.011**	
W18J260-04	JCI2	10/30/2018	**0.011**	**0.011**	**0.011**	**0.011**	**54**
W18J260-05	KCI1	10/30/2018					**50**
W18J260-06	KCI3	10/30/2018					
W18J260-07	KCI4	10/30/2018					
W18J260-08	KI1	10/30/2018					
W18J260-09	KI2	10/30/2018					
W18J260-10	BCI1	10/30/2018					
W18J260-11	BCI2	10/30/2018					
W18J261-01	FVL1	10/30/2018					
W18J260-12	FD-JCI2	10/30/2018					
W19B041-1	FCI0	2/6/2019					
W19B041-2	FCI1	2/6/2019					
W19B041-3	JCI1	2/6/2019	**1**	**1**	**1**	**1**	
W19B041-4	JCI2	2/6/2019	**1**	0.76	**1**	**1**	**1.1**
W19B041-5	KCI1	2/6/2019					**1.1**
W19B041-6	KCI3	2/6/2019					
W19B041-7	KCI4	2/6/2019					
W19B041-8	KI1	2/6/2019					
W19B041-9	KI2	2/6/2019					
W19B041-10	BCI1	2/6/2019					
W19B041-11	BCI2	2/6/2019					
W19B042-01	FVL1	2/6/2019					
W19B041-12	FD-JCI2	2/6/2019					
W19D274-01	FCI0	4/30/2019					
W19D274-02	FCI1	4/30/2019					
W19D274-03	JCI1	4/30/2019	**0.51**	**1**	**1**	0.14	
W19D274-04	JCI2	4/30/2019	**0.5**	**1**	**1**	**0.5**	
W19D274-05	KCI1	4/30/2019					
W19D274-06	KCI3	4/30/2019					
W19D274-07	KCI4	4/30/2019					
W19D274-08	KI1	4/30/2019					
W19D274-09	KI2	4/30/2019					
W19D274-10	BCI1	4/30/2019					
W19D274-11	BCI2	4/30/2019					
W19D275	FVL1	4/30/2019					
W19D274-12	FD-KI1	4/30/2019					

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Exceedance of TMDL or other water quality crite
Chronic exceedance of metal (Table 30)
Acute exceedance of metal (Table 30)
Exceedance of City WPCF Permit action level

Table 2-3 Continuous Temperature Monitoring

ID Number	Site	Basin	Stream	Max 7DADM (*C)	days 7DADM >18*C
1	Beaver downstream (DS) of Kelly	Beaver	Beaver	26.9	104
2	Beaver upstream (US) of Kelly	Beaver	Beaver	24.7	88
4	Beaver US of beaver dam @ MHCC	Beaver	Beaver	25.3	104
3	Beaver DS of beaver dam @ MHCC	Beaver	Beaver	23.3	88
5	Kelly DS of pond on MHCC campus	Beaver	Kelly	23.7	131
6	Beaver at Cory property	Beaver	Beaver	18.8	10
8	Johnson US of 7th Street beaver dam	Johnson	Johnson	23.8	41
7	Johnson DS of 7th Street beaver dam	Johnson	Johnson	23.8	42
10	Johnson US of MCP beaver dam	Johnson	Johnson	24.4	37
9	Johnson DS of MCP beaver dam	Johnson	Johnson	24.9	51
11	Johnson @ Regner	Johnson	Johnson	25.4	101
12	Butler US of Marpol Pond	Johnson	Butler	19.6	40
13	Butler DS of Marpol Pond	Johnson	Butler	20.3	45
14	Kelley @ Rodlun	Johnson	Kelley	17.9	0
15	Kelley @ 190th	Johnson	Kelley	20.1	45
16	Kelley @ Foster	Johnson	Kelley	20.6	49
17	Kelley @ 158th	Johnson	Kelley	21.4	57

Coding for Reported Data
Red = temperature exceedances for more than 100 days
Blue = no temperature exceedances
Temperature is not a pollutant associated with stormwater runoff since the rainy season does not coincide with summer temperatures. This data is provided to help the reader understand the general condition and impacts to streams in Gresham and Fairview. The City has a temperature TMDL plan that restores public land in an effort to provide shade and reduce streams temperatures over time. These activities are reported in **Table 3-3.**

Figure 2-1 Stream Temperature Monitoring Locations

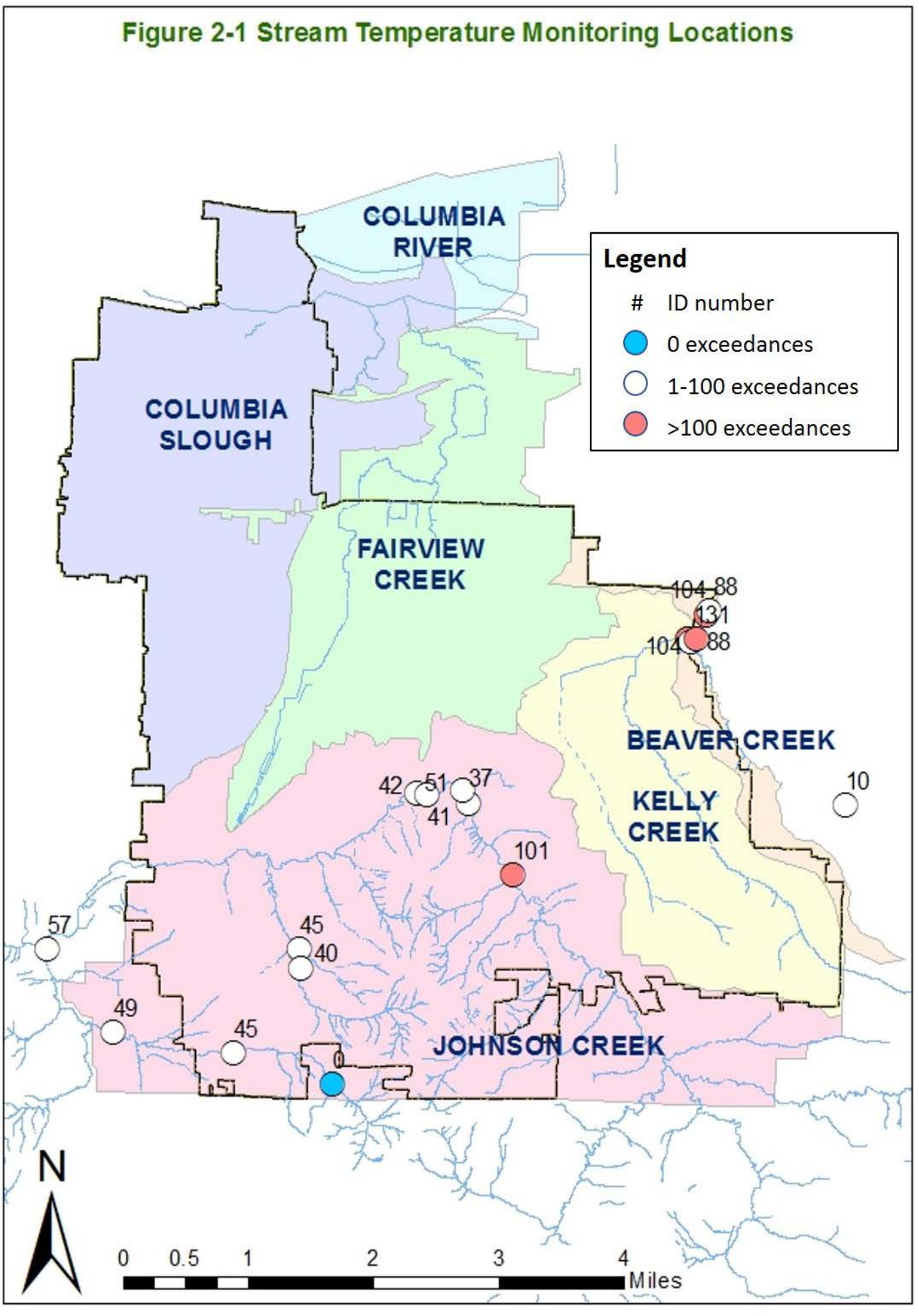

Table 2-4 Stormwater Sampling

Lab ID	System ID	Trips per Day	Land Use	Functional Class	Date	Time	Rainfall Previous	DO	pH	Temp	Conduc-tivity	Turbi-dity	E. coli	BOD	DOC	TSS	Ammonia	Nitrate	ortho-P	Total Kjeldahl Nitrogen	T-Phos	Hardness	Total Antimony	Total Cadmium	Total Copper	Total Lead	Total Mercury	Total Zinc	Dissolved Copper	Dissolved Lead	Diss Zinc
Method Reporting Limit							inches/24 hrs	mg/l		°C	µS/cm	NTU	MPN /100 mL	2 mg/L	1 mg/L	2 mg/L	10 ug/L	100 ug/L	20 ug/L	200 ug/L	30 ug/L	mg/L CaCO3	0.100 ug/L	0.100 ug/L	0.200 ug/L	0.100 ug/L	0.00200 ug/L	0.500 ug/L	0.200 ug/L	0.100 ug/L	0.500 ug/L
Analytical Method													SM 9223 B	SM 5210 B	SM 5310B	SM 2540D	EPA 300.0	EPA 300.0	EPA 365.1	EPA 351.2	EPA 365.4	SM 2340B CAL	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
W18K174-02	3048-W-033	>1000	MRES	Boulevard	11/23/2018	12:53	0.91	11.8	6.65	10.2	13.3	59.5	230	6	4.86	24	142	**100**	22	750	72	5.68	1.200	**0.1**	17.8	1.78	**0.001**	53.1	8.530	**0.106**	30.3
W18K174-04	3148-W-014	>1000	RES	Community	11/23/2018	13:25	0.82	11.51	6.48	9.5	6.5	17.9	30	4	3.56	4	21	**100**	**20**	270	38	2.56	**0.100**	**0.1**	2.5	0.425	0.00201	14.4	1.520	**0.106**	9.56
W18K174-05	3153-F-031	>1000	RES	Minor Arterial	11/23/2018	11:23	0.81	12.6	5.54	8.7	23.1	33.9	160	4	4.9	10	287	130	**20**	860	57	10.6	1.150	**0.1**	7.69	0.765	0.00215	35.7	3.790	**0.106**	18.5
W18K174-07	3151-F-064	>1000	COM	Collector	11/23/2018	12:20	0.91	12.4	6.67	9.7	17.9	44	420	5	4.78	16	150	**100**	32	490	77	8.17	0.984	**0.1**	7.6	1.09	0.00309	32.2	3.630	0.106	17.3
W18K174-10	3150-W-020	>1000	RES	Boulevard	11/23/2018	14:40	0.72	11.75	6.36	9.3	12.4	88.8	190	15	3.71	80	259	100	**20**	1150	115	8.41	3.110	0.115	23.6	5.12	0.00713	114	6.030	0.328	37.2
W18K174-06	3150-F-030	<1000	RES	Residential	11/23/2018	11:50	0.81	11.18	6.25	9.3	10.8	11.3	110	4	2.05	24	**20**	**100**	26	400	84	5.5	0.175	**0.1**	5.52	1.21	0.00312	31.2	1.660	**0.106**	10.2
W18K174-03	3149-W-073	<1000	COM	Residential	11/23/2018	13:52	0.82	10.48	6.46	9.5	10.1	4.59	**10**	2	1.36	**3**	**20**	**100**	**20**	**20**	**20**	4.67	**0.100**	**0.1**	1.05	**0.1**	**0.001**	4.7	0.798	**0.106**	3.5
W18K174-01	3048-W-028	<1000	RES	Residential	11/23/2018	14:15	0.72	10.8	6.27	9.6	8.3	8.09	**10**	9	6.64	**3**	**20**	**100**	60	320	103	3.09	**0.100**	**0.1**	0.896	**0.1**	0.00165	4.87	0.709	**0.106**	3.6
W18K174-08	3251-F-013	<1000	RES	Residential	11/23/2018	13:02	0.82	12.1	3.35	9.6	17.6	7.69	20	4	5.78	3	**20**	**100**	64	530	95	8.32	**0.100**	**0.1**	5.06	**0.1**	0.0036	90.9	4.250	**0.106**	83.5
W18K174-09	3153-F-040	<1000	RES	Residential	11/23/2018	11:03	0.81	12.2	5.85	10.2	8.5	5.32	52	3	3.31	3	**20**	**100**	**20**	270	31	2.44	0.243	**0.1**	3.31	0.123	0.0015	9.3	2.500	**0.106**	7.57
W18K174-11	FD 3048-W-033												190	6	4.9	24	142	**100**	21	520	81	6.11	2.130	**0.1**	20.1	2.4	0.00298	61.5	8.520	**0.106**	31.2

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Dup = Duplicate Sample

MRL = method reporting limits are included at the top of each data set where they are constant. For parameters were no MRL is included, this means they vary by sample, such as conductivity. Results below the MRL are estimates of detections as reported by the laboratory.
FD = Field Duplicate Sample

4 Stormwater Sampling

System ID	Trips per Day	Land Use	Functional Class	Date	Time	Rainfall Previous	Acenaph-thene	Acenaphthylene	Anthracene	Benzo-(a)-anthracene	Benzo-(a)-pyrene	Benzo(b)-fluoran-thene	Benzo(ghi)-perylene	Benzo(k)fluoran-thene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno-(1,2,3-cd)pyrene	Naphthalene	Phenan-threne	Pyrene	Butyl benzyl phthalate	Di-n-butyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-octyl phthalate
Reporting mit						inches/24 hrs	ug/L	MPN/100 ml	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
al Method							EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM
3048-W-033	>1000	MRES	Boulevard	11/23/2018	12:53	0.91	**0.020**	0.020	**0.020**	0.010	0.011	0.019	0.034	**0.010**	0.015	**0.010**	0.044	**0.020**	0.010	0.046	0.050	0.081	**1.0**	**1.0**	**1.0**	**1.0**	0.6
3148-W-014	>1000	RES	Community	11/23/2018	13:25	0.82	**0.020**	**0.020**	**0.020**	**0.010**	**0.010**	0.014	0.015	**0.010**	**0.010**	**0.010**	0.014	**0.020**	**0.010**	**0.040**	0.022	0.024	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
3153-F-031	>1000	RES	Minor Arterial	11/23/2018	11:23	0.81	**0.020**	**0.020**	**0.020**	**0.010**	0.011	0.019	0.042	**0.010**	0.014	**0.010**	0.047	**0.020**	0.011	**0.040**	0.047	0.091	**1.0**	**1.0**	**1.0**	**1.0**	0.5
3151-F-064	>1000	COM	Collector	11/23/2018	12:20	0.91	**0.020**	**0.020**	**0.020**	**0.010**	0.012	0.019	0.034	**0.010**	0.012	**0.010**	0.038	**0.020**	0.011	**0.040**	0.041	0.073	**1.0**	**1.0**	**1.0**	**1.0**	0.6
3150-W-020	>1000	RES	Boulevard	11/23/2018	14:40	0.72	**0.020**	0.030	0.027	0.035	0.047	0.085	0.170	0.023	0.054	0.014	0.180	**0.020**	0.047	0.069	0.140	0.330	**1.0**	**1.0**	**1.0**	**1.0**	3.4
3150-F-030	<1000	RES	Residential	11/23/2018	11:50	0.81	**0.020**	**0.020**	**0.020**	**0.010**	**0.010**	0.016	**0.010**	0.021	**0.010**	**0.010**	0.018	**0.020**	**0.010**	**0.040**	0.024	0.030	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
3149-W-073	<1000	COM	Residential	11/23/2018	13:52	0.82	**0.020**	**0.020**	**0.020**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.100**	**0.020**	**0.010**	**0.040**	**0.020**	**0.010**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
3048-W-028	<1000	RES	Residential	11/23/2018	14:15	0.72	**0.020**	**0.020**	**0.020**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.100**	**0.020**	**0.010**	0.150	**0.020**	**0.010**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
3251-F-013	<1000	RES	Residential	11/23/2018	13:02	0.82	**0.020**	**0.020**	**0.020**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.100**	**0.020**	**0.010**	**0.040**	**0.020**	0.010	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
3153-F-040	<1000	RES	Residential	11/23/2018	11:03	0.81	**0.020**	**0.020**	**0.020**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	**0.010**	0.011	**0.020**	**0.010**	**0.040**	0.023	0.013	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
FD 3048-W-033							**0.020**	**0.020**	**0.020**	0.011	0.011	0.017	0.034	**0.010**	0.015	**0.010**	0.042	**0.020**	0.013	0.042	0.049	0.081	**1.0**	**1.0**	**1.0**	**1.0**	0.8

ing for the Reported Data

ı detection value or an Estimated value for bacteria
ıents not sampled due to equipment failure or other extenuating circumstance
ısured **ND**= not detected
ːate Sample

d reporting limits are included at the top of each data set where they are constant. For parameters
is included, this means they vary by sample, such as conductivity. Results below the MRL are
ːtections as reported by the laboratory.
uplicate Sample

4 Stormwater Sampling — Stormwater Sampling

System_ID	Trips per Day	Land Use	Functional Class	Date	Time	Rainfall Previous	Di-(2-ethylhexyl)-phthalate	2,4,5-T	2,4,5-TP (Silvex)	2,4-D	2,4-DB	Acifluorfen	Bentazon	3,5-Dichlorobenzoic acid	Dicamba	Dichlorprop	Dinoseb	Pentachlorophenol	Picloram	Benzene	Ethylbenzene	Toluene	m,p-Xylene	o-Xylene
Reporting mit						inches/24 hrs	ug/L	0.040 ug/L	0.040 ug/L	0.040 ug/L	0.040 ug/L	0.040 ug/L	0.040 ug/L	0.200 ug/L	0.040 ug/L	0.040 ug/L	0.040 ug/L	0.040 ug/L	.040 ug/L	0.2 ug/L	0.5 ug/L	0.5 ug/L	1 ug/L	0.5 ug/L
al Method							EPA 8270-SIM	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 515.4 mod	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260
3048-W-033	>1000	MRES	Boulevard	11/23/2018	12:53	0.91	2.9	**0.1**	**0.1**	0.6	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	2.320	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3148-W-014	>1000	RES	Community	11/23/2018	13:25	0.82	0.8	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.066	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3153-F-031	>1000	RES	Minor Arterial	11/23/2018	11:23	0.81	3.3	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.109	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3151-F-064	>1000	COM	Collector	11/23/2018	12:20	0.91	2.9	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.124	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3150-W-020	>1000	RES	Boulevard	11/23/2018	14:40	0.72	17.0	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.332	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3150-F-030	<1000	RES	Residential	11/23/2018	11:50	0.81	1.5	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.030	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3149-W-073	<1000	COM	Residential	11/23/2018	13:52	0.82	**1.0**	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.065	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3048-W-028	<1000	RES	Residential	11/23/2018	14:15	0.72	**1.0**	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.033	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3251-F-013	<1000	RES	Residential	11/23/2018	13:02	0.82	**1.0**	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.024	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
3153-F-040	<1000	RES	Residential	11/23/2018	11:03	0.81	**1.0**	**0.1**	**0.1**	**0.2**	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	0.044	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**
FD 3048-W-033							2.9	**0.1**	**0.1**	0.5	**0.4**	**0.2**	**0.4**	**0.2**	**0.2**	**0.4**	**0.4**	2.120	**0.2**	**0.2**	**0.5**	**0.5**	**1**	**0.5**

ing for the Reported Data

n detection value or an Estimated value for bacteria
uents not sampled due to equipment failure or other extenuating circumstance
asured **ND**= not detected
cate Sample

d reporting limits are included at the top of each data set where they are constant. For parameters is included, this means they vary by sample, such as conductivity. Results below the MRL are etections as reported by the laboratory.
uplicate Sample

Table 2-5 Stormwater Green Infrastructure Sampling Data

Sample ID	Site ID	Inlet/outlet	Date	Time	Storm	24-hr Rainfall	Field DO	Field pH	Field Temp	Conduc-tivity	Turbi-dity	NH3-N	BOD5	NO3-N	O-PO4	TKN	Total-P	TSS	Hardness	Ca	Mg	Hg-Total	DOC	Cu-Dissolved
						inches	mg/L		C	uS/cm	NTUs	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L as CaCO3	mg/L	mg/L	ug/L	ug/L	ug/L
												EPA 300.0	SM 5210B	EPA 300.0	EPA 365.1	EPA 351.2	EPA 365.4	SM 2540D	SM 2340B CAL	EPA 200.7	EPA 200.7	EPA 200.8	SM 5310B	EPA 200.8
											0.01	20	2	100	20	100	25	2	1	0.5	0.5	0.001	1	0.2
W18L066-01	CSWQF Stormdrain Creek	inlet	12/9/2018	12:35	13	0.65	12.83	5.71	6.3	48.7	46.6	301	12	380	43	900	154	24	21.5	5.52	1.87	0.00745	8.6	5.02
W18L066-02	CSWQF Stormdrain Creek	inlet	12/9/2018	14:45	13	0.65	17.13	7.26	4.3	19.6	28.9	128	5	130	32	420	59	16	7.1	1.96	0.533	0.00264	2.86	2.03
W18L066-03	CSWQF East Inlet	inlet	12/9/2018	16:53	13	0.65	13.53	6.93	5.6	26.8	25.4	120	4	240	31	400	58	7	13.2	3.52	1.06	0.00274	2.9	2.42
W18L066-04	CSWQF East Inlet	inlet	12/9/2018	12:50	13	0.65	15.6	5.83	5.1	60.9	34.7	268	7	230	35	750	103	25	28.8	6.45	3.08	0.00693	5.81	4.07
W18L066-05	CSWQF Stormdrain Creek	inlet	12/9/2018	14:55	13	0.65	17.6	6.73	4.1	27.8	83.5	120	4	140	34	300	102	30	17.2	4.64	1.37	0.00339	2.43	1.84
W18L066-06	CSWQF East Inlet	inlet	12/9/2018	17:02	13	0.65	15.3	6.92	4.8	35.3	52.2	121	3	170	28	280	69	14	19.8	4.85	1.88	0.0042	2.34	2.17
W18L066-07	CSWQF Outlet	outlet	12/9/2018	13:17	13	0.65	12.72	5.84	3.9	130.4	17.9	111	**3**	1300	54	450	94	16	78.9	18.6	7.87	0.00132	1.84	0.682
W18L066-08	CSWQF Outlet	outlet	12/9/2018	17:15	13	0.65	14.92	6.86	4.3	21.2	29.5	121	4	170	40	350	66	10	9.74	2.55	0.821	0.00324	3.11	2.24
W18L071-01	CSWQF Outlet	outlet	12/10/2018	11:04	13	0.65	7.48	7.03	5.2	38.9	14.5	60	**3**	350	28	350	53	3	20.7	5.17	1.89	0.0014	1.9	1.29
W18L095-01	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	15:55	4	0.83	4.04	6.2	9.4	4.3	42.1	27	2	**100**	**20**	**200**	189	83	14.4	4.28	0.903	0.00833	**1**	0.418
W18L095-02	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	16:30	4	0.83	7.83	6.33	9.5	38.6	57.2	28	**2**	**100**	67	520	177	10	40.3	12.9	1.98	0.00844	5.44	3.49
W18L095-03	Hayden's Meadow rain garden A2 Portland blend inlet	inlet	12/11/2018	17:33	4	0.83	7.93	6.56	10	28.6	22.1	390	**2**	1200	88	610	222	8	29.2	9.48	1.34	0.00389	2.4	6.43
W18L095-04	Hayden's Meadow rain garden A2 Portland blend outlet	outlet	12/11/2018	19:24	4	0.83	6.68	6.43	8.7	52.6	44.9	**20**	**3**	940	83	450	228	**3**	45.1	14.4	2.21	0.0073	5.78	4.52
W18L095-05	Hayden's Meadow rain garden A7 Gresham blend inlet	inlet	12/11/2018	16:00	4	0.83	6.41	6.03	9.3	16.2	38.5	21	**3**	**100**	**20**	220	97	53	25.5	8.87	0.804	0.00469	**1**	0.364
W18L095-06	Hayden's Meadow rain garden A7 Gresham blend outlet	outlet	12/11/2018	16:25	4	0.83	7.97	6.39	8.8	35	25.8	**20**	**3**	170	87	520	210	5	36.8	11.6	1.89	0.00722	5.66	3.2
W18L095-07	Hayden's Meadow rain garden B11 Gresham blend inlet	inlet	12/11/2018	18:07	4	0.83	7.82	6.42	9	21.9	596	25	5	**100**	50	240	922	586	79.3	23.4	5.07	0.0526	4.82	3.15
W18L095-08	Hayden's Meadow rain garden B11 Gresham blend outlet	outlet	12/11/2018	19:19	4	0.83	7.39	6.35	8.8	50.5	192	**20**	**3**	120	128	280	430	27	53.4	15.2	3.73	0.0188	4.83	4.06
W18L095-09	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	17:52	4	0.83	6.15	6.56	9.8	3.7	33.9	**20**	**3**	**100**	**20**	**200**	137	32	12.7	3.95	0.688	0.00406	**1**	**0.212**
W18L095-10	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	18:44	4	0.83	7.35	6.45	8.9	43.1	93.8	**20**	**3**	460	124	350	338	12	38.3	10.8	0.368	0.0122	6.65	4.93
W18L095-11	Hayden's Meadow rain garden B15 Gresham blend inlet	inlet	12/11/2018	17:36	4	0.83	5.9	6.75	9.7	4	37.8	**20**	**2**	**100**	**20**	340	86	58	6.03	1.81	0.368	0.00382	**1**	**0.212**
W18L095-12	Hayden's Meadow rain garden B15 Gresham blend outlet	outlet	12/11/2018	18:38	4	0.83	6.7	6.38	10.4	39.1	76	**20**	**2**	400	118	460	274	12	33	9.13	2.47	0.00777	6.88	6.11
W19A155-01	Kane Road Impervious at culvert	inlet	1/18/2019	14:15	2	1.29	13.8	6.1	9.5	34	892	486	9	350	20	3900	159	412	53.3	12.4	5.4	0.0271	9.27	7.27
W19A155-02	Kane Road Pervious Overlay	outlet	1/18/2019	15:26	2	1.29	13.53	6.77	8.1	19.6	59.5	106	**3**	540	29	680	76	14	15.3	4.46	1	0.00363	1.95	2.38
W19A155-03	Kane Road Full Pervious	outlet	1/18/2019	15:45	2	1.29	14.34	6.53	7.8	25.2	40.3	124	5	160	**20**	960	110	64	15.7	4.64	1.01	0.00782	2.86	2.61
W19A155-04	Kane Paropa	inlet	1/18/2019	15:00	2	1.29	14.21	6.65	7.4	15.9	79	121	3	180	40	620	112	31	13.2	3.84	0.87	0.00621	2.56	4.09
W19C219-01	Brookside regional facility inlet	inlet	3/25/2019	16:50	4	0.4	8.41	6.81	10	51	91.6	100	5	270	62	910	159	65	27.8	8.43	1.63	0.00789	7.8	3.48
W19C219-02	Brookside regional facility outlet	outlet	3/25/2019	17:05	4	0.4	7.39	6.85	9.7	75	35.6	63	3	680	31	500	76	4	37.6	10.4	2.85	0.00403	6.82	4.83
W19C219-03	Brookside regional facility inlet	inlet	3/25/2019	17:25	4	0.4	9.12	6.97	10.2	46.1	68.3	78	3	290	44	390	110	38	24.2	7.05	1.6	0.00441	4.99	3.87
W19C219-04	Brookside regional facility outlet	outlet	3/25/2019	17:35	4	0.4	7.5	6.95	10.1	54.7	63.4	60	3	330	51	560	112	22	28.6	8.16	2	0.00647	7.08	4.64
W19D064-01	Kane Road Impervious at culvert	inlet	4/5/2019	7:45	3	0.41	7.76	8.01	9.9	34.7	163	387	5	130	**20**	1410	240	151	18.8	4.34	1.93	0.0126	4.75	6.37
W19D064-02	Kane Road Pervious Overlay	outlet	4/5/2019	8:13	3	0.41	8.17	7.15	10.2	49	26.6	122	2	1000	37	410	54	8	20.4	5.59	1.57	0.00291	2.74	2.8
W19D064-03	Kane Road Full Pervious	outlet	4/5/2019	8:42	3	0.41	8.66	6.81	10.6	43.3	19.4	**20**	**2**	1000	**20**	320	33	4	21.2	5.64	1.72	0.00304	3.12	2.32
W19D064-04	Kane Road Impervious at culvert	inlet	4/5/2019	9:54	3	0.41	7.71	6.95	10.9	60.7	369	415	14	370	21	2020	362	176	36.2	7.75	4.09	0.0198	8.85	10.3
W19D064-05	Kane Road Pervious Overlay	outlet	4/5/2019	10:10	3	0.41	8.21	6.76	10.9	59.4	16.3	36	**2**	570	34	260	55	4	27.6	8.4	1.6	0.00236	2.83	3.4
W19D064-06	Kane Road Full Pervious	outlet	4/5/2019	10:36	3	0.41	8.19	6.86	11.3	29.1	30.5	37	3	520	**20**	320	46	9	13.1	3.7	0.928	0.0041	4.13	3.46
W19D064-07	Kane Road Impervious at culvert	inlet	4/5/2019	10:52	3	0.41	8.28	6.79	11.5	44.2	218	495	8	210	**20**	1400	210	104	24	5.3	2.62	0.0123	6.81	7.79
W19D064-08	Kane Road Pervious Overlay	outlet	4/5/2019	11:09	3	0.41	7.9	6.75	10.9	60.6	12.8	31	**2**	610	36	260	52	**3**	29.1	8.92	1.67	0.00295	2.81	3.39
W19D064-09	Kane Road Full Pervious	outlet	4/5/2019	11:23	3	0.41	7.23	6.86	11.7	24.6	27.4	51	4	440	**20**	380	54	9	11.6	3.35	0.785	0.00508	4.21	3.47

Analysis Coding for the Reported Data

Bold = < than detection value or an Estimated value for bacteria
NA = constituents not sampled due to equipment failure or other extenuating circumstance
NM= not measured **ND=** not detected
Dup = Duplicate Sample **FD=** field duplicate
MRL = method reporting limits are included at the top of each data set where they are constant.
For parameters were no MRL is included, this means they vary by sample.

Table 2-5 Stormwater Green Infrastructure Sampling Data

Sample ID	Site ID	Inlet/outlet	Date	Time	Storm	24-hr Rainfall	Field DO	Pb-Dissolved	Zn-Dissolved	Cu-Total	Pb-Total	Zn-Total	E. coli	2,4,5-T	2,4-D	2,4-DB	2,4,5-TP (Silvex)	Acifluor-fen	Bentazon	Dicamba	Picloram
						inches	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	MPN/100ml	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
								EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	SM 9223B	EPA 515.3	EPA 515.3	EPA 515.3	EPA 515.3	EPA 515.3	EPA 515.3	EPA 515.3	EPA 515.3
								0.1	0.5	0.2	0.1	0.5	10	0.1	0.2	0.4	0.1	0.2	0.4	0.2	0.2
W18L066-01	CSWQF Stormdrain Creek	inlet	12/9/2018	12:35	13	0.65	12.83	0.11	57.5	9.35	2.14	93.4	680	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L066-02	CSWQF Stormdrain Creek	inlet	12/9/2018	14:45	13	0.65	17.13	**0.106**	28.9	4.51	0.904	42.4	460	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L066-03	CSWQF East Inlet	inlet	12/9/2018	16:53	13	0.65	13.53	0.115	37.2	4.78	0.745	42.8	240	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L066-04	CSWQF East Inlet	inlet	12/9/2018	12:50	13	0.65	15.6	**0.106**	50.5	9.11	1.16	82	52	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L066-05	CSWQF Stormdrain Creek	inlet	12/9/2018	14:55	13	0.65	17.6	**0.106**	24.5	4.78	0.693	42.6	170	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L066-06	CSWQF East Inlet	inlet	12/9/2018	17:02	13	0.65	15.3	**0.106**	32.5	4.66	0.587	51.3	41	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L066-07	CSWQF Outlet	outlet	12/9/2018	13:17	13	0.65	12.72	**0.106**	9.43	1.89	0.842	20.5	3900	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L066-08	CSWQF Outlet	outlet	12/9/2018	17:15	13	0.65	14.92	**0.106**	22.9	3.96	0.703	33.2	530	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L071-01	CSWQF Outlet	outlet	12/10/2018	11:04	13	0.65	7.48	**0.106**	14.6	2.17	0.468	20.3	2600	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-01	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	15:55	4	0.83	4.04	**0.106**	1.57	13.8	2.86	59.2	**10**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-02	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	16:30	4	0.83	7.83	**0.106**	2.68	9.61	1.02	17.6	52	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-03	Hayden's Meadow rain garden A2 Portland blend inlet	inlet	12/11/2018	17:33	4	0.83	7.93	**0.106**	6.26	20.1	0.606	21.9	720	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	0.292	**0.2**
W18L095-04	Hayden's Meadow rain garden A2 Portland blend outlet	outlet	12/11/2018	19:24	4	0.83	6.68	**0.106**	2.64	9.86	0.874	7.91	2500	**0.1**	0.352	**0.2**	**0.1**	**0.2**	**0.4**	0.638	**0.2**
W18L095-05	Hayden's Meadow rain garden A7 Gresham blend inlet	inlet	12/11/2018	16:00	4	0.83	6.41	**0.106**	0.661	7.57	1.63	52.3	**10**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-06	Hayden's Meadow rain garden A7 Gresham blend outlet	outlet	12/11/2018	16:25	4	0.83	7.97	**0.106**	2.09	7.33	0.723	8.32	63	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-07	Hayden's Meadow rain garden B11 Gresham blend inlet	inlet	12/11/2018	18:07	4	0.83	7.82	**0.106**	4.55	90	16	177	20	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-08	Hayden's Meadow rain garden B11 Gresham blend outlet	outlet	12/11/2018	19:19	4	0.83	7.39	**0.106**	2.15	16.9	3.39	30.3	**10**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-09	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	17:52	4	0.83	6.15	**0.106**	0.659	6.48	1.49	24.5	**10**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-10	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	18:44	4	0.83	7.35	**0.106**	1.83	11.4	1.39	11	**10**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-11	Hayden's Meadow rain garden B15 Gresham blend inlet	inlet	12/11/2018	17:36	4	0.83	5.9	**0.106**	1.38	6.34	1.49	29.3	10	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W18L095-12	Hayden's Meadow rain garden B15 Gresham blend outlet	outlet	12/11/2018	18:38	4	0.83	6.7	**0.106**	3.35	14.1	0.559	5.67	260	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W19A155-01	Kane Road Impervious at culvert	inlet	1/18/2019	14:15	2	1.29	13.8	0.112	84.1	72.2	14.9	42.9	480	NM	NM	NM	NM	NM	NM	NM	NM
W19A155-02	Kane Road Pervious Overlay	outlet	1/18/2019	15:26	2	1.29	13.53	**0.106**	112	5.06	0.786	14.8	1100	NM	NM	NM	NM	NM	NM	NM	NM
W19A155-03	Kane Road Full Pervious	outlet	1/18/2019	15:45	2	1.29	14.34	**0.106**	32.5	15.7	3.36	26.3	480	NM	NM	NM	NM	NM	NM	NM	NM
W19A155-04	Kane Paropa	inlet	1/18/2019	15:00	2	1.29	14.21	**0.106**	39.4	11.4	1.76	21.6	180	NM	NM	NM	NM	NM	NM	NM	NM
W19C219-01	Brookside regional facility inlet	inlet	3/25/2019	16:50	4	0.4	8.41	**0.105**	6.89	11.9	1.47	42.9	3900	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W19C219-02	Brookside regional facility outlet	outlet	3/25/2019	17:05	4	0.4	7.39	**0.105**	4.36	7.18	0.464	14.8	20	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W19C219-03	Brookside regional facility inlet	inlet	3/25/2019	17:25	4	0.4	9.12	**0.105**	6.53	7.36	0.936	26.3	240	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W19C219-04	Brookside regional facility outlet	outlet	3/25/2019	17:35	4	0.4	7.5	**0.105**	4.73	8.3	0.856	21.6	2400	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**0.2**
W19D064-01	Kane Road Impervious at culvert	inlet	4/5/2019	7:45	3	0.41	7.76	**0.105**	76.9	30.6	6.15	212	340	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-02	Kane Road Pervious Overlay	outlet	4/5/2019	8:13	3	0.41	8.17	**0.105**	82.8	4.12	0.53	94.1	610	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-03	Kane Road Full Pervious	outlet	4/5/2019	8:42	3	0.41	8.66	**0.105**	18	3.56	0.376	23.5	63	**0.1**	0.498	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-04	Kane Road Impervious at culvert	inlet	4/5/2019	9:54	3	0.41	7.71	0.255	55.5	48.2	8.81	287	3100	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-05	Kane Road Pervious Overlay	outlet	4/5/2019	10:10	3	0.41	8.21	**0.105**	31.6	4.67	0.28	36.3	41	**0.1**	1	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-06	Kane Road Full Pervious	outlet	4/5/2019	10:36	3	0.41	8.19	**0.105**	22.1	5.45	0.646	33.4	200	**0.1**	0.62	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-07	Kane Road Impervious at culvert	inlet	4/5/2019	10:52	3	0.41	8.28	0.161	49.2	31.4	5.66	195	990	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-08	Kane Road Pervious Overlay	outlet	4/5/2019	11:09	3	0.41	7.9	**0.105**	36	4.37	0.2	41.3	86	**0.1**	0.483	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**
W19D064-09	Kane Road Full Pervious	outlet	4/5/2019	11:23	3	0.41	7.23	**0.105**	19.9	5.7	0.705	33.9	110	**0.1**	0.771	**0.4**	**0.1**	**0.2**	**0.4**	**0.2**	**1**

Analysis Coding for the Reported Data

Bold = < than detection value or an Estimated value for bacteria
NA = constituents not sampled due to equipment failure or other extenuating circumstance
NM= not measured **ND=** not detected
Dup = Duplicate Sample **FD=** field duplicate
MRL = method reporting limits are included at the top of each data set where they are constant. For parameters were no MRL is included, this means they vary by sample.

