Multnomah County NPDES MS4 Phase I Permit
Stormwater Management Program

Annual Report 2022
Permit year 27

Submit to:
Oregon Department of Environmental Quality
November 2022

Submitted in Accordance with the Requirements
of the National Pollutant Discharge Elimination System
(NPDES) Permit Number 103004, File Number 120542

Submitted by:
Water Quality Program
Department of Community Services Transportation Division
Multnomah County

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Table of Contents

1. Introduction

Multnomah County implements a comprehensive stormwater management program with the goal of reducing pollutants into the municipal stormwater system to the maximum extent practicable. This program is maintained and prioritized in response to the federal Clean Water Act and the County's responsibility to protect the health and welfare of its community members and natural environment. The Stormwater Management Plan is the main component of the stormwater management program. This plan is submitted to and approved by the Oregon Department of Environmental Quality (DEQ) under the National Pollutant Discharge and Elimination System Municipal Separate Storm Sewer Phase I (NPDES MS4 Phase I) permit. The County's roles and responsibilities for complying with the permit term falls under seven categories of Best Management Practices (BMPs) with a focus on operating and maintaining the County bridges and roads.

This Annual Report summarizes the implementation activities of Multnomah County's Stormwater Management Plan in the County's permit area for the Permit Year 26 (Fiscal year 2021: July 1, 2021 – June 30, 2022).

2. Program Overview

History

From 1995 to 2010, the Oregon Department of Environmental Quality (DEQ) regulated stormwater from Multnomah County through two separate NPDES MS4 Phase I Discharge permits: Permit #101314 for the areas within the City of Portland permit boundary and Permit #108013 for the areas within the Gresham permit boundary. Multnomah County was a co-permittee on both Portland and Gresham's MS4 Permit.

The County had a limited amount of regulatory area under each permit under the two separate MS4 permits. To reduce the administrative burdens for program management and reporting, Multnomah County requested to DEQ that the permit areas be combined under a single individual permit for the 2010 permit renewal. DEQ granted this request and issued the new individual Phase I permit on December 30, 2010 (Permit #103004).

Permit area description

Multnomah County is a unique jurisdiction with NPDES permit areas composed of several discrete urban pockets, and approximately twenty-eight miles of road and bridge right-of-ways. The terms "Portland Area" and "Gresham Area" are used in this report to provide clarity in the area descriptions, and to provide continuity from the previous reporting areas.

Within the Portland Area, Multnomah County is responsible for five Willamette River bridges (see Figure 2-1). A few small unincorporated pocket areas within the Portland Urban Services boundary are under Portland's stormwater management through an Intergovernmental Agreement with the City of Portland. These areas are also under the City of Portland's land use authority.

Within the Gresham Area, Multnomah County is responsible for approximately twenty-eight miles of arterial roadways in the Cities of Fairview, Troutdale, and Wood Village, and the unincorporated residential area known as "Interlachen" that is located between Fairview Lake and Blue Lake (see Figure 2-2). In 2007, Troutdale and Wood Village came under NPDES Phase II coverage, and the County roads in those communities also came into permit coverage. Some road segments shown in the following maps are served by Underground Injection Controls or lack curb/gutter systems and do not discharge to surface waters.

More specific details regarding the County's jurisdiction are provided in the Stormwater Management Plan (updated April 2011).

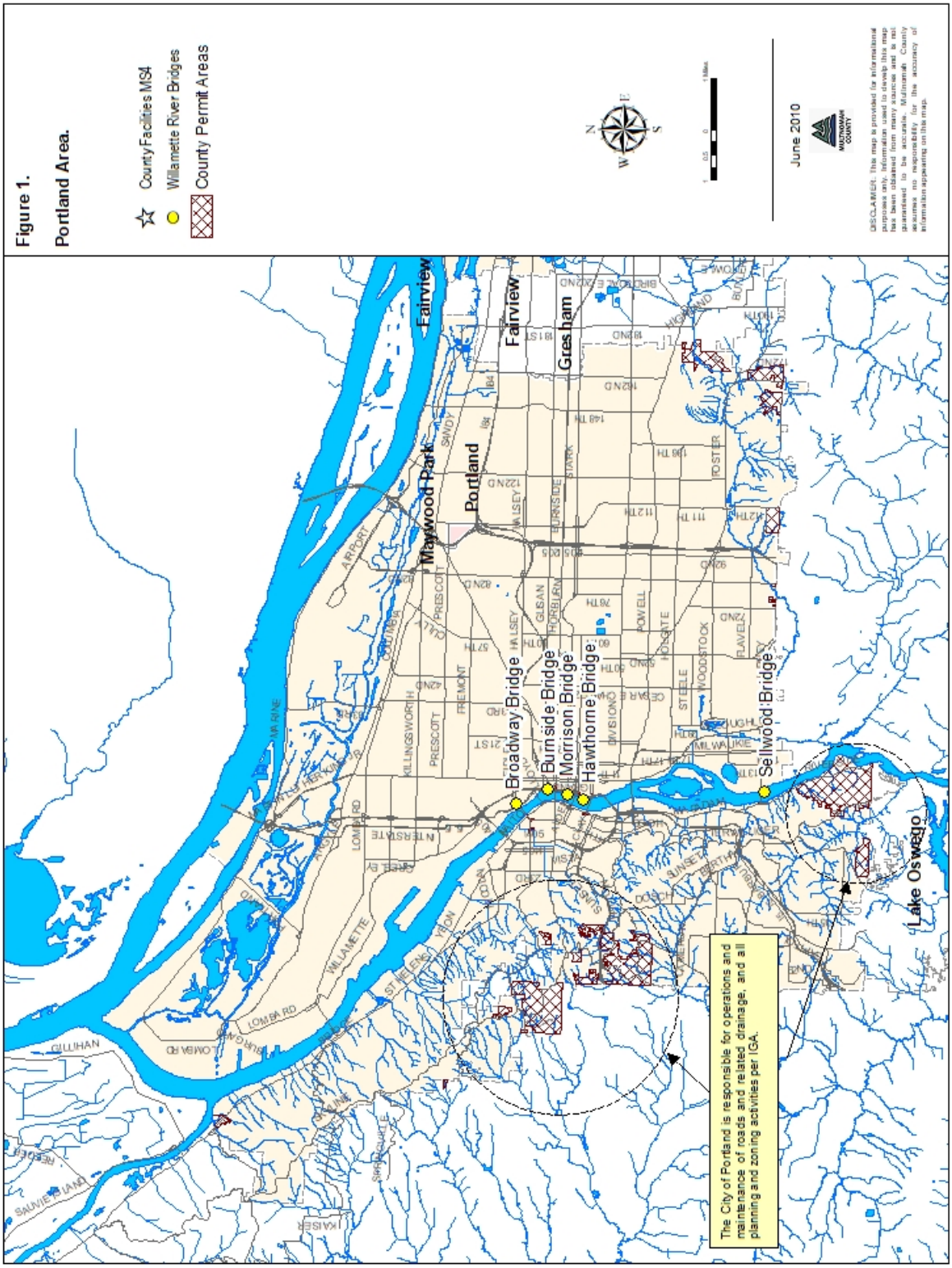


Figure 1.
Portland Area.
County Facilities MS4
Willamette River Bridges
County Permit Areas
June 2010
Fairview
Fairview
Gresham
Maywood Park
Portland
Broadway Bridge
Burnside Bridge
Morrison Bridge
Hawthorne Bridge
Sellwood Bridge
Lake Oswego
The City of Portland is responsible for operations and maintenance of roads and related drainage, and all planning and zoning activities per IGA.

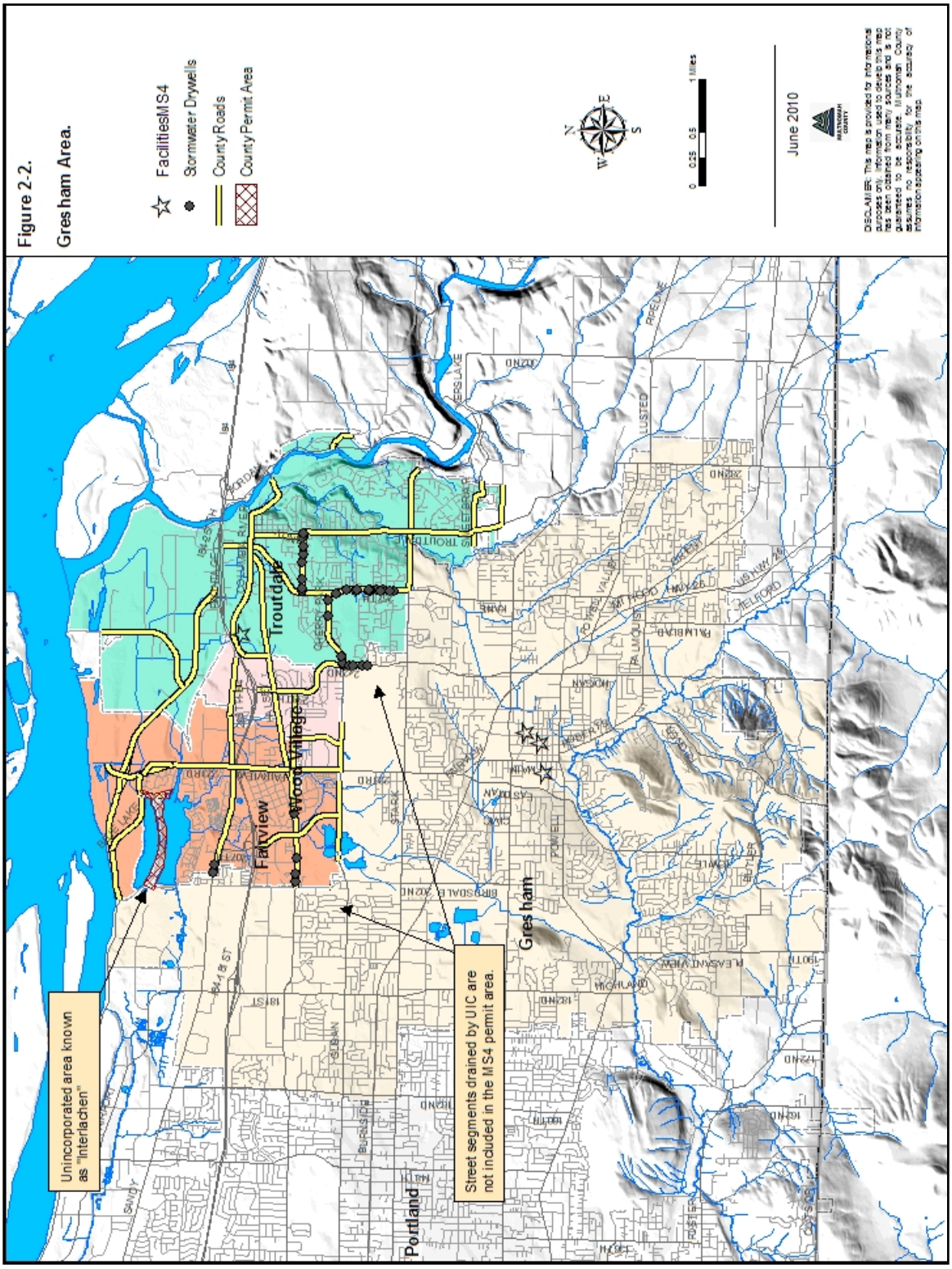


Figure 2-2.
Gresham Area.
FacilitiesMS4
Stormwater Drywells
CountyRoads
CountyPermit Area
June 2010
Unincorporated area known as "Interlachen"
Street segments drained by UIC are not included in the MS4 permit area.
Troutdale
Fairview
Wood Village
Gresham
Portland

