



City of West Linn, Oregon

NPDES MS4 and TMDL Annual Report

2020 – 2021 Reporting Year

Prepared for the
Oregon Department of Environmental Quality December 1, 2021

City of West Linn

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

JULY 1ST, 2020 – June 30th, 2021

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.

Date

Environmental Services Supervisor
City of West Linn Public Works

Table of Contents

<u>Section</u>	<u>Page No.</u>
1.0 INTRODUCTION	1
1.1 NPDES MS4 Permit Background.....	1
1.2 Document Organization.....	1-2
2.0 ADAPTIVE MANAGEMENT PROCESS IMPLEMENTATION.....	3
3.0 PROGRAM EXPENDITURES.....	4
4.0 ENVIRONMENTAL MONITORING PROGRAM.....	5-6
4.1 Summary of Monitoring Data.....	6
5.0 OVERVIEW OF PLANNING AND LAND USE CHANGES, UGB EXPANSIONS AND NEW DEVELOPMENT ACTIVITIES.....	7
5.1 Summary of Land Use Changes and UGB Expansions.....	7
5.2 Development Activities within the UGB.....	7-8
6.0 ADDITIONAL ACTIVITIES (STORMWATER MANAGEMENT PLAN).....	9
6.1 SWMP #1: Illicit Detection & Elimination.....	9
6.2 SWMP #4: Education & Outreach.....	9-10
6.3 SWMP #5: Public involvement & Participation.....	10
6.4 SWMP #6: Post-Construction Site Runoff.....	10
7.0 TMDL IMPLEMENTATION.....	11-12

List of Tables

Table 1: Summary of the 2012 NPDES MS4 Annual Report Requirements.....	2
Table 2: Environmental Services Division (ESD) Funding Sources & Expenditures.....	4
Table 3: Monitoring Locations and Frequencies.....	7
Table 4: Public and Private Best Management Practices.....	8
Table 5: Dry Weather Field Screening Results.....	9
Table 6: Staff Training.....	9-10

List of Appendices

Appendix A: West Linn SWMP Implementation Status
Appendix B: West Linn Monitoring Data
Appendix C: Willamette and Tualatin Rivers TMDL Implementation Status
Appendix D: Solve Events within the City of West Linn
Appendix E: Regional Coalition for Clean Rivers & Streams Annual Report

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 Clackamas County and its 12 co-permittees. Each co-permittee is required to submit an annual report, summarizing accomplishments and implementation of their individual Stormwater Management Plans (SWMP).

This annual report fulfills the reporting requirement under the City's Phase 1 NPDES MS4 permit for the reporting period of July 1, 2020 to June 30, 2021. This reporting period is the eighth year implementing the City's Stormwater Management Program Document, previously referred to as the Stormwater Management Program (SWMP) approved May 16, 2012.

This annual report follows the requirements of the 2012 Permit for annual reporting as the report was substantially prepared while still under coverage of the 2012 Permit. The 2021 Permit was issued with an effective date of October 1, 2021, and our annual reports are already well underway and in prepared draft form by that date. From a timing standpoint, it is infeasible to make the modifications necessary to follow the new annual reporting requirements of the 2021 Permit. In addition, some of the 2021 annual reporting requirements reflect new permit requirements, which are not implemented in the 2020-21 reporting period. Our annual reporting format will be revised for next year's report to match the 2021 permit requirements.

1.1 NPDES MS4 Permit Background

The City's 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). The City's NPDES MS4 permit was reissued March 16, 2012 after a multi-year negotiation process with DEQ and an additional year long delay related to an appeal. The 2012 Permit was not appealed and thus maintains an effective date of March 16, 2012. On February 28, 2017, the City submitted to DEQ a Permit Renewal Application. Although an updated SWMP was prepared and submitted as part of the Permit Renewal Application, the City's 2012 SWMP remains the effective NPDES MS4 program document for purposes of this annual report. The permit was administratively extended until DEQ issued a new NPDES MS4 Permit on September 15, 2021, which became effective October 1, 2021. Until a new SWMP Document is approved, the City will continue to implement its stormwater program in accordance with the 2012 approved SWMP.

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 2012 Permit. Specific Best Management Practices (BMPs) and activities are summarized in Appendix A. The City's TMDL Implementation Plan Annual Report for the Willamette and Tualatin River Basins is included as Appendix C.

The City, along with all Oregonians, is continuing to face unprecedented challenges in responding to the COVID-19 pandemic to protect the health of individuals and the greater community. These extraordinary circumstances require measures that impact the City's ability to strictly comply with its Permit. These measures include implementing social distancing plans, staff reassignment and rescheduling, and working

remotely when possible. Due to these circumstances, the City was unable to comply with or fully execute the following BMPs:

Education and Outreach- See Tracking Measures 3 and 4 of Element 4 in Appendix A.

Public Involvement and Participation- See Section 6.3 SWMP Element #5 BMP.

Table 1 – 2012 NPDES MS4 Annual Reporting Requirements

Annual Reporting Requirements from Schedule B.5.a. - j.		Location in document
a.	The status of implementing the Stormwater Management Program (SWMP) and each SWMP element, including progress in meeting the measurable goals in the SWMP.	Appendix A
b.	Status or results or both of any public education effectiveness evaluation conducted during the reporting year and a summary of how results were or will be used for adaptive management.	Appendix A – Element 4
c.	A summary of the adaptive management process implementation during the reporting year, including any proposed changes to the SWMP (e.g., new BMPs) identified through implementation of the adaptive management process.	2.0
d.	Any proposed changes to SWMP program elements that are designed to reduce Total Maximum Daily Loads (TMDL) pollutants to the Maximum Extent Practicable (MEP).	None this reporting year
e.	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
f.	A summary of monitoring program results, including monitoring data that are accumulated throughout the reporting year and any assessments or evaluations conducted.	4.1, 6.1 & Appendix B
g.	Any proposed modifications to the monitoring plan that are necessary to ensure that adequate data and information are collected to conduct stormwater program assessments.	None this reporting year
h.	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.	6.1 & Appendix A – Element 1
i.	A summary, as related to MS4 discharges, describing land use changes, Urban Growth Boundary (UGB) expansion, land annexations, and new development activities that occurred within these areas during the reporting year. The number of new post-construction permits issued and an estimate of the total new and replaced impervious surface area related to development projects that commenced during the reporting year.	5.0 & Table 4
j.	A summary, as related to MS4 discharges, describing concept planning or other activities conducted in preparation of UGB expansion or land annexation, if anticipated for the following year.	None this reporting year

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.

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, but as stated previously, those modifications have not been implemented pending reissuance of the permit.

3.0 PROGRAM EXPENDITURES

A summary of the City's Environmental Services Division (ESD) funding sources, expenditures for the fiscal year (FY) 2020 – 2021, and a projection of the City's expenditures for FY 2021 - 2022 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, 2021			
	Department No. 432 Surface	Department No. 433 Sewer	Total Environmental Services Fund #505
Funding Sources:			
Charges for Services	\$ 1,071,093	\$ 2,876,586	\$ 3,947,680
SDC Reimbursement Fees	47,476	26,228	73,704
Interest	1,434	0	1,434
Transfer from other Funds	0	0	0
Misc.	0	0	0
Total	\$ 1,120,003	\$ 2,902,814	\$ 4,022,818
Expenditures			
Personal Services	\$ 453,377	\$ 178,757	\$ 632,134
Materials and Services	180,846	162,102	342,948
Capital Outlay	120,336	578,937	699,273
Transfers	0	0	0
Total	\$ 754,559	\$ 919,796	\$ 1,674,355
Projected Expenditures for 2021-2022			
Personal Services	\$ 547,000	\$ 265,000	\$ 812,000
Materials and Services	265,000	227,000	492,000
Capital Outlay	1,284,000	2,100,000	3,384,000
Transfers	1,270,000	0	1,270,000
Total	\$ 3,366,000	\$ 2,592,000	\$ 5,958,000

4.0 ENVIRONMENTAL MONITORING PROGRAM

The 2020-2021 reporting year represents the 4th year implementing the 2017 Comprehensive Clackamas County Stormwater Monitoring Plan (CCCSMP). The CCCSMP was originally developed in 2007, in an effort 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 to address instream, stormwater outfall, biological, mercury and pesticide monitoring requirements outlined in the 2012 Permit.

Beginning in the spring of 2016, the City, in collaboration with other Clackamas co-permittees, participated in a series of workshops to identify updates and modifications to the 2012 CCCSMP. Modifications reflected completion of select, one-time monitoring obligations under the 2012 Permit and refinement of monitoring locations, parameters, and activities based on information collected over the permit term.

On December 16, 2016, the City submitted a 30-day notice to DEQ to approve the updates to the CCCSMP. As the City did not receive a response from DEQ within 30 days, the proposed modifications were deemed approved without written documentation. Implementation of the 2017 CCCSMP began July 1, 2017 and serves as an established agreement between 11 of the 13 Clackamas Co-permittees to conduct a coordinated monitoring effort. The following Clackamas County co-permittees are participants in the 2017 CCCSMP: Clackamas County Service District 1 (CCSD#1), Clackamas County, the cities of Gladstone, Happy Valley, Milwaukie, Oregon City, Rivergrove, West Linn and Wilsonville; Oak Lodge Water Services (OLWS) and the Surface Water Management Agency of Clackamas County (SWMACC).