Table 2-5 Stormwater Green Infrastructure Sampling Data

Sample ID	Site ID	Inlet/outlet	Date	Time	Storm	24-hr Rainfall	Field DO	Dichlorprop	Dinoseb	Pentachloro-phenol	3,5-Dichloro-benzoic acid	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene
						inches	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
								EPA 515.3	EPA 515.3	EPA 515.3	EPA 515.3	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-	EPA 8270-	EPA 8270-	EPA 8270-	EPA 8270-	EPA 8270-	EPA 8270-	EPA 8270-
								0.4	0.4	0.04	0.2	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
W18L066-01	CSWQF Stormdrain Creek	inlet	12/9/2018	12:35	13	0.65	12.83	**0.4**	**0.4**	0.203	**0.2**	**0.02**	**0.02**	**0.02**	0.01	**0.01**	0.017	0.027	**0.01**	0.015	**0.01**
W18L066-02	CSWQF Stormdrain Creek	inlet	12/9/2018	14:45	13	0.65	17.13	**0.4**	**0.4**	0.382	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	0.011	0.024	**0.01**	0.01	**0.01**
W18L066-03	CSWQF East Inlet	inlet	12/9/2018	16:53	13	0.65	13.53	**0.4**	**0.4**	0.201	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	0.011	**0.01**	**0.01**	**0.01**
W18L066-04	CSWQF East Inlet	inlet	12/9/2018	12:50	13	0.65	15.6	**0.4**	**0.4**	0.058	**0.2**	**0.02**	**0.02**	**0.02**	0.024	0.021	0.028	0.037	0.014	0.035	**0.01**
W18L066-05	CSWQF Stormdrain Creek	inlet	12/9/2018	14:55	13	0.65	17.6	**0.4**	**0.4**	0.072	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L066-06	CSWQF East Inlet	inlet	12/9/2018	17:02	13	0.65	15.3	**0.4**	**0.4**	0.052	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	0.017	**0.01**	**0.01**	**0.01**
W18L066-07	CSWQF Outlet	outlet	12/9/2018	13:17	13	0.65	12.72	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L066-08	CSWQF Outlet	outlet	12/9/2018	17:15	13	0.65	14.92	**0.4**	**0.4**	0.194	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L071-01	CSWQF Outlet	outlet	12/10/2018	11:04	13	0.65	7.48	**0.4**	**0.4**	0.098	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L095-01	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	15:55	4	0.83	4.04	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	0.015	0.016	**0.01**	**0.01**	**0.01**
W18L095-02	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	16:30	4	0.83	7.83	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L095-03	Hayden's Meadow rain garden A2 Portland blend inlet	inlet	12/11/2018	17:33	4	0.83	7.93	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L095-04	Hayden's Meadow rain garden A2 Portland blend outlet	outlet	12/11/2018	19:24	4	0.83	6.68	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L095-05	Hayden's Meadow rain garden A7 Gresham blend inlet	inlet	12/11/2018	16:00	4	0.83	6.41	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	0.011	0.016	0.039	0.067	**0.01**	0.025	**0.01**
W18L095-06	Hayden's Meadow rain garden A7 Gresham blend outlet	outlet	12/11/2018	16:25	4	0.83	7.97	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L095-07	Hayden's Meadow rain garden B11 Gresham blend inlet	inlet	12/11/2018	18:07	4	0.83	7.82	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	0.027	0.029	0.046	0.055	**0.01**	0.049	**0.01**
W18L095-08	Hayden's Meadow rain garden B11 Gresham blend outlet	outlet	12/11/2018	19:19	4	0.83	7.39	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L095-09	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	17:52	4	0.83	6.15	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	0.026	0.022	**0.01**	0.012	**0.01**
W18L095-10	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	18:44	4	0.83	7.35	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W18L095-11	Hayden's Meadow rain garden B15 Gresham blend inlet	inlet	12/11/2018	17:36	4	0.83	5.9	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	0.015	**0.03**	**0.05**	**0.01**	0.014	**0.01**
W18L095-12	Hayden's Meadow rain garden B15 Gresham blend outlet	outlet	12/11/2018	18:38	4	0.83	6.7	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W19A155-01	Kane Road Impervious at culvert	inlet	1/18/2019	14:15	2	1.29	13.8	NM	NM	NM	NM	**0.2**	**0.2**	**0.2**	0.13	0.19	0.34	0.91	**0.1**	0.29	**0.1**
W19A155-02	Kane Road Pervious Overlay	outlet	1/18/2019	15:26	2	1.29	13.53	NM	NM	NM	NM	**0.02**	**0.02**	**0.02**	0.015	0.014	0.027	0.049	0.015	0.03	0.012
W19A155-03	Kane Road Full Pervious	outlet	1/18/2019	15:45	2	1.29	14.34	NM	NM	NM	NM	**0.04**	**0.04**	0.053	0.047	0.056	0.097	0.2	0.04	0.087	0.022
W19A155-04	Kane Paropa	inlet	1/18/2019	15:00	2	1.29	14.21	NM	NM	NM	NM	**0.02**	**0.02**	**0.02**	0.017	0.019	0.034	0.086	0.011	0.03	0.01
W19C219-01	Brookside regional facility inlet	inlet	3/25/2019	16:50	4	0.4	8.41	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	0.013	**0.02**	**0.01**	0.013	**0.01**
W19C219-02	Brookside regional facility outlet	outlet	3/25/2019	17:05	4	0.4	7.39	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W19C219-03	Brookside regional facility inlet	inlet	3/25/2019	17:25	4	0.4	9.12	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	0.015	**0.01**	**0.01**	**0.01**
W19C219-04	Brookside regional facility outlet	outlet	3/25/2019	17:35	4	0.4	7.5	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W19D064-01	Kane Road Impervious at culvert	inlet	4/5/2019	7:45	3	0.41	7.76	**0.4**	**0.4**	0.13	**0.2**	**0.067**	**0.067**	**0.067**	0.038	0.044	0.082	0.2	**0.033**	0.078	**0.033**
W19D064-02	Kane Road Pervious Overlay	outlet	4/5/2019	8:13	3	0.41	8.17	**0.4**	**0.4**	0.045	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	0.015	0.023	**0.01**	0.014	**0.01**
W19D064-03	Kane Road Full Pervious	outlet	4/5/2019	8:42	3	0.41	8.66	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W19D064-04	Kane Road Impervious at culvert	inlet	4/5/2019	9:54	3	0.41	7.71	**0.4**	**0.4**	0.061	**0.2**	**0.067**	**0.067**	0.074	0.051	0.08	0.14	0.36	0.036	0.12	**0.033**
W19D064-05	Kane Road Pervious Overlay	outlet	4/5/2019	10:10	3	0.41	8.21	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W19D064-06	Kane Road Full Pervious	outlet	4/5/2019	10:36	3	0.41	8.19	**0.4**	**0.4**	**0.04**	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	0.013	**0.01**	**0.01**	**0.01**
W19D064-07	Kane Road Impervious at culvert	inlet	4/5/2019	10:52	3	0.41	8.28	**0.4**	**0.4**	0.066	**0.2**	**0.067**	**0.067**	**0.067**	0.042	0.044	0.082	0.19	**0.033**	0.069	**0.033**
W19D064-08	Kane Road Pervious Overlay	outlet	4/5/2019	11:09	3	0.41	7.9	**0.4**	**0.4**	0.166	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
W19D064-09	Kane Road Full Pervious	outlet	4/5/2019	11:23	3	0.41	7.23	**0.4**	**0.4**	0.043	**0.2**	**0.02**	**0.02**	**0.02**	**0.01**	**0.01**	0.01	0.017	**0.01**	0.01	**0.01**

Analysis Coding for the Reported Data

Bold = < than detection value or an Estimated value for bacteria
NA = constituents not sampled due to equipment failure or other extenuating circumstance
NM= not measured **ND=** not detected
Dup = Duplicate Sample **FD=** field duplicate
MRL = method reporting limits are included at the top of each data set where they are constant. For parameters were no MRL is included, this means they vary by sample.

Table 2-5 Stormwater Green Infrastructure Sampling Data

Sample ID	Site ID	Inlet/outlet	Date	Time	Storm	24-hr Rainfall	Field DO	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyre	Naphthalene	Phenanthrene	Pyrene	Butyl benzyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Diethyl phthalate	Dimethyl phthalate	Bis(2-ethylhexyl) phthalate
						inches	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
								EPA 8270-	EPA 8270-	EPA 8270-	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM	EPA 8270-SIM
								0.01	0.02	0.01	0.04	0.02	0.01	1	1	1	1	1	1
W18L066-01	CSWQF Stormdrain Creek	inlet	12/9/2018	12:35	13	0.65	12.83	0.036	**0.02**	**0.01**	**0.04**	0.035	0.064	**1**	**1**	**1**	**1**	**1**	1.8
W18L066-02	CSWQF Stormdrain Creek	inlet	12/9/2018	14:45	13	0.65	17.13	0.025	**0.02**	**0.01**	**0.04**	0.032	0.047	**1**	**1**	**1**	**1**	**1**	1.4
W18L066-03	CSWQF East Inlet	inlet	12/9/2018	16:53	13	0.65	13.53	0.015	**0.02**	**0.01**	**0.04**	0.021	0.03	**1**	**1**	**1**	**1**	**1**	**1**
W18L066-04	CSWQF East Inlet	inlet	12/9/2018	12:50	13	0.65	15.6	0.075	**0.02**	0.014	**0.04**	0.055	**0.1**	**1**	**1**	1.6	**1**	**1**	2.4
W18L066-05	CSWQF Stormdrain Creek	inlet	12/9/2018	14:55	13	0.65	17.6	0.017	0.025	**0.01**	**0.04**	0.098	**0.1**	**1**	**1**	**1**	**1**	**1**	**1**
W18L066-06	CSWQF East Inlet	inlet	12/9/2018	17:02	13	0.65	15.3	0.026	**0.02**	**0.01**	**0.04**	0.035	0.059	**1**	**1**	**1**	**1**	**1**	1.3
W18L066-07	CSWQF Outlet	outlet	12/9/2018	13:17	13	0.65	12.72	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	0.011	**1**	**1**	**1**	**1**	**1**	**1**
W18L066-08	CSWQF Outlet	outlet	12/9/2018	17:15	13	0.65	14.92	0.013	**0.02**	**0.01**	**0.04**	**0.02**	0.024	**1**	**1**	**1**	**1**	**1**	**1**
W18L071-01	CSWQF Outlet	outlet	12/10/2018	11:04	13	0.65	7.48	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	**0.01**	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-01	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	15:55	4	0.83	4.04	0.014	**0.02**	**0.01**	**0.04**	0.027	0.02	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-02	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	16:30	4	0.83	7.83	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	**0.01**	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-03	Hayden's Meadow rain garden A2 Portland blend inlet	inlet	12/11/2018	17:33	4	0.83	7.93	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	0.011	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-04	Hayden's Meadow rain garden A2 Portland blend outlet	outlet	12/11/2018	19:24	4	0.83	6.68	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	**0.01**	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-05	Hayden's Meadow rain garden A7 Gresham blend inlet	inlet	12/11/2018	16:00	4	0.83	6.41	0.051	**0.02**	**0.02**	**0.04**	0.059	0.09	**1**	**1**	**1**	**1**	**1**	1.7
W18L095-06	Hayden's Meadow rain garden A7 Gresham blend outlet	outlet	12/11/2018	16:25	4	0.83	7.97	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	**0.01**	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-07	Hayden's Meadow rain garden B11 Gresham blend inlet	inlet	12/11/2018	18:07	4	0.83	7.82	0.066	**0.02**	0.025	**0.04**	0.14	0.17	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-08	Hayden's Meadow rain garden B11 Gresham blend outlet	outlet	12/11/2018	19:19	4	0.83	7.39	**0.01**	**0.02**	**0.01**	**0.04**	0.026	0.024	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-09	Hayden's Meadow rain garden B12 Portland blend inlet	inlet	12/11/2018	17:52	4	0.83	6.15	0.014	**0.02**	0.013	**0.04**	0.022	0.018	**1**	**1**	**1**	**1**	**1**	1
W18L095-10	Hayden's Meadow rain garden B12 Portland blend outlet	outlet	12/11/2018	18:44	4	0.83	7.35	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	**0.01**	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-11	Hayden's Meadow rain garden B15 Gresham blend inlet	inlet	12/11/2018	17:36	4	0.83	5.9	0.033	**0.02**	0.017	**0.04**	0.039	0.058	**1**	**1**	**1**	**1**	**1**	**1**
W18L095-12	Hayden's Meadow rain garden B15 Gresham blend outlet	outlet	12/11/2018	18:38	4	0.83	6.7	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	**0.01**	**1**	**1**	**1**	**1**	**1**	**1**
W19A155-01	Kane Road Impervious at culvert	inlet	1/18/2019	14:15	2	1.29	13.8	0.87	**0.2**	0.19	**0.4**	0.69	2	**10**	**10**	**10**	**10**	**10**	46
W19A155-02	Kane Road Pervious Overlay	outlet	1/18/2019	15:26	2	1.29	13.53	0.073	**0.02**	0.017	0.041	0.063	0.12	**1**	**1**	**1**	**1**	**1**	2.1
W19A155-03	Kane Road Full Pervious	outlet	1/18/2019	15:45	2	1.29	14.34	0.24	**0.04**	0.056	0.095	0.21	0.51	**2**	**2**	**2**	**2**	**2**	21
W19A155-04	Kane Paropa	inlet	1/18/2019	15:00	2	1.29	14.21	0.092	**0.02**	0.019	0.046	0.078	0.2	**1**	**1**	**1**	**1**	**1**	4.5
W19C219-01	Brookside regional facility inlet	inlet	3/25/2019	16:50	4	0.4	8.41	0.019	**0.02**	**0.01**	**0.04**	0.024	0.03	**1**	**1**	**1**	**1**	**1**	**1**
W19C219-02	Brookside regional facility outlet	outlet	3/25/2019	17:05	4	0.4	7.39	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	**0.01**	**1**	2.5	**1**	**1**	**1**	**1**
W19C219-03	Brookside regional facility inlet	inlet	3/25/2019	17:25	4	0.4	9.12	0.014	**0.02**	**0.01**	**0.04**	**0.02**	0.022	**1**	**1**	**1**	**1**	**1**	**1**
W19C219-04	Brookside regional facility outlet	outlet	3/25/2019	17:35	4	0.4	7.5	0.011	**0.02**	**0.01**	**0.04**	**0.02**	0.017	**1**	**1**	**1**	**1**	**1**	**1**
W19D064-01	Kane Road Impervious at culvert	inlet	4/5/2019	7:45	3	0.41	7.76	0.018	**0.067**	0.042	**0.13**	0.17	0.39	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	13
W19D064-02	Kane Road Pervious Overlay	outlet	4/5/2019	8:13	3	0.41	8.17	0.045	**0.02**	**0.01**	**0.04**	0.034	0.06	**1**	**1**	**1**	**1**	**1**	**1**
W19D064-03	Kane Road Full Pervious	outlet	4/5/2019	8:42	3	0.41	8.66	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	0.015	**1**	**1**	**1**	**1**	**1**	**1**
W19D064-04	Kane Road Impervious at culvert	inlet	4/5/2019	9:54	3	0.41	7.71	0.3	**0.067**	0.07	0.16	0.25	0.76	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	26
W19D064-05	Kane Road Pervious Overlay	outlet	4/5/2019	10:10	3	0.41	8.21	**0.01**	**0.02**	**0.01**	**0.04**	**0.02**	0.016	**1**	**1**	**1**	**1**	**1**	**1**
W19D064-06	Kane Road Full Pervious	outlet	4/5/2019	10:36	3	0.41	8.19	0.016	**0.02**	**0.01**	**0.04**	0.024	0.028	**1**	**1**	**1**	**1**	**1**	1.3
W19D064-07	Kane Road Impervious at culvert	inlet	4/5/2019	10:52	3	0.41	8.28	0.18	**0.067**	**0.038**	**0.13**	**0.038**	**0.13**	0.15	0.4	**3.3**	**3.3**	**3.3**	13
W19D064-08	Kane Road Pervious Overlay	outlet	4/5/2019	11:09	3	0.41	7.9	0.011	**0.02**	**0.01**	**0.04**	**0.02**	0.013	**1**	**1**	**1**	**1**	**1**	**1**
W19D064-09	Kane Road Full Pervious	outlet	4/5/2019	11:23	3	0.41	7.23	0.018	**0.02**	**0.01**	**0.04**	0.025	0.034	**1**	**1**	**1**	**1**	**1**	1.6

Analysis Coding for the Reported Data

Bold = < than detection value or an Estimated value for bacteria
NA = constituents not sampled due to equipment failure or other extenuating circumstance
NM= not measured **ND=** not detected
Dup = Duplicate Sample **FD=** field duplicate
MRL = method reporting limits are included at the top of each data set where they are constant.
For parameters were no MRL is included, this means they vary by sample.

Table 2-6 Macroinvertebrate Sampling

Order	Family	Genus	Species	Life stage	Sediment Sensitive/ Tolerant	Pollution Sensitive/ Tolerant	BCI1	BCI2	FCI0	FCI1	JCI1	JCI2	FD (JCI2)	KCI1	LD (KCI1)	KCI4	KI1	KI2	LD (KI2)
Units in the columns are individuals of that taxa found and identified																			
Acari	Trombidiformes						7	27	18	12		11	12	2	4	34	20	13	16
Amphipoda				imm.															
		Crangonyx					3		48	63		13	1	46	46	81	29		
Decopoda	Astacidae	Pacifasticus					4		2	3	1	5	7				2		1
Hirudinea						tolerant								7	9	43			
Hydra						tolerant										1			
Isopoda	Asellidae	Caecidotea				tolerant				6									
Mollusca	Ancylidae	Ferressia			tolerant	tolerant	59	35	7		19	2	6	30	22		7		
	Corbiculidae	Corbicula			tolerant	tolerant			16		1								
	Hydrobiidae	Fluminicola				tolerant	153	1	18		3						3		
		Margaritifera	falcata			sensitive													
	Planoriibae	Helisoma																	
		Gyraulus			tolerant	sensitive												2	
		Menetus						4							1		2		1
	Lymnaidae				tolerant	tolerant													
	Physidae	Physa				tolerant	1		1							1			
	Pleuroceridae	Juga			tolerant	tolerant	94	152	18	143	17	37	13	20	22		21	6	16
	Sphaeriidae						2	34	53	31	2	1		11	6	23	109	3	11
Nematoda							1	5	2		5	4	2			13	7	4	
Oligochaeta					tolerant	tolerant	38	43	43	63	76	9	33	8	5	73	77	3	9
Ostracoda										1									
Turbellaria	Planariidae	Trepaxonemata					3	10	2			1	6		3	35		6	3
Ephemeroptera	Ameletidae	Ameletus																	
	Baetidae			imm							1								
Ephemeroptera	Baetidae	Aentrella		imm.									1						
		Baetis	tricaudatus				56	6	114	31	14	39	33	188	204		20	6	2
		Baetis	favistriga								1	3	4						
		Centroptilum				tolerant													
		Diphetor	hageni				1	2			17	20	17				1	5	7
		Proocloeon					1												
	Heptageniidae	Cinygma				sensitive													
		Epeous alberta										1							
		Ironodes																6	9
	Leptophlebidae	Paraleptophlebia					1	9			28	22	19				48		23
		Neoleptophlebia																22	
Plecoptera	Capniidae			imm.		sensitive		2											
	Chloroperlidae	Sweltsa																12	17
	Leuctridae			imm		sensitive													
		Perlomyia				sensitive												5	9
	Perlodidae																	1	2
		Isoperla																2	1
		Skwala																	
	Pteronarcyidae	Pteronarcella																5	1
	Nemouridae	Malenka																27	27
		Soyedina																15	7
		Zapada	cinctipes								1	9	1					95	80
Coleoptera																			1
	Elmidae			imm.															

Table 2-6 Macroinvertebrate Sampling

Order	Family	Genus	Species	Life stage	Sediment Sensitive/ Tolerant	Pollution Sensitive/ Tolerant	BCI1	BCI2	FCI0	FCI1	JCI1	JCI2	FD (JCI2)	KCI1	LD (KCI1)	KCI4	KI1	KI2	LD (KI2)
Units in the columns are individuals of that taxa found and identified																			
		Cleptelmis		adult		tolerant		1	1				1						
		Lara		imm.					2	3		1	3				2	1	3
		Narpus conclor																3	2
		Optioservus		larva		tolerant			12			24	28				2		
		Optioservus		adult		tolerant			3			7	4		1				
		Zaitzevia		larva		tolerant						41	5					1	
				adult		tolerant						11	10					1	
	Dytiscidae			larva		tolerant													1
Coleoptera	Hydrophilidae			larva				1				1							1
	Hydrophilidae			adult				1											
Lepidoptera	Pyralidae					tolerant													
Megaloptera		Sialis				tolerant				2		3							
Odonata				imm.														1	
		Aesha				tolerant	1												
		Cordulegaster																	
	Zygoptera							1						1		3			
		Coengrion/Enallagma				tolerant													
		Argia				tolerant													
Trichoptera				pupa															1
	Brachycentridae	Micrasema		larva								1						4	1
	Glossosomatidae	Glossosoma		larva	sensitive													7	2
	Glossosomatidae			pupa															1
	Hydroptilidae	Hydroptila		imm.		tolerant	7		1	1				1	2				
	Hydroptilidae			pupa			1												
	Hydropsychidae			pupa			2							1			1		
		Cheumatopysyche				tolerant	45	5	15		149	92	64	36	42		37		
		Hydropsyche				tolerant						5	5					33	38
		Parapsyche																1	2
	Lepidostomatidae	Lepidostoma		larva panel			1			5				1				1	5
		Lepidostoma		larva transverse						1								1	1
		Lepidostoma		pupa						1									
	Limnephilidae	Dicosmoecus					1												
		Onocosmoecus																1	
		Psychoglypha															3		1
	Philopotamidae	Wormaldia			sensitive			1			3	92	70			1		64	69
				pupa	sensitive						1		4						
	Rhyacophilidae			imm.											1			10	4
				pupa														1	
		Rhyacophila	betteni									4	1					2	3
		Rhyacophila	narvae															5	4
		rhyacophila	rotunda			sensitive													
	Uenoidae	Neophylax																3	3
Diptera									1										
	Ceratopogoninae						1	1	1							1		3	3
	Forcipomyinae		Atrichopogon	larva				1						1	1	1		8	12
				pupa														2	2
	Chironomidae																		
		Ablabesmyia				tolerant			1										
		Alotanypus														1			
		Apedilum																	
		Brillia					1	2		1							1	6	1
		Brundiniella																10	2
		Chironomus				tolerant											8		
		Corynoneura						1	2										
		Cricotopus									1								
		Cryptochironomus					1		6		1								
		Dicrontendipes														1			
		Diplocladius					1	1								5			
		Eukiefferiella brehmi group																	

Table 2-6 Macroinvertebrate Sampling

Order	Family	Genus	Species	Life stage	Sediment Sensitive/ Tolerant	Pollution Sensitive/ Tolerant	BCI1	BCI2	FCI0	FCI1	JCI1	JCI2	FD (JCI2)	KCI1	LD (KCI1)	KCI4	KI1	KI2	LD (KI2)
Units in the columns are individuals of that taxa found and identified																			
		Eukiefferiella claripennis group					1				1			1	1				
		Eukiefferiella pseudomontana grp					4		1		1	2	7						
		Heterotrissocladius marcidus grp				sensitive				4									
		Limnophyes				tolerant										3			
		Micropsectra					11	45	11			6	37	9	9	119	5	10	17
		Microtendipes pedellus grp						1											
		Nilotanypus					1				10	1	3				1		
		Orthocladius					2	1	1										
		Orthocladius (Symposiocladius)						3					1					1	
		Parametriocnemus					2	5	5	4	4	4	17	5	1		14	1	11
		Paraphaenocladius							1										
		Paratanytarsus							1							15			
		Paratendipes				tolerant			1					1		11	1		
		Phaenospectra						4	9	3				1			2		
		Polypedilum					13	2	18	10	5	11	12	50	42	11	21	2	
		Procladius				tolerant					1						6		
		Prodiamesa						1	1	2							1		
		Rheocricotopus					1						4						
		Rheotanytarsus						5	3		11	13	12	34	41		5	1	1
		Synorthocladius				sensitive									3				
		Stempellinella							8		1	1						1	
		Stenochironomus									1						1		
		Synorthocladius				sensitive			1										
		Tanytarsus						37	9		146	32	73	1		8	4		2
		Thienemanniella									1								
		Thienemannimyia complex					14	51	8	21	11	5	1	22	17	23	50	8	3
		Tvetenia bavarica group					2		2	2								5	12
		Zavrelimyia				tolerant												7	4
	Dixidae			pupa														1	
		Dixa															2	26	21
		Dixella														6			
		Maurnia		larva								4	10	7	4				1
		Maurnia		pupa									2						
		Meringodixa																1	2
	Empididae			imm.				2			1							1	
				pupa															
		Clinocera		larva												10			
		Clinocera		pupa															
		Hemerdromia		larva															
		Neoplasta		larva					1	2				1		11			3
		Neoplasta		pupa			1								2	1	1		
		Trichiclinocera																	
	Ephydridae			larva				1											
				pupa															
	Pelecorhynidae	Glutops				sensitive													1
	Psychodidae	Pericoma																2	1
		Psychoda																	
		Ptychoptera																1	
	Sciomyzidae			larva												1			
	Simuliidae			imm.			4			69							1		
				pupa				1		8		1			4				
		Simulium						1	1	18	2	7	6	15	33			1	3
	Tabaninae					tolerant													
	Thaumaleidae																	2	6
	Tipulidae				tolerant												1	3	3
		Antocha			tolerant		11	1				1	1		1				
		Antocha		pupa	tolerant														
		Dicanota			tolerant		1				1	10	12			1	4	23	25
		Hexatoma			tolerant														1
		Limonia			tolerant	tolerant													
		Limnophila			tolerant													1	3
		Pedicia			tolerant														
		Tipula			tolerant			1										1	
Benthic Index of Biological Integrity (B-IBI)					**Score**		**20**	**18**	**20**	**18**	**22**	**32**	**32**	**22**	**22**	**22**	**20**	**44**	**42**
Stream Condition as Level of Impairment from B-IBI							**Moderate**	**Severe**	**Moderate**	**Severe**	**Moderate**	**Slight**	**Slight**	**Moderate**	**Moderate**	**Moderate**	**Moderate**	**None**	**None**

Macroinvertebrate analysis protocol is from the Oregon Water Quality Monitoring Technical Guide Book: https://www.oregon.gov/OWEB/docs/pubs/wq_mon_guide.pdf
Score >39= no impairment, 30-39: slight impairment, 20-29: moderate impairment, <20 severe impairment

Figure 2-2 Longterm Instream Monitoring Site Locations

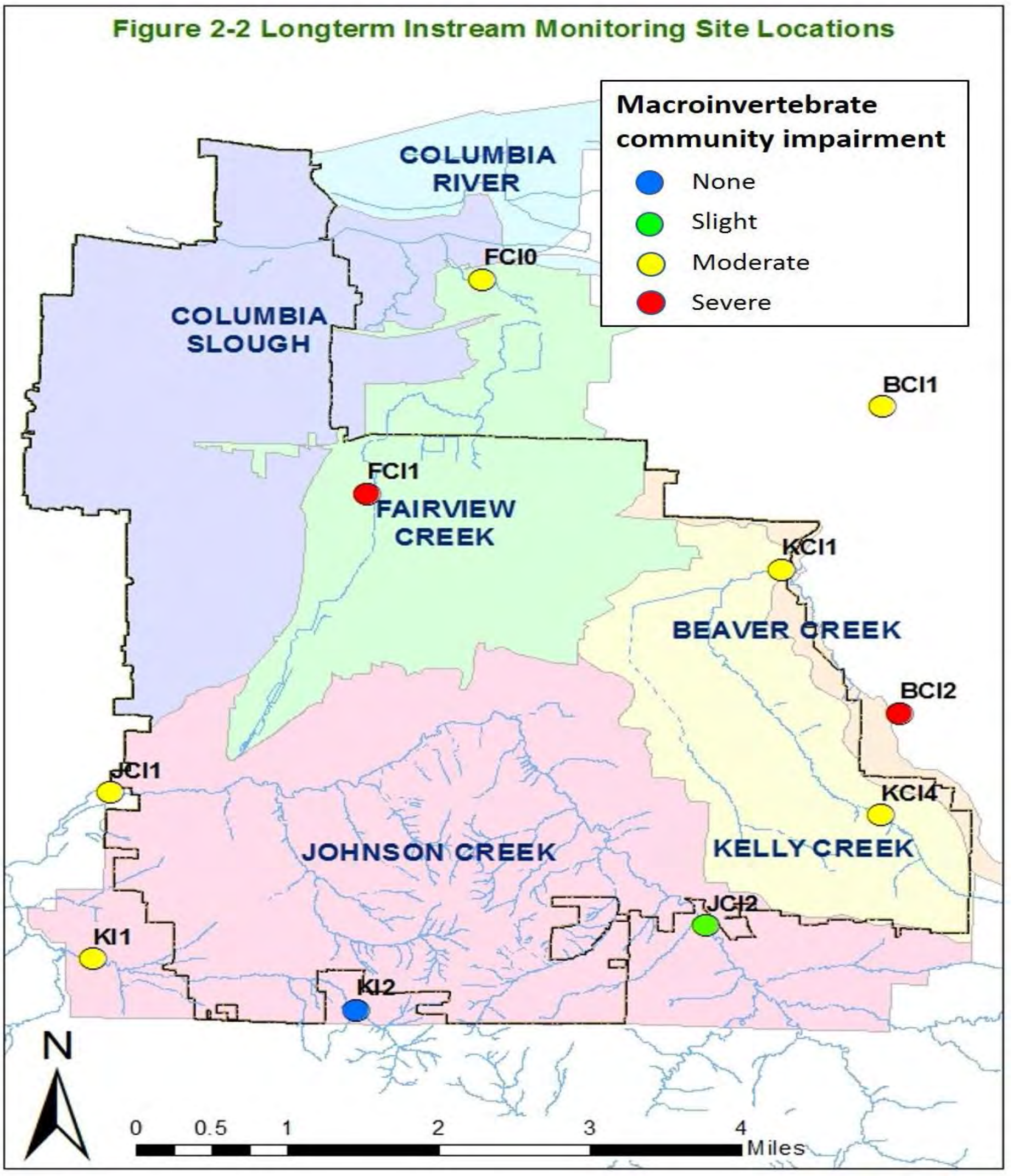


Figure 2-3 Stormwater Facility (BMP) Monitoring Site Locations

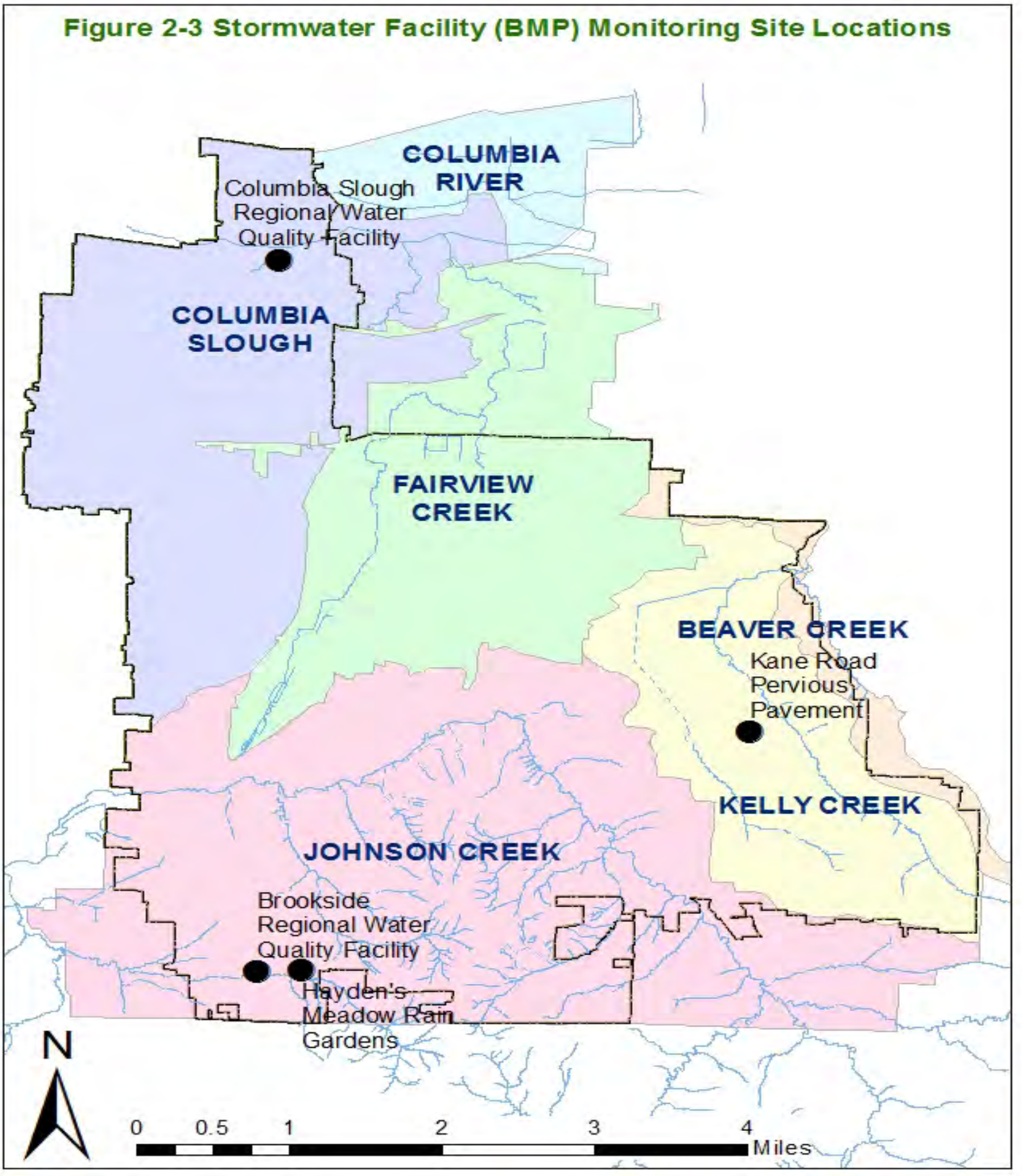


Figure 2-4 Stormwater Fixed and Rotating Monitoring Site Locations

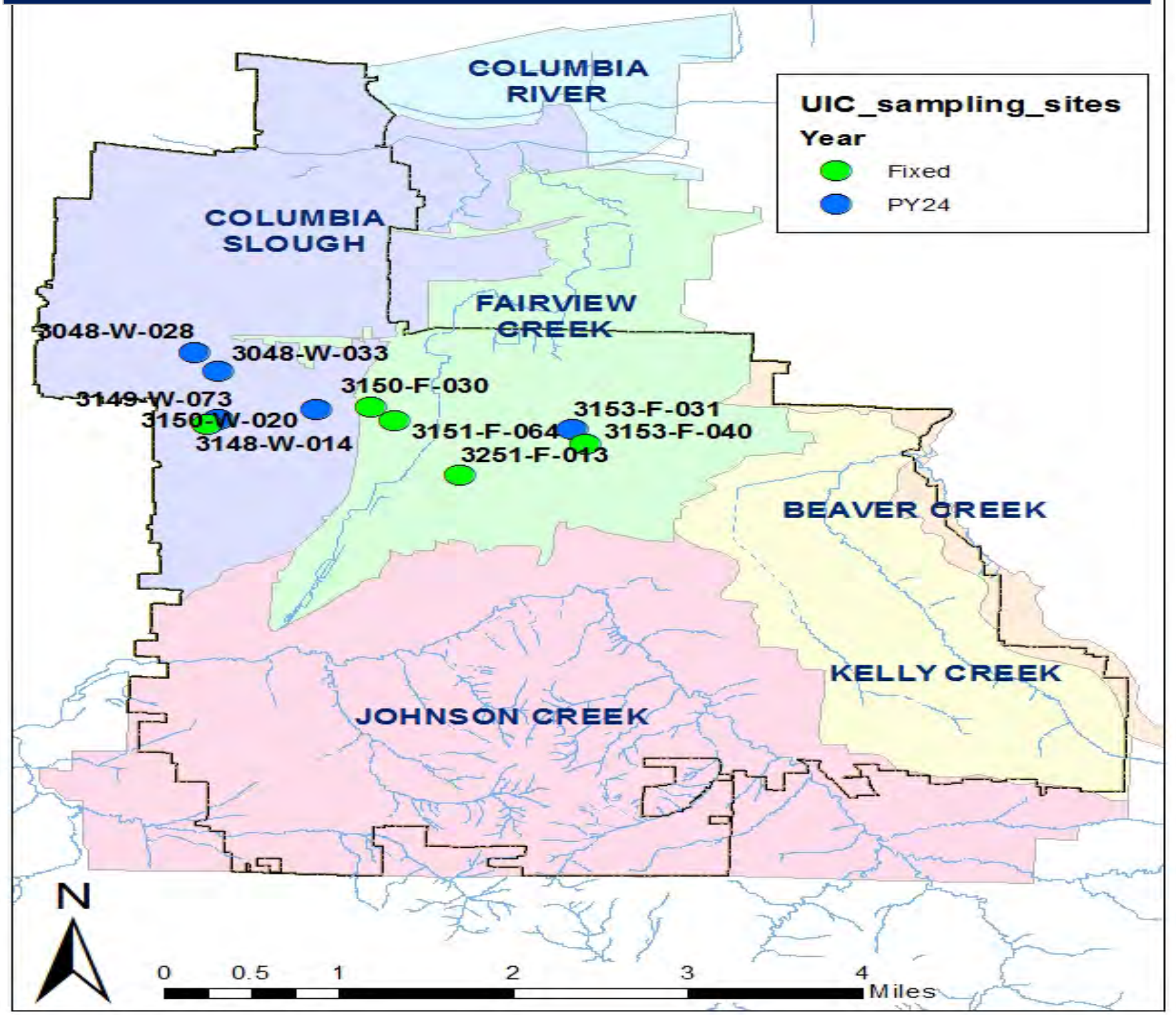
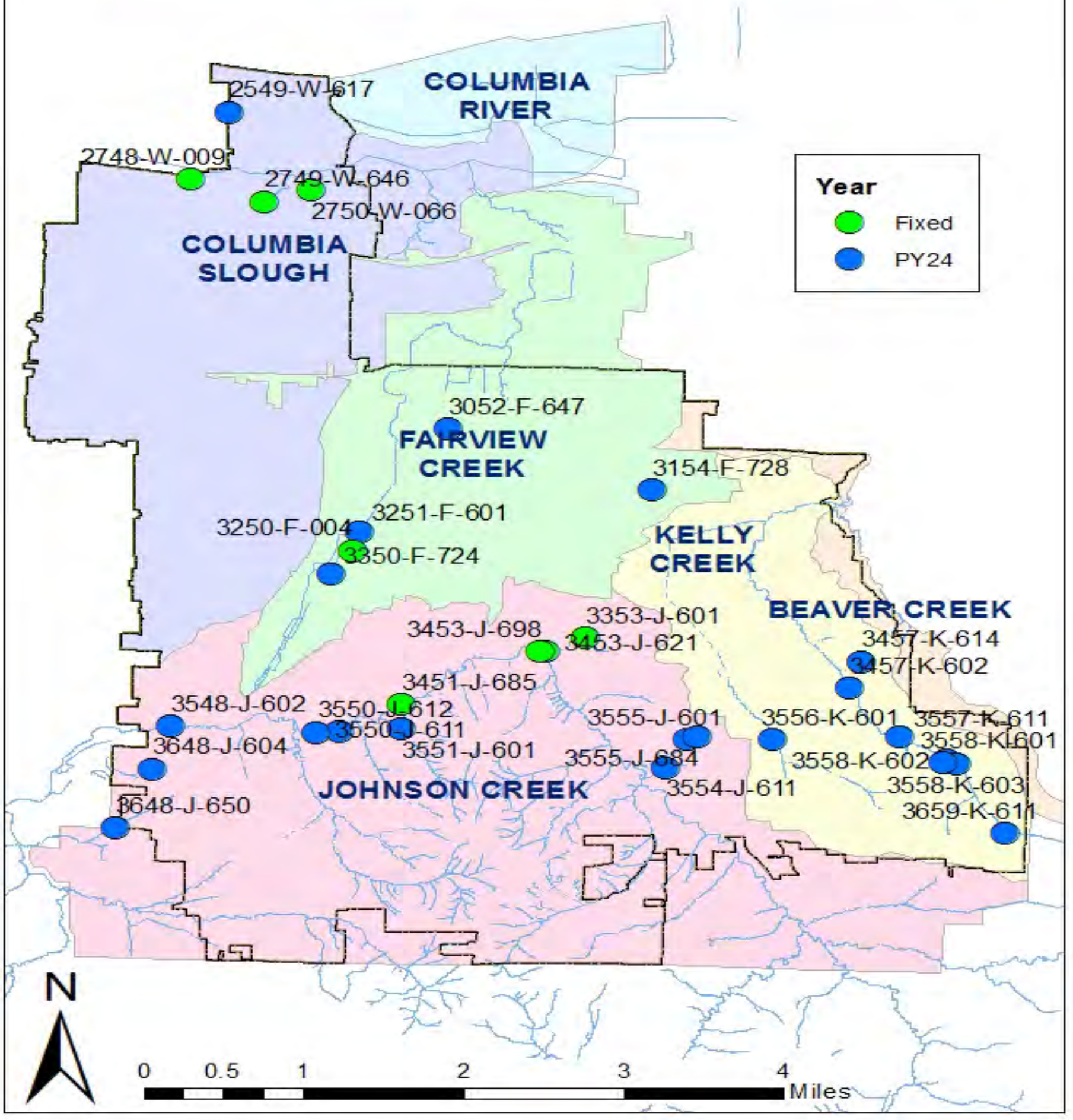


