City of Oregon City, Oregon

National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit

2019–2020 Annual Report

Prepared for the
Oregon Department of Environmental Quality

November 1, 2020

Assisted By:

Brown AND Caldwell

CITY OF OREGON CITY

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL STORMWATER SYSTEM ANNUAL REPORT

JULY 1, 2019 – JUNE 30, 2020

I, the undersigned, hereby submit this National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater System Annual Report in accordance with NPDES 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 knowing violations.

10-26-2020

Vance Walker
Public Works Operations Assistant Director
City of Oregon City

Date

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1.0 INTRODUCTION

1.1 NPDES MS4 Permit Background and Permit Renewal

The Oregon Department of Environmental Quality (DEQ) regulates stormwater runoff from the City of Oregon City (City) through the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit (Permit) No. 101348, issued to Clackamas County and its co-permittees. Clackamas County co-permittees include the City of Oregon City along with the cities of Lake Oswego, Gladstone, West Linn, Milwaukie, Wilsonville, Happy Valley, Johnson City, and Rivergrove, the Oak Lodge Water Services District, and Clackamas County. Each co-permittee is a relatively small community, most having populations under 30,000 with some (Johnson City, Rivergrove) having populations significantly smaller.

The City's effective NPDES MS4 Permit was issued 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. The Permit expired on March 1, 2017, and the City submitted its Permit Renewal Application on February 27, 2017. The Permit Renewal Application required an evaluation of proposed program and Stormwater Management Plan (SWMP) modifications, development of Total Maximum Daily Load (TMDL) benchmarks, mapping, a maximum extent practicable (MEP) evaluation, updates to the City's environmental monitoring program, and an evaluation of proposed service area expansions and associated pollutant load estimates. The City's Permit is currently in administrative extension, but the City has been actively participating in negotiation efforts with DEQ. Currently, however, the renewal date is unknown.

Each co-permittee is required to submit an annual report, summarizing accomplishments and implementation of their individual SWMPs. This annual report documents stormwater management activities from July 1, 2019 to June 30, 2020 in conjunction with the City's 2012 NPDES MS4 Permit. 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**. During this administrative extension period, the City is continuing to implement its stormwater program in accordance with the 2012 Permit.

1.2 Document Organization

The following table (Table 1) outlines the organization of this annual report document, with respect to the annual reporting requirements per Schedule B.5 of the City's Permit.

Table 1: Summary of the NPDES MS4 Annual Report Requirements

	Annual reporting requirement	Location in document
a)	Status of implementing SWMP elements, including progress in meeting measurable goals.	Appendix A
b)	Status of any public education effectiveness evaluation conducted during the reporting year, and a summary of how results were used in adaptive management.	Appendix A
c)	Summary of the adaptive management process implementation during the reporting year including new BMPs.	Section 2.0
d)	Proposed changes to SWMP program elements to reduce TMDL pollutants to the MEP.	Section 2.0
e)	A summary of total stormwater program expenditures and funding sources over the reporting fiscal year, and those anticipated in the next fiscal year.	Section 3.0
f)	A summary of monitoring program results, including monitoring data that is accumulated throughout the reporting year.	Section 4.0 & Appendix B
g)	Any proposed modifications to the monitoring plan necessary to ensure that adequate data and information are collected to conduct stormwater program assessments.	Section 4.0
h)	A summary describing the number and nature of enforcement actions, inspections, and public education programs.[a]	Section 6.0 and Appendix A
i)	An overview, as related to MS4 discharges, describing land use changes, UGB expansions, land annexations, and new development activities. The number of new post-construction permits issued and estimate of new and replaced impervious surface must also be included.	Section 5.0
j)	A summary related to MS4 discharges describing concept planning or other activities in preparation of UGB expansions or land annexations.	Section 5.0 and Appendix A
NA)	Additional efforts conducted by the City.	Section 6.0

[a] Enforcement actions, inspections, and public education programs are included in the City's SWMP as BMPs, and are reported along with the status of implementing all components of the SWMP in Appendix A.

Each section of this report corresponds to the specific Permit requirements in Schedule B.5. This report emphasizes efforts and activities associated with individual Best Management Practices (BMPs) from the City's 2012 SWMP, as summarized in Appendix A.

Per Section 5.5 of the City's Willamette Basin TMDL Implementation Plan, an annual progress report is also to be submitted to DEQ. This TMDL annual report is included in Appendix D.

The City, along with all Oregonians, is facing unprecedented challenges in responding to the COVID-19 pandemic to protect the health of individuals and the greater community. These extraordinary circumstances are requiring measures that impact the ability of the City 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 as identified in Appendix A: Operations and Maintenance, Industrial and Commercial Stormwater Inspections, Education and Outreach, Staff Training, and Public Participation.

2.0 ADAPTIVE MANAGEMENT PROCESS IMPLEMENTATION

2.1 Adaptive Management Program

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 approach to DEQ on November 1, 2012.

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 their Permit renewal application and updated Permit requirements. The City's submitted adaptive management approach is consistent 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 gage whether implementation was deemed to be effective or whether there are suggested improvements to be made. Suggested adjustments to BMP implementation 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:

1. Whether technology or information is available that would help improve or refine BMPs,

2. How representative are the measurable goals and tracking measures to the BMP objective, and

3. Are resources available to make changes to the measurable goals and BMP objectives?

Additionally, at the end of the Permit term, technical investigations and studies completed over the Permit term are reviewed and used to help target and identify specific issues that need to be addressed to maintain waterbody health and help formulate BMP activities (measurable goals and tracking measures). During the 2012-2017 Permit term, such technical studies included a water quality trends analysis, pollutant load reduction evaluation, hydromodification assessment, and a retrofit assessment.

During the 2016-2017 Permit renewal application process, the City, with the assistance of a consultant, reviewed the adaptive management evaluation factors and the studies listed above. This information informed the City's MEP evaluation and proposed SWMP changes submitted as part of the Permit Renewal Application. Proposed program changes were categorized as an organizational change, a removed activity (due to completion), an implementation change (due to identified efficiencies and adjustments to internal processes and procedures), and a change due to consolidation of activities. An updated (2017) SWMP was also included, reflecting refinement of BMPs, measurable goals, and tracking measures, for use in future permit negotiations and reissuance.

2.2 SWMP Updates for the 2019 – 2020 Reporting Year

The 2019-2020 reporting year is the eighth full year in which the City's effective 2012 SWMP has been implemented. For the 2019-2020 Permit year, no updates were made to the 2012 SWMP or BMP measurable goals and tracking measures, due to regulatory limitations preventing Permit modifications while a Permit is in administrative extension. It should be noted that a summary of proposed SWMP modifications was submitted with Oregon City's Permit Renewal Application on

February 27, 2017, but those modifications have not been implemented pending reissuance of the Permit.

2.3 Monitoring Plan Updates for the 2019 – 2020 Reporting Year

As documented previously, the 2017 Comprehensive Clackamas County Stormwater Monitoring Plan (CCCSMP) is the effective monitoring plan for the City of Oregon City. There have been no updates or modifications to the 2017 CCCSMP, pending upcoming reissuance of the NPDES MS4 Permit.

3.0 SUMMARY OF PROGRAM EXPENDITURES

A summary of the City of Oregon City's revenue and expenditures for the 2019–2020 fiscal year and a projection of the City's revenue and expenditures for the 2020–2021 fiscal year are provided in Table 2, below. Projection of expenditures is considered draft at this time.

Table 2: Summary of Program Expenditures

	Fiscal Year			
	2018 Sudited Actual	2019 Unaudited Actual	2020 Adopted Budget	2021 Adopted Budget
Beginning Fund Balance	$ 1,352,382	$ 1,263,035	$ 1,642,549	$ 1,196,495
Stormwater Fee Rates (per EDU per month)	**Rate = $9.65 / $9.94 3% rate increase**	**Rate = $9.94 / $10.24 3% rate increase**	**Rate = $10.24 / $10.54 3% rate increase**	**Rate = $10.54 / $10.86 3% rate increase**
Revenues				
Charges for Service	2,765,517	2,799,837	2,936,229	3,024,316
Intergovernmental	-	-	-	-
Interest Income	13,731	34,228	30,000	20,000
Miscellaneous Income	-	988	-	-
Erosion Control Permits	41,482	43,714	45,000	45,000
Project Management	29,266	29,214	26,409	26,409
TOTAL Revenues	**2,849,995**	**2,907,981**	**3,037,638**	**3,115,725**
Expenditures				
Personnel Services	1,114,288	1,086,889	1,210,105	1,269,558
Materials & Services	863,157	849,328	923,587	909,732
Capital Outlay Totals	**556,897**	**273,290**	**645,000**	**535,000**
Total Transfers	**405,000**	**405,000**	**705,000**	**205,000**
TOTAL Expenditures	**2,939,342**	**2,614,507**	**3,483,692**	**2,919,290**
Change in Fund Balance	**(89,347)**	**293,474**	**(446,054)**	**196,435**
Ending Fund Balance	$ 1,263,035	$ 1,556,509	$ 1,196,495	$ 1,392,930
Capital Outlay – Details				
Operations New Equip. >$5000	$ 2,715	$ 1,250	$ -	$ 45,000
Capital Construction	554,182	272,040	645,000	490,000
	$ 556,897	$ 273,290	$ 645,000	$ 535,000
Transfers – Details				
Transfer to Building Reserve	300,000	300,000	600,000	-
Transfer to equipment Replacement	105,000	105,000	105,000	105,000
Interdept. Transfers	-	-	-	100,000
	$ 405,000	$ 405,000	$ 705,000	$ 205,000

4.0 MONITORING DATA

4.1 Development of the Comprehensive Clackamas County Stormwater Monitoring Plan (CCCSMP)

Per the 2004 NPDES MS4 Permit requirements (Schedule B), the City of Oregon City, along with Clackamas County and other co-permittees, was required to develop and implement a stormwater monitoring program. Given the effort associated with implementing an effective environmental monitoring program that adequately met all Permit requirements and objectives, Clackamas County (i.e., CCSD#1 and SWMACC) and six other co-permittees including the City of Oregon City agreed to consolidate efforts and prepare one comprehensive stormwater monitoring plan. This plan, called the Comprehensive Clackamas County Stormwater Monitoring Plan (CCCSMP) was prepared for submittal with the 2006 NPDES Permit Annual Compliance Reports. The CCCSMP was implemented beginning July 1, 2007, and minor editorial changes were made in 2008.

In conjunction with requirements of the 2012 NPDES MS4 Permit, the 2007-2008 CCCSMP was reviewed for consistency with revised monitoring objectives. Monitoring locations and frequencies were adjusted to reflect requirements of the 2012 Permit. Additional efforts related to mercury monitoring, pesticide monitoring, macroinvertebrate (biologic) monitoring, and geomorphic monitoring were added to the CCCSMP. A description of the proposed time-composite sampling methodology was included as an appendix to the CCCSMP. Additional information such as quality assurance procedures were also added in conjunction with Schedule B.2 of the 2012 Permit.

The updated (2012) CCCSMP was submitted to DEQ in September 2012. Comments from DEQ were received in October 2012, and final revisions to the 2012 CCCSMP were submitted to DEQ June 30, 2013.

In 2016, the City, in collaboration with other co-permittees, participated in a series of workshops to propose modifications to the CCCSMP due to completion of monitoring obligations under the 2012 NPDES MS4 Permit. Modifications reflected completion of some 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. Key modifications included the following:

- Inclusion of Oak Lodge Water Services District and the City of Wilsonville instream, stormwater, and biologic monitoring activities;
- Removal of mercury and pesticide monitoring activities, as those obligations have been met;
- Removal of biochemical oxygen demand (BOD) and total volatile solids (for co-permittees outside of the Tualatin basin) from the analyte list, because of the limited usefulness of the collected data to date;
- Adjustment of analytical methods and reporting limits based on consistency with Code of Federal Regulations (CFR) Title 40 and current laboratory capabilities;
- Adjustment of monitoring locations to ensure geographic distribution of data and to continue to inform trends analyses;
- Inclusion of routine instream sampling, in addition to targeted dry weather/wet weather instream sampling activities;

- Removal of Clackamas County Service District #1's (CCSD #1s) geomorphic monitoring activities from the Plan, as physical conditions are evaluated during biologic (macroinvertebrate) monitoring activities; and
- Minor editorial updates to improve clarity and consistency with current practices.

Per Schedule B.2.e of the Permit and 7.2 of the CCCSMP, the City and other CCCSMP participants submitted to DEQ a 30-day notice of the proposed CCCSMP modifications for the Department's review and approval on December 16, 2016. As no response was received from DEQ within 30 days, the proposed modifications were deemed approved without written approval. Implementation of the 2017 CCCSMP began July 1, 2017. For this reporting year (2019–2020), **the 2017 CCCSMP is the effective monitoring plan for the City of Oregon City**.