Reporting requirements

The following table summarizes the requirements for the annual report as described in Schedule B.5 of the 2010 permit:

Permit reporting requirement	*Annual report section*
a. Status of each SWMP program element and progress in meeting measurable goals	BMP summary - status
b. Status or results of any public education program effectiveness evaluation conducted during the reporting year and summary of how the results were or will be used for adaptive management	BMP summary PI-1
c. Summary of the adaptive management process implementation during reporting year, including proposed changes or additions to BMPs	BMP summary – adaptive management
d. Proposed changes to SWMP elements designed to reduce TMDL pollutants	BMP summary
e. Summary of total stormwater program expenditures and funding sources over the reporting year and those anticipated in the next reporting year	Stormwater program budget
f. Summary of monitoring program results, including monitoring data and analyses	Environmental monitoring; also see Gresham and Portland permit annual reports
g. Proposed modifications to the monitoring plan	Environmental monitoring
h. Summary of the enforcement actions, inspections, public education programs, and illicit discharge screening and investigations	BMP summary
i. Overview of land use changes, concept planning and new development activities in the reporting year, including number of new post-construction permits issued and an estimate of the total new or replaced impervious surface area related to new development and redevelopment projects	Permit area description; BMP summary (ND, STR)
j. Results of ongoing field screening and follow up related to illicit discharges.	BMP summary (ILL-5)

Mercury Minimization Assessment for Multnomah County

A Total Maximum Daily Load (TMDL) is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet applicable water quality standards. TMDLs assign wasteload allocations (WLAs) to point sources of pollutants, and load allocations (LAs) to nonpoint sources of pollutants. The Oregon Department of Environmental Quality (DEQ) has the regulatory authority to implement TMDL programs in Oregon with responsibility for: 1) requiring and reviewing TMDL Implementation Plans for nonpoint sources; and, 2) incorporating TMDL related requirements for point sources in NPDES permits. Therefore, with respect to municipal stormwater discharges regulated under an NPDES MS4 permit, DEQ includes TMDL requirements directly within those permits.

As stated in DEQ's Permit Evaluation Report (PER) for the 2021 Multnomah County NPDES MS4 Permit,

> "*DEQ has determined that implementation of the permit conditions, BMPs identified in the SWMP Document, and the adaptive management process will meet TMDL WLAs for municipal stormwater* (PER, pp 36)."

Multnomah County's NPDES MS4 permit identifies applicable TMDLs and associated WLAs. Schedule D, *Special Conditions* of the permit lists specific conditions for addressing those TMDLs. These permit conditions include requirements to conduct a TMDL pollutant load reduction evaluation in comparison to assigned WLAs for stormwater, and to develop pollutant load reduction benchmarks targeting achievement of WLAs for specified TMDL pollutants over time. DEQ included TMDL requirements in the 2004, 2010, and the recently issued 2021 NPDES MS4 permits for Phase I permittees.

The County has complied with permit requirements to conduct pollutant load reduction evaluations and establish TMDL pollutant load reduction benchmarks. However, WLAs were not established for mercury until 2021 and, therefore, mercury was neither required nor included in the County's prior TMDL analyses.[1] The 2021 mercury TMDL includes a water quality management plan (WQMP) developed by DEQ, that outlines management strategies for both point and nonpoint sources of mercury. Specific management strategies for Phase I NPDES MS4 permittees are outlined in Section 13.3.2.2 of the revised TMDL (Appendix A) and were subsequently included in Schedule D.3.b of the Multnomah County NPDES MS4 permit. Per Schedule D.3.b, requirements specific for mercury are detailed below:

[1] Mercury was originally included in the 2006 Willamette River TMDL, but establishment of WLAs was deferred due to lack of data. On November 22, 2019, DEQ issued a revised Willamette River TMDL for mercury. The United States Environmental Protection Agency (EPA) disapproved DEQ's TMDL on December 30th, 2019 and the final TMDL was issued on February 4, 2021.

i. *Develop and submit a mercury minimization assessment with the annual report due November 1, 2022, that documents the current actions, such as BMPs implemented, that reduce the amount of solids discharged into and from the permitted MS4 system (similar to the actions currently required in Schedule A). If the assessment indicates that mercury and sediment reducing BMPs are fully incorporated into the SWMP Document, a report documenting the results as such is sufficient.*

ii. *Continued implementation of the BMPs and other actions described in the mercury minimization assessment that are effective for mercury reduction, along with documentation of implementation in each subsequent annual report.*

iii. *An analysis of the effectiveness of the best management practices and any other actions taken and qualitative pollutant load reductions achieved in the MS4 Permit Renewal Application Package. Due to data limitations, mercury benchmarks are not applicable in the first permit cycle after the TMDL is finalized.*

iv. *Collection of paired total mercury and total suspended solids samples, as described in Schedule B.*

v. *Submittal of paired mercury and total suspended solids monitoring data in the appropriate DEQ data submission template. Given the lack of sufficient mercury data, pollutant load reduction evaluations, benchmarks, and waste load allocation attainment analyses for mercury will not be required in this permit cycle.*

The purpose of this Mercury Minimization Assessment, included with the County's 2022 MS4 Annual Compliance Report is to address the requirement outlined in bullet *i.* above.

Chapter 4 of EPA's 2021 *TMDL for Mercury in the Willamette Basin* includes summary information regarding mercury sources. Atmospheric deposition of mercury from global sources is presented as the dominant source of mercury in the Willamette River Basin. Additional sources identified include: nonpoint sources such as runoff from forestry and agricultural land management practices that can transport sediment and mercury to streams; background/anthropogenic sources that include mercury in groundwater due to local geology, and naturally occurring sediment-bound mercury that is eroded and transported to streams; and point sources such as municipal waste discharges, industrial discharges, suction dredge mining and stormwater. Mercury loads in urban stormwater are believed to be predominantly associated with atmospheric deposition and active erosion or transport of sediment that is carried in runoff to downstream water bodies. As a result, stormwater best management practices (BMPs) implemented by NPDES MS4 permittees are focused on reducing the discharge of sediment as the primary method to reduce discharges of mercury.

The prevention and reduction of sediment in runoff has been a focus of the County's stormwater management program since the first MS4 permit-required Stormwater Management Plan (SWMP) was developed in the early 1990's. The County uses an adaptive management approach to continually improve upon existing stormwater BMPs over time as new knowledge is gained regarding the effectiveness and efficiency of these practices. The County has submitted the results of its adaptive management process as applicable in annual reports since the original SWMP became effective. The County has also conducted detailed quantitative and qualitative adaptive management analyses as part of each NPDES MS4 permit renewal. The County's 2022 MS4 Annual Compliance Report, due to DEQ on November 1, 2022, provides the latest summary of BMP implementation according to the pre-existing 2011 SWMP. A new SWMP that meets the conditions of the recently issued 2021 NPDES MS4 permit is also being submitted to DEQ for approval on November 1, 2022.

Based on the County's long-term ongoing adaptive management process, a review of the current/approved 2011 SWMP, and a comprehensive MS4 program evaluation and update as per the 2021 permit, we have determined that **effective sediment and mercury reducing BMPs are fully incorporated into the County's new/proposed 2022 SWMP Document**. A BMP summary table in the proposed SWMP (Appendix B) provides a cross-reference for each BMP to potential TMDL pollutants addressed, including total mercury. To meet the NPDES MS4 permit standard, these BMPs have been developed as part of an overall program to reduce pollutants to the maximum extent practicable (MEP).

In summary, the County's BMPs in the 2022 SWMP include the following major categories and activities that prevent sediment and mercury in stormwater discharges:

- Public Education & Outreach
- Public Involvement & Participation
- Illicit Discharge Detection & Elimination
- Construction Site Runoff Control
- Post-Construction Site Runoff
- Pollution Prevention and Good Housekeeping
- Industrial & Commercial Facilities
- Infrastructure Retrofit and Hydromodification Assessment Update

The 2022 SWMP includes detailed descriptions of each BMP, including measurable goals and tracking measures. As noted in the BMP summary table, a large majority of the BMP activities support the prevention and reduction of mercury and sediment.

Further, the County submitted an updated draft TMDL Implementation Plan in August, 2022 that addresses requirements of the 2021 *TMDL for Mercury in the Willamette Basin* for nonpoint sources of mercury in the County. The final TMDL Implementation Plan will be submitted before November 11, 2022.

As a result of this Mercury Minimization Assessment, the County finds that sediment and mercury reducing BMPs are fully incorporated into the SWMP Document.

Environmental monitoring

The City of Gresham and City of Portland have historically collected, managed, and analyzed stormwater and instream data on behalf of the County as the lead Permittee for the respective NPDES permits when the County was a co-permittee on both permits. Because the County's jurisdiction is part of the fabric of both permit areas, the data for each permit represented the overall quality of stormwater and instream health. This environmental monitoring was a component of the Intergovernmental Agreements (IGA) with both the City of Portland and City of Gresham.

Beginning December 2010, the County managed its stormwater program under a single individual permit. The monitoring requirements are met through a new IGA with the City of Gresham, and the monitoring plan is available online through the City of Gresham website.