Table 3-5: Illicit Discharge Detection & Elimination--Dry Weather Screening Results and Follow-up

Basin	Site Code	Flow	Odor	Color	Clarity	Float-ables	Deposits/ Stains	Veg Cond	Structural Cond	Biolo-gical	Last Rain	DO (mg/L)	pH	Temp (*C)	Conduc-tivity (µS/cm)	Turbidity (NTU)	Total Chlorine (mg/L)	Ammonia Nitrogen (mg/L)	Observations and Outcome
Pollutant Parameter Action Levels (Table 15 of the Gresham/Fairview Monitoring Plan)												**NA**	**<6.5, >8.5**	**NA**	**>300 µS/cm**	**>15 NTU**	**>0.5 mg/L**	**>0.5 mg/L**	
Fairview Creek	3052-F-647	No																	
Fairview Creek	3154-F-062	No																	
Fairview Creek	3154-F-728	No																	
Fairview Creek	3251-F-601	No																	
Fairview Creek	3350-F-724	No																	
Kelly Creek	3457-K-602	No																	
Johnson Creek	3555-J-601	No																	
Johnson Creek	3555-J-684	No																	
Kelly Creek	3556-K-60	No																	
Kelly Creek	3557-K-61	No																	
Johnson Creek	3648-J-604	No																	
Kelly Creek	3659-K-61	No																	
Columbia Slough	2748-W-00	No																	
Kelly Creek	3457-K-614	No																	
Johnson Creek	3548-J-602	No																	
Johnson Creek	3550-J-612	No																	
Johnson Creek	3554-J-611	No																	
Kelly Creek	3558-K-602	No																	
Johnson Creek	3648-J-650	No																	
Fairview Creek	3250-F-004	Yes	None	Clear	Clear	None	None	Normal	Normal	None	> 1 week	7.83	7.22	16.3	160.4	4.19	0	0	
Johnson Creek	3453-J-621	Yes	None	Orange	Poor	Foam	None	Normal	Normal	Iron Bacter	> 1 week	6.26	7.43	18.2	250.5	19.4	0	0.5	Readings are similar to past levels; follow-up investigations found groundwater and natural sources not deemed to be illicit discharges
Johnson Creek	3459-J-698	Yes	None	Orange	Poor	Foam	None	Normal	Normal	Iron Bacter	> 1 week	6.52	7.24	18.8	384	32.6	0	1	Readings are similar to past levels; follow-up investigations found groundwater and natural sources not deemed to be illicit discharges
Kelly Creek	3558-K-60	Yes	None	Clear	Clear	None	Rusty sedi	NA	Normal	None	> 1 week	8.36	7.19	18.4	177.2	53.8	1.5	0	Excess water from lawn watering
Kelly Creek	3558-K-603	Yes	None	Clear	Clear	None	None	NA	Normal	None	> 1 week	8.32	7.59	19.2	196.6	5.05	0	0	
Columbia Slough	2749-W-64	Yes	None	Clear	Clear	None	None	Normal	Normal	None	> 1 week	4.47	7.74	20.1	197.3	1.06	0	0	
Columbia Slough	2750-W-06	Yes	None	Clear	Clear	None	None	Normal	Normal	None	> 1 week	4.35	7.33	18.5	255	2.37	0	0	
Johnson Creek	3353-J-601	Yes	None	Clear	Clear	Brown scur	None	Normal	Normal	None	> 1 week	7.05	7.62	17.7	229.5	3.66	0	0	
Johnson Creek	3451-J-685	Yes	None	Orange	Clear	Foam	None	Normal	Normal	Iron Bacter	> 1 week	3.52	6.28	17.7	213.5	16	0	0.5	Readings are similar to past levels; follow-up investigations found groundwater and natural sources not deemed to be illicit discharges
Johnson Creek	3550-J-611	Yes	None	Clear	Clear	None	Rusty sedi	NA	Normal	Iron Bacter	> 1 week	3.3	7.37	23.5	210.8	5.32	0	0	
Johnson Creek	3551-J-601	Yes	None	Clear	Clear	None	None	NA	Normal	None	> 1 week	3.91	7.02	20.1	201.6	2.34	0	0	

Key: Shaded cells are above the action level and staff conducts additional upstream investigation.
NTU=Nephelometric Turbidity Units Clean drinking water is 1NTU or less. 50 NTU would be slightly cloudy.
DO=Dissolved Oxygen Stormwater is typically >5 mg/L which rarely poses a direct threat to instream conditions. This measurement is taken in order to collect pH and conductivity.
Temperature is not associated with stormwater as a pollutant, because typically rain fall does not occur in summer months. However, temperature is measured because release of heated water is a violation of City Code. In general, summer flow in pipes is either associated with high groundwater, incidental releases of potable water such as irrigation runoff which is allowed by DEQ, or is indicative of illegal discharges.

Figure 3-6 Dry Weather Screening Monitoring Locations



Section 3:
City of Gresham Stormwater Management Plan Summary

City of Gresham NPDES Annual Stormwater Compliance Report

Section Three: Stormwater Management Plan Summary

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
RC 1 Stormwater System Maintenance Plan						
A. Pipe Cleaning	Ongoing	Maintain stormwater system pipes to ensure proper function and limit impacts to water resources.	Clean and inspect 15-20 miles of pipe per year.	Number of pipe miles cleaned. Volume of debris collected.	Stormwater O&M staff inspected 12.5 miles of pipe for routine and new development connections, plus cleaned 3.5 miles identified as needing additional maintenance. During inspections we look for root intrusion, illicit connections, staining from illegal dumping, etc. This approach is more effective and environmentally sustainable because it uses less fuel, produces less emissions and releases less potable water. The purchase of a new Vactor Truck in 2017 with greater computer technology and water controls allows for better tracking and analysis of areas to return more frequently. Additional effort has been given to lateral lines while we are cleaning catch basins. Visually there is evidence that there is reduced sediment entering main lines as we have adapted our focus and procedures for line cleaning.	A request was submitted to DEQ in fall 2012 to reduce the miles of pipe cleaned to 5, in favor of conducting other higher priority maintenance activities. Staff met with former DEQ staff to discuss the proposal. DEQ requested additional data from the City. In 2014, DEQ hired a new permit coordinator. DEQ was unable to put the request out for public comment prior to the permit's expiration. Oregon Administrative Statute prohibits altering a permit that has been administratively extended, therefore, the City's request is on hold until the permit is reissued. DEQ's project timeline for permit renewal is spring 2020.
B. Catch Basin Cleaning	Ongoing	Maintain stormwater system catch basins to ensure proper function and limit impacts to water resources.	Clean or inspect 100% of publicly-owned catch basins that drain to surface water annually.	Number of catch basins cleaned. Volume of debris collected.	6,158 residential cbs cleaned*. 133 cy of debris removed. 1,418 arterial cbs cleaned. 61 cy of debris removed. There is a slightly higher ratio of debris removal per basin for arterial streets, consistent with our monitoring program findings that higher traffic roads generate more pollutants and sediment. Staff are now beginning to use portable data systems to track cbs with higher sediment volumes to analyze how to further optimize sediment control into the future. *Numbers cleaned vary each year because of parked cars. Additionally, the city has begun adding more sedimentation manholes to attempt to capture more sediment, so the total cb inventory has decreased slightly.	None
C. Maintain Public Water Quality Facilities	Ongoing	Maintain publicly-owned water quality facilities to ensure proper function and limit impacts to water resources.	Maintain an average 20-25 facilities per year over the permit term. (Annual totals may vary).	Number and type of facilities inspected. Number and type cleaned. Type of maintenance conducted. Volume of debris removed.	Inspected 400 ROW rain gardens and 54 publicly maintained detention ponds and swales (includes both public and privately owned but publicly maintained facilities). Routine vegetation maintenance was completed at all ROW rain gardens and at 44 publicly maintained detention ponds and swales using a combination of landscape contractors and O&M staff. Additional maintenance (sediment removal and improvements to structures) was completed at 9 detention ponds and swales. 4,164 of staff hours utilized for green infrastructure maintenance, plus 3,284 contractor hours. In total, staff removed 196 cy of debris from ponds, 12 cy from raingardens and swales and 188 cy from ditches. Privately owned, but publicly maintained, proprietary stormwater systems (31), staff inspected all inlets, manholes, vaults and pipes and replaced 17 water quality cartridges at 4 subdivisions. Staff cleaned 2 flow control manholes and one sedimentation manhole and all associated catch basins. Publicly owned proprietary stormwater systems, inspected all vaults (126), replaced 326 water quality cartridges removing 8.5 cy of debris from 106 structures requiring maintenance.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
D. System Repair and Maintenance	Ongoing	Maintain and repair pipes, ditches, culverts, inlets, off-road systems, etc. in order to ensure proper function and limit impacts to water resources.	Maintain and repair the stormwater infrastructure as needed.	Number of hours dedicated to R&M activities.	~19,000 hours were allocated to the repair and maintenance of pipes, catch basins, manholes, laterals, outfalls, conducting utility locates, significant rain event infrastructure inspections and emergency response, shop and equipment maintenance, GIS mapping corrections of infrastructure, program administration, and green and grey public facility inspections including the use of the CCTV camera.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
E. Manhole/Detention Line Cleaning	Ongoing	Maintain manhole and detention line structures to ensure proper function and limit impacts to water resources.	Inspect 75% of manhole structures annually, as appropriate; clean detention lines only as needed based on inspections.	Track number of structures cleaned/repaired. Report volume of debris removed.	Sedimentation manholes increased from 388 to 500 units. All were inspected removing 59 cy from 75 structures. Flow control manholes increased from 204 to 211. All were inspected removing 45 cy of debris from 46 structures. Detention lines remained at 231 units. All were inspected removing 1.2 cy from 7 lines and 1.2 cy of debris from 5 manholes.	None
F. Ensure Proper Debris Disposal	On going	City staff decant water to the wastewater system, dry debris & test debris to ensure that it meets disposal requirements.	Ensure that the city utilizes environmentally sound disposal practices and services.	Keep records of annual disposal services utilized. Keep annual debris testing data.	The City contracts with Water Truck Services (purchased by NRC Environmental Services in 2015), a DEQ permitted entity, to recycle the city's leaves and other debris from the maintenance of streets and structures. The city's contract ended on June 30, 2019 and NRC has notified us that it will not renew. The city released a RFB but received no bids. The city has explored options all across the region. Because the debris will not qualify as clean fill that can be transported to Hillsboro, the city (and other agencies) may have to begin hauling debris to Wasco or Arlington landfill as special waste. This is expected to raise the cost of debris removal to $100K-$200K per year.	None
G. Underground Injection Controls (UIC's) Maint. & Cleaning	As required by UIC Permit	Ensure that the city complies with the required elements of the WPCF permit in order to limit stormwater impacts to groundwater.	Under the City's UIC WPFC permit, report all maintenance and cleaning activities as required.	Keep records of annual maintenance locations and cleaning activities. Reporting not part of the MS4 Annual Report requirements.	Keep records of annual maintenance locations and cleaning activities. Reporting not part of the MS4 Annual Report requirements. Staff cleaned 10 UICs and removed 25.5 cy of material.	None
RC 2 Planning Procedures						
A. Water Quality Manual for New and Re-Development	Ongoing	Ensure that the water quality best management practices as described in the city's *Water Quality Manual/Green Development Practices Manual* are implemented by the development community to reduce impacts to local streams from stormwater pollutants.	Implement the *Manual* and bi-annually determine whether updates to the document are necessary. Conduct training to users of the *Manual* if it is updated significantly.	Track #, location, acreage & land use of new and redevelopment projects. Track # and type of private water quality facilities installed to comply with new development stds. Delineate and GIS map the drainage areas of the private facilities installed to comply w/new dev. standards. Track training activities.	See Table 3.1. Staff work with GIS staff to continually ensure a robust and high quality data set of stormwater system assets. As facilities are built, their type and area treated are recorded to aid the City in CIP and retrofit planning and design decisions as needed. This mapping also aids the City's pollutant reduction modeling that is required during the permit renewal submittal. The City adopted a new Stormwater Management Manual (SWMM) and updated related portions of code – both went into effect on January 1, 2019. Extensive internal and external outreach and trainings were conducted in development of the new standards and code. The SWMM includes improvements in facility design, ensures that on-site stormwater management using green infrastructure is prioritized, as well as adding in source control requirements to prevent illicit discharges from high risk businesses – examples include vehicle repair and maintenance facilities, fueling stations, and waste storage for food related businesses. Other improvements include adding information about conveyance requirements for sites where water cannot be fully retained on site, and updating and moving the Erosion Prevention and Sediment Control Manual from Public Works Standards into the SWMM. Minor improvements are being tracked and expected to be integrated into an update that will become effective on January 1, 2020.	None
B. Promote Low Impact Development (LID) Practices	Ongoing	Utilize city *Water Quality/Green Development Practices Manuals* to incorporate low impact development practices into new and redevelopment projects where applicable.	Implement practices or programs that promote the use of low impact development techniques.	Track location, drainage area & type of LID practices that are implemented.	See **Tables 3.1 and 3.2**.	None.

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
C. Private Water Quality Facility Maint. Program	PY 16 and Ongoing	Continue implementing tracking procedures for the installation of privately-owned water quality facilities and policies that ensure that private owners understand their maintenance responsibilities.	Collect and record maintenance agreements for privately-owned facilities that legal code allows. Develop a program to ensure facilities are being adequately maintained.	Track #, type, year installed, & watershed location for all private water quality facilities. Report progress on program dev. related to private facility maintenance annually in PY 16 and ongoing.	There are approximately 220 private stormwater facility locations, some with multiple owners and some with multiple facility types (About 128 vegetated and 92 proprietary underground devices). City's code is utilized to ensure that private owners have legal responsibility for maintaining their facilities and are educated and assisted with regard to facility maintenance. Staff inspects 20-30 vegetated facility locations per year and works with owners to ensure they are properly maintained. Additionally, there are newly constructed lot-level stormwater management facilities located on private lots in new developments. Stormwater management facilities installed include rain gardens, drywells, and infiltration vaults. These facilities were inspected when constructed and staff also conduct ongoing outreach to the homes to ensure they understand proper care, maintenance and function of the facilities. During PY24, staff completed 31 inspections of 31 private multi-owner underground vaults and replaced 17 proprietary filter cartridges. During PY25, staff will notify private single-owner commercial vault owners that proof of maintenance is required for proprietary filter maintenance. Notifications are sent out biennially to private single-owner commercial vault owners.	None.
D. Master Plan Update	Ongoing	Develop and update, as appropriate, Stormwater Master Plans for the city.	Include water quality goals in the city's master plans. Complete the Natural Resource Master Plan by PY 11-12.	Report on updates to Master Plans. Master plan project implementation w/water quality benefits are reported in BMP RC4: Water Quality Retrofits.	Consultant has completed citywide stormwater master plan modeling and has put together a list of potential stormwater CIP projects. Staff will work with consultant to finalize the CIP project list and overall stormwater master plan.	None.

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
E. Urban Canopy Initiatives	Ongoing	Protect and enhance the urban canopy as part of the city's overall stormwater management strategy.	Create and implement an Urban Forestry Management Plan. Utilize Code Enforcement to ensure that urban canopy objectives are supported. Collect fines from tree removal violations that may be used for tree replacement efforts.	1) Report on progress of creating Urban Forestry Mgmt. Plan (UFMP) & annually report on status of Plan's implementation; 2) Report number of code compliance investigations & outcomes related to tree protection objectives; 3) Report outcomes that result from the collection of tree removal fines; 4) Report code changes, as applicable. See MON 2: Legal Authority and Code Review; 5) Report type/number of outreach activities conducted & estimated persons reached. See EDU 1: Stormwater Education Program.	Green Gresham Healthy Gresham grant allowed the County to hire a Gresham tree team leader and six SummerWorks interns to survey the location and health of 500 street trees in the Rockwood and West Gresham neighborhood, pruned over 250 park trees and canvassed the neighborhood for future planting interest and also attended summer outreach events. Gresham recertified as a Tree City USA for the 11th year. Urban Forestry Operations and Education adopted in the annual Council Work Plan with the following update of events: * Researched and coordinated with Planning Commission members to asses tree canopy citywide. * Staff finalized urban forestry education and outreach materials for outreach across the city. * Staff worked with Multnomah County and Friends of Trees on a November 13 Trees and Health Symposium. * Staff collected Tree City USA data for year 12 recertification. * Staff researched some minor structural and content changes to the Tree Code, which will be incorporated into the Development Code and Process Update project timeline for 2019- 2021. * Staff working with the Urban Forestry Subcommittee initiated the process to update the urban forestry management plan to include climate resilient action items.	None
					Staff is organizing a Trees and Health Symposium for fall of 2019, which will capture much of the tree inventory and planting work and the respective health benefits received at the neighborhood level. Through a visioning exercise this summer, the Urban Forestry Subcommittee prioritized the following three out of 28 urban forest action items from the 2011 urban forestry management plan: 1) Establish a tree canopy goal/citywide target 2) Advocate for an on-call arborist to provide departments technical expertise using fee-in-lieu collected funds 3) Work across city departments to integrate urban forestry into projects and plans. The city's code allows a resident to cut three trees per year on their property with a permit. Fines are typically not issued, rather permits are retroactively issued. There were ~19 tree code violations handled by code enforcement.	
RC 3 Maintain Public Streets						
A. Street Sweeping	Ongoing	Continue street sweeping activities to prevent litter and debris from entering the public stormwater system.	Provide 8-10 sweeps of the city per year.	Track & report the number of sweeps per year, total miles swept and total debris collected.	Transportation's contractor conducted 10 residential and 12 arterial sweeps resulting in 5,968 miles and 1,620 cy of materials disposed. ~500 hours of additional sweeps were conducted with the COG sweeper removing 120 cy of debris (including sanding rock during winter ice/snow events). ~3350 hours were conducted for fall leaf removal resulting in 480 tons of debris.	None
B. Deicing	Ongoing	Continue to implement standard operating procedures to limit impacts to the environment from sand, gravel, and deicing product application.	Implement deicing practices in a manner that limits impacts to water quality.	Track & report an estimate of sand/gravel & deicing product applied to Gresham roads. Track miles of road to which sand/gravel or deicing products are applied.	4,750 gallons of Magnesium Chloride were applied to 237 miles of anti/deiced roads, plus 6 fifty lb. bags of Freeze Gard pellets. 105 cy of sanding rock applied. 126 hours were used to remove sanding debris. All 17 staff received a 1 hr. safety refresher related to filling tanks, application rate testing and spill response protocols. We have also added the use of granular MgCl for very localized applications. Locations of applications are kept via daily truck work logs.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
C. Standard Operating Procedures for Road Maint. Activities	PY 16 and Ongoing	Continue utilizing ODOT's maintenance standard operating procedures, as well as the City's manual titled Standard Operating Procedures for Wetland, Waterway and Habitat Protection in order to guide city staff and contractors in resource protection efforts when working near jurisdictional resources.	Implement a road maintenance program that will limit impacts to water quality. Biennially train appropriate staff. Monitor program implementation and adaptively manage based on feedback and results.	Track & report implementation of training activities. Report changes to SOP's annually, if updated.	Continue to implement road maintenance SOPs for the protection of waterways.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
RC 4 Retrofit & Restore System for Water Quality						
A. Water Quality Retrofits	Ongoing	The Watershed Engineering group will continue to implement the Stormwater Capital Improvement Projects that include water quality enhancement and pollution reduction elements.	Implement a CIP program that will help mimic the natural hydrologic cycle, treat stormwater, and promote stream protection and enhancement.	Track number, type, watershed location & total drainage area of CIPs constructed for water quality.	**Table 3.1** includes CIPs implemented by departments other than the Watershed Division that include water quality treatment. **Table 3.2** includes projects undertaken as a result of the Watershed and Natural Resource CIP list.	None
B. Enhance Riparian Areas	Ongoing	Continue conducting riparian restoration activities to remove invasive species, restore and enhance buffers and encourage multi-story native plant communities, channel stabilization and support of critical habitat.	Continue to seek partnerships/grants to implement riparian enhancement projects that will limit the introduction of stormwater pollutants into streams.	Track and describe riparian enhancement activities by location. Estimate number of volunteers/partners involved, where applicable. Estimate of acreage enhanced and total plans installed or invasives removed.	See **Table 3.3**.	None
RC 5 Monitor Pollutant Sources from Closed or Operating Municipal Waste Facilities						
Pollutant Source Evaluation	Ongoing	The City has reviewed historic records and current operating businesses to determine that, as of the 2010 permit application approval, no pollutant source exists from an operating or closed treatment, storage, or disposal facility for municipal waste. The City conducted an assessment of a closed facility during PY 12 and determined that no threat to stormwater existed from the facility. This report is available upon request.	Ensure that new municipal waste facilities within the City's permitted area are appropriately permitted and designed to limit the potential for pollutants to enter stormwater.	Review business permits annually. (Conducted under the IND 1 & 2 BMP A. Business Inspection Program). Report any new facilities and assessment results.	There are currently no operating treatment, storage or disposal facilities for municipal waste within the city. However, Gresham Sanitary Services who is a solid waste hauler, holds a UIC permit #13410 and is not connected to the City's stormwater system. They also have a DEQ Transfer Permit #1392 for reloading waste. The reloading area is entirely sealed and wastewater is discharged to the sanitary sewer via a licensed contractor.	None
RC 6 Reduce Pollutants from Pesticides, Herbicides and Fertilizers						
Integrated Pest Mgmt. Program	Ongoing	Limit the introduction of pesticides and fertilizers from city operations by implementing an integrated pest management plan.	Review and implement the IPM Plan biennially and, at a minimum, update at least once per permit cycle. Conduct training. Annually review the list of city approved pesticides.	Track frequency of staff trainings & number of staff trained. Report updates of the plan. Track quantities and types of pesticide, herbicides and fertilizer applications.	See **Table 3-4** of Pesticide/Fertilizer Application Records. Staff applicators follow Oregon education certification requirements to retain their licensure, as applicable. See also EDU 1--Staff/Stakeholder Trainings	None
ILL. 1 Non-Stormwater Discharge Controls						
A. Control Releases from Fire Training Activities	Ongoing	Limit pollutants to stormwater from fire training activities by implementing standard operating procedures.	Ensure Fire Training is overseen by staff familiar with the SOP for stormwater protection.	Document fire training protocols for stormwater protection and train staff.	SOP is on file and Fire Training staff are familiar with protocol.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
B. Water Line Flushing	Ongoing	Minimize impacts to the stormwater system from water line flushing activities by implementing standard operating procedures.	Ensure Water Line Flushing is overseen by staff familiar with the SOP for stormwater protection.	Train employees on standard operating procedure to minimize impacts to local streams. Annually report gallons flushed.	No water pipe system flushing was conducted this year.	None
ILL. 2 & 3 Illicit Discharges Elimination Program						
A. Field Screening and Investigation	Ongoing	Conduct dry weather screening at high priority outfalls, at a minimum of once per calendar year. When appropriate conduct follow up investigation to identify the source (responsible party). If a responsible party is identified work to eliminate the illicit discharge.	Conduct annual dry weather screening at high priority outfalls. Document the procedures the city will follow when an illicit discharge investigation identifies a responsible party.	Track number & location of outfalls inspected. Track number & location of illicit discharges and/or connections identified. Include documentation in 2011 Annual Report. Describe follow-up actions for identified illicit discharges and/or connections in Monitoring Plan.	Staff inspected 30 sites: 8 fixed sites and 22 new rotating sites. See map of locations in Section 2. Two of the fixed sites had turbidity levels slightly above our IDDE action level (15 NTU) requiring additional investigation. One of those sites also had ammonia levels above the action level of 0.15 mg/L. One additional fixed site had pH outside of the typical range of 6.5 - 8.5. All three of these sites have shown similar levels in past years and follow-up investigations did not identify any illicit discharges which drain to the sites. Past investigations indicated that upstream areas contain low-priority abandoned landfills which are likely contributing to these levels. One new rotating site had turbidity and chlorine above the action levels. An investigation found that the water was from excessive lawn watering.	None
B. CCTV New Development Stormwater Pipes	Ongoing	Conduct closed-circuit television (CCTV) inspections of new stormwater pipe installations during development projects to eliminate cross-connections.	CCTV at least 80% of all new pipes installed in the city.	Track number of stormwater pipe miles inspected as a percentage of the total stormwater pipes installed.	100% of new development inspected. All CCTV activity is tracked as one number, i.e., in total miles. The amount, in miles, of new development pipe is not specifically known, but is a fraction (~1-2 miles) of the total 12.5 miles, as reported in the pipe cleaning BMP.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
ILL. 4 Spill Response Program						
A. Spill Response	Ongoing	Respond to reports of spills or illegal dumping using the city's spill response protocol for hazardous and non-hazardous substances.	Implement the city's spill response protocol and conduct periodic review of the document to ensure efficacy.	Track number, type & location of spills that occur & the approx. quantity of material spilled. Track the response activities. Does not include traffic accidents, unless additional assistance is requested from the Watershed Operations staff.	See **Table 3-7**.	None
B. Spill Prevention (Hazardous Waste Mgmt. - City)	Ongoing	Continue to carefully manage hazardous materials to prevent spills on City-owned property from city practices.	1) Ensure safe handling, storage and disposal of hazardous fluids in order to prevent spills and limit pollutant sources to stormwater by training staff appropriately. 2) Provide periodic review of City contractor's safety and environmental violations and disposal permits, where applicable, to help ensure environmental compliance of contractors handling the City's waste products.	Report quantities of hazardous materials disposed annually. Report number of spill incidents and outcomes annually. Request & review contractor's permits, where applicable, at least annually and biennially review appropriate regulatory agency databases for safety and environmental violations.	Quantities of hazardous materials disposed: Used oil filters: (1) 55 gal drum Used oil: 771 gal (Thermo Fluids) Used Antifreeze: 25 gal Used Tires: 339 collected by Goodyear Used batteries are returned to the vendor for recycling to Battery Systems, Advance Auto Parts, and Auto Plus. All other recyclable commodities are recycled.	None
C. Maintain Public Vehicles	Ongoing	Continue to maintain city vehicles and equipment to limit the contribution of stormwater pollutants from leaks and runoff, etc.	1) Maintain City-owned vehicles & equipment and ensure proper handling & disposal of fluids to reduce the likelihood of leaks or spills being released into the MS4 system or the environment. Meet DEQ Permit 1700 A deminimis discharge or seek a permit and/or waiver.	Report annual disposal quantities of all fluids and vendors utilized. Report status of deminimis discharges or Vehicle Wash Water permit implementation and/or waiver.	Quantities included in the BMP: Spill Prevention (Hazardous Waste Mgmt. - City) above. DEQ is currently not issuing Vehicle Wash Water permits. The Fire Department washes less than 8 vehicles per week per fire station and does not use heated water, does not wash the engine, transmission or undercarriages, but does use a phosphate-free soap on the vehicle exterior.	None
ILL. 5 Facilitate Public Reporting						
Facilitate Public Reporting & Respond to Citizen Concerns	Ongoing	Continue to provide an outlet for public concerns regarding stormwater pollutant issues such as illegal dumping, erosion, plugged drains, invasive plants, etc.	Include information about how to report concerns of illegal discharges in various city publications.	Track number of calls/letter received, the issue of the call, and the response to the call.	See **Table 3-8**.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
ILL. 6 Facilitate Proper Management Disposal of Used Oil & Toxics						
Facilitate the Proper Mgmt. & Disposal of Used Oil & Toxics	Ongoing	The City uses a variety of approaches to encourage proper solid waste, recycling, and hazardous waste management practices including: GREAT (now called GREEN) Business Education Program, Special Collection Events for the Public, and Curbside Recycling of Oil.	Continue to offer disposal, recycling, and/or collection programs that facilitate the proper management of solid and hazardous waste in the business and residential sectors.	Track quantities of used oil and toxics collected. Estimate the number of persons and/or households reached.	At this year's Earth Day event ~40,000 lbs of shredded paper, fluorescent lights, metal and electronics were collected, as well as 53 ft trailer of Styrofoam, and 40 cy of mixed rigid plastic, cardboard and plastic film. A second shredding event was held collecting another 7525 lbs of paper. ~950 cars/households attended Earth Day and 1700 Earth Day webpage information views on proper waste management and disposal options.	None
ILL. 7 Limit Sanitary Sewer Discharges						
Limit Sanitary Sewer Discharges	Ongoing	The City's Wastewater Treatment Plant operates under its own NPDES discharge permit. Its programs include a pretreatment inspection program and implementation of Capital Improvement Projects that overall assist the City in meeting the NPDES MS4 Stormwater Discharge Permit objectives.	Continue to implement operations and maintenance programs for the wastewater pipe system that limits the introduction of sanitary sewer waste into the stormwater system.	Track sanitary discharge to the stormwater system, including estimated volume and location. Track follow-up responses to the identification of any sanitary discharges to the stormwater system. Track implementation of the CIP to connect currently unsewered properties to the sanitary sewer system.	The wastewater O&M program and CIP were responsible reducing impacts to stormwater from influx of wastewater in the ground by inspecting 1,316 pipes which equates to ~48 miles of pipe inspected, ~33 miles of pipe cleaned on 792 lines. Additionally, there were 3 pipe patches on lateral lines, 13 patches on main lines, 2 main line repairs, and 29 lateral lines repairs.	None
IND. 1 & 2 Industrial Inspection & Monitoring						
A. Business Inspection Program	Ongoing	The City's Stormwater Business Inspection Program consists of a variety of approaches including: business license review and technical assistance; prioritized business inspections; review of business classification codes to determine those that may need 1200Z or 1200-COLS permits to submit to DEQ and collaboration with DEQ to ensure 1200Z permit data is adequately reviewed; cross training with the Wastewater Pretreatment and Fats Oils and Grease Inspectors to look for potential stormwater concerns, and a business education program that is implemented by the Solid Waste & Recycling Division staff.	Continue to implement business license review, business inspections and business education efforts to help prevent and reduce the introduction of pollutants into stormwater from business practices.	1) Track number & location of stormwater related issues identified during the business license review and follow-up. 2a) Report status of ongoing program development.	During FY 18-19, staff completed 234 auto related business visits and required 38 corrections and 64 inspections of other manufacturing businesses in the wellfield protection area resulting in 5 corrections. Staff and summer interns inspected 305 restaurant outdoor garbage, recycling and grease areas for stormwater pollution, four locations were required to take corrective actions to clean up their outdoor area/grease containers. New businesses are sent to staff in a monthly email. Business inspection staff can then add them to a planned inspection list or contact via phone to review requirements in more detail. During PY 24, staff have worked with the planning department to review processes to proactively deliver regulatory information to businesses via city applications, forms, and handouts at the counter. A new software system is being adopted by the City for tracking data, so a department wide meeting will be held during PY 25 to review process and efficiencies and gaps in order to make necessary improvements. Finally, Wastewater staff have purchased a new business tracking software called SWYFT for FOG program implementation. Stormwater and wastewater staff are working to enhace the data intake within the software to meet the goals of both programs.	None
A. Business Inspection Program				2b) Notify DEQ of businesses that may need a 1200-Z or 1200-COLS permit and report actions promised by businesses with which the City is working.	(2b) Staff reviewed the business license applications and did not identify any businesses needing a DEQ 1200-Z or COLS permit. Staff reported food manufacturing businesses within Gresham to DEQ. DEQ has issued a new 1200Z permit to Teeny Foods. DEQ is currently reviewing its reports from permittees and will notify Gresham with any concerns or violations. See **Table 3-10** for a list of 1200Z permits within the city and associated inspections or known violations from DEQ.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
A. Business Inspection Program				2c) Track business inspections, including businesses location, outcome and follow-up. Estimate the number and type of businesses to be inspected for the next year. 2d) Report stormwater concerns identified by the wastewater pretreatment program and resolution. 3) Track GREAT (now called GREEN) business program environmental audits and certification annually. (Reported in Public Education--Table 3-8).	During PY 25 staff plan to continue inspecting priority businesses and industries that have a high potential to contribute stormwater pollution. Inspection goals are at least 100 automotive business and at least 50 industries within the wellfield protection area. Staff will also coordinate and co-inspect any DEQ led 1200 Z inspections. Staff will also continue to visit and conduct outreach to restaurants related to proper grease container management and plans to visit at least 50 locations. New: during PY 25, staff are issuing clean and repair notices to businesses with documented unmaintained private catch basins, which applies to over 100 locations. Staff inspected 12 pretreatment program industries. One follow-up contact was made a facility manager related to suspected staff outdoor draining of rinse water intended for the indoor drain. Manager agreed to send a reminder to all staff.	None
B. Industrial Monitoring Program	Ongoing	Coordinate with DEQ to ensure adequate notification of potential 1200Z and 1200-COLS permits and review of data submitted by permit holders.	Continue annual inventory of 1200-Z and 1200 COLS businesses within the city's boundaries and review monitoring results submitted to DEQ on an annual basis, if DEQ has not already done so. Report exceedances to DEQ, if applicable.	Track NPDES 1200Z/1200COLS permits issues in Gresham. Track number of violations reported.	Based upon a review of city records and correspondence with DEQ, there are currently 16 permitted facilities within Gresham's jurisdiction. Gresham staff inspected 4/16 industries to ensure wellfield protection area code implementation. Some corrective measures were requested. These are listed in **Table 3-10**.	None
CON. 1 & 2 Construction Site Planning & Controls						
Erosion Prevention & Sediment Control Manual	Ongoing	Continue to update the City's *EPSC Manual* when necessary to reflect current available and accepted technologies and City code and implement the Manual in order to limit impacts to local streams from stormwater.	Implement the EPSC Manual in order to limit stormwater pollutants from construction and development. Review and evaluate the manual biennially to assess changes needed, if any. At a minimum, at least once	Track updates to the Manual.	Staff reviewed and updated the EPSC manual during the process of updating the City's Stormwater Management Manual. The EPSC Manual is now included as Appendix C in the Stormwater Management Manual adopted in January 2019. Updating the EPSC Manual was necessary to develop a manual that can easily be used by the development and construction community, clearly specifies the City's EPSC requirement, and removed outdated BMPs.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
CON. 3 Construction Site Inspection & Enforcement						
Construction Site Inspection & Enforcement	Ongoing	Continue to implement an EPSC inspection program to ensure adherence to EPSC Manual requirements and 1200-C permit requirements, where applicable.	1) Implement the EPSC inspection program to enforce the EPSC Manual. 2)Ensure proper staff training. 3) Examine tracking parameters such as types of violations, number of active sites and total associated acreage.	Track the number of sites inspected annually. Track training sessions conducted for staff. Report parameters assessed and program adaptive management that result, if applicable.	A total of 399 sites were inspected: 374 with residential or commercial building permits and 25 sites with grading permits. There were 21 disapproved inspections affecting 21 sites. Correction notices were related to installing/maintaining perimeter control, providing adequate cover for denuded soil, protecting stockpiles, improving construction entrances, and sweeping streets. All sites were corrected within the given period, so no civil penalties or other enforcement actions were needed. During PY24, Stormwater staff attended the International Erosion Control Association Regional Event on 6/19/19.	None
Stormwater Education Program	Ongoing	Provide notice to construction site operators concerning where education and training to meet EPSC requirements can be obtained.	Ensure developers and construction permit holders are adequately informed of the city's EPSC Manual BMPs and requirements to limit impacts to streams from stormwater.	Report training and communication efforts to the construction community.	See **Appendix D**: Wet Weather Notification Letter Notice to Contractors.	None
EDU. 1 Stormwater Education Program						
A. Ensure Staff/Stakeholder Training	Ongoing	Continue to train new or existing employees as appropriate on all documents that regulate stormwater pollutant control activities such as: IPM Plan, Water Quality Manual, EPSC Manual, and Spill Response Protocol, etc.	Continue to train new personnel and existing personnel, as appropriate on stormwater regulatory documents and conduct trainings for stakeholders, when applicable.	Track the number of personnel & contractors who receive training by topic.	A variety of staff across operations & maintenance, inspections, and policy positions attended trainings in the following areas: Environmental Chemistry and Pollutant Transport, staff and contractor training on the new Stormwater Management Manual, pesiticide license renewal, APWA short school, ACWA Conferences	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
B. Educate Residents	Ongoing	Continue to create and deliver programs and/or messages to educate the public regarding non-point sources of pollutants of concern.	Continue to educate the public regarding their personal contributions to stormwater pollutant sources and impacts to water bodies, as well as the steps or actions they can take to reduce pollutants.	Track programs/messages delivered, type of communication piece and, where appropriate/known, the number of people affected and measured behavior changes. Annually report the Public Education program priorities and plans for the following year.	See **Table 3-9**. Education priorities for programs implemented by the City of Gresham include reduction of yard and garden chemical use. This effort is conducted by partnering with Audubon and Columbia Land Trust to deliver the Backyard Habitat Certification Program in Gresham (and Fairview via IGA). Staff also support watershed councils within our boundaries and help conduct invasive removal, native plant restorations, demonstration gardens, litter clean ups, and storm drain marking by community groups. Gresham also funds the Columbia Slough "Slough School" program which serves schools in the Gresham/Fairview area. During FY 18-19, staff produced a local wildlife calendar with a Gresham resident (retired photographer) and the watershed councils that helped the councils fundraise and engage the public. The calendars were well received and we plan to reproduce them in FY 19-20 for the councils. City communication vehicles continue to focus on promoting local workshops by EMSWCD, earth day, proper recycling and debris disposal and safe snow and ice techniques.	None
					Gresham also participates on the Regional Coalition for Clean Rivers and Streams, and has a "It's Our Water, Do Your Part" campaign with many regional partners on KOIN TV. Gresham also supports the EcoBiz and Gresham GREEN Business program implementation (formerly GREAT business). Lastly, staff participate on the statewide Clean Rivers Coalition which has successfully written and implemented a $100K grant from Meyer Memorial Trust to develop a strategic communication plan for Phase I and Phase II and TMDL communities, watershed councils and SWCDS and a campaign for less toxic yard and garden behaviors. Baseline survey of public knowledge and willingness will be completed in PY 25. Campaign expected to launch in PY 25-26.	
C. Educate Businesses	Ongoing	Continue to create and deliver programs and/or messages to educate businesses regarding non-point sources of pollutants of concern.	Continue to educate the public regarding their personal contributions to stormwater pollutant sources and impacts to water bodies, as well as the steps or actions they can take to reduce pollutants.	Track programs/messages delivered, type of communication piece and, where appropriate/known, the number of people affected and measured behavior changes. Annually report the Public Education program priorities and plans for the following year.	See **Table 3-9**. For PY 25, staff will continue to support the implementation of the GREAT (now GREEN) Business Program, the EcoBiz Program, the SCAP program, the EPSC contractor outreach and will continue technical assistance to restaurants and automotive sectors. During PY 24, staff and interns documented private drains in need of repair. Staff will focus on outreach and compliance in this area during PY 25.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
Program Management & Monitoring						
MON 1 Annual Report Writing	Ongoing	Coordinate across the city to review program commitments, gather data, and where appropriate, assist with program evaluation and additional goal setting or BMP enhancements.	Submit the Annual Report to DEQ on behalf of Gresham and Co-Permittee, as required by the permit.	Each year provide a report that includes the following components: * a description of the public comment notice method; *status of the SWMP implementation and SWMP program elements, progress in meeting the measurable goals; *status and/or results of any public education program effectiveness evaluation conducted during the reporting year and a summary of how the results were or will be used for adaptive management.; *a summary of the adaptive management. process during the report year, including any proposed changes to the SWMP identified through implementation of the adaptive mgmt. process; *proposed changes to SWMP elements designed to reduce TMDL pollutants to the MEP;	This year's Annual Report included a public comment period from October 15-27, 2019. Notices ran in the Oregonian and on Oregonlive.com. The City placed a notice on its website and also issued a press release to all media. A notice was also published in the City's e-newsletter which is emailed to ~900 households. A notice was emailed to the local active Watershed Councils and East Multnomah Soil and Water Conservation District. The status of the SWMP implementation and progress meeting measurable goals is described throughout this report. The Adaptive Management Process is described in Section 1 and a summary of the adaptive management process and resulting proposed changes may be found in the Summary and Date of Proposed Adaptive Management Column for the respective BMPs effected. A summary of total expenditures is included as **Table 3-11**.	None
				*a summary of total stormwater program expenditures and funding sources over the reporting fiscal year and those anticipated in the next fiscal year	A summary of the Environmental Monitoring Plan implementation for Gresham and Fairview is included as Section 2 of this report with a separate Appendix A, B & C of supporting raw data collected during PY 24.	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
				*proposed changes to SWMP elements designed to reduce TMDL pollutants to the MEP;	A summary of the Illicit Discharge Detection & Elimination Program (Dry Weather Screening and Spill Response) may be found in **Tables 3-5 and Figure 3-6**. A summary of concept planning, land use changes and new development activities for UGB expansion areas may be found in **Appendix B**. A summary of development permits issued within the City of Gresham is included in **Table 3-1**.	None
MON 2 Legal Authority and Code Review	Ongoing	Review existing code to ensure that the city maintains adequate legal authority and other requirements as stated in the NPDES MS4 permit.	Maintain adequate legal authority, as required by the permit.	*a summary of total stormwater program expenditures and funding sources over the reporting fiscal year and those anticipated in the next fiscal year	See **Appendix A.**	None
MON 3 Program Evaluation/Monitoring	PY 17 or as otherwise dated in the permit.	Review the 303(d) list to determine whether there is a reasonable likelihood of stormwater from the MS4 to cause or contribute to water quality degradation of receiving waters. Utilize the city's GIS mapping staff to enhance program evaluation efforts.	Conduct a 303 (d) pollutant evaluation, as required by the permit.	Submit a report summarizing the results of the 303(d) list review and evaluation and any proposed SWMP modification or updates necessary to reduce applicable 303(d) pollutants to the MEP: Submit a Waste Load Attainment Assessment; Submit a TMDL Pollutant Load Reduction Evaluation; Track significant mapping efforts that help evaluate, enhance or support the SWMP BMPs.	Significant mapping projects included: * GIS layers reviewed and updated to support Stormwater Master Plan project * Dry weather screening site location map * Operations and Maintenance system inspection and cleaning route maps * Public Education maps of participants by zip code for watershed councils and Big Float collaboration, as well as Backyard Habitat Participants * Business Inspection Maps of wellfield, 1200Z, pretreatment, and automotive locations. * UIC maps for WPCF permit reporting *Input of stormwater assets from development and update of city annexation into boundaries and associated watershed maps	None