As described in the CCCSMP, the NPDES MS4 stormwater monitoring program requires two components. The first component is program monitoring, which involves the tracking and assessment of programmatic activities, as described in the individual permittees SWMP, through the use of performance indicators or metrics. Results of the program monitoring are reported in Appendix A as the annual tracking measures. The second component is environmental monitoring, which includes visual monitoring and the actual collection and analysis of samples. Visual monitoring efforts for the 2019–2020 reporting year included dry weather field screening, as described in the City's SWMP under the BMP 1-2: "Conduct Annual Dry Weather Field Screening." Results of the visual monitoring efforts are reported in Appendix A under the applicable BMP. Environmental monitoring also consists of instream sample collection and outfall sample collection, and the City's sampling efforts are outlined in more detail in Sections 4.2 and 4.3 and in the CCCSMP. Results of the instream and outfall sample collection efforts for this reporting year are provided in Appendix B.

4.2 CCCSMP Updates and Modifications for the 2019–2020 Reporting Year

The 2017-2018 reporting year was the first full year implementing the revised 2017 CCCSMP. There have been no updates or modifications to the 2017 CCCSMP.

In 2018, seven Clackamas County jurisdictions, including the cities of Gladstone, Lake Oswego, Milwaukie, Oregon City, West Linn, Wilsonville, and Oak Lodge participated in biological monitoring as is expected to be required during a future NPDES MS4 Permit period.

4.3 Summary of Monitoring Data

In accordance with the 2017 CCCSMP, Oregon City is required to conduct instream and outfall monitoring. Routine instream monitoring is required at six locations reflecting four tributaries to the Willamette River. Outfall monitoring is required at two outfall locations that discharge to the Clackamas River. Time-weighted composite (during storm events) and single grab samples are taken in accordance with the frequencies outlined in Table 3 below.

During the 2019 – 2020 monitoring year, the City of Oregon City collected all required instream samples (four events at six sites). Four outfall events were sampled in 2019-2020 (four events at two sites). One extra outfall event was sampled to make up for the 2018-2019 term when only two events were sampled due to the lack of late winter/early spring rainfall, as stated in the 2018-2019 Annual Report. Complete sampling results are summarized in Appendix B. The sampling results presented have been formatted to simplify the data review process.

Table 3: 2019–2020 Oregon City Monitoring Locations and Required Frequencies

Site #	Location	Sample Type	Required Frequency	Routine Sampling
In-Stream Monitoring				
OC010is	Abernethy Creek at 17082 Holly Ln (Holly Ln Bridge)	Grab & Composite	4/year	Dry Weather (2/year) and Wet Weather (2/year)
OC011is	Abernethy Creek at 316 17th St (17th at railroad trestle)	Grab & Composite	4/year	Dry Weather (2/year) and Wet Weather (2/year)
OC012is	Coffee Creek behind 415 S McLoughlin (outfall at Willamette)	Grab & Composite	4/year	Dry Weather (2/year) and Wet Weather (2/year)
OC013is	Park Place Creek behind 13530 Redland Rd	Grab & Composite	4/year	Dry Weather (2/year) and Wet Weather (2/year)
OC014is	Singer Creek at the north end of Singer Creek Park (Linn Ave)	Grab & Composite	4/year	Dry Weather (2/year) and Wet Weather (2/year)
OC015is	Singer Creek 502 7th St (MH - 37138 located on Center St)	Grab & Composite	4/year	Dry Weather (2/year) and Wet Weather (2/year)
Outfall Monitoring				
OC006ofm	Clackamas River at O.C. Shopping Center	Composite	3/year**	Storm Event
OC007ofm	Clackamas River at Clackamette Cove	Composite	3/year**	Storm Event

** Four outfall sampling events were conducted in 2019-2020 Permit term to make up for 2018-2019 Permit term when only two outfall events were sampled.

5.0 Overview of Planning and Land Use Changes, UGB Expansions and New Development Activities

5.1 Summary of Land-Use Changes and UGB Expansions

The following land use/ zoning changes and/or annexations were approved by the City between July 1, 2019 and June 30, 2020:

- Zone Changes:
  - ZC-19-00002 – same as AN-19-02 below. Application included annexation and zone change. The property changed from County zoning to City zoning. All annexations require a zone change.

- Annexations:
  - AN-19-00001 – 19420 S Pease Road – 0.95 acres
  - AN-19-00002 – 14576 S Maplelane Rd. – 1.19 acres

5.2 Summary of Development Activities within the UGB

During the 2019 – 2020 reporting year, there were 26 development applications (9 were constructed and placed in operation; 17 were permitted and are in some phase of construction) reviewed and approved for compliance with water quality/water quantity standards.
The projects that are completed and in operation included site plan and design review (5), subdivisions (2), and minor partitions (2). The estimated total new and replaced impervious

surface area related to development projects that commenced during the 2019-2020 reporting year equals 6.5 acres.

There were no public capital improvement projects (CIPs), including water quality and/or flow control projects, contracted or constructed this reporting period.

6.0 ADDITIONAL ACTIVITIES

The following stormwater-related activities occurred within the City and are not currently documented in Appendix A.

BMP 4-5 – Ensure Municipal Staff Training in Stormwater Pollution Prevention

There were thirty-four stormwater staff meetings conducted during the 2019 – 2020 reporting period. Dates, topics, and attendees are summarized below in Table 4 on the next page.

Table 4: Staff Meetings and Training

2019-2020

Date/Time	Attendees	BMP's /Topics	Items Discussed	Next Steps/Program Adjustments
7/1/2019	Brian Monnin, Mallory Ott	Environmental Monitoring	Setting 2019-2020 monitoring schedule	Environmental monitoring on specified dates
8/6/2019	Phase I Permittees	TMDL	Public Review Draft of the Willamette River Mercury TMDL	Provide comments on proposed draft
9/6/2019	Phase I Permittees	MS4 Phase I renewal process	Update on MS4 Phase I renewal, permit topics under consideration, monitoring data submissions, Clean Water State Revolving Loan Fund	Participants free to give comments. No further action required.
9/12/2019	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
9/19/2019	Brian Monnin, Clackamas County Fire Department staff	SWMP 8-4 Private Water Quality Facility (PWQF) site visit at Clackamas County Fire District #16 location.	Proper maintenance and upkeep of PWQF's on Providence campus	Maintenance and Inspection Forms due annually to OCPW
9/23/2019	Brian Monnin, Jayson Thornberg, Wes Wilson	Winter maintenance	Discussion on Oregon City's winter maintenance plan. Explained how our new Permit could have a section on winter maintenance.	Discuss Oregon City's winter maintenance plan with DEQ in our next meeting.
10/2/2019	Brian Monnin, Kristen Brown	Pesticide Reduction	Discussed upcoming pesticide collection event provided by Clackamas River Water Providers and how to get the word out to the public.	Posted event on Oregon City's Facebook page

Date/Time	Attendees	BMP's /Topics	Items Discussed	Next Steps/Program Adjustments
10/10/2019	Clackamas Co-permittees	Discussion of upcoming NPDES MS4 permit renewal	Discussed topics of concern with DEQ's proposals on what the new NPDES MS4 permit could look like. Discussed topics to discuss during separate meetings with DEQ	Continue to review DEQ documents and emails. Discuss concerns with DEQ during jurisdictional meeting with DEQ
10/17/2019	Brian Monnin, Michael Pooschke	BMP 8-3	Discussed how to retrieve SWPPS inspections from Oregon City's asset management software (LUCITY)	Ability to review past and present SWPPS inspections. PDF's of all inspections in one location
10/17/2020	Brian Monnin, Vance Walker	NPDES MS4 Annual Report	Discuss and review NPDES MS4 annual report before submission to DEQ	Discussion and informational session discussing annual report
10/18/2019	Brian Monnin, Josh Wheeler,	Discussion of outfall monitoring, stormwater master plan, Forest Edge Apartments	Discussion of new requirements from stormwater master plan for outfall monitoring, stormwater management facility monitoring and dewatering system at Forest Edge Apartments	Discussed upcoming impacts to stormwater programs
10/24/19	Regional Coalition for Clean Rivers and Streams members	BMP 4-1	Public outreach campaign on FOX 12 and FOX 12+. Videos and public outreach about stormwater best management practices to be played on television	Group discussion of topics, videos, times played, views, participation
10/24/19	Brian Monnin, Pablo Martos	Renewal of NPDES MS4 permit	Discussed upcoming changes to NPDES MS4 permit for Phase I communities. Discussed current OC programs and thoughts on how Permit is working	Pablo welcomed ideas and input in the process moving forward and mentioned upcoming meetings to further discuss the Phase I permit
10/30/2019	Brian Monnin and members of CWET Planning Committee	BMP 4-1	Discussed student public education and outreach event at Clackamas Community College	Planning and organizing of information/education booths

Date/Time	Attendees	BMP's /Topics	Items Discussed	Next Steps/Program Adjustments
11/19/2020	Brian Monnin	Erosion and Sediment Control	Attended Fundamentals of Erosion & Sediment Control	Best management practices & tools for erosion/sediment control, plan development, special provisions to specification editing, permit compliance, and an introduction to navigating the Oregon standards specifications
1/9/2020	Brian Monnin, Bob Balgos, John Lewis, Vance Walker, Josh Wheeler, Krista Reininga	NPDES MS4 Permit renewal	Discussion of Phase I and ACWA/DEQ discussions about new NPDES MS4 permit	Informational session to help get everyone at Oregon City up to speed on process of renewing NPDES MS4 permit
1/28/2020	Brian Monnin	Erosion Control and Stormwater management	One day summit discussion topics on stormwater management and erosion control	One day training event offers informational topics on erosion prevention and sediment control, stormwater BMP's
3/5/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
2/18/2020	Brian Monnin	SWMP 8-4 PWQF site visit at AFC Urgent Care and Optimized Technologies	Proper maintenance and upkeep of PWQF's	Maintenance and Inspection Forms due annually to OCPW
2/20/2020	Brian Monnin	SWMP 8-4 PWQF site visit at Edgewater at the Cove Apartments	Proper maintenance and upkeep of PWQF's	Maintenance and Inspection Forms due annually to OCPW
3/4/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.

Date/Time	Attendees	BMP's /Topics	Items Discussed	Next Steps/Program Adjustments
3/5/2020	Brian Monnin, Eric Hand	Oil Spill Discussion	Discuss reporting and investigating of Oregon Emergency Response System (OERS) reports	Become familiar with reporting and field verification of OERS reports, how to fill out OERS report, follow up on reports
3/11/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
3/25/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
4/13/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
4/28/2020	Brian Monnin, Katie England	SWMP 8-4 PWQF	Discussion on creating new layer in GIS to show PWQF's	GIS will create layer specific to PWQF with correct facility names
5/12/2020	Brian Monnin, John Lewis	Hydromodification project – Scattering Canyon	Discussion on the proposed scope for Scattering Canyon	Informational discussion reviewing scope of services for Scattering Canyon project. Discussion of funding from GOCWC
5/13/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
5/19/2020	Brian Monnin, Josh Wheeler, John Lewis, Jeremy Tamargo	Post Construction Standards	Group discussion on potential impacts of draft language from DEQ on NPDES MS4 permit	Staff will continue to monitor and give input to ACWA and Phase I Co-permittees on draft language

Date/Time	Attendees	BMP's /Topics	Items Discussed	Next Steps/Program Adjustments
5/21/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
5/28/2020	Brian Monnin, Josh Wheeler, John Lewis, Jeremy Tamargo, Krista Reininga	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on potential impacts of draft language from DEQ on NPDES MS4 permit	Krista will continue to support Oregon City in negotiations with DEQ on draft language
6/10/2020	Phase I Permittees	Debrief discussion of Phase I MS4 NPDES meeting with DEQ	Group discussion on previous renewal meeting with DEQ staff. Thoughts and concerns were discussed and aired.	Continue to have open discussions with DEQ about the Permit.
6/18/2020	Clackamas Co-permittees	Discussion of comments to submit to DEQ on draft language for NPDES MS4 permit	Group discussion on comments, ways to respond with comments and steps moving forward	Continue to work collaboratively on comments and concerns regarding draft language
6/23/2020	Brian Monnin	SWMP 8-4 PWQF site visit at Clackamas Community College	Proper maintenance and upkeep of PWQF's	Maintenance and Inspection Forms due annually to OCPW