As described in the 2017 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 purpose of the CCCSMP is to address the environmental monitoring components of the 2012 Permit requirements.

In accordance with the 2017 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 vary 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 2017 CCCSMP, the City of West Linn continues to target storm events to meet their instream sampling requirement.

Instream Monitoring meets the following monitoring objectives per Schedule B.1.a of the 2012 Permit:

- 2) Evaluate the effectiveness of BMP's in order to help determine BMP implementation priorities.*
- 4) Evaluate status and long-term trends in receiving waters associated with MS4 stormwater discharges.*
- 5) Assess the chemical, biological and physical effects of MS4 stormwater discharges on receiving waters.*

Grab samples are collected instream during dry weather conditions. During storm events, a minimum of 3 time-spaced grab samples are collected throughout the storm event to provide a single time-composited sample. A composite sample collected during a storm event allows for capture of a larger portion of the storm hydrograph and better represents fluctuating pollutant concentrations.

Stormwater Monitoring addresses the following monitoring objectives from Schedule B.1 of the 2012 Permit:

- 1) Evaluate the sources of the 2004/2006 303 (d) listed pollutants.*
- 2) Evaluate the effectiveness of BMP's in order to help determine BMP implementation priorities.*
- 3) Characterize stormwater based on land use type, seasonality, geography or other catchment characteristics.*
- 5) Assess the chemical, biological and physical effects of MS4 stormwater discharges on receiving waters.*
- 6) Assess progress towards meeting TMDL pollutant load reduction benchmarks.*

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. Complete Instream and Stormwater Outfall sample results are presented in Appendix B.

During the 2020-2021 monitoring year, the City collected required Instream samples (3) during storm events at 3 sites and the required (2) dry weather samples at 3 sites. The City collected the required samples (3) during storm events for their Stormwater Outfall Monitoring program.

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 2020/21. There was one annexation this FY:

- 2.3 acres at 19676 Kapteyns Street

5.2 Development Activities within the UGB

October 10, 2020 a Water Resource Protection Area permit was approved at 4327 Kelly Street to construct a single-family home within water resource protection area under the hardship provision. This property is vacant with mostly grass and invasive plant life. A condition of approval requires the applicant to purchase off-site mitigation credits at a two-to-one ratio from the West Linn Parks Department a \$1.00/sf.

November 17, 2020 a Water Resource Protection Area permit was approved at 1221 9th Street to construct a covered patio and an uncovered walkway at an existing single family home within water resource protection area under the hardship provision. A condition of approval requires the applicant to mitigate at a 1:1 ratio. Mitigation includes removing invasive species and planting native plants.

June 25, 2021 a Water Resource Protection Area, Willamette River Greenway, and Flood Management Area permits were approved at 1088 9th Street for the purposes of constructing a single-family home. This land was vacant prior to this approval. This site is permitted for up to 5,000 square feet of impervious surface/disturbed area to be treated on-site with a rain garden. The use of permeable materials for the driveway and other hardscapes was a condition of approval.

The City of West Linn requires stormwater management for new and redevelopment activities exceeding 500 square feet of impervious surface in accordance with the City of Portland's Stormwater Management Manual (2016). Stormwater quality facilities installed during FY 2020-2021 include 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 (2)	44,523	44,523
Private Soakage Trenches (3)	17,816	17,766
Private Drywells (2)	8,998	8,998
Public Water Quality (2)	437,341	279,165
Total Square Feet	508,678	350,452
Acres	11.7	8.0

6.0 ADDITIONAL ACTIVITIES

This section supplements BMP activities documented in Appendix A and is organized by specific SWMP element.

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 2020. 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 some 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 are summarized in Table 5 below.

Table 5 – Dry Weather Field Screening Results 2020-2021									
Site Number	Site Location	Creek Name	Flow Quantity	Clarity	Odor	Color	Foam or Sheen	Garbage Present?	Wood Debris
1	Brandon Place	Tualatin River	None	N/A	N/A	N/A	N/A	No	None
2	13 th St @ I-205	Bernert	Low	Clear	None	Clear	None	No	None
3	Imperial Drive	Tanner	Low	Clear	None	Clear	None	No	None
4	Hollowell Trail	McLean	Trickle	Clear	None	Clear	None	No	None
5	Barclay & Tompkins	Barlow	Low	Clear	None	Clear	None	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 2020-2021 are summarized in Table 6 below.

Table 6 – Employee Training & Relevant Conference Attendance			
Name of Training	Location	Dates	Number of Employees
Fall APWA Conference	Virtual	9/21-9/23/20	1
Wildfires and Resulting Impacts to Water Bodies used as Drinking Water Sources	Virtual	9/29/20	2
Getting Tough with Pests and Going Soft on Pollinators	Virtual	9/30/20	1

Table 6 – Employee Training & Relevant Conference Attendance			
Name of Training	Location	Dates	Number of Employees
Ornamental and Turf Review	Virtual	9/30/20	1
OAFCA Safety and Stewardship Seminar	Virtual	11/10, 11/12/20	2
Creating Resilient Water Utilities	Virtual	11/17/20	1
Property Values and Water Quality: Supporting Decisions with the Hedonic Model	Virtual	11/18/20	1
Pests of Forest Plantings	Virtual	11/18, 12/22/20	2
Household Pests	Virtual	12/28/20	1
APWA Construction Inspection	Virtual	1/12, 1/14, 1/19, 1/21, 1/26, 1/28, 2/2, 2/4/21	2
OSU PSEP 2020-2021 Training Session	Virtual	1/6-1/7/21	1
12 th Annual Pull Together	Virtual	1/13/21	1
ACWA Stormwater Summit	Virtual	5/12-5/13/21	1
Vegetation Management on Rights of Way & Drift Control	Virtual	6/28/21	2

6.3 SWMP Element #5 BMP: Public Involvement and Participation

Schedule A.4.e of the City's 2012 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 2019-2020 NPDES MS4 Annual Report was posted to the City's website for public review and the City received no comments. Due to challenges presented by the COVID-19 pandemic, the City was unable to submit the 2019-2020 Annual Report to DEQ before the November 1 deadline. The City communicated those challenges in writing to DEQ staff in September 2020 and the annual report was submitted to DEQ on December 28, 2020.

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. Others are under further review and consideration by City Staff.

7.0 TMDL Implementation

This section supplements TMDL Implementation activities documented in Appendix C.

The City of West Linn Parks and Recreation Department plays a large part managing streams and open spaces as part of the City's temperature management strategies. Appendix C provides a comprehensive summary of temperature management activities to meet the City's TMDL Implementation Plan requirements. A summary of the City's Parks and Recreation Department outreach programs and current activities is provided below to supplement information provided in Appendix C.

1. Parks & Rec Volunteer Program: The Parks & Recreation Department has a robust volunteer program to remove invasive weeds and restore areas around streams in City parks including Mary S. Young, Burnside and Maddax Woods Parks. The program has the following goals:

- To recognize each volunteer's efforts through expressions of appreciation.
- To provide opportunities for volunteers to learn as much as possible about the organization's policies and programs.
- To place each volunteer in a position best utilizing their skills and in which they are most comfortable.
- To provide opportunity for growth and greater responsibility with helpful training and guidance.

The Department partners with SOLVE to host monthly work parties. See Appendix D for a complete list of SOLVE events.

2. Parks Recreation and Open Space Master Plan (PROS) Update: After an extensive public process, the Parks and Recreation Department updated their 2007 Master Plan. The overarching goal was to create a Master Plan that is relevant, implementable and inspiring to City residents. The Master Plan was approved by Council October 14, 2019.

3. West Linn Beaver Ambassadors: This is a natural resource awareness, education, and management program that uses beavers as a tool to teach and explore how we think about the natural resources in West Linn. Ambassadors work with schools, organizations, individuals, volunteers and at community events to celebrate and promote the function of beavers in our parks and rivers. By building dams, beavers slow water flow into the Willamette and Tualatin Rivers which helps to regulate flooding, attract wading birds like heron, and provide refuge to migratory fish. Woody inputs to streams increases insect biodiversity, (macroinvertebrates), which are a major food source for a variety of salmon and bird species. Larger mammals including fishers, deer, coyotes, river otters and foxes rely on beaver pond habitat. Dams create major changes to the hydrology and geology of our waterways. Sediment moving down streams becomes captured in beaver ponds and results in better water quality as streams trickle through, around or over beaver dams.

4. Monarch Butterfly Waystation: West Linn Parks and Recreation Department is one of more than 500 agencies across the U.S. participating in conservation activities to improve natural areas and promote the availability of milkweed, crucial to the survival of the Monarch. In 2015, Marylhurst Heights Park was selected as the first park location to be planted with milkweed. This park was selected because it receives full sunlight and is already established with a variety of native trees and shrubs while bordering a wetland area. There is no chemical pesticide application in the area immediately adjacent to the habitat areas, and instead it is maintained by hand weeding.