BMP Name	Compliance Date	BMP Description	Measurable Goals	Reporting Elements	2018-2019	Summary and Date of Any Proposed Adaptive Management Modifications
MON 4 Public Involvement	Ongoing	Conduct public involvement activities as required by the permit, such as annual reports, retrofit strategy, and Permit Renewal Submittal elements.	Conduct public involvement activities and report outcomes.	Report the number of people reached during public involvement activities.	The Annual Report is also released for public comment which is described in MON 1: Annual Report Writing. Below is a summary of potential reach utilizing the typical methods for making public announcements. Gresham's population is about 105,000 (2010 U.S. Census). The Oregonian daily readership in the Portland-Metro area is about 200,000, and Oregonlive.com receives 9M unique visitors annually. The City's Website Home Page this past year received ~9,000 visitors per month and 66,400 unique visitors and 7,000 returning visitors. The City's DES and Water Resources Division web pages, where public comment documents are housed electronically, receives ~1,000 and 500 views annually, respectively. City Newsletter mailed quarterly to 50,000 households.	None
MON 5 Permit Renewal Submittal	PY 17-18 or as appropriate to meet permit deadlines.	At least 180 days prior to permit expiration, prepare and submit the Permit Renewal Submittal package to DEQ.	Submit the Permit Renewal Package to DEQ.	Submittal includes as required by permit but is not limited to: Proposed modifications, including additions and removals of MBPs and measurable goals; Information allowing the Dept. to make an independent assessment that the SWMP proposed meets the requirements of the permit to the MEP; Updated pollutant loads for TMDL pollutants and BOD5, COD, nitrate, total phosphorus, dissolved phosphorus, cadmium, copper, lead & zinc; Establishment of TMDL Pollutant Reduction Benchmarks, if not achieving the WLA; A proposed monitoring program; A description of service area expansions; A fiscal evaluation summarizing expenditures for the current and next permit cycle; Updated MS4 maps.	The City of Gresham submitted its permit renewal package to DEQ on December 15, 2015. This included an updated Stormwater Management Plan and Monitoring Plan that went out for public comment on Nov 30 thru Dec 13, 2015. No comments were received. The City's permit expired on December 29, 2015 and was administratively extended by DEQ in a letter dated February 25, 2016. The City, therefore, is following the SWMP dated April 2011 and adaptively managed in April 2013. The City's permit allows for the Monitoring Plan to be adaptively managed by reporting changes in the annual report to DEQ. As such, minor changes to the City's Monitoring Plan were proposed last year and this**.** All documents are located at GreshamOregon.gov Watershed Documents.	None

Table 3-1: Total New and Redevelopment Acreage

Project Name	Land Use Type	Development Type	Location	WQ Treatment	Ownership*	System	Project Size/Area Treated (acres)	Construction Disturbance (acres)	Percent Impervious
Amy's Acres Ph2	LDR-5	Residential	SE Cochran Dr	Detention Pond, ROW Rain Gardens	Public	Johnson Creek	2.4	1.4	58%
Brickworks Subdivision	LDR-5	Residential	SE Palmquist Rd	Two Detention Ponds and ROW Rain Gardens	Public	Johnson Creek	33.0	21.7	66%
City of Gresham Operations Yard Stormwater Swale Retrofit Project	GI	Industrial	SE Hogan Rd	Water Quality Swale	Public	Johnson Creek	3.4	0.20	81%
Madelynn Place Subdivision	LDR-5	Residential	SE Palmblad Rd	Detention Pond	Public	Johnson Creek	22.9	8.1	35%
Mary's Harvest Distribution Warehouse	GI	Industrial	NE 172nd Pl	Infiltration Pond	Private	Columbia Slough	12.1	5.6	46%
Neagu Estates Subdivision	LDR-5	Residential	NE 202nd Ave	ROW Rain Gardens, Pervious	Public	Fairview Creek	0.7	0.4	56%
Oregon Laborers Parking Lot Expansion	GI	Industrial	NE Sacramento St	Infiltration Bioswale	Private	Columbia Slough	1.0	0.6	63%
Pacific Pride Gas Station Expansion	MC	Commercial	NE Sandy Blvd	Stormwater Planter	Private	Columbia Slough	0.7	0.6	81%
Rick's Custom Fencing	CC	Commercial	NE Halsey St	Detention Pond	Private	Columbia Slough	3.8	3.0	79%
Sierra Point Apartments	HDR	Residential	SE Powell Valley Rd	Infiltration Pond and Bioswales	Public	Johnson Creek	1.1	0.7	64%
Stoltz Terrace Subdivision	LDR-5	Residential	SW 23rd Terrace	Contech Stormwater Filters	Public	Johnson Creek	1.2	0.3	25%
Sunrise Rockwood Mixed Use	RTC	Commercial	SE 192nd Ave	ROW Rain Gardens, Parking lot bioswales	Public/Private	Fairview Creek	1.4	1.2	85%
Wilkes Elementary School	GI	Industrial	NE Wilkes Rd	Bioswales, Contech Stormwater Filters	Private	Columbia Slough	5.3	3.7	70%
Yanyk Partition	LDR-5	Residential	SE 176th Ave	Stormwater Planter	Public	Fairview Creek	0.2	0.1	50%
WoodSprings Suite Hotel	MC	Commercial	NE 181st Ave	Parking Lot Stormwater Planters and Bioswales	Private	Columbia Slough	2.4	2.0	80%
Total Disturbed Acreage								**49.5**	

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

Table 3-2 Examples of City of Gresham Watershed/Natural Resource Program Projects with Water Quality Benefits

Project Name/Watershed	Watershed	Project Status	Stormwater Mitigation Measures/Area Treated	Funding Mechanism
Private/Public Partnership Projects				
City of Gresham Operations & Maintenance Yard Swale Retrofit	Johnson Creek	Construction and planting completed.	The retrofit will capture 3.4 acres additional untreated impervious surface from the operations yard.	Watershed CIP retrofit fund
Kane Road Culvert Repair	Kelly Creek	Designed and bid. Construction to be completed during the next reporting year.	Replaced road and 12' wide non-fish passable culvert with a 34' wide fish passable culvert and natural stream bed. Introduced treatment to .86 acres of previously untreated arterial roadway surface.	Watershed CIP fund and FHWA emergency grant
Mt. Hood Community College Salmon Safe Campus	Kelly Creek	Designed and bid. Construction of rain gardens to be completed during the next reporting year. Additional projects have been identified to pursue over a five-year period.	The city partnered with EMSWCD, Sandy River Watershed Council, and Metro to 'green' the college campus by improving water quality and improving habitat by the reduction of impervious surfaces and the installation of rain gardens and native plants.	Watershed Operating Fund
Riparian and Upland planting	Fairview Creek, Johnson Creek, Kelly Creek, Butler Creek, and Chastain Creek.	Restoration is occurring along Johnson Creek main stem (6 sites), Jenne Creek (1 site), Kelly Creek (1 site), Butler Creek (1 site), Chastain Creek (1 site) and Fairview Creek (3 sites). Each of these sites are under active management for invasive species control. A subset of these sites will be selected for additional native plantings including Johnson Creek (4 sites), Jenne Creek (1 site), and Kelly Creek (1 site). The Natural Resource program also started its Upper Butler Creek CIP project and will be implementing the baseline report and restoration plan in Fall 2019 and continue through Fall 2022.	Water quality, stream shade, invasive control, forest health, stream function, wetland function, and habitat improvements.	Natural Resources Operating Funds
Invasive Weed Survey & Control	All	Active, ongoing invasive control. EDRR weeds are addressed as they are reported, anywhere in the city. Routine riparian weed treatment areas are detailed in Table 3.3. Where manual methods aren't used, only licensed herbicide applicators are used for chemical treatment.	Spot treatment for controlling aggressive invasives that lead to bank failures, including Japanese knotweed, Himalayan blackberry, purple loosestrife, and yellow flag iris.	Natural Resources Operating Funds
Fairview Creek Wetland Mitigation Bank	Fairview Creek/Columbia Slough	Latest cost estimate by Port puts project projection at $9M, so we sought an additional funding partner, and are currently in negotiations with the Cowlitz Tribe. As the project site is within their traditional tribal lands area, they are investigating the project lead with the proposal to use Port funding to complete the project. City remains site owner and project sponsor.	Water quality, stream function, wetland function, and habitat improvements.	Stormwater CIP and external partner funding (Port of Portland and Cowlitz Tribe)
Environmental Overlay Project (ongoing)	All	In partnership with Planning and Development Engineering, embarked on buffer code update to simplify and clarify code requirements, mitigation standards, and floodplain rules to enhance compliance and improve performance over existing code which has been found to be extremely complex in interpreting and applying. City will ensure changes still meet intent of state Goal 5 & 7 and Metro Title 3 and 13. The project also provides more accurate resource mapping	Water quality, tree preservation, stream shade, bank stabilization, and erosion control	Natural Resources CIP funding

Project Name/Watershed	Watershed	Project Status	Stormwater Mitigation Measures/Area Treated	Funding Mechanism
Slope stabilization projects	1st and 2nd order streams on east buttes	Working with environmental engineers, geomorphologists and modelers to identify and rank at-risk drainages where we have most significant signs of likely bank instability. This will result in new CIP project where we will address proactively (ideally, prior to failure) the prioritized list of bank stabilization needs.	Water quality, riparian function erosion control	Stormwater CIP funding

Table 3-3: Restoration Activities

Project Site	Project Partners	Volunteer Hours	Invasive Removal Acreage	Planting Acreage	Plants Installed	Notes
SW 14th West (Johnson Creek)	NYC	140	5.0	2.0	1,650	Third year of restoration at this location. Planted area (2 acres total) includes 2 sites that parallel Johnson Creek. Intensive invasive weed removal and spraying this past year was completed by the City for Yellow-flag iris, reed canary grass, lesser celandine, Himalayan blackberry, and Japanese knotweed throughout the 5-acre combined area of SW 14th Street locations. NYC students assisted with planting and weeding.
SW 14th Street East (Johnson Creek)	JCWC	140	1.7	0.5	1,200	JCWC in partnership with City of Gresham continued the previous work of FOTs on this site. They used a grant from EMSWCD and a City match to complete the work on the site (Year 2 of 3). Planting of the site was completed on 0.5 acres. Intensive weed management focused on reed canary grass, Himalayan blackberry, and yellow-flag iris. JCWC used volunteer events to plant the site. A contractor was used to complete the herbicide treatments.
Ochioto (Johnson Creek)	AC, NYC, JCWC, Citizen volunteers	445	8.0	2.5	2,500	Multiple sites within the area are under active restoration over different periods of time (1-5 years of restoration activities). A total of 4 sites were planted with a mix of shrubs and trees and live stakes. Intensive weed removal via hand pulling and spraying occurred throughout the project site with a focus on jewel weed, Himalayan blackberry, reed canary grass, garlic mustard, and other weedy species. Area was planted during the JCWC 2019 Watershed Wide event and other citizen volunteer events. Springwater Trail High used the site for Volunteer Day and did some planting and weeding of the site. Site herbicide treatments completed by a contractor.

Project Site	Project Partners	Volunteer Hours	Invasive Removal Acreage	Planting Acreage	Plants Installed	Notes
Wisteria Way at Dowsett (Johnson Creek)	AC, NYC, JCWC, Citizen volunteers	180	1.2	1.2	800	Second year restoration site along Johnson Creek. Site was previously a wisteria and Himalayan blackberry monoculture. Planted winter 2019 with mixture of trees/shrubs and live willow/dogwood stakes. Intensive weed treatment included wisteria, Himalayan blackberry, English ivy, holly, and reed canary grass. Site was used for JCWC 2018 Watershed Wide and other citizen events. Site herbicide treatments completed by contractor.
7th Street Bridge (Johnson Creek)	AC, NWYC, JCWC, Citizens volunteers	220	1.5	1.5	1,400	Second year restoration site along Johnson Creek. Site was previously a blackberry monoculture. Planted winter 2018. Site was planted with a mixture of bare root trees/shrubs and live stakings along the bank. Site was used for Watershed Wide with JCWC and other citizen events. AC and NYC helped weed and plant the site.
Columbia Slough Water Quality Facility (Columbia Slough)	NYC	240	2.0	2.0	1,000	Site is in its first year of restoration. Site was inundated with Himalayan blackberry. Area was cut and treated in summer/fall 2018 and planted winter 2019. NYC students completed hand removal of blackberry and planted the site. Site herbicide treatment completed by contractor.
Kane Road (Kelly Creek)	NYC	120	1.5	1.5	1,750	Restoration activity at this location resulted from a transportation/stormwater project to completed the repair & restoration from an emergency road washout in 2015. Site is in its first year of restoration. Site was planted with shrubs and trees and live stakes. Invasive weeds included reed canary grass, Himalayan blackberry, English ivy, and Scotch broom. NYC students completed hand pulling of blackberry. Site planting and herbicide treatment completed by contractor.

Project Site	Project Partners	Volunteer Hours	Invasive Removal Acreage	Planting Acreage	Plants Installed	Notes
Fairview Creek Headwater Wetlands	AC, RLA, NYC	600	2.0	2.0	700	Ongoing restoration site for reed canary grass control and restoration of headwater wetlands. Restoration has been going for 10 years. Site work consists of spreading mulch and live staking (700 willow/dogwood/black cottonwood) through it to reduce reed canary grass growth. All work completed by RLA students. No herbicide use.
Fujitsu Wetland Mitigation on Birdsdale (Columbia Slough)	NYC	40	4.0	0.0	0	Site is currently under maintenance activities which include weed control using hand pulling and spraying activities. NYC students completed hand pulling of blackberry. Site herbicide treatments completed by contractor.
Miller Creek (Johnson Creek)	NWYC	80	5.0	5.0	1,100	Miller Creek restoration begun in fall 2018 and was planted in winter 2019. Plantings consisted of shrubs and trees. Invasive weed treatments focused on Himalayan blackberry. Site in good shape but required underplanting of conifers in the riparian area and clear cut area. 900 plants were placed in the riparian area and 200 in the clear cut. NYC students helped plant and weed the site. Site herbicide treatments completed by contractor.
Butler Creek Corridor (Johnson Creek)	NYC	120	3.0	0.0	0	Two sites are currently under weed management after 5 years of planting. The area includes the first 2 miles of the creek. These two areas have been under active restoration since 2015. Restoration work includes invasive removal. Weed control used a mix of hand pulling and spraying. Sites are located starting at 14th street, up to Marpol Pond. No herbicide treatments this year.

Project Site	Project Partners	Volunteer Hours	Invasive Removal Acreage	Planting Acreage	Plants Installed	Notes
Border Way (Jenne Creek-Tributary of Johnson Creek)	NYC	120	5.0	0.0	0	Site is currently under active weed management after 5 years of planting activities. Site underwent infrastructure development in 2010 with a wastewater pipeline being installed within the area. To be planted in Winter 2019 and will include 5-years of monitoring. NYC students conducted weed control using hand methods on thistle. Site herbicide treatments done by a contractor.
Brookside (Kelley Creek)	NYC	80	4.0	4.0	1,700	This is the third year of work at this location, which includes invasive removal a through hand pulling and spraying and native plantings. Weed treatment focuses on Canada thistle, scotch broom, Himalayan blackberry, and other weedy species. Native plantings included a mix of shrubs and trees. NYC students hand pulled blackberry. Site herbicide treatments and plantings completed by a contractor.
Jenne Butte	NYC	144	20.0	0.0	0	Included extensive work on removal of garlic mustard through a series of hand pulling events with assistance from NYC students and some herbicide spraying by contractors. Impacted area was not planted this year. Site will continue to receive garlic mustard treatment until it is under control.
Hogan Butte Nature	AC, NYC	300	8.0	0.5	700	This nature park was completed in 2017.
Total		**2,969**	**72**	**23**	**14,500**	

CSWC =	Columbia Slough Watershed Council		
FOT =	Friends of Trees	STHS =	Springwater Trail High
GHS =	Gresham High School	NYC =	Northwest Youth Corps
JCWC =	Johnson Creek Watershed Council	RLA =	Reynolds Learning Academy
AC =	AmeriCorps		

**All spraying was completed by a hired (licensed) City contractor and not included in volunteer hours.

Table 3-4 City of Gresham Pesticide/Fertilizer Applications		
Department	**Product Utilized**	**Quantity**
Facilities Maintenance		
	Ranger Pro (isopropylamine salt of glyphosate)	241 oz.
	Spray-Rite (water safe adjuvant)	38 oz.
	Gallery	32 oz.
	Dimension	10 oz.
	Blue Marking Dye	6oz.
	Freehand 1.75 G (Dimethenamid-P pendimethalin)	316 lbs.
Transportation	Esplanade EZ (indaziflam, diquat dibromide, glyphosate isopropylamine salt)	420 oz.
Wastewater	none	NA
Watershed	Rodeo (isopropylamine salt of glyphosate)	390 oz.
	Vastlan	132 oz.
	Garlon 3A (triclopyr)	23 oz.
Natural Resource Program	Agridex (surfactant)	1005 oz.
	Rodeo (isopropylamine salt of glyphosate)	402 oz.
	Milestone VM Plus (Triclopyr)	65 oz.
	Element 3A (triclopyr)	1750 oz.
	Habitat (isopropylene salt of imazapyr)	101 oz.
Water	Roundup pro (isopropylamine salt of glyphosate and ethoxylated tallowamine)	278 oz.
	Crossbow (2,4-D/Triclopyr, Kerosene)	72 oz.
	SureGuard (flumioxazin)	9 oz.
Parks	Roundup (glyphosate)	1,008 oz.
	Crossbow (2,4-D/Triclopyr, Kerosene)	8 oz.
	Casoron (dichlobenil)	76 lbs.
	Weed and Feed (glyphosate and 2,4-D)	1,050 lbs.
	Element 3A (triclopyr)	48 oz.
	Glystar (isopropylamine salt of glyphosate)	48 oz.
	liquid totals	**3983 oz.**
		(wo adjuvants or dye
	dry totals	**1442 lbs**

Table 3-5: Illicit Discharge Detection & Elimination--Dry Weather Screening Results and Follow-up

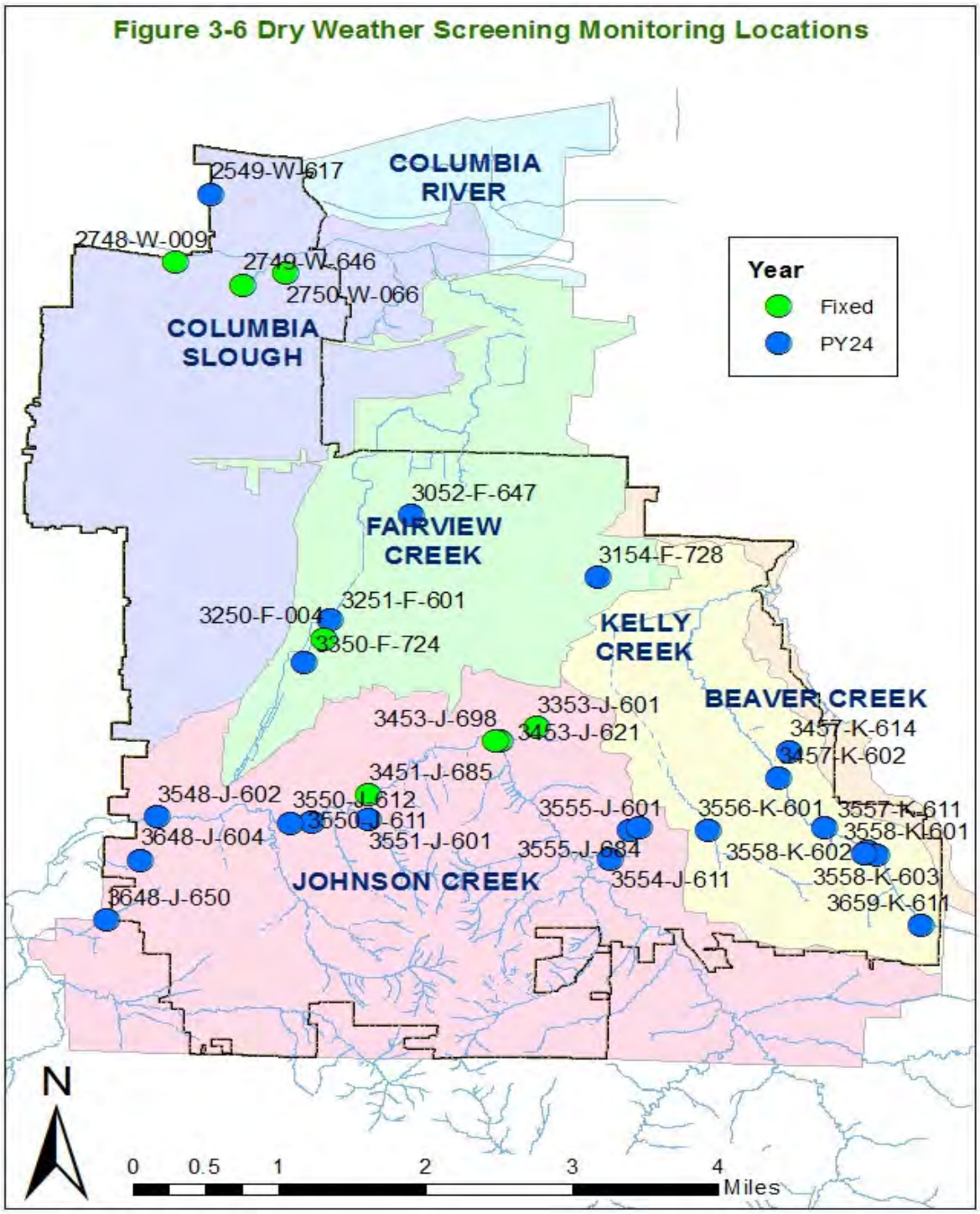
Basin	Site Code	Flow	Odor	Color	Clarity	Float-ables	Deposits/ Stains	Veg Cond	Structural Cond	Biolo-gical	Last Rain	DO (mg/L)	pH	Temp (*C)	Conduc-tivity (µS/cm)	Turbidity (NTU)	Total Chlorine (mg/L)	Ammonia Nitrogen (mg/L)	Observations and Outcome
Pollutant Parameter Action Levels (Table 15 of the Gresham/Fairview Monitoring Plan)												**NA**	**<6.5 , >8.5**	**NA**	**>300 µS/cm**	**>15 NTU**	**>0.5 mg/L**	**>0.5 mg/L**	
Fairview Creek	3052-F-647	No																	
Fairview Creek	3154-F-062	No																	
Fairview Creek	3154-F-728	No																	
Fairview Creek	3251-F-601	No																	
Fairview Creek	3350-F-724	No																	
Kelly Creek	3457-K-602	No																	
Johnson Creek	3555-J-601	No																	
Johnson Creek	3555-J-684	No																	
Kelly Creek	3556-K-60	No																	
Kelly Creek	3557-K-61	No																	
Johnson Creek	3648-J-604	No																	
Kelly Creek	3659-K-61	No																	
Columbia Slough	2748-W-00	No																	
Kelly Creek	3457-K-614	No																	
Johnson Creek	3548-J-602	No																	
Johnson Creek	3550-J-612	No																	
Johnson Creek	3554-J-611	No																	
Kelly Creek	3558-K-602	No																	
Johnson Creek	3648-J-650	No																	
Fairview Creek	3250-F-004	Yes	None	Clear	Clear	None	None	Normal	Normal	None	> 1 week	7.83	7.22	16.3	160.4	4.19	0	0	
Johnson Creek	3453-J-621	Yes	None	Orange	Poor	Foam	None	Normal	Normal	Iron Bacter	> 1 week	6.26	7.43	18.2	250.5	19.4	0	0.5	Readings are similar to past levels; follow-up investigations found groundwater and natural sources not deemed to be illicit discharges
Johnson Creek	3459-J-698	Yes	None	Orange	Poor	Foam	None	Normal	Normal	Iron Bacter	> 1 week	6.52	7.24	18.8	384	32.6	0	1	Readings are similar to past levels; follow-up investigations found groundwater and natural sources not deemed to be illicit discharges
Kelly Creek	3558-K-60	Yes	None	Clear	Clear	None	Rusty sedi	NA	Normal	None	> 1 week	8.36	7.19	18.4	177.2	53.8	1.5	0	Excess water from lawn watering
Kelly Creek	3558-K-601	Yes	None	Clear	Clear	None	None	NA	Normal	None	> 1 week	8.32	7.59	19.2	196.6	5.05	0	0	
Columbia Slough	2749-W-64	Yes	None	Clear	Clear	None	None	Normal	Normal	None	> 1 week	4.47	7.74	20.1	197.3	1.06	0	0	
Columbia Slough	2750-W-06	Yes	None	Clear	Clear	None	None	Normal	Normal	None	> 1 week	4.35	7.33	18.5	255	2.37	0	0	
Johnson Creek	3353-J-601	Yes	None	Clear	Clear	Brown scur	None	Normal	Normal	None	> 1 week	7.05	7.62	17.7	229.5	3.66	0	0	
Johnson Creek	3451-J-685	Yes	None	Orange	Clear	Foam	None	Normal	Normal	Iron Bacter	> 1 week	3.52	6.28	17.7	213.5	16	0	0.5	Readings are similar to past levels; follow-up investigations found groundwater and natural sources not deemed to be illicit discharges
Johnson Creek	3550-J-611	Yes	None	Clear	Clear	None	Rusty sedi	NA	Normal	Iron Bacter	> 1 week	3.3	7.37	23.5	210.8	5.32	0	0	
Johnson Creek	3551-J-601	Yes	None	Clear	Clear	None	None	NA	Normal	None	> 1 week	3.91	7.02	20.1	201.6	2.34	0	0	

Key: Shaded cells are above the action level and staff conducts additional upstream investigation.
NTU=Nephelometric Turbidity Units Clean drinking water is 1NTU or less. 50 NTU would be slightly cloudy.

DO=Dissolved Oxygen Stormwater is typically >5 mg/L which rarely poses a direct threat to instream conditions. This measurement is taken in order to collect pH and conductivity.

Temperature is not associated with stormwater as a pollutant, because typically rain fall does not occur in summer months. However, temperature is measured because release of heated water is a violation of City Code. In general, summer flow in pipes is either associated with high groundwater, incidental releases of potable water such as

Figure 3-6 Dry Weather Screening Monitoring Locations



Cities of Gresham and Fairview Environmental Monitoring Data

Table 3-7: Spill and Illicit Discharge Response					
Category	**Type**	**Watershed**	**Issue**	**Resolution**	**Outreach**
Restaurant greases	Business	Johnson Creek	Staff observation.	Staff provided outreach about proper best practices related to grease container handling and storage. Deminimus sheen flow only.	Courtesy information provided.
Soap/detergents	Business	Kelly Creek	Staff observed and took photos of uncontrolled outdoor soapy car washing occurring at a used car sales facility.	Staff visited and spoke to the owner. Staff sent a courtesy letter. Staff visited again after additional report and sent a violation letter.	Repeated reports resulted in a notice of violation being sent. Inspection staff visited site. No other washing was observed after the threat of a fine.
Sanitary discharge	Business	Columbia Slough	Resident reported sewage in a catch basin. Staff confirmed and also noted several catch basins full of debris.	Private company cleaned all drain. Dye test performed 8/31/18 showed no cross-connection. Conclusion is that sewage was probably dumped in the basin.	Staff informed property manager and owner about SCAP and their responsibility for maintenance of private drainage system.
Auto fluids	Transporting vehicle	Columbia Slough	semi rollover, hazmat deployed	NRC worked with Hazmat and ODOT to clean road, shoulder, catch basin and lateral pipe using VacCon. Oil absorbent booms placed at outfall, changed out for several days. No sheen in Columbia Slough.	NA
Misc.	Residential	Columbia Slough	Resident requests educational info for her HOA which is for a group of floating homes at Big Eddy's Marina for best practices related to houseboat management.	NA	Staff sent her a copy of the DEQ Marina BMP guidance book.
Yard Debris	Residential	Johnson Creek	dumping over fence into public land	Staff sent photos of violation via email City Hall staff phoned the resident using the utility bill information and informed them of the issue.	Issue explained, new resident without full understanding. Agreed to remove the debris and place curbside.

Table 3-7: Spill and Illicit Discharge Response					
Category	**Type**	**Watershed**	**Issue**	**Resolution**	**Outreach**
Auto fluids	Residential	Columbia Slough	Reported that a vehicle was towed from in front of the house and that oil leaked on the road in the process.	Transportation staff inspected road and applied absorbent, but most was in the pavement. No residue present when staff inspected.	Staff mailed an outreach letter advising on spill clean up procedures and protection of road if a vehicle is leaking.
Misc.	Residential	Kelly Creek	Requests assistance with understanding private shared drainage system maintenance and contacting multiple owners	Staff pulled information from Gresham GIS and As-built documents	Staff provided plat maps and notification language to resident to contact the neighbors.
Restaurant greases	Business	Kelly Creek	Spill noted by interns	Interns photographed significant spill at waste grease container. Staff sent letter with cleanup instructions. RP cleaned up grease as of 9/4/18 and agreed to obtain a spill kit for future use.	Spill cleanup information and spill kit recommendations provided to RP.
Soap/detergents	Residential	Fairview Creek	Neighbor reported resident dumping wash water into the street.	Water evaporated, nothing to clean.	Staff provided outreach information to the neighbor about the stormwater system and proper washwater disposal.

