



City of West Linn, Oregon

NPDES MS4 Annual Report

2022 – 2023 Reporting Year

Prepared for the
Oregon Department of Environmental Quality

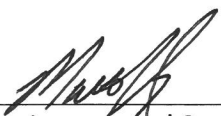
December 1, 2023

City of West Linn

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) ANNUAL REPORT

JULY 1ST, 2022 – JUNE 30th, 2023

I, the undersigned, hereby submit this NPDES MS4 Annual Report in accordance with Permit No. 101348. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.



Environmental Services Supervisor
City of West Linn Public Works

Date 11/20/2023

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1.0 INTRODUCTION

The Oregon Department of Environmental Quality (DEQ) regulates stormwater runoff from the City of West Linn (City) through the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit No. 101348, issued to 12 co-permittees in Clackamas County. Each co-permittee is required to submit an annual report, summarizing accomplishments and implementation of their individual Stormwater Management Program Document (SWMP).

This annual report documents stormwater management activities from July 1, 2022 to June 30, 2023, in conjunction with the City's 2012 SWMP and 2021 NPDES MS4 permit. The City's 2012 SWMP remains the effective NPDES MS4 program document for purposes of this annual report. An updated 2022 SWMP was submitted to DEQ and approved in May of 2023.

1.1 NPDES MS4 Permit Background

The Clackamas County Phase I NPDES MS4 Permit was originally issued in 1995 to Clackamas County's co-permittees including the cities of West Linn, Lake Oswego, Gladstone, Milwaukie, Oregon City, Wilsonville, Happy Valley, Johnson City, and Rivergrove, the Oak Lodge Water Services District (OLWSD), Clackamas County Service District No. 1 (CCSD#1) and Surface Water Management Agency of Clackamas County (SWMACC). On February 28, 2017, the City submitted to DEQ a Permit Renewal Application, and the City's permit was initially reissued on September 15, 2021, effective October 1, 2021. The Clackamas County NPDES MS4 Permit was modified in 2023 due to adjustment of pesticide monitoring requirements and has a current effective date of May 5, 2023.

With the reissued 2021 Permit, an updated SWMP was prepared and submitted December 1, 2022. The City received approval of their SWMP in May 2023, but due to the late nature of that approval, the City's 2012 SWMP remains in effect for the 2022-23 reporting year.

1.2 Document Organization

The table below outlines the organization of this annual report document, with respect to the annual reporting requirements per Schedule B.5 of the City's 2023 Permit. Specific Best Management Practices (BMPs) and activities per the 2012 SWMP are summarized in Appendix A.

Table 1 – 2021 NPDES MS4 Annual Reporting Requirements

Annual Reporting Requirements from Schedule B.3.a. - I.		Location in document
a.	The status of implementing the Stormwater Management Program (SWMP) and each control measure program element in Schedule A.3., including progress in meeting the measurable goals and program tracking and assessment metrics identified in the SWMP Document as well as additional annual reporting requirements identified in each section, or, prior to SWMP Document approval by DEQ, measurable goals and tracking metrics approved under the previous permit's approved SWMP.	Appendix A
b.	A summary of the adaptive management implementation and any changes or updates to programs made during the reporting year, including rationales for any proposed changes to the SWMP (e.g., new BMPs), and review of related new and historical monitoring data. This summary should also include discussion of the implications of, or any findings related to recent years' adaptive management and/or changes made to the SWMP Document, based on data from tracking measures, measurable goals, and/or any monitoring related to the change.	2.0
c.	Any proposed changes to SWMP program elements that are designed to reduce Total Maximum Daily Loads (TMDL) pollutants.	None this reporting year
d.	A summary of education & outreach and public involvement activities, progress toward or achievement of measurable goals, and any relevant assessment of those activities. This should include planned adaptive management or other program enhancements to occur in the following years.	Appendix A – Element #4 and Sections 6.2 & 6.3
e.	A summary describing the number and nature of enforcement actions, inspections, and public education programs, including results of ongoing field screening and follow-up activities related to illicit discharges.	Appendix A – Element #1 and Section 6.1
f.	A list of entities referred to DEQ for possible 1200-Z NPDES general permit coverage based on co-permittee screening activities, a list of categories of facilities inspected, and an overview of the results of inspections of commercial and industrial facilities.	Appendix A – Element #2
g.	A summary of total stormwater program expenditures and funding sources over the reporting fiscal year, and those anticipated in the next fiscal year.	3.0
h.	A summary of monitoring program results, including monitoring data that are accumulated throughout the reporting year submitted in the DEQ-approved Data Submission Template, and any assessments or evaluations of that data completed by the co-permittees or an authorized third party.	4.1, and online submission of data.
i.	Any proposed modifications to the monitoring plan that are necessary to ensure that adequate data and information are collected to conduct stormwater program assessments	4.0
j.	An overview, as related to MS4 discharges, of concept planning, land use changes and new development activities (including the number of new post-construction permits issued) that occurred within the Urban Growth Boundary (UGB) expansion areas during the reporting year, and those forecast for the following year, where such data is available.	5.0 & Table 4 and Section 6.4
k.	The details of all corrective actions implemented associated with Schedule A.1.b.iii during the reporting year.	Appendix A-Element #3

I	Additional Annual Report requirements for 2023 including: 1) Erosion control enforcement procedures (Appendix F), 2) Low Impact Development (LID)/Green Infrastructure (GI) Strategy (Appendix B) 3) Dry weather screening field screening prioritization criteria (Section 6.6), 4) Industrial/Commercial Facilities Strategy (Section 6.6), 5) Hydromodification Assessment and Stormwater Retrofit Strategy (Appendix C).	Appendices B, C and F, Section 6.6
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2.0 ADAPTIVE MANAGEMENT PROCESS IMPLEMENTATION

In accordance with the issuance of the City's NPDES MS4 Permit in 2012, the City was required to document their adaptive management approach to assess annually and modify, as necessary, existing and new SWMP components. The City submitted their adaptive management approach to DEQ on November 1st, 2012, as required in the 2012 Permit. No recent changes have been made to the adaptive management approach.

Historically, the City has implemented adaptive management principals to annually refine implementation methods and data collection activities in conjunction with their effective SWMP and BMPs. More significant modifications to SWMP activities occur every 5 years, in conjunction with the permit renewal application and updated permit requirements. The City's adaptive management approach maintains consistency with the City's historical approach for implementing adaptive management principals.

Annually, as the City completes their NPDES MS4 annual report, the City reviews SWMP implementation through BMP-specific measurable goals and tracking measures. The City collects data and feedback from staff responsible for implementing and reporting on each BMP to gauge whether implementation was deemed to be effective or whether there are suggested improvements to be made. Suggested adjustments to BMP implementation may include consideration of resource availability, budget/funding, and overall need. Every 5 years, during the permit renewal process and SWMP update effort, additional factors are considered as part of the City's overall adaptive management process. These factors include more detailed information related to BMP implementation, such as:

- Is technology or information available that would help improve or refine BMPs?
- How representative are the measurable goals and tracking measures to the BMP objective?
- Are resources available to make changes to the measurable goals and BMP objectives?

Additionally, technical investigations and studies required in the permit also inform adaptive management changes. During the 2012-2017 permit term, such studies included a water quality trends analysis, pollutant load reduction evaluation, hydromodification assessment, and a retrofit assessment. All studies were submitted according to the 2012 Permit deadlines. A summary of proposed SWMP modifications was submitted with the City's Permit Renewal Application on February 28, 2017.

In 2022, the City's SWMP and environmental monitoring plan (the Comprehensive Clackamas County Monitoring Plan or CCCSMP) went through an update process as required under the new 2021 MS4 NPDES Permit. The SWMP and CCCSMP were reviewed against new permit requirements and updated as needed to meet requirements and to be consistent with the latest management practices. The SWMP was submitted to DEQ in December 2022 and approved by DEQ in May of 2023. The CCCSMP was initially submitted to DEQ in

December 2022, and subsequently updated in accordance with the Clackamas NPDES MS4 permit modification (effective May 5, 2023), and approved by DEQ in June of 2023.

The City updated the 2022 SWMP during FY2023 to document completion of 2023 deliverables. No additional proposed changes were made to the SWMP at this time. A Change Log is included in the updated SWMP to document SWMP changes. The revised SWMP is posted on the city website in the **document library**¹.

¹ [MS4 Program Reference Library | City of West Linn Oregon Official Website](#)

3.0 PROGRAM EXPENDITURES

A summary of the City's Environmental Services Division (ESD) funding sources, expenditures for the fiscal year (FY) 2023, and a projection of the City's expenditures for FY2024 are provided in Table 2 (see orange highlight for surface water).

Table 2 – City of West Linn Environmental Services Fund for the FY ending June 30th, 2023			
	Department No. 432 Surface	Department No. 433 Sewer	Total Environmental Services Fund #505
Funding Sources:			
Charges for Services	\$ 1,188,030	\$ 3,228,625	\$ 4,416,655
SDC Reimbursement Fees	15,210	12,633	27,843
Interest	500	0	500
Transfer from other Funds	0	0	0
Misc.	0	110,606	110,606
Total	\$ 1,203,740	\$ 3,351,864	\$4,555,604
Expenditures			
Personal Services	\$ 409,477	\$ 293,301	\$ 702,778
Materials and Services	203,240	211,590	414,830
Capital Outlay	846,733	891,695	1,738,428
Transfers	1,555,000	0	1,555,000
Total	\$ 3,014,450	\$ 1,396,586	\$ 4,411,036
Projected Expenditures for 2024-2025			
Personal Services	\$ 390,000	\$ 284,000	\$ 674,000
Materials and Services	414,000	262,000	676,000
Capital Outlay	3,386,710	2,074,542	5,461,252
Transfers	1,496,000	0	1,496,000
Total	\$ 5,686,710	\$ 2,620,542	\$ 8,307,252

4.0 ENVIRONMENTAL MONITORING PROGRAM

The 2022-2023 reporting year represents the 6th year implementing the 2017 Comprehensive Clackamas County Stormwater Monitoring Plan (CCCSMP). The CCCSMP was originally developed in 2007 to implement an effective environmental monitoring program that adequately met all permit requirements and objectives for Clackamas co-permittees. The CCCSMP was updated in 2012 and again in 2017 to address instream, stormwater outfall, biological, mercury and pesticide monitoring requirements outlined in the 2012 NPDES MS4 Permit.

Starting in February 2022, the City began coordinating with the larger group of Clackamas County co-permittees to update the CCCSMP to address the 2021 NPDES MS4 Permit. The CCCSMP was most recently updated and resubmitted to DEQ on May 30, 2023, following the completion and outcome of the Clackamas NPDES MS4 Permit Modification (initiated in January 2023). The CCCSMP reflects updated pesticide monitoring frequencies and was approved by DEQ on June 7, 2023, for implementation beginning in July 2023. Specifically, for the City of West Linn, updates to the CCCSMP address new requirements related to mercury and pesticide monitoring. New monitoring procedures and updated parameters are also reflected.

During the 2022-2023 reporting year, the City continued implementing its current environmental monitoring plan (2017 CCCSMP) with no changes.

As described in the CCCSMP, stormwater monitoring programs require two components. The first component is **program monitoring**, which involves the tracking and assessment of programmatic activities, such as erosion and sediment control, stormwater conveyance system cleaning and maintenance, industrial and business inspection programs and public education and outreach. These are further described in the City's SWMP, through the use of performance indicators or metrics. The second component is **environmental monitoring**, which includes visual monitoring and the collection and analysis of Instream and Stormwater Outfall samples. Visual monitoring efforts include Dry Weather Field Screening as described in the City's SWMP under the "Implement the Illicit Discharge Elimination Program" BMP. Results for dry weather field screening are detailed in Section 6.1, Table 5. The CCCSMP addresses the environmental monitoring components of the NPDES MS4 Permit.

In accordance with the CCCSMP, Instream Monitoring efforts are focused on collecting ambient water quality data during both dry weather (July 1 – September 30; May 1 to June 30) seasons and wet weather seasons (October 1 to April 30). As instream water quality tends to change during storm events, sample collection is targeted during storm events and during dry weather conditions to allow the City to assess water quality impacts from MS4 discharges. For the 2022-23 reporting year, the City of West Linn continued to target storm events to meet their instream sampling requirement.

In West Linn, stormwater monitoring efforts are focused on capturing storm-specific data from residential land use. The collection of stormwater samples allows for the identification of pollutant sources, characterization of stormwater and indication of the effects that stormwater runoff may have on instream water quality when compared with instream water quality data.

4.1 Summary of Monitoring Data

Instream and Stormwater monitoring locations and required frequencies are outlined in Table 3 below in accordance with the 2017 CCCSMP. Complete instream and stormwater outfall sample results were submitted to DEQ through their online web portal.

