City of Newberg TMDL Implementation Plan

Annual Report Covering 2020 Activities

Submitted: February 10, 2021

Table of Contents

Tables

ACRONYMS

ACWA - Association of Clean Water Agencies

ASCE - American Society of Civil Engineers

AWWA - American Water Works Association

BMP - Best Management Practice

CESCL - Certified Sediment and Erosion Control Lead

CRRC - Citizen's Rate Review Committee

City - City municipal staff of Newberg, Oregon

DEQ - Oregon Department of Environmental Quality

ESC - Erosion and Sediment Control

EWRI - Environmental and Water Resources Institute

FOG - Fats, Oil, and Grease

GIS – Geographic Information System

GFU - George Fox University

GYWC - Greater Yamhill Watershed Council

IDDE - Illicit Discharge Detection and Elimination

MS4 – Municipal Separate Stormwater Sewer System

NORP - Northwest Oregon Restoration Partnership

NPDES – National Pollutant Discharge Elimination System

O&M- Operations and Maintenance

PW - Public Works

TMDL - Total Maximum Daily Load

YCSW - Yamhill County Solid Waste

Executive Summary

The City of Newberg entered its third year of the 2018-2022 Total Maximum Daily Load (TMDL) cycle in January 2020, which covers TMDL activities completed in calendar year 2020. Many public agencies had to adjust and adapt this year due to the COVID-19 pandemic and the summer wildfires (the Chehalem Mountain-Bald Peak Fire was just north of Newberg city limits), the City of Newberg was no different. Progress was certainly made on our plan goals this year, but some activities as noted were not accomplished or delayed due to safety concerns for staff members and/or availability of resources. The 2018-2022 TMDL Matrix can be seen in Appendix A. The matrix consists of the following seven focus areas:

- Public Education
- Public Involvement
- Illicit Discharge Detection and Elimination (IDDE)
- Construction Site Stormwater Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention in Municipal Operations
- Temperature

The first six focus areas are generally aligned with typical MS4 NPDES requirements, and the seventh focus area addresses stream temperature. Each area of focus has associated best management practices, strategies, and measurable goals. This 2020 annual report documents progress made toward achieving the measurable goals.

The TMDL Matrix which can be found in Appendix A has all of the best management practices, strategies, and measurable goals and each measurable goal has an associated 2020 status. The following status options and definitions can be seen below:

- "**Completed**" is used as a status update when a particular measurable goal has been completed and there are no ongoing activities associated with the measurable goal
- "**Ongoing**" is used as a status update when a particular measurable goal has been completed each year via continuing ongoing activities
- "**Incomplete, But Started**" is used as a status update when progress has been made on a measurable goal, but it has not yet moved into a "completed" or "ongoing" status
- "**Not Started**" is used as a status update when no work for a measurable goal has been started
- "**Delayed**" is used as a status update when a measurable goal hasn't been completed, and some but very minimal progress has been made on the goal. This may in some instances be related to available staffing or other resources

2020 TMDL Matrix Summary

The City has a total of 54 measurable goals identified in the TMDL Matrix. At the end of 2020 the status for those goals is as follows: Complete (5), Ongoing (42), Incomplete, But Started (4), Not Started (3), and Delayed (0). Details about each measurable goal can be found throughout the document.

Measure No. 1 – Public Education

The Public Education measure has two best management practices which include Stormwater Education and Watershed Education, which are comprised of five (5) strategies and seven (7) measurable goals which are listed below and a status summary can be found in Appendix A:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Measure No. 1 – Public Education			
PE-1 Stormwater Education	Website Education	Provide stormwater information on the City's website.	Provide general stormwater information and website links to the annual TMDL Implementation Plan.
	Citizen Group Education	Present stormwater information to interested citizen groups at local venues.	Track number of presentations, presentation messages, and number of participants (if available).
	Water Quality Report	Provide stormwater education in the City's annual Water Quality Report.	Provide website links to the annual Water Quality Report, and track stormwater messages included in the report.
PE-2 Watershed Education	Public Signage	Develop public infrastructure signage program.	Develop public infrastructure signage program to determine sign locations and messaging.
		Provide signage at stream crossings or LIDA infrastructure facilities.	Track number of signs installed and associated messages.
		Mark 50 unmarked catch basins a year with "No Dumping, Drains to Stream" type language.	Track number of catch basins marked per year. Prepare GIS map showing coverage of locations that are permanently marked or marked with after-market plastic labels.
	Student Education	Provide watershed education to students.	Track number of presentations, presentation messages, and number of participants (if available).

2020 TMDL Activities Completed

Activities completed in 2020 for each measurable goal are described below.

PE-1 Stormwater Education (Ongoing)

The Stormwater Education best management practice consists of three strategies; Website Education, Citizen Group Education, and the Water Quality Report.

Website Education (Ongoing)

The City has 13 web pages related to stormwater covering information on erosion and sedimentation control, riparian vegetation, water quality, illicit discharge, public works standards, and the Total Maximum Daily Load (TMDL) program. Some clean-up of the

City's TMDL related webpages was done in 2020, to consolidate information to 13 webpages versus the 16 webpages from last year. The City will be working with a consultant in 2021 to revamp the City's entire website and it is anticipated that more consolidation of information could occur in 2021.

The City posted on social media via the City of Newberg and Public Works Department Facebook pages 23 times about stormwater activities including the catch basin cleaning, illicit discharge, compost, waste management hazardous materials collections, the drug takeback program, native plant sales, the rate review committee, and volunteer events. This number was reduced compared to 2019 due to the need to focus public messaging on both COVID-19 and the Chehalem Mountain-Bald Peak Fire.

The annual TMDL report is uploaded each year to the City's website after receiving and incorporating comments from DEQ.

Citizen Group Education (Ongoing)

Due to COVID-19 the Leadership Newberg program was postponed in 2020, as such there were limited opportunities for Citizen Group Education opportunities.

A public messaging video called "Where does your stormwater go?" was released in October 2020, about the City's watershed and stormwater to help educate residents about their role in protecting the watershed. You can find the video on the City's YouTube channel here, https://youtu.be/SfkId_T6Thg.

A presentation was also given to City Council on October 5, 2020, which gave an overview of the City's history with stormwater management, today's stormwater requirements, and challenges that development can encounter when implementing those requirements. The presentation was well received and served as a primer to the Stormwater Master Plan update for many of the newer Councilors.

The City's Public Works Day was not held in 2020 due to the COVID-19 pandemic.

Water Quality Report (Ongoing)

The Environmental Protection Agency (EPA) and the State of Oregon require the City of Newberg to distribute a Water Quality Report each year to all residences/customers. The majority of information in the report is required by the EPA and the report is mailed to residents/customers by June 30th each year. The 2019 Water Quality Report was mailed out in June 2020 and can be found on the City's website here: https://www.newbergoregon.gov/operations/page/water-quality-report

The report included the following TMDL related messages:

- Watershed Volunteer opportunities (PE-1 Citizen Group Education)
- Watershed Education (PE-1 Citizen Group Education)
- City's Watershed Grant (PI-2 Public Participation in Stormwater Management)

- Illicit Discharge (Measure No. 3 – Illicit Discharge Detection and Elimination)
- Citizen Rate Review Committee (PI-1 Stormwater Utility Fee)

PE-2 Watershed Education (Ongoing/Incomplete, But Started/Not Started)

The Watershed Education best management practice consists of two strategies; Public Signage and Student Education.

Public Signage (Ongoing/Incomplete, But Started/Not Started)

The Public Signage strategy consists of three measureable goals.

Develop a Public Infrastructure Signage Program (Incomplete, But Started)

Development of a Public Infrastructure Signage Program for the City's watershed/stormwater system was started in 2020 and significant progress was made in developing preliminary sign layouts, determining sign messaging, and sizing. Unfortunately due to staffing constraints, the work was not finished in 2020, and an Adaptive Management date of December 2021 is being set to complete the work.

Provide Signage at Stream Crossings or LIDA Infrastructure Facilities (Not Started)

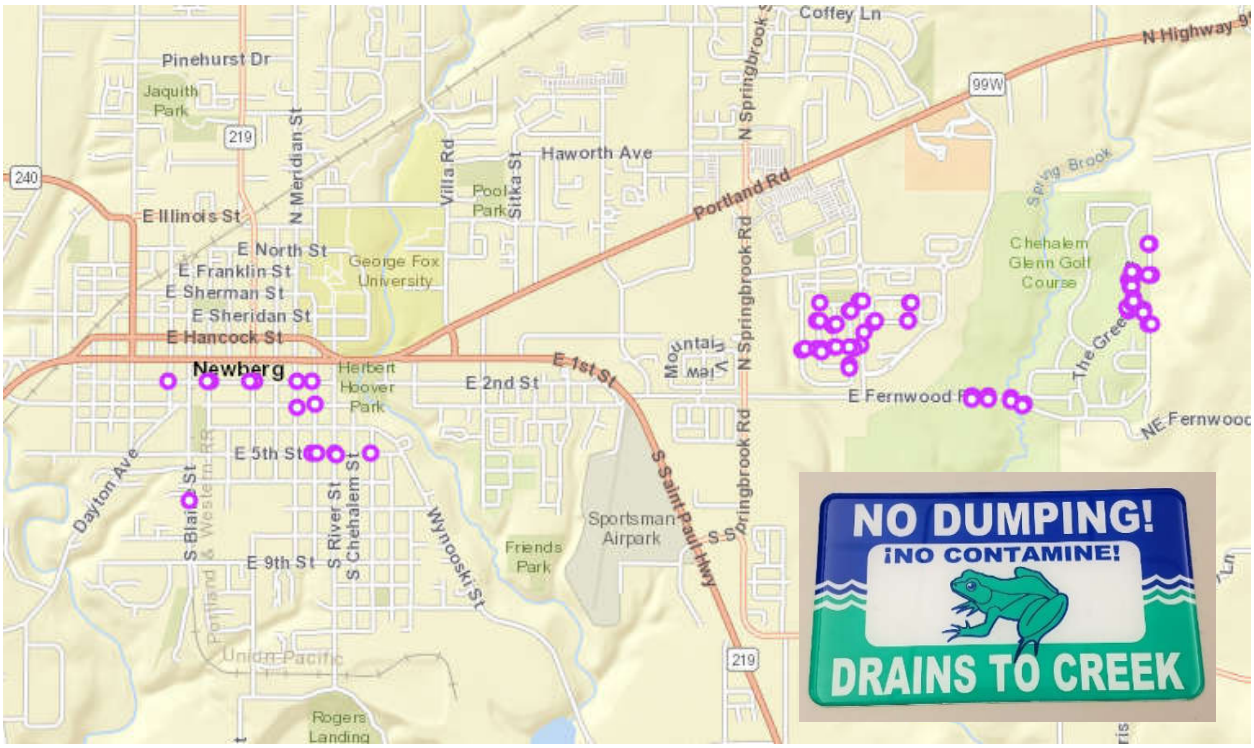
This work has not yet been started, the expected implementation timeline is December 2022.

Marking 50 Unmarked Catch Basins a Year with "No Dumping, Drains to Stream" Language (Ongoing)

The City installed 71 bi-lingual "No Dumping, Drains to Creek" catch basin markers throughout 2020. This year the City finished marking catch basins in The Greens neighborhood near the Chehalem Glenn Golf Course on the eastern edge of the City, catch basins in the downtown were marked near the Farmers Market located at S College Street and E Second Street, and catch basins in the neighborhood near Glady's Park were marked.

Figure 1 shows a screen capture from Cartegraph OMS showing the location of the "No Dumping, Drains to Creek" markers installed in 2020, seen in purple. Being able to track where catch basins have been marked around the City will help us to better target high risk areas and work to get full coverage across Newberg.

Figure 1: "No Dumping, Drains to Creek" markers installed in 2020



Student Education (Ongoing)

The City of Newberg has been working with a student led organization called Chehalem Valley Watershed Project (CVWP), which is comprised of students from Newberg High School.[1] The focus of this organization is to encourage high school students to learn about the environment through hands-on research, restoration work, and outreach events. Due to the COVID19 pandemic, no formal student education presentations occurred with the CVWP/Newberg High School in 2020.

However, the City of Newberg did provide a letter of support for the Newberg Environmental Education Continuum in coordination with the CVWP to the Newberg Public Schools Board of Directors. Based on the proposal the CVWP/Newberg Environmental Education Continuum would work in coordination with the City's TMDL Plan program to help the City make progress on some of our best management practices. The presentation to the Newberg Public Schools Board of Directors occurred in February 2020.

The CVWP also supported the City of Newberg via collaborative social media posts about the City's educational surveys sent out in July 2020 as part of best management practice PI-4.

[1] Chehalem Valley Watershed Project https://sites.google.com/view/cvwp/home

The City of Newberg does have a capital improvement project occurring near the Newberg High School in 2021/2022 and coordination with the CVWP/Newberg High School is expected to continue.

2020 Adaptive Management

The City of Newberg is modifying the completion date for the measureable goal listed under best management practice PE-2 Develop a Public Infrastructure Signage Program from December 2020 to December 2021. As noted, significant progress was made on this goal, however due to staffing constraints it was not finished in December of 2020.

Looking Ahead - 2021 Activities

Under Measure No. 1, there is one measurable goal with a completion date in 2021 due to the proposed Adaptive Management schedule for the Public Infrastructure Signage Program.

The remaining five of the seven measureable goals have a status of “ongoing” which means progress is made toward the goal each year via recurring activities.

Measure No. 2 – Public Involvement

The Public Involvement measure has four best management practices which include reviewing the Stormwater Utility Fee, Public Participation in Stormwater Management, Public Participation in Reporting Stormwater Issues, and Public Participation in Educational Focus. These four best management practices are comprised of four (4) strategies and five (5) measurable goals which are listed below and a status summary can be found in Appendix A:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Measure No. 2 – Public Involvement			
PI-1 Stormwater Utility Fee	Participate in Citizen Rate Review Committee (CRRC) Meetings	Present stormwater funding needs to CRRC.	Document meeting attendance, adopted rates, and effective dates of rate changes.
PI-2 Public Participation in Stormwater Management	Provide Grant Funding for Water Quality Improvement or Watershed Awareness Projects	Provide a minimum of $2,000 in a grant program to fund non-profit projects that fulfill goals of the TMDL plan.	Track number of funded projects, amount disbursed per project, stream affected, and either the number of stream miles affected or the number of participants.
PI-3 Public Participation in Reporting Stormwater Issues	Public Participation in Stormwater, Illicit Discharge, and Erosion Control Issues	Provide methods for citizens to report concerns during and after business hours. Notify public of available reporting methods.	Document methods and frequency of public notifications.
		Respond to public concerns.	Document number of stormwater, erosion control, and illicit discharge complaints reported by citizens and note resolutions.
PI-4 Public Participation in Determining Stormwater Educational Focus	Determine Focus of Stormwater Educational Messages to the Public	Conduct a public survey to revise and refine educational messages related to stormwater and the TMDL Implementation Plan.	Provide copy or link to survey and report results of the survey.

2020 TMDL Activities Completed

Activities completed in 2020 for each measurable goal are described below.

PI-1 Stormwater Utility Fee (Ongoing)

The Citizen's Rate Review Committee (CRRC) was started in 1992 and consists of volunteers from the public who meet every two years to review utility rates proposed by staff. After a discussion with the committee, the rates are presented by staff to the City Council for approval. The stormwater rate meeting to discuss rate increases was held on November 21, 2019.

New stormwater related rates were adopted on September 21, 2020 and can be seen below in Table 1. Typically rates are adopted in April, however due to the COVID19 pandemic City Council decided to delay the adoption of rate increases until more was known about the impacts of the COVID19 pandemic on the economy. Ultimately the recommended rates were adopted which include a 9% stormwater rate increase in 2021 and 2022.

Table 1: Stormwater Utility Fee adopted September 21, 2020

Municipal Services Statement Fees – Stormwater Service Charges	
Service Charge ($/month)	$13.34*
Storm System Development Fee* **	
Single Family – Equivalent Dwelling Unit (EDU)	$387.87 flat fee**
Other than Single Family	(Impervious Area/2877) x $387.87

*Rate effective January 1, 2021.