The environmental data and analysis presented in the Annual Reports for City of Gresham independent of this report fulfill the monitoring requirement for the County's Annual Report, per the respective IGA. A monitoring summary is provided at the end of this report.

The data includes monitoring requirements from the County permit: two instream monitoring sites, two macroinvertebrate monitoring sites.

Mercury monitoring

The mercury monitoring requirement is part of a special study to further the development of the Mercury TMDL. Two full years of mercury monitoring were completed during 2011-2013, which fulfilled the mercury monitoring requirement as described in Table B-1 of the NPDES permit. The mercury monitoring data has contributed to the characterization of urban stormwater runoff, a stormwater monitoring program objective. DEQ is expected to review the monitoring data once all of the results from the MS4 permittees have been submitted.
The County submitted a permit modification request to eliminate the mercury monitoring after two years of data collection. The request was submitted to DEQ on November 1, 2013. Permit modification was granted on January 8, 2014.

The mercury monitoring data analysis by the City of Gresham was included as an appendix to the 2013 Annual Report.

Adaptive management process

The assessment of BMPs occurs annually during preparation of the County NDPES annual report, to be submitted to DEQ by November 1 of each permit year. Among other reporting requirements, the MS4 annual report must contain (Schedule B.5) the following:

> *The status of implementing the stormwater management program and each SWMP program element, including progress in meeting the measurable goals identified in the SWMP.*

By providing a summary in the NPDES annual report of progress toward attaining BMP measurable goals (through data collection and tracking measures), the County both: 1) meets the aforementioned reporting requirement, and 2) facilitates a critical step in adaptively managing its stormwater program by assessing each BMP.

While preparing this MS4 annual report, the County collected data and feedback from staff responsible for implementing/reporting on each BMP to facilitate the BMP assessment process. Key factors considered in the annual evaluation 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?*
- *Are staffing/financial resources available to support such a BMP improvement or refinement?*

3. BMP Summary

The Multnomah County Stormwater Management Plan is a set of Best Management Practices (BMPs) designed to reduce stormwater pollutants to the maximum extent practicable. The County's stormwater management plan is made up of thirty-two BMPs grouped into seven categories as shown below. The following table summarizes the task, measurable goals, status, and changes for each BMP.

PI	Public Involvement and Education
OM	Operations and Maintenance
ILL	Illicit Discharges Control
ND	New Development Standards
STR	Structural Controls
NS	Natural Systems
PM	Program Management

Managers and staff in several Multnomah County workgroups implement the Stormwater Management Program. The functional groups are:

Public Affairs	Public Affairs Office
Bridge Engineering	Department of Community Services
Bridge Maintenance	Department of Community Services
Land Use Planning	Department of Community Services
Transportation Planning	Department of Community Services
Code Compliance	Department of Community Services
Facilities	Department of County Assets
Emergency Response	Department of Community Services
Right-of Way Permits	Department of Community Services
Road Maintenance	Department of Community Services
Road Engineering	Department of Community Services
Asset Management	Department of Community Services
Nuisance Code	Health Department, Community Health Services

Program Management	Department of Community Services

PI – Public Involvement and Education

Overall goal: *To inform and educate the public about the causes of stormwater pollution, the effects on local streams and rivers, and the need for stormwater management, and to encourage active participation in pollution reduction efforts.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
PI-1 Participate in Regional Public Education Efforts	Provide County representative to attend the *Regional Coalition for Clean Rivers and Streams* (RCCRS) meetings. Plan and Implement public education campaign promoting behaviors that improve water quality.	Help develop and implement RCCRS annual strategy to promote behavior change through the RCCRS website, television, radio and social media. Evaluate education campaign effectiveness by November 1, 2014.	RCCRS continued to manage the River Starts Here outreach campaign for 2021-2022. The River Starts Here annual report is attached as an appendix to this report. Water Quality staff chairs the Clean Rivers Coalition (CRC) steering committee, a new statewide outreach collaboration. The CRC launched the Follow the Water statewide outreach campaign with 60 partners across Oregon and SW Washington with a website and several social media channels.	No change
PI-2 Participate in Public Meetings	Attend public meetings related to water quality.	Track participation in watershed council and ad hoc committee meetings.	Water Quality (WQ) staff shared monitoring and project updates at regular monthly meetings of the Johnson Creek Watershed Council and Sandy River Watershed Council. WQ Staff participates in the Interjurisdictional Committee for Johnson Creek, a technical workgroup that coordinates stream monitoring and analysis for Johnson Creek watershed. WQ staff facilitates the Beaver Creek Conservation Partnership. All meetings are held approximately once a month.	No change
PI-3 Distribute Public Education Information Regarding Stormwater	Make brochures and other educational materials from Soil & Water Conservation Districts and Watershed Councils available at the planning office. Ensure that public education materials are current and cover relevant topics.	Track the number of materials distributed at meetings, front counters and online.	The Land Use Planning counter where brochures are shared had limited public access during Covid and the brochure count is not available at this time. New outreach using social media through the Rivers Starts Here and Follow the Water campaigns replaced this outreach opportunity.	This BMP was modified in updated draft stormwater management plan.

PI-4 Conduct Training and Education for County Personnel	Send a representative(s) to water quality conferences when feasible. Share information learned in training with other staff. Train volunteers, maintenance and operations crews, as well as inspectors on impacts of activities on water quality and MS4 in addition to new approaches to water quality protection and proper reporting procedures.	Conduct a minimum of one staff training session a year.	WQ staff attended the regional Urban Ecology symposium (3/2022) Water Quality staff gave short 10 min presentations on water quality related topics each month at virtual All Staff meetings for the Transportation Division.	Many trainings for road maintenance were canceled due to Covid (including the Oregon Skills Demo)
PI-5 Implement the Adopt-a-Road Program	Develop a strategy to promote the adopt-a-road program. Track road segments where volunteer roadside litter removal and clean-up is performed through participation in County Adopt-A-Road programs.	Continue to advertise and support the adopt-a-road program as interest exists.	Adopt-a-road program was rebuilt and currently awaiting legal approval. Twenty groups are active in Multnomah County with ten groups in the NPDES area. Clean ups range from once a month to once a year depending on the group. Adopt a Road is a trash pickup, but additional eyes on the road for illegal dumping is a benefit to the Roads program, as well as increasing the stewardship ethic in the community.	No change
PI-6 Maintain Signage to Protect Water Quality	Determine whether any areas need to be marked or re-marked and provide staff and materials to carry this out. Maintain signs in right-of-way promoting watershed awareness, as requested by watershed councils.	Inspect drain markers and signage once per permit term at all catch basins and stream crossings in the permit area.	Drain marker inspection was completed during the catch basin cleaning in Fall 2012. Since FY21, all drain markers are inspected at time of cleaning.	No change
PI-7 Provide Opportunities for Public Involvement During the CIP Process	Involve the public in the process of updating the Capital Improvement Plan and Program (every two years) and in evaluating the stormwater quality impacts and issues associated with the program.	Ensure opportunities for public participation in the CIP update process through public meetings. Ensure that public comment period is established for permit renewal.	The Capital Improvement Plan and Program (CIPP) is reviewed annually and updated biennially to ensure that limited resources for projects are efficiently and equitably allocated to the most critical capital needs, including where equity can be improved, as well as to leverage County funds. The CIPP is readily available for review online where feedback can be submitted to the County. There was not CIP update in FY22.	No change
PI-8 Facilitate Public Reporting of Illicit Discharges	Determine where signs need to be posted regarding illegal dumping and place them.	Install and maintain signage in all known areas that are problematic in terms of dumping.	No activity in permit area during permit year.	No change

OM – Operations and Maintenance

Overall goal: *To implement operations and maintenance practices for public streets, bridges, storm sewers, and other facilities to reduce pollutants in discharges from the municipal separate storm sewer system.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
OM-1 Review the RMOM for Potential Updates to Address Water Quality	Review the Road Maintenance Operations Manual annually. When manual revisions are made, conduct refresher staff training as provided for under BMP PI-4.	Annually review of the RMOM to ensure current practices are incorporated respect to water quality.	Discussions with Road Maintenance integrate the environmental elements of the RMOM into a new standard operating procedure manual. Work is on hold during Covid-19	No change
OM-2 Inspect and Maintain the Storm Drainage System	Inspect the entire stormwater conveyance system on an annual basis. Utilize the record keeping system and database to record findings and follow-up work completed by field crews.	Establish criteria used to determine catch basin (CB) cleaning frequency to maintain effective pollutant removal by July 1, 2011. Clean all roadway catch basins (CB) a minimum of 2 times per year, unless catch basin cleaning records indicates less frequent or more frequent cleaning is appropriate.	Criteria for roadway CB and sweeping frequency were submitted to DEQ on June 22, 2011. The program uses Cartegraph software and iPads in the field. Catch basin cleaning was completed according to existing cleaning frequency regimen. Over the two year cycle ending in fall 2021, 11.1%, which were full at the time of cleaning. This is a satisfactory result. Parking lot CBs maintained by County Facilities were inspected and cleaned on annual basis by Road Maintenance and private contractor.	No change
OM-3 Conduct Street Sweeping	Track street sweeping efforts to record the sweeping frequency.	Use catch basin cleaning records or inspections to inform the necessary sweeping frequency.	(See OM-2 and PM-3) Sweeping routes are included in the Cartegraph work order system. Multnomah County Route 1 and 2 (NPDES area in Troutdale, Fairview and Wood Village)	See OM-2
OM-4 Properly Dispose of Road Waste Material	Identify alternatives for a new decant facility to be used for the dewatering of road wastes, or upgrades to the existing facility.	Annually review disposal options that protect water quality.	Vactor waste and sweepings are disposed at a private transfer facility (PPV Inc). Vactor liquid is field decanted into public sewer trunk with approval from Fairview. Ditching spoils from the urban area will continue to be disposed at a waste facility.	No change

OM-5 Minimize Impacts from Anti-icing Operations	Continue to follow the County RMOM procedures for the application, collection, and washing of sanding materials applied to roadways. Continue to research alternative anti-icing methods.	Conduct street sweeping to recover sanding materials within two weeks after the Road Maintenance Manager determines that the roads are free from the threat of an ice or snow event.	Sanding materials are used very sparingly on steep hills and freeway ramps during freezing events. In FY22, no MgCl deicer was used in the permit area.	No new updates on conventional road salt use from ODOT. Despite challenges of MgCl, it is still used conservatively when the need arises.
OM-6 Minimize Impacts from County Truck Hauling Practices	Follow the RMOM procedures for conducting equipment checks when hauling materials.	See OM-1	No activity in permit area.	See OM-1
OM-7 Minimize Impacts From Right-of-Way and Road Shoulder Maintenance	Conduct maintenance according to RMOM	See OM-1	No activity in permit area.	See OM-1
OM-8 Minimize Impacts from Ditch Maintenance	Conduct maintenance according to RMOM	See OM-1	No activity in permit area.	See OM-1
OM-9 Maintain County-owned stormwater facilities	Inventory facilities by January 1, 2013	Annual inspection of treatment facility	Two stormfilter vaults exist in the permit area were inspected in FY22 and filter cartridges were replaced. Stormfilters on County bridges were inspected and replaced in FY22. Vegetated facilities were maintained under direction of Road Maintenance staff. County Facilities maintains several Vortex units which were cleaned.	Covid restrictions limited or delayed activities. Reduced staffing also a factor.