During the 2022-2023 monitoring year, the City conducted the required Instream sampling during five events at three locations – this included three required storm events and two dry weather events. The City also collected samples as required during three storm events at one stormwater outfall monitoring site.

Table 3 – West Linn Instream & Stormwater Outfall Monitoring Locations and Frequencies				
Site #	Creek Name, Location & Receiving Water	Collection Method	Required Frequency	Weather
Instream Monitoring				
WL_01	Trillium Creek at 3821 Calaroga Road that flows to the Willamette River	Grab & Composite	5/year	Dry Weather (2/year) & Storm Events (3/year)
WL_02	Tanner Creek at 4103 Imperial Drive that flows to the Willamette River	Grab & Composite	5/year	Dry Weather (2/year) & Storm Events (3/year)
WL_03	Unnamed Creek at Ryan Ct. & Johnson Road that flows to the Tualatin River	Grab & Composite	5/year	Dry Weather (2/year) & Storm Events (3/year)
Stormwater Outfall Monitoring				
WL_04	Barlow Creek Outfall at Summit St. & Horton Rd. that flows to the Willamette River	Composite	3/year	Storm Events Only

5.0 OVERVIEW OF PLANNING AND LAND USE CHANGES, URBAN GROWTH BOUNDARIES (UGB) EXPANSIONS AND NEW DEVELOPMENT ACTIVITIES

In West Linn, annexations are typically applicant and development driven. The City and the City Council do not typically initiate the annexation of property outside of the city limits.

5.1 Summary of Land Use Changes and UGB Expansions

West Linn did not approve any UGB expansions or prepare for any future expansions of the UGB into the Stafford area in FY 2022/23. There were no annexations this FY.

5.2 Development Activities within the UGB

Below is summary of development activities within the UGB in FY2023:

- MIP-22-01 – Partition of a 49,000 sq. ft. property into three parcels
- MIP-22-02 – Partition of a 23,000 sq. ft. property into two parcels
- MIP-22-03 – Partition of a 24,000 sq. ft. property into two parcels
- MIP-22-04 – Partition of a 17,000 sq. ft. property into two parcels
- MIP-22-05 – Partition of a 10,000 sq. ft. property into two parcels

- MIP-22-06 – Partition of a 30,000 sq. ft. property into two parcels
- SUB-22-01 – Division of a 25,000 sq. ft. property into four lots
- MIP-23-02 – Division of 32,000 sq. ft. property into two parcels
- MIP-23-03 – Division of 27,000 sq. ft. property into two parcels
- ELD-23-01 – Division of 10,000 sq. ft. property into two parcels
- ELD-23-02 – Division of 12,000 sq. ft. property into four lots

The City of West Linn requires stormwater management for new and redevelopment activities exceeding 1,000 square feet of impervious surface in accordance with the City of Portland's Stormwater Management Manual (2016). Stormwater quality facilities installed during **FY 2022-2023** included rain gardens, soakage trenches, drywells and water quality facilities to retain stormwater onsite.

Table 4 – Public and Private Best Management Practices		
Type of Facilities	Drainage Area in sq. ft.	Impervious Area in sq. ft.
Private Rain Gardens (3)	2,502	2,502
Private Planters (10)	25,022	25,022
Private swale (1)	3,536	3,536
Private Soakage Trenches (3)	11,630	11,630
Private Drywells (2)	7,298	7,298
Private Manufactured Facility (1)	9,386	9,386
Public Basins (2)	47,419	47,419
Total Square Feet	106,793	106,793
Acres	2.45	2.45

6.0 ADDITIONAL ACTIVITIES

6.1 SWMP Element #1: Illicit Detection & Elimination – Conduct Annual Dry Weather Field Screening

Dry weather field screening was conducted at six locations in August of 2022. There was no recorded precipitation for more than 72 hours prior to the inspections. No illicit discharges were found. When there is any flow quantity from an outfall, the City is required to take field readings for temperature, pH, dissolved oxygen, and conductivity. Conductivity can be strongly related with the total amount of dissolved material in water, and it can have value in detecting non-stormwater related discharges. pH can also be a good indicator of non-stormwater discharges. Where there was flow, none of the readings exceeded the action levels for pH or conductivity, which is anything outside of the range of 6.5 to 8.5 for pH and exceeding 500 $\mu\text{S}/\text{cm}$ for conductivity. Visual monitoring results from the dry weather field screening is summarized in Table 5 below.

Minor updates were made to the City's IDDE Standard Operating Procedure in September 2023, in accordance with requirements of the 2023 NPDES MS4 permit (Clackamas NPDES MS4 permit modification effective May 5, 2023). Additional detail is provided in Section 6.6.1.

Table 5 – Dry Weather Field Screening Results 2022-2023									
Site Number	Site Location	Creek Name	Flow Quantity	Clarity	Odor	Color	Foam or Sheen	Garbage Present?	Wood Debris
1	Brandon Place	Tualatin River	Trickle	Clear	None	Clear	None	No	None
2	13 th St @ I-205	Bernert	Low	Clear	None	Clear	None	No	None
3	Imperial Drive	Tanner	Trickle	Clear	None	Clear	None	Light	None
4	Hollowell Trail	McLean	Trickle	Clear	None	Clear	None	Light	None
5	Barclay & Tompkins	Barlow	None	N/A	N/A	N/A	N/A	No	None
6	19625 Old River Drive	Robin	None	N/A	N/A	N/A	N/A	No	None

6.2 SWMP Element #4: Education & Outreach – Promote Staff Education Related to Environmentally Friendly Solutions

The City's employee training and relevant conference attendance in FY 2022-2023 are summarized in Table 6 below.

Table 6 – Employee Training & Relevant Conference Attendance			
Name of Training	Location	Dates	Number of Employees
Invasive Pest Management	Virtual	10/5/2022	5
Managing Pests of White Pines	Virtual	10/18/2022	1
Identifying and Managing Toxic Plants	Virtual	11/15/2022	1
OGCA Pest Management Series	Virtual	12/6/2022-12/14/2022	3
Right Of Way Pest Control	Virtual	12/19/2022	5
Right of Way Pest Management Overview	Virtual	12/19/2022	5
Balancing Pest Management and Pollinator Health	Virtual	12/20/2022	5
Aquatic Weed Management	Virtual	12/20/2022	5
FUNGICIDES AND PLANT PATHOGEN SAMPLING	Virtual	12/20/2022	5
POLLINATOR STEWARDSHIP	Virtual	12/20/2022	5
RIGHT-OF-WAY WEED CONTROL	Virtual	12/20/2022	5
CALIBRATION CLINIC - PESTICIDE SPRAYERS AND SPREADERS	Virtual	12/21/2022	5
PESTICIDE LABELS AND SAFETY DATA SHEETS	Virtual	12/21/2022	5
Nursery Greenhouses	Virtual	1/11/2023	1
Forestry	Virtual	1/19/2023	2
Certified Erosion And Sediment Control Lead (CESCL)	Virtual	2/9/2023-2/10/2023	2
ASI Qualified Construction Stormwater Inspector	Virtual	2/22/2023	1
ASI Qualified Erosion & Sediment Control Inspector	Virtual	2/23/2023	1
ACWA Stormwater Summit	Corvallis	5/24/2023	1
Stormwater Permit and Regulations Introduction	Virtual	6/12/2023	3

6.3 SWMP Element #5 BMP: Public Involvement and Participation

The City's NPDES MS4 Permit requires that the City provide opportunities for the public to participate in the development, implementation, and modification of the City's stormwater management program. Annual reports are provided to the public for comment. The 2021-2022 NPDES MS4 Annual Report was posted to the City's website for public review and the City received no comments. The City's SWMP and the CCCSMP were also posted to the City's website for a 30-day public comment period prior to submittal to DEQ on December 1, 2022. The City received no public comments.

6.4 SWMP Element #6 BMP: Post-Construction Site Runoff – Review and Update the Applicable Code and Development Standards related to Stormwater Control

The City's Storm Drainage Master Plan was adopted by the City Council in November 2019, and it included a comprehensive review of the West Linn Municipal Code, West Linn Public Works Design Standards and Standard Construction Specifications (PWDS), and the West Linn Community Development Code (CDC). The Master Plan includes recommended updates to the PWDS and CDC intended to improve consistency with the NPDES MS4 permit requirements and guide developers implementing stormwater management in the City. Some of the recommendations were incorporated into the PWDS in October 2018.

In conjunction with the City's LID/ GI Strategy (see Appendix B), a more significant update to the City's PWDS is anticipated during the 2023-24 reporting year.

6.5 Winter Maintenance Activities

The City of West Linn has a snow and ice control plan that they follow during the winter months in anticipation of, and in response to winter weather events. The plan is reviewed and regulated yearly to improve responses to winter events. The City of West Linn's snow and ice plan addresses how snow removal, sanding, and chemical application is implemented to meet specific service levels, standards, and priorities. The City of West Linn also has winter weather area/route maps which are located on the City of West Linn website. These maps indicate the primary and secondary snow plowing and deicing routes, as well as streets that are subject to closures during a winter event. Public Works staff use a deicer on primary and secondary hills to aid in the snow and ice removal. The City of West Linn utilizes Magnesium Chloride as a deicer. Magnesium Chloride is an environmentally friendly liquid which is produced from natural minerals, and is the same product used on freeways. As a part of the City of West Linn's winter weather event plan, the deicer can be applied before or during a storm to prevent snow and ice from freezing to the pavement. A visual indication of deicer being utilized is the presence of parallel lines on the pavement. The City of West Linn has an 8,000-gallon tank of deicer located at 4001 Willamette Falls Drive. In addition, the city stores 400 tons of sanding rock at the public works yard.

During the 2022-2023 reporting period snow and ice events, the City used 3,275 gallons of deicer at a rate of 30 gallons per lane mile and 30 tons of sanding rock during four different weather events.

6.6 Additional 2023 Reporting Requirements Summary

Below is a status of each of the additional deliverables and reporting requirements due December 1, 2023 per the City's 2023 NPDES MS4 permit (Clackamas NPDES MS4 permit modification effective May 5, 2023):

- LID/GI Strategy – See Appendix B
- City's Infrastructure Retrofit and Hydromodification Assessment Update – See Appendix C
- Updated Public Work's Erosion Control Enforcement - See Appendix F

6.6.1 Dry Weather Screening Prioritization Criteria

In September of 2023 the city changed two of its high priority field screening locations due to baseflow issues. The two locations that the city removed were 13th street at I-205 (Site 2) and Century Drive at Lowry Street (Site 5). The city identified two new locations with no baseflow downstream from an aging infrastructure, these new locations are located at 2200 16th street (Site 2) and 2030 Dillow Drive (Site 5). For more detail the updated IDDE SOP is on the city website in the **document library**.

6.6.2 Industrial/Commercial Facilities Strategy

The City of West Linn has updated its industrial/ Commercial facility strategy to fulfill requirements of Schedule A.3. g. i and A.3.g.ii of the city's NPDES MS4 permit, effective May 5,2023.

West Linn has decided to implement a windshield survey screening process. Sites will be initially identified as high, medium, or low potential through a windshield survey. followed by a Formal, onsite inspections for businesses classified as "high" potential polluters.

Changes to the Industrial/Commercial facility cite visit form have been made to better fit the new type of inspections city staff will be performing.

This document was uploaded onto the city website for public reviewal on 10-23-2023 and removed on 11-23-2023. The city received no public comments. It can now be found on the City of West Linn's **document library on the city website**.

Appendix A

West Linn 2022-2023 Stormwater Management Plan (SWMP) Implementation Status

(Based on the 2012 SWMP)

Key to Pollutant Symbols: A full circle (●) indicates the BMP is expected to address the parameter. An empty circle ○ indicates the BMP may be expected to address the parameter. A blank cell indicates that the effect of the BMP is unknown at this time.