Table 3-7: Spill and Illicit Discharge Response					
Category	**Type**	**Watershed**	**Issue**	**Resolution**	**Outreach**
Soap/detergents	Residential	Fairview Creek	RV in yard appears to be discharging to the yard	Code Enforcement inspected. Owner is temp living in RV while home is being renovated. Discharge is sink water onto grass only. No runoff to storm or stream. This is allowable. No violation.	Owner has appropriate method for discharging black water and understands code. No further action needed
Household Waste	Residential	Columbia Slough	Neighbor called to report their neighbor was seen dumping waste into the catch basin.	O&M staff cleaned the catch basin and lateral pipe.	Door hangers were placed by Storm OPS crew at multiple homes as outreach.
Auto fluids	Transporting vehicle	Columbia Slough	Vehicle fluids entering public storm system.	Storm OPS assist COG Trans dept. in cleaning of vehicle fluids from street, applied absorbent and pressure washed street. Also cleaned Catch basin inlet & UIC.	NA
Auto fluids	Transporting vehicle	Columbia Slough	Dump truck towing trailer with excavator overturned on freeway off ramp.	Dump truck with trailer rollover on off ramp from I-84 onto 181st. Fuel & other fluids leaked from equipment onto the street then into the storm system. COG & ODOT directed NRC to clean catch basins, pipe system and place oil booms at outfall.	NA
Oil spill	Unknown	Kelly Creek	Oil sheen in ditch along Hwy 26.	COG staff worked with ODOT on responsibility of clean-up. Due to weather conditions COG staff moved forward with having NRC clean vegetated ditch area and clean Catch basin and cross culvert pipe.	NA
Auto fluids	Residential	Kelly Creek	O&M crew spotted leaking oil under a car during catch basin cleaning work	Stormwater Operations Crew cleaned catch basin, changed SMI filter, and placed absorbent pads and booms on the street. Vehicle was towed and materials were thrown away.	Unable to identify owner-vehicle abandoned.

Table 3-7: Spill and Illicit Discharge Response					
Category	**Type**	**Watershed**	**Issue**	**Resolution**	**Outreach**
Unknown discharge	Unknown	Johnson Creek	Resident reported an oil sheen	Staff investigation revealed sheen from decaying organic matter. NFA.	NA
Restaurant greases	Business	Columbia Slough	Resident reports grease entering drain	Staff found a stain on the pavement, no evidence of flowing or pooling oil. Drips around grease container at Chen's restaurant. This restaurant will be addressed via the business inspection program regarding grease management.	Restaurants are provided with BMP factsheets for training staff.
Soap/detergents	Residential	Fairview Creek	Resident did not have a photo, address or description of house or street.	Staff drove up and down the streets near the reported sighting. It was a dry day and there was no evidence of wash water or soap to be identified.	Resident notified DEQ of concern that Gresham was not taking action. Staff sent an email and photo of the investigation to DEQ. NFA.
Sanitary discharge	Residential	Johnson Creek	Discovered by staff doing field work	Garbage blocking sanitary sewer on a forested slope between homes and Johnson Creek. Sewer overflowed out of manhole. No visible sheen on stream. Wastewater and Stormwater Operations unblocked the pipe and cleaned up the site.	NA
Misc.	Business	Fairview Creek	clogged drain causing flooding of another property	Staff contacted the RP who contracted a plumber and sent cleaning documentation to the city.	NA
Fuel spill	Business	Columbia Slough	Approx. 40 gals of gasoline leaked from utility truck into private catch basin. Station manager says there is an underground containment tank that captured all the spill.	Approx. 40 gals of fuel leaked into a private catch basin. Private sump exists to capture spills. City OPS staff responded and inspected. Private cleaning company performed the clean-up. Nothing entered the public system.	NA

Table 3-7: Spill and Illicit Discharge Response					
Category	**Type**	**Watershed**	**Issue**	**Resolution**	**Outreach**
Concrete	Residential	Beaver Creek	Resident called to let the City know that there was a white substance running down the road and into a catch basin.	City staff determined that the white substance was from drywall joint compound and was partially dry at the time of investigation from falling off a truck. Appeared to be less than a 5-gallon bucket. Transportation operation staff alerted City street sweeper to clean up.	NA
Soap/detergents	Business	Johnson Creek	soapy water	Report of potential washwater dumping at a restaurant. Staff visited but found no visual evidence. Spoke with staff and manager.	Left a BMP fact sheet about handling restaurant fluids.
Oil spill	Unknown	Kelly Creek	Resident reported oil via phone call.	Respond to spill at 1555 SE Orient Dr. Clean up trailing from above address into ROW. Business owner notified of responsibility.	Staff advised business of cleanup actions to take.
Misc.	Business	Johnson Creek	Oil substance purging from PGE vault behind curb. OPS crews worked with PGE to contain. PGE tested to ensure no PCB's leaching. PGE hired NRC to clean street and surrounding area.	Oil substance purging from PGE vault behind curb. OPS crews worked with PGE to contain. PGE tested to ensure no PCB's leaching. PGE hired NRC to clean street and surrounding area.	NA
Misc.	Business	Columbia Slough	Unknown	Dumpster with contaminated water was leaking into catch basin. Now will be hauled off or drained into sanitary sewer.	Owners were eager to comply with stormwater and wellfield regulations.
Oil spill	Transporting vehicle	Columbia Slough	Delivery truck drove over COG catch basin, the grate flipped up and damaged the trucks oil pan, puncturing a hole. Oil leaked on road & into City's storm system.	Truck leaked oil on road and into catch basin. City staff use absorbent materials and contained the spill. Used COG sweeper to try and clean street before heavy rains began. Cleanup company was hired by COG to clean street and storm system. Oil booms placed downstream and at CSWQF.	NA

Table 3-7: Spill and Illicit Discharge Response					
Category	**Type**	**Watershed**	**Issue**	**Resolution**	**Outreach**
Oil spill	Transporting vehicle	Fairview Creek	Emulsified Asphalt trailer being pulled by flatbed truck was involved in a auto accident. The trailer was struck by another vehicle breaking the drain spout off the holding tank. Emulsified asphalt drained out & into the storm system.	Auto accident resulted in emulsified asphalt being released onto road and stormwater system. O&M staff cleaned, the street, the catch basin and the pipe.	NA

Table 3-8: Citizen Complaints*	
Issue and Resolution	
MyGresham App	An application that allows for phone, computer, or voice recorded complaints or concerns to come into the city and be tracked by topic. During 18-19 over 7,000 inquiries and follow ups were in the system. 30 were assigned as water, stormwater, sewer and drainage problems. These issues range from potential illegal dumping or spills, to minor home flooding, neighbor to neighbor drainage, street manhole lids ajar, etc. Other complaints addressed that protect stormwater include piling debris in the right of way, and various improper outdoor storage or garbage/refuse stockpiling.
Fee Reduction	Staff inspect properties and process requests for stormwater fee reductions based upon on-site stormwater management, typically from a resident having a private drywell or disconnected downspout from the city's infrastructure. 11 applications were processed in PY 24.
Pesticide application/water quality/stormwater management concerns	Typical issues that staff assist with include questions about invasive plant control, onsite stormwater management techniques, pesticide safety questions, etc.
Private Facility Maintenance	Staff spend time providing research documents to residents about who owns a particular facility and providing guidance for facility maintenance. When residents have a concern about the condition of a public facility, staff are sent to inspect and respond accordingly.
Minor Drainage	One minor drainage complaint was referred to O&M staff for resolution. An additional drain was installed on the residential street.
*Many citizen calls are also reported in the illicit discharge categories. These combined tables provide a representation of the nature of issues addressed by the stormwater program staff.	

Table 3-9 Examples of Water Quality Education Efforts*

Program/Event and Partners	Watershed of Focus	Number of Contacts	Educational Focus
For Residents			
Backyard Wildlife Habitat home visits	All	75 homes	Consultation visits with homeowners regarding qualifying for "Backyard Wildlife Habitat" status thru a partnership with Audubon/Columbia Land Trust Includes stormwater management, pesticide reduction, and tree education elements among others.
Presentations	All	60 residents	2 Public wildlife talks --one "Who are Gresham's Beavers" and "Wild Gresham" and 2 neighborhood association meetings: backyard habitat program and promotion of watershed councils
JCWC E-bulletin, monthly	Johnson	JCWC e-list to over 700 Gresham contacts; list goes to over 3,000	General watershed education, city public comment meetings/open houses, city natural resource workshops/events.
WMD Fish-Friendly Car Wash program	All	Kits continue to be used at various Gresham certified sites. Total number of contacts unknown.	Soap, grease and heavy metal pollution prevention. Education on use of professional car washes as an environmentally friendly alternative.
JCWC Restoration events in Gresham: Butler Creek, Springwater Woods, Watershed Wide Event, Jenne Creek, and Chastain Creek supported by City of Gresham staff and Gresham's AmeriCorps volunteers and EMSWCD grant funds to restore private parcels.	Johnson	70 volunteers at Jenne Creek and Ochioto for Watershed Wide Event 54 volunteers lead on Earth Day 22 Volunteers lead at Wisteria Lane	Earth Day at Ochioto site 4 acres of restoration managed. 100 trees planted and 1,300 trees and shrubs planted at Ochioto and Jenne Creek at Watershed Wide Event. Assisted city with 1.65 acres, .11 stream miles, 1,500 native trees and shrubs planted 1.58 acres managed at Wisteria Lane wetland planting 200 understory plants.
JCWC wildlife surveys	Johnson	31 volunteers	10 sections of Johnson Creek were surveyed with assistance by Gresham staff. 49 dams and 7 lodges were found. 69% marked as "active".

Table 3-9 Examples of Water Quality Education Efforts*

Program/Event and Partners	Watershed of Focus	Number of Contacts	Educational Focus
Gresham Arbor Day Tree Planting Events (locations at Palmquist, Gradin Sports Park, Wilkes East, Rockwood, N. Gresham and Centennial neighborhoods)	All	Stakeholders and ~150 community members	Education on the value of trees 150 trees planted and care of 45 trees planted in the past.
Wildlife Calendars	All	300 local wildlife calendars distributed to community members	Gresham partnered with a local photographer who donated photos of wildlife and calendar layout to print 300 calendars. 100 calendars were given to Sandy, Columbia Slough, and Johnson Creek Watershed Councils for fundraising and distribution. The calendars feature places to recreate, each council's premier events by month, and a variety of facts on wildlife.
School Outreach	All	~215 students reached	Staff presented on water pollution and wildlife at the following schools: Rosemary Anderson, West Orient Middle, Home School Co-Op science class, Sam Barlow High, MHCC, West Gresham Elementary, and Saturday Academy Spring Break Camp at MHCC.
Columbia Slough Watershed Council--Gresham and Fairview support of Slough School program	Fairview/Columbia Slough	131 programs were delivered to ~3400 students in the Gresham Barlow and Reynolds School Districts serving Gresham and Fairview students.	General education of watershed protection, native plants, ecosystems, wildlife and pollutant prevention measures.
Columbia Slough Watershed Council--*Explorando de Slough* event for LatinX community	Fairview/Columbia Slough	Over 300 attendees.	Gresham/CSWC staff promoted this event at a variety of LatinX businesses within Gresham. General education of watershed protection and pollutant prevention measures.

Table 3-9 Examples of Water Quality Education Efforts*

Program/Event and Partners	Watershed of Focus	Number of Contacts	Educational Focus
City of Gresham and Regional partners with KOIN TV--"Do the Right Thing" ad campaign and website	All	Aired 11 stormwater pollution reduction PSAs 369 times in 9 months resulting in 7M adult impressions from TV/Web/Facebook ads. ~ 4,300 web page visits.	Topics: plant natives & trees, lawn care, avoid pesticides, RV and Spa/Pool disposal, car washing, fall leaf disposal, pressure washing, auto fluid disposal/handling
City of Gresham e-newsletter, City newsletter, DES News to Reuse, social media, and website: greshamoregon.gov/watershed This represents the variety of approaches that Gresham uses for environmental education messaging to the public	All	e-newsletter: ~1220 monthly City news (print): 50,000 X quarterly Facebook: ~10,400 fans Instagram: ~2,143 Twitter: ~2,500 MyGresham: ~2,000 GoCart:~ 1000 (cancelled for PY 25) Entire city website: ~420,000 annually Web Watershed page: ~ 1,000 annually Utility bill stuffer 22,000 print Y.O.U. digital utility bill ~13,368 Next Door: ~16,561 DES webpage: 1,000 annually Water Resources webpage: 500 annually	Pesticide and fertilizer reduction, naturescaping, recycling, sustainability, and private on lot stormwater management education information. Most popular Water Resources webpages by hits: Backyard Habitat Page (~650 unique visits (uv)), Stormdrain Cleaning Program (~360 uv), Stormwater Documents (280 uv), Natural Resources (255 uv)
Interpretive panels and public rain gardens, COG Watershed Division	Johnson/Fairview/ Columbia Slough	Total contacts unknown	All residents: City oversees volunteer stewardship of public demonstration gardens at Vance Garden, Main City Park, Nadaka Park, Hollydale Elementary, St. Henry's Church, Covenant Baptist Church, West Gresham Elementary, Snowcap Charities and Gresham High School.
Rain garden education and outreach to Pleasant Valley on-lot rain garden owners	Johnson	Hand delivered ~30 flyers to new owners in the existing neighborhoods	Lot-level rain garden education
Gresham Green and Clean Summer Event	Johnson	~100 volunteers	Install naturescaping at Hall Elementary
For Businesses			

Table 3-9 Examples of Water Quality Education Efforts*

Program/Event and Partners	Watershed of Focus	Number of Contacts	Educational Focus
City of Gresham GREAT Business E-Newsletter (Has changed name to GREEN Business Program this year)	All	22 issues/yr. (1290 subscribers and 160 newly opened businesses)	Stormdrain Cleaning Assistance Program, General Best Practices, Sustainability
City of Gresham Stormdrain Cleaning Assistance Program (SCAP)--offered to City of Fairview businesses as well (spring and fall)	All	503 Businesses, ~2,700 drains cleaned	Pollution prevention via removal of sediment and debris.
GREEN Business Coffee Hour Outreach	All	~100 Businesses	Staff coordinated 11 business outreach events over the year that featured a variety of sustainable practice talks and idea sharing from peer to peer.
EcoBiz program partnership	All	19 Businesses	Technical assistance in the areas of recycling, energy, waste reduction, and stormwater management for landscaping, automotive, and manufacturing businesses. Two businesses recertified. Coordination/training with new Ecobiz staff and Gresham staff. Ecobiz partners also helped run advertising of certified auto firms and landscaping firms in the Chinook Book.
City of Gresham GREAT Business technical assistance visits (Has changed name this year to GREEN Business Program)	All	~184 Outreach assistance related to stormwater/water concern	7 new certifications and 4 recertifications -48 total GREAT (now called GREEN) businesses. 42 businesses are composting food waste. Supported 38 other businesses with the recertification process. Marked 17 stormdrains. Visits include: education on good housekeeping to limit stormwater pollutants; SCAP drain cleaning referrals; recommendations to fix broken elbows on oil/water separators; maintenance of stormwater facilities; follow spill response procedures; label storm drains; use native plants in landscaping, and reduce pollution from dumpsters.
Summerworks intern restaurant garbage & recycling area best practice inventory	All	200 properties	Inventory revealed 90 with housekeeping issues for follow up outreach that will be conducted over 2018-2020. Outreach materials delivered to over 100 establishments. Five restaurants conducted clean up of their grease area with city guidance.

Table 3-10 (1200-COLS & 1200-Z) in Gresham's Jurisdiction							
Facility Legal Name	**Street Address**	**City**	**Zip**	**DEQ WQ File Number**	**Permit Type**	**DEQ Permit Expiration Date**	**Gresham/DEQ Inspections**
Arnprior Aerospace Portland	17383 NE Sacramento	Portland	97230	125726	Gen. 1200-COLS	Issued July 2018	None.
Portland Specialty Baking	3423 NE 172nd Place	Portland	97230	125551	Gen. 1200-COLS	Issued Jan 2018	Inspected in spring 2018, in compliance.
Albertsons (ABS OR-O DC LLC)	17505 NE San Rafael St	Portland	97230	104374	Gen. 1200-COLS	Issued Aug 2017	WFPP: Inspected in 2018, in compliance.
Denton Plastics Inc.	18811 NE San Rafael	Portland	97230	113915	Gen. 1200-COLS	Issued Aug 2017	WFPP: Inspected in FY 18-19, in compliance.
Pella Vinyl Northwest Inc.	18600 NE Wilkes Rd	Portland	97230	120478	Gen. 1200-COLS	Issued Aug 2017	None.
McDonald & Wetle Inc.	2020 NE 194th Ave	Portland	97230	119535	Gen. 1200-COLS	Issued Aug 2017	DEQ fined in FY 18-19. Staff completed an informal check up on outdoor conditions during summer 2019. Formal inspection planned for FY 19-20.
Owens Corning Foam Insulation, LLC	18456 NE Wilkes Rd	Portland	97230	113153	Gen. 1200-COLS	Issued Aug 2017	WFPP: Inspected in FY 18-19, compliant.
Cascade Corporation	2201 NE 201st Ave	Fairview	97024	100491	Gen. 1200-COLS	Issued Aug 2017	WFPP: Inspected in FY 18-19, compliant.
The Boeing Company	19000 NE Sandy Blvd.	Portland	97230	9269	Gen. 1200-COLS	Issued Aug 2017	WFPP: Inspected in fall 2018; minor corrections, in compliance.

Facility Legal Name	Street Address	City	Zip	DEQ WQ File Number	Permit Type	DEQ Permit Expiration Date	Gresham/DEQ Inspections
Rolling Frito Lay Sales LP	4300 NE 189th Ave	Portland	97230	113285	Gen. 1200-COLS	Issued Aug 2017	None.
International Paper Company	1601 NE 192nd Ave	Portland	97230	107744	Gen. 1200-COLS	Issued Aug 2017	None.
Northwest Retreaders	19004 NE San Rafael	Portland	97230	111262	Gen. 1200-COLS	Issued Aug 2017	WFPP: Conducted site visit in fall 2017 resulting in four storm drains being cleaned and one of the drains being repaired for a broken elbow. DEQ inspected in winter 2018 and required corrections of covering outdoor stored materials, better control of tire shreds, staff training and update of SWPC Plan. WFPP to inspect in 2018/2019
First Student, Inc.	1625 SE Hogan Rd	Gresham	97080	112646	Gen. 1200Z	Issued Aug 2017	DEQ has required stormwater sampling. No inspections this year.
Mutual Materials Company	2300 SE Hogan Rd	Gresham	97080	108092	Gen.1200Z	Issued Aug 2017	Gresham staff required cleaning of catch basins in fall 2017. None.
Teeny Foods	NE 170th	Gresham	97080	126120	Gen 1200Z	Issued June 2019	New permit. Inspect in FY 19-20

Facility Legal Name	Street Address	City	Zip	DEQ WQ File Number	Permit Type	DEQ Permit Expiration Date	Gresham/DEQ Inspections
Pioneer Sheet Metal	19591 NE San Rafael St.	Portland	97230	120503	Gen. 1200-COLS	Issued Aug 2017	DEQ required an updated SWCP Plan in Jan 2018. None.
Wellfield Protection Program (WFPP)	Where noted, these businesses lie within the City's designated wellfield areas and have additional required pollution protection controls to protect future drinking water sources.						

Table 3-11: City of Gresham Water Resource Division--Stormwater Budget Allocation (including staff and operating)

Program Area	PY 24 FY 18-19 (actual)	PY 25 Budget FY 19-20 (projected)
Water Quality: Policy Development Stormwater/Erosion Manual Oversight Permit Compliance Monitoring and Analysis Spill Response Public Education & Outreach Private Water Quality Facility Program Inspection & Enforcement Erosion Control Inspection & Enforcement TMDL Compliance Stormwater Assets Management Training	$ 1,020,008	$ 1,103,632
Natural Resources: Restoration Capital Improvements Master Plan Updates Invasive Species Control TMDL Compliance Green Space Acquisition	$ 349,795	$ 563,924.00
Engineering: Capital Improvements Minor Drainage/Flood Control Public Works Standards Stormwater Manual Oversight Master Plan updates Mapping Stormwater Assets Management Training	$447,302 $5.7M CIP	$544,197 $14.9M CIP
Operations & Maintenance: Systems Maintenance & Repair Equipment Repair & Replacement Spill Response Inspection IMP implementation Mapping Training	$ 2,382,554	$ 3,089,002
Infrastructure Development (Development Engineering, Surveying, Public Works Inspections, Commercial Erosion Control Inspections)	$ 423,500	$ 455,300
City Admin Support, GIS Support, Management, Overhead	$ 2,512,109	$ 2,548,206
Total	**$7.1 M Operating/Salary $5.7M CIP**	**$8.3M Operating/Salary $14.9M CIP***

*Funds are budgeted over a multiyear projection for pipe repair and upsizing ($4M), wetland mitigation($5M) and regional facility enhancements ($400,000) and are not intended to reflect FY 19-20 solely. Kane Road repairs reflected $5.2M to date with another $1M still budgeted for future potential work needed.

“City of Fairview NPDES MS4 Annual Compliance Report, PY 24”

Section Four – City of Fairview Summary of Program Monitoring

Municipal National Pollutant Discharge Elimination System Annual Report for Permit Year 24, Permit #101315, November 1, 2019

Executive Summary

The City of Fairview (City) manages the stormwater system with the goal of reducing pollutants to the maximum extent practicable, preventing flooding and enhancing natural resources. The City is a co-permittee with the City of Gresham on the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit (#101315).

DEQ reissued the Permit on December 30, 2010 requiring the City to modify the SWMP to reflect the new permit conditions. The City's 2011 SWMP incorporates the new Permit conditions and includes best management practices (BMPs) and other elements intended to reduce the introduction of pollutants to the maximum extent practicable (MEP). The Stormwater Management Plan (SWMP) was modified on December 29, 2015 in accordance with Schedule B.6.a of the City's NPDES MS4 permit requirement for updates.

This Permit Year (PY) 24 Annual Report documents implementation activities from July 1, 2018 through June 30, 2019 within the city limits of Fairview. Activities include, but are not limited to, the Best Management Practices (BMP) contained within the Stormwater Management Plan (SWMP). The status of the BMP's and adaptive management are summarized in the table that follows. Table 4-2 (Prioritization Criteria) summarizes the time period July 1, 2018 to June 30, 2019 implementing the 2011 SWMP. Section 2 of this report summarizes the Environmental Monitoring Program that is conducted by the City of Gresham on behalf of the City of Fairview.

As part of the annual adaptive management process, data and feedback were collected from staff responsible for implementing/reporting on each BMP. Factors considered include but are not limited to: Was the BMP measurable goal attained? If not, describe circumstances why, and how progress will be made toward future attainment. For multi-year BMPs, were milestones or timelines met? Can we feasibly refine or improve the BMP to gain efficiency or effectiveness in removing stormwater pollutants? In addition to assessing the implementation of each BMP, staff weighed resource availability and needs related to the overall stormwater program, including consideration of budget/funding, training needs, new technology and available equipment. The annual adaptive management process will inform any alterations to the stormwater program or future modifications to

There are no Urban Growth Boundary expansion areas contiguous to the City of Fairview. Consequently there are no associated concept planning, significant land use changes or significant development activities to report for PY 24.

Stormwater Management Program Budget

City of Fairview Stormwater Management program costs for Permit Year 24 are primarily associated with the Department of Public Works.

Stormwater fund expenditures and anticipated budget allocations incorporate wages and benefits, operating materials, equipment repair/maintenance, water testing (NPDES compliance), storm water disposal (NPDES permitting), improvements, and general administration.

Street fund expenditures and anticipated budget allocations incorporate wages and benefits, operating materials, maintenance services (including IGA with Multnomah County), equipment repair/maintenance, improvements, traffic calming, footpaths and bike trails, and general administration.

The table below outlines fund expenditures for PY 23 and provides the anticipated budget for Permit Year 24.

Table 4-1	2018-2019	2019-2020
Program Area	PY 23 Expenditures	PY 24 Anticipated Budget
Stormwater Fund	$604,123	$751,807
Street Fund	$389,246	$822,607

Section Four: City of Fairview Stormwater Management Plan Summary

BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #1- Illicit Discharge Detection and Elimination							
Illicit Discharge Enforcement	Ongoing	Implement City code sections 13.40.050 and 13.40.110: • City code section 13.40.050 prohibits constructing, using, maintaining, or continuing an illicit connection to the storm drain system. • City code section 13.40.110 discusses enforcement actions for failing to comply with control of non-stormwater discharge. The penalty for a first violation is $250. A penalty of $1,000 may be imposed for each subsequent failure to comply and each day of a continuing violation shall constitute a separate offense. The City may order compliance by written notice that includes performance of monitoring, analysis, and reporting; elimination of illicit connections or discharges; abatement or remediation; payment of fines; and implementation of source control or treatment BMPs. The public works director may also exercise authority to enforce a construction permit or NPDES permit through a stop work order if necessary.	For identified illicit discharges conduct appropriate enforcement actions.	Track number, location and resolution of enforcement actions.	There are (2) total illicit discharge investigations, enforcements and clean up implemented this PY 24; are as follows: 1. 223rd & Sandy-Fairview Meadows Apartments 2. 22867 NE Townsend Way-Connor Manufacturing Services (Area Drain) The enforcement details are as follows: 1. On April 7, 2019 it was discovered someone broke into the construction site and caused heft and vandalism to West Coast Home Solution's property. As a result, pump system was unable to operate which then caused pond to overflow and cause stormwater damage to the neighborhood private property and Tract B directly south of the project site. WCHS immediately called Point Environmental and DEQ and DSL. A report was produced which addressed the impact of discharge. Impacted residents were contacted by WCHS for cooperation. During this timeframe a Stop Work Order was established and lifted once the situation fix satisfied all addressed parties. 2. 22867 NE Townsend way, Fairview, Oregon.- A Connor Manufacturing Services employee reported accidental spill. Xtreme Cut 270 Coolant was being transported out by conveyor out of a new CNC lathe going into a self dumping lift truck hopper. Hopper did not have drain plug and employee was unaware. About 10-15 gallons of gallons made its way onto asphalt and into stormwater area drain. Absorbent socks were used and NRC was called to clean the asphalt and drain.	No modification	Engineering Associate Engineering Technician
Illicit Discharge Field Screening Procedures	Ongoing	Conduct dry weather inspections of accessible outfalls following the procedure in the Stormwater Operation and Maintenance (O&M) Manual to search for, detect, and prevent illegal dumping of pollutants and illicit connections (including connections from sanitary sewers and commercial and/or industrial wastewater sewers) to the storm sewer system. Any dry weather flows identified will be reported to the public works department. Annually update maps as necessary to indicate field screening locations.	Inspect accessible outfalls annually. Maintain maps of outfall inspection locations.	Track number and percent of outfalls inspected.	Violations for - Containment - Chemical Storage - storm runoff - Enforcement in progress. The City of Fairview has identified and mapped a total of 38 outfalls; 9 of which are categorized as high priority outfalls. The 38 total outfalls (100%) were inspected for structural integrity and cleaned for maintenance capacity, this PY 24. The City of Fairview has recently initiated transitioning into producing electronic work orders via Dude Solutions software to achieve greater efficiency in asset management.	No modification	Storm Lead Worker Map Tech
Illicit Discharge Investigation Procedures	1-Jul-12	Implement follow-up actions on a prioritized basis when problems are reported to the public works department. Follow up actions may include sampling for pH, dissolved oxygen, temperature, conductivity, ammonia, and total chlorine. If elevated results or poor water quality are detected, additional samples could be collected for lab analysis. If screening results indicate a potential problem, staff will conduct upstream investigations. The City will revise and document standard operating procedures to address new permit requirements and to document and update the details of the illicit discharge field screening and investigation procedures by June 30, 2012.	Develop revised procedures by July 1, 2012. Until procedures are revised, investigate problems reported within 2 weeks of the initial report.	Track number and type of problems reported, and track problem resolutions. Track status of revisions to procedures.	See BMP 1:1 (Illicit Discharge Detection and Elimination_Enforcement). There are (2) total of IDDE investigations conducted this PY 24, which resulted to enforcement actions. There were no samples taken from all the (2) incidents.	No modification	Engineering Associate

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
Spill Prevention	Ongoing	**Wellhead Protection Program.** The wellhead protection program serves to prevent spills and illegal dumping. The City will work to maintain its existing agreement with the City of Gresham for wellhead inspection in the Columbia South Shore Well Field Wellhead Protection Area and continue to implement wellhead protection throughout Fairview for the protection of groundwater. This program is included here because of its residual benefits to stormwater. **Wellhead Protection - Intergovernmental Agreement.** The City of Gresham and the City of Portland entered into an intergovernmental agreement for the Implementation of the Columbia South Shore Well Field Wellhead Protection Program in 2003 (City of Gresham contract number 1609). This agreement provides protection of the Columbia South Shore Well Field Wellhead Protection Area lying within Gresham and Fairview from contamination by hazardous substances generated at industrial and commercial facilities.	Once during the permit term, conduct inspections of all businesses with regulated quantities in the well field.	Track the number of inspections conducted.	City of Fairview with 3.5 square miles geographic area is located in the Columbia South Shore Wellfield Protection Area. City of Fairview maintains the existing Intergovernmental Agreement with the City of Gresham established in 2003 for inspection of the regulated and monitored industrial/commercial facilities in the Columbia South Shore Wellfield Protection Program, (Zone 1). There were a total of (8) total of regulated industrial/commercial facilities that were inspected during PY 24. Updated and most recent Hazardous Material Inventory Report (HMIR) and Site Plan were required in the notification letters that were sent to both regulated and monitored facilities last October, 2018 with December 31st, 2018 deadline. The reporting is a tool used to evaluate and assess the classification of facilities; either an upgrade or downgrade of being regulated or monitored facilities. The 8 inspected regulated facilities are as follows: • All Storage PH. II - 20918 NE Sandy Blvd., Fairview, OR • Northbrook Village 180-Unit Apartment - 22022 NE Halsey St, Fairview, OR • Fairview Woods 49-Unit Apartment - NE 205th St., Fairview, OR • New Fairview Elementary School - NE Main St., Fairview, OR • Reynolds School District Maintenance Yard - NE Glisan St. FV • Townsend Farms - NE Townsend Way, Fairview, OR • Allwood Recyclers, Inc.- 23001 NE Marine Dr, Fairview, OR • Dirt and Aggregate Interchange, Inc.- NE 212th Ave, Fairview, OR • AGC Heat Transfer, Inc.-3109 NE 230th Ave, Fairview, OR.	No modification	Engineering Associate Engineering Technician City of Gresham (IGA)
		Fairview has adopted Ordinance #12-2002 to protect the Columbia South Shore Well Field Wellhead Protection Area from contamination by hazardous substances by establishing an inspection and enforcement program governing the utilization, storage and transportation of hazardous materials in Fairview's portion of the Columbia South Shore Well Field Wellhead Protection Area. A wellhead inspection is performed at commercial and industrial facilities by the City of Gresham. The entire city, except for a residential area, high school and park, is included in the wellhead			The Columbia South Shore Well Field Protection Program Committee meets quarterly to discuss any changes to code provisions and updates of the Wellhead Protection Program Reference Manual. The Columbia South Shore Wellfield Protection Program Reference Manual was recently updated back in PY 22 by the City of Portland under the supervision of Doug Wise in 2017.		
		Wellhead protection is discussed in City code chapter 16.10. A wellhead protection program reference manual has been developed that establishes the wellhead protection boundaries. The code also includes requirements for reporting, standards, and inspections related to the storage, handling, use and transportation of hazardous materials; penalties for violations and enforcement actions; compliance requirements; building and site permit review and approval requirements; and inspection fees.			There were no reported and recorded spill incident events that took place this PY 24 within the City of Fairview jurisdiction.		
Spill Clean-up	Ongoing	Maintain agreement with the City of Gresham Fire Department for clean-up after structural fires and vehicular accidents to prevent pollutants and debris from being washed into the storm drain system. When there is a hazardous spill or a spill of any other substance that: • Is hazardous in any quantity • Is non-hazardous and greater than 42 gallons on the ground • Or is any quantity that has entered a waterway or a dry well. The City of Gresham Fire Department staff notifies the Oregon Emergency Response System (OERS). OERS then notifies the Oregon Department of Environmental Quality (DEQ) and other state and local agencies that may be affected. The responsible party, if identified, is required to contact an environmental clean-up company and pay for clean-up costs. Examples could include spillage of a 55-gallon-drum of restaurant grease or sanitary sewer overflows on private property, resulting in or having the risk of resulting in, discharges to the public stormwater system. DEQ remains the enforcement authority in these cases. DEQ may choose to enforce against the responsible party under the following conditions: 1) the party has acted maliciously; 2) the party is a repeat offender; or 3) the party has failed to report the incident to DEQ.	Maintain agreement with City of Gresham Fire Department. Investigate spills and provide emergency containment and clean-up as necessary.	Track spill locations, type of materials and response activities.	There are a total of (2) reported spills with in the City of Fairview reported during this PY 23. They are: 1. 181015 Lake Salish Apartments (Parking Lot) 2. Intersection where I-84 EB Off-Ramp Meets 207th (Exit 14) 1. 20699 NE Glisan St, Fairview, OR-Spill was reported on south easternmost parking lot of Lake Salish Apartments. Went on site to take photos and expressed concerns to apartment manager and maintenance guy . City had the apartment tow the car away from the site since the driver was no where to be found once it had been contained with spill kits. 2. 207th and EB I-84 Off-Ramp-Spill was reported to Miguel by City of Gresham employee regarding slick road at the intersection. Miguel want out to the site to take photos and take care of concerns but Multnomah County Sheriff and Firetrucks were already on the scene and had sections closed due to vehicle crash due to the oil slick. This prevented photos from being taken at the site. The spill was cleaned up and taken care of	No modification	Gresham Fire Engineering Associate PW Superintendent

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
		Non-Hazardous Substances Public Works staff will investigate and provide emergency containment and clean-up as necessary. If the responsible party can be identified, he or she is directed to provide containment and site clean-up. If the spill is an imminent threat to waters of the state, the City reserves the right to provide clean-up and bill the responsible party for the work. The responsible party will be invoiced for any response and clean-up provided by the City. Examples include spills or dumping of paint, auto fluids, carpet cleaning wastes or concrete, etc. into catch basins or onto the street. In non-emergency situations, such as dumping of debris on private property near a stream bank, Public Works staff will notify the responsible party, verbally and in writing, and specify a timeframe for clean-up. Staff will refer the incident to Code Enforcement if the responsible party does not respond within the specified time frame. Code enforcement has the authority to issue Abatement Procedures, Violations or Civil Actions.			None, see above report.		
Municipal vehicle monitoring and maintenance	Ongoing	Ensure that materials from municipal vehicles do not leak, spill, or otherwise release contaminants onto roadways or open spaces where they may be washed into storm drains or waterways. Municipal vehicles are inspected by the driver during loading and unloading. If any leaks are observed between the regular maintenance the vehicles are repaired immediately.	Maintain vehicles on a 4-month schedule.	Track status of municipal vehicle maintenance.	All City fleet vehicles (Public Works, Administration and Police departments) were regularly maintained and serviced as scheduled (every 3 months) with auto service providers. No vehicular leaks were detected.	No modification	PW Superintendent Police Dept.
Water Line Flushing	Ongoing	The City periodically flushes all public water lines to ensure the reliability and quality of the domestic water system. To minimize impacts to the storm system, discharges are dechlorinated with the use of ascorbic acid (vitamin C). The flushing crew periodically tests the chlorine levels of the discharge prior to entering the storm system.	Dechlorinate waterline flushing with vitamin C.	NA	No chlorine detected.	No modification	Water Lead Worker

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #2- Industrial and Commercial Facilities							
Industrial and Commercial Facility Inspections	Ongoing	Implement the City's Industrial and Commercial Facility Inspection procedure that is included in the Stormwater Operation and Maintenance Manual to control the discharge of pollutants in stormwater from industrial and commercial facilities to the municipal separate storm sewer system.	Spend one week (40 hours) implementing commercial and industrial inspection procedures.	Track number of facility inspections and follow-up.	There were (3) total of inspected regulated industrial/commercial facilities during this PY 24. Inspection procedures were in conformance and compliance with the City of Fairview's Stormwater Operation and Maintenance Manual and the Columbia South Shore Wellfield Protection Program Reference Manual. See BMP 1.4_Spill Prevention. A total of 39.00 inspection hours (pre-documentation, inspection / photos, final documentation and follow up) were spent this PY 24, which did not meet the recommended 40 hours of inspection requirements. This was due to Fairview Terrace having a gated community and pre-existing dispute between City and Private community did not allow for smooth communication. This matter will be investigated further in order to establish a relationship where the City can gain permission for yearly inspection without obstacles.	No modification	Engineering Associate Engineering Technician
Screen Industries/Businesses and Track NPDES Stormwater Permits	Annually	Annually, the City will review their business license inventory to determine whether any new facilities would be subject to an industrial stormwater NPDES permit. This determination will occur based on a review of the applicable SIC codes related to the 1200-series NPDES permit. If a facility is identified that would be subject to an industrial stormwater NPDES permit, the facility and DEQ will be notified within 30 days. During industrial and commercial inspections staff will obtain a copy of the facility's permit or work with the facility to either obtain a permit, or eliminate the potential for contact of pollutants with stormwater, thereby eliminating the need for a permit. In cases where discharges appear contaminated, the City will send a copy of the inspection report to DEQ.	Annually notify DEQ of any existing or new industrial facilities within the City's jurisdiction that may potentially be subject to an industrial stormwater NPDES permit.	Track number and type of new facilities identified as needing permits.	Screening process of applicable Industrial/Commercial SIC codes reflecting the 1200-series NPDES permit is being conducted during pre-application review process of land use permit. All 1200-C General Stormwater Construction, 5-yr. permit term expired last November 30, 2015. Permit renewals are required for all current permit holders for the next 5 year term (November, 2020). There were nine (13) total of developments with active 1200-C permits during this PY 24 and are as follows: • Northbrook Village 180-Unit Apartment - 22022 NE Halsey, FV • Northbrook Providence Site- 22100 NE Halsey, FV • Fairview Woods 49-Unit Apartment - NE 205th St., Fairview • New Fairview Elementary School - NE Main St., Fairview • Reynolds School District Maintenance Yard - NE Glisan St. FV • (2) Townsend Farms (Lots 6,19,20,21) - NE Townsend Way, Fairview, OR • Allwood Recyclers, Inc.- 23001 NE Marine Dr, Fairview, OR • All-Stor Phase ll - 20918 NE Marine Dr., Fairview OR • Dirt and Aggregate Interchange, Inc.- NE 212th Ave, Fairview OR • Fairview Heights - NE Sandy Blvd, Fairview, OR • Environmental Works-Fairview OR • Mistwood Apartment-Fairview, OR	No modification	Engineering Associate Engineering Technician