Several other high-quality habitat areas have been identified by the West Linn Parks and Recreation Department as pollinator friendly parks. Parts of Mary S. Young Park was cleared of invasive species and planted with milkweed seed as an Eagle Scout candidate project in 2016. Areas at the White Oak Savanna, Fields Bridge, Willamette and Tanner Creek Parks are also being planned to support the native butterflies and bees.

Appendix A

West Linn 2020-2021 Stormwater Management Plan (SWMP) Implementation Status

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 2020-2021	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)	<ul style="list-style-type: none">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 2020-2021 reporting year.	
*Conduct Annual Dry Weather Field Screening	○	○	○	CWL-ESD	<ul style="list-style-type: none">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 6, 2020. (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)	<ul style="list-style-type: none">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) No spills were reported to West Linn’s Environmental Services Division of Public Works. (2) The City of West Linn Environmental Services and Tualatin Valley Fire and Rescue (TVF&R) did not respond to any spills this reporting year as no spills were reported. (3) N/A	
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 and the City is in the process of reinspecting since permit expiration and through the administrative process.	

* indicates there is more information in Section 6.0 Additional Activities

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 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 2020-2021	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	<ul style="list-style-type: none"> 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) No updates or modifications to the 2009 Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual have occurred. (2) West Linn received a total of <u>59</u> Erosion Prevention Permit applications. (3) <u>59</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 Building Department has several building and permit related flyers at its front office window. Due to COVID-19 restrictions, City Offices have been largely closed to the public since March 2020, making implementation of this BMP limited. An Environmental Protection Guide to Erosion Control can be found on the City website.	
Conduct Erosion Control Inspections and Enforcement	○	●	●	City of West Linn Public Works Engineering Division	<ul style="list-style-type: none"> 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 2020 – 2021 reporting year: <ul style="list-style-type: none"> Preliminary Inspections: <u>21</u> Approved, <u>19</u> Approved w/conditions, <u>7</u> Denied Mid Inspections: <u>16</u> Approved, <u>15</u> Approved w/conditions, <u>20</u> Denied Final Inspections: <u>30</u> Approved, <u>2</u> Approved w/conditions, <u>3</u> Denied (2) No notices of non-compliance or stop work orders were issued during the 2020-2021 reporting year. Procedures for violations are listed under additional activities in the column to the right.	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	<ul style="list-style-type: none"> 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. Due to COVID-19 restrictions affecting City facility openings, brochure distribution has been minimal. (2) Appendices C, D and E explain all of the public education that was completed this FY. (3) Due to COVID-19 pandemic, the city was unable to provide staff for outreach activities with local co-permittees during this reporting year. (4) No catch basins were stenciled this reporting year. (5) The City paid \$900 to TBPAC, as well as funded \$1500 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. <ul style="list-style-type: none"> Monthly Work Parties at Mary S. Young Park, Wilderness Park, Maddax Woods, Sahallie Illahee Park in partnership with SOLVE, Ivy pulling, native plantings, chips spread on paths, mulching newly planted trees and shrubs. Arbor Week 4/4 - 4/10/21: Native tree and shrub giveaways in celebration of West Linn as a recipient of the Tree City USA award Celebrated Pollinator Week June 21-27, 2021: Pollinator Scavenger Hunt, Pollinator Plant Giveaway, Pollinator Seed Bomb Giveaway
Implement a Pet Waste Program	●			City of West Linn Public Works Department & Parks and Recreation Department	<ul style="list-style-type: none"> 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. 	(1) Report on activities conducted annually.	(1) The City of West Linn currently has <u>55</u> dog waste bag dispensers installed throughout the parks and open spaces. During the 2020 – 2021 reporting year, the City spent <u>\$6,388</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.	

					• Continue to provide pet waste baggies and disposal areas in City parks for disposal of domestic animal waste.			
--	--	--	--	--	-----------------------------------------------------------------------------------------------------------------	--	--	--

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 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 2020-2021	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>19</u> hours of training in Pest Management. The Parks Department staff received a total of <u>20</u> hours of Integrated Pest Management training. A total number of hours trained: <u>39</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 Table 6 on Pages 9-10 for a complete listing of employee trainings on stormwater. (2) One West Linn staff is on the Board of Directors for the Association of Clean Water Agencies (ACWA) as the Chair. See Table 6 on Pages 9-10 for participation in professional organizations.	These 2 tracking measures are combined in Table 6 under Section 6.2 on pages 9-10.
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>3</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>7</u> new private facilities added in FY 2020-21 with <u>71,337</u> square 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 2016 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.

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 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 2020-2021	Additional Detail Related to Activities Conducted
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>5 City-wide sweeps</u> were conducted. (2) Approximately <u>789 cubic yards</u> of material were removed. (3) <u>500 Gallons of deicing agent</u> was used in the winter of 2020/21.	
Implement an Integrated Pest Management Program	○	○	●	City of West Linn Public Works Department and Parks and Recreation Department	<ul style="list-style-type: none">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>\$500</u> on pest management chemicals. The Public Works Department, which includes the Transportation, Water and Environmental Divisions spent approximately <u>\$ 600</u> . The total spent by the City was <u>\$ 1,100</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	<ul style="list-style-type: none">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.	

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 2020-2021	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	<ul style="list-style-type: none"> 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) to improve understanding of system characteristics and infrastructure in the city. The SDMP includes of 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) No CIP projects were implemented this reporting year. (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.	

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 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)	Annual Report Information: Tracking Measure Status, Permit Year 2020-2021	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) <u>1000</u> linear feet of stormwater pipe was inspected. (2) <u>3</u> cubic yard of debris was removed during cleaning activities.	
Conduct Catch Basin Cleaning and Maintenance	●	●	○	CWL-ESD	<ul style="list-style-type: none"> 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) <u>2,765</u> catch basins were inspected, and <u>436</u> catch basins were cleaned during the 2020-2021 reporting year. (2) <u>75</u> 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 2020-2021 reporting year: <ul style="list-style-type: none"> Pollution Control Manholes = 142 inspected and 142 were Cleaned & Maintained. Detention Tanks = 41 Inspected and 0 Cleaned or Maintained. Bio Swales = 110 Hours were spent on maintenance. Water Quality Ponds = 331 hours were spent on maintenance. (2) The volume of debris removed during cleaning activities was: 35 cubic yards from Pollution Control Manholes.	
Private Water Quality Facility Maintenance Program	●	●	●	CWL-ESD & Engineering Dept.	<ul style="list-style-type: none"> 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) <u>7</u> new Private Stormwater maintenance agreements were recorded through the City’s Engineering Department and the Clackamas County Recorder’s Office during the 2020-2021 reporting year. (2) A total of <u>15</u> inspection reports were received during the 2020-2021 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 agreements.	The Environmental Technician inspected <u>30</u> 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 2020-2021 Monitoring Data

Appendix B – Stormwater Monitoring Data

INSTREAM MONITORING		Location - Culvert near 3821 Calaroga Drive								
		Sample Site # WL_01								
		Stream Name - Trillium Creek								
Analysis	Units	Grab Sample #1 Dry Weather 10/7/2020	Grab Sample #1 Dry Weather 4/6/2021	Composite #1	Composite #2	Composite #3	Statistics			Notes
				Storm Event	Storm Event	Storm Event	High	Low	Mean	
				3/22/2021	5/7/2021	5/24/2021				
Conductivity - Field	µS/cm	177.1	146.9	106.2	155.7	170.8	177.1	106.2	141.7	4
Dissolved Oxygen - Field	mg/L	9.2	12.7	12.8	9.7	10.4	12.8	9.2	11.0	
Dissolved Oxygen - Winkler	mg/L	10	11	9.8	9.5	8.5	11	8.5	9.8	
Dissolved Oxygen - Field	% Saturation	88	105	106	88	98	106	88	97	
pH - Field	Std Units	8.29	8.06	7.63	7.46	7.71	8.29	7.46	7.86	
Temperature - Field	°C	13.8	7.7	7.6	11.5	12.3	13.8	7.6	10.7	
Ammonia Nitrogen Low Seal	mg/L	ND	ND	ND	ND	ND	-	-	-	3
Copper	ug/L	ND	ND	2.03	ND	ND	2.03	-	1.02	3
Copper, Dissolved	ug/L	ND	ND	ND	2.16	ND	2.16	-	1.08	3
E. coli	MPN/100mL	146	166	70	488	249	488	70	279	1,2
Hardness	mg CaCO ₃ /L	76.0	76.0	68.0	88.0	88.0	88.0	68.0	78.0	3
Lead	ug/L	ND	ND	ND	ND	ND	-	-	-	
Lead, Dissolved	ug/L	ND	ND	ND	ND	ND	-	-	-	
Nitrate-Nitrite Seal	mg/L	0.32	0.433	0.534	0.6	0.7	0.7	0.32	0.51	
Ortho Phosphate Seal	mg/L	ND	ND	0.146	0.117	0.055	0.146	-	0.07	
Total Phosphate Seal	mg/L	0.08	ND	0.06	0.19	0.07	0.19	-	0.1	
Total Solids	mg/L	280	150	110	110	250	280	110	195	3
Total Dissolved Solids	mg/L	124	124	62	131	127	131	62	97	
Total Suspended Solids	mg/L	4	6	8	6	6	8	4	6	
Volatile Solids	mg/L	ND	10	44	40	60	60	-	30	
Zinc	ug/L	20.4	86.1	36.1	40.0	43.8	86.1	20.4	53.3	
Zinc, Dissolved	ug/L	9.45	10.5	21.6	10.6	8.6	21.8	8.6	15.1	
Storm Event Rainfall	Inches	N/A	N/A	0.3	0.1	0.1				

Notes: Red font indicates a potential QA/QC issue.