Appendix A

Oregon City 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 Oregon City's (OC) 2012 Stormwater Management Plan (SWMP)							
BMP or activity	Addresses bacteria?	Addresses mercury?	Responsible department	Measurable goals (2012 SWMP)	Tracking measures (2012 SWMP)	Annual report information: tracking measure status, Permit year 2019– 2020	Additional detail related to activities conducted
Element 1. Illicit Discharge Detection and Elimination							
BMP 1-1: Implement the Illicit Discharge Elimination Program	●	●	Oregon City Public Works Department (OCPW)	• Document and implement updated Standard Operating Procedures (SOPs) for the Illicit Discharge Detection and Elimination (IDDE) Program by November 1, 2012. • Conduct actions to remove identified illicit discharges in conjunction with timeframes outlined in OC's NPDES MS4 Permit. • Track and record all identified illicit discharges and how such discharges were removed.	1) Track status of documenting and updating the IDDE SOP. 2) Track the number, location, type of discharge, resolution, and enforcement action for any illicit discharge investigation conducted.	1) The IDDE SOP was updated on 7/29/16 (see BMP 1-2, item 5). 2) No illicit discharge investigations were deemed necessary as a result of annual dry weather field screening conducted during this permit year.	1) OC developed an IDDE SOP (effective date: November 1, 2012), in conjunction with other Clackamas County co-permittees. The SOP includes guidelines for identification and enforcement of illicit discharges.
BMP 1-2: Conduct Annual Dry Weather Field Screening	○	○	OCPW	• Conduct dry-weather field screening once per year, at a minimum, at major outfalls. • Characterize dry weather flows as permissible, non-permissible, or unknown. • Conduct sampling, analysis, and investigations for non-permissible and unknown dry weather discharges. • Maintain maps of major outfalls and dry weather field screening locations. • Notify the OCPW Operations Manager of all identified illicit discharges and take necessary steps to eliminate them. • Update procedures for dry weather field screening by November 1, 2012.	1) Track the number and location of outfalls inspected annually. 2) Summarize inspection results and track the number and location of outfalls requiring monitoring and/or investigations. 3) Report the outcome and resolution of any investigation activities. 4) Report the outcome and resolution of any code enforcement actions. 5) Track the status of updating standard procedures.	1) Nine outfalls were inspected as part of annual dry weather field screening activities. 2) Outfalls were inspected on 8/5/2020. Flow was observed at five of the nine outfalls; all discharges were a trickle and flow were characterized as permissible. 3) N/A 4) N/A 5) On 7/29/16 OC updated the IDDE SOP that includes procedures for conducting dry weather field screening. Priority sites 1 and 2 were relocated to address staff safety concerns. One site was added (site 9) as a result of a reported illicit discharge.	1) Dry weather screening was conducted at the following outfalls: 1. 99E and 6th Street (manhole 33556): 12-inch 2. 427 Main Street (manhole 33558): 15-inch 3. Abernethy Road at Tri-Lett: 15-inch 4. Clackamas River Drive: 48-inch 5. Metro Wetlands Pond: 48-inch 6. Falcon Drive: 30-inch 7. Berry Hill: 24-inch 8. Beavercreek at Hwy 213: 24-inch 9. Behind 1651 Beavercreek Road: 48-inch
BMP 1-3: Implement the Spill Response Program	○	○	Clackamas Fire District #1 (Hazardous Materials Team) and OCPW	• Respond to reports of hazardous and non-hazardous spills and follow the OC *Spill Response Plan*. • Report all hazardous and non-hazardous spills to DEQ as necessary.	1) Indicate the number of spills reported to OCPW and DEQ. 2) Track responses to reported spills. 3) Indicate sources, causes, and types of discharges resulting from spill activities. 4) Track any changes to the OC *Spill Response Plan*.	1) Five spills were reported to OCPW during the 2019-2020 reporting period. 2) Responses were appropriate for each spill. See list below. 3) One spill required DEQ reporting. Four spills were of various types. Minor (non-reported) spills resulted primarily from vehicle accidents, mechanical failure, or materials spilled on roadway and had no discharges. • #1: Singer Creek Falls – Motor vehicle accident. OCPW responded oil absorbent booms and pads were deployed. Oil was cleaned up and materials disposed of in accordance with the OCPW Spill Response Plan. Reported to DEQ. • #2: 201 S. 2nd St. – Kitchen mop buckets being dumped in catch basin. OCPW responded and advised manager to utilize utility sink for mop water disposal. No DEQ reporting required. • #3: 1121 Jefferson St. - Oil spill on roadway. Approximately 3 gallons of oil spilled on roadway. Absorbent material was applied shoveled up. No DEQ reporting required. • #4: 12th St. between Washington & Center St. – fuel spill on roadway. An unknown amount of diesel fuel was spill on roadway. Absorbent material was applied shoveled/swept up. No DEQ reporting required. No DEQ reporting required. • #5: 399 Caufield St – Motor vehicle oil in parking lot being washed into private water quality facility. Absorbent material used, rocks washed or disposed of, soil removed and replaced. No DEQ reporting required. 4) There were no changes to the OC *Spill Response Plan* during this reporting period.	
Element 2. Industrial and Commercial Facilities							
BMP 2-1: Screen Existing and New Industrial Facilities	○	○	OCPW	• Review the business license inventory for 1200Z industries once over the Permit term. • Notify DEQ of any existing or new industrial facilities within OC that may be subject to an Industrial Stormwater NPDES Permit.	1) Track the number of existing or new facilities subject to an Industrial Stormwater NPDES permit during the Permit term.	1) The Water Quality Coordinator continued to review all new business license applications for potential water quality-related issues. 90 business license applications were reviewed during the 2019-2020 reporting period. The screening did not identify any additional facilities potentially subject to an Industrial Stormwater NPDES Permit.	DEQ provided additional guidance on industrial facility screening in June 2013. OC's consultant has coordinated with DEQ related to the methodology and process for identifying "potential" 1200-Z permittees.
BMP 2-2:	○	○	OCPW	• Pursue approval to hire staff to implement a business inspection program.	1) Track the number of inspections conducted.	1 and 2) No inspections were conducted during the 2019-2020 reporting period due to COVID-19.	• OC has not hired additional staff to implement the business inspection program.

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Appendix A. Status of Implementing Components of Oregon City's (OC) 2012 Stormwater Management Plan (SWMP)							
BMP or activity	Addresses bacteria?	Addresses mercury?	Responsible department	Measurable goals (2012 SWMP)	Tracking measures (2012 SWMP)	Annual report information: tracking measure status, Permit year 2019– 2020	Additional detail related to activities conducted
Implement an Industrial/Commercial Inspection Program for High Priority Facilities				• Develop a priority list of industrial/commercial facilities for inspection. • Investigate 25% of OC's manufacturing businesses once during the permit term. • Develop an industrial/commercial inspection procedure by July 1, 2013.	2) Report on inspection results and follow up actions. 3) Report on status of documenting and updating procedures.	3) Table 2 of the Industrial/Commercial Facility Inspection Program SOP was updated January 2020 to reflect current Oregon City manufacturing-related business license holders. The 2013 Table 2 identified 31 facilities. The updated table identifies 41 manufacturing businesses potentially subject to inspection.	• OC developed an Industrial/Commercial Facility Inspection Program SOP July 1, 2013. The SOP includes procedures and guidelines related to facility screening, DEQ notification of potential industrial stormwater permit needs, and high pollutant source facility inspections. • OC investigated more than 25% of manufacturing businesses once during the permit term.
Element 3. Construction Site Runoff Control							
BMP 3-1: Implement the Erosion Control Ordinances	●	○	OCPW	• Review erosion control plans for all developments greater than 1,000 square feet. • Require erosion and sediment control plans not in compliance with standards to be amended and approved prior to construction. • By November 1, 2014, adopt the Clackamas County *Erosion Control Manual* or revise OC's manual in accordance with the NPDES MS4 permit requirements.	1) Record the number of erosion control plan reviews completed and approved. 2) Track the number of erosion control permits issued annually. 3) Report on the status of adopting the Clackamas manual or updating OC's manual.	1) 149 erosion control plans were reviewed and approved this permit year. 2 149 erosion control permits were issued this permit year. 3) OC has adopted the Clackamas County *Erosion Control Manual*, in conjunction with its update of the City's *Stormwater and Grading Design Standards* manual.	
BMP 3-2: Provide Educational Information to Construction Site Operators	○	○	OCPW	• Continue to provide OC's most current erosion control manual on OC website. • Continue to offer discounts on erosion control permits to contractors completing the Erosion Control Certification Program.	1) Track the number of contractors receiving a discount on erosion control permit fees.	1) No contractors received a discount on permit fees.	
BMP 3-3: Conduct Erosion Control Inspections	●	○	OCPW	• Conduct a minimum of three erosion control inspections at each permitted site. • Conduct appropriate enforcement activities for erosion control violations.	1) Record the number of erosion control inspections conducted annually. 2) Report the number of notices of non-compliance issued during inspections.	1) A total of 537 erosion control site visits, random inspections and final inspections were conducted this permit year. Due to the time frames with which construction occurs, some sites had all three required inspections, and some sites have only had one or two inspections at this time (construction is still ongoing). 2) One notice of non-compliance was issued. Nine stop-work orders were issued.	1) The total number of inspections are comprised of: • 149 initial site visits, Inspection 1 • 215 random inspections, Inspection 2 • 173 final inspections, Inspection 3 • Total = 537
Element 4. Education and Outreach							
BMP 4-1: Provide Public Education and Outreach Materials Regarding Stormwater Management	○	○	OCPW	• Include a water quality related article in each City newsletter, distributed to citizens three times per year. • Participate in the Regional Coalition for Clean Rivers and Streams (Coalition). • Seek out opportunities to partner with other agencies/jurisdictions/organizations to educate and promote watershed health and low impact development. • Periodically install signs near water quality structures and around OC promoting water quality. • Sponsor the volunteer catch basin stenciling program. • Distribute an annual water quality report to OC residents.	1) Track the number, types, and topics of public educational materials distributed to the public. 2) Report any large scale public educational campaigns initiated during a given year. 3) Track coordinated public outreach activities with other permittees.	1) The following educational activities were conducted (see Appendix C for details): • A total of four water quality-related articles were included in Trail News. • OC participated in no special events due to COVID-19 and promoted a second one on the OC website. The 15th Annual Celebrating Water Event was cancelled due to COVID-19. • The April 2020 utility bill included a message kick the weed and feed habit. • The May 2020 utility bill included a message about the River Starts Here campaign • Mailed 15,293 postcards announcing availability of the Annual Water Quality Report on OC's website. • Stormwater banner displayed at City Hall (9/30/2020-10/11/2020) and the Pioneer Center (10/14/2020-10/25/2020). 2) Continued participation in regional Stormdrain Cleaning Assistance Program (SCAP) in 2019-2020 Permit year. 3) Coordinated efforts included: • Continued to sponsor the "Clean Water, It's Our Future" campaign via KPTV media outlets. • Continued participation in the Coalition for Clean Rivers and Streams. • Continued participation with other agencies to promote water quality education through Clackamas River Water Providers. • Continued participation with Greater Oregon City Watershed Council	• OC continues to conduct catch basin marking and stenciling to increase public awareness. During this reporting period 547catch basins were either stenciled with the message "Dump No Waste – Drains to Stream" or had "No Dumping, Drains to Waterway" markers installed.
BMP 4-2: Participate in a Public Education	○	○	OCPW	• Coordinate with other local, Phase I jurisdictions in providing/compiling information regarding a public education effectiveness evaluation by July 1, 2015.	1) Report on activities conducted annually.	1) OC submitted a Public Education Effectiveness Evaluation Summary to DEQ on June 29, 2015.	The Association of Clean Water Agencies (ACWA) Stormwater Committee completed a coordinated effort to compile existing educational survey information and develop conclusions to inform how public education efforts result in behavioral change. The study was conducted by DHM Consulting with cost

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Effectiveness Evaluation							shared among interested Phase I and Phase II communities, including OC.
BMP 4-3: Conduct Staff Training for Pest Management	○	○	OCPW and Parks	• Ensure OCPW and Parks Dept. staff conducting pest management activities are certified for spraying activities according to OSHA requirements. • Ensure licensed staff attends annual refresher courses.	1) Track the number of employees licensed for spraying activities. 2) Report number of employees that attended initial or refresher training.	1) Staff licensed for spraying activities: OCPW = 8 Parks Dept. = 7 2) Five OCPW staff and seven Parks Department staff attended refresher training classes during the reporting period.	Annual refresher training is not required. OCPW and Parks Department staff attend refresher training per requirements of their licensing.
BMP 4-4: Conduct Staff Training in Spill Response	○	○	OCPW	• Provide non-hazardous spill response training annually through monthly safety meetings. • Coordinate annual training and refresher courses for staff initially responding to spills using OSHA hazardous materials educational resources.	1) Track spill-related training and education.	1) Spill response training was not conducted due to COVID-19.	
BMP 4-5: Ensure Municipal Staff Training in Stormwater Pollution Prevention	○	○	OCPW	• Conduct municipal training for employees associated with stormwater management in OC. • Coordinate with other Clackamas County co-permittees regarding regional water quality efforts. • Participate in training and advisory committee opportunities available through state and local agencies and groups. • Conduct regular stormwater staff meetings once or twice a year.	1) Track the number of employees receiving training in stormwater management annually. 2) Track OC staff participation in groups, committees, and organizations relevant to stormwater quality management. 3) Track regular stormwater staff meetings and staff attendance at those meetings.	1) OCPW Employees receiving training in stormwater management: • Three employees attended APWA Conferences (10/22/2019-10/25/2019), • Six employees attended Urban Pest Management/IPM training (2/19/2020, 2/6/2020), • Two employees attended Erosion Control and Stormwater Management (1/28/2020), • No employees attended ACWA Stormwater Summit -Canceled due to COVID-19. 2) OC staff participates in the following groups and organizations: • ACWA - active participant in the ACWA Stormwater committee and Phase I Stormwater subcommittee, • Continued collaboration with other co-permittees on Comprehensive Clackamas Stormwater Monitoring Program, • Greater Oregon City Watershed Council, • Clackamas County Water Education Team, • Regional Coalition for Clean Rivers and Streams. 3) There were 34 stormwater staff meetings conducted during the 2019-2020 permit year.	1) Dates, topics, and attendees are summarized in Table 4 in Section 6.0 of the annual report.
Element 6. Post-Construction Site Runoff							
BMP 6-1: Implement Municipal Construction Standards	●	●	OC Community Development	Per OC'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 and approved for compliance with stormwater regulations. 2) Track the number, type, and drainage area of treatment facilities constructed annually.	1) 26 development applications (some of which were permitted in previous reporting years but never completed construction) were reviewed and approved for compliance with water quality/water quantity standards. For applications that proceed to the construction phase, constructed treatment facilities will be noted in the appropriate reporting period. 2) The following were constructed and placed in operation during the reporting period of 7/1/2019 through 6/30/2020: 8 developments: 14 Private Raingardens, 3 Private Swales, 1 Public Drainage Swale, 1 Private Pervious Pavement, 2 Proprietary Systems (Contech Chambers), and numerous roadside planters • Total drainage area = 6.42 acres	<u>Details of treatment facility construction during the 2019-20 reporting year:</u> - TP 16-02 Lazy Creek Lane Subdivision (TP 16-02) – 5 lot subdivision with PRIVATE bioswales and five raingardens, 0.44 acres - MP 17-03 19851 S Leland Road (MP 17-03) – 3 lot minor partition – a 1,150 sf raingarden – PRIVATELY maintained, 1.08 acres - Laurel Ridge Subdivision (TP 17-06) – 6 lot subdivision with roadside planters and PRIVATE raingardens, 1.27 acres - 314 Pleasant Avenue Apartments (SP 17-119) – PRIVATE 2,000 sf raingarden, 0.91 acres - Optimize Technologies (SP 17-165) – PRIVATE 1,389 SF raingarden, 2.0 acres - Derusha Partition (MP 18-02) – PUBLIC enhanced 1,245 sf drainage swale, 0.41 acres - AFC Clinic (SP 18-42) – No Stormwater Improvements required due to PRIVATE pervious pavement, 0.18 acres - 415 Center Street SP15-04 – PRIVATE: 2 Contech Chamber systems, 0.13 acres -