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #3 - Construction Site Runoff Control							
Erosion Control Activities	Ongoing	Ordinance 3-1993 adopts an erosion control plan. The ordinance includes an Erosion Control Technical Guidance Handbook (Technical Guidance) that describes regulations, standards and provisions for erosion control as well as fees and penalties for violation. The City enforces the erosion control requirements through a permitting process required for sites disturbing 500 ft^2 or more as discussed under the BMP, Development Review. The Technical Guidance prescribes the following four steps to consider in planning for erosion control: Step 1: Identify Site Characteristics Step 2: Lay Out Preconstruction Plan and Proposed Base Measure Step 3: Measures During Construction Step 4: Post Construction Measures The Technical Guidance also has requirements for single-family homes and duplexes on existing lots of record, private developments construction, private construction in public rights-of-way, public works construction, erosion control measures, inspections and enforcements, and penalties. Non-stormwater wastes on construction sites are also addressed through the City's nuisance ordinance in Chapter 8 of the municipal code.	Inform all construction site owners that have 1 acre or more of disturbed land that they are required to obtain a 1200-C permit from DEQ. Review development sites required to meet City erosion control requirements.	Track the number of erosion control permits issued annually.	Resolution 49-2013 approved compliance order agreement with Environmental Protection Agency to implement reporting requirements and standards associated with the NPDES stormwater permit which includes adoption of the Erosion Prevention and Sediment Control (EPSC) Manual from the City of Gresham (Ordinance 2-2014). The City developed a standard operating procedures for implementation of Erosion and Sediment Control Standards. Total of 4 (2< 1 acre; 2> 1 acre, with 1200-C SW Construction permits) erosion and sediment control permits were issued and inspected during PY 24. Site developments of these 4 permits were less than an acre (43,560 ft.^2) of disturbed earth. 2 sites disturbed of greater than an acre were required to obtain a 1200-C General SW Construction permits from DEQ during the Planning Development Review Process.	No modification	Permit Tech Engineering Associate
Erosion Control Program Training	Ongoing	The Technical Guidance describes regulations, standards and provisions for erosion control as well as fees and penalties for violation.	Provide a copy of the Technical Guidance to all developers and contractors.	N/A	Erosion Prevention and Sediment Control (EPSC) manuals are provided with the erosion control permit applications during the planning development review process.	No modification	Permit Tech Engineering Associate Engineering Technician
Construction Site Inspections	1-Jan-14	The City currently reviews plans and inspects construction sites required to meet the City's erosion control standards using the following procedures: 1. Phone call before inspection to make sure BMPs are in place. 2. Visit every site over 1 acre after the first significant rainfall event and periodically thereafter. If time is limited, the City prioritizes inspections by visiting problem sites first, then visiting facilities that would have the highest environmental effect if the erosion control failed.	Inspect all construction sites required to meet City erosion control standards. Audit or review existing codes to ensure legal and escalation clauses exist for site design, source control, stormwater treatment BMPs, and post-construction BMPs by January 1, 2014.	Track the number of sites that were permitted and inspected. Report the number and type of enforcement actions.	Total of 4 Erosion Prevention & Sediment Control issued permits were inspected during PY 24. All were in total compliance with the City's Erosion Prevention & Sediment Control (EPSC) standards. 1 enforcement action was taken on Fairview Height for construction runoff and resolved. Total of 13 EPSC with 1200-C renewed permits inspections were conducted for PY 23. Current permit holders for 1200-C site developments are monitored during 1/2 an inch. rainfall precipitation. All 1200-C General SW Construction Permits expired last November 30, 2015 and all permit holders were requested to submit a renewed 1200-C permit from DEQ for the next 5-yr. term.	No modification	Permit Tech Engineering Associate Engineering Technician

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #4 - Education and Outreach							
Educational Activities	Ongoing	The City supports community programs, publishes articles in the City newsletter and coordinates with the City of Gresham where appropriate. Current City public education programs that are related to stormwater include educational programs on stormwater quality and the use of nonpolluting alternative garden products, including low-volume uses of pesticides, herbicides, and fertilizers (e.g., household uses). The City also supports the following programs: • Programs with local area schools • Programs with volunteer groups • Columbia Slough Watershed Council activities • Business Assistance Program – Private Catch Basin Cleaning • Spring Clean-up • Metro Hazardous Waste Clean-up • Informational kiosks at City events and City Hall • Doggy Don't waste bag	Publish stormwater related articles in the City newsletter. Support local education programs.	Track newsletter articles produced annually. Track activities conducted to support local education programs.	Large scale public education campaigns: • City of Fairview participated in Public Service Announcement (Do the right thing campaign through an IGA with the City of Gresham) with KOIN 6 TV for broadcast to provide public education services on stormwater quality program. Campaign messages are as follows: • Water Do Your Part • Hot Tub • Fall Lawn Care • Native Plants • Be Rain Ready • Pesticides • Pet Waste • Invasive • RV Waste • Metro Garden • Wildlife Garden • Washing • Cigarette • Hiatus Local Outreach Effort: City of Fairview Public Works staff maintained a booth annually at the "Fairview On The Green" event during the month of September. The booth displays Groundwater/Aquifers, Rainfall/Water Cycle and Surface Water Models and distributes brochures on stormwater education, healthy streams, low impact development programs, use of pesticides, natural lawn care/gardening techniques, erosion control best management practices, water conservation kits and other stormwater related educational subjects. City of Fairview is currently active with the Storm drain Cleaning Assistance Program (SCAP) (schools, apartments, industrial/commercial facilities) and the Backyard Habitat that is hosted by the Audubon Society through the City of Gresham. Other agencies that are affiliated with this program are: City of Wood Village and City of Troutdale.	No modification	Engineering Associate Engineering Technician Development Analyst Event Coordinator
					Educational Outreach Articles: The City of Fairview utilizes the local monthly newsletter "Fairview Point" to provide educational materials related to stormwater. Applicable articles are as follows: 1. Fairview on the Green 2. Prevent Flooding of Fairview Streets Spring Clean Up 3. Illegal Dumping Prevent		
Report Illegal Dumping and Illegal Connections	Ongoing	Continue to facilitate efforts by the public to report illegal dumping, illicit connections, and other incidents. Implement public reporting program as described in the Stormwater Operation and Maintenance (O&M) Manual.	Respond to reports and/or complaints from citizens regarding observed water quality problems.	Track the number of reports/complaints received, and the follow-up actions conducted (including the timing of the follow-up action).	Fairview 3 citizens reported complaints this PY 24 impacting stormwater quality. See details on BMP 1.1 (Illicit Discharge Enforcement) and BMP 1.3 (Illicit Discharge Investigation). All complaints were addressed in compliance and conformance to the City of Fairview Municipal Code, Stormwater Operation & Maintenance Manual and the Columbia South Shore Wellfield Protection Program. The two complaints were resolved as it turned out to be natural bio-degradation causing sheen in Fairview Creek. The second was found to be a spring occurring. The third was concluded that their sewer lateral connection to the main showed I&I which will be resolved during the Interlachen Sewer Project now in PY 25.	No modification	Engineering Associate PW Superintendent Code Compliance

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
Illegal Dumping and Illegal Connections, Public Education	Ongoing	Educate the public about the harmful effects of dumping oil, antifreeze, pesticides, paints, solvents, and other potentially harmful chemicals into storm sewers or drainage channels.	Support recycling and disposal programs; programs that provide convenient means to dispose of materials, existing solid waste management programs. Educate the public regarding the stormwater pollution that results from dumping and illegal connections.	Track the number of public recycling and disposal programs conducted annually.	The Fairview Point contains education outreach articles educating the public about harmful effects of dumping hazardous materials and waste into storm sewers or drainage channels as well as public recycling and disposal. City's website posted contact information as well about reporting illegal dumping and illegal connections (BMP 4.3). Also, staff tracks public complaints, reporting, and inquiry regarding illegal dumping, connections and other issues about harmful effects into our storm drainage system and any receiving water bodies. There are 4 total news letter articles published during PY 24 about educational outreach on healthy environment.	No modification	PW Assistant Metro Recycling
Participate in a Public Education Effectiveness Evaluation	Ongoing	By November 1, 2014, the City of Fairview will coordinate with other local, Phase I jurisdictions to provide information related to an effectiveness evaluation. The effectiveness evaluation information will focus on assessing changes in targeted behaviors and will allow for additional information that can be used in adaptive management of the City's education and outreach strategy.	Coordinate with other local jurisdictions in providing/compiling information regarding a public education effectiveness evaluation by November 1, 2014.		City of Fairview recently submitted "Public Education Effectiveness Evaluation" report (Schedule A.4, NPDES Permit Term 2010-2015) to DEQ last, November 1, 2015. The City has a current IGA with the City of Gresham regarding participation in the ACWA public education effectiveness evaluation. This coordinated effort involves compilation of existing educational survey information and development of conclusions to inform how public education efforts result in behavioral change. DHM Consulting prepared a report in compliance to meet DEQ's intended requirements that pertained to general and targeted findings about evaluation on education effectiveness to public. These targeted findings are focused on pet care, car care, lawn and garden care, and home care which are distinct municipal stormwater pollutant sources where source control activities (like public education) are generally a preferred treatment approach.	No modification	Engineering Associate
Staff Education and Training	Ongoing	Conduct training for new employees and contract employees on stormwater requirements and train existing employees when there is a significant update to the documents used by the City that regulates stormwater pollution control activities.	Provide annual training to personnel involved in stormwater management.		City of Fairview's engineering staff (responsible reporting party) conducted (1) in-house trainings with nine (7) Public Works Operation & Maintenance staff during PY 24 (June 19, 2019). Topics discussed were: Stormwater Management on Facilities / Stormwater Operation & Maintenance Standard Operating Procedures (SOP) / SW Regulatory Compliance / Spill Prevention and What To Do When You Have a Spill Emergency Protocol & Contact Information. The responsible reporting party (Civil Engineering Technician) has attended a total of 6 committee meetings, trainings (actual and on-line), seminars, workshops and trainings during PY 24 (July 1, 2018 to June 30, 2019, which are as follows: 1. 11/14/2018 - ACWA Joint SW/GW?Education Meeting 2. 01/02/2019 - ACWA/DEQ Meeting 3. 02/13/2019 - Stormwater Technology Testing Center Tour 4. 03/06/2019 - BMI Confined Space Entry Safety Awareness 5. 03/13/2019 - ACWA SW Meeting 6. 03/25/2019 - ACWA Meeting 7. 04/09/2019 - MS4 Phase 1 Meeting 8. 08/22-23/2019 - CESCL Training 9. 09/06/2019 - DEQ Permit Renewal Meeting 10. 09/06/2019 - DEQ Permit Renewal Meeting 11. 09/12/2019 - ACWA Meeting	No modification	Engineering Associate PW Superintendent Development Analyst

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #5 - Public Involvement and Participation							
Provide for Public Participation with the annual report, SWMP and Benchmark Submittals	Annually by November 1	Co-permittees must submit an annual report for the portion applicable to its jurisdiction by November 1 of each year. SWMP revisions and pollutant load reduction benchmarks are required for submittal to DEQ at the permit renewal submittal (180 days prior to permit expiration). Prior to submittal of these items, the City will provide the public with an opportunity to comment on the annual report, revisions to the SWMP and proposed pollutant load reduction benchmarks. The documents will be made available on the City's website or through web links. Comments on the documents will be collected and considered and a response to comments will be provided.	Provide for public participation with the annual report, SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline.	N/A	Public review and comments were solicited for public participation through publication on the City's website, Oregonian Newspaper and Oregon Live Media on NPDES MS4 annual compliance report during PY 24. City of Fairview has published the (updated 2015) Stormwater Management Plan (SWMP) and the Pollutant Load Reduction Benchmarks (PLRB) in the City's website, Oregonian Newspaper and Oregon Live Media for public review and comments, last PY 20.	No modification	Engineering Associate

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BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #6 - Post-Construction Site Runoff							
Development Review for Private Projects	Ongoing	Implement and enforce regulations which give legal authority to: 1) require site-drainage designs and systems which address water quality; and/or 2) minimize the total volume of runoff and the peak rate of runoff, where local conditions permit. The City implements these regulations through its Community Development Department and Public Works Department. New development and redevelopment projects are reviewed for conformance to the following existing City regulations: • Fairview Comprehensive Plan, June 2004–provides the guiding direction to protect the natural environment and ensure that long-term growth does not adversely affect the natural resources. • Community Development Department–Land Use and Building Permits; Land Use Code Enforcement. • Title 19, Development Code–requires accommodation and treatment of stormwater runoff and system installation conforming to standards and specifications adopted by the City. • City of Fairview Standard Specifications for Public Works Construction	Review development plans for conformance with standards. Maintain map of private water quality facilities	Track acreage of new and re-development activities requiring stormwater treatment annually. Track the number and type of private water quality BMPs built.	There were **5** total development reviews for private stormwater management facilities and 0 development reviews for agency stormwater management facilities conducted this PY 24. Private Stormwater Management Facilities: • Raze/Haq (Halsey and 207th) • Ceeley Project-Mixed 33 Units/Commercial • Futsal Court-Reynolds School District • AGC Heat Warehouse (230th) • Townsend Lot 19,20,21 There were no development reviews for Agency Stormwater Management Facilities for this PY24 The City has recently updated both municipal and private stormwater facilities on GIS mapping. New polygon layers were created for both municipal and private stormwater facilities and sub-basins. New identified and updated facilities and their attributes were integrated in the City's GIS system, last PY 24. Newly found errors call for re-assessment of previous work for targeted for Summer of 2020 (PY 25-26)	No modification	Permit Tech Engineering Associate Map Tech
					City of Fairview is currently using the 2016 City of Portland's Stormwater Management Manual as a reference for CIP projects, developers, consulting firms and builders. In the future the City is planning to adopt the City of Gresham's SW Management Manual as a reference for guidelines implementation. City of Fairview's Standard Specifications, Standard Drawings and Design Standards (1) document has been updated by Consultant. Fairview's Stormwater Management Plan was updated last 2015 by Consultant as well.		
Review Applicable Code and Development Standards related to Stormwater Management	1-Jan-14		Review and the City's current stormwater treatment standards for compliance with new MS4 NPDES permit language by January 1, 2014. Review the City's current public works development code provisions to ensure that applicable barriers related to the use of Low Impact Development techniques are minimized and eliminated where practicable by January 1, 2014. If necessary, update the City's post-construction stormwater design standards and code language.	Track progress related to the review of the City's code and development standards per provisions in the MS4 NPDES permit.	City of Fairview's Resolution 49-2013 approved compliance order agreement with Environmental Protection Agency (EPA) to implement reporting requirements and standards associated with the NPDES MS4 stormwater permit which includes adoption of the Erosion Prevention and Sediment Control (EPSC) Plan from the City of Gresham. The Erosion Control Plan Review, Inspection and Enforcement Standard Operating Procedures describe the roles and responsibilities of Public Works Inspectors, acting as the lead Erosion Control Inspector with respect to erosion control-related plan review, inspections, documentation, and enforcement and serves as the City of Fairview's Standard Operating Procedure (SOP).	No modification	Engineering Associate Development Analyst

Section Four: City of Fairview Stormwater Management Plan Summary

BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
			Document the City's post-construction inspection and enforcement response procedures by January 1, 2014		Low Impact Development (LID) design methodology and the post-construction stormwater design standards will be investigated to ensure it is in compliance with current public works development code.		
Design Standards for Public Projects	Ongoing	Follow the Standard Specifications for Public Works Construction which requires treatment of stormwater runoff through the use of BMPs. Maintain database of BMPs that are implemented.	Ensure that public works stormwater related projects address treatment of runoff as appropriate.	Number and type of public stormwater quality BMPs built.	The following CIP projects are identified in the project list of the Consolidated SW Master Plan (CSMP) and were designed/constructed this PY 24; are as follows: • GN-4, Hydraulic System Modeling: City of Fairview has awarded the professional services to Cardno for the SW modeling this PY 22. • NE 7th St. (Main to Cedar) Sidewalk, Storm, Street Improvement Project: Grant proceeds from Community Development Block Grant (CDBG). Release order of $66,282.00 was awarded to Fairview as the CDBG funding for this PY 22. The project close-out was May 2017 (PY 22). • NE 7th St. (Main to Depot) Right-of-Way Improvement Project: All County Surveyors (Consultant) has completed the design and construction is also anticipated this PY 22. • Interlachen Sanitary Pipe assessment and evaluation: Pre-design milestone was achieved and construction is anticipated on PY 23. • Capital Project AM-1: Stormwater Infrastructure and Asset Management was newly added CIP capital project to allocate funds annually to establish a stormwater asset replacement and maintenance fund that would be used to replace and maintain public infrastructure. • FV-8a: Resulted in .8 acre of retrofit and reconstruction of the whole Chinook detention pond. • FV9-Fairview Lake Bank Stabilization: Bank stabilization measures and planting to address erosion of bank at Lakeshore City Park (acreage still do be determined as plants needed re-establishments) Will check on current condition by November 1, 2019.	No modification	Engineering Associate Engineering Technician
					Pavement Surface Treatment Maintenance - No Crack Seal and one Slurry Seal projects were completed this PY 24.		

Section Four: City of Fairview Stormwater Management Plan Summary

BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #7 - Pollution Prevention for Municipal Operations							
O&M Plan	1-Nov-13	Use the O&M Plan as a guide for designing and maintaining public storm facilities in order to maximize water quality benefits while maintaining flood capacity. The O&M Plan is intended to help locate and eliminate pollutants and provides a framework for maintaining field inspections records.	Implement the procedures in the O&M Plan. Review the O&M Plan by November 1, 2013, and update as necessary to maximize water quality benefits while maintaining flood capacity.	Track annual changes made to the O&M Plan	There were no new implementation to the procedures in the O&M Plan.	No modification	Engineering Associate PW Superintendent Storm Lead Worker
Right of way–O&M	Ongoing	The City contracts with Multnomah County for road maintenance that includes street sweeping, roadside mowing and brushing and pavement maintenance. The maintenance program is substantially similar to, and at least as protective as, the ODOT Routine Road Maintenance program approved under the current 4(d) limit.	Maintain contract with Multnomah County for road maintenance.		City of Fairview maintains an IGA with Multnomah County for road maintenance activities. Road maintenance activities performed at county roads this PY 24, are as follows: • Catch basins cleaning - two times: September and October. • Roadside mowing - As needed • Roadside brushing - Once or twice a year • Route sweeping - 5 times: Aug, Oct, Dec, Jan and April • Misc. sweeping (snow gravel pick up) • Crack Sealing Pavement Preventive Maintenance - None this PY 24, due to severe weather conditions. • Pavement Marking Restoration - None this PY 24	No modification	PW Superintendent
Street Sweeping	Ongoing	The City contracts with Multnomah County for street sweeping (approximately 6 times per year). The frequency is based on weather conditions, road conditions and funding.	Maintain contract with Multnomah County.	Track frequency of sweepings.	Multnomah County conducted a total of 5 street sweeping this PY 24. Please see details above, Right of Way operation and maintenance.	No modification	PW Superintendent
De-icing and Yard Debris Activities	Ongoing	Sand and gravel are applied to roadway surfaces to assist with traction during inclement weather. The sand is removed and recycled as soon as possible after the snow or ice event. Yard debris is picked up from residents weekly by the City's solid waste provider.	As weather permits, remove gravel when it is no longer needed.	Track processes conducted, sand and gravel were removal.	There was one de-icing event that took place during this PY24: • Once in December, 2018	No modification	PW Superintendent
Native Vegetation	Ongoing	Encourage the use of native vegetation in riparian areas on private and public property to reduce the need for fertilizers, pesticides, and herbicides. Planting and landscape policies for riparian buffer areas encourage use of vegetation (indigenous or imported) that is self-sustainable without the need for pesticides or herbicides. Riparian buffer permits are issued for alterations to the landscape within 50 feet of Fairview Creek, Fairview Lake, the Columbia Slough and their tributaries (City code chapter 19.106).	Review planting plans associated with riparian buffer permits.	Track number of riparian buffer permits.	Applicants for riparian buffer permits were encouraged to use native vegetation that is self sustainable without the need for pesticides or herbicides and to be in compliance with FMC chapter 19.106. This is implemented during the Natural Resources Land Use permitting process. There were (1) dock and (1) riparian buffer permits issued.	No modification	Associate Planner

Section Four: City of Fairview Stormwater Management Plan Summary

BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
Integrated Pest Management	Ongoing	The City encourages use of the Portland Parks and Recreation Pest Management Guide. This guide emphasizes controlling pests that are harmful to the health or aesthetic value of park plantings in a manner that is cost-effective, safe, and environmentally responsible. It is an approach that uses multi-faceted strategies that minimize negative impacts on the environment and on human health. The controls used in this program include manual, mechanical, cultural, biological and chemical methods. Often a combination of methods is used. Examples of Integrated Pest Management include: • Timing of chemical applications to avoid runoff. • Mowing high grass and brush to reduce weed seed crops in rough areas. • Pruning of trees and shrubs to increase air circulation to reduce susceptibility to disease and insect problems. • Appropriate fertilizing to encourage plant health and resistance to pests (i.e., weeds, insects and disease). • Using plants with natural resistance to pests. • Combining turf aeration and over-seeding along with any application of broadleaf weed control to eliminate the cause of the problem, and therefore the need for repeated applications.	Use Portland Parks and Recreation approved chemicals. Incorporate native plants in City planting projects to reduce chemical and fertilizer usage, as well as maintenance requirements.	Track City planting projects that incorporate native plants.	There were total of 27 City of Fairview neighborhood parks and recreation (Total of 443.56 acres) that were treated with approved Portland Parks and Recreation pesticides, this PY 24. In addition, there are 4 Metro parks and 3 Reynolds School District parks. Most of these parks were only treated with a mixture of herbicides as needed for evasive or unwanted native vegetation. Planting native vegetation were also incorporated in the City planting projects and during maintenance activities. Our Parks & Recreation Lead worker had been in total compliance in renewing his chemical applicator license biennially. Also, he attends seminars and trainings related to Parks and Recreation Pest Management presentations.	No modification	Parks Lead Worker
Chemical Applicator Licensing	Ongoing	Maintain staff certification in public pesticide application and follow Oregon Department of Agriculture (ODA) requirements related to herbicide application.	All chemical applications will be supervised by an ODA Certified Applicator.	N/A	City of Fairview's Park Lead Worker is a certified Oregon Department of Agriculture (ODA) chemical applicator who updates his certification on biennial renewal period. All events involving chemical applications are supervised by the Park Lead Worker.	No modification	Parks Lead Worker
Track Municipal Facilities	Ongoing	The City has one facility that includes the treatment, storage or transport of municipal waste. This facility is the Corporation Yard Dumpster. Collection of waste from municipal litter receptacles is collected and stored in a dumpster at this site until the City's garbage hauler collects the waste on a weekly basis. The dumpster has a cover on it and runoff from the site is treated by a structural stormwater filter. No additional stormwater management practices are deemed necessary for this site.		N/A	Public Works crew regularly monitored our Corporation Yard Dumpster facility known as the Crestwood Shop. Collected waste from municipal litter receptacles is collected and stored in this covered dumpster and collected by City's garbage hauler on a weekly basis. Storm run-off from the site is treated with Oil-Water separator / Concrete Structural Containment Vault (filter cartridges by Contech) / Bio-swale Retention Pond. Also, stockpile of construction materials needed for maintenance activities are covered and bermed to protect migration from run-off and wind erosion.	No modification	Engineering Associate
Litter Receptacles	Ongoing	Provide, collect, and maintain litter receptacles in strategic public areas and during major public events to provide disposal of pet waste bags and prevent trash from entering the stormwater system.	Maintain at least one litter receptacle at all public parks greater than 1 acre. Provide collection a minimum of once per week.	Track number of litter receptacles.	City of Fairview conducts public outreach through Fairview Outlook monthly magazine on healthy watershed campaign. One of the topics is about "Dog Waste Scooping" and dog waste bag receptacles are provided in every City Park. There are 43 litter receptacles that are maintained and collected once a week and after significant events.	No modification	Parks Lead Worker

Section Four: City of Fairview Stormwater Management Plan Summary

BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
Sanitary Sewer System Program	Ongoing	Limit wastewater infiltration through the operation, maintenance and construction of the sanitary sewer infrastructure based on existing conditions and projected sanitary flows.	Respond to pump station failures. Perform cleaning of the problem areas of the City's sanitary sewer system. Construct pipe restoration projects to replace defective pipe and reduce inflow and infiltration.	Track identified sanitary problems and resolutions related to the storm system each year.	A high profile sanitary sewer rehabilitation project is under pre-design milestone by a Qualification Based Selected Consultant. It is the Interlachen Sanitary Sewer Pipe Rehabilitation, which is about 50-yr old sewer piping system. Project completion is forecasted on PY 23. There are talks on having Halsey Street Sewer Rehab designed to address I&I issues in PY25	No modification	Engineering Associate Engineering Technician
Consolidated Stormwater Master Plan (CSMP)	Ongoing	The Consolidated Stormwater Master Plan (CSMP) adopted in 2007 combines infrastructure improvements including retrofit opportunities with federal and state water quality requirements. Projects were developed to address water quantity and quality issues, utilizing hydrologic and hydraulic modeling as well as information from the TMDL regulatory program and the NPDES stormwater discharge permit.	Continue to make progress in the implementation of the CSMP.	Track the number, type and watershed location of projects that are completed.	City of Fairview has updated the Consolidated Stormwater Master Plan (CSMP), CIP project list by Brown and Caldwell on January 1, 2019. The following CIP projects are identified in the project list of the Consolidated SW Master Plan (CSMP) and were designed/constructed this PY 24; are as follows: • GN-4, Hydraulic System Modeling: City of Fairview has awarded the professional services to Cardno for the SW modeling this PY 22. • NE 7th St. (Main to Cedar) Sidewalk, Storm, Street Improvement Project: Grant proceeds from Community Development Block Grant (CDBG). Release order of $66,282.00 was awarded to Fairview as the CDBG funding for this PY 22. The project close-out was May 2017 (PY 22). • NE 7th St. (Main to Depot) Right-of-Way Improvement Project: All County Surveyors (Consultant) has completed the design and construction is also anticipated this PY 22. • Interlachen Sanitary Pipe assessment and evaluation: Pre-design milestone was achieved and construction is anticipated on PY 23. • Capital Project AM-1: Stormwater Infrastructure and Asset Management was newly added CIP capital project to allocate funds annually to establish a stormwater asset replacement and maintenance fund that would be used to replace and maintain public infrastructure. • FV-8a: Resulted in .8 acre of retrofit and reconstruction of the whole Chinook detention pond. • FV9-Fairview Lake Bank Stabilization: Bank stabilization measures and planting to address erosion of bank at Lakeshore City Park (acreage still do be determined as plants needed re-establishments) Will check on current condition.by November 1, 2019.	No modification	Engineering Associate PW Superintendent

Section Four: City of Fairview Stormwater Management Plan Summary

BMP Name	Compliance Date	BMP Description	Measurable Goals	Tracking Measures	Status 2018-2019 (PY 24)	Summary and Date of Proposed Adaptive Management Modifications	Responsible Party
SWMP Element #8 -Structural Stormwater Facility Operations and Maintenance							
Inspect and Maintain Public Storm Facilities	Ongoing	Perform inspection and required maintenance as stated in the O&M Plan–clean catch basins and storm pipe, sedimentation manholes, channels and stormwater detention basins in areas where sediment and/or debris tend to accumulate.	Inspect 50 percent of detention lines, ponds, swales and outfalls. Inspect natural stream channels from bridge and road crossing. Clean catch basins and inspect adjacent pipes in one third of the City annually. Clean all water quality manholes (5). Update maps of City Structural Stormwater Facilities.	Track facilities inspected and maintained. Track number of catch basins cleaned. Estimate quantity of sediment removed from catch basins and water quality manholes.	The following are City of Fairview's stormwater quality facilities that are structurally inspected and operationally maintained annually: • Catch Basins: A total of 490 and are divided into 3 zones for maintenance purposes. Zone 1 (189 CBs), Zone 2 (176 CBs) and Zone 3 (125 CBs). Each zone is inspected and maintained annually. Zone 2 was inspected by city staff and cleaned by Multnomah County crew, this PY 24. City of Fairview has an Inter-Governmental Agency (IGA) with Multnomah County with respect to catch basin cleaning; however, inspection and monitoring is done by Fairview O & M staff. City of Fairview's O & M crew reverted from using mobile tablet / iPad for field inspection and monitoring and has completed the structural and maintenance inspections of the following stormwater facilities last PY 23: • Outfalls: 38 total (9 High Priority Outfalls) • Underground Injection Control Facilities (UICs) / Sumps and Sedimentation Manholes: 3 total • Rain Gardens: 4 total • Detention Ponds: 4 total • Flow Control Manholes: 4 total • Vortex Manholes: 3 total • Trash Racks: 3 total • Weir: 1 total • Oil Water Separator: 1 total • Storm Cartridges/Filters: 2 total • Natural Streams • Bio-filtration Swales • Detention Pipelines	No modification	Engineering Associate Storm Lead Worker PW Superintendent Map Tech
Private Water Quality Facilities Inspection and Maintenance	Ongoing	Require plans conforming to the requirements of City of Fairview Standard Specifications for Public Works Construction and City of Portland Stormwater Management Manual at the time of permitting for stormwater facilities related to new private development and redevelopment/retrofitting. Include recording of operations and maintenance plans for stormwater quality facilities.	Ensure new private stormwater facility plans conform to City requirements. Inspect new facilities for conformance to approved O&M plans.	Track number of inspections conducted and inspection results.	"City of Fairview engineering staff participates during pre-application and engineering review routing process for permit acquisition on new private and public agency development and re-development. The reporting staff manages review, comments and feedbacks on plans, specifications, stormwater report and calculations during the review process. It is one of the requirements from the consultants and project owners to include submittal of Operation and Maintenance Agreement (to be permitted with Multnomah County) on stormwater facilities maintenance activities at post-construction period. There are 1 total of new private developments conducted for permitting process this PY 24: are as follows: • Environmental Work-Warehouse There was 1 one total of private regulated stormwater business facilities inspected during PY 23; are as follows: • Knight Transportation	No modification	Engineering Associate

Appendix A—Legal Authority

CITY OF
GRESHAM

1333 N.W. Eastman Parkway | Gresham, OR 97030

October 28, 2019

Oregon Department of Environmental Quality
Water Division
811 S.W. 6th Ave.
Portland, OR 97204

RE: Adequate Legal Authority – 40 CFR 122.26(d)(2)(i)

To Whom It May Concern:

I am a Senior Assistant City Attorney for the City of Gresham and provide legal counsel to the Department of Environmental Services, which includes the Watershed Management Division. In that capacity, I am familiar with the provisions of the Gresham Revised Code that address stormwater issues, including but not limited to GRC Articles 3.20 to 3.60. These code provisions can be accessed at www.greshamoregon.gov/code.

I have reviewed these code provisions and have determined that the provisions provide the City of Gresham with adequate legal authority as required in 40 CFR 122.26(d)(2)(i). Enclosed please find the table that summarizes these requirements and the applicable Gresham Revised Code provisions.

Sincerely,

David J. Ross
Senior Assistant City Attorney

Enclosures

c: Keri Handaly

Adequate Legal Authority		
Permit Reference	**Requirement**	**Code Authority**
Schedule A. 1. Prohibit Non-Stormwater Discharges	…effectively *prohibit non-stormwater discharges* into the MS4 unless such discharges are otherwise permitted under Subsection A.4.a.xii., another NPDES permit or other applicable state or federal permit, or are otherwise exempted or authorized by the Department.	GRC Articles 3.23.010-030 contain the **Discharge of Pollutants** and **Waste Disposal and General Discharge Prohibitions** Regulations which prohibit non-stormwater discharges except as exempted per the City's permit. Non-stormwater discharge is defined as *Any discharge to the public system not comprised entirely of stormwater.*
Schedule A. 4. A. i.	*Prohibit* through ordinance or other regulatory mechanism, *illicit discharges* into the permittee's MS4. [Illicit discharges are any release/spill not composed entirely of stormwater.]	GRC Articles 3.23.020 and 3.24.030-040 contain the Discharge Regulations which prohibit **Illicit Connections and Illicit Discharges, Requirement to Eliminate, Remediate, and Monitor and Analyze.**
Schedule A. 4. A. ii.	Include documentation in an enforcement response plan or similar document… *describing the enforcement procedures* the permittee will implement when an illicit discharge investigation identifies a responsible party.	GRC Article 3.99.040 **Enforcement Tools,** Council Resolution 3041 **Establishing Civil Penalties** and Stormwater Pollution Prevention for Business Standard Operating Procedures and/or Stormwater Monitoring Plan
Schedule A. 4. C. i.	Include ordinances or other enforceable regulatory mechanisms that *require erosion prevention and sediment controls be designed, implemented and maintained* to prevent adverse impacts to water quality and minimize the transport of construction-related contaminants to waters of the State. …the regulatory mechanism must apply to construction activities that result in land *disturbance of 1,000 square feet or greater.*	GRC Articles 3.28.010-015 **Erosion Prevention** contain the requirements for erosion control compliance with the City's Erosion Prevention and Sediment Control (EPSC) Manual and authority to inspect for compliance. The City's EPSC Manual contains the threshold for the implementation of erosion control practices.
Schedule A. 4. C. ii.	Require construction site operators to	GRC Article 3.22.020

	develop erosion prevention and sediment control site plans, and to implement and to maintain effective erosion prevention and sediment control best management practices.	**Stormwater Manuals** and GRC 3.28 **Erosion Prevention** and is described in the EPSC Manual and Article 3.28.015 **Authority to Inspect**
Schedule A. 4. C. iii.	Require construction site operators to *prevent or control non-stormwater waste* that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste.	GRC Article 3.23.025 **Waste Disposal Prohibitions** and 3.22.020 **Stormwater Manuals** and is described in the EPSC Manual
Schedule A. 4. C. vi.	Describe… the *enforcement response procedures* the permittee will implement. The enforcement response *procedures must ensure construction activities are in compliance with ordinances* or other regulatory mechanisms.	GRC Article 3.22.020 **Stormwater Manuals:** enforcement authority is described in the EPSC Manual. Enforcement procedures are described in the EPSC Standard Operating Procedure and utilize 3.99.040 **Fines, Penalties and Other Enforcement Tools**, 750.100 **Stop Work Order**, and 7.50.200 **Abatement**.
Schedule A. 4. F. iii	…co-permittees must develop or reference an enforceable post-construction stormwater quality management manual…	GRC Article 3.22.020 **Stormwater Manuals** and Article 3.24.045 **Stormwater Treatment**
Schedule A. 4. F. v.	Where a new or redevelopment project site is characterized by factors limiting the use of on-site stormwater management methods to achieve the post construction site runoff standards… the Post-Construction Stormwater Management Program must require equivalent pollutant reduction measures, such as off-site stormwater quality management.	GRC Article 3.22.020 **Stormwater Manuals**
	Control through ordinance, permit contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water *discharges associated with industrial activity* and the quality of storm water discharged from sites of industrial activity.	GRC Article 3.23.025 **Waste Disposal Prohibitions** (2) and GRC Article 3.24.010 requires **Compliance with Industrial NPDES and WPCF Permits**
Schedule A. 4. H. 1.	Legal authority to inspect and require effective operation and maintenance [of	GRC Article 3.20.035 **Policy**. (2) Requires stormwater

	stormwater structural facilities]	facilities to comply with the City's development standards and stormwater manual. It further requires that these facilities be located on private properties and shall be owned and maintained by the benefited property, as applicable. GRC 3.20.055 Describes **Private Responsibilities** for stormwater facility maintenance. GRC 3.24.050 **Design and Performance Criteria** Provides the City's right to inspect and require maintenance.
Code of Federal Regulations 122.26 (A)	Control through ordinance, permit, contract or similar means, the contribution of pollutants to the municipal storm sewer by stormwater discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity.	GRC Article 3.30 requires a **Stormwater User Permit.** Includes new connections and the alteration, modification or increase in discharge from existing development. GRC Article 3.23.025 **Waste Disposal Prohibitions** (2) prohibits industrial washing/activities without sufficient BMPs. Article 3.24 requires compliance with **NPDES Stormwater and WPCF Permits.** Article 3.24.021 **Accidental Spill Prevention and Control and 3.24.025 Notification of Spills and 3.24.03-040 Remediation and Monitoring** requires the following: spill containment and kits, non-leaking disposal/recycling/product storage containers, spill prevention plans upon request, notification of spills, elimination of illicit connections, remediation of pollution and restoration of

		property and the monitoring, analysis, and reporting to demonstrate compliance.
(B)	Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer.	GRC 3.23.02 **Illicit Connections and Discharges** GRC 3.23.025 **Waste Disposal Prohibitions** GRC 3.23.030 **General Discharge Prohibitions.**
(C)	Control through ordinance, order or similar means the discharge to municipal separate storm sewer of spills, dumping or disposal of materials other than storm water.	GRC 3.23.010 **Discharge of Pollutants** GRC 3.23.025 **Waste Disposal Prohibitions** GRC 3.23.030 **General Discharge Prohibitions.**
(D)	Control through interagency agreements among the co-permittees the contribution of pollutants form one portion of the municipal system to another portion of the municipal system.	A cooperative monitoring and stormwater management program exists between the Cities of Gresham and Fairview, and Gresham and Multnomah County, based on historical arrangements that were formalized in June 2004.
(E)	Require compliance with conditions in ordinances, permits, contracts or orders; and	GRC Article 3.99 **Enforcement** and GRC Article 7.50 **Stop Work Order and Abatement**
(F)	Carry out all *inspection, surveillance and monitoring* procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.	GRC Article 3.24.040 **Requirement to Monitor and Analyze** Article 3.24.010 **Compliance with Industrial NPDES Stormwater and WPCF Permits** Article 3.24.050 (5) Authority to Inspect Private stormwater facilities **and 3.28.015** Authority to inspect construction sites Article 3.99.020 **Authority to Inspect**

Beery Elsner & Hammond LLP
ATTORNEYS AT LAW

MEMORANDUM

TO: Allan Berry, Public Works Director, City of Fairview

FROM: Heather R. Martin, City Attorney's Office HRM

SUBJECT: Legal Authority to Implement and Enforce NPDES MS4 Permit

DATE: July 19, 2019

Fairview's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit requires it to "maintain adequate legal authority through ordinance(s), interagency agreement(s) or other means to effectively implement and enforce" the permit's provisions. See NPDES MS4 Permit No. 101315 at Schedule D(1).