**Rate effective April 1, 2020.

***Revenues are used to maintain the City's Stormwater System. This fee is collected for each new development that connects to or otherwise uses the City's stormwater system and is determined by the square feet of impervious area. Impervious surface is the hard surface area which either prevents or retards entry of water into the soil mantel and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions. Impervious surface areas include, but are not limited to, rooftops, concrete or asphalt paving, walkways, patios, driveways, parking lots or storage areas and trafficked gravel or other surfaces which impede the natural infiltration or runoff of surface water. An equivalent dwelling unit (EDU) is equal to 2,877 square feet of impervious area.

PI-2 Public Participation in Stormwater Management (Ongoing)

The City is in the process of revising the grant forms and selection criteria and will be making an effort in 2021 to do more public outreach about the Watershed Grant Program. We did not have any participation in the grant program in 2020.

PI-3 Public Participation in Reporting Stormwater Issues (Ongoing)

The Public Participation in Reporting Stormwater Issues best management practice consists of two measureable goals.

Provide Methods for Citizens to Report Stormwater Concerns (Ongoing)

In 2020, the City used its website to provide a phone number for the public to call about stormwater issues/concerns which are then logged in Cartegraph OMS, the City's asset management program, by the Maintenance Division. The City rolled out a mobile app service in 2020 called SeeClickFix which provides residents another way to report TMDL

related issues around town. SeeClickFix is integrated with Cartegraph OMS for better data management.

Respond to Public Concerns (Ongoing)

The City categorizes public concerns into four main categories which include illicit discharge, erosion control, flooding, and illegal dumping. Totals for each type of concern received in 2020 can be found in Table 2 and are inclusive of concerns received by both the maintenance division and code enforcement. More information concerning incident resolution for illicit discharge concerns can be found in Appendix B. Once a concern is logged, City staff works to keep that resident informed about the issue resolution.

Table 2: Stormwater Concerns Received from the Public

Types of Concerns	Number of Concerns Received					Total
	2018	2019	2020	2021	2022	
Illicit Discharge	1	8	7	-	-	16
Erosion Control	1	0	0	-	-	1
Flooding	7	1	6	-	-	14
Illegal Dumping	0	2	4	-	-	6

PI-4 Public Participation in Determining Stormwater Educational Focus (Completed)

This best management practice was completed in July 2020. The City posted two separate surveys with the first called “Test Your Knowledge” and the second called “How do You Interact with Newberg’s Watersheds and Waterways?” These surveys were used to help focus our educational messaging which will be feeding into our watershed/stormwater signage program. The first survey received 21 responses and helped the City identify education gaps that citizens have about our watershed. As an example, roughly 30% of respondents thought water going into storm drains is treated at the Wastewater Treatment Plant before being discharged into our creeks. The second survey received 18 responses and has really helped the City understand where and how often people interact with our waterways and what they perceive as the condition of those facilities.

2020 Adaptive Management

The City of Newberg is not proposing to modify any measurable goals through adaptive management.

Looking Ahead - 2021 Activities

Under Measure No. 2, there are no measurable goals with completion dates in 2021. One goal has been completed, and the remaining four of the five measureable goals have a status of "ongoing" which means progress is made toward the goal each year via recurring activities.

Measure No. 3 – Illicit Discharge Detection and Elimination (IDDE)

The Illicit Discharge Detection and Elimination measure has four best management practices which include Training Staff to Implement IDDE, Implementation of the IDDE Plan, Hazardous Waste Collection, and the Drug Take-Back Program which are comprised of six (6) strategies and nine (9) measurable goals which are listed below and a status summary can be found in Appendix A:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Measure No. 3 – Illicit Discharge Detection and Elimination (IDDE)			
ID-1 Train Staff to Implement IDDE Plan	Train Staff in Illicit Discharge Investigation and Spill Response	Train new staff members in illicit discharge investigation and spill response. Provide training in some aspect of illicit discharge investigation and spill response every five years for all applicable staff.	Track type of training (webcast, class, certification, on-the-job, etc.), number of employees trained, and the training subject (maintenance, response, investigation, sampling, etc.).
ID-2 Implement IDDE Plan	Conduct Illicit Discharge Inspections	Fieldscreen outfalls.	Inventory type, size, and location of public and private outfalls. Map existing and new development outfall locations in GIS.
		Investigate outfalls for illicit discharges.	Document location, number and types of samples taken, date, cause, and resolution.
	Respond to Illegal Dumps	Clean up illegal dumps.	Track number of illegal dumps, citations issued, and resolution.
	Respond to Illicit Discharges/Spills	Fire Department spill response.	Track date and cause of spills that occur. Document whether the spill reached the stormwater system or a stream and if water sampling was conducted. Document response resolution.
		Public Works illicit discharge/spill response.	Track date and cause of illicit discharges/spills that occur, identified illicit discharges from private wastewater laterals or from failing public infrastructure. Document whether the pollutant reached the stormwater system or a stream and if water sampling was conducted. Document response resolution.
		Provide spill response cards and spill response kits on municipal trucks and sweepers.	Track number of municipal trucks and sweepers with spill response cards and spill kits. Document the number of spill kits used annually in response to spills.
ID-3 Hazardous Waste Collection	Provide Opportunity for Residents to Dispose of Hazardous Waste	Offer free hazardous waste collection service twice per year to City residents.	Track volume of waste received during collection events.

ID-4 Drug Take-Back Collection	Provide Opportunity for Residents to Dispose of Unused Medication	Offer free unused medication collection service to City residents.	Track the volume of unused medication collected annually.

2020 TMDL Activities Completed

Activities completed in 2020 for each measurable goal are described below.

ID-1 Train Staff in Illicit Discharge Investigation and Spill Response (Ongoing)

Public Works Maintenance staff members are reminded of the appropriate response to spills and illicit discharges throughout the year as part of regular staff meetings. As noted in Table 2 and Appendix B, seven illicit discharges were reported and responded to in 2020.

ID-2 Implement IDDE Plan (Ongoing)

The Implementation of the IDDE Plan consists of three strategies and six measurable goals.

Conduct Illicit Discharge Inspections (Ongoing)

The strategy for conducting illicit discharge inspections consists of two measurable goals.

Fieldscreen Outfalls (Ongoing)

The City screens outfalls during stormwater system maintenance and stream assessments. As maintenance performs work throughout the system, requests are made to the GIS department to update asset mapping.

Investigate Outfalls for Illicit Discharges (Ongoing)

There were no events in 2020 that warranted samples being taken at an outfall location as a result of a known or suspected illicit discharge.

As part of the City's Stormwater Credit Program, one participant does perform its own sample testing at discharge locations. These records are kept by the applicant and they coordinate directly with DEQ to meet requirements of their 1200-Z permit.

Respond to Illegal Dumps (Ongoing)

The City of Newberg had four reported illegal dumps occur in 2020. One case was of a dumped couch found on the side of the street. Another case was where a renter moved out and left a bunch of debris in the public right-of-way. The two cases involved glass and debris dumped in public alleys or the street. In all cases the dumped debris was picked up and was removed and disposed of properly.

Respond to Illicit Discharges/Spills (Ongoing)

The strategy for responding to illicit discharges/spills consists of three measurable goals.

Fire Department Spill Response (Ongoing)

The Fire Department, Tualatin Valley Fire & Rescue (TVF&R) responded to one (1) "spill" incidents in 2020 related to a motor vehicle crash. The spill was contained and oils/petroleum were prevented from entering storm drains.

Public Works Illicit Discharge/Spill Response (Ongoing)

Public Works Maintenance Division provided clean up response to one illicit discharge/spill within the City in 2020 which is noted in Appendix B.

Spill Response Cards/Kits on Municipal Trucks and Sweepers (Ongoing)

The City of Newberg has PIG® Truck Spill Kits available on ten (10) public works vehicles. Maintenance staff are made aware of these spill kits and the associated instruction manual.

ID-3 Hazardous Waste Collection (Ongoing)

Yamhill County Solid Waste (YCSW) continues to sponsor hazardous waste collection events for Newberg in May and for McMinnville in October. However, this year due to the evolving COVID-19 Pandemic, the Newberg event in May was cancelled. Both events are open to all Yamhill County residents and it is an opportunity for residents to safely dispose of hazardous items for free, higher collection numbers were recorded at the McMinnville event that occurred in October. Additionally, it should be noted that medication will no longer be collected at these events because by July 2021, all pharmacies in Oregon will be required to have their own take back programs. Annual totals from the hazardous waste collection events can be seen in Table 3.

Table 3: Yamhill County Solid Waste: Hazardous Waste Collection Events Summary

Year	City of Newberg Event (May)			City of McMinnville Event (October)		
	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)
2018	32,697	22,500	36.3	31,679	9,500	480
2019	40,334	22,500	167.5	37,449	22,250	230
2020	0*	0*	0*	39,245	33,050	0**
2021	-	-	0**	-	-	0**
2022	-	-	0**	-	-	0**
Total	73,031	45,000	203.8**	69,128	31,750	710**

*Event did not occur due to the COVID-19 pandemic.
**Medications will no longer be collected at these events. Starting in July 2021, all pharmacies in Oregon will be required to have their own take back programs.

ID-4 Drug Take-Back Collection (Ongoing)

The City of Newberg has a Medication Disposal Site which is located inside the lobby of the City's Public Safety Building. The safe drop box is for the public to dispose of unneeded or expired medications. Over the counter and pet medications are also accepted at the drop box location. Medications collected are incinerated so they do not end up in the garbage or flushed down the drain, avoiding contamination of soil and drinking water.

This year due to the evolving COVID-19 Pandemic, the lobby where the drug collection bin is located had to be closed to the public for several months and could not be relocated to due restricts on the bin placement. The amount collected in 2020 is down considerably compared to previous years. Annual totals from the Medication Take-Back Program can be seen in Table 4.

.

Table 4: City of Newberg Medication Take-Back Program Summary

Year	Medication Collected (pounds)
2018	887.5
2019	887.2
2020	568.2
2021	-
2022	-
Total	1774.7

2020 Adaptive Management

The City of Newberg is not proposing to modify any measurable goals through adaptive management.

Looking Ahead - 2021 Activities

Under Measure No. 3, there are no measurable goals with completion dates in 2021. All nine measureable goals have a status of "ongoing" which means progress is made toward the goal each year via recurring activities.

Measure No. 4 – Construction Site Stormwater Runoff Control

The Construction Site Stormwater Runoff Control measure has two best management practices which include Training Staff in Erosion and Sedimentation Control (ESC) and Implementation of the Erosion and Sediment Control Program which are comprised of two (2) strategies and four (4) measurable goals which are listed below and a status summary can be found in Appendix A:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Measure No. 4 – Construction Site Stormwater Runoff Control			
CS-1 Train Staff in Erosion and Sediment Control (ESC)	Train Staff in Plan Review, Site Inspection, and Enforcement of ESC Program	Train new staff whose responsibilities include erosion and sediment control plan review and enforcement. Provide refresher training to all staff involved in ESC every three years.	Document number of staff trained and type of training (on-the-job training, certification, or recertification).
CS-2 Implement Erosion and Sediment Control Program	Implement ESC Program	Conduct ESC plan review.	Document location and type (commercial, industrial, single-family residential, etc.) of all construction project plan reviews. Document which project obtained a DEQ 1200-C permit. Develop and send a notice letter to applicants on wet weather best management practices as weather conditions change.
		Conduct site inspections at least once during active construction by trained or experienced staff.	Provide number of erosion and sedimentation control inspections for each project. Document location and type (commercial, industrial, single-family residential, etc.) of construction project.
		Enforce ESC ordinances.	Report number of warning letters or non-compliance citations by project and resolution.

2020 TMDL Activities Completed

Activities completed in 2020 for each measurable goal are described below.

CS-1 Train Staff in Erosion and Sediment Control (Ongoing)

Each department or division within the City is responsible for their own employee training, No specific ESC training was attended in 2020, however the topic of ESC was discussed at several staff meetings. Two Engineering Division staff members are Certified Erosion and Sedimentation Control Leads.

CS-2 Implement Erosion and Sediment Control Program (Ongoing)

The best management practice for implementing the ESC Program consists of three measureable goals.

Conduct ESC Plan Review (Ongoing)

Erosion and Sediment Control plans reviewed for major projects are listed in Appendix C. Projects exceeding 1-acre are required to obtain DEQ 1200-C permits and are noted, inspections of these permits are conducted by DEQ. The City had three construction projects in 2020 that were more than a single-family home and less than 1-acre that required City issued Erosion and Sediment Control Permits (see Appendix C). The remainder of the City issued Erosion and Sediment Control Permits in 2020, were reviewed and issued for 62 single-family residential developments.

In 2020 staff gave verbal reminders about best management practices to permit holders on the upcoming wet weather season and for specific storm events.

Conduct Site Inspections (Ongoing)

Staff reported that there were 62 single-family residential ESC permits with associated inspections in 2020 throughout the City of Newberg.

Enforce ECS Ordinances (Ongoing)

Staff reported no warning letters or non-compliance citations were issued in 2020.

2020 Adaptive Management

The City of Newberg is not proposing to modify any measurable goals through adaptive management.

Looking Ahead - 2021 Activities

Under Measure No. 4, there are no measurable goals with completion dates in 2021. All four measureable goals have a status of “ongoing” which means progress is made toward the goal each year via recurring activities.

Measure No. 5 – Post-Construction Runoff Control

The Post-Construction Runoff Control measure has three best management practices which include Develop a Stormwater Management Program, Train Staff in Stormwater Management, and Implement the Stormwater Management Program which are comprised of five (5) strategies and eight (8) measurable goals which are listed below and a status summary can be found in Appendix A:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Measure No. 5 – Post-Construction Runoff Control			
DS-1 Develop Stormwater Management Program	Update Stormwater Development Manuals and Standard Details	Update stormwater design standards manual and standard drawings. Notify development community of proposed new requirements before adoption.	Provide summary of changes and link to new design standards when adopted.
DS-2 Train Staff in Stormwater Management	Train Staff in Stormwater Management	Provide training opportunities for staff in watershed and stormwater management.	Track type of training (webcast, class, on-the-job, certification, etc.), number of employees trained, and the training subject (plan review, inspection, enforcement, etc.)
DS-3 Implement Stormwater Management Program	Require Stormwater Management for Development and Redevelopment	Require stormwater plan submittals and conduct plan reviews.	Document number of construction plan submittals, plan reviews, project type (commercial, institutional, residential, etc.), size, and location.
		Require stormwater management per the Stormwater Development Manuals and Standard Details.	Document number and type (detention basin, flow dissipater, raingarden, filtration swale, etc.) of stormwater facilities required for each project.
		Conduct pre-construction conferences to inform contractors about stormwater requirements.	Document number of pre-construction conferences, project type (commercial, institutional, residential, etc.), size, and location.
	Improve Watershed Management	Evaluate stormwater projects for treatment opportunities (new installations vs. existing infrastructure upgrades) i.e. Stormwater Master Plan.	Summarize hierarchy used for screening. Document location and number of sites reviewed, drainage area, and result of evaluation.
		Implement stormwater projects for treatment opportunities (new installations vs. existing infrastructure upgrades) i.e. Stormwater Master Plan.	Document number of projects including location, size, type (LIDA, traditional, etc.), and drainage area.
	Optimize Water Quality	Inspect public stormwater facilities post-construction.	Conduct a post-construction stormwater facility transfer. Complete final inspection at end of the two-year maintenance agreement. Document facility in GIS/asset management program, obtain and file stormwater as-built drawings, and facility maintenance plan.

2020 TMDL Activities Completed

Activities completed in 2020 for each measurable goal are described below.

DS-1 Develop Stormwater Management Program (Incomplete, But Started)

This best management practice included updates to Standard Drawings in December 2020, and updates to the Stormwater Design Standards in December 2020 (target dates). As was noted in last year's report, edits had been made to the City's standard drawings to provide more clarity where necessary based on both staff feedback and feedback from the construction community, however they were not yet adopted at the time of the report submittal. Since that time, the City has undertaken the effort to update the City's Transportation, Water, Wastewater, and Stormwater Master Plans to align with the adoption of the Riverfront Master Plan which reenvisions the City's old mill site area along the Willamette River. In order to better align these efforts, the stormwater Standard Drawing updates, updates to the Design and Construction Standards, and updates to the Stormwater Master Plan are all anticipated to occur in a coordinate effort which should be completed by December 2021. However it should be noted that the Standards Drawings and Design and Construction Standards update is independent from the Master Plan update process. As such the City is proposing Adaptive Management to adjust the completion timeline for Standard Drawing Updates to December of 2021, and for the Standard Manual Amendments to December of 2021.