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BMP 6-2: Review and Update Code and Development Standards related to Stormwater Quality Control	●	●	OCPW	• Review OC's current/planned stormwater treatment and detention standards for compliance with new NPDES MS4 Permit language. • Review OC's current public works development code provisions to ensure that applicable barriers to LID or green infrastructure (GI) are minimized and eliminated where practicable. • If necessary, update OC's post-construction stormwater design standards and code language by November 1, 2014.	1) Track progress related to review of OC's code and development standards per provisions in the NPDES MS4 Permit. 2) Track any code/standards modifications made by ordinance.	1) The update has been completed to OC's *Stormwater and Grading Design Standards* to meet the current NPDES MS4 Permit language. The update prioritizes the use of LID and GI to the maximum extent practicable and addresses flow duration. 2) OC reviewed and updated the Oregon City Municipal Code Chapter 13.12 Stormwater Management, the *Stormwater and Grading Design Standards* manual, and the *Erosion and Sediment Control Standards* manual. The updated manuals were adopted through Resolution 15-14 and the associated municipal code update was adopted by Ordinance 15-1006 on May 20, 2015. A subsequent update was adopted through Resolution 19-26 in March 2020.	Stormwater Standards were updated and adopted in March 2020.
Element 7. Pollution Prevention for Municipal Operations							
BMP 7-1: Conduct Street Sweeping and Roadway Repair Activities	●	●	OCPW	• Sweep city streets every 3-4 months on average, more frequently in high traffic areas and during leaf pick up and following deicing activities.	1) Track the average number of citywide sweeps per year. 2) Estimate the miles of streets swept per year. 3) Track volume of debris removed.	1) 7.3 city-wide sweeps were conducted for this reporting period. 2) During the 2019-2020 reporting period, 5,367 miles of roadway were swept. 3) 3,127 cubic yards of debris were removed as a result of sweeping and leaf pickup activity.	
BMP 7-2: Minimize Pollutant Discharges Associated with Landscape Management Practices	○	○	OCPW and Parks	• All chemical applicators, both contractor and city, must follow state laws related to the use of pesticides. • Applicators will complete spray reports for the application of chemicals.	1) Track any program changes regarding chemical application practices used by OC.	1) Both the City and contracted chemical applicators comply with 2300-A, pesticide general permit requirements. Pesticide applications are kept at least three feet away from any water's edge. There were no program changes regarding chemical application practices used by OC.	
BMP 7-3: Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities	○	○	OCPW	• By July 1, 2013, inventory municipal facilities subject to this permit requirement. • By July 1, 2013, identify whether there is a need for additional strategies to minimize discharge from these facilities.	1) Track updates to strategies used to minimize pollutant discharge from municipal waste storage facilities	1) OC developed a Stormwater Pollution Prevention Strategy document for municipal operations (SWPPS) July 1, 2013. The SWPPS includes a description of each of OC's six facilities that treat, store, or transport municipal waste. Additionally, it identifies potential pollutant sources as well as short- and long- term pollution reduction strategies. The SWPPS was updated during the 2017-2018 reporting period to reflect these changes.	OCPW purchased 13895 Fir Street for the future home of OCPW Complex. The Fir Complex was added to the current facilities list and is now being monitored quarterly.
BMP 7-4: Control Infiltration and Cross Connections to the City's Stormwater Conveyance System	●		OCPW	• Review new and redevelopment for possible cross-connections. • Eliminate cross connections upon identification.	1) Report whether any cross connections were discovered and describe follow up activities.	1) One cross-connection was discovered and corrected during this reporting period. • 1640 Hiram St. – Existing cross-connection discovered via private drain cleaning technician. Corrections made within 5 days of discovery.	• Dye tests are performed by OCPW upon request from plumbing inspector if there are questions regarding sewer connections. • Routine storm sewer video inspection continues, and cross-connections are repaired when identified.
BMP 7-5: Coordinate with Local Fire Department related to Pollutant Discharge from Fire Fighting Training Activities			OCPW	• By November 1, 2012, contact Clackamas Fire District #1 to determine what activities are conducted to minimize pollutant discharges associated with firefighting training activities. • As applicable, provide educational information to Clackamas Fire District #1 by November 1, 2012.	1) Track contacts made with Clackamas Fire District #1.	1) No contacts were made during this reporting period.	On 9/12/12 OC's Water Quality Coordinator contacted Clackamas Fire District #1 to discuss firefighting training activities conducted in OC. Per an email dated 9/13/12 the Battalion Chief for Training & Safety confirmed that all foam drills were conducted at their primary training facility in Clackamas. As of 2019-2020, training activities at the four OC stations still use water only.
BMP 7-6: Conduct Master Planning and Implement Capital Projects for Stormwater Quality Enhancement	●	●	OCPW	• The *Oregon City Stormwater Master Plan dated July 2019 was adopted by Ordinance 19-1014 on March 18, 2020 and became effective April 17, 2020* • Prioritize CIPs by funding availability and water quality/flood control benefit. • Update maps to include location and drainage area of any new stormwater quality CIPs.	1) Track master planning activities. 2) Track number and cost of major (water quality) CIP projects and discuss added benefit. 3) Map the location and drainage area of water quality related CIPs.	1) The update to OC's *City-wide Stormwater Master Plan* was adopted by City Commission on April 17, 2020. 2) No stormwater quality-related CIP projects were constructed during this reporting period.	2) Following are details of the contracted CIP projects completed during this reporting period: • None

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Element 8. Stormwater Management Facilities Operation and Maintenance							
BMP 8-1: Conduct Stormwater Conveyance System Cleaning and Maintenance	●	●	OCPW	• Maintain, repair, and/or replace conveyance system components when needed, based on ongoing inspections. • Update the stormwater system map when discrepancies are found.	1) Estimation of the volume of debris removed per year during public conveyance system cleaning activities (in conjunction with BMP 8-2).	See BMP 8-2.	
BMP 8-2: Conduct Catch Basin Cleaning and Maintenance	●	●	OCPW	• Inspect at least 33% of the public catch basins annually. • Schedule the repair, and replacement of catch basins as needed, based on inspections. • Update the stormwater system map when discrepancies are found.	1) Track the percentage of total public catch basins inspected and/or maintained annually. 2) Track the volume of sediment removed during cleaning activities conducted annually (also includes volume from BMP 8-1). 3) Track the number of catch basin replacements annually. 4) Track the number of public catch basins added to OC's catch basin inventory annually.	1) 40% of public catch basins were maintained during this reporting period. 2) 91 cubic yards of sediment were removed (includes sediment from pipes, culverts, manholes, open channels, and catch basins). 3) No catch basins were replaced or repaired. 4) OC's catch basin inventory was reduced by 65 catch basins this year to a total of 4,477. Reduction was a result of a thorough review of storm utility maps. Many catch basins previously listed as OC were private or owned by other agencies.	40% = 1,790public catch basins
BMP 8-3: Public Structural Control Facility Cleaning and Maintenance	●	●	OCPW	• Inspect and maintain public structural control facilities in accordance with documented frequencies and procedures. • Update the public structural control facility inventory as needed. • Update the stormwater system map in accordance with new public facility installations and when discrepancies are found.	1) Track the number of public structural facilities inspected and maintained. 2) Track the volume of sediment removed during cleaning. 3) Track changes to the public structural control facility inventory as needed.	1) 158public structural facilities were inspected during the reporting period. See the next column for maintenance details. 2) 25 cubic yards of sediment were removed during maintenance/cleaning. 3) Additional public structural facilities added to inventory: • 36 roadside stormwater planters were added to the inventory this past year.	1) The following public structural facilities were inspected and maintained during the reporting period: • Ponds (85) = 85 inspected; 85 maintained • swales/bioswales (27) = 27 or 35,009sq ft inspected & maintained. • soaker trench infiltrators (2) = 2 inspected; 2 maintained • rain gardens (1) = 1 inspected; 1 maintained • roadside planters (36) = 36 inspected; 36 maintained • detention pipes (44) = 0 inspected due to COVID-19 shut down • water quality vaults (8) = 0 inspected due to COVID-19 shut down • pollution control/flow control manholes (166) = 7 inspected, 7 cleaned. Minimal inspections due to COVID-19 shut down
BMP 8-4: Private Structural Control Facility Cleaning and Maintenance	●	●	OCPW	• Require new private water quality facilities to submit maintenance agreements to OC. • Compile an inventory of existing private structural water quality facilities and work to collect maintenance agreements for these by July 1, 2013. • Implement an inspection strategy for private water quality facilities by July 1, 2013.	1) Track the number of maintenance agreements submitted to OC each year. 2) Track progress related to the inventory and mapping of existing private structural facilities. 3) Track the status of updating the inventory and map of private water quality facilities. 4) Track the status of developing procedures in accordance with permit requirements.	1) OC continues to require maintenance agreements for private water quality facilities. Seven maintenance agreements were recorded during this reporting period. 2) Files have been reviewed for existing private structural facilities. An inventory list has been created. 3) Initial mapping is complete; refinements ongoing. 4) OC developed SOPs for public water quality facilities and private water quality facilities July 1, 2013. The SOPs outline procedures for ongoing mapping and inventory activities, as well as facility inspections. For private facilities, OC requires a maintenance agreement and submission of annual inspection records.	1) The following are details for the newly recorded private water quality facilities: - TP 16-02 Lazy Creek Lane Subdivision (TP 16-02) – 5 lot subdivision with PRIVATE stormwater planters and a bioswale, 0.44 acres - MP 17-03 19851 S Leland Road (MP 17-03) – 3 lot minor partition – a 1,150 sf raingarden – PRIVATEIY maintained, 1.08 acres - Laurel Ridge Subdivision (TP 17-06) – 6 lot subdivision with roadside planters and PRIVATE underground chambers, 1.27 acres - 314 Pleasant Avenue Apartments (SP 17-119) – PRIVATE 2,000 sf raingarden, 0.91 acres - Optimize Technologies (SP 17-165) – PRIVATE 1,389 SF raingarden, 2.0 acres

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							- AFC Clinic (SP 18-42) – No Stormwater Improvements required due to PRIVATE pervious pavement, 0.18 acres - 415 Center Street SP15-04 – PRIVATE: 2 Contech Chamber systems, 0.13 acres 2) The following are details for newly constructed PUBLIC improvements to be maintained by the City: - Derusha Partition (MP 18-02) – PUBLIC enhanced 1,245 sf drainage swale, 0.41 acres

Appendix B

Oregon City Monitoring Data

Outfall Monitoring - Oregon City 2019 - 2020
Location - Oregon City Shopping Center
Sample Site # OC006
Stream Name - Clackamas River
Land Use - Commercial