Appendix A – Status of Implementing Components of West Linn’s 2012 Stormwater Management Plan (SWMP)								
Best Management Practice or Activity	Addresses Bacteria?	Addresses Mercury and SVS?	Addresses Phosphorus?	Responsible Division/ Department	Measurable Goals (2012 SWMP)	Tracking Measures	Annual Report Information: Tracking Measure Status, Permit Year 2022-2023	Additional Detail Related to Activities Conducted
Element 1: Illicit Discharge Detection and Elimination								
Implement the Illicit Discharge Elimination Program	○	○	○	City of West Linn Public Works Environmental Services Division (CWL-ESD)	- Document and implement the details of the City’s IDDE program in a Standard Operating Procedures manual by November 1, 2012. - For identified illicit discharges, conduct appropriate actions to remove the discharge in conjunction with time frames outlined in the City’s NPDES MS4 Permit. - Track and record all identified illicit discharges and how such discharges were removed.	(1) Track the status of completing the IDDE SOP manual. (2) Track the number, location, resolution, and enforcement activities related to any illicit discharge investigation conducted.	(1) The City of West Linn developed an IDDE SOP (effective date: November 1, 2012). The SOP includes guidelines for identification and enforcement of illicit discharges as well as how to inspect the priority outfalls for Dry Weather Inspections. (2) There were no potential illicit discharges reported or identified during the 2022-2023 reporting year.	
*Conduct Annual Dry Weather Field Screening	○	○	○	CWL-ESD	- Conduct dry weather, illicit discharge inspections annually at all priority outfall locations. - Develop pollutant parameter action levels to assist in the identification of non-permissible discharges by November 1, 2012. - If necessary, update existing mapping related to outfalls and priority outfall locations in accordance with field observations.	(1) Track the number and location of high priority outfalls inspected during dry weather illicit discharge inspection activities. (2) Summarize inspection results and indicate outfalls requiring sampling and/or investigations. (3) Indicate the outcome and resolution of any investigation activities conducted.	(1) Six high priority outfalls were inspected as part of the annual dry weather field screening activities on August 19 th , 2022. (2) Inspection results did not indicate the presence of any illicit discharges. Where water was found in the outfalls, the City tested for pH, temp., DO and conductivity. Results were within normal ranges according to the IDDE SOP, so it wasn’t necessary to take any samples. (3) Inspection results are provided in Section 6.1, Table 5 of this report. None of the inspection results warranted follow-up investigations. In accordance with the IDDE SOP, priority inspection locations were updated in 2012 to better reflect outfalls with solely stormwater contribution to receiving waters (i.e. avoiding inline facilities).	
Implement the Spill Response Program	○	○	○	CWL-ESD and Tualatin Valley Fire and Rescue (TVFR) (via contract with the City)	- CWL-ESD to respond to minor spills. - Call Tualatin Valley Fire and Rescue to respond to significant spills.	(1) Indicate the number of spills reported to the City of West Linn Environmental Services. (2) Track the number of spills responded to by the City of West Linn Environmental Services and Tualatin Valley Fire and Rescue. (3) Indicate sources, causes, and types of discharges resulting from identified spill activities.	(1) 3 spills were reported to West Linn’s Environmental Services Division of Public Works and TVF&R. (2) The City of West Linn Environmental Services responded to 1 spills and Tualatin Valley Fire and Rescue (TVF&R) responded to 2 spills. (3) Spill 1: (3-4-2023) 5639 Hood St in the parking lot of Market of choice a black Kia had a slow fuel leak underneath their car while parked. TVF&R put out absorbent material to clean up spill. Approx. 1 quart of fuel leaked out. (3) Spill 2: (3-4-2023) 3467 Chippewa Ct. Residential fire that spread to a car in the driveway Approx. 15-30 gallons of fuel spilt out. TVF&R did a test for petroleum in the MS4 system and none was detected. Absorbent material was put down then cleaned up. (3) Spill 3: (6-1-2023) 2312 5th Ave Customer had a private sewer lateral blockage that released approx. 5 gallons of sewage onto a landscaped area between road and sidewalk. City crews cleaned up spill with a vactor truck.	
Element 2: Industrial and Commercial Facilities								
Screen Existing and New Industrial Facilities	○	○	○	CWL-ESD	Notify DEQ of any existing or new industrial facilities within the City of West Linn jurisdiction that may potentially be subject to an industrial stormwater NPDES permit.	(1) Track the number of existing or new facilities subject to a stormwater industrial NPDES permit during the permit term.	(1) The one industrial business in West Linn, the West Linn Paper Company reopened in the summer of 2019. The facility operates under an NPDES permit issued by DEQ (facility #21489).	
Conduct Priority Facility Inspections	○	○	○	CWL-ESD	Inspect identified priority industrial or commercial facilities once during the permit term.	(1) Track the number and outcome of priority facility inspections conducted over the permit term.	(1) No commercial or industrial inspections were performed during the reporting period. An SOP was developed to determine which commercial properties should be considered priority. All the high priority properties have been inspected throughout the permit term.	

* indicates there is more information in Section 6.0 Additional Activities

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Appendix A continued – Status of Implementing Components of West Linn’s 2012 Stormwater Management Plan (SWMP)								
Best Management Practice or Activity	Addresses Bacteria?	Addresses Mercury and SVS?	Addresses Phosphorus?	Responsible Division/ Department	Measurable Goals (2012 SWMP)	Tracking Measures	Annual Report Information: Tracking Measure Status, Permit Year 2022-2023	Additional Detail Related to Activities Conducted
Element 3: Construction Site Runoff Control								
Implement the Erosion Control Manual	○	●	●	City of West Linn Public Works Engineering Division and Planning Department	- Require submission of erosion control plans for development greater than 1000 ft². - Require a copy of all 1200-C permit applications for development greater than five acres. - Assess new and redevelopment applications for erosion control compliance during plan review. Require erosion and sediment control plans not in compliance to be amended prior to approval in conjunction with provisions outlined in the Clackamas County Erosion Prevention and Sediment Control Manual (2008).	(1) Report any updates or modifications to the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (2008). (2) Record the number of erosion control permit (City issued and DEQ issued) applications received. (3) Track the number of erosion and sediment control plan reviews completed.	(1) The Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual was updated in June 2020. (2) West Linn received a total of <u>44</u> Erosion Prevention Permit applications. (3) <u>30</u> Building Erosion Control plans were reviewed, amended, and issued.	
Provide Educational Information to Construction Site Operators	○	○	○	City of West Linn Public Works Department and Building Department	Provide educational information to construction site operators and the general public via brochures, flyers, pamphlets, and attachments to building and grading permit applications.	(1) Verify that this BMP was conducted.	(1) The City of West Linn website has a link to erosion control, enforcement, erosion prevention and design manual, erosion control permit, 1200-C program, and an environmental protection guide.	
Conduct Erosion Control Inspections and Enforcement	○	●	●	City of West Linn Public Works Engineering Division	- Conduct an initial and a final site inspection on all sites with an erosion control plan for appropriate erosion control. - As necessary, enforce appropriate erosion and sediment control in conjunction with the three-step progression as outlined on the City’s website. - Require all disturbed areas to be permanently stabilized or vegetated prior to final engineering or building inspection. - Ensure a minimum of one additional erosion control inspection is conducted during active construction on all sites with an erosion control plan.	(1) Track the number of erosion control inspections conducted each year. (2) Report the number of notices of noncompliance and stop work orders issued, and describe the measures used to resolve the issue.	(1) The following number of erosion control (EC) inspections were conducted during the 2022 – 2023 reporting year: Preliminary Inspections: <u>8</u> Approved, <u>16</u> Approved w/conditions, <u>6</u> Denied Mid Inspections: <u>10</u> Approved, <u>3</u> Approved w/conditions, <u>10</u> Denied Final Inspections: <u>42</u> Approved, <u>1</u> Approved w/conditions, <u>3</u> Denied (2) <u>49</u> Notices of non-compliance where issued in the 2022-2023 reporting year. Zero stop work orders were issued.	Permit violations are issued in a three step enforcement progression as follows: 1st a written notice of the inspection findings and required corrections (Warning) 2nd Should corrections not be implemented, a notice of non-compliance will be issued with the required corrections. 3rd Should corrections remain unaddressed a stop work order will be issued. Additionally, a stop work order may be issued at any time a permit violation occurs.
Element 4: Education and Outreach								
Provide Public Education and Outreach Materials Regarding Stormwater Management	○	○	○	City of West Linn Public Works Department	- Utilize newsletters, brochures, bill inserts, City web page, and radio advertisements to promote public awareness of stormwater quality issues and to provide information to encourage public reporting of illicit discharges. - Continue to make annual monetary contributions to Tualatin Basin Public Awareness Committee (TBPAC).	(1) Track the number, types, and topics of public educational materials dispersed to the public annually. (2) Indicate any large-scale public educational campaigns initiated during a given year. (3) Track coordinated public outreach activities with local co-permittees. (4) Record the number of catch basins stenciled in a given year. (5) Track amount donated to Tualatin Basin Public Awareness Committee (TBPAC) each year.	(1) Quarterly, the City dispenses approximately 50 TBPAC brochures (Nature-Friendly Home and Yard Care) to each of the city buildings where citizens are likely to visit: the first floor of City Hall, the Library and the Adult Community Center. (2) Appendices C, D and E explain the public education activities that were completed this FY. (3) No additional coordinated public outreach efforts were conducted this reporting year. (4) No catch basins were stenciled this reporting year. (5) The City paid \$1000 to TBPAC, as well as funded \$1000 to the Regional Coalition of Clean Rivers & Streams (RCCR&S).	West Linn sponsored several earth friendly teaching/volunteer opportunities in the City this fiscal year. - Monthly Work Parties at Mary S. Young Park, Wilderness Park, Maddax Woods, Sahallie Illahee Park, Fields Bridge Park, Willamette Park, Carriage Way Open Space, Palomino Park in partnership with SOLVE, Ivy pulling, native plantings, chips spread on paths, mulching newly planted trees and shrubs. - Arbor Week 4/3 - 4/6/23: Native tree and shrub giveaways in celebration of West Linn as a recipient of the Tree City USA award. - Celebrated Pollinator Week June 19-23, 2023: Pollinator Scavenger Hunt, Pollinator Plant Giveaway, Pollinator craft, OSU Master Gardener onsite for education purpose. - Native planting at Mary S Young Park and Sahallie Park, Carriage way open space, Troon Open space, Skye Parkway open space December 2022, planted over 1500 native shrubs and trees.
Implement a Pet Waste Program	●			City of West Linn Public Works Department & Parks and Recreation Department	- If pet waste is observed as a problem upon routine maintenance activities at public property, install educational signs and distribute educational door hangers at homes in the immediate vicinity of the identified problem areas. - Continue to provide pet waste baggies and disposal areas in City parks for disposal of domestic animal waste.	(1) Report on activities conducted annually.	(1) The City of West Linn currently has <u>52</u> dog waste bag dispensers installed throughout the parks and open spaces. During the 2022 – 2023 reporting year, the City spent <u>\$9,276</u> on bags. City staff monitors water quality facilities for pet waste issues. If a facility is observed to have issues, City staff distributes door hangers in the neighboring area to educate the public about pet waste. There were no pet waste issues this reporting year.	

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Appendix A continued– Status of Implementing Components of West Linn’s 2012 Stormwater Management Plan (SWMP)								
Best Management Practice or Activity	Addresses Bacteria?	Addresses Mercury and SVS?	Addresses Phosphorus?	Responsible Division/ Department	Measurable Goals (2012 SWMP)	Tracking Measures	Annual Report Information: Tracking Measure Status, Permit Year 2022-2023	Additional Detail Related to Activities Conducted
Element 4: Education and Outreach Continued								
Participate in a Public Education Effectiveness Evaluation	○	○	○	City of West Linn Public Works Department	● Coordinate with other local, Phase 1 jurisdictions in providing/ compiling information regarding a public education effectiveness evaluation over the permit term.	(1) Report on activities conducted annually.	(1) The City submitted a Public Education Effectiveness Evaluation to DEQ on July 1st, 2015. The Evaluation was completed as part of a coordinated effort with ACWA and NPDES MS4 Phase 1 and 2 permittees in Oregon.	
Ensure Staff Training for Pest Management	○	○	○	City of West Linn Public Works Street Division and Parks and Recreation Department	● Provide training to Public Works and Parks department crews once every two years on proper pesticide and fertilizer application rates and techniques in conjunction with guidelines outlined in the IPM Plan.	(1) Report on training conducted every two years.	(1) The Transportation Division of Public Works received a total of <u>60</u> hours of training in Pest Management. The Parks Department staff received a total of <u>84</u> hours of Integrated Pest Management training. A total number of hours trained: <u>144</u> .	
Ensure Staff Training in Spill Response	○	○	○	Tualatin Valley Fire and Rescue	● Provide OSHA HAZWOPER training and refresher courses to staff initially responding to spills annually.	(1) Track the number of employees receiving OSHA HAZWOPER training annually.	(1) No City employee receives HAZWOPER training, instead we rely on TVF&R staff as needed for spill response. Also, the City relies on emergency response contractors for large spill emergencies.	
Promote Staff Education Related to Environmentally Friendly Solutions	○	○	○	City of West Linn Public Works Department	● Conduct municipal training for employees associated with stormwater management in the City. ● Continue to participate in, and attend environmental and water quality related professional meetings and conferences. ● Continue to maintain a budget for employee attendance of conferences. ● Continue to coordinate with other local Phase 1 jurisdictions regarding regional water quality efforts.	(1) Track the number of employees receiving training in stormwater management annually. (2) Track Operations and Engineering staff participation in professional organizations and attendance at relevant conferences.	(1) See Section 6.2, Table 6 on Pages 9-10 for a complete listing of employee trainings on stormwater. (2) West Linn has several staff members that are members of the Association of Clean Water Agencies (ACWA).	
Element 6: Post-Construction Site Runoff								
Implement Community Development Code and Public Works Design Standards for Stormwater Treatment	●	●	●	City of West Linn Public Works Department and the Planning Department	Per City’s Development Code, review all new development and applicable redevelopment for conformance with current City Stormwater Standards and Ordinances.	(1) Track the number of development applications reviewed for compliance with the current Stormwater requirements for treatment and detention. (2) Track any modifications to the list of currently approved structural stormwater treatment facilities. (3) Track private BMP’s that are implemented and their associated drainage areas.	(1) A total of <u>11</u> land use development applications were reviewed for compliance with stormwater treatment and detention standards. (2) No changes have been made to the list of currently approved structural stormwater treatment facilities. However, use of Infiltration facilities including, Soakage trenches and Rain Gardens are being increasingly used. (3) There were <u>20</u> new private facilities added in FY 2022-23 with 59,374square feet of drainage area treated. See Table 4 in Section 5.2	
*Review and Update the Applicable Code and Development Standards related to Stormwater Control	●	●	●	City of West Linn Planning and Public Works Departments	● Review the City’s current stormwater treatment standards for compliance with new NPDES MS4 permit language. ● Review the City’s Current public works development code provisions to ensure that applicable barriers related to the use of LID or GI techniques are minimized and eliminated where practicable. ● Update the City’s existing post-construction stormwater design standards and code language by November 1, 2014.	Track progress related to the review of the City’s Code and development standards per provision in the NPDES MS4 Permit.	The 2020 version of the City of Portland Stormwater Management Manual has been adopted by the City of West Linn for design of stormwater facilities. West Linn’s Public Works Construction Standards and Municipal Stormwater Code have been reviewed and barriers to GI and LID use in projects have been identified and addressed. Rain gardens, detention ponds, and bio swales are typically used to meet the treatment standards specified in the NPDES MS4 permit.	