DS-2 Train Staff in Stormwater Management (Ongoing)

The following stormwater related trainings were attended in 2019:

- One Engineering Division staff member attended the TMDL designated management agency (DMA) meetings to learn from other DMA coordinators throughout the Willamette basin.
- Two Engineering Division staff members attended the OSBEELS Symposium in September 2020.
- Two Engineering Division staff members attended the 2020 APWA Oregon Chapter Fall Virtual Conference.

DS-3 Implement Stormwater Management Program (Ongoing)

The best management practice Implement Stormwater Management program consists of three strategies; Require Stormwater Management for Development and Redevelopment, Improve Watershed Management, and Optimize Water Quality.

Require Stormwater Management for Development and Redevelopment (Ongoing)

The strategy Require Stormwater Management for Development and Redevelopment consists of three measurable goals.

Require Stormwater Plan Submittals and Conduct Plan Reviews (Ongoing)

The City requires that all development/redevelopment projects that create a net new impervious surface area that exceeds 500 square feet of either public or private property must treat and detain stormwater.

The projects found in Appendix D represent construction plans received and reviewed for stormwater management in regards to development and redevelopment. The project type, size, and location are noted.

Additionally the Engineering Division participated in 36 pre-application meetings in 2020 where City stormwater requirements were discussed with applicants.

Require Stormwater Management per the Stormwater Development Manuals and Standard Details (Ongoing)

Appendix D notes the number and type of stormwater facilities constructed for each project that was either completed or started in 2020. Public stormwater facilities are then added to the City's GIS system once a development's as-builts are provided to the City.

Private stormwater facilities are required to have recorded Stormwater Maintenance Agreements with the City of Newberg which provide guidance on maintenance activities into perpetuity.

Conduct pre-construction conferences to inform contractors about stormwater requirements (Ongoing)

The City typically holds pre-construction conferences for all public improvement projects, and for larger private development projects within the City. Pre-construction meetings are noted in Appendix D. The City held fourteen pre-construction meetings (ten private development meetings and four meetings for public improvement projects) for projects that were either completed or started in 2020.

Improvement Watershed Management (Ongoing/Incomplete, but Started))

The strategy Improve Watershed Management consists of two measureable goals.

Evaluate stormwater projects for new treatment opportunities (Ongoing/ Incomplete, but Started)

Each year the City establishes a 5-Year Capital Improvement Plan (CIP) that balances infrastructure needs based on a variety of sources including the Stormwater Master Plan, City Council goals, operational needs, and regulatory obligations.

The stormwater projects included in the fiscal year (FY) 2021-2022 project list include the following:

- **N Elliot Road** – There is currently no storm drainage in N Elliot Road resulting in frequent ponding alongside the roadway. This project would add an 18-inch storm pipe to the system as part of a larger roadway project.
- **N Springbrook Road** – There are existing gaps in the public storm drainage system in N Springbrook Road, improvements will be made as part of the larger street project.
- **800 Block of Wynooski Street** – Correct a current pipe and outfall that is eroding an area east of Wynooski Street.
- **Update Stormwater Master Plan** – The Riverfront Master Plan was recently adopted and will need to be incorporated into the Stormwater Master Plan, the current Stormwater Master Plan was adopted in 2014 and gets updated every five years.
- **Railroad Ditch; N College Street to N Meridian Street** – This area experiences flooding from a variety of contributing sources. This project will study the issues and develop a solution to be implemented in a future plan year.

These projects are scheduled for work to begin over the next fiscal year and are consistent with the City's stormwater infrastructure and planning needs. As projects move toward preliminary design, they will be reviewed for treatment opportunities based on the City's established stormwater facility hierarchy as noted in the Public Works Design and Construction Standards Section 4.6.8 Facility Selection Hierarchy.

As has been noted previously, the City is in the process of updating the Stormwater Master Plan as part of a larger planning effort to incorporate planning outcomes from the Riverfront Master Plan. The City anticipates completion of updates to the Stormwater Master Plan, Standard Drawings, and Design and Construction Standards by December 2021. As such, the City is proposing Adaptive Management to adjust the completion timeline for updating the Stormwater Master Plan project list from June 2020 to December 2021.

Implement stormwater projects for treatment opportunities (Ongoing/ Incomplete, but Started)

The N Elliot Road project was identified as a high priority project because it provides direct access to the high school. Areas of N Elliot Road were also identified as having drainage problems in the Stormwater Master Plan. As the roadway design develops, both new and existing stormwater will be treated and detained within the system.

The N Springbrook Road project identified in 2021/2022 is an exploratory analysis of the existing conditions to determine what steps can be taken to correct storm drainage issues in advance of a larger million dollar project in 2022/2024.

The 800 Block of Wynooski Street project was started in 2018 with the support of the George Fox University engineering program under the guidance of the City's Public Works Director. An engineering consultant was then brought on board in 2019 to finish

the design and get the package ready for bid. The Joint Permit Applicant for the work occurring in both jurisdictional waters of the state and wetland was received by the State in late-February 2020. Unfortunately, at this time this project has been placed on hold as negotiation with property owners for easement access and compensation is ongoing. The City is hopeful this project is completed during the 2021 construction season.

As has been noted previously, the City is in the process of updating the Stormwater Master Plan as part of a larger planning effort to incorporate planning outcomes from the Riverfront Master Plan. The City anticipates completion of updates to the Stormwater Master Plan, Standard Drawings, and Design and Construction Standards by December 2021. As such, the City is proposing Adaptive Management to adjust the completion timeline for updating the Stormwater Master Plan implementation plan from June 2020 to December 2021.

Optimize Water Quality (Ongoing)

The City requires a two-year maintenance agreement for all private development of public stormwater facilities. As an example, if a subdivision is built and requires a detention pond to mitigate stormwater, the development enters into a two-year maintenance agreement with the City to maintain that stormwater facility through the establishment phase. When the two year maintenance agreement is coming to an end, a final inspection is scheduled and completed to allow for the developer to correct any problems before the stormwater facility becomes the responsibility of the City.

In 2020 the following stormwater facility was transferred from the private maintenance agreements to public stormwater maintenance:

- Gracie's Landing Ph 1, 2, 3 (detention pond)
- Chehalem Ponte Apartments (4 roadside water quality swales)
- Freeman Manufacturing Building (3 roadside water quality swales)
- Hazelwood Farms (detention pond)
- Villa Road Improvements (roadside water quality swales, detention ponds, outfall)
- Old Mill Development (2 roadside water quality swales)
- CPRD Pool Expansion (1 public stormwater planter)

These facilities has been added to the City's asset management program (both GIS and Cartegraph OMS), and as-builts are available for review through an internal staff portal.

2020 Adaptive Management

The City of Newberg is modifying the completion date for the measureable goals listed under best management practice DS-1, updates to the stormwater Standard Drawings, from December 2020 to December 2021 and to the Design and Construction Standards, from December 2020 to December 2021. As noted, the Engineering Division is going through a large exercise to update portions of our Transportation, Water, Wastewater, and Stormwater Master

Plans to align with the adoption of the Riverfront Master Plan which reenvisions the City's old mill site area along the Willamette River. In order to better align these efforts, the stormwater Standard Drawing updates, updates to the Design and Construction Standards, and updates to the Stormwater Master Plan are all anticipated to occur in a coordinate effort which should be completed by December 2021. However it should be noted that the Standards Drawings and Design and Construction Standards update is independent from the Master Plan update process.

The City of Newberg is also modifying the completion date for two measureable goals listed under best management practice DS-3. As noted, the City is in the process of updating the Stormwater Master Plan as part of a larger planning effort to incorporate planning outcomes from the Riverfront Master Plan. The City anticipates completion of updates to the Stormwater Master Plan, Standard Drawings, and Design and Construction Standards by December 2021. As such, the City is proposing Adaptive Management to adjust the completion timeline for updating the Stormwater Master Plan project list and implementation plan from June 2020 to December 2021.

Looking Ahead - 2021 Activities

Under Measure No. 5 there were three measurable goals with a completion date in 2020 that did not get completed. One goal under DS-1 and two goals under DS-3. All three goals are associated with the coordinated updates to the City's Stormwater Master Plan, Standard Drawings, and Design and Construction Standards. This body of work to update these guidance documents is currently in process and is expected to be completed by December 2021. As such, we are proposing Adaptive Management to adjust the completion timeline on all three goals.

The remaining five of the eight total measureable goals have a status of "ongoing" which means progress is made toward the goal each year via recurring activities.

Measure No. 6 – Pollution Prevention in Municipal Operations

The Pollution Prevention in Municipal Operations has three best management practices which include the Operations and Maintenance (O&M) Manual, Operations and Maintenance Training, and Stormwater Infrastructure Maintenance. These three best management practices are comprised of five (5) strategies and fourteen (14) measurable goals which are listed below and a status summary can be found in Appendix A:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Measure No. 6 – Pollution Prevention in Municipal Operations			
OM-1 Operations and Maintenance (O&M) Manual	Update O&M Policies	Review existing O&M practices.	Document current procedures in an O&M manual.
		Update O&M manual to optimize water quality.	Document modifications to manual.
	Update Infrastructure Procedures	Review and evaluate the need to update the catch basin cleaning program.	Document current procedures and any modifications to optimize water quality.
		Implement revised catch basin cleaning program.	Track progress.
	Update Street Sweeping Procedures	Review and evaluate the need to update the street sweeping program.	Document current procedures and any modifications to optimize water quality
		Implement revised street sweeping program.	Track progress.
OM-2 Operations and Maintenance Training	Train staff in infrastructure and street sweeping procedures that optimize water quality	Train new staff in stormwater maintenance duties in O&M procedures manual.	Track type of training (webcast, class, certification, on-the-job, etc.), number of employees trained, and the training subject (inspections, maintenance, repair, construction, etc.)
		Train all staff in revised O&M procedures manual every three years.	Track type of training (webcast, class, certification, on-the-job, etc.), number of employees trained, and the training subject (inspections, maintenance, repair, construction, etc.)
OM-3 Stormwater Infrastructure Maintenance	Maintain stormwater infrastructure	Clean catch basins.	Track number of catch basins cleaned per year.
		Place trash racks over major inlets.	Track number and percentage of major inlets installed with trash racks.
		Inspect, clean, repair, replace, and install stormline.	Track length of stormline inspected. Document length of stormline cleaned. Document length and location of stormline repaired or replaced. Track length, diameter and location of stormline installed.

		Inspect, repair, and replace culverts.	Document location of repaired and replaced culverts and reason for repair or replacement. For newly installed culverts, document new culvert size, material, and elevation from culvert bottom to stream bottom.
		Inspect and repair public stormwater facilities.	Document number of inspections, type of facility (detention basin, LIDA facilities, vegetated swale, etc.) and whether facilities were categorized as excellent, fair, or poor condition.
		Sweep streets every 4-6 weeks.	Track curb miles swept and debris collected per curb mile each year. Document disposal method.

2020 TMDL Activities Completed

Activities completed in 2020 for each measurable goal are described below.

OM-1 Operations and Maintenance Manual (Complete/Ongoing/Incomplete, But Started/Not Started)

The Operations and Maintenance Manual best management practice consists of three strategies; Update O&M Policies, Update Infrastructure Procedures, and Update Street Sweeping Procedures.

Update O&M Policies (Completed/Not Started)

The Update O&M Policies strategy consists of two measureable goals.

Review existing O&M practices (Completed)

The City developed an Operations and Maintenance Manual in 2018 to document current maintenance procedures as they relate to stormwater. The Manual was completed in early December and sent to DEQ on December 10, 2018. The Manual covers stormwater work flow, public participation in reporting stormwater issues, stormwater inspection and cleaning, stormwater repair and replacement, illicit discharge investigation and spill response, the catch basin cleaning program, the street sweeping program, and the newly deployed operations management program called Cartegraph OMS.

Update O&M manual to optimize water quality (Not Started)

The Operations and Maintenance Manual is scheduled to be reviewed and updated every three years. The manual is scheduled for a review and update in December 2022, and this work has not yet been started.

Update Infrastructure Procedures (Completed/Ongoing)

The Update Infrastructure Procedures strategy consists of two measurable goals.

Review and evaluate the need to update the catch basin cleaning program (Completed)

As part of developing the Stormwater Operations and Maintenance Manual and the implementation of the City's new operations management program called Cartegraph OMS, the existing catch basin cleaning program was discussed. Attribute tables for catch basins inside of the Cartegraph OMS system were modified to capture the data most relevant to our maintenance division and to support reporting as part of the TMDL plan. As was noted last year, a draft catch basin cleaning program was completed in December 2019 and then due to the COVID19 pandemic progress was a bit delayed near the beginning of the year. However, the documented was finalized in August 2020.

Implement revised catch basin cleaning program (Ongoing)

The City continues to implement the existing catch basin cleaning program annually. Information regarding catch basins cleaned annually can be found in section OM-3 Stormwater Infrastructure Maintenance.

Update Street Sweeping Procedures (Completed/Ongoing)

The Update Street Sweeping Procedures strategy consists of two measurable goals.

Review and evaluate the need to update the street sweeping program (Completed)

As part of developing the 2018 Stormwater Operations and Maintenance Manual, the City documented current street sweeping practices at that time. A separate and more detailed guidance document for the Street Sweeping Program was finalized in October 2020. The 2020 Street Sweeping Program Document will be incorporated into the Stormwater Operations and Maintenance Manual as an appendix.

Implement revised street sweeping program (Ongoing)

The City continues to implement the existing street sweeping program annually. Information regarding street sweeping activities can be found in Table 7.

OM-2 Operations and Maintenance Training (Ongoing)

The Operations and Maintenance Training best management practice has one strategy which is to train staff in infrastructure and street sweeping procedures that optimize water quality. The strategy has two (2) measureable goals.

Train new staff in stormwater maintenance duties in O&M procedures manual (Ongoing)

The Maintenance Division proactively trains new employees on the day to day tasks associated with stormwater maintenance duties. Much of this training is "on-the-job" and is taught through the experience of completing tasks like cleaning catch basins or stormwater lines. Additional training was forgone in 2020 due to the COVID19 pandemic. The City of Newberg restricted travel for employees and several training opportunities were cancelled in response to the pandemic.

Train all staff in revised O&M procedures manual every three years (Ongoing)

The City developed an Operations and Maintenance Manual to document current maintenance procedures as they relate to stormwater. The Manual was completed in

December 2018 and sent to DEQ on December 10, 2018. A presentation of the manual was given to the entire Maintenance Division on March 14, 2019. Two hard copies of the manual were provided (one for each maintenance building), and all staff members were sent an email with the location of the digital copy. This presentation will then be given every three years in coordination with the manual update. The next presentation will occur in March 2022.

OM-3 Stormwater Infrastructure Maintenance (Ongoing)

The Stormwater Infrastructure Maintenance best management practice has one strategy which is to maintain stormwater infrastructure. The strategy has six (6) measurable goals.

Clean catch basins (Ongoing)

There were 409 catch basins/grates cleaned in 2020, as is shown in Table 5. The number of catch basins and grates cleaned in 2020 increased significantly at the beginning of the COVID19 pandemic when it was unclear if City crews could safely work on the wastewater system.

Place trash racks over major inlets (Ongoing)

There were no trash racks installed in 2020, as is shown in Table 5.

Inspect, clean, repair, replace, and install stormline (Ongoing)

The amounts of stormline inspected, cleaned, repaired, replaced, and installed in 2020 can be seen in Table 5. The Maintenance Division has committed to inspecting and cleaning all stormwater lines on a six-year rotation and are doing much of this work in coordination with the City's Pavement Preservation Project.

Inspect, repair, and replace culverts (Ongoing)

The amounts of culverts inspected, repaired, and replaced in 2020 can be seen in Table 5. The City recognizes that storm culverts and storm pipe can be perceived as the same thing and in some instances information logged in our asset management system may not be fully capturing the work accomplished. As an example, if a length of storm pipe has a culvert in it, the storm pipe gets noted as cleaned but information may not get added to the culvert asset. This will be a point of focus in the coming year to modify our asset management system appropriately to capture the data accordingly.