		Results							
		Composite Wet Weather	Composite Wet Weather	Composite Wet Weather	Composite Wet Weather	Statistics			
Analysis	Units	12/19/2019	1/6/2020	1/23/2020	5/18/2020	High	Low	Mean	Notes
Hardness	mg/L	32.0	26.0	24.0	28.0	**32.0**	**24.0**	**27.5**	
Total Dissolved Solids	mg/L	34.0	48.0	23.0	22.0	**48.0**	**22.00**	**31.8**	
Total Suspended Solids	mg/L	9	22	41	11	**41**	**9**	**21**	
Copper	mg/L	0.00484	0.00613	0.00925	0.00477	**0.00925**	**0.00477**	**0.00625**	
Lead	mg/L	0.0019	0.0075	0.0029	0.00392	**0.0075**	**0.0019**	**0.0041**	
Zinc	mg/L	0.043	0.0450	0.0607	0.0301	**0.0607**	**0.0301**	**0.0447**	
Nitrate-Nitrite	mg/L	0.1409	ND	ND	0.138	**0.1409**	**ND**	**0.0972**	(2)
Orthophosphate as P	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Phosphorus	mg/L	ND	0.07	0.17	ND	**0.17**	**ND**	**0.07**	(2)
Ammonia as N	mg/L	0.1	ND	ND	ND	**0.1**	**ND**	**0.1**	(2)
Dissolved Oxygen - Winkler	mg/L	NM	12	10	9.1	**12**	**9.1**	**10.4**	(1) (2)
E. coli - Colilert	MPN/100mL	921	1986	461	2420	**2420**	**461**	**1447**	(3) (4)
Dissolved Copper	mg/L	0.00295	0.00210	0.00363	0.00246	**0.00363**	**0.00210**	**0.00279**	
Dissolved Lead	mg/L	ND	ND	0.00085	0.00021	**0.00085**	**ND**	**0.00032**	(2)
Dissolved Zinc	mg/L	0.032	0.0340	0.0249	0.0183	**0.0340**	**0.0183**	**0.0273**	
Temperature - Field	°C	8.6	7.7	12.1	14.9	**14.9**	**7.7**	**10.8**	
Dissolved Oxygen - Field	mg/L	11.19	11.89	10.47	9.68	**11.89**	**9.68**	**10.81**	
Dissolved Oxygen - Field	% Saturation	96.2	97.9	96.8	96.1	**97.9**	**96.1**	**96.8**	
pH - Field	Std Units	7.26	7.52	7.71	7.16	**7.71**	**7.16**	**7.41**	
Conductivity - Field	µS/cm	22.6	17.15	20.21	17.21	**22.6**	**17.15**	**19.3**	
Storm Event Rainfall	Inches	0.6	0.24	0.22	0.5	**0.6**	**0.22**	**0.39**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Outfall Monitoring - Oregon City 2019 - 2020
Location - Clackamette Cove
Sample Site # OC007
Stream Name - Clackamas River
Land Use - Industrial

Analysis	Units	Results: Composite Wet Weather 12/19/2019	Composite Wet Weather 1/6/2020	Composite Wet Weather 1/23/2020	Composite Wet Weather 5/18/2020	Statistics: High	Low	Mean	Notes
Hardness	mg/L	48.0	56.0	120	44.0	**120**	**44.0**	**67**	
Total Dissolved Solids	mg/L	49.0	66.0	147	39.0	**147**	**39.0**	**75.3**	
Total Suspended Solids	mg/L	16	5	16	9	**16**	**5**	**12**	
Copper	mg/L	0.00482	0.00385	0.00648	0.00453	**0.00648**	**0.00385**	**0.00492**	
Lead	mg/L	0.0020	0.0024	0.0026	0.00114	**0.0026**	**0.00114**	**0.00204**	
Zinc	mg/L	0.0402	0.0304	0.0583	0.0207	**0.0583**	**0.0207**	**0.0374**	
Nitrate-Nitrite	mg/L	0.208	ND	0.1187	0.241	**0.241**	**ND**	**0.1557**	(2)
Orthophosphate as P	mg/L	ND	ND	ND	0.100	**0.100**	**ND**	**0.06**	(2)
Phosphorus	mg/L	0.11	0.09	0.19	0.10	**0.19**	**0.09**	**0.12**	
Ammonia as N	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Oxygen - Winkler	mg/L	10	NM	NM	NM	**10**	**10**	**10**	(1) (2)
E. coli - Colilert	MPN/100mL	365	345	1046	1733	**1733**	**345**	**872**	(3) (4)
Dissolved Copper	mg/L	0.00285	0.00297	0.00316	0.00309	**0.00316**	**0.00285**	**0.00302**	
Dissolved Lead	mg/L	0.00024	0.00120	0.00060	0.00021	**0.00120**	**0.00021**	**0.00056**	
Dissolved Zinc	mg/L	0.0265	0.0422	0.0433	0.0120	**0.0433**	**0.0120**	**0.0310**	
Temperature - Field	°C	8.2	7.6	10.0	14.3	**14.3**	**7.6**	**10.0**	
Dissolved Oxygen - Field	mg/L	10.19	7.78	6.76	8.44	**10.19**	**6.76**	**8.29**	
Dissolved Oxygen - Field	% Saturation	86.9	63.9	59.6	82.9	**86.9**	**59.6**	**73.3**	
pH - Field	Std Units	7.33	7.37	7.44	7.49	**7.49**	**7.33**	**7.41**	
Conductivity - Field	µS/cm	65.8	113.2	306	52.2	**306**	**52.2**	**134**	
Storm Event Rainfall	Inches	0.6	0.24	0.22	0.5	**0.6**	**0.22**	**0.39**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Instream Monitoring - Oregon City 2019 - 2020
Location - 17082 Holly Ln (Holly Ln Bridge)
Sample Site # OC010
Stream Name - Abernethy Creek (Upstream)

		Results							
		Grab Sample Dry Weather	Grab Sample Wet Weather	Grab Sample Wet Weather	Grab Sample Dry Weather	Statistics			
Analysis	Units	8/12/2019	11/4/2019	2/10/2020	6/8/2020	High	Low	Mean	Notes
Hardness	mg/L	60.0	48.0	50.0	44.0	**60.0**	**44.0**	**50.5**	
Total Dissolved Solids	mg/L	93.0	100	62.0	50.0	**100**	**50.0**	**76.3**	
Total Suspended Solids	mg/L	20	3	20	8	**20**	**3**	**13**	
Copper	mg/L	0.00134	ND	0.00112	ND	**0.00134**	**ND**	**0.00099**	(2)
Lead	mg/L	0.00031	ND	0.0003	ND	**0.00031**	**ND**	**0.00020**	(2)
Zinc	mg/L	0.00726	ND	ND	ND	**0.0073**	**ND**	**0.00332**	(2)
Nitrate-Nitrite	mg/L	0.270	0.345	1.243	0.339	**1.2430**	**0.270**	**0.5493**	
Orthophosphate as P	mg/L	ND	ND	0.101	ND	**0.101**	**ND**	**0.063**	(2)
Phosphorus	mg/L	0.21	0.08	ND	0.08	**0.21**	**ND**	**0.10**	(2)
Ammonia as N	mg/L	ND	ND	0.1	ND	**0.1**	**ND**	**0.0625**	(2)
Dissolved Oxygen - Winkler	mg/L	NM	NM	NM	9.2	**9.2**	**9.2**	**9.2**	(1) (2)
E. coli - Colilert	MPN/100mL	228	56	52	135	**228**	**52**	**118**	(3)
Dissolved Copper	mg/L	0.00162	ND	ND	ND	**0.00162**	**ND**	**0.00091**	(2)
Dissolved Lead	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Zinc	mg/L	0.00529	0.00421	0.0136	ND	**0.0136**	**ND**	**0.0063**	(2)
Temperature - Field	°C	18.2	5.7	7.5	14.1	**18.2**	**5.7**	**11.4**	
Dissolved Oxygen - Field	mg/L	8.17	11.52	11.72	9.54	**11.72**	**8.17**	**10.24**	
Dissolved Oxygen - Field	% Saturation	86.2	90.8	96.0	91.7	**96.0**	**86.2**	**91.2**	
pH - Field	Std Units	7.68	7.60	7.69	7.71	**7.71**	**7.60**	**7.67**	
Conductivity - Field	µS/cm	131.1	122.6	55.9	99.9	**131.1**	**55.9**	**102.4**	
Storm Event Rainfall	Inches	0.00	0.00	0.00	0.00	**0.00**	**0.00**	**0.00**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Instream Monitoring - Oregon City 2019 - 2020
Location - 316 17th St at Railroad Trestle
Sample Site # OC011
Stream Name - Abernethy Creek (Downstream)

		Results							
		Grab Sample Dry Weather	Grab Sample Wet Weather	Grab Sample Wet Weather	Grab Sample Dry Weather	Statistics			
Analysis	Units	8/12/2019	11/4/2019	2/10/2020	6/8/2020	High	Low	Mean	Notes
Hardness	mg/L	64.0	64.0	40.0	60.0	**64**	**40.0**	**57.0**	
Total Dissolved Solids	mg/L	99.0	128	66.0	74.0	**128**	**66.0**	**91.8**	
Total Suspended Solids	mg/L	6	7	140	10	**140**	**6**	**41**	
Copper	mg/L	0.00134	0.00109	0.00316	ND	**0.00316**	**ND**	**0.00165**	(2)
Lead	mg/L	ND	ND	0.0015	0.000272	**0.0015**	**ND**	**0.00049**	(2)
Zinc	mg/L	0.00748	ND	0.00986	ND	**0.0099**	**ND**	**0.00534**	(2)
Nitrate-Nitrite	mg/L	0.273	0.375	1.22	0.3772	**1.220**	**0.273**	**0.561**	
Orthophosphate as P	mg/L	ND	0.147	ND	ND	**0.147**	**ND**	**0.074**	(2)
Phosphorus	mg/L	0.20	0.09	0.10	0.08	**0.20**	**0.08**	**0.12**	
Ammonia as N	mg/L	ND	ND	ND	0.1	**0.1**	**ND**	**0.1**	(2)
Dissolved Oxygen - Winkler	mg/L	NM	NM	NM	NM	**NM**	**NM**	**NM**	(1) (2)
E. coli - Colilert	MPN/100mL	178	26	37	770	**770**	**26**	**253**	(3) (4)
Dissolved Copper	mg/L	0.00179	ND	ND	ND	**0.00179**	**ND**	**0.00095**	(2)
Dissolved Lead	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Zinc	mg/L	0.00783	ND	0.0172	0.00544	**0.0172**	**ND**	**0.0081**	(2)
Temperature - Field	°C	18.7	5.8	7.0	14.1	**18.7**	**5.8**	**11.4**	
Dissolved Oxygen - Field	mg/L	7.46	11.34	11.73	9.14	**11.73**	**7.46**	**9.92**	
Dissolved Oxygen - Field	% Saturation	79.4	89.5	94.7	87.6	**94.7**	**79.4**	**87.8**	
pH - Field	Std Units	7.54	7.52	7.49	7.59	**7.59**	**7.49**	**7.54**	
Conductivity - Field	µS/cm	147.8	137.5	62.0	110.4	**148**	**62.0**	**114**	
Storm Event Rainfall	Inches	0.00	0.00	0.00	0.00	**0.00**	**0.0**	**0.0**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Instream Monitoring - Oregon City 2019 - 2020
Location - Behind 415 S McLoughlin Blvd
Sample Site # OC012
Stream Name - Coffee Creek

		Results							
		Grab Sample Dry Weather	Grab Sample Wet Weather	Grab Sample Wet Weather	Grab Sample Dry Weather	Statistics			
Analysis	Units	8/12/2019	11/4/2019	2/10/2020	6/8/2020	High	Low	Mean	Notes
Hardness	mg/L	40.0	52.0	32.0	44.0	**52.0**	**32.0**	**42.0**	
Total Dissolved Solids	mg/L	66.0	69.0	69.0	56.0	**69.0**	**56.0**	**65.0**	
Total Suspended Solids	mg/L	15	5	14	4	**15**	**4**	**10**	
Copper	mg/L	0.00151	ND	ND	ND	**0.00151**	**ND**	**0.00088**	(2)
Lead	mg/L	0.00089	0.0004	0.0004	0.000265	**0.0009**	**0.000265**	**0.00049**	
Zinc	mg/L	0.0151	0.0145	0.0161	0.00965	**0.0161**	**0.0097**	**0.0138**	
Nitrate-Nitrite	mg/L	1.59	2.02	3.08	2.16	**3.08**	**1.59**	**2.21**	
Orthophosphate as P	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Phosphorus	mg/L	0.18	ND	ND	0.05	**0.18**	**ND**	**0.07**	(2)
Ammonia as N	mg/L	0.5	ND	ND	ND	**0.5**	**ND**	**0.16**	(2)
Dissolved Oxygen - Winkler	mg/L	NM	NM	NM	NM	**NM**	**NM**	**NM**	(1) (2)
E. coli - Colilert	MPN/100mL	2421	326	12	921	**2421**	**12**	**920**	(3) (4)
Dissolved Copper	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Lead	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Zinc	mg/L	0.00864	0.0145	0.0238	0.00791	**0.0238**	**0.00791**	**0.0137**	
Temperature - Field	°C	16.0	9.2	8.6	12.6	**16.0**	**8.60**	**11.60**	
Dissolved Oxygen - Field	mg/L	9.53	11.48	11.71	10.51	**11.71**	**9.53**	**10.81**	
Dissolved Oxygen - Field	% Saturation	96.1	98.8	98.5	97.7	**98.8**	**96.1**	**97.8**	
pH - Field	Std Units	7.58	7.62	7.37	7.59	**7.62**	**7.37**	**7.54**	
Conductivity - Field	µS/cm	86.8	85.5	75.9	81.6	**86.8**	**75.9**	**82.5**	
Storm Event Rainfall	Inches	0.00	0.00	0.00	0.00	**0.00**	**0.00**	**0.00**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Instream Monitoring - Oregon City 2019 - 2020
Location - Behind 13530 Redland Rd
Sample Site # OC013
Stream Name - Park Place Creek