* indicates there is more information in Section 6.0 Additional Activities.

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Element 7: Pollution Prevention for Municipal Operations								
Conduct Street Area Repair	○	●	○	City of West Linn Public Works Department	Ensure all road maintenance and repair activities implement appropriate erosion and sediment control to address potential water quality impacts.	(1) All City crew are required to implement erosion control measures at all times.	Both City crews and contractors are required to implement erosion control measures at all times.	The following verbiage is typical for construction plans: “Contractor shall provide erosion control best management practices per CWL Standards. Provide catch basin protection and continual sweeping so that no mud, sediment, or rock is left on the streets, with no additional compensation.”
Maintain Public Streets	○	●	○	City of West Linn Public Works Department	Sweep each street between 3 and 6 times a year.	(1) Track the number of sweeps conducted annually. (2) Track the volume of debris removed during sweeping activities. (3) Track the amount (volume) of deicing agent used annually.	(1) <u>4 City-wide sweeps</u> were conducted. (2) Approximately <u>999 cubic yards</u> of material were removed. (3) <u>3,275 Gallons of deicing agent</u> was used in the winter of 2022/23.	
Implement an Integrated Pest Management Program	○	○	●	City of West Linn Public Works Department and Parks and Recreation Department	• Use the Portland Integrated Pest Management (IPM) Program as a guide for appropriate pesticide and fertilizer application procedures along roadways, within City Parks, and around water quality facilities. • Conduct work within public right-of-way only with certified, licensed applicators.	(1) Track any updates or modifications to the referenced IPM procedures and protocols. (2) Track the amount of money spent on pest management chemicals each year.	(2) The City of West Linn Parks Department spent approximately <u>\$726</u> on pest management chemicals. The Public Works Department, which includes the Transportation, Water and Environmental Divisions spent approximately <u>\$ 2,829</u> . The total spent by the City was <u>\$ 3,555</u> .	The City of West Linn uses the City of Portland IPM Program as an informal guide.
Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities	○	○	○	CWL-ESD	• Inventory municipal facilities subject to this permit requirement by July 1, 2013. • By July 1, 2013, identify and implement strategies to reduce the impact of pollutant discharges from these facilities.	(1) Track strategies used to minimize pollutant discharge.	No improvements were made to the Public Works Building or yard this reporting year. The City is currently working on constructing a new Public Works Facility.	

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Appendix A continued– Status of Implementing Components of West Linn’s 2012 Stormwater Management Plan (SWMP)								
Best Management Practice or Activity	Addresses Bacteria?	Addresses Mercury and SVS?	Addresses Phosphorus?	Responsible Division/ Department	Measurable Goals (2012 SWMP)	Tracking Measures (2012 SWMP)	Annual Report Information: Tracking Measure Status, Permit Year 2022-2023	Additional Detail Related to Activities Conducted
Element 7: Pollution Prevention for Municipal Operations								
Control Infiltration and Cross Connections to the Stormwater Conveyance System	●	○	○	CWL-ESD	- Annually investigate for cracking and breakage, and repair as necessary based on the results of the inspection, a minimum of 5,000 linear feet of sanitary lines. - Review new and redevelopment plan submittals for possible cross-connections. - Inspect for potential cross-connections during dry weather field screening activities.	(1) Indicate whether any sanitary sewer cross-connections were identified during sanitary line testing, during the plan review process, or during dry-weather field screening activities on an annual basis. (2) Describe any follow-up activities required for identified cross-connections.	(1) No cross connections were discovered while cleaning sanitary sewer lines, plan review or dry-weather field screening during the reporting period. (2) N/A	
Conduct Master Planning for Stormwater Quality Improvement	●	●	●	City of West Linn Public Works Department	Ensure water quality is considered during the development of flood control CIPs.	(1) Track any updates or modifications to the current Stormwater Master Plan approved by the City. (2) Track the number of CIP projects implemented each year and discuss the added benefit (water quality, habitat restoration, etc.) of each. (3) Map the location and drainage area of water quality CIPs as they are constructed.	(1) The City of West Linn updated its Storm Drainage Master Plan (SDMP) in 2019 to improve understanding of system characteristics and infrastructure in the city. The SDMP includes capital improvement projects (CIPs) and programmatic activities to address conveyance, capacity, and water quality for both existing and future development. The City’s SDMP was adopted November 12, 2019. (2) This reporting year the City of West Linn implemented the 2023 Road program. This project includes paving a previously unpaved parking lot at a local park. Two water quality basins were installed to properly retain and treat water for the parking lot’s 47,419 square foot impervious surface. (3) GIS applications to support field operations and analytics are in development. Efforts to improve the completeness and accuracy of our GIS data are ongoing.	

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Best Management Practice or Activity	Addresses Bacteria?	Addresses Mercury and SVS?	Addresses Phosphorus?	Responsible Division/ Department	Measurable Goals (2012 SWMP)	Tracking Measures (2012)	Annual Report Information: Tracking Measure Status, Permit Year 2022-2023	Additional Detail Related to Activities Conducted
Element 8: Stormwater Management Facilities Operation and Maintenance								
Conduct Stormwater Conveyance System Cleaning and Maintenance	●	●	○	CWL-ESD	Perform cleaning and repair promptly based on inspection results.	(1) Track the length of conveyance system inspected. (2) Track the volume of debris removed during cleaning activities.	(1) 0 linear feet of stormwater pipe was inspected. (2) 0 cubic yard of debris was removed during cleaning activities.	
Conduct Catch Basin Cleaning and Maintenance	●	●	○	CWL-ESD	- Inspect all public catch basins once per year, and clean as needed based on inspection results. - Repair or replace catch basins promptly based on inspection results. - Update tracking database during each maintenance cycle.	(1) Track the number of catch basins inspected. (2) Track the volume of debris removed during cleaning activities.	(1) 2300 catch basins were inspected, and 338 catch basins were cleaned during the 2022-2023 reporting year. (2) 47 cubic yards of debris were removed from catch basins.	
Public Structural Control Facility Cleaning and Maintenance	●	●	●	CWL-ESD	Inspect public structural water quality facilities annually and maintain based on inspection results.	(1) Track the number and frequency of structural facilities inspected and maintained. (2) Track the volume of debris removed during cleaning activities.	(1) The following water quality facilities were inspected and maintained during the 2022-2023 reporting year: Pollution Control Manholes = 139 inspected and 139 were Cleaned & Maintained. Detention Tanks = 22 Inspected and 0 Cleaned or Maintained. Bio Swales = 40 Hours was spent on maintenance. Water Quality Ponds = 47 inspected and 47 maintained (2) The volume of debris removed during cleaning activities was: 47 cubic yards from Pollution Control Manholes.	
Private Water Quality Facility Maintenance Program	●	●	●	CWL-ESD & Engineering Dept.	- Require new private water quality facilities to submit maintenance agreements to the City. - Require submittal of annual reports related to inspection and maintenance activities for private water quality facilities with existing maintenance agreements. - Continue to work to identify the responsible parties associated with private water quality facilities that do not have an existing maintenance agreement. - Provide formalized structural stormwater facilities inspection and maintenance documentation to private facility owners by July 1, 2013.	(1) Track the number of new maintenance agreements submitted to the City each year. (2) Track number of new and existing annual maintenance reports received each year.	(1) 14 new Private Stormwater maintenance agreements were recorded through the City’s Engineering Department and the Clackamas County Recorder’s Office during the 2022-2023 reporting year. (2) A total of 50 inspection reports were received during the 2022-2023 reporting year after sending letters requesting private water quality facility owners to inspect and maintain their facilities. The inspection reports are due by October 1 st of each year for all facilities with or without a recorded maintenance agreement.	The Environmental Technician inspected 42 private stormwater facilities. These inspections were focused on properties that have failed to return their inspection and maintenance forms back to the city in the last 4 years.

Appendix B

West Linn 2022-2023

Low Impact Development/Green Infrastructure
Design Strategy

City of West Linn Low Impact Development/ Green Infrastructure Design Strategy

The current City of West Linn's stormwater codes/requirements do not explicitly call out the prioritization of Low Impact Development (LID) and Green Infrastructure (GI). However, the City's code does have requirements that are in line with the encouragement of LID and GI practices, and these code excerpts are summarized below.

Code applicable to LID and GI efforts:

- Public Works Design Standards (PWDS) 2.0041 (A). "Single-family residential site redevelopment is required to provide water quality improvements for all newly created impervious area, whether or not replacing existing impervious area, prior to off-site discharge, where water quality improvements not already been installed. On-site disposal is preferred for single-family residential site redevelopment."
- PWDS 2.0041 (D). "Developers may mitigate impervious area by various means, as approved by the City Engineer, to reduce the new effective impervious area (EIA) below the thresholds listed above or to reduce facility size required for detention and/or water quality improvements. Methods contained in the City of Portland Stormwater Manual, as modified by the City of West Linn, may be used in mitigation as approved by the City Engineer. Stormwater facilities must be aesthetically blended into surrounding landscaping to greatest possible extent."
- PWDS 2.0053 (A). "Stormwater facility sizing methodologies, design criteria, and typical drawings in the City of Portland Stormwater Management Manual, as modified by the City of West Linn, shall be used in designing stormwater management facilities for detention and water quality improvements."
- PWDS 2.0053 (C). "Stormwater facilities must be aesthetically blended into surrounding landscaping to the greatest possible extent."
- PWDS 2.0053 (D). "Manufactured Stormwater Treatment Technologies will generally not be approved for use in public or private stormwater water quality systems within the City, but may be approved by the City Engineer only if an above ground facility will not be functional as determined by the City Engineer."

The PWDS 2.0041(A) state that onsite disposal is the preferred method of managing newly generated stormwater runoff which is in line with the LID approach of reducing runoff discharge from development through infiltration.

The PWDS 2.0041 (D) and 2.0053 (C) state that the facilities must be aesthetically blended with the surrounding landscaping which would lead to more vegetated facilities. This is also in line with the LID and GI approach to use vegetation and evapotranspiration as a means to provide stormwater management.

The PWDS 2.0041 (D) also state that developers may mitigate impervious area by using various methods to reduce the impervious area of development as called out in the City of Portland's manual. This is in

line with the LID approach to reduce the overall effective impervious area associated with development activities.

The PWDS 2.0053 (A) references consistency with the methodology in the City of Portland's Stormwater Management Manual (SWMM) for the sizing and design of stormwater management facilities. The City of Portland SWMM emphasizes the prioritization of onsite stormwater management with vegetated infiltration and/or filtration facilities. This is in line with the LID and GI approach to size and design stormwater management facilities to incorporate onsite retention with infiltration and vegetation.