ILL – Illicit Discharge

Overall goal: *To prevent, identify, investigate, and if appropriate, control/eliminate any non-stormwater discharges into the municipal separate storm sewer system.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
ILL-1 Implement the Spill Response Program	Continue to follow and implement the Multnomah County Spill Response Plan. Track and record spills and information regarding spills as they occur.	Conduct spill response procedures when spills are reported.	County crews inspect the Spill Response Truck monthly to ensure proper spill control materials are stocked. No spills of significance during permit term.	No change
ILL-2 Address Spills from Private Truck Haulers	Report to the appropriate agency of the private truck hauling practices impacting the County right-of-way and the stormwater conveyance system.	Contact all private haulers when spills are observed to ensure proper clean up	See incident response from spills above.	No change
ILL-3 Require Erosion and Pollution Controls for Public Projects (formerly ILL-4 and ILL-5)	Execute formal contracting practices including pre-construction meetings, bonding, construction permit review, and erosion control inspections.	Inspect 100% of County project sites	FY 22 projects were all inspected for proper erosion control: • SE 238th	No change
ILL-4 Investigate Illegal Dumping	Continue to implement the existing field inspection program during routine maintenance activities. Record and report any noticeable illegal discharge and dumping in the right-of-way.	Clean up all reported discharge or debris dumped in the right-of-way	No activity within the permit area.	No change
ILL-5 Detect and Eliminate Illicit Discharges to the Storm Sewer	Continue to maintain the bridge restroom facility holding tanks quarterly. Document enforcement response plan for illicit discharges by November 1, 2011 Develop pollutant parameter actions levels and identify priority outfall locations by July 1, 2012.	Conduct quarterly maintenance of bridge facilities. Conduct tasks by date above, and annual inspection of dry weather flows at major outfalls.	Bridge facilities maintained quarterly without incident. Dry weather outfall inspection of four outfalls occurred in August 2021. No visible signs or other indications of illicit discharge were observed.	No change

ND – New Development

Overall goal: *New Development Standards (ND) BMPs are designed to mitigate pollutant discharges and other water quality impacts associated with new development and redevelopment during and after construction.*

BMP Description	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
ND-1 Require Erosion Control for Private Development	Review and provide comments on applications for grading permits and hillside development permits. Perform Erosion and Sediment Control Inspections for all approved construction projects.	Inspect 100% of sites once during the permit review, and a second time during active construction.	No activity in permit year in Interlachen	No change
ND-2 Regulate Stormwater Discharge	Continue to review new development permit applications to ensure proper connection to the storm sewer system and application of design standards. Inspect stormwater facilities during and after construction to ensure that the site is compliant with design standards.	Conduct plan reviews and inspections for 100% of permitted projects.	No activity in permit year in Interlachen	No change

STR – Structural Controls

Overall goal: *To implement structural modifications (constructed facilities) to existing systems/development to reduce pollutants in discharges from the municipal separate storm sewer system.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
STR-1 Address Water Quality with New Capital or Roadway Improvement Projects	Develop criteria and strategy for when stormwater treatment will be incorporated into public projects. Conduct plan checks of stormwater quality treatment facilities that are included in capital improvement or roadway improvement projects to assure they follow standard design criteria that include stormwater quality considerations, and that the appropriate facility is selected for the intended purpose.	Identify strategy or criteria used to determine when stormwater quality treatment will be incorporated into Capital Improvement Projects by November 1, 2013.	The County submitted criteria for when stormwater treatment is incorporated into public projects to DEQ in 2013. SE 238th Drive project incorporates stormwater swales and a bioretention pond in the design. Sandy Blvd project features off site UICs planned for FY23.	No change
STR-2 Retrofit Existing Facilities for Water Quality Benefit	Include consideration of stormwater treatment for water quality purposes in capital projects to reduce pollutants to the maximum extent practicable. Conduct a hydromodification assessment and develop a strategy to identify and prioritize potential retrofit projects by November 1, 2014.	Identify one retrofit project by November 1, 2013. Develop hydromodification and retrofit strategy by November 1, 2014.	Halsey St project was completed in 2016. Hydromodification Assessment and Stormwater Retrofit Strategy was submitted to DEQ on November 1, 2014.	No change
STR-3 Inventory and Map the County Storm Sewer System	Continue to update the County GIS storm sewer system map.	Complete GIS drainage system maps of the NPDES permit area by 2014, including catch basins, culverts, manholes, ditches and pipes systems.	Since 2015, the County has coordinated and maintained an online stormwater map with the cities of Troutdale, Gresham, Wood Village and Fairview. Catchment areas are included in the updated map.	More collaboration meetings are needed to further develop the map with GIS, such as flow direction for all pipes in all jurisdictions, and new pipeshed delineations.

NS – Natural Systems

Overall goal: *to help preserve and restore the natural environment/functions to reduce pollutants in discharges from the municipal separate storm sewer system.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
NS-1 Conduct Vegetation Management Activities	Follow RMOM and IVM procedures. Maintain current Oregon Department of Agriculture (ODA) certifications for chemical applicators. Review and update integrated vegetation management practices (IVM) annually.	Review RMOM vegetation activities and the Integrated Vegetation Management Program (IVM) annually.	Based on a review of existing ditches in watersheds with Total Maximum Daily Loads, grass in the ditch is a viable solution to help reduce erosion and sediment removal. Staffing changes during Covid have resulted in a loss of vegetation staff. New hires are expected and updates to the IVM will move forward.	A new standard for vegetated ditches has been approved. This programmatic change will be reflected in the updated IVM.
NS-2 Specify Native Vegetation in ROW and Permitted Projects	Review the current contract specifications for landscaping in the right-of-way, and update as needed. Promote the use of native vegetation and develop contract specifications for landscaping. Condition plan approvals with invasive plants removal, if needed. Ensure contract specifications are followed which require certain landscaping materials and placement.	Inspect 100% of project sites for landscaping specifications.	No activity in the permit area	No change

PM – Program Management

Overall goal: *Program Management BMPs ensure effective program management, coordination, and reporting.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
PM-1 Stormwater Program Management	Continue to participate in the NPDES MS4 coordination meetings and any DEQ meetings. Continue to work with other NPDES MS4 permittees and DEQ to implement the stormwater management program. Review each BMP file annually. Prepare an annual report to demonstrate the County's compliance with requirements. Submit to DEQ.	Annually review BMP implementation data and submit annual report by November 1 each year.	Annual report submitted to DEQ.	No change
PM-2 Assess and Evaluate the Stormwater BMP Program	Evaluate progress of BMPs for annual report using adaptive management approach.	Develop an adaptive management approach by November 1, 2011.	The adaptive management approach was discussed mainly in the context of our catch basin and sweeping efficiency program.	No change
PM-3 Maintain Environmental Management Database	Pilot new GPS and onboard computer technology by July 2011. Develop GIS or other mapping technology to sync with GPS system by July 2012. Develop SAP work orders and tracking to integrate with GIS by July 2013.	Ensure tasks are completed by dates shown.	Work orders for Road Maintenance are captured in Cartegraph operations management system. Cartegraph uses GIS to capture catch basin cleaning and sweeping data.	No change

4. Stormwater Management Program Budget

Program activity within the County's NPDES permit area is divided between areas that were previously managed under the Portland area and Gresham area NDPES permits. The Water Quality program, consisting of one staff manages the County stormwater program, and portions of two Asset Management staff provide mapping and database services across the entire permit area. Services specific to the two areas are described below.

Gresham area stormwater related services:

- Road Maintenance expenditures and anticipated budget allocations within the Fairview and Interlachen incorporate items including drainage maintenance, right-of-way, surface management, vegetation management, general administration, emergency road hazard response and training.

- Road Engineering expenditures and anticipated budget allocations within Fairview and Interlachen incorporate drainage studies and reviews, environmental compliance review, as-built plan drafting and inventory, GIS database entry, and training.

- Land Use and Transportation Planning expenditures and anticipated budget for design review of capital improvements and right-of-way impacts to the County roads in Fairview, Troutdale, and Wood Village, and for design review and permits for development within the Interlachen Area.

Portland area stormwater related services:

- Bridge Maintenance expenditures and anticipated budget allocations within the Portland Permit area incorporate items including, drainage maintenance, right-of-way, surface management, vegetation management, general administration, emergency road hazard response and training.

- Bridge Engineering expenditures and anticipated budget allocations within the Portland Permit area incorporate drainage studies and reviews, environmental compliance review, as-built plan drafting and inventory, GIS database entry, and training.

- Multnomah County Road Maintenance, contracts the City of Portland and Clean Water Services to maintain and operate County owned roads to their respective standards in the urban unincorporated pocket areas through Intergovernmental Agreements.

- Road Engineering continues to retain authority to review access and impacts to the right-of-way including stormwater discharge when such discharges cannot be retained on site.

- Transportation Planning within the Portland Permit area includes development review in the unincorporated pockets where such development has the potential to access or impact the county right-of-way.

Funding for stormwater program expenditures are derived from two sources. The Land Use Planning receives funding from County's General Fund. The Transportation Division (Road and Bridge Services and Transportation Planning) receive funding from the State Highway Trust Fund, which includes the State gasoline tax, weight/mile tax on trucks, and vehicle registration fees. Highway Trust Funds are constitutionally dedicated to road related issues. The County has no revenue from dedicated stormwater fees. This is a result of the County roads and unincorporated pockets being nested within other city jurisdiction's service areas.

The table below outlines program expenditures for Fiscal Year 2022 and provides the anticipated budget for Fiscal Year 2023.