		Results							
		Grab Sample Dry Weather	Grab Sample Wet Weather	Grab Sample Wet Weather	Grab Sample Dry Weather	Statistics			
Analysis	Units	8/12/2019	11/4/2019	2/10/2020	6/8/2020	High	Low	Mean	Notes
Hardness	mg/L	140	104	112	120	**140**	**104**	**119**	
Total Dissolved Solids	mg/L	196	181	177	171	**196**	**171**	**181**	
Total Suspended Solids	mg/L	15	10	8	5	**15**	**5**	**10**	
Copper	mg/L	0.00105	0.00151	0.00112	ND	**0.00151**	**ND**	**0.00117**	(2)
Lead	mg/L	0.00031	ND	ND	0.000247	**0.00031**	**ND**	**0.00019**	(2)
Zinc	mg/L	0.0120	0.00571	0.00744	0.00752	**0.0120**	**0.00571**	**0.0082**	
Nitrate-Nitrite	mg/L	ND	1.27	1.99	0.6395	**1.9911**	**ND**	**0.9889**	(2)
Orthophosphate as P	mg/L	ND	0.416	ND	ND	**0.416**	**ND**	**0.142**	(2)
Phosphorus	mg/L	0.22	0.08	0.06	0.10	**0.22**	**0.06**	**0.12**	
Ammonia as N	mg/L	ND	ND	0.7	0.3	**0.70**	**ND**	**0.3**	(2)
Dissolved Oxygen - Winkler	mg/L	2.0	7.1	6.9	NM	**7.1**	**2.0**	**5.3**	(1) (2)
E. coli - Colilert	MPN/100mL	71	1	9	52	**71**	**1**	**33**	(3)
Dissolved Copper	mg/L	0.00104	ND	0.00100	ND	**0.00104**	**ND**	**0.00089**	(2)
Dissolved Lead	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Zinc	mg/L	0.00858	0.00832	0.0189	0.0114	**0.0189**	**0.00832**	**0.0118**	
Temperature - Field	°C	16.7	7.7	8.3	13.8	**16.7**	**7.7**	**11.6**	
Dissolved Oxygen - Field	mg/L	2.15	5.82	6.78	5.20	**6.78**	**2.15**	**4.99**	
Dissolved Oxygen - Field	% Saturation	22.0	48.2	56.6	49.6	**56.6**	**22.0**	**44.1**	
pH - Field	Std Units	6.92	6.96	7.03	7.10	**7.10**	**6.92**	**7.00**	
Conductivity - Field	µS/cm	308	271	239	275	**308**	**239.0**	**273**	
Storm Event Rainfall	Inches	0.00	0.00	0.00	0.00	**0.00**	**0.00**	**0.00**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Instream Monitoring - Oregon City 2019 - 2020
Location - North end of Singer Creek Park
Sample Site # OC014
Stream Name - Singer Creek (Upstream)

		Results							
		Grab Sample Dry Weather	Grab Sample Wet Weather	Grab Sample Wet Weather	Grab Sample Dry Weather	Statistics			
Analysis	Units	8/12/2019	11/4/2019	2/10/2020	6/8/2020	High	Low	Mean	Notes
Hardness	mg/L	40.0	48.0	32.0	40.0	**48.0**	**32**	**40.0**	
Total Dissolved Solids	mg/L	75.0	102	45.0	38.0	**102.0**	**38.0**	**65.0**	
Total Suspended Solids	mg/L	74	11	11	13	**74**	**11**	**27**	
Copper	mg/L	0.00198	0.00103	ND	ND	**0.0020**	**ND**	**0.0011**	(2)
Lead	mg/L	0.0019	0.0006	0.0004	0.000757	**0.00190**	**0.000400**	**0.00091**	
Zinc	mg/L	0.0126	ND	ND	0.00460	**0.0126**	**ND**	**0.0053**	(2)
Nitrate-Nitrite	mg/L	1.55	1.94	3.11	2.43	**3.11**	**1.55**	**2.26**	
Orthophosphate as P	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Phosphorus	mg/L	0.22	ND	ND	ND	**0.22**	**ND**	**0.07**	(2)
Ammonia as N	mg/L	ND	ND	ND	0.1	**0.1**	**ND**	**0.063**	(2)
Dissolved Oxygen - Winkler	mg/L	NM	NM	NM	NM	**NM**	**NM**	**NM**	(1) (2)
E. coli - Colilert	MPN/100mL	1553	61	5	18	**1553**	**5**	**409**	(3) (4)
Dissolved Copper	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Lead	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Zinc	mg/L	0.00534	0.00453	0.0149	ND	**0.0149**	**ND**	**0.00669**	(2)
Temperature - Field	°C	14.7	7.7	8.3	11.6	**14.7**	**7.7**	**10.6**	
Dissolved Oxygen - Field	mg/L	9.63	11.63	11.66	10.56	**11.66**	**9.63**	**10.87**	
Dissolved Oxygen - Field	% Saturation	95.3	97.4	98.3	96.9	**98.3**	**95.3**	**97.0**	
pH - Field	Std Units	7.73	7.63	7.47	7.67	**7.73**	**7.47**	**7.63**	
Conductivity - Field	µS/cm	92.5	87.9	70.7	84.0	**92.5**	**70.7**	**83.8**	
Storm Event Rainfall	Inches	0.00	0.00	0.00	0.00	**0.00**	**0.00**	**0.00**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Instream Monitoring - Oregon City 2019 - 2020
Location - 502 7th St (Manhole # 37138)
Sample Site # OC015
Stream Name - Singer Creek (Downstream)

		Results							
		Grab Sample Dry Weather	Grab Sample Wet Weather	Grab Sample Wet Weather	Grab Sample Dry Weather	Statistics			
Analysis	Units	8/12/2019	11/4/2019	2/10/2020	6/8/2020	High	Low	Mean	Notes
Hardness	mg/L	40.0	52.0	40.0	40.0	**52.0**	**40**	**43.0**	
Total Dissolved Solids	mg/L	77.0	83.0	77.0	68.0	**83**	**68.0**	**76**	
Total Suspended Solids	mg/L	17	2	12	8	**17**	**2**	**10**	
Copper	mg/L	0.00201	0.00108	0.00106	ND	**0.00201**	**ND**	**0.00129**	(2)
Lead	mg/L	0.0017	0.0003	0.0008	0.000970	**0.00170**	**0.00030**	**0.00094**	
Zinc	mg/L	0.0517	0.00620	0.00732	0.0113	**0.0517**	**0.0062**	**0.0191**	
Nitrate-Nitrite	mg/L	0.642	1.41	2.62	1.93	**2.62**	**0.642**	**1.65**	
Orthophosphate as P	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Phosphorus	mg/L	0.19	ND	ND	ND	**0.19**	**ND**	**0.07**	(2)
Ammonia as N	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Oxygen - Winkler	mg/L	NM	NM	NM	NM	**NM**	**NM**	**NM**	(1) (2)
E. coli - Colilert	MPN/100mL	4	75	18	93	**93**	**4**	**48**	(3) (4)
Dissolved Copper	mg/L	0.00144	ND	ND	ND	**0.00144**	**ND**	**0.00086**	(2)
Dissolved Lead	mg/L	ND	ND	ND	ND	**ND**	**ND**	**ND**	(2)
Dissolved Zinc	mg/L	0.0307	0.00713	0.0168	0.00448	**0.0307**	**0.00448**	**0.01478**	
Temperature - Field	°C	19.0	8.6	8.1	12.4	**19.0**	**8.1**	**12.0**	
Dissolved Oxygen - Field	mg/L	9.17	11.63	11.85	10.55	**11.85**	**9.17**	**10.80**	
Dissolved Oxygen - Field	% Saturation	98.8	99.1	98.7	98.0	**99.1**	**98.0**	**98.7**	
pH - Field	Std Units	7.76	7.72	7.54	7.73	**7.76**	**7.54**	**7.69**	
Conductivity - Field	µS/cm	105.2	102.1	79.6	96.0	**105.2**	**79.6**	**95.7**	
Storm Event Rainfall	Inches	0.00	0.00	0.00	0.00	**0.00**	**0.00**	**0.00**	(5)

Notes:

(1) Dissolved Oxygen (Winker Method) samples are taken once per sampling event as QA/QC for eletronic meter.

(2) An "ND" designation is understood to be "less than the lower reporting limit " and treated as 1/2 the reporting limit for calculations. N/A is Not Applicable. NM is Not Measured.

(3) MPN = Most Probable Number

(4) Shading indicates samples that exceed the E. coli standard of 406 MPN/100mL.

(5) Rainfall totals from the start of the event through sample collection.

Appendix C

Public Education and Outreach Information

Public Education and Awareness Activities
July 1, 2019 – June 30, 2020

Table 5: Summary of Activities

Date	Event	Location	Contact Total	Program/Subject
9/30/2020 to 10/11/2020	Stormwater Banner Display at City Hall	625 Center St Oregon City OR	Visitors & staff at City Hall	Display featuring Oregon City's major streams; tips to improve water quality
10/14/2020 to 10/25/2020	Stormwater Banner Display at Pioneer Center	615 5th St Oregon City OR	Visitors & staff at City Hall	Display featuring Oregon City's major streams; tips to improve water quality
3/31/2020	Message on Utility Bill	N/A	Utility bill recipients	Kick the "weed and feed" habit
4/30/2020	Message on Utility Bill	N/A	Utility bill recipients	River Starts Here campaign
4/24/2020	Annual Water Quality Report	N/A	15,293**, available on OC's website	Water Quality Information
6/18/2020	Stormwater Design Brochure	City Hall and Building Department and website	Visitors & Staff of buildings and website	Design guidance for developers in Oregon City
Fall 2019	Trail News – Autumn	N/A	All OC residents; available on website and OC public buildings	Fish on the Run campaign – importance of keeping water in the Clackamas River
Winter 2019-2020	Trail News – Winter	N/A	All OC residents; available on website and OC public buildings	Pesticide Reduction Efforts – focus on pesticide reduction and highlighting the pesticide pledge Grow Smart Grow Safe – encouraging chemical free landscaping opportunities
Summer 2020	Trail News - Winter	N/A	All OC residents; available on website and OC public buildings	Stormwater SDC and Rate Study – explanation of stormwater related priorities and CIPs
2019-2020	KPTV Public Service Announcements	N/A	Metro area	Television & web information about water quality
2019-2020	Regional Coalition for Clean Rivers & Streams	N/A	Metro area	Pollution prevention messages via website and social media
2019-2020	Clackamas River Water Providers	N/A	Residents with the Clackamas River as drinking water source	Various programs to promote source water protection, water conservation, and water quality awareness

***A postcard was mailed to each Oregon City utility customer announcing the on-line availability of the annual water quality report. Those with limited internet access were encouraged to request a printed copy of the report.*

Specific Activity Information

Trail News Articles

Autumn 2019

Fish on the Run, Irrigation Done

- Encourage customers to reduce irrigation in summer months when river levels are low
- Keep water in the river to help reduce high temperatures for aquatic life

Winter 2019 – 2020

Pesticide Reduction Efforts

- Encourage customers to reduce the amounts of pesticides used at home
- Highlighting the Pesticide Pledge and yard sign
- Attention to keeping pesticides out of local waterways to protect aquatic life

Grow Smart, Grow Safe

- Encourage customers to reduce lawn chemicals or to become chemical free
- Attention to keeping lawn chemicals out of local waterways to protect aquatic life

Summer 2020

Stormwater SDC and Rate Study

- Explanation of stormwater related priority projects and Capital Improvement Projects

Special Events

15th Annual Celebrating Water Event – Canceled due to COVID-19

Miscellaneous Items

Message on Utility Bill (mailed 3/31/2020)
Want your home and garden to be chemical-free? Want to kick the "weed and feed" habit? Go towww.growsmartgrowsafe.org for useful information.

Message on Utility Bill (mailed 4/30/2020)
The River Starts Here – Stormwater pollution is now our number one source of water pollution. What can you do? Go to http://theriverstartshere.org/ for pollution prevention tips.

Annual Water Quality Report – 4/24/2020
The 2019 report included the following topics specific to stormwater:

- Clackamas River – Our Drinking Water Source
- Protecting our drinking water source

- Monitoring For Contaminants
- Fish on the Run, Irrigation Done!
- Stormwater Management
- 2019 System Improvements Projects
- Lead in drinking water
- Riparian Health
- Photos/graphics with accompanying captions:
    - Cross Connection Backflow Prevention Program
    - Riparian Health- does a stream flow through your property
    - No Dumping Drains to Waterway emblem

Beginning on April 24, 2020, a total of 15,293 postcards were mailed to Oregon City residents announcing the on-line availability of the annual water quality report. Those with limited internet access were encouraged to request a printed copy of the report.