The PWDS 2.0053(D) states that manufactured stormwater management facilities are generally not approved within the City. This is in line with the LID and GI efforts to manage stormwater using GI, which incorporate soils and vegetation and are not structural underground proprietary or manufactured facilities.

The City of West Linn hired the consulting firm Brown and Caldwell to identify gaps in the City's code with regards to the City's NPDES MS4 permit related to post-construction stormwater controls. It has been identified that the City's LID and GI strategy should be more explicitly stated within the code to meet the permit requirement to *"require to the maximum extent feasible, the use of LID/GI design, planning, and engineering strategies intended to minimize effective impervious area or surfaces, and reduce the volume of stormwater discharge and the discharge of pollutants in stormwater runoff from development and redevelopment projects"*. Currently the City is not specific enough regarding the requirement to prioritize LID/GI. Brown and Caldwell also identified gaps in the retention requirements from the permit, which are scheduled and required to be addressed by December 1, 2024.

Due to the multiple gaps identified in the City Code regarding the LID/GI strategy and retention requirements, West Linn plans to refine and adopt another jurisdiction's existing stormwater design standards manual. After reviewing multiple jurisdiction's manuals, the City believes that adopting the City of Gresham's Stormwater Management Manual (SMM) will bring the City within compliance of the MS4 permit. Gresham's SMM clearly states the importance of, and requirement to prioritize LID and GI. Although the City of West Linn does have existing codes that are in line with LID and GI strategies, a more upfront and explicit approach is needed. The City of Gresham also has extensive language in their manual regarding retention requirements. With the adoption of stormwater standards consistent with the Gresham's SMM these requirements will be met prior to the December 1, 2024 annual report as required by the permit.

Over the next year the City plans to adopt and customize the City of Gresham's Stormwater Management Manual for the City of West Linn in order to meet all the LID/GI strategy and retention requirements within the MS4 permit and use the updated manual in conjunction with the PWDS.

Appendix C

West Linn 2022-2023

City's Infrastructure Retrofit and
Hydromodification Assessment Update



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Technical Memorandum

Prepared for: City of West Linn

Project Title: 2023 NPDES Support

Project No.: 159705

Technical Memorandum

Subject: Infrastructure Retrofit and Hydromodification Assessment Update

Date: December 1, 2023

To: Dan Norton, City of West Linn

From: Natalie Chow, PE and Angela Wieland, P.E.

Reviewed by: 
Angela Wieland, P.E.

Limitations:

This document was prepared solely for the City of West Linn in accordance with professional standards at the time the services were performed and in accordance with the contract between West Linn and Brown and Caldwell dated February 8, 2023. This document is governed by the specific scope of work authorized by West Linn; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by West Linn and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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Section 1: Introduction/Background

The City of West Linn's (City) 2012 Phase 1 National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) permit (Permit), Schedule A.5 required the City to conduct a hydromodification assessment to examine hydromodification impacts related to MS4 discharges, including erosion, sedimentation and/or alteration to stormwater flow, volume and duration that may cause or contribute to water quality degradation. The assessment and resulting report were required to "identify strategies and priorities for preventing or reducing hydromodification impacts related to the permittees MS4 discharges... and identify or develop effective tools to reduce hydromodification". The report was required for submittal to DEQ by July 1, 2015.

Also included in the 2012 NPDES MS4 Permit, in Schedule A.6., the City was required to develop a stormwater quality retrofit strategy applicable to developed areas of the City identified as impacting water quality and underserved or lacking stormwater controls. The strategy and resulting plan were required to include "a retrofit control measure project or approach priority list, including rationale, identification and map of potential stormwater retrofit locations where appropriate, and an estimated timeline and cost for implementation of each project or approach." As with the hydromodification assessment, the plan was also due to DEQ by July 1, 2015.

Schedule A.3.h of the City's 2021 NPDES MS4 Permit requires permittees by December 1, 2023, to "consider the impacts of policy, capital improvements, and retrofit projects on MS4 discharges to receiving waters, considering the goals and proposed actions described in the 2012 Permit's Hydromodification Assessment and Stormwater Retrofit Strategy reports (i.e., the 2015 submittals). Specifically, permittees are required to prepare "an assessment of any outcomes related to the Hydromodification Assessment and Stormwater Retrofit Strategy Reports." This assessment is required to include the following:

1. An assessment of how the Hydromodification Assessment and Stormwater Retrofit Strategy have been used, considered, or implemented since the time the reports were completed (see Sections 2.1 and 3.1);
2. Progress toward or completion of projects identified in the Retrofit Strategy priority list, and a qualitative assessment of the benefits of those projects (see Section 2.2);
3. Description of any further actions taken as a result of the Hydromodification Assessment, and a rationale for those actions since the writing of the reports (see Section 3.3);
4. Narrative describing progress toward addressing gaps in the hydromodification information or data related to waterbodies within the permittees' jurisdiction as identified in the Hydromodification Assessment (see Section 3.2); and,
5. New goals, tools, priorities, and planned or potential projects for addressing ongoing hydromodification and/or water quality impacts resulting from historical development/infrastructure, and for improving retrofit planning, considering information gathered in the time since the completion of the reports (see Sections 2.3 and 3.4).

The Permit requires the permittees to document this assessment in the third annual report (i.e., the 2023 annual report) as an appendix or subsection. This documented assessment was prepared to fulfill this requirement. Findings and results are based on City review of completed and in-progress capital projects, code implementation, and pending programmatic and regulatory activities.



Section 2: 2015 Retrofit Strategy Summary

2.1 What was included in the Retrofit Strategy and how has it been used, considered, or implemented since 2015?

The City's 2015 Stormwater Retrofit Plan (Retrofit Plan) was developed to reduce pollutants of concern (i.e., dissolved oxygen, phosphorus, bacteria, and mercury [assuming TSS is a surrogate measure]), reduce impacts associated with hydromodification, and make progress towards total maximum daily load (TMDL) benchmarks.

Implementation of the Retrofit Plan centered around the future update to the City's Storm Drainage Master Plan (SDMP) and consideration of water quality in conjunction with flood control projects. When the 2015 Retrofit Plan was developed, there was no dedicated, annual program resources directed to the development of stormwater retrofits, which was a goal for the updated SDMP.

The elements of the City's 2015 Retrofit Plan and Strategy include:

- Update the West Linn Storm Drainage Master Plan (SDMP) – The SDMP would evaluate the storm system with respect to both flooding (capacity deficiencies) and water quality. Capital improvement projects (CIPs) would be identified to provide water quality benefits in currently developed areas that are lacking stormwater quality controls. The project was anticipated to be completed by December 2016.
- Incorporate stormwater quality measures into transportation CIPs – Recent project examples referenced in the Retrofit Strategy included adding filtered catch basins to resurfacing projects, adding parallel storm mains to existing swales, and adding rain gardens to existing subdivisions.
- Investigate treatment retrofit opportunities on City-owned property – Six completed, project examples from 2012 to 2014 were listed that include adding rain gardens, swales, detention to remodeling and expansion projects.

Because the proposed list of retrofit projects is associated with the future SDMP, a future retrofit project list was not included in the 2015 Retrofit Plan. However, the following retrofit strategies were highlighted for inclusion in the SDMP.

- Stormwater pond retrofits – Many stormwater ponds in the City were designed for flood control only. These ponds are in poor condition, and some are non-functioning. Retrofits would allow them to provide flood control as well as add water quality benefits. Two locations for future consideration as part of the SDMP include Bland Circle Detention Facility on Salamo Creek and the in-line Detention Facility in Salamo Creek upstream of Remington Drive.
- Culvert retrofits – Undersized or elevated culverts can increase flow and lead to erosion and sediment transport. The SDMP should include an inventory and evaluation of culvert sizing in conjunction with design standards and replacement/ retrofit for those that are undersized.

The status of the SDMP development and associated CIPs is provided in Section 2.2.

2.2 What progress has been made toward completion of projects identified in the Retrofit Strategy priority list, and what have been the benefits of those projects?

In 2017, the City initiated development of a multi-objective SDMP to guide stormwater and drainage-related capital project, program, and policy needs over a 10-year planning period. An increased focus on water quality, as highlighted in the 2015 Retrofit Plan, influenced the approach of this SDMP. The SDMP was finalized in 2019 and adopted by City Council in December 2019.

As detailed in the 2019 SDMP, CIPs and programs were identified that reflect the City's retrofit strategies to 1) retrofit culverts; 2) incorporate water quality into existing transportation CIPs; 3) install new treatment on city-owned property; and 4) retrofit stormwater ponds. Projects identified as high priority or medium priority were costed, conceptually designed, and anticipated to be completed between 2019 and 2028. Additional projects deemed lower priority are anticipated to be completed after 2029 and were not costed out.

Table 1 includes the projects and programs identified in the SDMP with a water quality and/or hydromodification benefit, as well as updated construction timing. Since completion of the SDMP in 2019, Project R-2 (Mary S. Young Park Parking Lot) was completed in 2023 and included the installation of 5,400 sq ft of vegetated infiltration basins at the public parking lot of Mary S. Young Park. The Green Street Pilot Program (G-5) resulted in the installation of approximately 25,330 sq ft of pervious pavement for a bike lane. The Public Pond Maintenance Program (G-4) has resulted in enhanced maintenance of 29 detention ponds.

Three projects per the SDMP are delayed due to staffing challenges but still anticipated for construction in the 2029-2034 timeframe: 5th Avenue Culvert Replacement, Mark Lane Improvements, and Buck Street Improvements.

Three projects from the SDMP that would have been considered retrofit projects are no longer applicable and not reflected in Table 1. Projects C-1 and C-3 (Phase I and II Highway 43 Culvert Replacements) have been cancelled due to changes in the Oregon Department of Transportation (ODOT) scope. Project R-3 (West Linn Public Works Dept. Planters) is not a likely project, as the West Linn Public Works Department will be moving locations.

Table 1. City of West Linn Retrofit and Hydromodification Projects and Programs

Project ID	Project Name	Original Anticipated Construction Date	Updated or Actual Construction Date	Project Description	Water Quality Components	Hydromodification Benefit? (Y/N)	Notes
Culvert Retrofits							
C-2	5 th Avenue Culvert Replacement	2019-2023	2029-2034	Upsizing existing culvert and realigning the culvert along the existing stream alignment.	Culvert realignment to minimize bank erosion and degradation of existing infrastructure in its proximity.	Y	Project schedule delayed due to cost of other citywide projects.
R-7	Arbor Creek Culvert Hydromodification Improvements	2029-2038		Realign existing culvert and add bank protection and energy dissipation structure.	Alleviate existing scour hole and bank erosion.	Y	Project still planned for 2029-2038
Retrofit Opportunities with Transportation Projects							
I-2	Mark Lane Improvements	2019-2023	2029-2034	Installation of 1,050 ft of stormwater pipe and 5,000 sq ft of stormwater planters.	Reduction of high inflow and infiltration. Treatment of untreated ROW.	N	Project schedule delayed due to cost of other citywide projects.

Table 1. City of West Linn Retrofit and Hydromodification Projects and Programs

Project ID	Project Name	Original Anticipated Construction Date	Updated or Actual Construction Date	Project Description	Water Quality Components	Hydromodification Benefit? (Y/N)	Notes
1-3	Buck Street Improvements	2019-2023	2029-2034	Installation of 750 ft of stormwater pipe and 3,750 sq ft of stormwater planters.	Reduction of high inflow and infiltration. Treatment of untreated ROW.	N	Project schedule delayed due to cost of other citywide projects.

Treatment Opportunities on City-owned Property

R-2	Mary S. Young Park Parking Lot Retrofit	2024-2028	2023	5,400 sq ft of vegetated basins were installed with parking lot improvements (separate lot than project R-2).	Adding water quality treatment.	N	The original project description called for the installation of 1.5 acres of permeable pavers at the public parking lot. This project may still be constructed in the 2029-2038 date range.
R-4	Mary S. Young Park Erosion Measures	2024-2028	2028	Install in-stream bank erosion measures and bridge repair.	Prevent erosion.	Y	Parks and Rec department working to complete project by 2028
R-5	Mary S. Young Park Trillium Creek Restoration	2029-2038		Restore channel connectivity with floodplain and conduct creek stabilization measures.	Prevent erosion and increase water quality treatment.	Y	West Linn continues to work towards completion 2029-2038
R-8	Willamette Park Parking Lot Retrofit	2029-2038		Replace existing impervious parking lot with pervious pavers	Adding water quality treatment and promoting infiltration.	Y	West Linn continues to work towards completion 2029-2038
G-5	Green Street Pilot Program	Annual	In progress	Install green street retrofits in residential neighborhoods.	Adding water quality treatment.	N	25,330 sq ft of pervious pavement installed for bike lane on Willamette Falls Dr. Additional installations anticipated with sidewalk construction and the Safe Routes to School Program.