(1) MPN = Most Probable Number.

(2) Grey shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(3) Per DEQ request, an "ND" designation is understood to be "less than the lower reporting limit" and treated as 0 for calculations. N/A is Not Applicable.

(4) Dissolved Oxygen (Winker Method) samples are taken once at site WL_01 site only, per sampling event as QA/QC for comparison with the electronic meter.

Appendix B – Stormwater Monitoring Data

Location – 4103 Imperial Drive										
INSTREAM MONITORING		Sample Site # WL_02								
Stream Name – Tanner Creek										
Analysis	Units	Grab Sample #1 Dry Weather 10/7/2020	Grab Sample #1 Dry Weather 4/6/2021	Composite #1	Composite #2	Composite #3	Statistics			Notes
				Storm Event	Storm Event	Storm Event	High	Low	Mean	
				3/22/2021	5/7/2021	5/24/2021				
Conductivity - Field	µS/cm	128.5	105.7	85.0	108.1	105.1	128.5	85	106.6	
Dissolved Oxygen - Field	mg/L	9.2	12.6	12.8	10.0	10.1	12.8	9.2	11.0	
Dissolved Oxygen - Field	% Saturation	96	107	106	93	95	107	93	100	
pH - Field	Std Units	7.94	7.62	6.87	7.43	7.09	7.94	6.87	7.41	
Temperature - Field	°C	14.6	7.8	8.0	12.3	12.6	14.6	7.8	11.2	
Ammonia Nitrogen Low Seal	mg/L	ND	ND	ND	ND	ND	-	-	-	3
Copper	ug/L	ND	ND	3.63	2.62	7.58	7.58	-	3.79	3
Copper, Dissolved	ug/L	ND	ND	2.26	2.78	7.38	7.38	-	3.69	3
E. coli	MPN/100mL	130	32	179	86	866	866	32	449	1,2
Hardness	mg CaCO ₃ /L	50.0	56.0	40.0	52.0	60.0	60.0	50.0	55.0	
Lead	ug/L	ND	ND	0.306	ND	ND	0.306	-	0.153	3
Lead, Dissolved	ug/L	ND	ND	ND	ND	ND	-	-	-	3
Nitrate-Nitrite Seal	mg/L	0.605	0.716	0.601	0.7	0.8	0.8	0.601	0.701	
Ortho Phosphate Seal	mg/L	ND	ND	ND	0.074	ND	0.074	-	0.037	3
Total Phosphate Seal	mg/L	0.06	ND	0.05	0.12	0.06	0.12	-	0.06	3
Total Solids	mg/L	190	75	100	130	190	190	75	133	
Total Dissolved Solids	mg/L	100	67	63	106	103	106	63	85	
Total Suspended Solids	mg/L	4	2	9	4	4	9	2	6	
Volatile Solids	mg/L	30	ND	34	30	40	40	-	20	3
Zinc	ug/L	24.2	43.0	72.0	59.7	65.4	72.0	24.2	48.1	
Zinc, Dissolved	ug/L	8.88	18.9	42.0	24.5	26.6	26.6	8.88	17.74	
Storm Event Rainfall	Inches	N/A	N/A	0.3	0.1	0.1				

- Notes: Red font indicates a potential QA/QC issue.
- (1) MPN = Most Probable Number.
- (2) Grey shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.
- (3) Per DEQ request, an "ND" designation is understood to be "less than the lower reporting limit" and treated as 0 for calculations. N/A is Not Applicable.
- (4) Dissolved Oxygen (Winker Method) samples are taken once at site WL_01 site only, per sampling event as QA/QC for comparison with the electronic meter.

Appendix B – Stormwater Monitoring Data

Location – Johnson @ Ryan Court										
INSTREAM MONITORING										
Sample Site # WL_03										
Stream Name – Unnamed Creek										
Analysis	Units	Grab Sample #1 Dry Weather 10/7/2020	Grab Sample #1 Dry Weather 4/6/2021	Composite #1	Composite #2	Composite #3	Statistics			Notes
				Storm Event 3/22/2021	Storm Event 5/7/2021	Storm Event 5/24/2021	High	Low	Mean	
Conductivity - Field	µS/cm	155.0	154.6	106.6	142.1	127.1	155.0	106.6	130.8	
Dissolved Oxygen - Field	mg/L	8.7	11.0	0.5	8.7	8.3	11.0	0.5	5.75	
Dissolved Oxygen - Field	% Saturation	87	94	5	80	79	94	5	50	
pH - Field	Std Units	7.75	7.31	6.95	7.31	7.10	7.75	6.95	7.35	
Temperature - Field	°C	15.0	8.2	8.6	11.9	12.9	15.0	8.2	11.6	
Ammonia Nitrogen Low Seal	mg/L	ND	ND	ND	ND	ND	-	-	-	3
Copper	ug/L	ND	ND	3.33	ND	5.93	5.93	-	2.97	3
Copper, Dissolved	ug/L	ND	ND	ND	2.09	6.64	6.64	-	3.32	3
E. coli	MPN/100mL	133	7	231	41	178	231	7	119	1,2
Hardness	mg CaCO ₃ /L	72.0	84.0	52.0	72.0	60.0	84.0	52.0	68.0	
Lead	ug/L	ND	ND	0.879	ND	ND	0.879	-	0.440	3
Lead, Dissolved	ug/L	ND	ND	ND	ND	ND	-	-	-	3
Nitrate-Nitrite Seal	mg/L	0.171	0.301	0.614	0.5	0.8	0.8	0.171	0.490	
Ortho Phosphate Seal	mg/L	ND	ND	ND	0.074	ND	0.074	-	0.037	3
Total Phosphate Seal	mg/L	0.07	ND	0.08	0.10	ND	0.10	-	0.05	3
Total Solids	mg/L	150	160	140	150	120	160	120	140	
Total Dissolved Solids	mg/L	127	131	63	115	90	131	63	97	
Total Suspended Solids	mg/L	15	3	21	4	2	21	2	12	
Volatile Solids	mg/L	30	40	42	40	60	60	30	45	
Zinc	ug/L	38.3	52.2	83.5	75.7	60.7	83.5	38.3	60.9	
Zinc, Dissolved	ug/L	19.3	37.7	36.1	22.4	22.9	37.7	19.3	28.5	
Storm Event Rainfall	Inches	N/A	N/A	0.3	0.1	0.1				

Notes: Red font indicates a potential QA/QC issue.

(1) MPN = Most Probable Number.

(2) Grey shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(3) Per DEQ request, an "ND" designation is understood to be "less than the lower reporting limit" and treated as 0 for calculations. N/A is Not Applicable.

(4) Dissolved Oxygen (Winker Method) samples are taken once at site WL_01 site only, per sampling event as QA/QC for comparison with the electronic meter.

Appendix B – Stormwater Monitoring Data

STORMWATER OUTFALL MONITORING								
Location - Horton Rd. @ Summit St. Outfall								
Sample Site # WL_04								
Stream Name - Barlow Creek								
Land Use - Residential								
Analysis	Units	Composite #1	Composite #2	Composite #3	Statistics			Notes
		Storm Event	Storm Event	Storm Event	High	Low	Mean	
		3/22/2021	5/7/2021	5/24/2021				
Conductivity - Field	µS/cm	72.4	86.9	86.2	86.9	72.4	79.7	
Dissolved Oxygen - Field	mg/L	0.9	8.7	9.6	9.6	0.9	5.3	
Dissolved Oxygen - Field	% Saturation	7	80	93	93	7	50	
pH - Field	Std Units	6.86	7.64	6.81	7.64	6.81	7.23	
Temperature - Field	°C	9.4	12.3	13.3	13.3	9.4	11.4	
Ammonia Nitrogen Low Seal	mg/L	ND	ND	ND	-	-	-	3
Copper	ug/L	6.24	19.6	20.5	20.5	6.24	13.37	1,2
Copper, Dissolved	ug/L	4.29	20.4	20.4	20.4	4.29	12.4	
E. coli	MPN/100mL	186	41	29	186	29	108	
Hardness	mg CaCO ₃ /L	28.0	48.0	48.0	48.0	28.0	38	
Lead	ug/L	0.23	0.233	ND	0.233	-	0.117	
Lead, Dissolved	ug/L	ND	0.201	ND	0.201	-	0.101	3
Nitrate-Nitrite Seal	mg/L	0.852	1.4	1.3	1.4	0.852	1.13	3
Ortho Phosphate Seal	mg/L	ND	0.173	ND	0.173	-	0.09	
Total Phosphate Seal	mg/L	ND	0.31	0.07	0.31	-	0.16	
Total Solids	mg/L	32	140	160	160	32	96	
Total Dissolved Solids	mg/L	43	121	85	121	43	82	
Total Suspended Solids	mg/L	ND	7	ND	7	-	3.5	3
Volatile Solids	mg/L	32	50	70	70	32	51	
Zinc	ug/L	53.2	62.9	69.2	69.2	53.2	61.2	
Zinc, Dissolved	ug/L	22.9	32.9	38.0	38.0	22.9	30.5	
Rain Fall Data in Inches	Inches	0.3	0.1	0.1				

Notes: Red font indicates a potential QA/QC issue.