Figure 1: Photo on 2020 Annual Water Quality Report Postcard

<u>Stormwater Banner Display at City Hall – 9/30/2020 – 10/11/2020, Pioneer Center – 10/14/2020-10/25/2020</u>

Visitors to the Pioneer Center (615 5th St), as well as City staff, could view our stormwater banner display featuring Oregon City's largest basins and streams. Included are the following suggestions to prevent stormwater runoff pollution and to improve water quality:

- Never dump anything down storm drains or into streams,
- Sweep driveways and patios clean instead of hosing them down,
- Repair your vehicles if they are leaking oil, antifreeze, or other fluids,
- Take your car to a car wash, or wash it on the lawn instead of the driveway,
- Minimize your use of fertilizers and pesticides; consider going organic,
- Plant native trees and shrubs; if you have a stream flowing through your property streamside plantings will help reduce the temperature of the water,
- Pick up after your pet.

The banner includes contact information for the Greater Oregon City Watershed Council and how to obtain additional information about Oregon City's SWMP.

Clackamas River Water Providers – ongoing throughout the year

Oregon City, through its association with South Fork Water Board, partners with other agencies that use the Clackamas River for potable water, to promote source water protection and water conservation. Programs include water quality monitoring and a pesticide outreach program. For specific information, and to read their annual report, visit the CRWP website at www.clackamasproviders.org.

The Oregon City Website – ongoing throughout the year

A wide variety of information pertaining to stormwater, water quality, and Oregon City's NPDES MS4 Permit is available to the public at www.orcity.org.

Collaboration with Other Agencies

"Clean Water, It's Our Future" Campaign on KPTV Chanel 12 on Television and Website (https://www.kptv.com/water/)

Oregon City continues to partner with other agencies in the Portland metro area in sponsoring public education messaging via KPTV media outlets. The campaign identifies simple things that can be done to keep our rivers and streams healthy. The following topics were highlighted on their website, social media, and television during the 2019-2020 campaign:

- Reducing stress while gardening
- Car maintenance
- Water friendly weed control
- Clean gutters and storm drains
- Fall lawn tips
- Clean driveways

Regional Coalition for Clean Rivers and Streams

Oregon City is one of the Clean River Partners of Clackamas County. As such, the City continues to support the effort, along with other agencies in the Portland metro area, to educate the public about the impact of stormwater runoff pollution on the health of our rivers and streams. For specific information about the current campaign – The River Starts Here – visit the Coalition website at http://theriverstartshere.org/. The *"Regional Coalition for Clean Rivers and Streams: Fiscal Year 2019-2020 Annual Report"* by EnviroIssues (Dated September 23, 2020) is included in this appendix.

Regional Coalition for Clean Rivers and Streams

Fiscal Year 2019-2020 Annual Report

September 23, 2020

Prepared by:

enviroissues

THE RIVER STARTS HERE

FY 2019-20 Overview

The Regional Coalition for Clean Rivers and Streams (Coalition) continued its work – initiated in the mid-1990s – of providing coordinated messaging to target behaviors linked to stormwater pollution from residential sources across the Portland metropolitan region. The Coalition continues its brand recognition efforts by consistently using the previously developed *The River Starts Here* creative concept in its various materials. Other Coalition activities in the 2019-20 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 Troutdale
- City of West Linn
- City of Wilsonville
- Oak Lodge Water Services
- Multnomah County
- Washington County

This report covers the time frame of July 1, 2019 - June 30, 2020.

Background

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

Participants in the Coalition represent agencies that serve diverse population sizes from very small (Troutdale) to very large (Clean Water Services). As such the ability to run programs specific to their community is limited by funding and staffing. 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 is able to reach many thousands of people in the region compared to what entities can typically achieve on their own.

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

Key Messages

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

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

FY 2019-20 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 2019-20. Members of the Coalition share their knowledge with the broader regulated communities in Oregon via the Association of Clean Water Agencies (ACWA). Members have presented on prioritizing public behaviors to maximize pollutant reduction success and on a water pollutant risk assessment database at the past two spring ACWA conferences.

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

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

Goal 3: Practice adaptive management

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

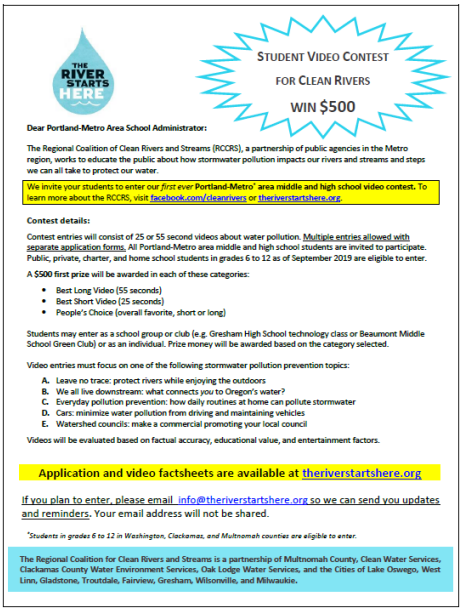
THE RIVER STARTS HERE MESSAGING AND OUTREACH

COMMUNITY EVENTS AND AGENCY COLLABORATION

Representatives of member agencies promoted Coalition messages throughout the fiscal year using Facebook, Instagram, YouTube and Twitter. The Coalition produced collateral materials emphasizing *The River Starts Here* brand and messages to support community events. In addition, the Coalition adapted to the changing landscape of COVID-19 by increasing social media posts and digital events. The primary focus of digital outreach was to drive engagement in the first annual Student Video Contest.

Watershed Village – The Big Float

In the summer of 2019, the Coalition staffed a large interactive booth at the Big Float along with a number of regional watershed councils including Tryon Creek, Oswego Lake, Johnson Creek, Columbia Slough and Clackamas River. The booth served lemonade, had a salmon obstacle course, a large watershed map that people put dots on to learn what watershed they lived in and a social media photo booth with props for people to take photos with. An estimated 500 or more people visited the booth.



STUDENT VIDEO CONTEST
FOR CLEAN RIVERS
WIN $500

Dear Portland-Metro Area School Administrator:

The Regional Coalition of Clean Rivers and Streams (RCCRS), a partnership of public agencies in the Metro region, works to educate the public about how stormwater pollution impacts our rivers and streams and steps we can all take to protect our water.

We invite your students to enter our *first ever* **Portland-Metro* area middle and high school video contest.** To learn more about the RCCRS, visit facebook.com/clearrivers or theriverstartshere.org.

Contest details:

Contest entries will consist of 25 or 55 second videos about water pollution. Multiple entries allowed with separate application forms. All Portland-Metro area middle and high school students are invited to participate. Public, private, charter, and home school students in grades 6 to 12 as of September 2019 are eligible to enter.

A $500 first prize will be awarded in each of these categories:

- Best Long Video (55 seconds)
- Best Short Video (25 seconds)
- People's Choice (overall favorite, short or long)

Students may enter as a school group or club (e.g. Gresham High School technology class or Beaumont Middle School Green Club) or as an individual. Prize money will be awarded based on the category selected.

Video entries must focus on one of the following stormwater pollution prevention topics:

A. Leave no trace: protect rivers while enjoying the outdoors
B. We all live downstream: what connects you to Oregon's water?
C. Everyday pollution prevention: how daily routines at home can pollute stormwater
D. Cars: minimize water pollution from driving and maintaining vehicles
E. Watershed councils: make a commercial promoting your local council

Videos will be evaluated based on factual accuracy, educational value, and entertainment factors.

Application and video factsheets are available at theriverstartshere.org

If you plan to enter, please email info@theriverstartshere.org so we can send you updates and reminders. Your email address will not be shared.

**Students in grades 6 to 12 in Washington, Clackamas, and Multnomah counties are eligible to enter.*

The Regional Coalition for Clean Rivers and Streams is a partnership of Multnomah County, Clean Water Services, Clackamas County Water Environment Services, Oak Lodge Water Services, and the Cities of Lake Oswego, West Linn, Gladstone, Troutdale, Fairview, Gresham, Wilsonville, and Milwaukie.

Student Video Contest

Beginning in summer 2019, the RSH team developed a YouTube page in order to host a student video contest. The team also developed a region-wide mailing list including public, private and homeschooling organizations, and collected emails whenever possible. The team developed an application, rules, a waiver, added materials to its website and launched the first annual 6th-12th grade Student Video Contest in fall 2019 with submissions due in 2020. Finally, the team sent a mailer to 229 schools in fall and winter.

Categories included first prize of $500 for best long video (55 seconds), best short video (25 seconds) and people's choice. The team created fact sheets to support student learning and video content accuracy on the topics of 1) Leave No Trace 2) Pollution from Cars 3) What Connects You to the River 4) Pollution from Everyday Behaviors.

The Coalition received an overwhelming response from participants and viewers who learned about our connection with local waterways. In this first year, local youth environmentalists passionate about telling their story responded to the call and helped create videos about how we each have a role in protecting rivers and streams. Overall, the Coalition received 46 entries, of those 36 were deemed completed applications with appropriate content accuracy and were uploaded to the Coalition's YouTube site.

On June 6, 36 middle and high school student finalists from throughout the Portland Metro area shared videos to encourage clean water behaviors like reducing pesticide use, practicing Leave No Trace principles in natural areas and traveling by transit, bike and foot to reduce pollution. Expert judges from the film industry, governments and river organizations voted to select the winners for the best 55-second and 25-second videos. From June 6-19, students rallied friends and family to vote for them to win the People's Choice Award for the most liked, commented, viewed and shared video. Over 4,000 community members watched student videos, which were viewed over 11,000 times. Viewers submitted over 1,800 likes and added hundreds of comments. Commenters shared their enthusiasm for these creative videos.

"I always forget that everyday activities can be harmful to my community whether I intended it to or not, I will definitely remember the car wash part!" – Margo Flanagan

"This is the greatest public service announcement for keeping our waters clean I have ever seen." – Robert Pirtle

In July, the Coalition met over Zoom to finalize all winners and honorable mentions. The Coalition will report on the winners and awards in the next fiscal year's annual report.

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. This fiscal year, the blog promoted upcoming events including The Big Float, the East Multnomah Soil and Water Conservation District 2020 Yard Tour and local native plant sales.

Website: TheRiverStartsHere.org

TheRiverStartsHere.org launched in June 2015. The website uses a modern design 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. During the fiscal year, the Coalition met and analyzed the website layout and content areas and planed a full website refresh in August 2020.

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

Total sessions: 2,500 (▲114 %)

- **Users:** 1.7k (▲64%)
- **Traffic type**
  - Direct: 52% (▲160%)
  - Social: 33% (▲1,890%)
  - Organic (search engine): 14% (▼60%)
  - Referral: 1.2% (▼95%)
- **Bounce rate:** 77% (▼10%)
- **Time on site:** 1:39 (▲171%)

During this fiscal year, web traffic has increased rapidly. In particular, traffic from social media to the website increased 1,890%. This change is due in part to the hosting Student Video Contest content on the website. The River Starts Here also increased post frequency on social media and linked more regularly to the website. Finally, COVID-19 increased social media and website engagement in 2020.

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 the spring and

summer time period when households in the region have an increased interest in yard and garden activities relevant to surface water quality. Social media messages build on existing conversations and connect with organizations around the region. While spring and summer are also times for promoting events, this year presented a different challenge with the COVID-19 pandemic. The Coalition focused on promoting educational webinars and online events as opposed to in person events such as restorations and river cleanups.

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, 2020 is as follows:

- **Followers ("likes"):** 1,684 (▲110)
- **Weekly organic reach:** 193 (▲29)
- **Posts:** 89 (▲16)

Facebook follower demographics breakdown:

Age	Female	Male	Total by Age
18-24	1%	1%	2%
25-34	11%	7%	16%
35-44	19%	8%	27%
45-54	16%	8%	24%
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 2019-20. 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. The majority of advertising was on Facebook.

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

Ads or Boosts during FY 19-20:

Topic	Engagement	Reach	Impressions
The Big Float 2019—Watershed Village promo	94	781	NA
24th Annual Columbia Slough Regatta	82	2,602	4,406
Sandy River Annual Float Clean -Up	406	16,418	26,660
Johnson Creek Annual Clean-Up	153	7,696	12,021
Harmful Algal Blooms educational post	1,159	60,603	131,800
12th Annual Johnson Creek Clean-Up	120	8,235	12,754
Tualatin Tire Collection Event	20	2,958	6,113
Where does Stormwater Go—Downspouts (Portland edu video)	82	1038	NA
Salmon recovery & toxics—educational-engagement	412	10,192	19,395
Car Washing techniques for water protection educational video (from City of Salem)	2,445	8,245	16,307
Willamette Riverkeeper Clean-Up	106	8,384	11,962
Student Video Contest post	18	504	
Student Video Contest	1,276	13,196	25,479
Student Video Contest -deadline extended (video link)	30,037	21,756	39,157
Pesticides Harm Pollinators/Backyard Habitat	175	1860	NA
Columbia Slough anti-littering promo	1,173	24,414	64,382
Follow Us: River Starts Here	5	15,555	34,849
JCWC Watershed Wide Event	113	5,999	12,026
Totals	190,723	210,436	2.5M
Total Cost			**$3,503***

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. **Impressions** are the number of times placed by Facebook including being show to individuals more than once. NA=unpaid spot.