Table 5: Stormwater Infrastructure Maintenance Activities from 2018 to 2022

Stormwater Maintenance Activity	2018	2019	2020	2021	2022
Catch Basin/Grates Cleaned	75	86	409	-	-
Trash Racks Installed	0	0	0	-	-
Stormline Inspected, feet	2,089	32,707	21,014	-	-
Stormline Cleaned, feet	4,390	33,121	22,267	-	-
Stormline Repaired, feet	0	13	1,172	-	-
Stormline Replaced, feet	0	12	34	-	-
Stormline Installed, feet*	0	0	1,615	-	-
Ditch Cleaned, feet	125	0	0	-	-
Culvert Inspected	0	0	0	-	-
Culvert Repaired	0	0	0	-	-
Culvert Replaced	0	0	0	-	-

*This value represents stormline installed by the City's Maintenance Division only, and is not inclusive of new development within the City.

Inspect and repair public stormwater facilities (Ongoing)

The City inspects and repairs public stormwater facilities on an annual basis, 2020 activities can be seen in Table 6. In 2020, visual inspections of public stormwater facilities including detention areas, spillways, water quality swales, and bioretention ponds was done throughout the year to determine maintenance needs. Forty-nine public stormwater facilities were visually inspected and vegetative maintenance was performed at least once.

George Fox University Serve Day did not occur in 2020 due to the COVID19 pandemic. As such, City crews shifted focus toward stormwater facilities throughout the City and made good progress.

The City of Newberg also has a contract in place with Yamhill County to utilize Yamhill County Jail Work Crews to do some maintenance of stormwater facilities. The support from the Yamhill County Jail Work Crews was not available this year due ot the COVID19 pandemic.

Fifteen water quality swales along Springbrook Road were in poor condition and repaired this past summer. These facilities were constructed as part of the Newberg-Dundee Bypass and when the facilities were given to the City to maintain many had dead or dying plants and trees. Dead trees and associated root balls were removed and replanted in 2020.

Table 6: Stormwater Facility Activities from 2018-2022

Stormwater Facility Activities		2018	2019	2020	2021	2022
Total Facilities (Detention Areas, Spillways, Water Quality Swales, and Bioretention Pond)		83	93	205	-	-
Inspections		26	17	49	-	-
Type	Detention Area	21	8	22	-	-
	Spillway	2	1	0	-	-
	Water Quality Swale	3	8	25	-	-
	Bioretention Pond	-	-	2		
Condition	Excellent	4	3	5	-	-
	Fair	18	12	29	-	-
	Poor	4	2	15	-	-
Facility Repairs		4	2	15	-	-

Sweep streets every 4-6 weeks (Ongoing)

The City cleans streets approximately once each month. In 2020, 523 cubic yards of debris were removed while sweeping 1,797 curb miles. It's suspected that the amount of debris collected in 2020 could have to do with the lesser amount of travel occurring throughout the City due to the COVID19 pandemic. Information regarding both the City's street sweeping activities and the contracted street sweeping activities can be found in Table 7.

Table 7: Street Sweeping Activities from 2018 to 2022

Street Sweeping Activities (Public and Private)	2018	2019	2020	2021	2022
Sweeping Debris (Cubic Yards)	1,009	943	523	-	-
Street Sweeping Miles (curb miles)	2,016	1,797	1,797	-	-
Cubic Yard per Mile Swept	0.50	0.52	0.29	-	-
Contracted Sweeping Debris (Cubic Yards)	95*	158**	199**	-	-
Contracted Street Sweeping Miles	64*	216**	216**	-	-
Contracted Cubic Yard per Mile Swept	1.5*	0.73**	0.92**	-	-

*A pilot program was started in September 2019 to have OR99W swept between the western city limits and Villa Road using a third party contractor. That section of OR99W is swept twice a month.

**The City has fully implemented a permanent third-part street sweeping contract for services along State highways in the downtown. The downtown is swept twice a month.

2020 Adaptive Management

The City of Newberg is not proposing to modify any measurable goals through adaptive management.

Looking Ahead - 2021 Activities

Of the 14 total measureable goals under Measure No. 6, three goals have been completed, one goal has not been started, and the remaining ten measurable goals have a status of “ongoing” which means progress is made toward the goal each year via recurring activities.

Temperature

The Temperature criteria includes Maintaining Existing Stream Vegetation, Increase Effective Shade, and conducting Stream Assessments. These three (3) best management practices are comprised of three (3) strategies, and seven (7) measurable goals which are listed below and a status summary can be found in Appendix A:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Temperature			
T-1 Maintain Existing Stream Vegetation	Use Municipal Code and other Measures to Maintain Stream Vegetation	Update Municipal Code that can affect stream health.	Update ordinances that affect stream vegetation.
		Update Stream Corridor Overlay.	Document changes to the Stream Corridor Overlay map and code based on wetland inventory and property annexation.
T-2 Increase Effective Shade	Increase Shade along Streams within the City	Continue with established Trees for Streams Program. Provide incentives (free or reduce cost native plant materials) for citizens to plant trees, shrubs, and grasses along tributaries or streams within the City limits.	Document watershed and number of native plant types (trees, shrubs, grasses) planted per year.
T-3 Stream Assessment	Assess Stream Health and Canopy Coverage	Assess at least one stream mile annually for vegetative ground cover, stream channel configuration, and canopy coverage.	Document results of assessment.
		Complete a wetland inventory that encompasses the Urban Reserve areas. Update wetland inventory when Department of Land Conservation and Development (DLCD) provides funding for City's comprehensive plan periodic review.	Track progress. Provide link to wetland inventory and map.
		Develop stream temperature monitoring program.	Document procedures and identify locations for sampling.
		Implement stream temperature monitoring program.	Document sampling locations, dates, and results.

2020 TMDL Activities Completed

Activities completed in 2019 for each measurable goal are described.

T-1 Maintain Existing Stream Vegetation (Ongoing)

The best management practice Maintain Existing Stream Vegetation has one strategy which is to use the Municipal Code and other measures to maintain stream vegetation. The strategy has two (2) measureable goals.

Update Municipal Code that can affect stream health (Ongoing)

The City had no ordinances adopted in 2020 that would affect stream health.

Update Stream Corridor Overlay (Ongoing)

There were no code changes or map changes to the Stream Corridor Overlay in 2020. There were also no projects that went through the land-use process where the City's Stream Corridor Overlay code was followed in 2020.

T-2 Increase Shade along Streams within the City (Ongoing)

The City continues to promote and facilitate a Trees for Streams Program in coordination with the Northwest Oregon Restoration Partnership (NORP). Native plant materials are purchased at a reduced cost from NORP in exchange for City volunteer hours each year; in 2019 the City's plant invoice was $116.00. The City paid that fee, but unfortunately was not able to pick up plants in Spring 2020 due the COVID19 pandemic and the City's travel restrictions. At this time the City has a credit of $116 with NORP and the program has been put on hold due to the COVID19 pandemic.

Table 8: Trees for Streams Program Native Plant Totals from 2018 to 2022

	2018	2019	2020	2021	2022	Total
Chehalem Creek Watershed						
Trees	16	19	0*	-	-	19
Shrubs	49	24	0*	-	-	24
Groundcovers	20	5	-	-	-	5
Hess Creek Watershed						
Trees	-	5	0*	-	-	5
Shrubs	-	12	0*	-	-	12
Groundcovers	-	8	0*	-	-	8
Spring Brook Watershed						
Trees	-	5	0*	-	-	5
Shrubs	-	38	0*	-	-	38
Groundcovers	-	0	0*			0
Total	85	116	0*	-	-	116

*In spring 2020 plants were not delivered to property owners due to the emerging COVID19 pandemic and City's travel restrictions. This program has been put on hold until restrictions are lifted.

T-3 Stream Assessment (Ongoing/Completed/Not Started)

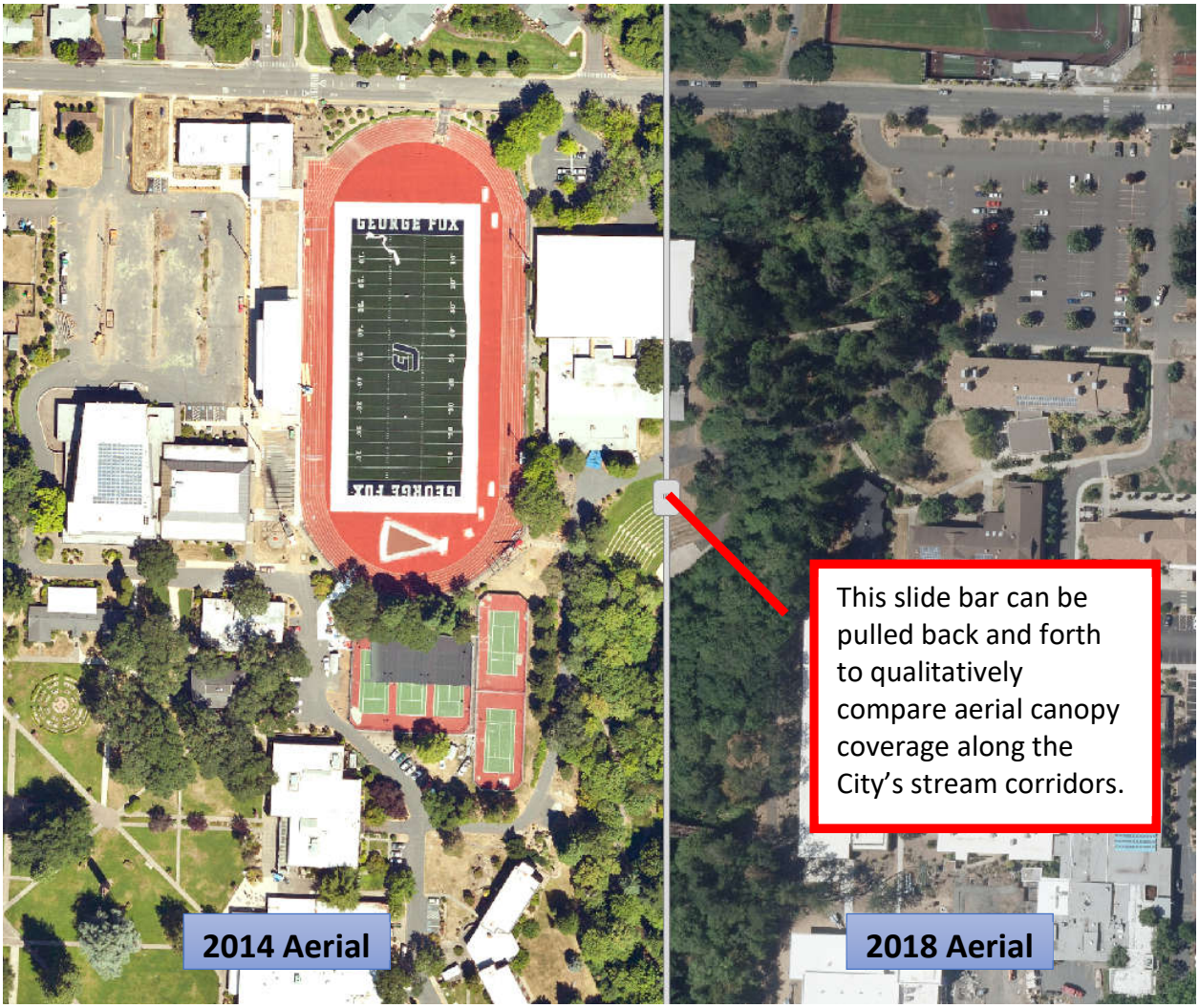
The best management practice Stream Assessment has one strategy to Assess Stream Health and Canopy Coverage. The strategy has four (4) measureable goals.

Assess at least one stream mile annually for vegetative ground cover, stream channel configuration, and canopy coverage (Ongoing)

Due to the COVID19 pandemic safety procedures and staff availability. One stream mile was not continuously walked by staff in 2020. The City is hopeful that a stream mile can walked in 2021 depending on safety procedures and guidance related to the COVID19 pandemic and staff availability.

Additionally in order to better evaluate stream canopy coverage, web mapping was developed to compare aerial imaging over time. The City of Newberg generally obtains a new aerial image of the City every two years as part of the GIS mapping program. These images can then be compared to evaluate stream canopy coverage over time. Images are typically capture during the spring/summer months so relative comparisons can be made and currently the 2014, 2016, and 2018 aerials are available for viewing comparison. The City purchased aerial imaging in 2020 of the City of Newberg. The City should be receiving 2020 aerial images in the coming months once they have been processed by our vendor. Once processed, this mapping will be updated and evaluated to see the stream canopy coverage change over time comparing 2018 to 2020. The online mapping tool can be found here: https://newberg.maps.arcgis.com/apps/webappviewer/index.html?id=99e5d269a8a84b74bb7e79f4dc8f37ba.

Figure 2: Stream Corridor Aerial Imaging Canopy Coverage Comparison



Complete a wetland inventory that encompasses the Urban Reserve areas. Update wetland inventory when Department of Land Conservation and Development (DLCD) provides funding for City's comprehensive plan periodic review (Ongoing)

The City of Newberg completed an update to the Water Management and Conservation Plan in 2019 and as part of the correspondence with the Department of State Lands, it was noted that the City has not yet completed a Local Wetlands Inventory (LWI) for Goal 5. The City was made aware that the State now has some funding resources available to facilitate this process through the Department of Land Conservation and Development (DLCD) Community Technical Assistance Grant. At this time, the grant funding available is not enough to support the effort required to complete a Local Wetlands Inventory. However, the City will continue looking for opportunities and funding sources to complete this work.

As a proxy to a Local Wetland Inventory map, the City of Newberg does have a Stream Corridor Overlay Subdistrict with regulations about activities that can and cannot occur within the established boundary. Based on evaluation of the National Wetlands Inventory (NWI) online mapping tool, it appears that most areas with high wetland probability are located within the City's establish Stream Corridor Overlay Subdistrict. The regulations around activities within this subdistrict can be read in Newberg Municipal Code (NMC) *Chapter 13.342 Stream Corridor Overlay (SC) Subdistrict*. The City also has an online interactive planning map where the Stream Corridor Overlay can be see here: https://www.arcgis.com/home/webmap/viewer.html?webmap=1de60af01cb64885af90c5eb94d565b4&extent=-123.0064,45.3093,-122.9906,45.3159.

Develop stream temperature monitoring program (Completed)

The development of Stream Temperature Monitoring Program was done in coordination with the Greater Yamhill Watershed Council and online resources from DEQ and the Oregon Watershed Enhancement Board (OWEB). Procedures were developed based on both best practices and field experience deploying exploratory water loggers over the last few years. The completed Stream Temperature Monitoring Program document can be found in Appendix F and will be used by all future staff members to insure consistency with collecting data.

Implement stream temperature monitoring program (Not Started)

The implementation of the stream temperature monitoring program was scheduled to start in May 2020, however due to the COVID19 pandemic this program deployment has been put on hold. Due to the close proximity of staff members needed to deploy water loggers by climbing into and out of streams and creeks, deployment did not occur in May 2020, and it is unlikely to occur in May of 2021 due to COVID19 safety protocols and procedures and staffing availability. The City is modifying the start date for this measurable goal from May 2020 to May 2022, based on the best available information related to safety protocols and procedures related to the COVID19 pandemic and due to staffing availability. If things happen to change over the coming months and water logger deployment becomes feasible, the City will pursue it.

2020 Adaptive Management

The City of Newberg is modifying the start date for the measurable goal of implementing the Stream Temperature Monitoring program under best management practice T-3 from May 2020 to May 2022 base on safety protocols and procedures related to the COVID19 pandemic and staffing availability.

Looking Ahead - 2021 Activities

Of the seven total measurable goals under Temperature, one goal has been completed, one goal has not yet started, and the remaining five measureable goals have a status of "ongoing" which means progress is made toward the goal each year via recurring activities.