(1) MPN = Most Probable Number.

(2) Grey shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(3) Per DEQ request, an "ND" designation is understood to be "less than the lower reporting limit" and treated as 0 for calculations.

Appendix C

West Linn 2020-2021 Willamette & Tualatin Rivers TMDL Implementation Status

Appendix C

Tualatin and Willamette TMDL Implementation Plan Annual Report

Along with Section 7.0 in this report, Table C-1 summarizes the City's efforts to implement pollutant reduction measures specified in the Total Maximum Daily Load (TMDL) Implementation Plans (IPs) for the Willamette River and the Tualatin River. The City's NPDES MS4 permit serves as the Willamette River and Tualatin River TMDL IPs for point source TMDL parameters including bacteria, mercury, total phosphorus (as a surrogate for pH and chlorophyll a), and settleable volatile solids (as a surrogate for dissolved oxygen). Progress toward implementing best management practices (BMPs) to address these parameters is summarized in Appendix A of this document with additional information described in Sections 6.0 and 7.0 of this report. The respective IPs include management strategies to address temperature as a non-point source TMDL parameter.

Willamette River TMDL IP

The City of West Linn originally submitted its Willamette River TMDL IP to the Oregon Department of Environmental Quality (DEQ) on March 31, 2008. DEQ approved the IP on May 9, 2009. The Willamette River TMDL IP was updated April 30, 2014 and approved by DEQ August 18, 2014. The City submitted a combined Willamette and Tualatin River TMDL IP to DEQ in March 2019. The combined TMDL IP was approved by DEQ May 13, 2020. The TMDL parameters of concern for the Willamette River are: 1) bacteria, 2) mercury, and 3) temperature. The updated Willamette Basin mercury TMDL was issued by EPA on February 4, 2021, and requires an update to the TMDL IP by September 2022.

Tualatin River TMDL IP

The Tualatin River TMDL IP was originally submitted to DEQ in August 2003. It was revised and submitted to DEQ in June 2014 and was approved by DEQ on August 18, 2014. As mentioned previously, the City submitted a combined Willamette and Tualatin River TMDL IP to DEQ in March 2019. DEQ approved the combined TMDL IP May 13, 2020. There are five TMDL pollutant parameters of concern for the Tualatin River: 1) bacteria, 2) mercury, 3) temperature, 4) pH and chlorophyll a, with total phosphorus as a surrogate parameter, and 5) dissolved oxygen, with settleable volatile solids (SVS) as a surrogate parameter.

USGS and the City of West Linn

The City of West Linn entered into a new Joint Funding Agreement (JFA) with the U.S. Department of the Interior, U.S. Geological Survey (USGS) on October 1st, 2016 for Water Resource Investigations and to participate in a hydrologic streamflow data collection program on the Tualatin River. The JFA extends from 10/01/2016 through 9/30/2021. City costs will be \$9,045 over the 5 year term. The USGS number for this project is YF00D7U and the gauge is at river mile 1.8. Other local agencies that fund this study are: Clean Water Services (CWS), Clackamas County Water Environment Services, (WES), and the City of Lake Oswego.

Tualatin River Water Trail

In a Resolution (No. 2016-08) approved by the City Council on July 11, 2016, the City has been given permission to pursue the designation of the Tualatin River Water Trail (TRWT) as a National Water Trail (NWT); the City owns and manages Fields Bridge and Willamette Park as access points for the TRWT. The designation requires that the trail remain open to the public for at least the next 10 years, be designed, constructed and maintained according to best management practices and comply with all land use plans and environmental laws. The benefits of this designation will be to have access to funding opportunities, training and technical assistance. October 20, 2020, the Interior Department designated the Tualatin River as a National Water Trail.

Table C-1.Summary of Temperature Management Strategies for The Willamette River TMDL and the Tualatin River TMDL Implementation Plans							
BMP or Activity	Commitment/ Implementation Strategy	Measurable Goal(s)	Implementation Tracking/Performance Measure	Timeline	Milestones	Responsible City Department	Status (to be populated with each annual report)
Riparian Area Management	Enforce riparian buffer ordinances to protect existing vegetation and minimize impacts to surface waters due to development.	Continue to implement West Linn Community Development Code (WLCDC), Chapter 28 (Willamette and Tualatin River Protection) and Chapter 32 (Water Resource Area Protection), related to the following: <ul style="list-style-type: none">Chapter 28 - Implementation of the Willamette and Tualatin River Protection Areas (overlays) and habitat conservation areas (HCA) to comply with Title 3 and Title 13 requirements.Chapter 32 – Implementation of Water Resource Protection Areas (overlay and buffer widths) to comply with Title 3 and Title 13 requirements. Provisions of Chapter 32 apply to wetlands and riparian buffers city-wide.	Annually track CDC updates related to Title 3/ 13 compliance.	Ongoing	N/A - CDC is currently consistent with Title 3/ 13 compliance.	West Linn Planning Department	No updates to the CDC were made this reporting year.
		Continue to implement Ordinance 1542, relating to the Community Tree Ordinance and efforts to encourage and promote tree conservation and planting to maintain and increase tree canopy coverage.	Annually track code updates related to tree canopy coverage and enforcement.	Ongoing	N/A – Implementation is ongoing.	West Linn Planning Department	No code updates were made this reporting year.
	Utilize annually committed funds to restore and enhance riparian shade conditions and instream habitat at identified public and private areas.	Conduct a desktop GIS evaluation and/or ground truthing to evaluate current riparian vegetation conditions to determine whether replanting or maintenance is required.	Annually document results of the desktop evaluation/ ground truthing efforts. Prepare updated mapping to document findings.	November 2021	<ul style="list-style-type: none">Evaluate the riparian condition of high and medium priority planting opportunity areas identified in the 2009 Willamette Basin TMDL IP by November 2021. Identify maintenance needs.Assess and identify additional planting opportunity areas in the Tualatin Basin by November 2021.Prepare a maintenance and planting schedule for identified planting opportunity areas by November 2021.	West Linn Public Works	High and Medium priority planting opportunities have been evaluated. Two medium priority areas have been cleared of invasive species and planted with native species. Maintenance is performed as needed.
		Conduct or financially support riparian planting activities city wide.	Track planting and vegetation management activities conducted city wide. Track planting and vegetation management activities specific to identified planting opportunity areas.	Ongoing	N/A – Implementation is ongoing.	West Linn Public Works	See Appendix D for planting and management activities.
		Continue partnerships with and/or financial contributions to watershed councils, non-profit organizations, and private citizens in support of riparian planting projects. Partnership may include in-kind staff participation on governing boards or technical support for sponsored projects on public property within the City. Financial contributions may be direct material or monetary.	Annually document partnership efforts. Annually document any shade planting incentives (materials, trainings, etc.) provided to citizens.	Ongoing	N/A – Implementation is ongoing.	West Linn Public Works	See Appendix A for material contributions in support of habitat restoration and Appendix D for a list of partnerships.
		Implement capital projects with a water quality component.	Complete one capital project with a water quality component to benefit stream health over the 5-year TMDL implementation period.	Annually track status of the City's master plan update and capital project implementation.	Ongoing	The City's SMP was adopted in November 2019. Implementation of the SMP is ongoing.	West Linn Public Works
Design Standards for New and Redevelopment	Implement design standards that promote infiltration.	Promote the use of infiltration for stormwater management through the City of West Linn Public Works Design Standards, Section 2.	As applicable, document changes or updates to the City's stormwater design standards.	Ongoing	N/A – Implementation is ongoing.	West Linn Public Works	No updates or changes were made to stormwater design standards this reporting year.
Public Education for Temperature Management	Continue to provide information regarding temperature related issues and shade preservation efforts to the public.	Using the City newsletter, website, or other media platform, annually distribute a minimum of one article related to temperature issues and instream habitat management.	Annually track the number and content of temperature – related articles distributed to City residents.	Ongoing	N/A – Ongoing implementation is addressed through implementation of the City's SWMP.	West Linn Public Works	Printed materials are distributed at City facilities and are restocked on a quarterly basis.
		Promote regional or local programs targeted at improving habitat on private property using City outlets. Instruction to include the importance of maintaining riparian buffers for shade and temperature management.	Annually document the methods of information distribution conducted by the City.	Ongoing	N/A – Implementation is ongoing.	West Linn Public Works	The City promotes regional and local programs through its partnerships with RCCR&S and TBPAC.
Environmental Monitoring	Monitor surface water temperature to document status and evaluate trends with respect to water quality standards.	In conjunction with NPDES MS4 requirements and implementation of the Coordinated Clackamas County Monitoring Plan (CCCSMP), conduct sampling for temperature at required instream monitoring locations.	As applicable, annually report any modification to existing instream temperature monitoring activities.	Ongoing	N/A – Ongoing implementation is addressed through implementation of the City's NPDES MS4 permit.	West Linn Public Works	No modifications to existing instream temperature monitoring were made this reporting year.