Stormwater Pond Retrofits

R-1	Public Pond #22 Retrofit	2019-2023	2024-2025	Maintenance and retrofit of an existing detention pond.	Enhance treatment function and increase retention time.	N	General maintenance conducted in 2022-23.
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Table 1. City of West Linn Retrofit and Hydromodification Projects and Programs

Project ID	Project Name	Original Anticipated Construction Date	Updated or Actual Construction Date	Project Description	Water Quality Components	Hydromodification Benefit? (Y/N)	Notes
				Possible expansion of pond footprint.			Additional rehabilitation efforts and upsizing still anticipated.
R-9	Public Pond #18 Retrofit	2029-2038	2024-2025	Rehabilitation of existing water quality pond and possible replacement of pond outflow structure.	Increase water quality treatment.	Y	Working on rehabilitation efforts.
G-4	Public Pond Maintenance Program	Annual	In progress	Maintenance of ponds and/or retrofit detention ponds.	Increase water quality treatment.	N	Contractors did maintenance on 29 city owned ponds in the 2022-23 fiscal year. Project is ongoing for pond maintenance

2.3 What are the new goals, tools, priorities, and planned or potential projects for improving retrofit planning to address water quality impacts resulting from historical development/infrastructure?

The City anticipates continuation of its retrofit strategy in conjunction with implementation of their SDMP. Updates to the SDMP are a continuous process, and capital projects and programs will continually be prioritized and scheduled utilizing the retrofit and hydromodification objectives.

In addition, the City anticipated a more substantial update to their Public Works Design Standards (PWDS) related to stormwater management in conjunction with the reissued 2021 NPDES MS4 permit. The City recently completed their Low Impact Development (LID)/ Green Infrastructure (GI) Strategy after completion of a larger code evaluation and literature review of other local stormwater standards that meet the retention-based performance standards per the permit.

Section 3: 2015 Hydromodification Assessment Summary

3.1 What were the results of the Hydromodification Assessment and how has it been used, considered, or implemented since 2015?

The City's 2015 Hydromodification Assessment included a desktop GIS evaluation and field assessments, along with a review of the West Linn Municipal Code (WLMC) and other planning documents and watershed studies, to result in a qualitative evaluation of stream channel conditions and identification of locations where past development patterns and controls (or lack of controls) have resulted in significant stream channel impacts.

The 2015 Hydromodification Assessment found that most observed stream channels are composed of bed and bank materials that appear to provide a natural resistance to hydromodification. There were minor hydromodification impacts observed in locations of concentrated flow (i.e., culverts and at discharges from stormwater outfalls), but combined with the limited future development opportunities, there are relatively minor flow impacts anticipated.

The 2015 Hydromodification Assessment included a variety of recommendations centered on 1) updates to the City's SDMP; 2) incorporation of projects associated with stream enhancement and vegetation management into the City's capital improvement program; and 3) continued monitoring of channel conditions for hydromodification impacts.

Outcomes from the Hydromodification Assessment have been used to identify and inform the CIPs as outlined in Table 1 and Section 2.2, as well as considered with updates to design standards and code/policies. Additional details on the updates to design standards and code/policies is provided in Section 3.3 of this assessment.

3.2 Were there any identified gaps in the hydromodification information or data related to waterbodies within the City's jurisdiction and, if so, what progress has been made in addressing gaps?

The City's 2015 Hydromodification Assessment focused on urbanized areas of the Tanner Creek, Trillium Creek, and Arbor Creek watersheds. The assessment recommends that future hydromodification evaluations be conducted in other city watersheds in the Willamette and Tualatin River basins. To date, additional field-based hydromodification assessments have not been conducted, although significant field work was incorporated into the SDMP to identify project needs. Physical condition monitoring (in conjunction with macroinvertebrate sampling) is also reflected in the updated Clackamas County Coordinated Stormwater Monitoring Plan (CCCSMP), updated in 2023 and reflecting a July 1, 2023 implementation start date.

3.3 What further actions have been taken as a direct result of the Hydromodification Assessment, and what was the rationale for those actions?

Potential instream capital project locations as identified in the 2015 Hydromodification Assessment (Table 8-1) were considered in the identification of project opportunity areas in the SDMP. Project R-7 (per Table 1) was identified during the hydromodification assessment and carried forward. Retrofit of the inline stormwater facility upstream of Remington Drive was a specific location called out in the SDMP under Project G-4. Other identified project locations per the 2015 Hydromodification Assessment were either determined not viable as a capital project or program because they were located on private property or had recently been addressed by the City.

The City is currently (2023) updating and refining their PWDS for consistency with the City's NPDES MS4, specifically to clarify the use of infiltration-based facilities (i.e., GSI) to meet the Numeric Stormwater Retention Requirement (NSRR). The City has preliminarily identified Gresham's stormwater standards as the template for their update. The update will be completed by December 1, 2024 to meet the 2021 NPDES MS4 Permit deadline.

3.4 What are the City's new goals, tools, priorities, and planned or potential projects for addressing ongoing hydromodification?

Given the conclusions from the 2015 Hydromodification Assessment provided in Section 3.1 above, the City anticipates ongoing implementation of their SDMP and updating their stormwater design standards to prioritize LID and infiltration where feasible.



Appendix D

West Linn 2022-2023

SOLVE Events within the City of West Linn

Appendix D - SOLVE Events within the City of West Linn in FY 2022-2023 (in order of dates)									
Event Date	Volunteer Opportunity	Total Volunteers	Adult Volunteers	Youth Volunteers	Area Cleared	Pounds of Trash	Native Shrubs Planted	Native Trees Planted	Trees Cleared of Ivy
7/2/2022	Mary S Young State Park Habitat Restoration	68	39	29	1000	0	0	0	0
7/9/2022	Burnside Nature Park Restoration	5	5	0	1000	10	0	0	0
7/10/2022	Sahallie Illahee Park Habitat Restoration	18	8	6	43560	3	0	0	0
7/16/2022	Willamette Park Improve the Park	15	15	0	2500	50	0	0	0
8/6/2022	Mary S Young State Park Habitat Restoration	53	35	18	1000	0	0	0	0
8/14/2022	Fields Bridge Park Work Party	30	10	5	3000	4	0	0	0
8/20/2022	Willamette Park Improve the Park	16	5	11	2000	10	0	0	0
8/27/2022	Wilderness Park in West Linn	10	4	6	1000	6	0	0	0
9/3/2022	Mary S Young State Park Habitat Restoration	53	30	23	1000	0	0	0	0
9/10/2022	Burnside Nature Park Restoration	15	13	2	250	15	0	0	0
9/17/2022	Willamette Park Improve the Park	9	7	2	2000	3	0	0	0
9/24/2022	Mary S Young State Park Habitat Restoration	88	31	57	1000	0	0	0	0
9/25/2022	Palomino Loop Trail Work Party	37	18	11	1000	0	0	0	0
9/25/2022	Palomino Loop Trail Work Party	29	18	11	400	0	0	0	0
10/1/2022	Mary S Young State Park Habitat Restoration	41	36	5	1000	0	0	0	0
10/8/2022	Burnside Nature Park Restoration	6	4	2	500	1	0	0	0
10/9/2022	Fields Bridge Park Work Party	15	10	5	500	0	0	0	0
10/15/2022	Willamette Park Improve the Park	1	3	2	1997	1	0	0	0
10/22/2022	Wilderness Park in West Linn	12	4	4	1000	0	0	0	0
11/5/2022	Mary S Young State Park Habitat Restoration	44	21	23	0	0	0	0	0

11/12/2022	Burnside Nature Park Restoration	6	5	1	4000	20	0	0	0
11/13/2022	Fields Bridge Park Work Party	17	13	2	100	0	160	0	0
11/19/2022	Willamette Park Improve the Park	4	6	2	1000	0	0	0	0
12/3/2022	Mary S Young State Park Habitat Restoration	73	41	33	0	0	0	0	0
12/3/2022	Mary S Young State Park Habitat Restoration	74	41	33	0	0	1013	40	0
12/10/2022	Palomino Loop Trail Work Party	10	8	2	0	0	248	2	0
12/17/2022	Willamette Park Improve the Park	17	8	9	2000	0	0	0	0
1/7/2023	Mary S Young State Park Habitat Restoration	53	41	12	1000	0	0	0	0
1/14/2023	Mary S Young State Park Habitat Restoration	50	20	30	1000	0	0	0	0
1/16/2023	Mary S Young State Park Habitat Restoration	58	44	14	2000	0	0	0	0
1/21/2023	Willamette Park Improve the Park	7	7	0	2000	0	0	0	0
2/4/2023	Mary S Young State Park Habitat Restoration	42	29	13	1000	0	0	0	0
2/18/2023	Willamette Park Improve the Park	14	13	1	2000	0	0	0	0
3/4/2023	Mary S Young State Park Habitat Restoration	52	34	18	1000	0	0	0	0
3/13/2023	Mary S Young Park Habitat Restoration Weekday Crew	5	5	0	500	0	0	0	0
3/15/2023	Mary S Young Park Habitat Restoration Weekday Crew	7	7	0	1000	0	0	0	0
3/18/2023	Willamette Park Improve the Park	5	7	2	2000	0	0	0	0
3/27/2023	Mary S Young Park Habitat Restoration Weekday Crew	7	6	1	1000	0	0	0	0
3/29/2023	Mary S Young Park Habitat Restoration Weekday Crew	7	5	2	500	0	0	0	0
4/1/2023	Mary S Young State Park Habitat Restoration	47	36	11	1000	0	0	0	0
4/3/2023	Mary S Young Park Habitat Restoration Weekday Crew	12	8	4	500	0	0	0	0
4/5/2023	Mary S Young Park Habitat Restoration Weekday Crew	5	3	2	500	0	0	0	0

4/8/2023	Burnside Nature Park Restoration	8	4	4	0	1	0	0	70
4/10/2023	Mary S Young Park Habitat Restoration Weekday Crew	7	5	2	500	0	0	0	0
4/12/2023	Mary S Young Park Habitat Restoration Weekday Crew	5	5	0	500	0	0	0	0
4/15/2023	Willamette Park Improve the Park	10	8	2	2000	0	0	0	0
4/17/2023	Mary S Young Park Habitat Restoration Weekday Crew	17	15	2	1000	0	0	0	0
4/22/2023	Earth Day Park Restoration Event at Fields Bridge Park in West Linn	59	43	16	3000	50	175	0	0
4/23/2023	Earth-Sunday at Palomino Park	10	9	1	7100	0	0	0	0
4/24/2023	Mary S Young Park Habitat Restoration Weekday Crew	6	6	0	1000	0	0	0	0
4/26/2023	Mary S Young Park Habitat Restoration Weekday Crew	28	28	0	2000	0	0	0	0
4/28/2023	Arbor Day at Mary S Young Park	53	53	0	3000	0	0	0	0
5/1/2023	Mary S Young Park Habitat Restoration Weekday Crew	4	4	0	500	0	0	0	0
5/3/2023	Mary S Young Park Habitat Restoration Weekday Crew	6	6	0	500	0	0	0	0
5/6/2023	Mary S Young State Park Habitat Restoration	106	69	37	0	0	0	0	40
5/8/2023	Mary S Young Park Habitat Restoration Weekday Crew	28	10	18	500	0	0	0	0
5/13/2023	Burnside Nature Park Restoration	23	5	18	0	2	0	0	100
5/13/2023	Burnside Nature Park Restoration	23	5	18	0	2	0	0	100
5/15/2023	Mary S Young Park Habitat Restoration Weekday Crew	9	7	2	750	0	0	0	0
5/17/2023	Mary S Young Park Habitat Restoration Weekday Crew	8	7	0	500	0	0	0	0
5/17/2023	Mary S Young Park Habitat Restoration Weekday Crew	7	7	0	500	0	0	0	0
5/20/2023	Willamette Park Improve the Park	6	6	0	1000	0	0	0	0
5/22/2023	Mary S Young Park Habitat Restoration Weekday Crew	10	10	0	1000	0	0	0	0

5/24/2023	Mary S. Young State Park Weekday Work Crew	4	4	0	500	0	0	0	0
5/27/2023	Wilderness Park Habitat Restoration	9	5	4	3000	0	0	0	0
5/27/2023	Wilderness Park Habitat Restoration	9	5	4	0	0	0	0	0
5/28/2023	Palomino Park and Trail work parties	19	12	7	500	1	0	0	0
5/31/2023	Mary S. Young State Park Weekday Work Crew	4	4	0	223	0	0	0	0
6/3/2023	Mary S Young State Park Habitat Restoration	50	40	10	30	0	0	0	20
6/7/2023	Mary S. Young State Park Weekday Work Crew	4	4	0	0	0	0	0	0
6/12/2023	Mary S. Young State Park Weekday Work Crew	3	3	0	0	0	0	0	0
6/17/2023	Willamette Park Improve the Park	17	13	4	1000	0	0	0	0
6/19/2023	Mary S. Young State Park Weekday Work Crew	4	4	0	0	0	0	0	0
6/21/2023	Mary S. Young State Park Weekday Work Crew	4	4	0	0	0	0	0	0
6/24/2023	Wilderness Park Habitat Restoration	4	4	0	610	2	0	0	0
6/25/2023	Palomino Park and Trail work parties	13	9	4	500	0	0	0	0
6/26/2023	Mary S. Young State Park Weekday Work Crew	1	1	0	998	0	0	0	0
	Totals:	1715	1127	555	122518	181	1596	42	330

Appendix E

Regional Coalition for Clean Rivers & Streams Annual Report

July 1, 2022 – June 30, 2023



REGIONAL COALITION FOR CLEAN RIVERS AND STREAMS

FISCAL YEAR 2022-2023 ANNUAL REPORT

AUGUST 23, 2023

PREPARED BY:



enviroissues



FY 2022-23 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.