Next Steps

As has been documented in the annual report the City of Newberg made a significant effort in 2020 to protect water quality and the environment within the City through seven focus areas. Looking forward to the 2021 plan year, the City will continue to make progress on the "ongoing" measurable goals, and has identified the following items to be completed in 2021:

- **PE-2 Public Signage**: Develop a public infrastructure signage program to determine sign locations and messaging (December 2021) – ***Adaptive Management***
- **DS-1 Develop Stormwater Management Program**: Update stormwater standard drawings and notify the development community of proposed new requirements/modifications before adoption (December 2021) – ***Adaptive Management***
- **DS-1 Develop Stormwater Management Program:** Update stormwater standards manual and notify the development community of proposed new requirements/modifications before adoption (December 2021) – ***Adaptive Management***
- **DS-3 Update the City's Stormwater Master Plan:** Update the City's Stormwater Master Plan and associated stormwater project lists (December 2021) – ***Adaptive Management***

We look forward to our continued stewardship of the Chehalem Creek, Hess Creek, and Spring Brook watersheds.

Appendix Summary

Appendix A: Newberg TMDL Implementation Matrix 2018-2022

Appendix B: Illicit Discharge Investigations 2018-2022

Appendix C: Construction Site Stormwater Management 2018-2022

Appendix D: Post-Construction Stormwater Management 2018-2022

Appendix E: 2018 & 2019 TMDL Accomplishments

Appendix A: Newberg TMDL Implementation Matrix 2018-2022

Appendix A: City of Newberg TMDL Implementation Matrix 2018-2022 (Update 11/28/2018 per DEQ Comments)

Best Management Practice	Strategy	Measureable Goal	Performance Measure	Expected Implementation Timeline	2020 Status	Pollutants		
						Mercury	Bacteria	Temperature
Measure No. 1 – Public Education								
PE-1 Stormwater Education	Website Education	Provide stormwater information on the City's website.	Provide general stormwater information and website links to the annual TMDL Implementation Plan.	Ongoing	Ongoing	X	X	X
	Citizen Group Education	Present stormwater information to interested citizen groups at local venues.	Track number of presentations, presentation messages, and number of participants (if available).	Ongoing	Ongoing	X	X	X
	Water Quality Report	Provide stormwater education in the City's annual Water Quality Report.	Provide website links to the annual Water Quality Report, and track stormwater messages included in the report.	Ongoing	Ongoing	X	X	X
PE-2 Watershed Education	Public Signage	Develop public infrastructure signage program.	Develop public infrastructure signage program to determine sign locations and messaging.	~~December 2020~~ **December 2021 – Adaptive Management**	Incomplete, But Started	X	X	X
		Provide signage at stream crossings or LIDA infrastructure facilities.	Track number of signs installed and associated messages.	December 2022	Not Started	X	X	X
		Mark 50 unmarked catch basins a year with "No Dumping, Drains to Stream" type language.	Track number of catch basins marked per year. Prepare GIS map showing coverage of locations that are permanently marked or marked with after-market plastic labels.	Ongoing	Ongoing	X	X	X
	Student Education	Provide watershed education to students.	Track number of presentations, presentation messages, and number of participants (if available).	Ongoing	Ongoing	X	X	X
Measure No. 2 – Public Involvement								
PI-1 Stormwater Utility Fee	Participate in Citizen Rate Review Committee (CRRC) Meetings	Present stormwater funding needs to CRRC.	Document meeting attendance, adopted rates, and effective dates of rate changes.	Ongoing; - Fall 2021/Spring 2022	Ongoing	X	X	X
PI-2 Public Participation in Stormwater Management	Provide Grant Funding for Water Quality Improvement or Watershed Awareness Projects	Provide a minimum of $2,000 in a grant program to fund non-profit projects that fulfill goals of the TMDL plan.	Track number of funded projects, amount disbursed per project, stream affected, and either the number of stream miles affected or the number of participants.	Ongoing	Ongoing	X	X	X

Best Management Practice	Strategy	Measureable Goal	Performance Measure	Expected Implementation Timeline	2020 Status	Pollutants		
						Mercury	Bacteria	Temperature
PI-3 Public Participation in Reporting Stormwater Issues	Public Participation in Stormwater, Illicit Discharge, and Erosion Control Issues	Provide methods for citizens to report concerns during and after business hours. Notify public of available reporting methods.	Document methods and frequency of public notifications.	Ongoing	Ongoing	X	X	X
		Respond to public concerns.	Document number of stormwater, erosion control, and illicit discharge complaints reported by citizens and note resolutions.	Ongoing	Ongoing	X	X	X
PI-4 Public Participation in Determining Stormwater Educational Focus	Determine Focus of Stormwater Educational Messages to the Public	Conduct a public survey to revise and refine educational messages related to stormwater and the TMDL Implementation Plan.	Provide copy or link to survey and report results of the survey.	~~June/July 2019~~ August 2020	Completed	X	X	X
Measure No. 3 – Illicit Discharged Detection and Elimination (IDDE)								
ID-1 Train Staff to Implement IDDE Plan	Train Staff in Illicit Discharge Investigation and Spill Response	Train new staff members in illicit discharge investigation and spill response. Provide training in some aspect of illicit discharge investigation and spill response every five years for all applicable staff.	Track type of training (webcast, class, certification, on-the-job, etc.), number of employees trained, and the training subject (maintenance, response, investigation, sampling, etc.).	Ongoing	Ongoing	X	X	X
ID-2 Implement IDDE Plan	Conduct Illicit Discharge Inspections	Fieldscreen outfalls.	Inventory type, size, and location of public and private outfalls. Map existing and new development outfall locations in GIS.	Ongoing; December 2019 (Initial Mapping); December 2022 (Complete mapping and ongoing for new development)	Ongoing	X	X	X
		Investigate outfalls for illicit discharges.	Document location, number and types of samples taken, date, cause, and resolution.	Ongoing	Ongoing	X	X	X
	Respond to Illegal Dumps	Clean up illegal dumps.	Track number of illegal dumps, citations issued, and resolution.	Ongoing	Ongoing	X	X	X
	Respond to Illicit Discharges/Spills	Fire Department spill response.	Track date and cause of spills that occur. Document whether the spill reached the stormwater system or a stream and if water sampling was conducted. Document response resolution.	Ongoing	Ongoing	X	X	X

Best Management Practice	Strategy	Measureable Goal	Performance Measure	Expected Implementation Timeline	2020 Status	Pollutants		
						Mercury	Bacteria	Temperature
		Public Works illicit discharge/spill response.	Track date and cause of illicit discharges/spills that occur, identified illicit discharges from private wastewater laterals or from failing public infrastructure. Document whether the pollutant reached the stormwater system or a stream and if water sampling was conducted. Document response resolution.	Ongoing	Ongoing	X	X	X
		Provide spill response cards and spill response kits on municipal trucks and sweepers.	Track number of municipal trucks and sweepers with spill response cards and spill kits. Document the number of spill kits used annually in response to spills.	Ongoing	Ongoing	X	X	X
ID-3 Hazardous Waste Collection	Provide Opportunity for Residents to Dispose of Hazardous Waste	Offer free hazardous waste collection service twice per year to City residents.	Track volume of waste received during collection events.	Ongoing	Ongoing	X	X	X
ID-4 Drug Take-Back Collection	Provide Opportunity for Residents to Dispose of Unused Medication	Offer free unused medication collection service to City residents.	Track the volume of unused medication collected annually.	Ongoing	Ongoing	X	X	X
Measure 4 – Construction Site Stormwater Runoff Control								
CS-1 Train Staff in Erosion and Sediment Control (ESC)	Train Staff in Plan Review, Site Inspection, and Enforcement of ESC Program	Train new staff whose responsibilities include erosion and sediment control plan review and enforcement. Provide refresher training to all staff involved in ESC every three years.	Document number of staff trained and type of training (on-the-job training, certification, or recertification).	Ongoing	Ongoing	X	X	X
CS-2 Implement Erosion and Sediment Control Program	Implement ESC Program	Conduct ESC plan review.	Document location and type (commercial, industrial, single-family residential, etc.) of all construction project plan reviews. Document which project obtained a DEQ 1200-C permit. Develop and send a notice letter to applicants on wet weather best management practices as weather conditions change.	Ongoing	Ongoing	X	X	X
		Conduct site inspections at least once during active construction by trained or experienced staff.	Provide number of erosion and sedimentation control inspections for each project. Document location and type (commercial, industrial, single-family residential, etc.) of construction project.	Ongoing	Ongoing	X	X	X
		Enforce ESC ordinances.	Report number of warning letters or non-compliance citations by project and resolution.	Ongoing	Ongoing	X	X	X
Measure No. 5 – Post-Construction Runoff Control								

Best Management Practice	Strategy	Measureable Goal	Performance Measure	Expected Implementation Timeline	2020 Status	Pollutants		
						Mercury	Bacteria	Temperature
DS-1 Develop Stormwater Management Program	Update Stormwater Development Manuals and Standard Details	Update stormwater design standards manual and standard drawings. Notify development community of proposed new requirements before adoption.	Provide summary of changes and link to new design standards when adopted.	~~December 2019~~ **December 2021 – Adaptive Management (Standard Drawing Updates)**; ~~December 2020~~ **December 2021 – Adaptive Management (Standard Manual Amendments)**	Incomplete, But Started	X	X	X
DS-2 Train Staff in Stormwater Management	Train Staff in Stormwater Management	Provide training opportunities for staff in watershed and stormwater management.	Track type of training (webcast, class, on-the-job, certification, etc.), number of employees trained, and the training subject (plan review, inspection, enforcement, etc.)	Ongoing	Ongoing	X	X	X
DS-3 Implement Stormwater Management Program	Require Stormwater Management for Development and Redevelopment	Require stormwater plan submittals and conduct plan reviews.	Document number of construction plan submittals, plan reviews, project type (commercial, institutional, residential, etc.), size, and location.	Ongoing	Ongoing	X	X	X
		Require stormwater management per the Stormwater Development Manuals and Standard Details.	Document number and type (detention basin, flow dissipater, raingarden, filtration swale, etc.) of stormwater facilities required for each project.	Ongoing	Ongoing	X	X	X
		Conduct pre-construction conferences to inform contractors about stormwater requirements.	Document number of pre-construction conferences, project type (commercial, institutional, residential, etc.), size, and location.	Ongoing	Ongoing	X	X	X
	Improve Watershed Management	Evaluate stormwater projects for treatment opportunities (new installations vs. existing infrastructure upgrades) i.e. Stormwater Master Plan.	Summarize hierarchy used for screening. Document location and number of sites reviewed, drainage area, and result of evaluation.	May 2014, and Ongoing; ~~June 2020 (Re-evaluate Stormwater Master Plan project list)~~ **December 2021 – Adaptive Management (Stormwater Master Plan project list)**	Ongoing; Incomplete, but Started	X	X	X
		Implement stormwater projects for treatment opportunities (new installations vs. existing infrastructure upgrades) i.e. Stormwater Master Plan.	Document number of projects including location, size, type (LIDA, traditional, etc.), and drainage area.	May 2014, and Ongoing; ~~June 2020~~ **December 2021 – Adaptive**	Ongoing; Incomplete, but Started	X	X	X

Best Management Practice	Strategy	Measureable Goal	Performance Measure	Expected Implementation Timeline	2020 Status	Pollutants		
						Mercury	Bacteria	Temperature
				Management (Stormwater Master Plan project list)				
	Optimize Water Quality	Inspect public stormwater facilities post-construction.	Conduct a post-construction stormwater facility transfer. Complete final inspection at end of the two-year maintenance agreement. Document facility in GIS/asset management program, obtain and file stormwater as-built drawings, and facility maintenance plan.	Ongoing	Ongoing	X	X	X
Measure No. 6 – Pollution Prevention in Municipal Operations								
OM-1 Operations and Maintenance (O&M) Manual	Update O&M Policies	Review existing O&M practices.	Document current procedures in an O&M manual.	December 2018	Completed	X	X	X
		Update O&M manual to optimize water quality.	Document modifications to manual.	December 2022	Not started	X	X	X
	Update Infrastructure Procedures	Review and evaluate the need to update the catch basin cleaning program.	Document current procedures and any modifications to optimize water quality.	July 2020	Completed	X	X	X
		Implement revised catch basin cleaning program.	Track progress.	Ongoing	Ongoing	X	X	X
	Update Street Sweeping Procedures	Review and evaluate the need to update the street sweeping program.	Document current procedures and any modifications to optimize water quality	July 2020	Completed	X	X	X
		Implement revised street sweeping program.	Track progress.	Ongoing	Ongoing	X	X	X
OM-2 Operations and Maintenance Training	Train staff in infrastructure and street sweeping procedures that optimize water quality	Train new staff in stormwater maintenance duties in O&M procedures manual.	Track type of training (webcast, class, certification, on-the-job, etc.), number of employees trained, and the training subject (inspections, maintenance, repair, construction, etc.)	Ongoing	Ongoing	X	X	X
		Train all staff in revised O&M procedures manual every three years.	Track type of training (webcast, class, certification, on-the-job, etc.), number of employees trained, and the training subject (inspections, maintenance, repair, construction, etc.)	February 2019 (following manual completion, then every three years); August 2022	Ongoing	X	X	X
OM-3 Stormwater Infrastructure Maintenance	Maintain stormwater infrastructure	Clean catch basins.	Track number of catch basins cleaned per year.	Ongoing	Ongoing	X	X	X
		Place trash racks over major inlets.	Track number and percentage of major inlets installed with trash racks.	Ongoing	Ongoing	X	X	X
		Inspect, clean, repair, replace, and install stormline.	Track length of stormline inspected. Document length of stormline cleaned. Document length and	Ongoing	Ongoing	X	X	X

Best Management Practice	Strategy	Measureable Goal	Performance Measure	Expected Implementation Timeline	2020 Status	Pollutants		
						Mercury	Bacteria	Temperature
			location of stormline repaired or replaced. Track length, diameter and location of stormline installed.					
		Inspect, repair, and replace culverts.	Document location of repaired and replaced culverts and reason for repair or replacement. For newly installed culverts, document new culvert size, material, and elevation from culvert bottom to stream bottom.	Ongoing	Ongoing	X	X	X
		Inspect and repair public stormwater facilities.	Document number of inspections, type of facility (detention basin, LIDA facilities, vegetated swale, etc.) and whether facilities were categorized as excellent, fair, or poor condition.	Ongoing	Ongoing	X	X	X
		Sweep streets every 4-6 weeks.	Track curb miles swept and debris collected per curb mile each year. Document disposal method.	Ongoing	Ongoing	X	X	X
Temperature								
T-1 Maintain Existing Stream Vegetation	Use Municipal Code and other Measures to Maintain Stream Vegetation	Update Municipal Code that can affect stream health.	Update ordinances that affect stream vegetation.	Ongoing	Ongoing	X	X	X
		Update Stream Corridor Overlay.	Document changes to the Stream Corridor Overlay map and code based on wetland inventory and property annexation.	Ongoing	Ongoing	X	X	X
T-2 Increase Effective Shade	Increase Shade along Streams within the City	Continue with established Trees for Streams Program. Provide incentives (free or reduce cost native plant materials) for citizens to plant trees, shrubs, and grasses along tributaries or streams within the City limits.	Document watershed and number of native plant types (trees, shrubs, grasses) planted per year.	Ongoing	Ongoing	X	X	X
T-3 Stream Assessment	Assess Stream Health and Canopy Coverage	Assess at least one stream mile annually for vegetative ground cover, stream channel configuration, and canopy coverage.	Document results of assessment.	Ongoing	Ongoing	X	X	X
		Complete a wetland inventory that encompasses the Urban Reserve areas. Update wetland inventory when Department of Land Conservation and Development (DLCD) provides funding for City's comprehensive plan periodic review.	Track progress. Provide link to wetland inventory and map.	Ongoing	Ongoing	X	X	X
		Develop stream temperature monitoring program.	Document procedures and identify locations for sampling.	Completed December 2019	Completed	X	X	X

Best Management Practice	Strategy	Measureable Goal	Performance Measure	Expected Implementation Timeline	2020 Status	Pollutants		
						Mercury	Bacteria	Temperature
		Implement stream temperature monitoring program.	Document sampling locations, dates, and results.	~~May 2020~~ **May 2022 – Adaptive Management**, and Ongoing	Not Started	X	X	X