Appendix D

West Linn 2020-2021

SOLVE Events within the City of West Linn

Appendix D – SOLVE Events within the City of West Linn in FY 2020-2021 (in order of dates)

Site Name	Event Name	Event Date	Event Duration	Partner Organization	Pounds Trash	Area Cleared of Invasives (Sq. Ft.)	Trees Planted	Shrubs Planted	Total Volunteers	Adults	Youth	Mulched	Caged
Mary S. Young State Park	Mary S. Young Park Work Party for August	8/1/2020	3	City of West Linn Parks & Recreation		4,000			41	19	22		
Burnside Park	Burnside Park – Willamette River cleanup	8/22/2020	3	SOLVE Events	15				3	2	1		
Mary S. Young State Park	Mary S. Young Park Work Party for September	9/5/2020	3	City of West Linn Parks & Recreation		4,000			49	32	17		
Maddax Woods	Maddax Woods Monthly Cleanup for September	9/19/2020	3	Friends of Maddax Woods					29	9	20		
Wilderness Park	Ivy Pull & Trail Chipping	9/26/2020	3	Friends of Wilderness Park	5	14,500			64	16	48		
Mary S. Young State Park	Mary S. Young Park Work Party for October	10/3/2020	3	City of West Linn Parks & Recreation		7,800			78	40	38		
Sahallie Ilahee Park	Sahallie Ilahee Park Habitat Restoration - October!	10/10/2020	3	City of West Linn Parks & Recreation		2,000			24	13	11		
Maddax Woods	Maddax Woods Monthly Cleanup for October	10/17/2020	3	Friends of Maddax Woods	2	250			6	4	2		
Wilderness Park	Wilderness Park Habitat Restoration	10/24/2020	3	Friends of Wilderness Park	2	2,000			12	8	4		
Mary S. Young State Park	Mary S. Young Park Work Party for November	11/7/2020	3	City of West Linn Parks & Recreation		5,000			115	49	66		
Willamette Park	Willamette Park DIY Cleanup	11/8/2020	3	SOLVE Events	5				1		1		
Willamette Park	Willamette Park Work Party for November	11/21/2020	3	City of West Linn Parks & Recreation		250			7	7			
Mary S. Young State Park	Mary S. Young Park Work Party for December - PLANTING NATIVE PLANTS	12/5/2020	3	City of West Linn Parks & Recreation		2,000	3	997	137	85	52	500	
Sahallie Ilahee Park	Sahallie Ilahee Park - December - NATIVE TREE & SHRUB PLANTING	12/12/2020	3	City of West Linn Parks & Recreation			171	221	40	26	14	392	
Willamette Park	Willamette Park- Save the trees from ivy	12/19/2020	3	City of West Linn Parks & Recreation					7	6	1		
Wilderness Park	Wilderness Park Habitat Restoration	12/26/2020	3	Friends of Wilderness Park		2,000		115	23	16	7	130	
Mary S. Young State Park	Mary S. Young Park Work Party for January	1/2/2021	3	City of West Linn Parks & Recreation		3,000			61	28	33		
Sahallie Ilahee Park	Sahallie Ilahee Park Habitat Restoration - January!	1/9/2021	3	City of West Linn Parks & Recreation	1	3,000			34	14	20		
Maddax Woods	Maddax Woods Monthly Cleanup for January	1/16/2021	3	Friends of Maddax Woods	20	1,000			32	17	15		
Willamette Park	Willamette Park Improve the Riverfront January Event	1/16/2021	3	City of West Linn Parks & Recreation	3	6,000			15	7	8		
Wilderness Park	Wilderness Park Habitat Restoration	1/23/2021	3	Friends of Wilderness Park	5	2,700			29	9	20		

Appendix D continued – SOLVE Events within the City of West Linn													
Site Name	Event Name	Event Date	Event Duration	Partner Organization	Pounds Trash	Area Cleared of Invasives (sq. Ft.)	Trees Planted	Shrubs Planted	Total Volunteers	Adults	Youth	Mulched	Caged
Mary S. Young State Park	Mary S. Young Park Work Party for February	2/6/2021	3	City of West Linn Parks & Recreation	1	9,200			92	49	43		
Mary S. Young State Park	Mary S. Young Park Work Party for March	3/6/2021	3	City of West Linn Parks & Recreation		250			154	101	53		
Sahallie Ilahee Park	Sahallie Illahee Park Habitat Restoration - March!	3/13/2021	3	City of West Linn Parks & Recreation					58	42	16		
Mary S. Young State Park	Mary S Young Park Ivy Pull!	3/14/2021	3	City of West Linn Parks & Recreation		1,000			127	59	68		
Sahallie Ilahee Park	Sahallie Illahee Park Habitat Restoration	3/20/2021	3	City of West Linn Parks & Recreation	1				6	6			
Sahallie Ilahee Park	Sahallie Illahee Park Habitat Restoration	3/27/2021	3	City of West Linn Parks & Recreation					14	11	3		
Mary S. Young State Park	Mary S. Young Park Work Party for April	4/3/2021	3	City of West Linn Parks & Recreation		3,000			103	55	48		
1855 Carriage Way	Sunburst Greenspace Habitat Restoration	4/10/2021	3	Sunburst Cleanup		3,500			48	45	3		
Sahallie Ilahee Park	Sahallie Illahee Park Habitat Restoration - April!	4/11/2021	3	City of West Linn Parks & Recreation	5	5,000			21	17	4		
Maddax Woods	Maddax Woods Monthly Cleanup for April	4/17/2021	3	Friends of Maddax Woods		400			10	10			
Willamette Park	Willamette Park- Ice storm damage clean up	4/17/2021	3	City of West Linn Parks & Recreation	40				15	13	2		
Mary S. Young State Park	Mary S. Young Park Work Party for May	5/1/2021	3	City of West Linn Parks & Recreation		5,000			111	82	29		
Mary S. Young State Park	Mary S Young Park - February Ice Storm Trail Cleanup	5/1/2021	3	City of West Linn Parks & Recreation					14	13	1		
Sahallie Ilahee Park	Sahallie Illahee Park Habitat Restoration - May!	5/8/2021	3	City of West Linn Parks & Recreation	5	1,000			22	14	8		
1855 Carriage Way	Sunburst Greenspace Habitat Restoration	5/8/2021	3	Sunburst Cleanup	10	10,000			19	14	5		
Maddax Woods	Maddax Woods Monthly Cleanup for May	5/15/2021	3	Friends of Maddax Woods	15	200			14	10	4		
Wilderness Park	Wilderness Park Habitat Restoration	5/22/2021	3	Friends of Wilderness Park	1	300			17	11	6		
1855 Carriage Way	Sunburst Greenspace Habitat Restoration	6/12/2021	3	Sunburst Cleanup	200	1,000			24	19	5		
Sahallie Ilahee Park	Sahallie Illahee Park Work Party for June	6/13/2021	3	City of West Linn Parks & Recreation	1	3,000			22	13	9		
Totals:					337	102,350	174	1,333	1,698	991	707	1,022	0

Appendix E

Regional Coalition for Clean Rivers & Streams Annual Report

July 1, 2020 – June 30, 2021



REGIONAL COALITION FOR CLEAN RIVERS AND STREAMS

FISCAL YEAR 2020-2021 ANNUAL REPORT

SEPTEMBER 20, 2021

PREPARED BY:



enviroissues



FY 2020-21 OVERVIEW

The Regional Coalition for Clean Rivers and Streams (Coalition) continued its work – initiated in the mid-1990s – of providing coordinated messaging about behaviors linked to stormwater pollution from residential sources across the Portland metropolitan region in Washington, Multnomah and Clackamas counties. According to 2020 Census data, Washington County has a population of 600,372. Multnomah County has a population of 815,428 and the Clackamas County population is 421,401. 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 2020-21 fiscal year included sponsoring and promoting the Coalition and its messages at community events.

Coalition participants include:

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

This report covers July 1, 2020 - June 30, 2021.

BACKGROUND

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

Participants in the Coalition represent agencies that serve diverse population sizes from very small (Troutdale) to very large (Clean Water Services). As such the ability to run programs specific to their community is limited by funding and staffing. The Coalition represents an efficient, effective method to



combine stormwater outreach funds. Coalition members continue to provide funding for the collaborative work each fiscal year based on the size of the respective community. The group shares funds with Multnomah County acting as the fiscal agent to purchase associated consulting services, advertising, materials and event sponsorships. By sharing resources, the group reaches many thousands of people in the region compared to what entities can typically achieve on their own.