Program Area	*FY 2022 actual*	*FY 2023 budget*
Water Quality Program[1]	$293,046	$292,913
Asset Management[2]	$8,936	$9,316
Gresham area		
• Road Maintenance[3]	$229,872	$130,000
• Road Engineering[3]	$15,446	$3,500
Portland Area		
• Bridge Maintenance/Operations	$15,007	$23,350
• Bridge Engineering[4]	$12,360,615	$25,218,867
• Road Maintenance IGA	$14,975[5]	$100,000
• Road Engineering[6]	$18,653	$21,328

[1]*Figure includes entire Water Quality program includes one staff, monitoring budget for UIC, TMDL and NPDES programs, and additional program costs.*
[2]*Estimate is based on a portion of time from two Asset Management staff.*
[3]*Budget estimate is based on actual spending from the previous year for time spent on water quality work plus a budget for training.*
[4] *The amount shown represents the entire Bridge Engineering program. The entire program is included because Bridge Services do not budget or collect charges for water quality tasks. Water quality best practices are integral in all aspects of design and construction and hence we are not able to be segregated from the other work. Increase in budget reflects Sellwood Bridge funding.*
[5]*Portland Road Maintenance IGA funds used for non-water quality related maintenance are not reported here.*
[6]*Estimate of the amount of time spent on water quality issues in Portland area right-of-way.*

5. Monitoring Summary

Environmental monitoring for the NPDES MS4 Phase I permit includes instream monitoring, macroinvertebrate monitoring, stormwater sampling for mercury, and pesticide monitoring. This summary describes the instream and macroinvertebrate monitoring. In previous permit terms, the mercury monitoring was completed. Pesticide monitoring is slated to be done in conjunction with the County's underground injection control (UIC) Water Pollution Control Facility (WPCF) permit requirements.

Instream Data

Instream monitoring is required at two sites in the permit area for a range of pollutant parameters shown in the table below. Monitoring is coordinated with the City of Gresham; the County maintains an intergovernmental agreement with Gresham to contract monitoring services, including monitoring scope, and sampling methods.

Monitoring location	*Sampling frequency*	*Parameters*
Lower Beaver Creek (BCI1) Upper Beaver Creek (BCI2)	4 events/year	Biological Oxygen Demand (BOD5) Total suspended sediment (TSS) Hardness Temperature Dissolved Oxygen (DO) Conductivity pH Nitrate (NO3) Ammonia nitrogen (NH3-N) Total phosphorus (TP) Ortho-phosphorus (O-PO4) Copper, total and dissolved Lead, total and dissolved Zinc, total and dissolved E.coli bacteria
Lower Beaver Creek (BCI1) Upper Beaver Creek (BCI2)	1 event/year	Macroinvertebrate

Monitoring results discussion:

The following discussion is an excerpt from City of Gresham Annual Report monitoring summary, which covers all Gresham sites. Monitoring data was submitted to the DEQ AWQMS database, and is not shared in this report per DEQ direction.

Instream mointoring

> *The raw data collected in Permit Year 27 are summarized below and have been submitted through the AWQMS database. The instream data have been*

compared to the relevant DEQ water quality criteria, and values that do not meet the water quality standards are discussed below. Instream monitoring results were generally within expected ranges. There were some exceedances of water quality standards for pH, temperature, chlorophyll-a, total phosphorus, total Hg, total Cu, dissolved Zn, E. coli, and DDT. The greatest number of exceedances were for total Hg and stream temperature.

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 data range is somewhat different for this parameter than for others because loggers are placed in the field in spring and removed in the fall for processing. Therefore, the time-period reported here is from May – October 2021.

Watershed	***Creek***	***Location***	***Max 7DADM temp (*C)***	***Exceedances (# of days)***
Beaver	*Beaver*	*Division St.*	*24.8*	*73*
Beaver	*Beaver*	*In canyon*	*26.0*	*104*

Macroinvertebrates were monitored at two sites by the City of GreshamThe City has submitted raw macroinvertebrate data for Permit Year 27 through the AWQMS database. The new format does not allow an immediate calculation of an index for discussion or direct comparison with previous data. However, the City is working with Shannon Hubler at DEQ to assess the macroinvertebrate data from the database in a way that allows these comparisons. It is anticipated that a more thorough assessment will be provided in a future Annual Report.

*The summer of 2021 was fairly warm, and there was an unprecedented heat dome where air temperatures reached new records for several days. Stream temperatures generally reflected this with relatively high temperatures, where one site even reached over 30 *C for the 7DADM. No sites this year attained the temperature standard for the entire summer, while half of the sites exceeded the standard for more than three months.*

APPENDIX A. Regional Coalition for Clean Rivers and Streams Annual Report 2022

Regional Coalition for Clean Rivers and Streams

Fiscal Year 2021-2022 Annual Report

September 20, 2022

Prepared by:

FY 2021-22 Overview

The Regional Coalition for Clean Rivers and Streams (Coalition) continued its work – initiated in the late 1990s – of providing coordinated messaging about area water health and residential behaviors linked to stormwater pollution from across the Portland metropolitan region in Washington, Multnomah, and Clackamas counties. For many years, Clark County, WA was also a participant in the Coalition but due to staffing and resource constraints, are no longer a financial participant. However, the Coalition continues to collaborate voluntarily with the Southwest Stormwater Partners who work "on the other side of the river."

Population statistics for the tri-county Metro area are as follows: Washington County 600,372, Multnomah County, 815,428 and Clackamas County 421,401 (2020 Census). 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 2021-22 fiscal year included sponsoring and promoting the Coalition and its messages at community events.

Coalition participants include:

- Clackamas Water Environment Services
- Clean Water Services
- City of Gladstone
- City of Gresham
- City of Lake Oswego
- City of Milwaukie
- City of Oregon City
- City of Portland, Bureau of Environmental Services
- City of Troutdale
- City of West Linn
- City of Wilsonville
- Oak Lodge Water Services
- Multnomah County

This report covers July 1, 2021 - June 30, 2022.

Background

As identified in the 2013 Strategic Plan, the Coalition continues its mission of collaborating 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 National Pollution Discharge Elimination System 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. 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 shares funds with Multnomah County acting as the fiscal agent to purchase associated consulting services, advertising, materials, and event sponsorships. By sharing resources, the group reaches many thousands of people in the region compared to what entities can typically achieve on their own.

The Coalition focuses on changing 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 toxins 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, legacy pesticides, and mercury 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 goes directly to our local waterways without treatment. When it rains, pollutants from your home, car, and garden wash into our rivers and streams. Never dump anything into storm drains.
- 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 2021-22 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.

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 2020-21. 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 strategies 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 social media outreach and digital advertising, including messaging and news for the 2022 Student Video Contest. Partners continued to message on individual social media channels as well as the Regional Coalition for Clean Rivers and Streams.

Goal 3: Practice adaptive management

The Coalition is committed to leveraging available resources to maximize impact while setting the stage for future collaboration among agencies. Total member representation in the Coalition has increased in the past few years, bringing in more regional partners. During the beginning of the 2021-2022 fiscal year, the Coalition relied more on ongoing social media outreach as most in-person outreach opportunities were canceled or delayed due to the COVID-19 pandemic.

In spring 2021, the Coalition discussed the importance of acknowledging the intersectionality of the environmental and social justice movements. Independently, partner agencies had been in various stages of educating staff on the topics of diversity, equity, and inclusion. Partners committed together to think about practices that could be implemented that would result in more inclusivity for historically marginalized and underserved populations. This included opportunities to collaborate with community-based organizations and discussions about ways the Coalition can strengthen relationships with community partners. The partners agreed to broaden the content of their messages to include environmentally related social justice information and use their platform to amplify the voices of the Black, Indigenous, and People of Color (BIPOC) communities. Further, this resulted in the partners renaming a category within the Student Video Contest to, "Honoring Diverse Voices" to celebrate and recognize the impact, creativity, and contributions of BIPOC filmmakers.

The River Starts Here Messaging and Outreach

Community Events and Agency Collaboration

Summer 2021 still faced significant limitations on the number of in person events taking place; as such, few of the Coalition's agencies conducted physical outreach. However, the representatives of member agencies promoted the Student Video Contest, local watershed events, and Coalition messages throughout the fiscal year using Facebook, Instagram, YouTube, and Twitter.

Towards the spring and summer of 2022 digital outreach was used to promote in-person event opportunities with local watershed councils. Some of the events that received significant online engagement and in-person participation included the 10th Annual Soil School Event hosted by the West Multnomah Soil & Water Conservation District and Tualatin Soil and Water Conservation District, Greater Oregon City Watershed Council's Habitat Enhancement Event, a workshop with Clackamas River Basin Council, and a paddle trip with Tualatin Riverkeepers.

Student Video Contest

2021 Student Video Contest Winners:

- **Best BIPOC Filmmaker**: Grounding Waters with K by K (Kingston) Bonneau, Harriet Tubman Middle School
- **People's Choice Award**: Keep Our Rivers Clean by Shea Stephens, Grant High School
- **Clean Water Action Award for Leave No Trace**: Don't Litter Be Better by Liliana Jacobsen, Homeschool
- **Clean Water Action Award for Climate Change**: You, Doing Your Part by Maggie Sandberg, Summit Learning Charter School
- **Clean Water Action Award for Active Transportation:** Mindful Maintenance by Pauline Petersen, Lakeridge High School

The third annual Student Video Contest was launched in the Spring of 2022 with a deadline for video submission of April 24, 2022. 2022 Student Video Contest categories included People's Choice and Honoring Diverse Voices, in the following topics: Everyday Actions Add Up and Our Drinking Water/Don't Dump That. The 2022 winners and statistics will be reported in the 2023 annual report.

This Honoring Diverse Voices category was added to amplify the crucial perspectives and contributions of our Black, Indigenous, and People of Color (BIPOC) students in creating a more equitable and sustainable future. Despite extensive outreach directly to schools, community groups that serve youth, partnerships with watershed councils, and advertising on Instagram, Facebook, and Snapchat, the entries were significantly down from the previous two years to only three entries, which were uploaded to the Coalition's YouTube site. Coalition partners such as the City of Portland and Clean Water Services shared

on their individual social media accounts to promote the People's Choice voting for youth in their service area schools. Video submissions were viewed over 776 times and received 64 likes and 15 comments. Commenters shared their enthusiasm for these creative videos, and the winners were announced in June 2022.