Appendix B: Illicit Discharge Investigations 2018-2022

Appendix B: Illicit Discharge Investigations 2018-2022

Date	Cause	Watershed	Resolution
1/2018	Concern about an existing oil-water separator and petroleum releasing to a storm drain ditch.	Chehalem Creek	A DEQ Hazardous Waste coordinator come out on site and did a field investigation. It was determined that the oil-water separator was in good working order, but there were other site conditions that need to be corrected. A Complaint Investigation #18-141 letter was sent to the owner.
1/2019	A motor vehicle spilling/leaking oil drove through the gas station parking lot and covered the area with an oil sheen.	Chehalem Creek	The City of Newberg maintenance crew deployed absorbent socks around the nearby catch basins. No additional action was taken.
4/2019	Dumping of floor wax and stripping compound into the storm drain in a private parking lot. Private storm drain connects to public storm drain along E 2nd Street and illicit discharge was found flowing along the curb line.	Chehalem Creek	The City of Newberg maintenance staff cleaned the illicit discharge from the catch basin and gutter line along E 2nd Street. They also flushed the private catch basin in parking lot in order to access all of the dumped material with the City's vactor truck. A Notice of Municipal Code Violation was sent to the Contractor responsible for the illicit discharge and a fine of $400.45 covering the clean-up cost was assessed and then paid.
6/2019	Restaurant was improperly disposing of grease. Grease containers by the dumpster were improperly maintained and grease on ground was being washed into private onsite storm drain.	Spring Brook	The City of Newberg is still actively working with this restaurant. Contact began with outreach and education and has escalated to imposing fines for continued violations of improperly maintained grease disposal methods.
7/2019	Anonymous DEQ Complaint 19-1678: Employee dumping windshield washing fluid into a private onsite catch basin at a gas station at the end of their work day.	Spring Brook	The City of Newberg made contact with the manager of the gas station and provided education about proper disposal methods and how to avoid illicit discharges. Verbal warning.
7/2019	Restaurant was pouring mop water into a private onsite storm drain.	Spring Brook	The City of Newberg made contact with employees and owner. Through education and outreach they were informed

			that mop water needs to go into the mop sink only and that dumping in the storm drain is an illicit discharge. Verbal warning.
10/2019	Phone call from public about diesel fuel spill running into storm drain in the Terra Estates Subdivision.	Chehalem Creek	The City of Newberg received a phone call from a concerned citizen about a fuel spill. Maintenance employees determined the spill was minor and deployed two absorbent bags to soak up the spilled fuel.
10/2019	A medical office building was under construction when a sewer manhole was pumped into a private stormwater detention basin/drainage system.	Spring Brook	The City of Newberg was made aware of this violation and had the contractor stop immediately. An OERS report was filed: OERS 2019-2800. The contractor was assessed and then paid the City fine of $1,000. DEQ will be following up with any state enforcement action.
10/2019	Grocery store was improperly maintaining their grease disposal container and grease was flowing into private stormwater drain.	Spring Brook	The City of Newberg made contact with the store manager. Through education and outreach they were made aware of proper care of grease containers and the spilled grease was cleaned from the pavement leading to the storm drain. Verbal warning.
2/2020	Phone call complaint was received by the City concerning a mud covered work truck being cleaned in a driveway with mud being directed to a storm drain.	Spring Brook	The City of Newberg made contact with the truck owner and informed them about purpose of storm drains and the potential consequences of continued dumping.
3/2020	Phone call from the public about soapy bubbles floating down a tributary to Chehalem Creek.	Chehalem Creek	The City of Newberg received a phone call from a concerned citizen about soapy bubbles in a Chehalem Creek tributary behind their house. Engineering staff investigated upstream of the event and were not able to identify a point source. No further action was taken.
5/2020	Anonymous DEQ Complaint 20-1111: DEQ received a complaint about paint dumping into a private onsite catch basin at Springbrook Apartments	Spring Brook	The City of Newberg made contact with the manager of the apartment complex and it was determined that the white water was a result of power washing sidewalks within the complex as part of routine maintenance. The apartment maintenance crew was directed to put in BMPs around catch basins prior to power washing. No further action was taken.

7/2020	Anonymous DEQ Complaint 20-1461: DEQ received a complaint about construction/drywall material being directed to a storm drain at the base of a driveway.	Chehalem Creek	The City of Newberg investigated the complaint and did not see evidence of construction materials or drywall in the storm drain. A door hanger was left at the residence explaining the purpose of storm drains and the potential consequences of continued dumping.
9/2020	DEQ Complaint 20-2292: DEQ received a complaint about a trash compactor associated with a grocery store, that was leaking and the contents were running into the storm system.	Chehalem Creek	The City of Newberg made contact with the grocery store manager and it was determined the trash compactor needed to be replaced and the existing oil/grease on the surface need to be cleaned and removed. The grocery store followed City guidance and the issue was resolved.
11/2020	A City employee noticed what appeared to be new drain pipes leaving a commercial building and entering an adjacent private property	Chehalem Creek	The City of Newberg made contact with the business owner and it was determined that the new pipes leaving the building were related to a heating/cooling system and were not contributing to the existing stormwater drainage system on the adjacent property. No further action was taken.
12/2020	City maintenance crews noticed oil presence around a loop in our downtown streets that they were able to trace back to an Auto Repair shop.	Hess Creek	City crews immediately deployed BMPs around catch basins and applied kitty litter where the oil was pooled. The City of Newberg then made contact with the business owner and it was determined that a gas cap was not secured property on a car they were repairing. The City assessed a fine in the amount of $747.52 to the business owner to cover the cost of materials and labor for City crews to mitigate the spill.

Appendix C: Construction Site Stormwater Management 2018-2022

Appendix C: Construction Site Stormwater Management 2018-2022

Project Name	Location	Watershed	1200-C Permit (Yes/No)	ESC Inspections					Completed
				2018	2019	2020	2021	2022	
Gracie's Landing, Ph 1	North Valley Rd/Chehalem Dr	Chehalem Creek	Yes	NA	-	-	-	-	2018
Gracie's Landing, Ph 2 & 3	North Valley Rd/Chehalem Dr	Chehalem Creek	Yes	NA	-	-	-	-	2018
Chehalem Pointe Apartments	1317 Villa Rd	Hess Creek	Yes	NA	-	-	-	-	2018
CPRD Pool Expansion	1802 Haworth Ave	Hess Creek	Yes	NA	-	-	-	-	2018
Freeman Manufacturing Building	1001 Wilsonville Rd	Hess Creek	Yes	NA	-	-	-	-	2018
GFU Student Activity Center	1400 E Sherman St	Hess Creek	Yes	NA	-	-	-	-	2018
GFU Austin Sports Complex	1953 N Center St	Hess Creek	Yes	NA	-	-	-	-	2018
Grace Baptist Church	1619 E 2nd St	Hess Creek	Yes	NA	-	-	-	-	2018
Hazelwood Farms	E Henry Rd	Hess Creek	Yes	NA	-	-	-	-	2018
Villa Rd Improvements	Villa Rd	Hess Creek	Yes	NA	-	-	-	-	2018
Dayton Avenue Pump Station	840 S Dayton Ave	Chehalem Creek	No	144	-	-	-	-	2018
Old Mill Development	2401 Portland Rd	Hess Creek	No	30	-	-	-	-	2018
South Park	609 Wynooski St	Hess Creek	Yes	NA	-	-	-	-	2018
Dutchman Ridge, Ph 1	25300 NE North Valley Rd	Chehalem Creek	Yes	NA	NA	-	-	-	2019
Page Landing	400 E Columbia Dr	Chehalem Creek	Yes	NA	NA	-	-	-	2019
Airport Commercial Building	1000 S Commerce Pkwy	Hess Creek	No	1	2	2	-	-	2020
GFU Edwards Hall	617 N Villa Rd	Hess Creek	Yes	NA	NA	-	-	-	2019
McCann Apartments	800 E 2nd St	Hess Creek	No	1	27	5	-	-	2020
Harding School	601 Wynooski St	Hess Creek	Yes	NA	NA	NA	-	-	2020
Providence Medical Office Building	1001 Providence Dr	Spring Brook	Yes	NA	NA	-	-	-	2019
CPRD Friends Park	1800 N Kennedy Dr	Hess Creek	Yes	-	NA	NA			2020
GFU Health Occupations Building	879 N Providence Dr	Spring Brook	Yes	-	NA	NA			Under Construction
Dutchman Ridge, Ph 2	25300 NE North Valley Rd	Chehalem Creek	Yes	-	NA	NA			2020

King's Landing, Ph 1, 2, 3	25020 NE North Valley Road	Chehalem Creek	Yes	-	NA	NA			2020
Riverrun, Ph 1, 2	101 W Weatherly Way	Hess Creek	Yes	-	NA	NA			2020
Hancock Commons	200 E Hancock Street	Chehalem Creek	No	-	13	15			2020
Crestview Crossing	Parcel Numbers: 3216AC, 13800, & 1100	Spring Brook	Yes	-	-	NA			Under Construction
Crestview Drive CIP	Chehalem Drive	Spring Brook	Yes	-	-	NA			Under Construction
Longplay Wine	888 South Industrial Pkwy	Hess Creek	No	-	-	10			Under Construction
Friendsview Springbrook Meadows II	Providence Drive	Spring Brook	Yes	-	-	NA			Under Construction
Beaudry's Cabinets	502 S St Paul Hwy	Hess Creek	Yes	-	-	NA			Under Construction
Flats at Rodger's Landing	1109 S River Street	Chehalem Creek	No	-	-	31			Under Construction
Eastlands Subdivision	1546 E 3rd Street	Hess Creek	No	-	-	6			2020

Under Construction: The public improvement permit is still active and has not yet been closed out.

Appendix D: Post-Construction Stormwater Management 2018-2022

Appendix D: Post-Construction Stormwater Management 2018-2022

Project Name	Location	Acres	Project Type-Zoning	Pre-Construction Meeting	Project	Stormwater Facility	Completed
Freeman Manufacturing Building	1001 Wilsonville Rd	2.04 (1200-C)	Commercial	No	Commercial Building	3 public stormwater planters, 3 private flow through planters, private Contech underground detention	2018
Chehalem Pointe Apartments	1317 Villa Rd	5.8 (1200-C)	Residential	Yes	Apartment Complex	4 public stormwater planters, detention pond, underground detention	2018
Page Landing	400 E Columbia Dr	3.19 (1200-C)	Residential	Yes	25 Lot Subdivision	1 detention pond	2018
South Park	609 Wynooski St	1.21 (1200-C)	Residential	No	13 Lot Subdivision	None required. No new impervious surface areas.	2018
1002 S Pacific Partition	1002 S Pacific St	0.16	Residential	No	Partition	1 raingarden	2018
Gracie's Landing, Ph 1	North Valley Rd/Chehalem Dr	10.6 (1200-C)	Residential	Yes	24-lot Subdivision	Detention pond, water quality swale	2018
Gracie's Landing, Ph 2 & 3	North Valley Rd/Chehalem Dr	See Gracie's Ph 1 1200-C permit	Residential	No	29-lot Subdivision	Detention pond, water quality swale	2018
CPRD Pool Expansion	1802 Haworth Ave	5.1 (1200-C)	Residential	Yes	Recreation Facility	Private detention facilities, public stormwater planter	2018
GFU Student Activity Center	1400 E Sherman St	2.4 (1200-C)	Institutional	Yes	Activity Center	1 detention pond, stormwater planters	2018
GFU Austin Sports Complex	1953 N Center St	3.8 (1200-C)	Institutional	Yes	Sports Complex	Vegetated strips, vegetated swales	2018
Grace Baptist Church	1619 E 2nd St	3.0 (1200-C)	Residential	No	Church Expansion	None required. No new impervious surface areas.	2018
Hazelwood Farms	E Henry Rd	4.9 (1200-C)	Residential	No	19-lot Subdivision	Detention pond	2018
Villa Rd Improvements	Villa Rd	(1200-C)	NA	Yes	Roadway Improvement	Stormwater planters, detention pond, underground detention	2018

Project Name	Location	Acres	Project Type-Zoning	Pre-Construction Meeting	Project	Stormwater Facility	Completed
Dayton Avenue Pump Station	840 S Dayton Ave	0.28	Public Facility	Yes	Pump Station	Detention pond	2018
Shelly Cate Partition	1305 Newall Rd	0.38	Residential	No	Partition	1 raingarden	2019
GFU Edwards Hall	617 N Villa Rd	6.6 (1200-C)	Institutional	No	Residence Hall	Vegetated water quality/detention basin	2019
Providence Medical Office Building	1001 Providence Dr	5.10 (1200-C)	Institutional	Yes	Medical Office Building	6 private water quality facilities, 2 underground detention tanks, and flow control manholes	2019
Harding School	601 Wynooski St	0.77	Residential	Yes	Multi-family residential and 5 single-family lots	5 public stormwater planters, and 3 private raingardens	2020
Dutchman Ridge, Ph 1	25300 NE North Valley Rd	13.3 (1200-C)	Residential	Yes	35-lot Subdivision	1 detention pond	2019
Airport Commercial Building	1000 S Commerce Pkwy	0.5	Light Industrial	No	Commercial Building	Detention Pond	2020
McCann Apartments	800 S 2nd St	0.31	Commercial	No	Apartment Complex	None required. No new impervious surface areas.	2020
CPRD Friends Park	1800 Kennedy Dr	9.0 (1200-C)	Open Space	Yes	Park	Vegetated filter strip (for pathway)	2020
GFU Health Occupations Building	879 N Providence Dr	1.53 (1200-C)	Residential-Professional	Yes	Medical Office Building	6 flow through rain garden	Under Construction
Dutchman Ridge, Ph 2	25300 NE North Valley Rd	13.3 (1200-C)	Residential	Yes	35-lot Subdivision	Note: Detention pond constructed in Ph 1.	2020
King's Landing Ph 1-3	25020 NE North Valley Rd	15.4 (1200-C)	Residential	Yes	76-lot Subdivision	2 regional stormwater ponds	2020

Riverrun, Ph 1 & 2	101 Weatherly Wy	7.24 (1200-C)	Residential	Yes	91-lot Subdivision	1 regional stormwater pond; serves all homes north of Weatherly Wy	2020
Hancock Commons	200 E Hancock St	0.13	Commercial	Yes	Commercial Building/Residential Units	1 infiltration planter	2020
Single Family Home	207 W Fourth Street	0.08	Residential	No	Residential Home	1 raingarden	2019
Single Family Home	809 S Willamette St	0.08	Residential	No	Residential Home	1 raingarden	2019
Single Family Home	811 S Willamette St	0.08	Residential	No	Residential Home	1 raingarden	2019
Crestview Crossing	Parcel Numbers: 3216AC, 13800, & 1100	33.13 (1200-C)	Residential	Yes	250-lot Subdivision	3 stormwater ponds, 14 flow through planters, 1 off-site water quality swale	Under Construction
Crestview Drive CIP	Chehalem Drive	(1200-C)	Public	Yes	Public Street Construction	7 roadside water quality flow through planters	Under Construction
Longplay Wine	888 South Industrial Pkwy	0.06	Commercial	No	Commercial Building	Mechanical treatment, and underground detention	Under Construction
Friendsview Springbrook Meadows II	Providence Drive	6.67 (1200-C)	Residential	Yes	14-duplexes	2 detention ponds and a water quality flow through planter	Under Construction
Beaudry's Cabinets	502 S St Paul Hwy	1.14 (1200-C)	Industrial	No	Building Expansion	2 stormwater planters, underground detention, flow control manhole	Under Construction
Flats at Rodger's Landing	1109 S River Street	1.33 (1200-C)	Residential	Yes	45-unit apartment complex	Detention Pond	Under Construction
Eastlands Subdivision	1546 E 3rd Street	0.48	Residential	No	4-lot Subdivision	1 water quality swale	2020
Single Family Home	900 N Williams Street	0.08	Residential	No	Residential Home	1 raingarden	Under Construction

Single Family Home	1541 E 3rd Street	0.08	Residential	No	Residential Home	1 raingarden	2020
Single Family Home	1904 Birch Lane	0.08	Residential	No	Residential Home	1 raingarden	2020

Appendix E: 2018 & 2019 TMDL Accomplishments

Appendix E: 2018, 2019 TMDL Accomplishments

2018 TMDL Accomplishments

Measure No. 1 – Public Education

PE-1 Stormwater Education (Ongoing)

The Stormwater Education best management practice consists of three strategies; Website Education, Citizen Group Education, and the Water Quality Report.