For the reasons listed in the attached memo from our office dated October 12, 2015 (Exhibit A), the City has maintained and currently possesses legal authority to implement and enforce the NPDES MS4 permit. None of the Fairview Municipal Code (FMC) provisions cited in Exhibit A have changed or been deleted. They are all still in effect as is the intergovernmental agreement the City has with Gresham.

I believe, given that information, the City continues to possess adequate legal authority required by its NPDES MS4 permit.

Please let me know if you have any questions.

HRM/yh
Attachment

Beery Elsner & Hammond LLP

ATTORNEYS AT LAW

MEMORANDUM

TO: Allan Berry, Public Works Director, City of Fairview

FROM: David F. Doughman, City Attorney's Office

SUBJECT: Legal Authority to implement and enforce NPDES MS4 permit

DATE: October 12, 2015

Fairview's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit requires it to "maintain adequate legal authority, through ordinance(s), interagency agreement(s) or other means, to effectively implement and enforce" the permit's provisions. *See* NPDES MS4 Permit No. 101315 at Schedule D(1). You asked our office to confirm that Fairview is maintaining such authority.

As outlined below, we are confident that Fairview has maintained and currently possesses adequate legal authority to implement and enforce the NPDES MS4 permit.

The legal authority must enable the City to:

(a) *Control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity.*

In 2004, the City adopted a comprehensive ordinance to control non-stormwater discharge into its storm sewer system, codified at Fairview Municipal Code (FMC or Code) Chapter 13.40. It applies to "all water entering the city of Fairview storm drain system and generated on any developed and undeveloped property unless specifically exempted." FMC 13.40.020.

The Code, at FMC 13.40.070, regulates industrial discharges into the storm sewer system. It requires an industrial discharger to prove it is complying with any NPDES permit it may possess for industrial discharges and allows the Fairview public works department to inspect a discharger's facility. It grants the public works department the authority to install monitoring devices at a facility to control the quality of storm water discharged from the site and provides for penalties for dischargers who fail to comply with FMC 13.40.070's terms.

For industrial dischargers that are not required to possess a NPDES permit, the City is able to require a reporting form and establish a schedule of monitoring discharges from such facilities.

(b) *Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer*.

The Code specifically prohibits illicit discharges to the system at FMC 13.40.040. Any materials that are not "stormwater" – defined as rain runoff, snowmelt runoff, and surface water and drainage – are not allowed to be discharged into the system, subject to certain exceptions. Penalties may be imposed upon persons illicitly discharging prohibited materials, including fines and suspending access to the system, among others. *See* FMC 13.40.060 and 13.40.110.

(c) *Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water*.

In addition to explicitly prohibiting non-stormwater discharges into the system as discussed above, the Code controls the discharge of materials other than stormwater by utilizing best management practices (BMPs) identified in Fairview's Stormwater Management Plan. *See* FMC 13.40.080. Further, the Code allows for monitoring of discharges at the public works department's discretion. *See* FMC 13.40.070.

The Code also requires dischargers to immediately report spills or disposal of materials other than stormwater and provides for penalties for those who may fail to report such spills. *See* FMC 13.40.100 and 13.40.110.

Other Code sections control the discharge of materials other than stormwater. FMC 19.106.040(B) prohibits alterations to wetlands that would appreciably diminish the values or functions of the water body or wetland. FMC 19.106.040(C)(9) requires construction sites adjacent to wetlands to install erosion/sedimentation control devices between the land area to be disturbed and any wetlands. The devices must conform to the specifications and procedures of the City's erosion control standards

FMC 19.106.040(C)(10) requires developments with significant impervious surface areas adjacent to wetlands to have storm water detention and filtration facilities as part of their approved design. The design of such facilities must conform to the BMPs described in the City's standard specifications for public facilities and related ordinances and technical/guidance manuals.

(d) *Control through interagency agreements among co-applicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system*.

The City has an intergovernmental agreement (IGA) with Gresham, a co-permittee for the duration of the permit term. The jurisdictions agree to minimize their contribution of

pollutants to each others' stormwater systems to the maximum extent practicable through implementation of an approved Stormwater Management Plan. In addition, each jurisdiction may provide services related to water quality protection to the other upon mutual agreement, at full cost.

(e) *Require compliance with conditions in ordinances, permits, contracts or orders*.

All of Fairview's ordinances are subject to enforcement actions, either specific to a given ordinance (e.g. FMC 13.40.110) or generally through a violation citation in municipal court. Land use/development permits routinely condition approval upon satisfying various Code criteria and such permits may similarly be enforced in court. Naturally, if a contract pertaining to stormwater management is breached the City has the right to enforce the contract in court.

(f) *Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and non-compliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.*

Fairview's comprehensive ordinance controlling non-stormwater discharges into its system explicitly:

► Permits the public works director to prohibit a discharger from engaging in activities that are, were or may be a significant source of non-stormwater discharge. FMC 13.40.040(B)(2).

► Prohibits illicit discharges into the system and illicit connections to the system. FMC 13.40.040(A).

► Permits the public works department to suspend MS4 discharge access if necessary to prevent an actual or threatened discharge that will harm the public, the system or the environment. FMC 13.40.060(A).

► Permits the public works department to enter and inspect a discharger's facilities, establish monitoring of the discharge, and require regular reporting to the City. *See* FMC 13.40.070.

For all of the above reasons, we believe the City continues to possess the adequate legal authority required by its NPDES MS4 permit. Please let me know if you have any questions.

Appendix B—Summary of Urban Growth Boundary Activities

July 2018 - June 2019 Planning Permits

File Type	File No.	Date Filed	Project Description & Location			Comments
SD/TR	18-149	4/19/18	Sycamore Vista phased 23-lot subdivision; 6540 SE 182nd			**Approved 8/24/18** **Pleasant Valley**
SD/DRD/TR	18-265	7/13/18	Sunset Village phased 332-lot subdivision; SE 190th & Richey Rd.			**Approved 11/15/18** **Pleasant Valley**
SUR2	19-065	2/25/19	City of Gresham Neighborhood Park – Brookside at Pleasant Valley; SW Tegart Lane between SW 42nd & 43rd			**Approved 5/7/19** **Pleasant Valley**
SD/PH	19-162	5/17/19	Jim Leeper 3-phase subdivision – Brookside North. 200 lots with mix of attached/detached housing; 3284 SW Butler & 7200 SE 190th			**Still in Planning Review** **Pleasant Valley**

No new annexations this year.

Appendix C—City of Gresham Supporting Education and Outreach Documents

REGIONAL COALITION FOR CLEAN RIVERS AND STREAMS

FISCAL YEAR 2018-2019 ANNUAL REPORT

OCTOBER 11, 2019

PREPARED BY:

enviroissues

FY 2018-19 Overview

The Regional Coalition for Clean Rivers and Streams (Coalition) continued its work – initiated in the mid-1990s – of providing coordinated messaging to target behaviors linked to stormwater pollution from residential sources across the Portland metropolitan region. The Coalition continues its brand recognition efforts by consistently using the previously developed *The River Starts Here* creative concept in its various materials. Other Coalition activities in the 2018-19 fiscal year included sponsoring The Big Float 2018 and promoting the Coalition and its messages at community events.

Coalition participants include:

- Clackamas County
- City of Gladstone
- City of Lake Oswego
- City of Milwaukie
- City of Oregon City
- City of West Linn
- City of Wilsonville
- Oak Lodge Water Services
- Washington County
- Multnomah County
- City of Gresham/Fairview
- City of Troutdale

The Coalition continues active discussions with additional future members. Multnomah County transferred its role as Coalition fiscal agent to The City of Gresham for this fiscal year.

This report covers the time frame of July 1, 2018 - June 30, 2019. Supporting materials are included in an appendix.

Background

As identified in the 2013 Strategic Plan, the mission of the Coalition is to collaborate across the Portland metropolitan region to improve watershed health by changing household behaviors, reducing polluted runoff and connecting people with their local waterways. Coalition members leverage their collective resources to conduct outreach to communities across the region with common stormwater information and messages. Coalition activities complement individual agency efforts to raise awareness of stormwater runoff and affect behavior change to prevent pollution and protect regional surface water quality. Coalition activities support commitments relative to state permits under the federal Clean Water Act (administered by the Oregon Department of Environmental Quality), including Total Maximum Daily Load and Municipal Separate Storm Sewer System (MS4) programs, as well as compliance with the federal Endangered Species Act.

Participants in the Coalition represent agencies that serve diverse population sizes from very small (Troutdale) to very large (Clean Water Services). As such the ability to run programs specific to their

community is limited by funding and staffing and the Coalition represents an efficient, effective method to combine stormwater outreach funds. Coalition members continue to provide funding for the collaborative work each fiscal year based on the size of the respective community. The group's funds are shared through Multnomah county acting as the fiscal agent to purchase associated consulting services, advertising, materials, and event sponsorships. By sharing resources, the group is able to reach many thousands of people in the region compared to what entities can typically achieve on their own.

The Coalition targets behaviors from residential sources linked to stormwater pollution prevention. Information and messages used by the Coalition are intended to reach those making purchasing and management decisions about yard care, pets and auto maintenance activities – some of the most likely sources of stormwater pollution from residents. Coalition activities address a range of surface water contaminants, including nutrients and toxics from fast-releasing synthetic fertilizers and pesticides applied to yards and lawns, pollutant loads from car washing soaps, metals and other toxics from vehicle maintenance (and unmaintained vehicles), *E. coli* from pet waste, turbidity from eroded soils and other contaminants from illicit discharges.

Key messages

The Coalition's key messages focus on raising awareness about pollution from stormwater runoff and motivating actions to protect surface water quality through action at the household level. The key messages are:

- Stormwater runoff is now our number one source of water pollution. When it rains, pollutants from your home, car, and garden wash into our rivers and streams.
- Bacteria from uncollected dog waste washes into our rivers and streams. You can protect our water by picking up after your pets.
- Yard and garden products wash into our rivers and streams. You can protect our water by eliminating these products or using compost and slow-release fertilizer.
- Motor oil, solvents, and soaps wash into our rivers and streams. You can protect our water by keeping car-care chemicals out of storm drains, diverting wash water onto your landscaping, and going to a car wash.

FY 2018-19 Activities and Results

Activities during the reporting period focused on continuing to implement the Coalition's strategic plan with messaging and outreach using *The River Starts Here* creative concept, developed in FY 2014-15. This concept was informed by the research summary about stormwater behavior (DHM Research, Feb. 2014) used by Coalition members in partial fulfillment of the FY 2014-2015 MS4 permit requirement to evaluate the effectiveness of permittee's education and outreach program.

Strategic Plan Implementation

A strategic plan, adopted in 2013, continued to guide Coalition efforts during the fiscal year. The Coalition acted on strategic plan goals as summarized below:

Goal 1: Maintain a functioning Coalition

Each year, Coalition members prepare an updated cost sharing approach and budget, which was implemented in 2018-19. Members of the Coalition share their knowledge with the broader regulated

communities in Oregon via the Association of Clean Water Agencies (ACWA). Members have presented on prioritizing public behaviors to maximize pollutant reduction success and on a water pollutant risk assessment database at the past two spring ACWA conferences.

Goal 2: Develop and adapt creative products to fulfill the Coalition's mission

The Coalition continued to use collateral materials developed with *The River Starts Here* creative concept through event promotion and digital advertising, including materials such as temporary tattoos, T-shirts for staffing, message banners for booths, and a large durable watershed map. Coalition members use collateral materials through individual outreach events held throughout the year.

Goal 3: Practice adaptive management

The Coalition is committed to leveraging available resources to maximize impact while setting the stage for a future collaboration among agencies. Total member representation in the Coalition has increased in the past few years, bringing in more regional partners.

The River Starts Here Messaging and Outreach

Community Events and Agency Collaboration

Representatives of member agencies promoted Coalition messages throughout the fiscal year. The Coalition produced collateral materials emphasizing *The River Starts Here* brand and messages to support community events.

The Big Float 2018 – Event Sponsorship and Promotion

The Coalition sponsored and promoted The Big Float 2018 both in-print and online:

- The Coalition advertised The Big Float in English and Spanish on Facebook in collaboration with KOIN TV. This effort achieved over 45,000 impressions and over 400 clicks. Facebook followers increased by less than 100 from July 2017 to 2018.
- The Coalition placed quarter-page print ads in the Portland Tribune twice on behalf of the event. The Portland Tribune reports about 70,000 papers distributed throughout the metro area.

Overall, the event was a major success, attended by about 5,000 people from across the region! See map of attendee ZIP codes in the appendix.

The Big Float 2018 – 'Watershed Village' Tabling

In 2018, the Coalition coordinated with regional watershed councils to conduct outreach together at The Big Float. The 'Watershed Village' was composed of six 10'x10' tents with six partner watershed councils.

The Coalition brought its Raindrop costume that members where to be a mascot, a large aerial map of the watersheds in the area and a mobile photo booth. Additionally, Gresham staff conducted intercept surveys of participants at the event (n=35) testing people's level of concern for local river health (20/35 somewhat to very concerned); awareness that household chemicals cause impacts to rivers (33/35 agreed), whether they believed individuals play a role in water protection (33/35 agreed, two young people were not sure), and their rating of self awareness of things they can do to protect water (13/35 somewhat to very aware, most were middle of the road or less confident about their knowledge).

Figure 1: The Big Float 2018 'Watershed Village' Crew

This was the first year the watershed councils coordinated tabling at The Big Float. Most councils had not been to The Big Float before. In addition to internal uncertainty, event leaders were not sure where to put the Watershed Village. As a result, the councils chose a traditional tabling set-up.

There were some lessons learned with the first Watershed Village. Traditional tabling set-ups are not suited for a beach party atmosphere and the photobooth location turned out to be in an area not heavily trafficked by event goers. The watershed village did not attract much attention as a result, but had approximately 50 visits over the day. The roaming photo booth did not work as well as having a stationary photo booth located with the tables, but took ~115 photos shared more than 1,500 times. The stationary photobooth attracts more visitors. Next year, the group will work with the event organizers for better booth visibility and switch back to a stationary photo booth.

The following groups were represented in the village:

- The Regional Coalition for Clean Rivers and Streams
- Clackamas River Basin Council
- North Clackamas Urban Watersheds Council
- Columbia Slough Watershed Council
- Oswego Lake Watershed Council
- Johnson Creek Watershed Council

- Sandy Watershed Council

In addition, the following groups expressed interest in attending future tabling opportunities:

- Greater Oregon City Watershed Council
- SW Watershed Resource Center

The Clackamas Down the River Cleanup & Lower Sandy River Floating Cleanup – Event Promotion

The Coalition promoted The Clackamas Down the River Cleanup through quarter-page print ads in the Portland Tribune, Clackamas Review, and Sandy Post in late August. Both events were considered a success, engaging several hundred people, in part thanks to the Coalition's promotional partnership.

Additional community events

Oregon City promoted *The River Starts Here* as part of their *Stormwater Starts Here* booth at the Clackamas County Water Education Team event for middle school-aged children. Four hundred and fifty fourth and fifth graders participated in the event, along with 90 chaperones and 32 teachers.

Oak Lodge Water Services shared *The River Starts Here* resources at the Oak Grove Trolley Trail Festival on August 24, 2018. Brochures were distributed to many of the event's ~500 attendees.

WEBSITE: THERIVERSTARTSHERE.ORG

TheRiverStartsHere.org launched in June 2015. The website uses a modern design featuring *The River Starts Here* creative assets (Figure 4). It features an image slider highlighting Coalition messages and includes links to member websites and additional web resources. The website URL was promoted through newspaper and web advertisements.

Summary website analytics for the fiscal year are shown below. Statistics in parenthesis are the difference between last year's and this year's data. Positive changes are shown in green, negative changes are shown in red, and inconsequential changes are shown in lavender. New data points are presented in black.

Total sessions: 1,144 (▼50)

- **Traffic type**
  - Direct: 34% (▼2)
  - Organic (search engine): 17% (▼2%)
  - Referral: 45% (-)
- **Bounce rate:** 85% (▼4%)
- **Time on site:** 36 seconds (▲:01)

Of note, the web traffic is down, due in part to the Coalition's focus on the use of social media to directly engage with the public. In other words, the website URL is not being heavily marketed. The Coalition understands that given its limited budget, it's not realistic to drive people to its website, but rather a more effective approach is to advertise and educate them directly with social media followers and also paid social media advertising in addition to some other digital ad placement with Google AdWords' Display Network. The website primarily acts as a foundation to hold and describe the structure of the

organization and basic stormwater tips with links to the social media posts in a blog format. Maintaining the website also lends credibility to its social media presence.

SOCIAL MEDIA

The Coalition continued posting to its social media channels. As in past years, the Coalition concentrated social media activity in the spring and summer time period when households in the region have an increased interest in yard and garden activities relevant to surface water quality. Social media messages build on existing conversations and connect with organizations around the region. The Coalition delivers its messages on social media following its seasonal messaging calendar and heavily promotes summer river restoration and cleanup events.

Statistics in parenthesis are the difference between last year's and this year's data. Positive changes are shown in green, negative changes are shown in red, and inconsequential changes are shown in lavender.

Facebook page, Clean Rivers and Streams

A summary of Coalition Facebook account use during the fiscal and as of July 1, 2019 is as follows:

- **Total followers ("likes"):** 1,574 (▲403)
- **Weekly organic reach:** 164 (▼50)
- **Posts:** 75 (▲68)

Facebook follower demographics breakdown:

Age	Female	Male	Total by Age
18-24	3%	2%	4%
25-34	12%	7%	19%
35-44	19%	8%	27%
45-54	16%	8%	24%
55-64	9%	4%	13%
65+	8%	4%	12%
Total by Gender	67%	33%	-

Table 1: Facebook followers by age range and gender

Twitter, @riverstartshere

A summary of use during the fiscal year is as follows:

- **Followers:** 1,470 (▲127)
- **Tweets during the period:** 49 (▲38)

Female	Male
67%	33%

Table 2: Twitter followers by gender

Instagram, @theriverstartshere

A summary of Coalition Instagram account use during the fiscal and as of July 1, 2019 is as follows:

- **Total followers:** 4
- **Posts:** 12

Instagram, @riverstartshere

A summary of Coalition Instagram account use during the fiscal and as of July 1, 2019 is as follows:

- **Total followers:** 114
- **Posts:** 4

FY 2018-19 BUDGET

	Services	Investment
Event sponsorship and promotion		
The Big Float 2018	Event Sponsorship	$3,000
	KOIN Facebook Ads – English and Spanish	$800
	Portland Tribune, ¼ page ads x 2	$992
	Photo Booth Rental	$750
Clackamas Down The River & Lower Sandy Floating Cleanup	Portland Tribune, Sandy Post, Clackamas Review, ¼ page ads x 3	$1,905
Johnson Creek, Sandy, Tualatin, and Clackamas River Events	KOIN Facebook Ads	$5,000
Materials		
Print Materials	PDX Printing Services - Vinyl banner of aerial watershed map	$541
Coordination support		
EnviroIssues	Meeting facilitation and member coordination, website maintenance, social media authoring	$3,245
	TOTAL	**$16,233**

Table 3: FY 2018-19 expenditures

OBSERVATIONS

The following observations are based on the results of FY 2018-19 activities and suggest future direction the Coalition may take in its mission of educating the public about the impact of stormwater runoff pollution on the health of our rivers and streams.

The Big Float Watershed Village group reconvened in Spring 2019 to re-imagine the village. The group drafted new plans for The Big Float 2019. Plans included a single 20'x20' tent where watersheds planned fun interactive activities for youth. The Watershed Village would be set up in a central location near other children's activities (e.g. water bounce house) and would provide shade for parents.

The Coalition's website online events calendar continues to attract traffic, but is outdated and will be updated in 2019-2020 to match the social media calendar or be replaced with the Facebook events calendar. The group has limited funding, so streamlining the administration needs is important for efficiency. The latter could include embedding the Facebook events calendar on the website so both information outlets are always synced.

Both the Coalition's **Facebook and Twitter** followings are dominated by women, particularly those 35-54. Engaging this audience may be a priority for the Coalition for the upcoming fiscal year. In contrast, attracting and engaging more men could be the Coalition's focus. A clear goal for 2019-2020 is to consolidate the Coalition's **Instagram** handles and create more original content for all social media platforms. Instagram is particularly important in reaching young people; Most of Instagram's users are 29 and younger.

The Coalition continued to use **low cost web advertising** as part of its campaign in FY 2018-19. Continuing to focus on defined target audiences for messages (male v. female, age level for behavior, etc.) as well as targeting by ZIP code is a primary strategy.

Direct, person-to-person outreach is a powerful way to share information, allows immediate feedback and compliments advertising. However, not all of the agencies have staffing to support event attendance and of the events they attend, they generally have to promote their own agency specific branding and programs (although still stormwater pollution reduction focused). As such, the Coalition is satisfied with its strategy to do the one large festival together and combine efforts with local watershed councils.

Outreach to local youth is conducted in a variety of ways by members of the Coalition. Connecting students to local rivers and developing an appreciation of natural resources and the protection of our water is one of the Coalition's goals in addition to focusing on their parents' home maintenance and yard care potential impacts. The Coalition will explore ways to engage youth in 2019-2020.

APPENDICES

A. The Big Float 2018 – Attendee ZIP Code Map
B. The Big Float 2018 – KOIN Ads Tearsheets
C. The Big Float 2018 – WES Advertisement
D. TheRiverStartsHere.org Analytics
E. Facebook Analytics
F. Twitter Profile
G. Instagram Profile - @theriverstartshere
H. Instagram Profile - @riverstartshere
I. Budget Detailed Breakdown
J. American Social Media Use by Demographic, Pew Research Center

Big Float Attendance (2012-2018)

Limited Access
Highway
Major Road
Local Road
Portland Metropolitan Area Counties
Major rivers and water bodies

Zip Code

AverageYear

0-10 Persons
11-30 Persons
31-60 Persons
61-101 Persons
Portland Area Cities

Other Locations Not Included in Map	Average/Year
CA	28
WA	23
All Other States/ International	39

CITY OF GRESHAM

0 10,000 20,000 Feet

Date: 9/6/2018

Path: Y:\Inter-Departmental\MapsAndData\Projects\2018\09\35641\BigFloat2018.mxd

Big Float 18 –how’d we do?

Facebook

KOIN TV Ad Placements $600 Eng, $200 Sp

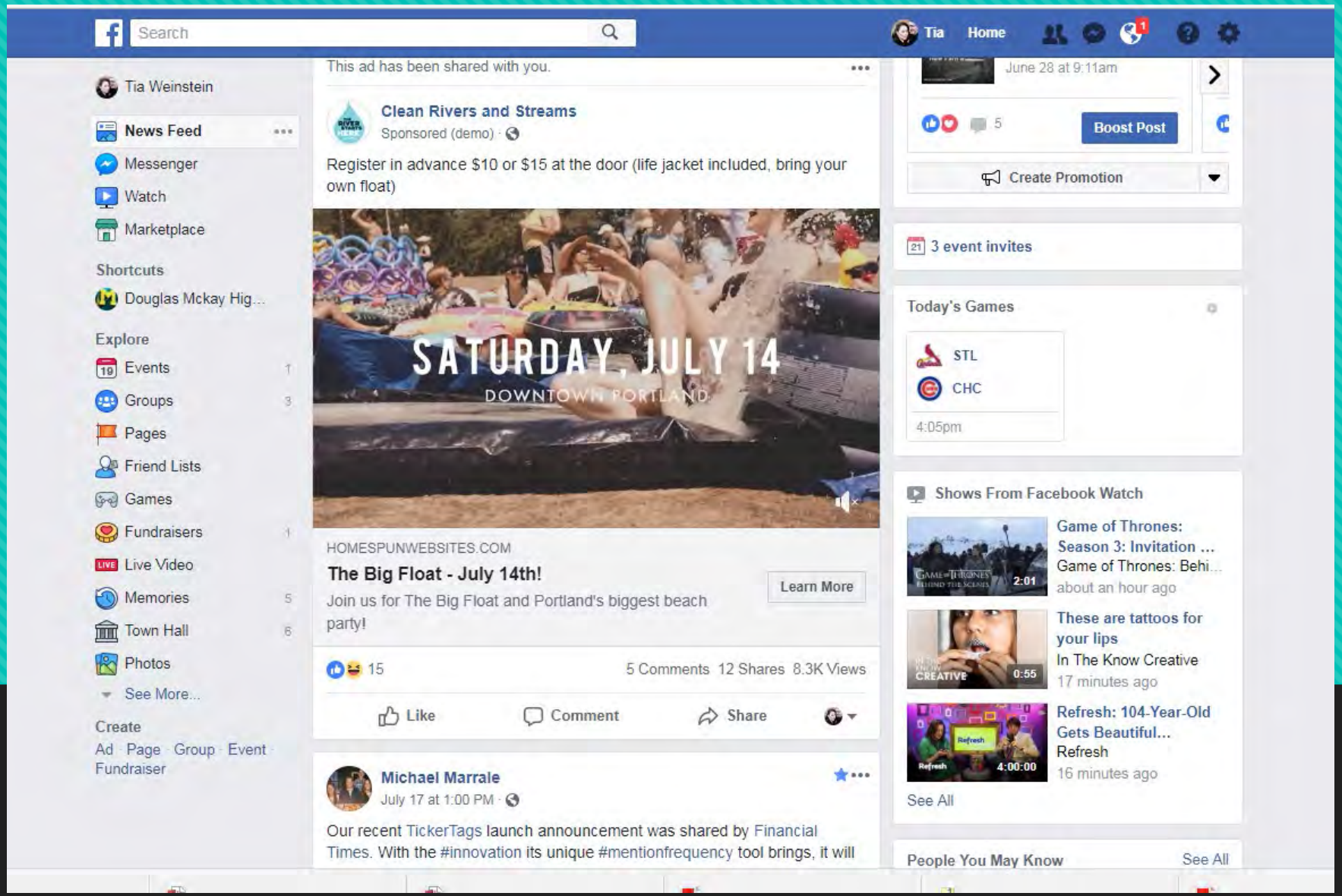
45,147	399	0.884 %	$ 2.005	$ 800.00
IMPRESSIONS -2.49%	CLICKS	CTR	AVERAGE CPC	TOTAL COST

PERFORMANCE BY CAMPAIGN

Campaign	Impressions	Clicks	Page Likes	Post Likes	Video Views	CTR	Reach	Average CPC	CPV	Total Cost
(id:136354) Social - Facebook Video Views Spanish - Facebook Video Views (687232)	11814	133	0	12	2327	1.126%	9635	$1.50	$0.09	$200.00
(id:136354) Social - Facebook Video Views English - Facebook Video Views (687231)	33333	266	0	15	8124	0.798%	28890	$2.26	$0.07	$600.00

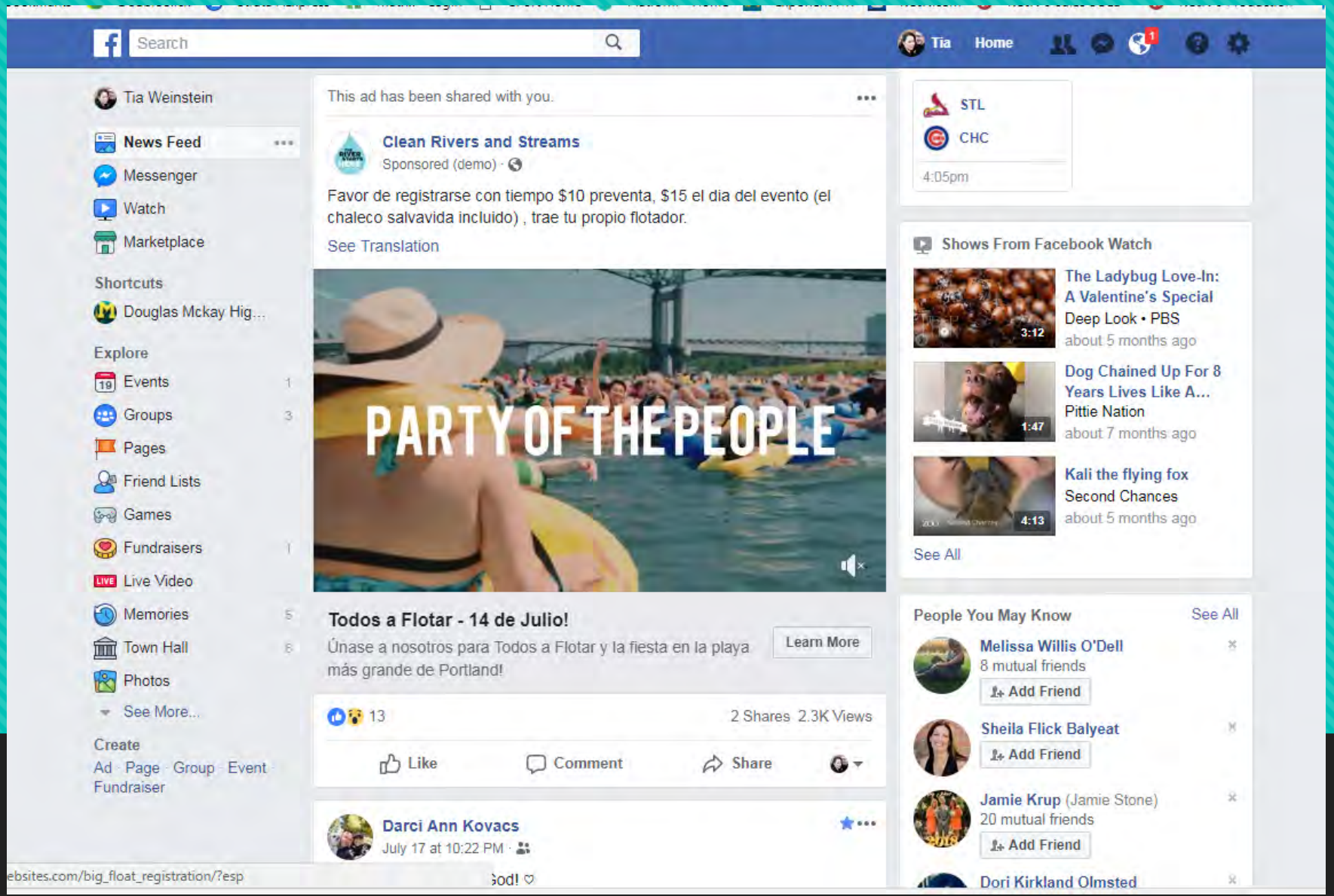
PERFORMANCE BY CREATIVE

Title	Image	Body	Impressions	Clicks	Page Likes	Post Likes	Video Views	CTR	Reach	Average CPC	CPV	Total Cost
The Big Float - July 14th!		Register in advance $10 or $15 at the door (life jacket included, bring your own float)	33333	266	0	15	8124	0.798%	28890	$2.26	$0.07	$600.00
Todos a Flotar - 14 de Julio!		Favor de registrarse con tiempo $10 preventa, $15 el dia del evento (el chaleco salvavida incluido) , trae tu propio flotador.	11814	133	0	12	2327	1.126%	9635	$1.50	$0.09	$200.00



Clean Rivers and Streams

The Big Float – English ad 7/12/18



hyfn LOCAL

Clean Rivers and Streams

The Big Float – Spanish ad 7/12/18

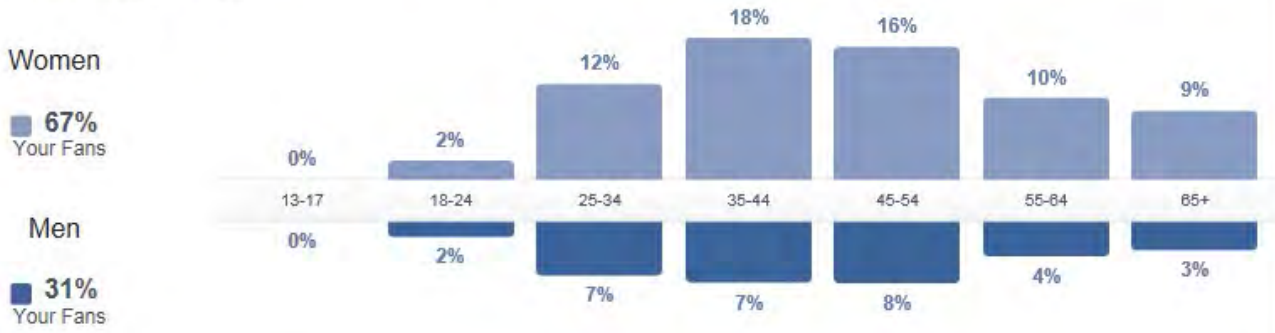
Big Float

- 311 Page Views
- 30,000 People Reached in July
- 11,000 Video Views
- 500 Engagements
- But no increase to our followers this year
- *We need to start doing ads to increase our followers

Clean Rivers Fan Summary

Your Fans | **Your Followers** | **People Reached** | **People Engaged**

Aggregated demographic data about the people who like your Page based on the age and gender information they provide in their user profiles.