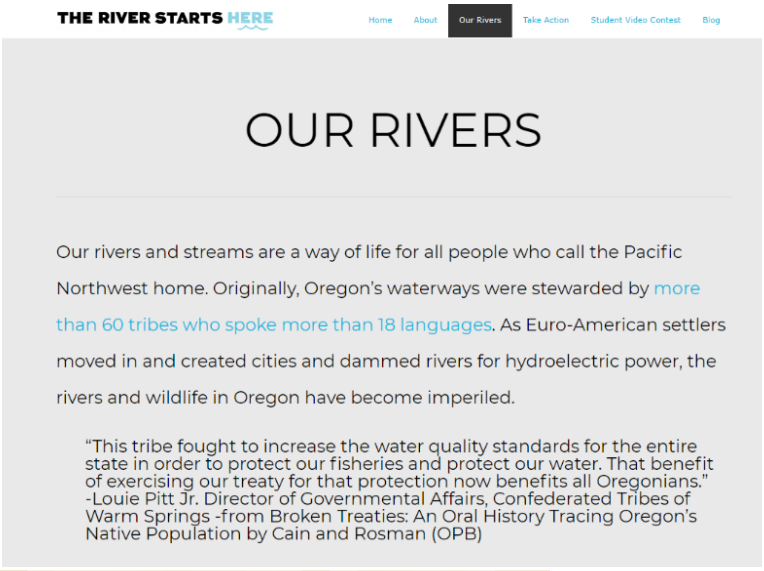
The next step for the Coalition is contracting with Outside the Frame, a nonprofit video firm that provides opportunities for underprivileged youth to gain skills to pursue work and careers in video production. Through this contract, fifteen of the best videos from all contests will be edited with River Starts Here branding and edited to create public call-to-action videos. These videos will also be available with subtitles and closed captioning in Spanish and Russian. These videos will then be used in the River Starts Here future social media digital advertising campaign.

"Great job of communicating a lot of useful information in an engaging way. Bravo!"
– Jumping Into Cool Water

"I love that this puts responsibility and action into the average person's hands and gives them a place to go to learn more!" – Madison Bryan

Website: TheRiverStartsHere.org

TheRiverStartsHere.org launched in June 2015 featuring *The River Starts Here* creative assets. It features an image slider highlighting Coalition messages and includes links to member websites and additional web resources.



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: 5,568 (▼2,288)

- **Users:** 4,533 (▼1,322)
- **Traffic type**
  - Direct: 2,193
  - Social: 868
  - Organic (search engine): 555
  - Referral: 439

The website has grown just a bit in visits each year, mostly due to the running of the Student Video Contest. That is a similar trend that was evident during the 2021-2022 fiscal year. The website had about 1,400 unique visitors from Oregon and about 800 visitors from Washington. As part of the RSH social media model, most of the posts advertised went directly to other websites such as registration for watershed council events, online resources, and partner websites. There were few posts that directed the public to the RSH website. The highest visited website pages were advertisements and information associated with the Student Video Contest and a page about how members of the public can safely get rid of moss. Due to the coalition's goal of reaching people where they are at and amplifying partner communications, website traffic is not a significant indicator of success.

The River Starts Here Blog

In December 2021, the Coalition began refreshing the website and updating the blog. The blog included cross links to partner webpages that supported student research to make a video entry submission.

Social media

The Coalition continued posting to its social media channels with the following types of content as emphasis: promotion of watershed council, soil and water conservation council and riverkeepers online or in person events, promotion of native plants for landscaping, promotion of good lawn and garden water protective techniques, promotion of the student video contest entry and voting for the people's choice, promotion of BIPOC events, opportunities, and nature organizations that focus on serving the BIPOC population, promotion of Native American tribal messages, videos, and public events/workshops, promotion of fall salmon migration watch, Earth Day events, World Water Day, the Nature of Oregon Day, and surface water drinking water protection from the Clackamas and Portland area Regional Water Providers.

The Coalition also leveraged its other campaign work by cross promoting the KPTV public service announcement campaign with Meteorologist Mark Nelson called "Clean Water, It's Our Future" and the statewide campaign launch of "Follow the Water –Connect the Drops" and "What's Your Lawn Style" as well as promoting the brand of the River Starts Here and its website via digital advertising buys.

Overall, the work was successful in reaching many audiences, although engagement and entry into the Student Video Contest was significantly lower than the previous two years.

Summary Table of Social Media Advertising Results

Facebook & IG Paid Ad Reach	96,192	Likes were up by 108%, IG followers added 146
Facebook Annual Reach (includes organic posts)	173,761 (up 15.5%) Total posts: 113	Total followers 1,978 (up 302)
Instagram Annual Reach (includes organic posts)	8,673	

Annual Reach of IG/FB Ads & Boosted Posts	101,421	Engagement (likes, shares, comments) 8,225

The Coalition's social media across platforms is majority women (see graphic below). In particular, Facebook and Twitter reach women between 35-54, whereas on Instagram, the majority categories are 25-54. Consistent with industry stats for social media, the Coalition is reaching an older population 55+ on Facebook as compared to Instagram, and is reaching more people under 25 on Instagram.

To increase the number of followers who interact with the Facebook page, account administrators invite individuals who like posts to follow the Facebook page, as management time allows. Statistics also show that more consumer engagement occurs in the morning before 9 a.m. and in the late afternoon and evening after 4 p.m. Therefore, scheduling posts or posting within these time frames is a best practice, when possible, especially with a short video. Continuing to add hashtags and tagging River Starts Here partners is also a best practice.

Social Media Age and Gender Demographics for Reporting Year

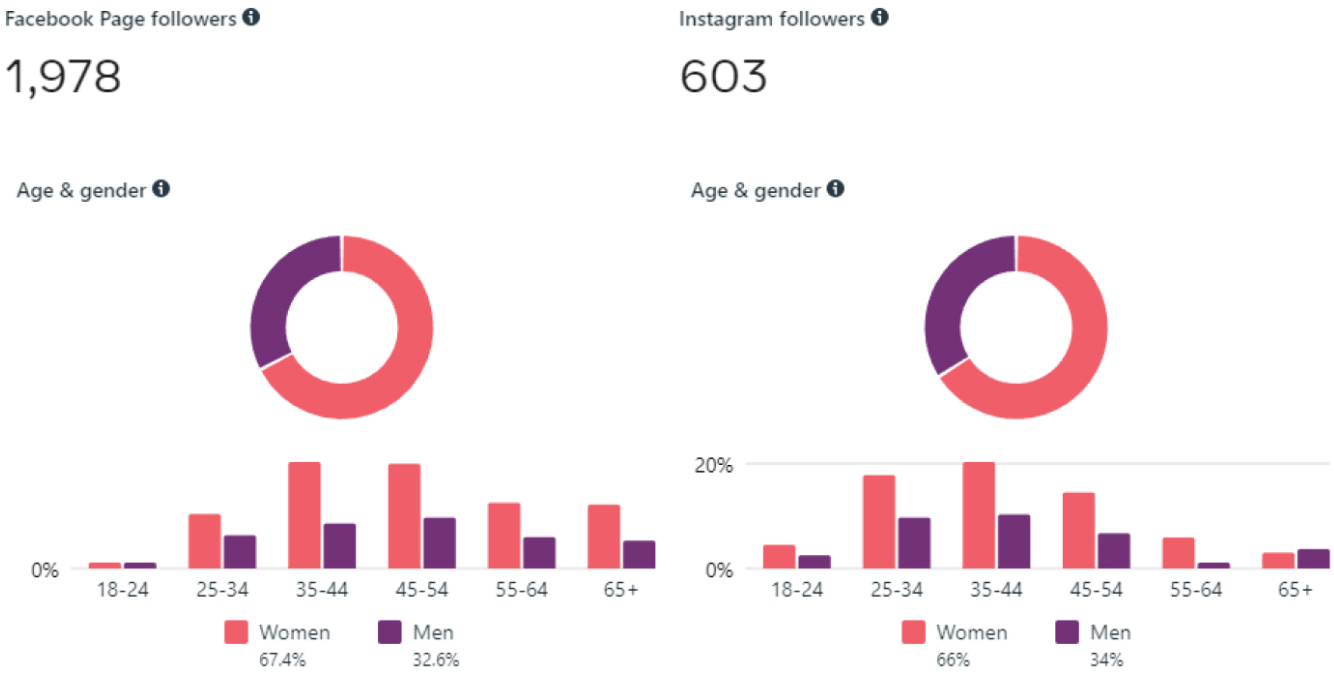


Table 1: Facebook followers by age range and gender. A large portion of the Coalition's Facebook audience is made up of women from age 35-54.

Facebook & Instagram ads, The River Starts Here

The Coalition continued to use low-cost social media advertising as part of its campaign in FY 2021-22. 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. Most advertising was on Facebook. Increasing the consistency and number of paid ads and boosted posts would be influential in gaining more reach from Facebook users.

Top Performing Ads, Boosts, & Posts during FY 21-22

Topic	Engagement	Reach
Black History Month: J. Drew Lanham	1,054	9,146
Black History Month: Estella Ehelebe	2,091	11,543
Black History Month: People of Color Outdoors	30	70
Black History Month: Blueprint Foundation	398	8,264
Water IQ	516	6,085
Salmon Water Conservation Curriculum for Teachers	173	3,071
Black History Month: Chad Brown	171	3,279
Follow the Water	26	10,980
Greater Oregon City Watershed Habitat Cleanup	444	6,518
Forest Park Conservancy/Love is King MLK day Event	110	7,042
Student Video Contest Ad	16	4,315
Earth Day Events	32	270
Student Video Contest	1	4,225
Student Video Contest Winners	200	368
Spring Lawn Care—What's Your Lawn Style	479	10,980
Organic Posts typical reach		~70

Engagement is an interaction such as a like, comment, or click thru. **Reach** is the number of individuals who saw or interacted with the post. **Cost per result** indicates how cost-efficiently you achieved the objectives you set in your ad campaign.

*Some ads also ran on Instagram.

Twitter, @riverstartshere

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

- **Followers:** 1,449 (▲8)
- **Tweets:** 11 (▼51)

The Coalition continued to utilize Twitter to primarily share posts and information about the Student Video Contest and reshare content from partners. Posts with images and content from affiliated groups received the most engagement. As a strategy, the Coalition can increase the number of tweets that are promoted and encourage partners to like and retweet content from The River Starts Here Twitter page.