Website Education (Ongoing)

The City has 16 web pages related to stormwater covering information on erosion and sedimentation control, riparian vegetation, water quality, illicit discharge, public works standards, and the Total Maximum Daily Load (TMDL) program.

The City posted on social media via the City of Newberg and Public Works Department Facebook pages 44 times about stormwater activities including the Trees for Streams program, illicit discharge, compost, waste management hazardous materials collections, rate review committee, and volunteer events.

The annual TMDL report is uploaded each year to the City's website after receiving and incorporating comments from DEQ.

Citizen Group Education (Ongoing)

In March 2018, City staff met with the Friendsview Hess Creek Canyon Committee (retirement community group) to evaluate vegetative coverage and the stream channel at their property on Fulton Street. Representatives from the Yamhill Soil and Water Conservation District and George Fox University were also onsite for the meeting and site walk. It was determined that some incising of the creek and erosion along the banks was occurring. It was acknowledged that residents were doing a good job of removing invasive plants and now needed to turn their focus toward replanting. Follow-up site preparation occurred as part of the George Fox Serve Day in September 2018, and a follow-up planting event occurred in early-February 2019 in coordination with the Greater Yamhill Watershed Council.

Leadership Newberg attended a presentation at the Newberg Wastewater Treatment Plant in March 2018 to learn about City programs such as volunteer opportunities, the Trees for Streams program, the watershed grant, the fats, oils, and grease (FOG) program, and City created compost. Participants were also given a tour of the waste water treatment plant and its composting facilities.

In June 2018, the City held the annual Public Works Day event in the park across from the Chehalem Cultural Center. The Engineering Department provided stormwater education as part of the event by using a casting of the City's stormwater manhole lid to stamp T-shirts for attendees. In total, 200 t-shirts were stamped and the message "Dump No Waste, Drains to

Stream" can now be spotted walking around town. We received really positive feedback about this activity and plan to do it again in the future. See Figures 1 and 2 for images from the event.

Figure 1: Stamping T-shirts with City's Stormwater Manhole Graphic

Figure 2: Stamped T-shirts Drying Before Pick-up

Water Quality Report (Ongoing)

The Environmental Protection Agency (EPA) and the State of Oregon require the City of Newberg to distribute a Water Quality Report each year to all residences. The majority of information in the report is required by the EPA and the report is mailed to residents by June 30th each year. The 2017 Water Quality Report was mailed out in June 2018 and can be found on the City's website here: https://www.newbergoregon.gov/operations/page/water-quality-report

The report included the following TMDL related messages:

- Citizen Rate Review Committee (PI-1 Stormwater Utility Fee)
- City's Watershed Grant (PI-2 Public Participation in Stormwater Management)
- Illicit Discharge (Measure No. 3 – Illicit Discharge Detection and Elimination)
- Watershed Volunteer opportunities (PE-1 Citizen Group Education)
- Hazardous Waste Collection resources (ID-3 Hazardous Waste Collection)

PE-2 Watershed Education (Ongoing/Not Completed)

The Watershed Education best management practice consists of two strategies; Public Signage and Student Education.

Public Signage (Ongoing/Not Completed)

The Public Signage strategy consists of three measureable goals.

Develop a Public Infrastructure Signage Program (Not Started)

This work has not yet been started, the expected implementation timeline is December 2020.

Provide Signage at Stream Crossings or LIDA Infrastructure Facilities (Not Started)

This work has not yet been started, the expected implementation timeline is December 2022.

Marking 50 Unmarked Catch Basins a Year with "No Dumping, Drains to Stream" Language (Ongoing)

The City installed 50 bi-lingual "No Dumping, Drains to Creek" catch basin markers in November 2018. Catch basins near the Terra Estates neighborhood in the northwest corner of the City were marked. The approximate boundary for the catch basins marked includes N Terrance Drive, Jones Street, Taylor Drive, and E Foothills Drive.

The City is in the process of implementing Cartegraph OMS, a new software operations management system. The City's Maintenance division began implementing the software program in late-2018, which is being used to manage infrastructure maintenance, resource tracking, request management, data collection and analysis. Each public works maintenance staff member has an OMS tablet that can be used to intersect with the City's GIS information to access different assets and keep track of maintenance activities. The analysis tools within the software allow for better evaluation of the effectiveness of maintenance activities and ensure

that assets throughout the City are being adequately inspected and maintained. As staff members become more adept within the system, it's anticipated that annual TMDL reporting should become more simplified on several fronts. The catch basins marked in 2018 have been noted in the Cartegraph OMS system.

Student Education (Ongoing)

In 2018 the City sponsored two Mad Science presentations. The first presentation occurred in April and was given to 250 student's kindergarten through second grade at Antonia Crater Elementary. The second presentation occurred in May and was given to 110 students in the first and second grades at Joan Austin Elementary.

In March 2018, City staff gave two (2) separate presentations to Environmental Science students at George Fox University in coordination with the Greater Yamhill Watershed Council. Topics discussed included the City's TMDL Plan, Water Management & Conservation Plan, Stream Corridor Overlay zone in the Municipal Code, Public Works Design and Construction Standards, Stormwater Master Plan, 1200-C Permits, and Stormwater Maintenance.

In July 2018, City staff gave a presentation as part of the "STEAM: Creators at Lunch" series in coordination with the Newberg Library and the National School Lunch Program. Staff gave a presentation about the City's three watersheds (Chehalem Creek, Hess Creek, and Springbrook) and how watersheds in general can be affected by erosion, pollutants, and dense urban housing. In total, approximately 35 children and 20 adults participated in the "crumpled paper as a watershed" activity and everyone took home their watershed art project with information about what watershed they live in within the City.

In December 2018, the Newberg SAIL (Support, Advocacy for Independence in Life) Program visited the City of Newberg. Eighteen students and six supporting staff members received a tour of the Maintenance Yard and learned about our City's watershed and water conservation efforts. The group then supported the Engineering Division by helping to construct Water Conservation Kits using what they learned about water conservation.

Measure No. 2 – Public Involvement

PI-1 Stormwater Utility Fee (Ongoing)

The Citizen's Rate Review Committee (CRRC) was started in 1992 and consists of volunteers from the public who meet every two years to review utility rates proposed by staff. After a discussion with the committee, the rates are presented by staff to the City Council for approval. New stormwater related rates were adopted on April 1, 2018 and can be seen below in

Table *1*.

Table 1: Stormwater Utility Fee adopted April 1, 2018

Municipal Services Statement Fees – Stormwater Service Charges	
Service Charge ($/month)	$10.30
Storm System Development Fee*	
Single Family – Equivalent Dwelling Unit (EDU)	$358.64 flat fee
Other than Single Family	(Impervious Area/2877) x $358.64

*Revenues are used to maintain the City's Stormwater System. This fee is collected for each new development that connects to or otherwise uses the City's stormwater system and is determined by the square feet of impervious area. Impervious surface is the hard surface area which either prevents or retards entry of water into the soil mantel and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions. Impervious surface areas include, but are not limited to, rooftops, concrete or asphalt paving, walkways, patios, driveways, parking lots or storage areas and trafficked gravel or other surfaces which impede the natural infiltration or runoff of surface water. An equivalent dwelling unit (EDU) is equal to 2,877 square feet of impervious area.

PI-2 Public Participation in Stormwater Management (Ongoing)

In 2018, the City of Newberg provide $630 dollars from the Watershed Grant Program to the Newberg School District for stormwater education modules at Antonia Crater Elementary and Joan Austin Elementary. At Antonia Crater Elementary, 250 students in grades kindergarten through second enjoyed the "Where's the Water, Watson?" show, and at Joan Austin Elementary 110 students in first and second grades also enjoyed the "Where's the Water, Watson?" show.

The City is in the process of revising the grant forms and selection criteria and will be making an effort in 2019 to do more public outreach about the Watershed Grant Program.

PI-3 Public Participation in Reporting Stormwater Issues (Ongoing)

The Public Participation in Reporting Stormwater Issues best management practice consists of two measureable goals.

Provide Methods for Citizens to Report Stormwater Concerns (Ongoing)

In 2018, the City used its website to provide a phone number for the public to call about stormwater issues/concerns.

Respond to Public Concerns (Ongoing)

The City categorizes concerns into four main categories which include illicit discharge, erosion control, flooding, and illegal dumping. Totals for each type of concern received in 2018 can be found in Table 2 and are inclusive of concerns received by both the maintenance division and

code enforcement. More information concerning incident resolution for illicit discharge concerns can be found in Appendix B.

Table 2: 2018 Stormwater Concerns Received from the Public

Types of Concerns	Number of Concerns Received					Total
	2018	2019	2020	2021	2022	
Illicit Discharge	1	-	-	-	-	1
Erosion Control	1	-	-	-	-	1
Flooding	7	-	-	-	-	7
Illegal Dumping	0	-	-	-	-	0

PI-4 Public Participation in Determining Stormwater Educational Focus (Incomplete, But Started)

This best management practice is scheduled for completion in June/July 2019. A draft set of survey questions has been prepared based on research done about different stormwater surveys completed by other public agencies. The survey question have not yet been reviewed by management staff which will need to occur prior to issuing the survey to the public.

Measure No. 3 – Illicit Discharge Detection and Elimination (IDDE)

ID-1 Train Staff in Illicit Discharge Investigation and Spill Response (Ongoing)

Staff training on illicit discharge was done using the Excal Visual training video "*A Grate Concern: Illicit Discharge Detection & Elimination.*" The engineering division (six staff members) watched the video and had a discussion on illicit discharge and spill response in January 2018, and the maintenance division managers (five staff members) watched the video and had a discussion on illicit discharge and spill response in February 2018.

ID-2 Implement IDDE Plan (Ongoing)

The Implementation of the IDDE Plan consists of three strategies and six measurable goals.

Conduct Illicit Discharge Inspections (Ongoing)

The strategy for conducting illicit discharge inspections consists of two measurable goals.

Fieldscreen Outfalls (Ongoing)

The City screens outfalls during stormwater system maintenance and stream assessments. As maintenance performs work throughout the system, requests are made to the GIS department to update asset maps.

Additionally, the City did a field walk/investigation of one stream mile on Hess Creek in September 2018. During this field walk, outfalls were observed. No observations were made during the field walk/investigation that resulted in updates to the City's asset management system.

Investigate Outfalls for Illicit Discharges (Ongoing)

There were no events in 2018 that warranted samples being taken at an outfall location as a result of a known or suspected illicit discharge.

As part of the City's Stormwater Credit Program, one participant does perform its own sample testing at discharge locations. These records are kept by the applicant and they coordinate directly with DEQ to meet requirements of their 1200-Z permit.

Respond to Illegal Dumps (Ongoing)

The City of Newberg had no reported or identified illegal dumps in 2018.

Respond to Illicit Discharges/Spills (Ongoing)

The strategy for responding to illicit discharges/spills consists of three measurable goals.

Fire Department Spill Response (Ongoing)

The Fire Department, Tualatin Valley Fire & Rescue (TVF&R) responded to eight (8) "spill" incidents in 2018. In all cases the spills were either absorbed or contained and oils/petroleum were prevented from entering storm drains.

Public Works Illicit Discharge/Spill Response (Ongoing)

Public Works Maintenance Division did not respond to any spills within the City in 2018. However, they did identify an illicit discharge which was then coordinated with DEQ for further investigation (Appendix B).

Spill Response Cards/Kits on Municipal Trucks and Sweepers (Ongoing)

The City of Newberg has PIG® Truck Spill Kits available on ten (10) public works vehicles. Maintenance staff are made aware of these spill kits and the associated instruction manual.

ID-3 Hazardous Waste Collection (Ongoing)

Yamhill County Solid Waste (YCSW) continues to sponsor hazardous waste collection events for Newberg in May and for McMinnville in October. Both events are open to all Yamhill County residents and it is an opportunity for residents to safely dispose of hazardous items for free. Annual totals from the hazardous waste collection events can be seen in

Table *3*.

Table 3: Yamhill County Solid Waste: Hazardous Waste Collection Events Summary

Year	City of Newberg Event (May)			City of McMinnville Event (October)		
	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)
2018	32,697	22,500	36.3	31,679	9,500	480
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
2022	-	-	-	-	-	-
Total	32,697	22,500	36.3	31,679	9,500	480

ID-4 Drug Take-Back Collection (Ongoing)

The City of Newberg has a Medication Disposal Site which is located inside the lobby of the City's Public Safety Building. The safe drop box is for the public to dispose of unneeded or expired medications. Over the counter and pet medications are also accepted at the drop box location. Medications collected are incinerated so they don't end up in the garbage or flushed down the drain, avoiding contamination of soil and drinking water. Annual totals from the Medication Take-Back Program can be seen in Table 4.

Table 4: City of Newberg Medication Take-Back Program Summary

Year	Medication Collected (pounds)
2018	887.5
2019	-
2020	-
2021	-
2022	-
Total	887.5

Measure No. 4 – Construction Site Stormwater Runoff Control

CS-1 Train Staff in Erosion and Sediment Control (Ongoing)

Each department or division within the City is responsible for their own employee training. No specific ESC training was attended in 2018, however the topic of ESC was discussed at several of the trainings noted in best management practice DS-2 Train Staff in Stormwater Management. One Engineering Division staff member is a Certified Erosion and Sedimentation Control Lead.

CS-2 Implement Erosion and Sediment Control Program (Ongoing)

The best management practice for implementing the ESC Program consists of three measureable goals.

Conduct ESC Plan Review (Ongoing)

Erosion and Sediment Control plans reviewed for major projects are listed in Appendix C. Projects exceeding 1-acre are required to obtain DEQ 1200-C permits and are noted, inspections of these permits are conducted by DEQ. The City had four construction projects in 2018 that were more than a single-family home and less than 1-acre that required City issued Erosion and Sediment Control Permits (see Appendix C). The remainder of the City issued Erosion and Sediment Control Permits in 2018, were reviewed and issued for 54 single-family residential developments.

In 2018 staff gave verbal reminders to permit holders on the upcoming wet weather season and associated best management practices.

Conduct Site Inspections (Ongoing)

Staff reported that there were 54 single-family residential ESC permits with associated inspections in 2018 throughout the City of Newberg.

Enforce ECS Ordinances (Ongoing)

Staff reported no warning letters or non-compliance citations were issued in 2018.

Measure No. 5 – Post-Construction Runoff Control

DS-1 Develop Stormwater Management Program (Incomplete, But Started)

This best management practice includes updates to standard drawings in December 2019, and updates to the stormwater design standards in December 2020 (target dates). Based on both staff feedback and feedback from the construction community, updates are currently being made to the City's standard drawings to provide more clarity where necessary. It's anticipated that these changes should be finalized by December 2019.

DS-2 Train Staff in Stormwater Management (Ongoing)

Each department or division within the City is responsible for their employee training. The following trainings were attended in 2018:

- One Engineering Division staff member attended the TMDL designated management agency (DMA) meetings to learn from other DMA coordinators throughout the Willamette basin.
- Two Engineering Division staff members attended the Mid-Willamette Erosion Control and Stormwater Management Summit in January 2018.
- One Engineering Division staff member attended the ACWA Stormwater Summit in May 2018.
- One Engineering Division staff member attended the Pacific Northwest Clean Water Association (PNWCA) Annual Conference in October 2018.
- The Maintenance Division held a best management practice training for all staff members on LIDA facilities in February 2018.
- Five Maintenance Division staff members attended ODOT Short-School in March 2018, and two staff members attended training called "What Makes Emergency Response Successful?" which covered products for stormwater flooding and management in emergency events.

DS-3 Implement Stormwater Management Program (Ongoing)

The best management practice Implement Stormwater Management program consists of three strategies; Require Stormwater Management for Development and Redevelopment, Improve Watershed Management, and Optimize Water Quality.

Require Stormwater Management for Development and Redevelopment (Ongoing)

The strategy Require Stormwater Management for Development and Redevelopment consists of three measurable goals.

Require Stormwater Plan Submittals and Conduct Plan Reviews (Ongoing)

The City requires that all development/redevelopment projects that create a net new impervious surface area that exceeds 500 square feet of either public or private property must treat and detain stormwater.