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

Key Messages

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

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

FY 2020-21 ACTIVITIES AND RESULTS

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

Strategic Plan Implementation

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

Goal 1: Maintain a functioning Coalition

Each year, Coalition members prepare an updated cost-sharing approach and budget, which was implemented in 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, including messaging and news for the 2020 and 2021 Student Video Contests. 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 2020-2021 fiscal year, the Coalition relied more on ongoing social media outreach as most in-person outreach opportunities were cancelled or delayed due to the COVID-19 pandemic.

In spring 2020, the Coalition discussed the importance of acknowledging the intersectionality of the environmental and social justice movements. Independently, partner agencies had been in various stages of educating staff on the topics of diversity, equity and inclusion. Partners committed together to think about practices that could be implemented that would result in more inclusivity for historically marginalized and underserved populations. The partners agreed to broaden the content of their messages to include environmentally related social justice information, as well as to utilize its platform to amplify the voices of the Black, Indigenous, and People of Color (BIPOC) communities. Further, this resulted in the partners adding a specific category to the Student Video contest that recognized BIPOC filmmakers and ensure their voices are represented and heard.



Figure 1: Screenshot from Facebook post promoting donations for the Water for Warm Springs Fund.

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. The Coalition continued to adapt to in-person event restrictions caused by COVID-19 by increasing social media posts and digital events. The primary focus of digital outreach was for the first and second annual Student Video Contests.



Student Video Contest

Students were honored at the fall 2020 Ecofilm Festival held at the Hollywood Theatre in Portland via a RSH sponsorship of the festival. The Ecofilm festival director launched a special day-of programming that focused solely on films made by young artists.

The contest videos were featured as part of the day's programming and the River Starts Here Partners created a segment interviewing the students about how they made their videos, got story ideas, etc., for the audience to virtually "meet and greet" the students after the show. As part of the sponsorship, the RSH social media links were included in the film festival e-newsletters that went out to 73,000 subscribers. The contest winners were also highlighted in social media posts from KPTV FOX 12 Oregon that reached 26,000 people.

2020 Student Video Contest Winners:

- **25-second Video Award:** [Water Pollution From Cars](#) by Ava Behunin, Art and Communication Magnet Academy, Beaverton
- **55-second Video Award:** [Everyday Water Pollution Prevention](#) by Liza Wadell and Serena Rothman, Lake Oswego High School, Lake Oswego
- **People's Choice Award:** [Hazardous Materials and Recycling](#) by Ekansh Gupta, ACCESS Academy, Portland



Figure 2: Screenshot from 2020 Student Video Contest winner in the 55-second video category

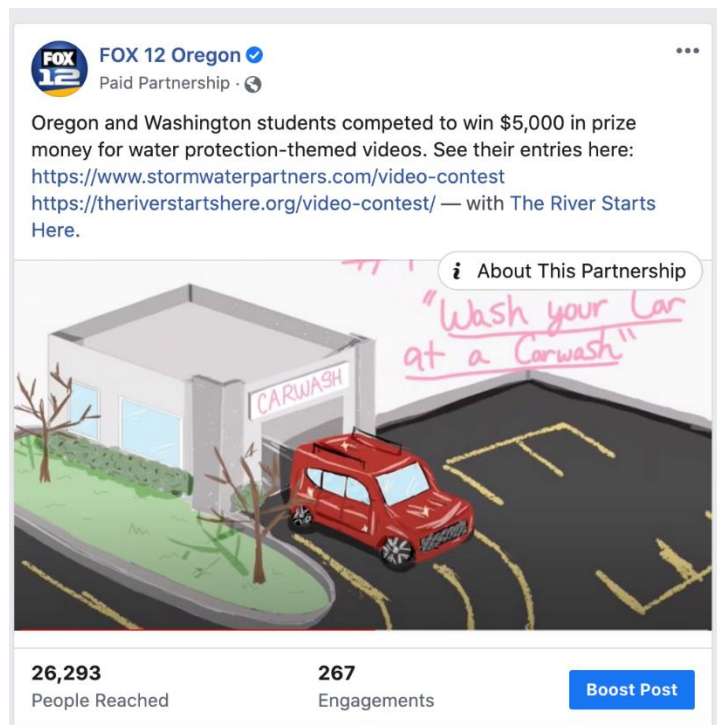


Figure 3: Screenshot of social media post by KPTV Fox 12 Oregon that reached 26,000 people.



Honorable Mentions:

- [Stormwater Pollution Stop-motion](#) by Charlie Johnson, Alliance Charter School, Oregon City
- [Fishy](#) by Jaden Winn, Wilson High School, Portland
- [Walking with Trash](#) by Charlie Abrams, Cleveland High School, Portland

The second annual Student Video Contest was launched in Spring of 2021 with a deadline for video submission of June 6, 2021. 2021 Student Video Contest categories included people's choice, best BIPOC filmmaker, best community storytelling video and best clean water action in the following topics: Leave no Trace, Climate Change, Rivers are Also Drinking Water and Active Transportation. The team created factsheets to support student learning and video content accuracy on each topic.

The community storytelling topic area was new for 2021. The category was intended to highlight the work of community organizations – including watershed councils, Environmental Justice organizations, and environmental organizations – working for clean rivers and streams. Also new for 2021 was the best BIPOC filmmaker category. This prize category is intended to recognize the crucial perspectives and contributions of our Black, Indigenous, and People of Color (BIPOC) students in creating a more equitable and sustainable future. The Coalition also worked in fall and winter of 2020 to broaden the student video contest to include the Vancouver-Clark County area by sharing the model and materials with the SW Washington Stormwater Partners.

Changes to online learning in 2021 presented a challenge for spreading the word of the video contest. Overall, the Coalition received five entries in 2021, all entries were uploaded to the Coalition's YouTube site. Coalition partners such as Clean Water Services shared on their individual social media accounts and [The Skanner](#) picked up the press release announcing the winners. Over 1,754 community members watched student videos, which were viewed over 1,553 times. Viewers submitted over 254 likes and added hundreds of comments. Commenters shared their enthusiasm for these creative videos, and winners were announced in July 2021.



Figure 4: Screenshot of 2020 Portland Ecofilm Festival Twitter posts

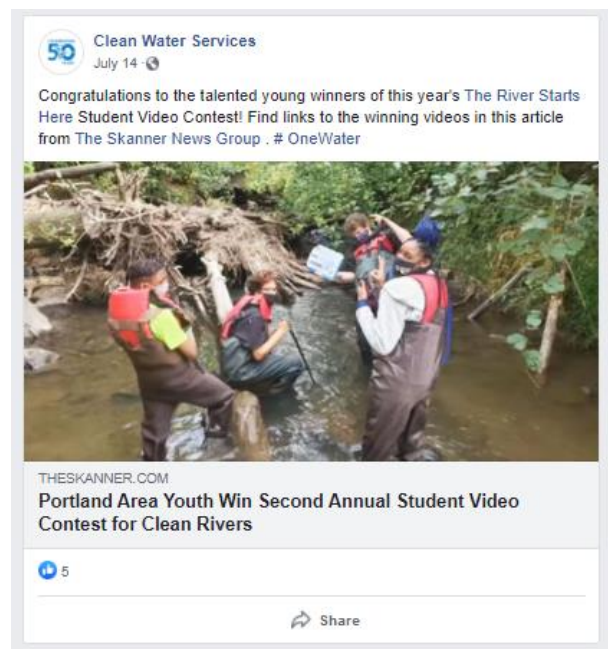


Figure 5: Screenshot of Clean Water Services Facebook post congratulating 2021 Student Video Contest winners



“Excellent video and program! Hoping this video inspires others across the globe as it has me; to help save our planet.” – Anya Berube

“What a nice way to remind us of a way to easily make a difference. Good job!” – Anne MacDonald

2021 winners of the Student Video Contest will be reported in the 2021-2022 annual report.

WEBSITE: TheRiverStartsHere.org

TheRiverStartsHere.org launched in June 2015 featuring *The River Starts Here* creative assets. It features

an image slider highlighting Coalition messages and includes links to member websites and additional web resources.