Country	Your Fans
United States of America	1,121
India	5
Mexico	5
Australia	4
Canada	4
United Kingdom	4
Indonesia	4
Jordan	4
Brazil	3
Germany	2

City	Your Fans
Portland, OR	406
Vancouver, WA	62
Beaverton, OR	54
Gresham, OR	35
Hillsboro, OR	24
Clackamas, OR	22
Oregon City, OR	21
Tigard, OR	21
Milwaukie, OR	16
Lake Oswego, OR	15

Language	Your Fans
English (US)	1,103
English (UK)	34
Spanish	18
Arabic	3
Indonesian	3
Spanish (Spain)	2
French (France)	2
Japanese	2
Portuguese (Brazil)	2
Turkish	2

See More

Salem, OR	12
Wilsonville, OR	12
Canby, OR	11
Eugene, OR	11
Sandy, OR	10
New York, NY	7
Aloha, OR	7
Sherwood, OR	7
Longview, WA	7
Tulatin, OR	7
Bend, OR	6
Forest Grove, OR	6
Keizer, OR	6
Molalla, OR	6
West Linn, OR	6
Kelso, WA	6
Washougal, WA	6
Estacada, OR	5

People Reached with our page

- Women are more likely to be fans (67%), but we are reaching more men with content (58%)

City	People Reached
Portland, OR	18,488
Beaverton, OR	2,081
Gresham, OR	2,049
Clackamas, OR	1,014
Oregon City, OR	962
Salem, OR	914
Tigard, OR	790
Milwaukie, OR	403
Wilsonville, OR	393
Hillsboro, OR	380
Sherwood, OR	349
Tulatin, OR	335
Troutdale, OR	301
Lake Oswego, OR	237
Aloha, OR	224
Vancouver, WA	213
Fairview, OR	150
Forest Grove, OR	119
Seattle, WA	68
Happy Valley, OR	65
Canby, OR	62
Cornelius, OR	62
Wood Village, OR	59
West Linn, OR	57
Honolulu, HI	55
Damascus, OR	52
Redland, OR	45
Cedar Mill, OR	42
Battle Ground, WA	40
Newberg, OR	39
Lake Shore, WA	34
King City, OR	32
Stafford, OR	32
Corvallis, OR	31
Indianapolis, IN	30
Eugene, OR	30
Keizer, OR	30
Manchester, England,...	29
Bend, OR	28
Gladstone, OR	28
Phoenix, AZ	28
Los Angeles, CA	27

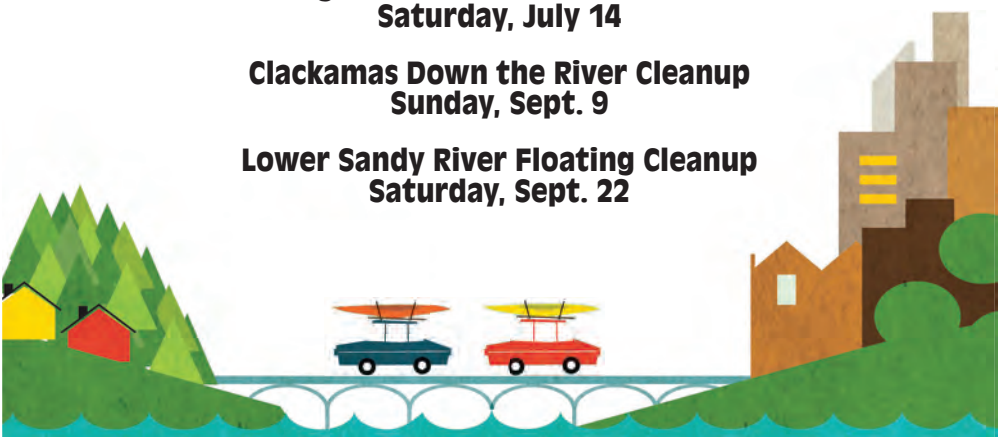
THE RIVER STARTS HERE

Summer River Events

The Big Float on the Willamette River
Saturday, July 14

Clackamas Down the River Cleanup
Sunday, Sept. 9

Lower Sandy River Floating Cleanup
Saturday, Sept. 22



Stormwater runoff is now our number one source of water pollution. When it rains, pollutants from your home, car and garden wash into our rivers and streams. Learn how you can help protect our water at clackamas.us/wes

WATER ENVIRONMENT SERVICES

theriverstarshere.org

Traffic Type	Users	New Users	Sessions	Sessions	Bounce Rate	Avg. Session Duration
Referral	504	502	510	45%	83%	37.84
Direct	350	349	390	34%	92%	30.55
Organic Search	158	153	194	17%	81%	35.76
Social	29	27	31	3%	87%	75.45
Display	19	19	19	2%	79%	80.58
TOTALS	1060	1050	1144	-	86%	36.73

Date of Data Export	Lifetime Total Likes	Daily Page Engaged Users	Weekly Page Engaged Users
43,647	1,574	23	279
28 Days Page Engaged Users	**Daily Total Reach**	**Weekly Total Reach**	**28 Days Total Reach**
1,480	764	27,377	118,516
Daily Organic Reach	**Weekly Organic Reach**	**28 Days Organic Reach**	**Daily Paid Reach**
32	543	2,892	737
28 Days Paid Reach	**Weekly Paid Reach**	**Daily Viral Reach**	**Weekly Viral Reach**
116,844	27,031	21	245
28 Days Viral Reach	**Daily Total Impressions**	**Weekly Total Impressions**	**28 Days Total Impressions**
2,392	819	32,519	238,047
Daily Organic impressions	**Weekly Organic impressions**	**28 Days Organic impressions**	**Daily Paid Impressions**
40	1,089	5,843	776
Weekly Paid Impressions	**28 Days Paid Impressions**	**Daily Viral impressions**	**Weekly Viral impressions**
31,411	232,122	26	334
28 Days Viral impressions	**Daily Logged-in Page Views**	**Weekly Logged-in Page Views**	**Daily Logged-in Page Views**
3,195	3	19	2
Weekly Logged-in Page Views	**Daily Reach Of Page Posts**	**Weekly Reach Of Page Posts**	**28 Days Reach Of Page Posts**
10	764	27,377	118,516
Daily Organic Reach of Page posts	**Weekly Organic Reach of Page posts**	**28 Days Organic Reach of Page posts**	**Daily Paid Reach of Page posts**
32	543	2,892	737
Weekly Paid Reach of Page posts	**28 Days Paid Reach of Page posts**	**Daily Viral Reach Of Page Posts**	**Weekly Viral Reach Of Page Posts**
27,031	116,844	21	245
28 Days Viral Reach Of Page Posts	**Daily Total Impressions of your posts**	**Weekly Total Impressions of your pos**	**28 Days Total Impressions of your posts**
2,392	816	32,500	237,965
Daily Organic impressions of your posts	**Weekly Organic impressions of your post**	**28 Days Organic impressions of your p**	**Weekly Total get direction click count pe**
40	1,089	5,843	
Weekly Paid impressions of your posts	**28 Days Paid impressions of your posts**	**Daily Viral Impressions Of Your Posts**	**Weekly Viral Impressions Of Your Posts**
31,411	232,122	26	334
28 Days Viral Impressions Of Your Posts	**Daily Total Consumers**	**Weekly Total Consumers**	**28 Days Total Consumers**
3,195	13	217	1,256
Daily Page Consumptions	**Weekly Page Consumptions**	**28 Days Page Consumptions**	**Daily Negative Feedback**
15	270	1,508	
Weekly Negative Feedback	**28 Days Negative Feedback**	**Daily Negative Feedback From Users**	**Weekly Negative Feedback From Users**
	1		

28 Days Negative Feedback From Users	Daily Total Organic Views	Weekly Total Organic Views	28 Days Total Organic Views
1	9	88	719
Daily Total Promoted Views	**Weekly Total Promoted Views**	**28 Days Total Promoted Views**	**Daily Total Organic 30-Second Views**
128	11,479	96,407	1
Weekly Total Organic 30-Second Views	**28 Days Total Organic 30-Second Views**	**Daily Paid 30-Second Views**	**Weekly Paid 30-Second Views**
14	138	19	2,016
28 Days Paid 30-Second Views	**Daily Total Video Views**	**Weekly Total Video Views**	**28 Days Total Video Views**
14,211	137	11,567	97,126
Daily Total Auto-Played Views	**Weekly Total Auto-Played Views**	**28 Days Total Auto-Played Views**	**Daily Total Clicked Views**
135	11,538	97,049	2
Weekly Total Clicked Views	**28 Days Total Clicked Views**	**Daily Video Repeats**	**Weekly Video Repeats**
29	77	2	835
28 Days Video Repeats	**Daily Total Unique Video Views**	**Weekly Total Unique Video Views**	**28 Days Total Unique Video Views**
31,294	135	10,732	65,832
Daily Total 30-Second Views	**Weekly Total 30-Second Views**	**28 Days Total 30-Second Views**	**Daily Auto-Played 30-Second Views**
20	2,030	14,349	19
Weekly Auto-Played 30-Second Views	**28 Days Auto-Played 30-Second Views**	**Daily Total Clicked 30-Second View**	**Weekly Total Clicked 30-Second Views**
2,022	14,312	1	8
28 Days Total Clicked 30-Second Views	**Daily Total 30-Second Repeats**	**Weekly Total 30-Second Repeats**	**28 Days Total 30-Second Repeats**
37		97	1,523
Daily Total Unique 30-Second Views	**Weekly Total Unique 30-Second Views**	**28 Days Total Unique 30-Second V**	**Daily Total: total action count per Page**
20	1,933	12,826	
Weekly Total: total action count per Page	**Daily Total website click count per Page**	**Weekly Total website click count p**	**Daily Total website click count per Page**
Weekly Total website click count per Page			

Home

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The River Starts Here is dedicated to educating the public about the impact of stormwater runoff pollution on the health of our rivers and streams

Portland/Vancouver Metro Area theriverstartshere.org Joined April 2009

1,684 Following **1,470** Followers

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12 posts 3 followers 0 following

River Cleaner

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Clean Rivers and Streams

We are a coalition of public agencies working to enhance appreciation of Oregon's rivers, and protect our water for people, pets, and wildlife.

POSTS IGTV SAVED TAGGED

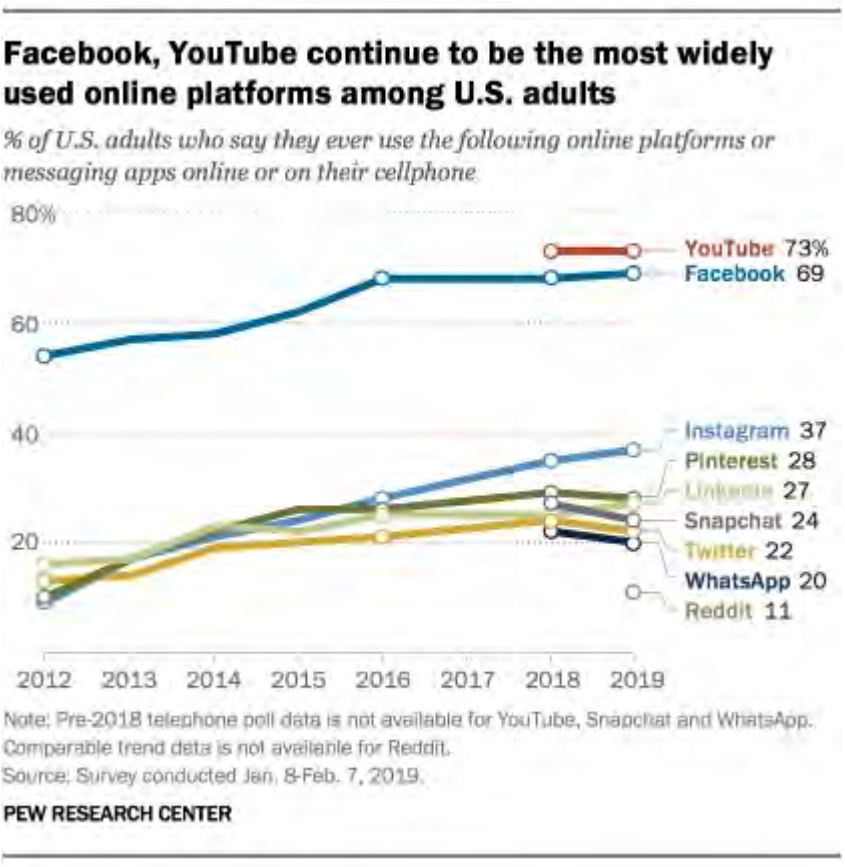
FACTTANK
NEWS IN THE NUMBERS

APRIL 10, 2019

Share of U.S. adults using social media, including Facebook, is mostly unchanged since 2018

BY ANDREW PERRIN AND MONICA ANDERSON

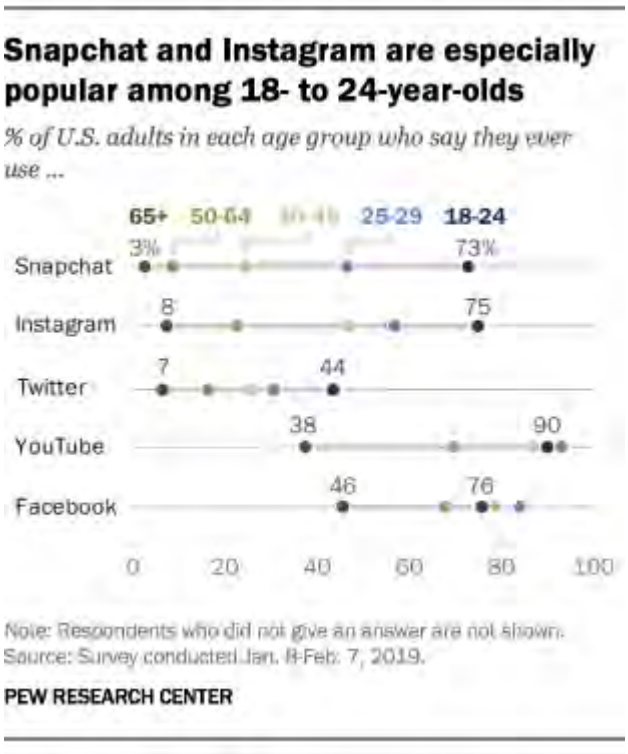
The share of U.S. adults who say they use certain online platforms or apps is statistically unchanged from where it stood in early 2018 despite a long stretch of controversies over privacy, fake news and censorship on social media, according to a new Pew Research Center survey conducted Jan. 8 to Feb. 7, 2019.



More broadly, the steady growth in adoption that social platforms have experienced in the United States over the past decade also appears to be slowing. The shares of adults who say they use Facebook, Pinterest, LinkedIn and Twitter are each largely the same as in 2016, with only Instagram showing an uptick in use during this time period. (There are no comparable 2016 phone survey data for YouTube, Snapchat, WhatsApp or Reddit.)

Facebook – which recently celebrated its 15th anniversary – remains one of the most widely used social media sites among adults in the U.S. Roughly seven-in-ten adults (69%) say they ever use the platform. (A separate 2018 Center survey showed Facebook use among U.S. teens had dropped in recent years.) YouTube is the only other online platform measured that matches Facebook's reach: 73% of adults report using the video sharing site. But certain online platforms, most notably Instagram and Snapchat, have an especially strong following among young adults.

Instagram, Snapchat remain especially popular among those ages 18 to 24



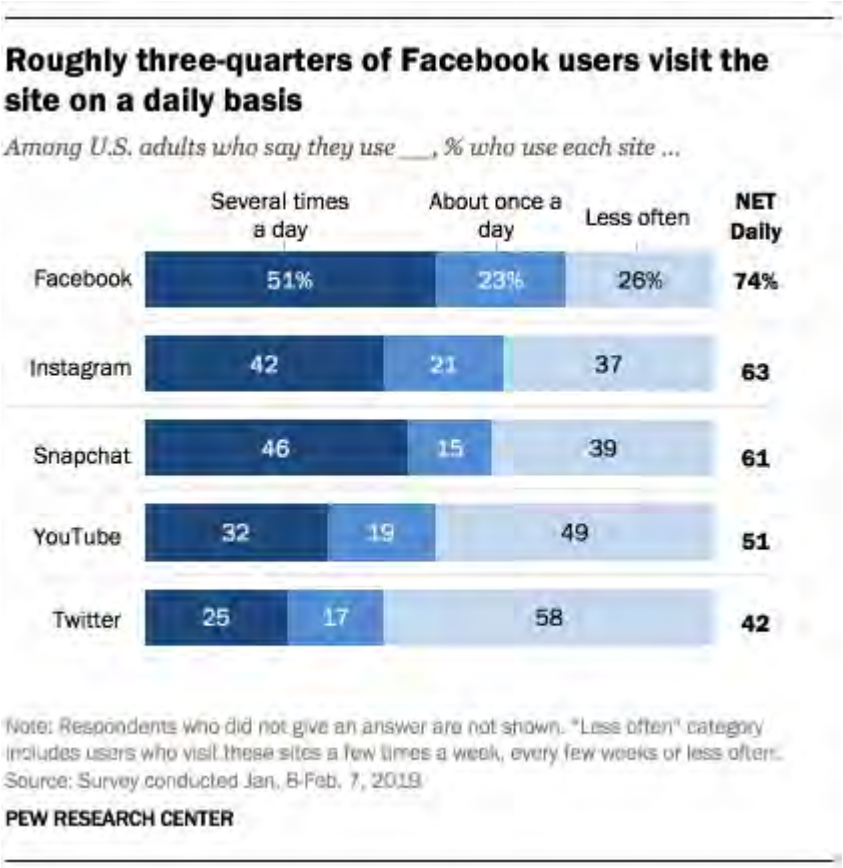
As was true in previous surveys of social media use by the Center, there are substantial age-related differences in platform use. This is especially true of Instagram and Snapchat, which are used by 67% and 62% of 18- to 29-year-olds, respectively.

Particularly for these two platforms, there are also pronounced differences in use *within* the young adult population. Those ages 18 to 24 are substantially more likely than those ages 25 to 29 to say they use Snapchat (73% vs. 47%) and Instagram (75% vs. 57%).

By comparison, age differences are less pronounced for Facebook. Facebook use is relatively common across a range of age groups, with 68% of those ages 50 to 64 and nearly half of those 65 and older saying they use the site.

Other demographic patterns related to social media and messaging app use are relatively unchanged from last year. Women are nearly three times as likely as men to use Pinterest (42% vs. 15%). Around half of college graduates and those who live in high-income households use LinkedIn, compared with 10% or fewer of those who have not attended at least some college or those in lower-income households. And WhatsApp continues to be popular among Hispanics: 42% use the messaging app, compared with 24% of blacks and 13% of whites. (For more details on social media and messaging app use by different demographic groups, see the bottom of the post.)

Majority of Facebook, Snapchat and Instagram users visit these sites daily



A 2018 Center survey found that some Facebook users had recently taken steps to moderate their use of the site – such as deleting the Facebook app from their phone or taking a break from the platform for some time. But despite these findings and amid some high profile controversies, Facebook users as a whole are just as active on the site today as they were a year ago. Roughly three-quarters of Facebook users (74%) visit the site daily,

including about half who do so several times a day. These shares are identical to those reported by Facebook users in the Center's 2018 social media use survey.

Majorities of Snapchat and Instagram users also say they visit these sites daily, though they are slightly less likely than Facebook users to do so. The shares of young adults using these platforms daily are especially large. Roughly eight-in-ten Snapchat users ages 18 to 29 (77%) say they use the app every day, including 68% who say they do so multiple times day. Similarly, 76% of Instagram users in this age group visit the site on a daily basis, with 60% reporting that they do so several times per day. These patterns are largely similar to what the Center found in 2018.

Other platforms are visited somewhat less frequently. Some 51% of YouTube users say they visit the site daily – a slight increase from the 45% who said this in 2018.

Use of different online platforms by demographic groups

% of U.S. adults who say they ever use the following online platforms or messaging apps

	YouTube	Facebook	Instagram	Pinterest	LinkedIn	Snapchat	Twitter	WhatsApp	Reddit
U.S. adults	73%	69%	37%	28%	27%	24%	22%	20%	11%
Men	78	63	31	15	29	24	24	21	15
Women	68	75	43	42	24	24	21	19	8
White	71	70	33	33	28	22	21	13	12
Black	77	70	40	27	24	28	24	24	4
Hispanic	78	69	51	22	16	29	25	42	14
Ages 18-29	91	79	67	34	28	62	38	23	22
18-24	90	76	75	38	17	73	44	20	21
25-29	93	84	57	28	44	47	31	28	23
30-49	87	79	47	35	37	25	26	31	14
50-64	70	68	23	27	24	9	17	16	6
65+	38	46	8	15	11	3	7	3	1
<$30,000	68	69	35	18	10	27	20	19	9
$30,000-$74,999	75	72	39	27	26	26	20	16	10
$75,000+	83	74	42	41	49	22	31	25	15
High school or less	64	61	33	19	9	22	13	18	6
Some college	79	75	37	32	26	29	24	14	14
College+	80	74	43	38	51	20	32	28	15
Urban	77	73	46	30	33	29	26	24	11
Suburban	74	69	35	30	30	20	22	19	13
Rural	64	66	21	26	10	20	13	10	8

Note: Respondents who did not give an answer are not shown. Whites and blacks include only non-Hispanics. Hispanics are of any race.
Source: Survey conducted Jan. 8-Feb. 7, 2019.

PEW RESEARCH CENTER

Note: See full topline results and methodology here.

Topics Social Media, Technology Adoption

Andrew Perrin *is a research analyst focusing on internet and technology at Pew Research Center.*

POSTS | BIO | EMAIL

Monica Anderson *is a senior researcher focusing on internet and technology at Pew*

Does your Auto Mechanic Help keep Oregon Green?

Since 1997, ECOBIZ has certified local **auto repair, body shops, and car washes** that protect our air, land, water and people.

visit
ecobiz.org/chinook
to find certified businesses

EcoBiz is sponsored by local government agencies to assist businesses with sustainable practices

Environmental Services City of Portland working for clean rivers
Clean Water Services
Eugene
City of Gresham
Clackamas River Water Providers
Water 159 Environment Services

Does your Landscaper Help keep Oregon Green?

ECOBIZ Certified Landscapers **reduce pesticides**, **save water**, and **find the right plant for the right place** to protect people, pets and our water.

visit
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Environmental Services
City of Portland
working for clean rivers

Clean Water Services

Eugene

City of Gresham

Clackamas River Water Providers
Working together to protect and conserve our drinking water.

Water Environment Services

POST THIS NOTICE: REGIONAL STORMWATER REGULATIONS FOR MOBILE CARPET CLEANERS

ALL EMPLOYEES MUST FOLLOW PROPER DISPOSAL PROCEDURES

This is a no ce regarding regional regula ons for disposal of carpet cleaning fl ids from your business. **It is against the law to allow anything other than rain water to enter the public storm system.** Viola ons that allow cleaning water to enter the stormwater system, like draining wash water to the street or an outdoor drain, are subject to enforcement acti n including **fines of up to $5,000**.

PROPER DISPOSAL OPTIONS:

1. Use **bathtubs or utility sinks** and a fil er over the drain inside the homes that you are cleaning.
2. Use the **wastewater cleanout** at the home which you are cleaning. These are commonly located near the home's founda on.
3. Collect the wash water in a **tank on your vehicle** and pump it into a u lity sink or wastewater cleanout at your home or place of business.
4. Check **sanidump.com** for disposal loca ons.
5. Contact the City or County to **request permission** to use a sanitary system manhole. The sanitary system is a closed system that must be accessed by removal of a manhole lid.

DO NOT:

1. Pour chemical-laden water onto the ground or into an outdoor drain.
2. Discharge wash water with chemicals in a home with a sep c system.

For questions or assistance, call 503-618-2525 or email WaterResources@GreshamOregon.gov.

These agencies enforce stormwater pollution laws:

Clackamas County	Oak Lodge Water Services	City of Oregon City	City of Vancouver
City of Fairview	City of Milwaukie	City of Portland	City of Wilsonville
City of Gresham	Multnomah County	City of Troutdale	City of Wood Village

PUBLICAR ESTE AVISO:
REGULACIÓN REGIONAL DE AGUAS PLUVIALES PARA LIMPIADORES MÓVILES DE TAPETES
TODOS LOS EMPLEADOS DEBEN SEGUIR LOS PROCEDIMIENTOS DE DESECHO ADECUADOS

Este es un aviso sobre las regulaciones regionales para la eliminación de uidos usados en su negocio para la limpieza de alfombras. **Es contra la ley permitir que cualquier otro tipo de líquidos que no sea agua de lluvia ingrese al sistema público de tormentas.** Las violaciones que permiten que lo ingrese al sistema de aguas pluviales, como drenar el agua de lavado a la calle o un desagüe al aire libre, están sujetas a medidas de cumplimiento que incluyen **multas de hasta $ 5,000.**

OPCIONES DE ELIMINACIÓN ADECUADA:


limpieza de agua residual

1. Utilice **bañeras o lavaderos y un filtro** sobre el drenaje dentro de los hogares que usted esté limpiando.
2. Utilice **la limpieza de agua residual** en el hogar que usted esté limpiando. Por lo general, se encuentran al lado o en la parte trasera de los hogares.
3. También podrá recoger el agua de lavado, dentro de un **tanque de su vehículo** y bombearla hacia un lavadero o aguas residuales en su hogar o en su negocio.
4. Vea **sanidump.com** para encontrar las ubicaciones de eliminación.
5. Usted también puede comunicarse con la ciudad o el condado para **solicitar permiso** para u lizar una boca de drenaje del sistema sanitario que le quede cerca. El sistema sanitario es un sistema cerrado, al que se debe acceder removiendo la tapa del drenaje o alcantarilla.

NO:

1. Vierta agua con sustancias químicas en el suelo o en un drenaje o desagüe al aire libre.
2. Descargue agua de lavado con sustancias químicas en un hogar que tenga sistema sép co.

¿Tiene preguntas? WaterResources@GreshamOregon.gov o en el 503-618-2525

Estas agencias hacen cumplir las leyes de contaminación de aguas pluviales:

Clackamas County	Oak Lodge Water Services	City of Oregon City	City of Vancouver
City of Fairview	City of Milwaukie	City of Portland	City of Wilsonville
City of Gresham	Multnomah County	City of Troutdale	City of Wood Village

Gresham Slough School 2018-19

During the 2018-19 school year, Slough School made **6864** student contacts through **304 free programs** in the classroom and the field across Portland Public, Parkrose, Reynolds, and Gresham-Barlow school districts. 91% of them came from low-income families and 73% were students of color.

Specifically in the Fairview Creek Watershed, Slough School provided **131 programs**, resulting in **3423 student contacts** for students in Reynolds and Gresham Barlow School districts in the following ways:

- Supported students at **Reynolds Learning Academy (RLA)** with the following:
    - 2 classroom lessons on how to teach elementary students in the field
    - Put them in leadership roles showing three Woodland 4th grade classes how to harvest and plant live stakes of willow and red osier dogwood at their school
    - Put them in leadership roles helping 4th and 5th graders from Salish Ponds Elementary plant shrubs and herbs at Salish Ponds Natural Area
    - Allow them to shadow Slough School educators and then teach lessons with Fairview 5th graders on water quality
    - Attended MYC's community night and year end student recognition
    - Rain Garden construction in partnership with Verde and CSWC's Stewardship program
    - Canoe Paddle at 166th & Airport Way in May

- Started programming for **West Gresham Elementary**
    - 2 classroom lessons for two 3rd grade classes on Animal Adaptations and Macroinvertebrates
    - 1 2-hour field trip for each class to Salish Ponds Natural Area

- Started programming for **West Orient Middle School**
    - 1 classroom lesson for sixth-eighth grade Green Club (24 students)
    - 1 field trip to Gresham Stormwater Treatment Facility

- Continued Slough School for students at **Woodland Elementary**.
    - 3rd grade planting
    - 4th grade Groundwater, Water Chemistry, Erosion, Animal Adaptations, and Stormwater/Wastewater Programs in addition to planting live stakes with MYC

  - 5th grade Flooding/Vanport programming, wetlands as a natural resource, and Fact and Fiction about Fairview Creek, in addition to planting native plants on their school property with Wisdom of the Elders
  - 3 paddles for all 5th graders at 166th & Airport Way

- Started a program for all 4th and 5th graders at **Salish Ponds Elementary School** (~150 students)
  - Each Tuesday and Wednesday in November, 6 1-hour classroom lessons on Watersheds, Riparian Zones, Erosion, and How to Plant
  - In December, 6 walking planting field trips at Salish Ponds Nature Park next to Fairview Creek, 3 with mentorship from MYC
  - In February, 6 classroom lessons on Water Chemistry testing, followed by 6 walking field trips back to Fairview Creek to test the water in the park.

- Provided another year-long in depth series of classroom and field trips for three classes of **Fairview Elementary** 5th Graders. We delivered **18 classroom lessons** and **18 field trips** for a total of **986 student contacts**. Curriculum included watersheds, riparian zones, water chemistry, how to plant native plants, and groundwater. We took field trips to Nadaka Nature Park, Salish Ponds Nature Park, Wilkes Creek Headwaters (multiple), and canoed from the Groundwater Pump Station at NE 166th & Airport Way.

The positive rapport that we had with many of the students was possible because of repeated contacts. This was made possible by the City of Fairview and City of Gresham's funding, in addition to Multnomah County Drainage District and Portland Water Bureau.

Columbia Slough Watershed Council
7040 NE 47th Ave, Portland Or 97218 503-281-1132

Seventeenth Annual

Explorando el Columbia Slough

Saturday June 22, 2019

Thank you to all of our partners, event sponsors, committee members, and volunteers! Your generous support made 2019 ¡Explorando el Columbia Slough! a great success. We served over 300 community members despite the clouds and had an amazing line-up of performers and offerings! The theme for ¡Explorando! this year was 'Sin Plastico', with the goal of eliminating the use of single-use plastics and the detrimental effects they have on the natural world. With this goal in mind, we tried to make each of our offerings plastic-free, and worked with our tabling partners and food vendors on offering plastic free-alternatives. The goals of CSWC's ¡Explorando! festival are to connect the Cully and Latinx communities to the natural areas in their neighborhood—including the Columbia Slough—to hold a community co-led event, and to celebrate culture alongside nature. We were able to meet these goals by partnering with Verde and Columbia Riverkeeper and by celebrating ¡Explorando! on the Slough itself at the newly developed Whitaker Ponds. We are thrilled that we had the opportunity to strengthen our community partnerships while organizing this amazing event. We extend our deepest gratitude to all who made it possible!

¡Muchas Gracias!

Attendance: 310+

Volunteers: 56

Sponsors: 15

To protect and enhance the Columbia Slough and its watershed through community engagement, education, and restoration.

Columbia Slough Watershed Council

7040 NE 47th Ave, Portland Or 97218 503-281-1132

Explorando el Columbia Slough 2019

Event Sponsors & Partners

Presenting Sponsors

VERDE

ENVIRONMENTAL SERVICES
CITY OF PORTLAND

PORT OF PORTLAND

Celebration Sponsors

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PBOT
PORTLAND BUREAU OF TRANSPORTATION

MCDD Flood Protection

Sheraton Portland Airport HOTEL

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City of Gresham
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To protect and enhance the Columbia Slough and its watershed through community engagement, education, and restoration.

Columbia Slough Watershed Council

7040 NE 47th Ave, Portland Or 97218 503-281-1132

Explorando el Columbia Slough 2019

Event Report

Location: Whitaker Ponds Nature Park
7040 NE 47th Ave

Date & Time: June 22nd, 11am-3pm

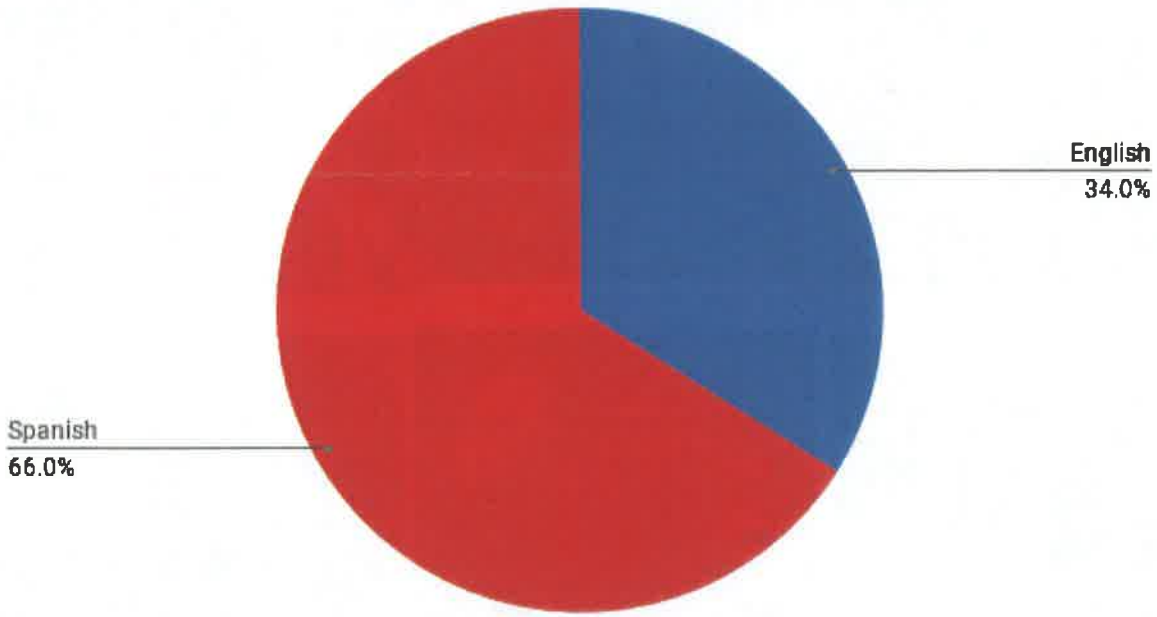
Attendance: 300+

Volunteers: 56

Sponsors: 15

Information Tables: 30

Estimate of Primary Household Language of Participants



To protect and enhance the Columbia Slough and its watershed through community engagement, education, and restoration.

Columbia Slough Watershed Council

7040 NE 47th Ave, Portland Or 97218 503-281-1132

Explorando el Columbia Slough 2019

Thank You!

We are extremely grateful for our partners at Verde and Columbia Riverkeeper and for all of our sponsors for helping to make ¡Explorando! possible. We would also like to give a special thank you to our photographer, Sean McDonald; our graphic designer, Christa Britton; Meei Lum and Hollywood Grocery Outlet for their plant donations; Portland Nursery for donating soil and plants; Ubaldo Hernández for emceeing the event; Miché Lozano for leading the bike ride; and Tippi Moon for creating the eco art activity. Thank you to everyone who was involved! See you next year!









To protect and enhance the Columbia Slough and its watershed through community engagement, education, and restoration.

JULY 19 & 20

FREE!

Historic Downtown Gresham

ART UNDER THE STARS ★★★ Fri., July 19 • 6–10 p.m.

ARTIST MARKET (170+ ARTISTS)
Sat., July 20 • 9 a.m. – 5 p.m.

BREAKDANCING COMPETITION Sat., July 20 • Noon–5 p.m.

KIDS VILLAGE Sat., July 20 9 a.m.–5 p.m.

WORLD RECORD EVENT
Sat., July 20 • 9 a.m. – 5 p.m.

TENILLE ARTS WITH SPECIAL GUESTS THE TALBOTT BROTHERS Sat., July 20 6–10 p.m.

Find out more at GreshamOregon.gov/Gresham-Arts-Festival

Appendix D—Erosion Prevention Sediment Control Program Wet Weather Notice to Contractors

Attention Builders and Contractors

Wet Weather Construction Season is October 1st – May 31st

The City of Gresham conducts frequent inspections of construction sites during the wet weather season to ensure that soil remains on site and erosion protection is properly installed and maintained. Contractors with failing erosion control are liable for civil penalties.

IT IS YOUR RESPONSIBILITY TO:

- Properly install perimeter protection (fiber roll/wattle or silt fence) to keep soil on site.

- Tarp stockpiles and protect exposed soil with straw or hydroseed to prevent runoff.

- Prevent sediment tracking into street with rocked construction entrance and protect catch basins with inserts.

- Maintain a clean construction site:
  - Sweep dirt and debris from streets
  - Do not stockpile dirt or materials in the street
  - Keep trash contained

Thank you for building responsibly and helping to protect Gresham's water resources by minimizing erosion.

More information about erosion prevention and sediment control can be found online at:
http://greshamoregon.gov/publicworksstandards/

Questions about Gresham's erosion protection requirements?

Please call Karen Bromley at 503-618-2289 or email karen.bromley@greshamoregon.gov

Appendix E—City of Gresham TMDL Report

Table 4. TMDL Implementation Plan Commitments

					Pollutant										Watershed					Regulatory Program				
NONPOINT SOURCE TMDL IMPLEMENTATION PLANS																								
Best Management Practice or Activity	**Commitment**	**Performance Measure**	**Status and Additional Goals, TMDL Year July 2018 through June 2019**	**Proposed Adaptive Management**	*Nutrient Related**	*Bacteria*	*Temperature*	*DDT/DDE*	*Dieldrin*	*Dioxin*	*PAHs*	*Mercury*	*Lead*	*PCBs*	*Johnson Creek*	*Fairview Creek*	*Columbia Slough*	*Sandy River*	*Columbia River*	*NPDES--MS4*	*Nonpoint Source*	*UIC (drywells)*	*NPDES--WWTP*	*Limit 10*	*Goal 5/Title 13*
Private Sanitary Waste Systems																								
NPB-1 New and Redevelopment Requirement	**Program Commitment:** Ensure that new and redevelopment connect to the public sanitary system.	Number of new connections to the City system	City billing records show 24,860 total active accounts. 24,454 are wastewater accounts. An addition of 42 wastewater accounts. City code requires hookup to the city system when septic systems fail (for historically operating septic tanks) if a city wastewater pipe is located within 300 feet. *Last year's report to DEQ contained an error. We reported 24,803 active and inactive wastewater accounts--but the 24,803 was actually total accounts. However, when assembling this year's account data, we are amending that figure to 24,412 active and inactive wastewater accounts, an addition of 150 accounts, not the 541 previously reported.	None proposed.	ó	ó									P	P	P	P	P		X				
NPB-2 Require Failed Systems to Connect to Public System	**Program Commitment:** Ensure that failing onsite systems are replaced by connection to City system, where City system is available.	Number of onsite properties that connect to public system	County sanitarian data shows that 5 septic tanks were decommissioned in Gresham.	None proposed.	ó	ó									P	P	P	P	P		X				
NPB-3 Ensure Spills from Private Piped Systems are Resolved	**Program Commitment:** Respond to reports of private system spills to ensure prompt cleanup and repair	Number of failures reported, and outcome	There were two incidents of private sanitary waste overflows being investigated and remedied using the city's spill response and operations staff. See Table 3-7 of the NPDES report for the details. Staff continue to conduct proper RV waste dumping education and outreach as a measure of prevention.	None proposed.	ó	ó									P	P	P	P	P		X				
Temperature Management																								
NPT-1 Natural Resource CIP Implementation	**Program Commitment:** As CIP resources allow, implement Natural Resource Master Plan prioritized floodplain, wetland, stream and riparian projects, and strategically invest in land acquisition opportunities where there is an identified temperature benefit.	Land acquisition will be reported in new acres and linear stream feet holdings. Reporting will add detail on pre-project shade conditions and projected post-project shade targets, using OWEB stream shade classification categories of 1 (poor shade cover), 2 (moderate), or 3 (good shade cover).	See Table 3-2 of the NPDES report.	Temp TMDL Buffer Model and related Natural Resources Master Plan to be updated in 2020 to reflect new riparian buffer geometry. This update will include proposed changes to how NPT -1 is tracked and reported.			ó								P	P	P	P	P		X				X
NPT-2 Riparian Planting	**Program Commitment:** Work with contractors, community, volunteers, and private landowners to install a native riparian canopy in identified shade target areas. Fast growing pioneer species may precede System Potential Vegetation species, depending on site conditions, in initial phases of restoration projects	Details will include number of sites, volunteer hours, acres or linear feet of stream where concentrated invasive weed treatment occurred, and number of plants installed. Planting stats will include any fast growing shade trees planted in advance of the System Potential Vegetation to be installed. Acreage will be provided of pre-project shade conditions at individual sites and projected post-project shade targets, using OWEB stream shade classification categories of 1 (poor shade cover), 2 (moderate), or 3 (good shade cover).	See Table 3-3 of the NPDES report.	Temp TMDL Buffer Model and related Natural Resources Master Plan to be updated in 2020 to reflect new riparian buffer geometry. This update will include proposed changes to how NPT -2 is tracked and reported.			ó								P	P	P	P	P		X				X
NPT-3 Monitoring and Reporting	**Program Commitment:** Annually report on implementation of projects; every 10 years provide an analysis of change in shade conditions based on aerial photo analysis.	Annually: number, type, and size of implemented projects, as specified under Performance Measures for NPT-1 and NPT-2. Every 10 years conduct an aerial photo analysis to assess changes (from the 2008 baseline) in near stream canopy cover using OWEB stream shade classifications of 1 (poor shade cover), 2 (moderate), or 3 (good shade cover). These statistics will be presented for city-wide riparian canopy cover, AND for individual planting project sites reported on under NPT-1 and NPT-2 where planting efforts were started at least 5 years prior to this aerial photo analysis.	See Table 3-3 of the NPDES report.	Temp TMDL Buffer Model and related Natural Resources Master Plan to be updated in 2020 to reflect new riparian buffer geometry. This update will include proposed changes to how NPT -3 is tracked and reported.			ó								P	P	P	P	P		X				X