Instagram, @theriverstartshere

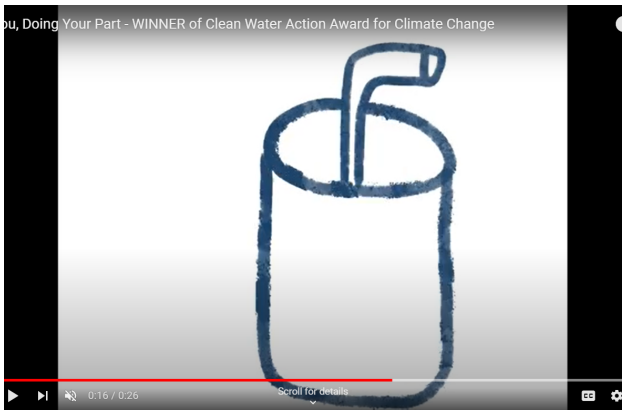
A summary of Coalition Instagram account use during the fiscal year is as follows:

- **Followers:** 602 (▲238)
- **Posts:** 14 (▼17)

The Coalition's move in 2020-2021 to consolidate Instagram handles and grow its audience continues to have noticeable effects on the diversity of people reached in comparison to last year. The Coalition can continue to build a following from youth by utilizing the Instagram Reels and Stories, adapting current social media challenges to fit River Starts' mission, and promoting Tik Tok content, and short clips, while reaching an older population through Facebook. All things to consider given the Coalitions' members limited time to manage multiple types of posting, advertising, and content generation.

YouTube, The River Starts Here

A summary of the Coalition YouTube account during the fiscal year is as follows:



- **Subscribers:** 170 (▲2)
- **Videos added:** 3 (▼38)
- **Watch time (hours):** 25 (▼107)
- **Views:** 2.1K (▼14.7K)
- **Impressions: ~17K**

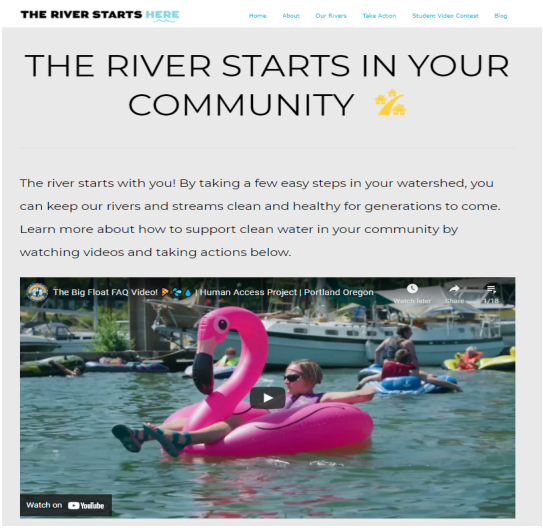
Since the 2019 inception of the Student Video Contest, entries have declined each year. The 2021 contest resulted in 234 video playlist views as a result of the People's Choice voting promotion. The most popular video across all playlists during the year was one of the 2021 contest winners "You, Doing Your Part" which has been seen 252 times.

FY 2021-22 EXPENDITURES

Category	Services	Investment
2022 Student Video Contest		
Participant awards		$1,500
Hollywood Theater	Honored Student Videos placement in the Portland EcoFilm Festival	$750
Advertisements		
Facebook & Instagram	Digital advertisements & Boosted posts	2, 179. 43
Snapchat	Student Video Contest Ads	$500
Coordination support		
EnviroIssues	Meeting support and member coordination, website maintenance, social media authoring	$19,998.00
	TOTAL	**$24,927.43**

OBSERVATIONS

The following observations are based on the results of FY 2021-22 activities and suggest additional 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 FY 2021-22 efforts consisted of the Coalition continuing to use digital advertising, contracting with EnviroIssues to assist with continued social media posts, meeting coordination and data analytics, and maintaining a YouTube page and blog.

While the Coalition's social media audience and its engagement grew slightly during the fiscal year, outreach for the Student Video Contest through schools continued to be challenging. The community capacity of schools, teachers, and students to become involved during the ongoing COVID-19 pandemic, with disruption and uncertainty for our education system, was severely impacted.

Based on feedback from partners, community members, and students, the River Starts Here team is exploring alternative ways to inform and engage youth during FY 22-23. The team is having ongoing conversations about finding alternative educational opportunities to bring attention to the importance

of water preservation and protection such as an art contest, social media contest, photo challenge, or potential Tik Tok challenge, as a new variation of the video contest.

The Coalition plans to continue to consult with social media specialists at Regional Coalition of Clean Rivers and Streams member agencies, including staff at the Oak Lodge Water District and Clean Water Services. The Coalition will also invest time in building and maintaining relationships with community partners and organizations that work with youth and Black, Indigenous, and People of Color (BIPOC) communities through outreach events and partnership opportunities.

APPENDIX B. Clean Rivers Coaliton Annual Report 2022

Clean Rivers Coalition

Annual Report - July 1, 2022 - June 30, 2023

Message from the Steering Committee:

Dear Partners and Collaborators,

The Clean Rivers Coalition Steering Committee is pleased to share this annual report for coalition activities from the previous fiscal year. We appreciate the time and thoughtfulness of each of our partner organizations, particularly to the municipal jurisdictions who help fund this work, and the EPA Columbia River Restoration Grant Program. We look forward to more fun, interesting, and engaging conversations, to move this collaborative effort forward!

- *CRC Steering Committee*

Contents

1. Clean Rivers Coalition Forum

On March 30, 2022, the Clean Rivers Coalition hosted our 7th Forum as a kick off celebration of the new Follow the Water campaign. We are grateful for the participation of the **75 folks** who were able to join us at this milestone event.

After years of work to create the Clean River Coalition, develop our mission and vision, and create the organizational structure to guide this work, the power of the power of the coalition was realized to pull together funding to create the campaign brand and strategy - and launch the visible campaign on the web and social media.

Forum attendees
10 Oregon cities
5 southwest WA cities
7 SWCDs
11 Counties & Regional Gov
7 Watershed Councils
2 Federal agencies
3 State agencies
6 Water related NGOs

At this virtual forum in March, participants shared their ideas on virtual white boards for social media content, and website resources for the new website. The input from the forum whiteboards was collated into spreadsheets, which serve as the guide for our new social media management consultant to develop content and to develop content themes.

2. Follow the Water Website

The Steering Committee worked with a Portland area web designer to develop the Follow the Water website (www.followthewater.info). The website hosts a variety of user engagement tools including a blog[1], web resources, and features stories of various kinds. The webpage features

[1] If you are interested in contributing a blog, please contact Roy.Iwai@multco.us

the Follow the Water brand which we developed the previous year with a media marketing firm. The logo, graphics, and color palette, as well as the “manifesto” blend together in a cohesive style layered with emotion and values. Follow the Water is about connecting people to their waterways, connecting people’s behavior their waterways, and promoting clean water behaviors, through “hope and curiosity.”

Expenditure: $5,000 (CRC funds)

3. EPA Grant 2020 projects completed in 2021-2020

Follow the Water (3-part Video series)

In January 2022, the Steering Committee completed a new video project in partnership with members of the **Columbia River Inter-Tribal Fish Commission** and the filmmakers at Metro East Community Media. The film, Follow the Water, is a story of our responsibility to reduce toxics in the Columbia Rivers that focuses on our shared values: our connection to our rivers. The film is unique in how it features stories from diverse cultural perspectives, centering on Native American cultural values. The three themes of the film - “connection,” “disconnection” and “reconnection” to our water - are timeless and resonate with the cultural climate of the day.

The representation of the distinct cultures is intentional, as is the storytelling predominantly told by diverse women. Where many river stories have focused primarily on salmon, this story is told through the wapato, the water potato, and Indigenous first foods. We are reminded that our connections to our rivers resonate in our being, and that water has inherent value and spiritual meaning. The message of the film is however we decide to connect to our rivers, by recreating, walking, photographing, or running along it, we can strengthen our connection and share it with others.

The films are housed on a new Follow the Water YouTube channel, as well as the Follow the Water website. Also, check out our Stakeholder Toolkit at: https://cleanriverscoalition.com/resources/

Expenditure: $25,000 (EPA funds)

What's Your Lawn Style (commercials and lawn care videos)

In Fiscal year 21-22, the CRC focused on implementing two projects as funded in the EPA Columbia River Toxic Reduction grant - the Follow the Water film series and a Pesticide Reduction project. The What's Your Lawn Style project was focused on delivering integrated pest management techniques for lawn care to reduce nonpoint source runoff of pesticides and quick release fertilizers by single family residents.

Previous research conducted by CRC in 2019 for audience segmentation[2] for pesticide use behavior revealed that the key audience for message delivery (and primary users of pesticides) are white males 34 to 54, earning more than $50K annually and using products, but found to be most open to other techniques. In other words, slightly younger and older white males also use pesticides but are not as open to behavior change.

CRC also conducted a survey of statewide stakeholders in 2019 to gather opinions about lawn techniques and what to focus on regarding success v. harm. CRC held a pesticide reduction and lawn care forum to engage stakeholders statewide in the concept development for the campaign. The CRC then formed a lawn care video committee, hired Metro East Community media via a competitive RFP and began developing short commercials to advertise the lawn care videos, as well as develop the OSU extension IPM approved script for techniques.

This project created four 30 second commercials that featured an "expert gardener[3]" male and female character who "pop up" to give unsuspecting advice to residents and featured the following scenarios:

1. A male lawn enthusiast spending lots of time trying to perfect his lawn speaking with a neighbor and child on the way to float in the river about what practices the neighbor employed with good results
2. A young couple relaxing on the lawn and the female complimenting the male on how nice the lawn looks and male explaining, "it looks good and its safe"
3. A female who manages the family lawn using weed and feed looking happy until she sees her partner bringing the baby and dog to relax on the lawn and has an epiphany
4. A female head of household influencer realizing that her partner is using dangerous chemicals on the lawn and wants a better way

These commercials, in long, short, and 6-second promo formats, were featured on YouTube as non-skippable ads, and included this riff on American Gothic. The commercials were only created in English because households with English as a second language were not found to be significant users of lawn & garden commercial products.

[2] CRC research, reports, branding strategy, etc. is available for stakeholders on its resources page: https://cleanriverscoalition.com/resources/

[3] To maximize flexibility in overall use of these commercials, the term Master Gardener was not used because it is trademarked to OSU exclusively.