Population statistics for the tri-county Metro area are as follows: Washington County 596,969, Multnomah County 810,011 and Clackamas County 418,577¹. 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 2022-23 Fiscal Year (FY) included sponsoring and promoting the Coalition and its messages at community events.

Coalition participants include:

- Clackamas River Water Providers
- 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, 2022 - June 30, 2023.

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

¹ 2021 American Community Survey 5-Year Estimates, Table B01003



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 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 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 2022-23 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 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. 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 a future collaboration among agencies. Total member representation in the Coalition has increased in the past few years, bringing in more regional partners. During the 2022-2023 FY, the Coalition continued to rely more on social media outreach, but increased in-person activities compared to recent years.

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 (DEI). 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. During the 2022-2023 FY, the Coalition continued their effort to center antiracism in their work by updating the group's internal



Figure 1: Screenshot from Twitter post promoting the PDX People of Color Outdoors' monthly outdoor events.



and external values statements and utilizing those values as part of their ongoing outreach to the Coalition members' respective communities.

THE RIVER STARTS HERE MESSAGING AND OUTREACH

COMMUNITY EVENTS AND AGENCY COLLABORATION

Representatives of member agencies promoted Coalition messages throughout the fiscal year using Facebook, Instagram, YouTube and Twitter. During FY 2020-2021 and 2021-2022, the primary focus of digital outreach was for the first and second annual Student Video Contests. In FY 2022-2023, the primary focus of digital outreach was highlighting in-person events and outreach activities of member agencies. The Coalition also used digital outreach to promote in-person event opportunities with local watershed councils and like-minded community organizations. Some of the events that received significant online engagement and in-person participation included: the 14th Annual Great Willamette Cleanup, Indigenous Culture Day and Salmon Bake at Tryon Creek State Park, and a litter cleanup with SOLVE along the Eastbank Esplanade.

Partnerships & Sponsorships

Clearing Magazine – Honoring Our Rivers Youth Art and Poetry Program

The Coalition began coordination efforts with Clearing Magazine and the Honoring Our Rivers Student Anthology of Art and Creative Writing program. It is an annual student art and poetry program celebrating pacific northwest rivers and watersheds. Their mission is to encourage stewardship of rivers and watersheds and to nurture the next generation of civic and conservation leaders by engaging the creative capacities of youth. The Coalition promoted their work by conducting in kind phone and email outreach to all public and private schools in Multnomah, Clackamas, and Clark County as well as provided strategic guidance on program implementation and outreach efforts.



Sierra Daves, Grade 2

**Honoring
Our Rivers**
A Student Anthology of Art and
Creative Writing Celebrating
Pacific Northwest Rivers and Watersheds

Figure 2: A graphic of the Honoring Our Rivers website.

Hollywood Theater and EcoFilm Fest

The Coalition sponsored an ad to run at the Hollywood Theater to promote the River Starts Here and honor the winners of the 2022 Student Video Contest. This helped lead to approximately 100 attendees



at the showing of the student videos that year. The ads also promoted the 2022 EcoFilm Fest season, which was attended by approximately 650 people where the Student Videos and the Regional Coalition were also promoted. The River Starts here was also promoted on the EcoFilm Fest social media page as a sponsor of the event.

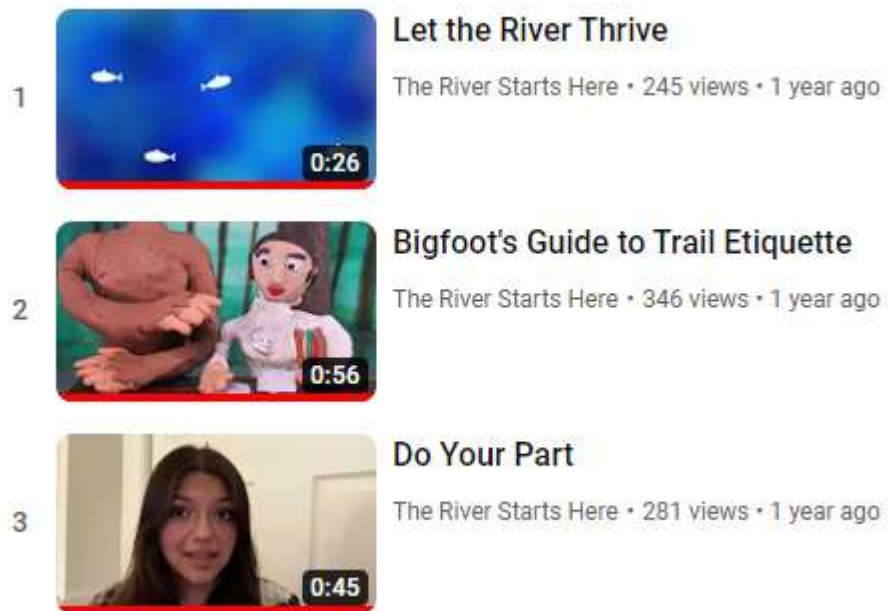


Figure 3: 2022 Student Video Contest Winners

1. "Let the River Thrive" by Finnian Morgan Brewer
2. "Bigfoot's Guide to Trail Etiquette" by Nathan Monroe-Ramberg
3. "Do Your Part" by Natalia Gates



Figure 4: A graphic of the ad that was ran at Hollywood Theater



Figure 5: The Portland EcoFilm Festival logo



In-Person Community Events

- Clackamas Water Environment Services partnered with SOLVE for the Summer Waterways Cleanup Series, which occurred from May-September 2022. In all, 1,481 volunteers participated in nearly 70 cleanup projects to collect and dispose of 11,373 pounds of trash and pollutants from waterways and natural areas. Litter cleanup projects occurred along the Clackamas, Sandy and Willamette Rivers. Mentionable cleanup projects also took place at Camp, Johnson, Oswego, Mt. Dean, and Willow Creeks.



Figure 6: Volunteers cleaning up a natural area in Clackamas County



Figure 7: Trash and pollutants collected during one of the Summer Waterways Cleanup efforts by Clackamas Environment Services

- SOLVE hosted the Annual Beach and River Cleanup along the Vera Katz Eastbank Esplanade in partnership with the Willamette Riverkeepers and Central Eastside Industrial Council on September 24, 2022.
- The Willamette Riverkeeper hosted the 14th Annual Great Willamette Cleanup throughout October 2022, which consisted of 21 events that were supported by 375 volunteers and led to the removal of 16.7 tons of trash, 122 needles, and invasive English Ivy from near the waterways.
- On November 12, 2022 the City of Gladstone partnered with the Tigard Water District and the Clackamas River Basin Council to host a Community Work Party to clean up Cross Park in Gladstone with the help of volunteers.
- On November 19, 2022 Clackamas County partnered with Friends of Trees to plant trees and shrubs in the Rock Creek watershed in Damascus.
- The North Clackamas Watershed Council held a tree planting event in Southern Lites Park in Happy Valley on January 21, 2023.
- The Greater Oregon City Watershed Council partnered with Oregon City Parks and Recreation to host four volunteer opportunities to help plant new native plantings along the shores of Singer Creek. The volunteer dates included February 4, 11 and 18 as well as March 4 in 2023.
- The City of Gresham supported a restoration event, hosted by the Johnson Creek Watershed Council, which comprised of weeding, mulching, and planting with the help of volunteers. The event occurred on March 4, 2023.



- On April 15, 2023 Multnomah County held a fishing tournament along the Vera Katz Eastbank Esplanade in Portland that also served as an educational opportunity for participants to learn about fishing and which fish are okay or not okay to eat from the river.
- On May 6, 2023, Friends of Tryon Creek State Park hosted the 5th Annual Indigenous Culture Day and Salmon Bake at Tryon Creek State Park, which provided attendees an opportunity to learn from Indigenous educators.
- Coalition members Clackamas Water Environment Services, Oak Lodge Water Services, Clackamas River Providers, and the City of Oregon City hosted an in-person *How to Build a Rain Garden* workshop on May 13, 2023.
- Clackamas Water Environment Services partnered with local organizations, including the Wetlands Conservancy, to hold a local wetland tour in Milwaukie on May 13, 2023.
- SOLVE also hosted a cleanup of Meldrum Bar Park in Gladstone as part of their Waterway Cleanup Series on May 18, 2023.
- Clackamas Water Environment Services and the City of Portland Environmental Services of Portland, along with other local agencies, sponsored the Johnson Creek Watershed Council's Annual Celebration, which occurred on May 25, 2023.
- On June 17, 2023, the City of Gresham held a Repair Café and Swap to promote repairing and trading of products instead of buying new to promote waste reduction and water and air pollution reduction.
- On June 24, 2023, Oak Lodge Water Services partnered with Clackamas County, the City of Milwaukie, and other community partners to hold a Pollination Celebration in Stringfield Family Park in Milwaukie.

WEBSITE: [THERIVERSTARTSHERE.ORG](https://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 2022-2023 FY are shown below.

Statistics in parentheses are the difference between last fiscal year's and this fiscal 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: 1,742 (▼ 3,826)

- **Users:** 1,552 (▼ 2,981)
 - **New users:** 1,543
- **Traffic type**
 - Direct: 723 (▼ 1,470)
 - Social: 113 (▼ 755)
 - Organic (search engine): 849 (▲ 294)
 - Referral: 57 (▼ 382)



During our 2021-2022 annual report, the website had slowly grown in visits each year, mostly due to the annual Student Video Contest. With the choice to not engage in a student video contest this year nor make any other substantive updates to the site during the 2022-2023 FY, web traffic slowed down significantly and is comparable to FY 2018-2019 website metrics (1,144 total sessions). The website has about 150 unique visitors, with 37 from Virginia, 25 from Oregon and 13 from Washington. The most visited website pages were How to Remove Roof Moss the Eco Friendly Way and the Student Video Contest.

As depicted in Figure 5, three spikes of website engagement were detected in October 2022, December 2022, and May 2023. In October 2022, higher engagement is attributable to social media promotion of #fatbearweek. In December 2022, an increase of engagement on the website is likely due to a successful ad campaign for the YouTube video, *Something Fishy*. In May 2023, an increase in web traffic may be tied to a higher number of partner events like planting workshops and river cleanups, a higher number of posts on social media in general, as well as a boosted post encouraging the audience to visit the website which received a higher-than-average amount of likes at 65 likes.

The River Starts Here Blog

In past years, the Coalition blog was used as a resource for students participating in the video contest. During FY 2022-2023, no posts were made on the blog due to foregoing the Student Video Contest and not identifying an alternative use for the blog to drive people to the site.

SOCIAL MEDIA

The Coalition continued posting to its social media channels with an increase in frequency compared to previous years. As in past years, the Coalition concentrated social media activity in spring and summer when residents have an increased interest in yard and garden activities relevant to surface water quality. During FY 2022-2023, the Coalition broadened its reach by promoting global events, such as World Fish Migration Day and National Day of Racial Healing, to bring year-round social media activity to its pages. The most liked post on Instagram was the promotion of Fat Bear Week, which received 8,225 likes.