*Some ads also ran on Instagram.

Twitter, @riverstartshere

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

- **Followers:** 1,438 (▼32)
- **Tweets:** 53 (▲4)

Instagram, @theriverstartshere

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

- **Followers:** 164 (▲160)
- **Posts:** 26 (▲14)

Instagram follower demographics breakdown:

Age	Female	Male	Total by Age
13-17	1%	4%	2%
18-24	5%	2%	4%
25-34	39%	35%	37%
35-44	28%	24%	26%
45-54	18%	24%	20%
55-64	4%	8%	6%
65+	6%	4%	6%
Total by Gender	62%	38%	-

Table 3: Instagram followers by age range and gender. A large portion of the Coalition's Instagram audience is made up of women from age 25-44.

The Coalition's move in 2019-2020 to consolidate Instagram handles and grow its audience has had tangible effects on the diversity of demographics reached. The Instagram audience is dominated by people ages 25-34. 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:** 9
- **Videos added:** 5
- **Watch time (hours):** 28.5
- **Views:** 225

In 2019, the River Starts Here created a YouTube account for the Student Video Contest. During this fiscal year, the channel saw a modest increase in views and subscribers. The People's Choice Award voting for the student video contest occurred in July 2020. The annual report for the next fiscal year will capture the large increase in YouTube audience.

FY 2019-20 BUDGET

Category	Services	Investment
Event sponsorship and promotion		
Big Float	2019 Big Float Sponsorship	$3,000
Materials		
Mailers	Environmental Paper and Print – Student video contest mailer	$424
Mailers	Student video contest mailer	$120
Stickers	1000 The River Starts Here stickers	$510
Banner	Streamside forest banner	$125
Banner	Watershed village banner	$100
Advertisement		
Facebook	Facebook digital advertisements	$3,503
Coordination support		
EnviroIssues	Meeting facilitation and member coordination, website maintenance, social media authoring	$18,000
	TOTAL	$25,782

Table 3: FY 2019-20 expenditures

OBSERVATIONS

The following observations are based on the results of FY 2019-20 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 19-20 efforts consisted of the Coalition continuing to use online social media advertising, contracting with EnviroIssues to assist with increasing social media post frequency and meeting coordination and data analytics, building a YouTube page and creating thematic playlists and switching Coalition meetings to digital. As noted in the advertising review section, The Coalition's digital strategies were effective.

The Student Video Contest **outreach through schools proved challenging**, as only two teachers responded to the video contest by involving their students resulting in about 20 submissions. To compensate, the Coalition extended the deadline and purchased Instagram advertising that was geotargeted to the region's young people which resulted in a total of 46 entries. This **digital outreach strategy was successful**. The group noted that given the amount of time it took to receive, organize and upload the videos, review them for accuracy and score them, having many more entries would be incredibly time intensive. As such, the outreach strategy will not be much altered. The group is very pleased with the quality of the videos submitted and the enthusiasm shown by the engaged young people and will continue this approach to engage the next generation of adults in addition to the adult population already engaged via Facebook and Twitter. The Coalition will continue to focus on Instagram and YouTube content targeted to reach young people.

Next fiscal year, the Coalition will conduct a **three-fold student outreach strategy** through school mailers, Instagram 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 will now be able to use student videos from the 2019-2020 competition as collateral for social media ads and posts.

Appendix D

TMDL Implementation Plan Annual Report

City of Oregon City

Willamette River TMDL Implementation Plan

Annual Progress Report

Year 5

November 1, 2020

Introduction

The City of Oregon City (City) submitted its first Willamette River Total Maximum Daily Load Implementation Plan (TMDL Plan) to the Oregon Department of Environmental Quality (DEQ) on March 31, 2008. Comments from DEQ were received and addressed by the City, and DEQ approved the City's TMDL Plan in May 2009. On March 10, 2014 DEQ requested an update to the City's TMDL Plan which the City provided on May 30, 2014. In 2018 DEQ called for the 5 Year Review in the 2014 Plan's fourth year of implementation. The five-year review took the place of the 2017-2018 annual report and was submitted October 17, 2018.

The July 1, 2019 – June 30, 2020 reporting year is the sixth year of implementation for the 2014 TMDL Plan. This annual report provides a summary of the City's efforts during this reporting year. DEQ provided comments on the City's 2019 draft TMDL Plan in July 2020. The City submitted a revised draft TMDL Plan to DEQ in August 2020 and received DEQ's approval on August 23, 2020. The new 2020 TMDL Plan is the effective TMDL Plan for the 2020-2021 reporting year.

Background

The City's TMDL Plan identifies and describes management strategies that the City will implement to address nonpoint sources of pollution generated in the Clackamas and Middle Willamette River subbasins in the Willamette River watershed. The TMDL parameters of concern for these subbasins include temperature, bacteria, and mercury.

Management strategies for bacteria and mercury are summarized in the TMDL Plan, but compliance with the TMDL for these parameters is covered by the City's National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) Stormwater Permit (NPDES MS4 Permit). DEQ includes requirements within the City's NPDES MS4 permit as they pertain to TMDL pollutants associated with point sources of stormwater runoff. The NPDES MS4 permit requires best management practices (BMPs) to be applied to address sources of pollution in stormwater runoff. The NPDES MS4 permit also requires Oregon City to develop TMDL pollutant load reduction benchmarks to show progress towards meeting TMDL wasteload allocations. Finally, the NPDES MS4 permit requires adaptive management to ensure that stormwater programs are expanded and refined over time to ensure continued progress towards meeting wasteload allocations. The City was reissued their NPDES MS4 permit on March 16, 2012. The City's effective (2012) Stormwater Management Plan (SWMP) outlines BMPs to comply with the reissued permit

and address bacteria and mercury.

Stormwater runoff in the Willamette Valley is not considered a problem with respect to temperature, and therefore, temperature is not addressed under City's NPDES MS4 permit. Management strategies for temperature were developed and identified in the TMDL Plan. Historically, riparian vegetation removal and channel modifications result in reduced baseflow, reduced stream shade, and increased instream temperatures. As part of the first TMDL Plan, a Geographic Information System-based evaluation of the City's stream corridors was conducted to evaluate existing shade conditions and identify opportunities for riparian vegetation enhancement. Strategies to address temperature were identified, and a timeline and schedule for implementation were provided in the first TMDL Plan.

Implementation Status

The City's NPDES MS4 permit addresses the Willamette River TMDL requirements for bacteria and mercury. Progress towards implementing BMPs to address bacteria and mercury are summarized in Appendix A of this 2019−2020 NPDES MS4 Annual Report and TMDL Implementation Annual Report.

As required by Schedule D.3.b of the NPDES MS4 permit, Oregon City submitted a TMDL Wasteload Allocation Attainment Assessment (WLAAA) on October 29, 2015. Four hypothetical BMP scenarios were evaluated to determine what types of BMPs and coverage levels would be needed to achieve the established TMDL wasteload allocations for bacteria (E. coli). A financial analysis of the cost to construct and maintain these BMPs was included in the evaluation.

Results from the WLAAA indicate that achievement of the waste load allocation for E. coli is not practical or feasible with current structural stormwater treatment BMPs given the City's practical and physical constraints and current fiscal abilities. The City continues its work towards reducing pollutant loads and hydromodification impacts by looking for opportunities for new water quality facilities, incorporating treatment measures into transportation and road improvement projects whenever feasible, and investigating retrofit opportunities on City-owned properties.

The City's progress towards implementing strategies to address temperature is summarized in Table D-1 of this annual report. Such strategies include public education and outreach activities, implementation of development standards to promote infiltration, and shade preservation and planting activities. As described in the TMDL Plan, the City had committed to contributing $5,000 per year for the duration of the Plan (2014 – 2019) of TMDL implementation to enhance riparian vegetation. The City continues to contribute $5,000 while in administrative extension. Table D-1 lists how this commitment has been addressed during the 2019 – 2020 reporting period. In 2018 the City entered a contract with Greater Oregon City Watershed Council (GOCWC) to pursue shade planting opportunities outside of Oregon City's jurisdictional boundaries. The City has committed and additional $5,000 annually towards the partnership with GOCWC.

Table D-1
City of Oregon City TMDL Implementation Plan Progress Report 2019 – 2020
Summary of Strategies to Address Temperature

Best Management Practice or Activity	Responsible Division	Commitment/ Implementation Strategy *What will be done in the next five years*	Measurable Goal *Specific ways to implement strategy (Fiscal analysis as needed)*	Performance Measure *How implementation will be demonstrated*	Timeline *When goal will be achieved*	Milestone *Intermediate indicators of progress*	Status *Progress update for reporting period (Gap analysis discussion as needed)*
Public Education	Oregon City Public Works (OCPW)	Attend regularly scheduled coordination meetings with the Greater Oregon City Watershed Council (GOCWC).	Attend a minimum of one meeting during the implementation period.	Track meetings attended.	Ongoing throughout the cycle.	Receive and review draft meeting agendas.	OCPW Water Quality staff attended seven GOCWC meetings during the 2019-2020 reporting period.
		Include articles regarding temperature-related issues and shade planting projected in the City newsletter and through direct mailings.	Ensure a minimum of one temperature-related piece of educational material during the implementation period.	Record temperature-related educational materials.	Ongoing throughout the cycle.	Ensure temperature-related article for spring Trail News.	Temperature-related articles were disseminated by OCPW in the following: • Autumn 2019 Trail News • 2020 Annual Water Quality Report See Appendix C of the City's 2019-2020 NPDES MS4 Annual Report for specific details.
Implement Stormwater Design Standards	OCPW	Implement provisions of Chapters 13 and 17 of the City's development code, which includes provisions for use of infiltration-based stormwater treatment systems and tree planting.	Update design standards to include LID and additional infiltration-based guidelines for stormwater treatment during the implementation period.	Track modifications to the City's development standards related to use of LID and BMPs for new and redevelopment.	Ongoing throughout the cycle.	N/A	As reported in the 2014-2015 Progress Report, the City's Municipal Code Chapter 13.12 Stormwater Management, the *Stormwater and Grading Design Standards* manual, and the *Erosion and Sediment Control Standards* manual were updated. The City has been working on small modifications to the existing standards, but no modifications were adopted during this reporting period.
Preservation of Existing Shade	Planning and OCPW	Continue to enforce regulations pertaining to the protection of riparian vegetation and buffer areas.	Continue to implement Chapter 17.49 of the City's development code to address Title 3 and Title 13.	Track any enforcement actions taken to protect existing shade.	Ongoing throughout the cycle.	N/A	Three enforcement actions taken. 21 NROD (Chapter 17.49) applications processed: • Five (5) Type II-III Natural Resource Overlay District (NROD) applications requiring impact analysis and mitigation • Three (3) Type II exemptions/verifications • Thirteen (13) Type I NROD exemptions/verifications

Table D-1
City of Oregon City TMDL Implementation Plan Progress Report 2019 – 2020
Summary of Strategies to Address Temperature

Best Management Practice or Activity	**Responsible Division**	**Commitment/ Implementation Strategy** *What will be done in the next five years*	**Measurable Goal** *Specific ways to implement strategy (Fiscal analysis as needed)*	**Performance Measure** *How implementation will be demonstrated*	**Timeline** *When goal will be achieved*	**Milestone** *Intermediate indicators of progress*	**Status** *Progress update for reporting period (Gap analysis discussion as needed)*
Planting Activities for Identified Shade Opportunity Areas	OCPW	Conduct planting, plant maintenance, and supplemental irrigation activities for the identified shade opportunity areas.	Utilize annual committed funds towards shading and planting activities for identified opportunity areas. *($5,000 allocated annually for planting activities.)*	Track ground truthing activities to refine priority opportunity areas.	Public priority areas by June 2015.	Recruit intern for ground truthing activities.	As reported in the 2014-2015 Progress Report, an intern was hired (7/7/14 – 9/24/14) for ground truthing activities. No intern was recruited during the 2019-2020 reporting period.
				Track planting activities for public, high priority areas.	Ongoing throughout the cycle.	Review priority list annually by December 1st; select next area for planting.	No high priority areas were planted during this reporting period.
				Track planting activities for other identified shade opportunity areas.	Ongoing throughout the cycle.	Review as planting opportunities arise.	In partnership with GOCWC, the following low priority sites were cleared of invasive species, prepared for plantings and planted in Spring 2020 • 17033 S Holly Lane • 17082 S Holly Lane • 17033 S Anchor Way The following stream enhancement project was completed at part of a hazard tree removal project behind 379 Barker Ave. • 2 Douglas Fir • 2 Western Red Cedar • 3 Big Leaf Maple • Total Cost ($820)
				Track any re-vegetation and maintenance activities required.	Ongoing throughout the cycle.	Evaluate need for re-planting annually by June 30th.	All 85 stormwater quality facilities and 27 swales or 35,009 sq.ft. of swales were evaluated for re-planting within the designated time frame. Re-vegetation and Maintenance Activities: Planted 20 trees ($622 each).