The lawn care series was broken into three "ideals" to meet people where they are at: low effort (those who do not expend much effort to perfect their lawn), medium effort and high effort (those who want a golf course style beautiful lawn). CRC partners for this effort included Metro Regional government and OSU Extension (Metro region). These videos were narrated in both English and Spanish. Once the lawn care videos were complete, OSU extension created a webpage in English and Spanish[4] to house the content. For simplicity of advertising, a vanity url was created www.whatsyourlawnstyle.org and the call to action was "What's Your Lawn Style?" (WYLS).

The choice to co-brand WYLS with OSU ext. was deliberate because of the established brand and respect for OSU as a science institution. By placing
the materials here achieves a much higher rank in Google search and increases the likelihood of someone finding and visiting the page. Coming in FY 22-23, OSU extension will be launching the Solve Pest Problems IPM website for Oregon which will also feature the lawn care videos.

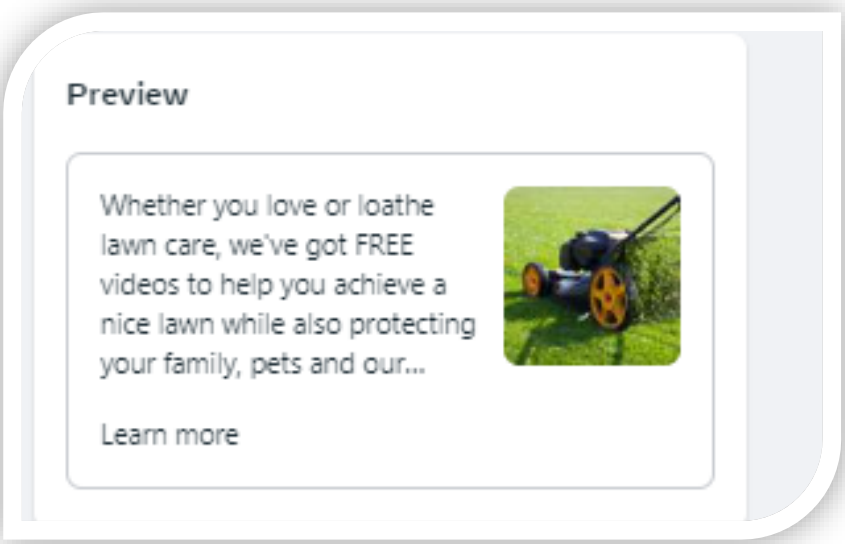
Simultaneously, CRC created its social media channels and website for its branded Follow the Water campaign. A "sister" channel was created for the lawn care campaign called What's Your Lawn Style? Additionally, the Follow the Water website houses the WYLS videos for those who begin following FTW social media channels to check out if they visit the site.

In summary, there are three homes on the internet currently for the videos that people can find in a variety of ways. **Lastly, Oregon and southwest WA stakeholders are encouraged to promote WYLS on their own social media channels and add links to their websites and embed the YouTube videos, as applicable to their pages and goals.** Check out our Stakeholder Toolkit at: https://cleanriverscoalition.com/resources/

Expenditure: Video and Commercials production $30,000 (EPA grant and Metro funding)

The FY 21-22 ad buys for WYLS did not launch until June due to production setbacks because of Covid-19, so only $2,900 was spent[5]. (See corresponding CRC newsletter for updated statistics on campaign performance for the first quarter of FY 22-23).

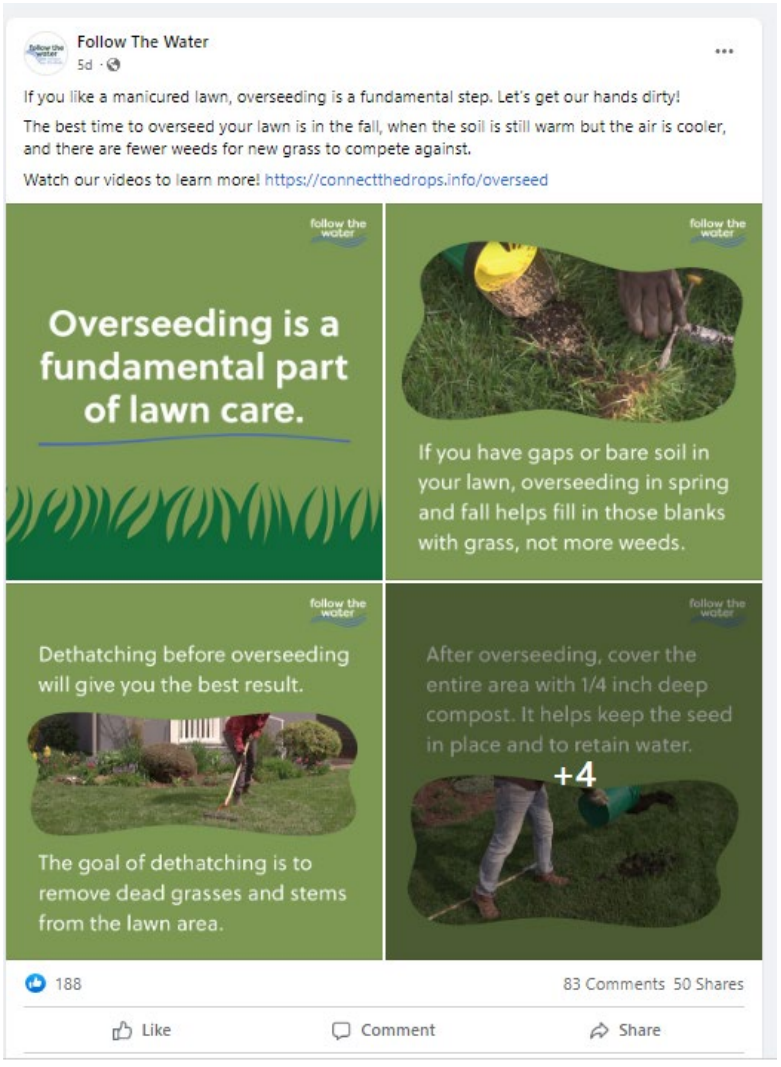
[4] We have not yet marketed the Spanish language videos but will in the future.
[5] The campaign will continue and ultimately spend $100,000.



Additionally, the Portland-Metro area group of agencies called the Regional Coalition for Clean Rivers and Streams, also began boosting the lawn campaign as of June 2022 in a $400 ad which resulted in 442 clicks from the 11,000 residents reached. (Image on left)

The image on the right is a lawn tutorial post on the Follow the Water Facebook account which was shared 50 times and received 83 comments!

Boosted (paid) social media posts: Total reach (~102K)



Fiscal Year 21-22 Lawn Care Impact Estimate[6]:
Visits to OSU Lawn Care webpage: 516 (avg time spent 2 minutes)
Total Lawn Care video views: English Low (207) Medium (87) and High (82)
Google Ads for lawn care commercials: Impressions (4,462) with 322 clicks
YouTube ads for lawn care commercials: Impressions (314,947) with 843 clicks
Boosted (paid) social media posts: Total reach (~102K)
Metro Area boosted post: Reach (11,000) with 442 clicks
Total link clicks: (580)
Total engagement[7]: (610)
Total Estimated FY 21-22 Engagement[8]: 3,109 people[9] with $3,300.
Total Impressions/Reach: 432,409 persons

Social Media Content and Digital Advertising

The Follow the Water campaign is built on digital and social media. We created the website, and social media channels including YouTube, Facebook and Instagram are our primary social media channels, as well as Twitter. Each outlet has its own unique strength to attract the engagement of our audience, and we build on each of these strengths.

In March 2022, we hired Parachute Strategies to manage this work in all our digital channels with a $180,000 contract. Funds from the first EPA grant (2019-2020) cover $60,000 cover the purchase of digital ads, social media software, and staff time. The Clean Rivers Coalition funds, supported by our municipal government funding partners provided $45,000, as match. The remainder of the contract funds will be paid through our second EPA grant (2021-2024), as well as continued funding from our partners[10]. This work continues at a vigorous pace, to firmly establish the brand and community reach in our populous areas.

Digital analytics are used to measure the effectiveness of our campaign. The number of impressions, reach, average cost-per-click, clickthrough rate, views and engagement are important measures from which we adapt our strategies.

[6] Statistics reflect June 2022 only, for FY 21-22 MS4 Annual reporting
[7] Engagement = total clicks, likes, comments, shares
[8] Engagement represents the deepest level of impact (watching, absorbing) v. Impressions/Reach = has seen the ad or post of the video, but has not necessarily absorbed the content.
[9] Does not include promotion post statistics from stakeholder independent work (cities, watershed councils, etc.)
[10] Agency support for this work is integral to the success in order to reach people, impact them, engage them, develop a water protection culture, and catalyze behavior change with simple actionable tips that everyone can do.

4. Our new EPA grant 2022

In November 2021, the EPA Columbia River Grant Program announced a second round of grant funding. The CRC steering committee developed the second phase of campaign implementation, based on the successes and challenges of the first grant from EPA. We were notified that our project was recommended for funding in June 2022. Total project funding of $463,216, is split between $347,412 from EPA, and $115,804 cost share. The cost share is made up almost entirely of in-kind support from City of Gresham grant administration and time from our partners.

The new grant proposal includes:

- *Pesticide Reduction using Community Based Social Marketing*. As COVID-19 limited the direct outreach to the public by jurisdictional and watershed partners, we held back from implementing the pesticide reduction program using the Community Based Social Marketing techniques. In the project, we will hire a consultant to help lead a pilot study of CBSM techniques for pesticide reduction in Lane, Clackamas, and Marion Counties.

- *Latinx Landscape Professional Outreach.* In partnership with Northwest Center of the Alternatives to Pesticides (NCAP), Metro, Eco-Biz, and OSU Extension, the CRC will provide education around pesticide exposure to the Spanish-speaking landscape community of professionals, as well as promote reduced pesticide use services to their clients.

- *Social Media and Digital Advertising*. Building on the existing social media and digital marketing campaign strategy, the CRC will continue to develop digital content and ads to achieve high saturation, impact, and engagement.

5. Summary

The Clean Rivers Coalition has participation from over 60 organizations, including federal and state agencies, local governments, watershed councils, Soil & Water Conservation Districts, and many water-related non-profits. Collaboration is key and we also appreciate financial contributions[11].

FY 22_23 will continue to focus on lawn care and creating the culture of water protection. Stay up to date by signing up for our e-news updates to stay informed and tell others!

[11] Your contribution is important to sustain our impact over time. Contact Roy.Iwai@multco.us