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

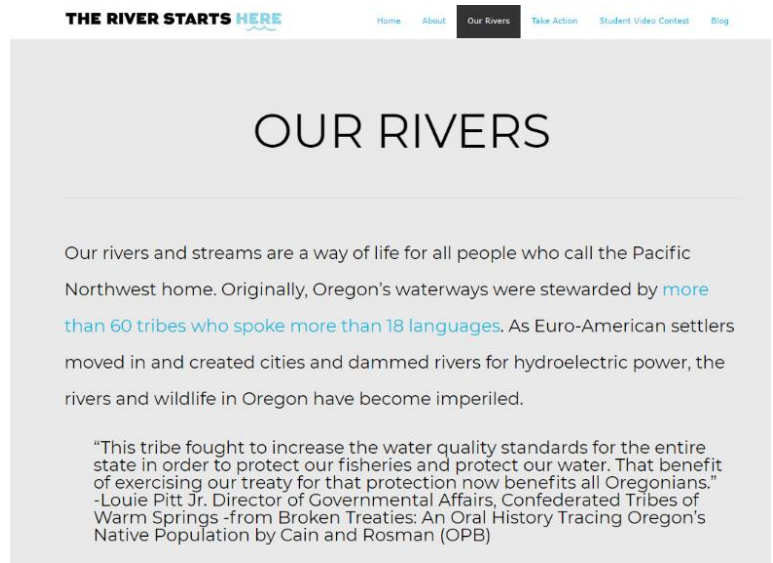


Figure 6: Screenshot from The River Starts Here website

Total sessions: 7,856 (▲ 214 %)

- **Users:** 5,855 (▲ 244%)
- **Traffic type**
 - Direct: 41% (▼ 21%)
 - Social: 20% (▼ 39%)
 - Organic (search engine): 25% (▲ 78%)
 - Referral: 13% (▲ 1200%)
- **Bounce rate:** 57% (▼ 25%)
- **Time on site:** 1:42 (▲ 2%)

During this fiscal year, web traffic has increased rapidly. In particular, total sessions and the number of users both increased by over 200%. This change is due in part to the hosting Student Video Contest content on the website.

The River Starts Here Blog

In May 2020, the Coalition began refreshing the website and added a blog. The blog created new opportunities for agency collaboration, event cross-promotion and driving traffic to partner resources.



During the fiscal year blog posts announced the winners of the 2020 Student Video contest and provided information on potential 2021 video topics. Blog posts also covered how to remove roof moss without harming rivers and streams, and announced the 2019-2020 annual report.

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. Social media messages build on existing conversations and connect with organizations around the region. While spring and summer are also times for promoting events, this year presented a different challenge with the COVID-19 pandemic which resulted in no public events. The Coalition focused on promoting educational webinars and online events as opposed to in person events such as restorations and river cleanups. The Partners also collaborated with all regional watershed councils on how to encourage people to get outside and stay healthy, sane, and away from crowds using nature to find respite and joy. This group of watershed councils decided to create a Facebook group called “Together for Watersheds” where partners would take turns creating content, especially videos, to begin teaching the public about a variety of nature arts and crafts, scavenger hunt hikes with kids, creating a wildlife friendly outdoor space, identifying, and removing aggressive weeds and much more. The Coalition amplified these messages and also included some on the YouTube page.

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

Facebook page, The River Starts Here

A summary of Coalition Facebook account use during the fiscal and as of July 1, 2021, is as follows:

- **Followers (“likes”):** 1,676 (▲2)
- **Weekly organic reach:** 140 (▼153)
- **Posts:** 123 (▲34)

Facebook follower demographics breakdown:

Age	Female	Male	Total by Age
18-24	1%	1%	2%
25-34	10%	6%	16%
35-44	19%	8%	27%
45-54	17%	9%	26%
55-64	10%	4%	14%
65+	9%	4%	13%



Total by Gender	66%	32%	-
------------------------	-----	-----	---

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

The Coalition's social media following is dominated by women. In particular, the Coalition Facebook mostly reaches women who are 35-54. The Coalition's Facebook following has also increased its reach to older people while reaching fewer young people.

Facebook ads, The River Starts Here

The Coalition continued to use low-cost social media advertising as part of its campaign in FY 2020-21. 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:

- **Advertisements and boosted posts:** 10
- **Reach:** 141,189
- **Post engagements:** 2,477

Ads or Boosts during FY 20-21

Topic	Engagement	Reach
EPA Columbia River Basin Restoration Program	389	14,044
Gresham Tree Team	238	10,088
Website Visitors	N/A	14,376
Student Video Contest	501	2,938
Student Video Contest	308	3,739
Student Video Contest	0	63,013
Student Video Contest	287	1,882
The Chuush Fund: Water for Warm Springs	277	3,886
Backyard Habitat Certification Program	38	17,376
Car Washing Tips	439	9,847

Engagement is an interaction such as a like, comment, or click thru. **Reach** is the number of individuals who saw or interacted with the post.

*Some ads also ran on Instagram.



Twitter, @riverstartshere

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

- **Followers:** 1,441 (▲3)
- **Tweets:** 61 (▲8)

Instagram, @theriverstartshere

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

- **Followers:** 364 (▲200)
- **Posts:** 31 (▲5)

Instagram follower demographics breakdown:

Age	Female	Male	Total by Age
13-17	0%	3%	3%
18-24	7%	6%	13%
25-34	30%	25%	55%
35-44	32%	31%	63%
45-54	24%	19%	43%
55-64	5%	5%	10%
65+	3%	12%	15%
Total by Gender	61%	40%	-

The Coalition's move in 2020-2021 to consolidate Instagram handles and grow its audience has had noticeable effects on the diversity of people reached. The Instagram audience is dominated by people ages 35-44. The Coalition can continue to build a following from youth by promoting YouTube and Instagram content while reaching older people through Facebook.



YouTube, The River Starts Here

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

- **Subscribers:** 168 (▲159)
- **Videos added:** 42 (▲37)
- **Watch time (hours):** 132 (▲124)
- **Views:** 16.8K (▲+15K)

In 2019, the River Starts Here created a YouTube account for the Student Video Contest. The 2020-2021 annual report captures the large increase in viewers from the Student Video Contests.



Figure 7: Screenshot of YouTube video from The River Starts Here channel

FY 2020-21 EXPENDITURES

Category	Services	Investment
2020 Student Video Contest		
Participant awards		\$1,650
Hollywood Theater	Honored Student Videos placement in the Portland EcoFilm Festival	\$500
Hollywood Theater	Discounted tickets (15) for the EcoKids Film Showcase Show for student film-makers	\$135
Advertisements		
Facebook	Facebook digital advertisements	\$3,189.20
Coordination support		
Envirolssues	Meeting support and member coordination, website maintenance, social media authoring	\$18,000
	TOTAL	\$23,474.20

OBSERVATIONS

The following observations are based on the results of FY 2020-21 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 2020-21 efforts consisted of the Coalition continuing to use digital advertising, contracting with EnviroIssues to assist with continued social media posts, meeting coordination and data analytics, and maintaining a YouTube page and blog.

While the Coalition's online audience and its engagement continued to grow during the fiscal year due to the strategic investments into those types of content, the Student Video Contest outreach through schools continued to be challenging. The community capacity of schools, teachers and students to become involved during the ongoing COVID-19 pandemic, with disruption and uncertainty for our education system, was severely impacted.

As the 2021-22 school year begins with students in Oregon largely back in classrooms, the Coalition will again attempt an outreach strategy through school mailers, social media ads and through other community-based organizations, especially those serving marginalized populations and BIPOC youth, in an effort to achieve more diversity, equity and inclusion.

The Coalition plans to consult with new staff at Clean Water Services and Oak Lodge Sanitary District who have more specialized social media backgrounds for ideas on social media innovations in posting or purchased ads. The Coalition will also edit the student videos with applicable calls to action and branding and begin running them as advertising with a strategy to build culture and followers across the platforms.

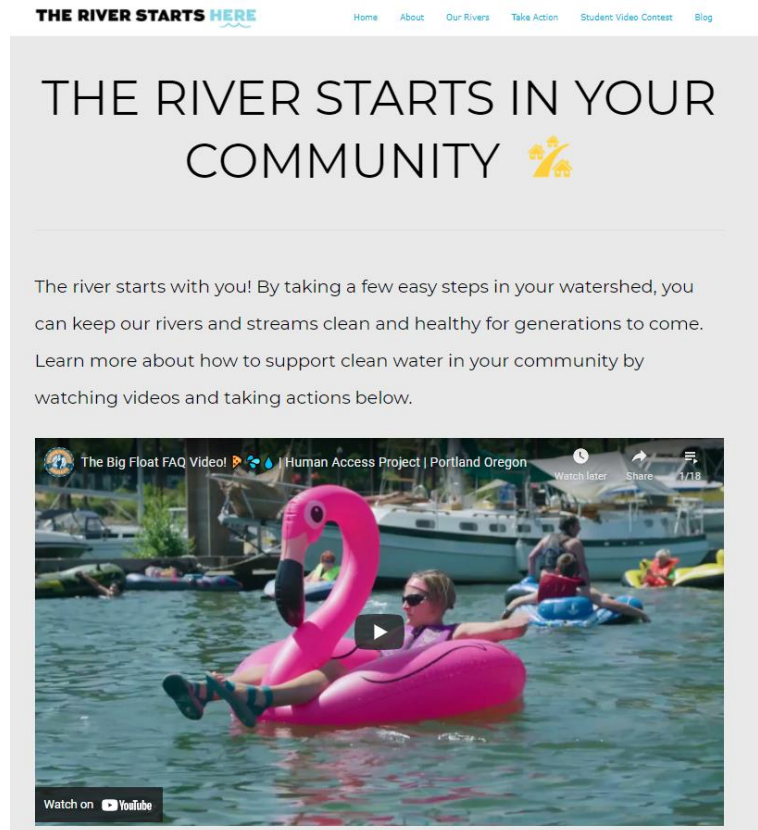


Figure 8: Screenshot from the River Starts Here website