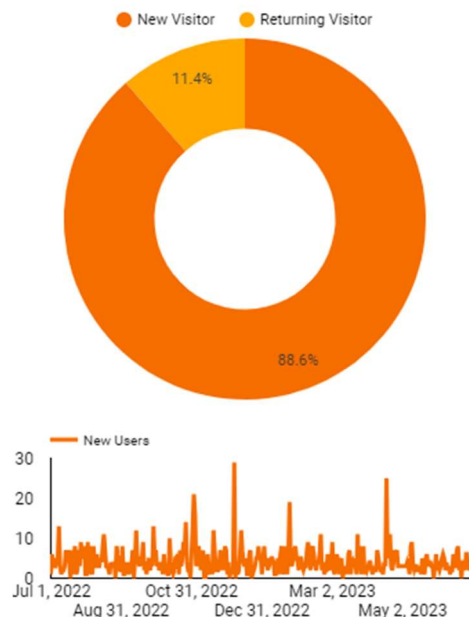


Figure 8: Graphics of website analytics showing that most visitors to the site were new and that there were a few spikes in visitation through the fiscal year.





Figure 9: A social media post by Oak Lodge Water Services discouraging the use of lawn chemicals.



Figure 10: A social media post by Oak Lodge Water Services promoting the Connect the Drops campaign, hosted by the Clean River Coalition.

In comparison to previous years, which were more heavily impacted by the COVID-19 pandemic, the Coalition was able to promote more in-person events held by members and community partners throughout the year. Events promoted included river cleanups, restorations, educational workshops and outdoor celebrations. In total, 27 events were promoted on Instagram by member organizations during FY 2022-2023. The Coalition also helped draw public interest to the Coalition’s social media pages using global events as well as sharing key messages around pollution from stormwater runoff.

Facebook & Instagram Paid Ad Reach	60,336 (▼35,856)	Likes down 33%, IG followers added: 406
Facebook Annual Reach (includes organic posts)	469,064 (up 170%) Total posts: 245 (up 132)	Total followers: 2,524 (up 727)
Instagram Annual Reach (includes organic posts)	104,511	

Table 1: Summary table of social media advertising results

Important note: Paid ad reach was not the goal during FY 2022-2023, which is why there’s a 33% decrease in likes related to paid ads. The 170% increase in annual reach on Facebook signifies that more investment into conducting targeted ad campaigns of users most likely to like the Coalition’s work, is more effective in driving users to like the Coalition pages on multiple platforms.



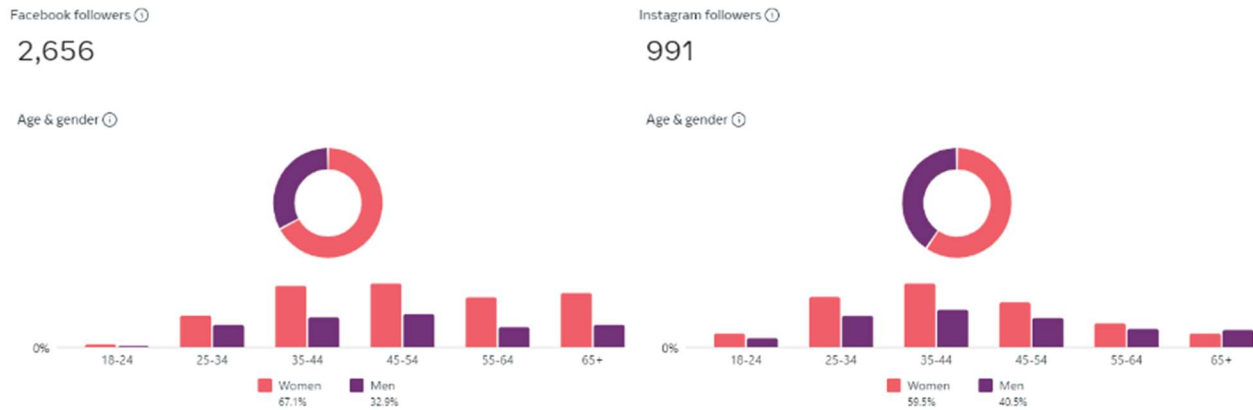


Figure 11: Facebook and Instagram followers by age range and gender. A large portion of the Coalition's Facebook is made up of women between 35-54.

In the following sections, 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 ads, *The River Starts Here*

The Coalition continued to use low-cost social media advertising as part of its campaign in FY 2022-23. 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.

A summary of Facebook ad engagement during the fiscal year is as follows:

- **Top advertisements and boosted posts:** 8 (▼7)
- **Reach:** 73,374 (▼12,782)

Topic	Plays	Reach	Page Likes	Cost Per Page Like
Something Fishy	46,341	45,192	N/A	N/A
It Starts With You	12,428	5,480	213	\$0.68
Mindful Maintenance	1,684	3,143	40	\$3.37
Don't Be a Chump, Don't Dump	1,732	2,277	5	\$2.64
Getting Creative Getting Around	1,467	2,439	42	\$3.34
Do Your Part	3,178	6,934	67	\$2.09
Do Your Part	2,405	3,471	7	\$2.09
Don't Litter, Be Better	3,650	4,438	104	\$1.25

Table 2: Ads or Boosts during FY 22-23. Plays is the number of times a video was started to play. Reach is the number of individuals who saw or interacted with the post. Some ads also ran on Instagram.



Twitter, @riverstartshere

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

- **Followers:** 1,628 (▲187)
- **Tweets:** 178 (▲117)

Instagram, @theriverstartshere

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

- **Followers:** 983(▲406)
- **Posts:** 99(▲68)

Age	Female	Male	Total by Age
13-17	1%	1%	1%
18-24	6%	6%	8%
25-34	24%	21%	25%
35-44	30%	26%	28%
45-54	21%	21%	19%
55-64	11%	13%	11%
65+	7%	12%	8%
Total by Gender	59%	41%	-

Table 3: Instagram follower demographics breakdown.

The Coalition focused on building a youth following by promoting Instagram content while reaching older people through Facebook. The Instagram audience continues to be dominated by people ages 35-44.

YouTube, The River Starts Here

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

Subscribers: 170 (▲2)

- **Videos added:** 14 (▼28)
- **Watch time (hours):** 8.1 (▼123.9)
- **Views:** 932 (▼-15k)

In 2019, The River Starts Here created a YouTube account for the Student Video Contest. Fourteen videos were added to the YouTube channel since June 2022, twelve of which were re-uploaded entries



from past Student Video Contest years. Viewership was much lower compared to FY 2021-2022 due to scant promotion of the page through other social media channels and a lack of new content to upload.

FY 2022-23 EXPENDITURES

Category	Services	Investment
Advertisements		
Facebook	Facebook digital advertisements	\$348.98
Hollywood Theater	EcoFilm event sponsorship	\$750.00
Coordination support		
Envirolssues	Meeting support and member coordination, website maintenance, social media authoring	\$23,568.98
	TOTAL	\$24,667.96

OBSERVATIONS

The following observations are based on the results of FY 2022-23 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 FY 2022-23 efforts consisted of the Coalition continuing to use digital advertising, contracting with Envirolssues to assist with continued social media posts, meeting coordination and data analytics, and maintaining a YouTube page.

The Coalition's online audience and its engagement increased on the Coalition's Instagram and Twitter accounts yet decreased substantially in terms of overall viewership of videos on the Coalition's YouTube channel and visitation to the Coalition's website. While the increase in social media engagement could be attributed to the ongoing strategic investments into those types of content and expanding its coverage to nationwide events, not holding a Student Video Contest during this fiscal reduced website visitation and YouTube viewership. While recognizing that outreach through schools to promote the Student Video Contest was challenging in previous years due to the impact of the COVID-19 pandemic and school schedule challenges, the effect on public engagement was palpable.

LOOKING AHEAD

As the 2023-24 school year begins, the Coalition will continue supporting Clearing Magazine's Honoring Our Rivers student art and poetry program in lieu of reinstating the Coalition's Student Video Contest. This includes Coalition partners continuing to provide guidance on outreach methods and program implementation as well as spreading awareness of the program to schools in the Portland-Vancouver



Metro area. The Coalition will also consider strategies for increasing participation in the program by BIPOC youth.

The Coalition plans to consult with social media specialists at its member agencies who have more specialized social media backgrounds for ideas on social media innovations in posting or purchased ads that drive engagement to the Coalition website and YouTube channel. The Coalition can also reach out to aligned organizations like the Clean Rivers Coalition, which has launched the Follow the Water campaign - a statewide educational campaign to protect the state's water resources – that utilizes digital engagement strategies like social media outreach to disperse its messaging. The Coalition will also invest time in building and maintaining relationships with community partners and organizations that work with youth and BIPOC communities through outreach events and partnership opportunities.



Appendix F

West Linn 2022-2023

Updated Public Work's Erosion Control Enforcement



West Linn Erosion Control Guide

November, 2023

Plan Review Process:

1. Disturbance greater than 1000ft² require an erosion control permit. Erosion Control application can be found on the City of West Linn website (<https://westlinnoregon.gov/publicworks/erosion-control-permit>).
2. Review the plan for Minimum Erosion Control BMPs: sediment fence, gravel entrance, gravel sidewalk sub-grade, trash cans, bio-bags against the curb, stockpile locations, and ground cover. Enhanced BMPs are required for projects with close proximity to waterways or environmental protection areas..
3. Single Lot Development- Erosion Control plans are reviewed with the Site Development Permit. Site development permits are assigned to engineers for review by the Building Department via Accela. Fees associated with the erosion control permit will be charged along with the site development permit.
4. Larger developments that require a Public Improvement Permit: Erosion Control plans are reviewed along with the Public Improvement Permit. If it is over 5 acres, make sure that a copy of an approved DEQ 1200-C permit is included. Fees associated with the erosion control permit will be invoiced once City has reviewed and approved plans.
5. After Erosion Control plans meet city standards, stamp the plans approved and attach a copy of conditions of approval stating: "This approval does not prohibit the inspector to make further corrections in the field." Conditions of approval also state the enforcement steps for erosion control.
6. Once the erosion control fees have been paid, a copy of the approved permit including the application, conditions of approval and site plan are sent to the applicant/contractor.

Inspections:

Site Development Projects:

1. Inspections are requested by the contractor once the permit has been issued through Accela.
2. Four inspections are conducted during site development: preliminary, site check/mid-level, final, and investigative. If any of these inspections fail, the Building Department will not schedule further inspections for development until corrective action has been completed. Failed inspection will trigger the first step in our 3 step escalating enforcement process.
 - a. Preliminary Inspection: Ensure all BMP control measures from the plan are installed which includes sediment fence, inlet protection, bio bags, debris containers, stockpile locations and any other controls outlined on the site plan. Preliminary inspection to be approved prior to any ground disturbance on site.
 - b. Site check/Mid-Level Inspection: Ensure all BMP control measures continue to be installed correctly, and are properly containing the erosion and sediment on site.

- c. Final Inspection: Once all landscaping has been completed this inspection is to ensure slopes are stabilized and all BMPs are removed.
- d. Investigative Inspection: Anytime the Engineering Department becomes aware of a potential erosion control violation an investigation inspection will be immediately scheduled. The purpose is to note any violations and report on corrective action needed by the contractor.

Public/Capital Improvement Projects:

1. An initial erosion control inspection is performed to ensure all BMPs outlined within the erosion control plan are installed.
2. Regular inspections are performed every 14 days to ensure erosion control BMPs are still maintained and standards are met.
3. Rain fall inspections are performed following any rain events that could contribute to discharge from a construction site. This inspection is performed to ensure that control measures installed properly contained the site during runoff events.
4. Final erosion control inspection is performed once all ground has been stabilized.

Enforcement: Three step process

1. Verbal or written warning. This warning would include the following:
 - a. Explanation to contractor/applicant of what erosion control issues are happening on the site.
 - b. Determination of corrective action needed to mitigate erosion control issues.
 - c. A schedule for when corrective action needs to be completed (24 hours for first warning and assuming no immediate threat to human health or the environment)
2. Notice of non-compliance. This step would take place if no reasonable effort was made to correct actions after previous warning in accordance with schedule.
 - a. Contractor/applicant will be given a written notice that the erosion control issues are violating the city codes.
 - b. Contractor/applicant will be given notice that a violation of the Municipal Code Chapter 5, Section 5.477 Erosion can result in fines issued by City of West Linn Code Enforcement if corrective action is not completed within 24 hours.
 - c. Contractor/applicant will be given notice that a stop work order will be issued to the site if corrective action is not completed within 24 hours.
 - d. Contractor/applicant will be given notice that a 1200-C permit will be required for any further work if corrective action is not completed within 24 hours.
3. If corrective action has not been completed 24 hours after notice of non-compliance, the following enforcement will occur:
 - a. Stop Work is issued to the site by the Engineering Department until corrective action is completed.
 - b. Code Enforcement is informed of the violations and can apply applicable fines daily until the corrective action is completed.
 - c. Applicant will be required to get a 1200-C permit from DEQ to continue work. Any violations of a 1200-C permit will be immediately reported to DEQ.