The projects found in Appendix D represent construction plans received and reviewed for stormwater management in regards to development and redevelopment. The project type, size, and location are noted.

Additionally the Engineering Division participated in 45 pre-application meetings in 2018 where City stormwater requirements were discussed with applicants.

Require Stormwater Management per the Stormwater Development Manuals and Standard Details (Ongoing)

Appendix D notes the number and type of stormwater facilities constructed for each project that was either completed or started in 2018. Public stormwater facilities are then added to the City's GIS system once a development's as-builts are provided to the City.

Private stormwater facilities are required to have recorded Stormwater Maintenance Agreements with the City of Newberg which provide guidance on maintenance activities into perpetuity.

Conduct pre-construction conferences to inform contractors about stormwater requirements (Ongoing)

The City typically holds pre-construction conferences for all public improvement projects, and for larger private development projects within the City. Pre-construction meetings are noted in Appendix D. The City held eight pre-construction meetings for projects that were either completed or started in 2018.

Improvement Watershed Management (Ongoing)

The strategy Improve Watershed Management consists of two measureable goals.

Evaluate stormwater projects for new treatment opportunities

Each year the City establishes a 5-Year Capital Improvement Plan (CIP) that balances infrastructure needs based on a variety of sources including the Stormwater Master Plan, City Council goals, operational needs, and regulatory obligations.

The stormwater projects included in the fiscal year (FY) 2018-2019 project list include the following:

- **S. Blaine Street; Hancock to 11th Street** – Correct flooding problems and upgrade old pipe sections that no longer meet City standards (material type and sizing).
- **N. Elliot Road** – There is currently no storm drainage in N. Elliot Road resulting in frequent ponding alongside the roadway. This project would add an 18-inch storm pipe to the system as part of a larger roadway project.
- **N**. **Springbrook Road** – There are existing gaps in the public storm drainage system in N. Springbrook Road, improvements will be made as part of the larger street project.
- **800 Block of Wynooski Street** – Correct a current pipe and outfall that is eroding an area east of Wynooski Street.

These projects are scheduled to be constructed over the next 5-years and are consistent with the City's stormwater infrastructure needs. As projects move toward preliminary design, they will be reviewed for treatment opportunities based on the City's established stormwater facility hierarchy as noted in the Public Works Design and Construction Standards Section 4.6.8 Facility Selection Hierarchy.

Implement stormwater projects for treatment opportunities

The S. Blaine Street project is a very large undertaking as noted in the Stormwater Master Plan. The City has elected to break the project out into smaller segments due to funding constraints. The first two phases of construction are complete (from approximately 405 S Blaine Street

south to the tributary to Chehalem Creek) and the City is planning to construct the next phase in FY 2021/2022 (from approximately 405 S Blaine Street north to Hancock Street).

The 800 Block of Wynooski Street project was started in 2018 with the support of the George Fox University engineering program under the guidance of the City's Public Works Director. This project is in the engineering phase and is correcting erosion in the vicinity of Hess Creek.

Optimize Water Quality (Ongoing)

The City requires a two-year maintenance agreement for all private development of public stormwater facilities. As an example, if a subdivision is built and requires a detention pond to mitigate stormwater, the development enters into a two-year maintenance agreement with the City to maintain that stormwater facility through the establishment phase. When the two year maintenance agreement is coming to an end, a final inspection is scheduled and completed to allow for the developer to correct any problems before the stormwater facility becomes the responsibility of the City.

In 2018 the following stormwater facilities were transferred from the private maintenance agreements to public stormwater maintenance:

- Highlands at Hess Creek Phase 4 and 5 (Detention Pond)
- Columbia Estates (Detention Pond)
- Nova Grace (Detention Pond, Flow Dissipater)

These facilities have been added to the City's asset management program (both GIS and Cartegraph OMS), and as-builts are available for review through an internal staff portal.

Measure No. 6 – Pollution Prevention in Municipal Operations

OM-1 Operations and Maintenance Manual (Complete/Ongoing/Incomplete, But Started/Not Started)

The Operations and Maintenance Manual best management practice consists of three strategies; Update O&M Policies, Update Infrastructure Procedures, and Update Street Sweeping Procedures.

Update O&M Policies

The Update O&M Policies strategy consists of two measureable goals.

Review existing O&M practices (Completed)

The City developed an Operations and Maintenance Manual in 2018 to document current maintenance procedures as they relate to stormwater. The Manual was completed in early December and sent to DEQ on December 10, 2018. The Manual covers stormwater work flow, public participation in reporting stormwater issues, stormwater inspection and cleaning, stormwater repair and replacement, illicit discharge investigation and spill response, the catch basin cleaning program, the street sweeping program, and the newly deployed operations management program called Cartegraph OMS.

Update O&M manual to optimize water quality (Not Started)

The Operations and Maintenance Manual is scheduled to be reviewed and updated every three years. The manual is scheduled for a review and update in December 2022, and this work has not yet been started.

Update Infrastructure Procedures

The Update Infrastructure Procedures strategy consists of two measurable goals.

Review and evaluate the need to update the catch basin cleaning program (Incomplete, But Started)

As part of developing the Stormwater Operations and Maintenance Manual and the implementation of the City's new operations management program called Cartegraph OMS, the existing catch basin cleaning program was discussed. Attribute tables for catch basins inside of the Cartegraph OMS system were modified to capture the data most relevant to our maintenance division and to support reporting as part of the TMDL plan. This initial work will be reviewed and evaluated by July 2019 to determine if additional modifications need to be made.

Implement revised catch basin cleaning program (Ongoing)

The City continues to implement the existing catch basin cleaning program annually, and as the program is revised/updated in July 2019 will follow any modifications made. Information regarding catch basins cleaned annually can be found in section OM-3 Stormwater Infrastructure Maintenance.

Update Street Sweeping Procedures

The Update Street Sweeping Procedures strategy consists of two measurable goals.

Review and evaluate the need to update the street sweeping program (Not Started)

The City is scheduled to review and evaluate the need to update the street sweeping program in July 2020. As such, this task has not yet been started.

However, as of September 2018 the City is undertaking a pilot program to have a contractor support with street sweeping along OR99W between the western city limits and Villa Road. This work must be completed at night and put stress on City maintenance division employees who were switching back and forth between day shifts and night shifts. This pilot program is expected to last for an entire year and will be evaluated at the completion to determine if the City wants to continue with this service.

Implement revised street sweeping program (Ongoing)

The City continues to implement the existing street sweeping program annually, and as the program is revised/updated in July 2020 will follow any modifications made.

OM-2 Operations and Maintenance Training (Ongoing/Incomplete, But Started)

The Operations and Maintenance Training best management practice has one strategy which is to train staff in infrastructure and street sweeping procedures that optimize water quality. The strategy has two (2) measureable goals.

Train new staff in stormwater maintenance duties in O&M procedures manual (Ongoing)

The Maintenance Division proactively trains new employees on the day to day tasks associated with stormwater maintenance duties. Much of this training is "on-the-job" and is taught through the experience of completing tasks like cleaning catch basins or stormwater lines. Additionally the following training was attended by the Maintenance Division staff members:

- The Maintenance Division held a best management practice training for all staff members on LIDA facilities in February 2018.
- Five Maintenance Division staff members attended ODOT Short-School in March 2018, and two staff members attended training called "What Makes Emergency Response Successful?" which covered products for stormwater flooding and management in emergency events.

Train all staff in revised O&M procedures manual every three years (Incomplete, But Started)

The City developed an Operations and Maintenance Manual to document current maintenance procedures as they relate to stormwater. The Manual was completed in early December and sent to DEQ on December 10, 2018. A presentation of the manual to the entire Maintenance Division is currently being coordinated and is expected to be complete in March 2019. This presentation will then be given every three years in coordination with the manual update.

OM-3 Stormwater Infrastructure Maintenance (Ongoing)

The Stormwater Infrastructure Maintenance best management practice has one strategy which is to maintain stormwater infrastructure. The strategy has six (6) measurable goals.

Clean catch basins (Ongoing)

There were 75 catch basins/grates cleaned in 2018, as is shown in *Table 5*.

Place trash racks over major inlets (Ongoing)

There were no trash racks installed in 2018, as is shown in *Table 5*.

Inspect, clean, repair, replace, and install stormline (Ongoing)

The amounts of stormline inspected, cleaned, repaired, replaced, and installed in 2018 can be seen in *Table 5*. It should be noted that a migration between the old data collection system and the new Cartegraph OMS asset management system occurred in October 2018, there were problems with some of the old data migrating into the new software so the number presented may not fully represent all of the maintenance activities in 2018.

Inspect, repair, and replace culverts (Ongoing)

The amounts of culverts inspected, repaired, and replaced in 2018 can be seen in *Table 5*. It should be noted that a migration between the old data collection system and the new Cartegraph OMS asset management system occurred in October 2018, there were problems with some of the old data migrating into the new software so the number presented may not fully represent all of the maintenance activities in 2018.

Table 5: Stormwater Infrastructure Maintenance Activities from 2018 to 2022

Stormwater Maintenance Activity	2018	2019	2020	2021	2022
Catch Basin/Grates Cleaned	75	-	-	-	-
Trash Racks Installed	0	-	-	-	-
Stormline Inspected, feet	2,089	-	-	-	-
Stormline Cleaned, feet	4,390	-	-	-	-
Stormline Repaired, feet	0	-	-	-	-
Stormline Replaced, feet	0	-	-	-	-
Stormline Installed, feet*	0	-	-	-	-
Ditch Cleaned, feet	125	-	-	-	-
Culvert Inspected	0	-	-	-	-
Culvert Repaired	0	-	-	-	-
Culvert Replaced	0	-	-	-	-

*This value represents stormline installed by the City's Maintenance Division only, and is not inclusive of new development within the City.

Inspect and repair public stormwater facilities (Ongoing)

The City inspects and repairs public stormwater facilities on an annual basis, 2018 activities can be seen in *Table 6*. In 2018, visual inspections of public stormwater facilities including detention areas, spillways, and water quality swales was done in July 2018. Twenty six public stormwater facilities were visually inspected and rated.

Four facilities were identified in poor condition. The following facilities were cleaned and repaired as part of the George Fox University Serve Day in September 2018, where approximately 30 college students were broken into three groups and under the direction of staff in the Maintenance Division performed repairs.

- STS I0901 – N Springbrook Road north of Middle Brook Drive (Detention Area)
- STS G1103 – Renfro Way (Detention Area)
- STS J1202 – Worth Boulevard south side (Detention Area)
- STS G0801 – E Edgewood Dr east of N College St (Detention Area)

It should also be noted that the 12 LIDA facilities along N College Street were also cleaned by George Fox Students. These stormwater facilities were replanted in January 2018, and so students removed newly sprouted weeds and trash from those facilities as part of keeping them on track for new growth success.

Table 6: Stormwater Facility Activities from 2018-2022

Stormwater Facility Activities		2018	2019	2020	2021	2022
Total Facilities (Detention Areas, Spillways, and Water Quality Swales)		83	-	-	-	-
Inspections		26	-	-	-	-
Type	Detention Area	21	-	-	-	-
	Spillway	2	-	-	-	-
	Water Quality Swale	3	-	-	-	-
Condition	Excellent	4	-	-	-	-
	Fair	18	-	-	-	-
	Poor	4	-	-	-	-
Facility Repairs		4	-	-	-	-

Sweep streets every 4-6 weeks (Ongoing)

The City cleans streets on a 5-week rotation. In 2018, just over one thousand cubic yards of debris were removed while sweeping 3,808 curb miles. As has been noted previously, the City also has a pilot program underway which started in September 2018 where a contracted street sweeping company is sweeping OR99W from the western city limits to Villa Road. Information regarding the contracted street sweeping activities is included in *Table 7*.

Table 7: Street Sweeping Activities from 2018 to 2022

Street Sweeping Activities (Public and Private)	2018	2019	2020	2021	2022
Sweeping Debris (Cubic Yards)	1,009	-	-	-	-
Street Sweeping Miles	3,808	-	-	-	-
Cubic Yard per Mile Swept	0.26	-	-	-	-
Contracted Sweeping Debris (Cubic Yards)	95*	-	-	-	-
Contracted Street Sweeping Miles	64*	-	-	-	-
Contracted Cubic Yard per Mile Swept	1.5*	-	-	-	-

*A pilot program was started in September 2019 to have OR99W swept between the western city limits and Villa Road using a third party contractor. That section of OR99W is swept twice a month.

Temperature

T-1 Maintain Existing Stream Vegetation (Ongoing)

The best management practice Maintain Existing Stream Vegetation has one strategy which is to use the Municipal Code and other measures to maintain stream vegetation. The strategy has two (2) measureable goals.

Update Municipal Code that can affect stream health (Ongoing)

The City had no ordinances adopted in 2018 that would affect stream health.

Update Stream Corridor Overlay (Ongoing)

There were no code changes or map changes to the Stream Corridor Overlay in 2018.

T-2 Increase Shade along Streams within the City (Ongoing)

The City continues to promote and facilitate a Trees for Streams Program in coordination with the Northwest Oregon Restoration Partnership (NORP). Native plant materials are purchased at a reduced cost from NORP in exchange for City volunteer hours each year, in 2018 the City's plant invoice was $131.00. The City then provides native plant materials for free to interested property owners within the city limits whose properties abut Chehalem Creek, Hess Creek, Spring Brook or tributaries to these stream systems. This program gives the City an opportunity to build relationships with private land owners who own the majority of the property along the City's stream systems, and to stabilize stream temperatures within the City by increasing the amount of shade. Native plant materials provided to residents in 2018 can be seen in *Figure 3* and *Table 8*.

In 2018, two Newberg citizens participated in the Trees for Streams Program and both were located in the Chehalem Creek Watershed. These land owners planted natives along a total of 0.02 miles of stream/tributary and positively impacted a total of 0.29 riparian acres.

Figure 3: 2018 Plants received from NORP and distributed to Newberg Residents

Table 8: Trees for Streams Program Native Plant Totals from 2018 to 2022

	2018	2019	2020	2021	2022	Total
Chehalem Creek Watershed						
Trees	19	-	-	-	-	19
Shrubs	24	-	-	-	-	24
Groundcovers	5	-	-	-	-	5
Hess Creek Watershed						
Trees	5	-	-	-	-	5
Shrubs	12	-	-	-	-	12
Groundcovers	8	-	-	-	-	8
Spring Brook Watershed						
Trees	5	-	-	-	-	5
Shrubs	38	-	-	-	-	38
Groundcovers	0	-				0
Total	116	-	-	-	-	116

T-3 Stream Assessment (Ongoing/Incomplete, But Started/Not Started)

The best management practice Stream Assessment has one strategy to Assess Stream Health and Canopy Coverage. The strategy has four (4) measureable goals.

Assess at least one stream mile annually for vegetative ground cover, stream channel configuration, and canopy coverage (Ongoing)

In March 2018, the City assessed approximately 0.2 stream miles adjacent to the Friendsview Retirement Village between Fulton Street and the railroad along Hess Creek. This visit was done in coordination with George Fox University and the Yamhill County Soil and Water Conservation District to prepare for future restoration efforts (invasive removal, native plantings, and deer resistant tree protection) that occurred in September 2018 and in February 2019.

In September 2018, the City assessed approximately 1.2 stream miles of Hess Creek between OR99W/Hoover Park to the City's Waste Water Treatment Plant. This stream walk was done in coordination with the Maintenance Division and was used to evaluate both the stream corridor and the City's wastewater infrastructure which follows Hess Creek in this section.

In the 1.4 total miles of stream assessments completed in March and September, qualitative assessments were done concerning vegetative ground cover, stream channel configuration, and canopy coverage.

Complete a wetland inventory that encompasses the Urban Reserve areas. Update wetland inventory when Department of Land Conservation and Development (DLCD) provides funding for City's comprehensive plan periodic review (Ongoing)

The Department of Land Conservation and Development (DLCD) is not currently funding periodic reviews for comprehensive plan updates. At the time were DLCD has identified funding, a wetland inventory of the City's urban reserve area will likely be included in Newberg's Comprehensive Plan update.

Develop stream temperature monitoring program (Incomplete, But Started)

The development of the stream temperature monitoring program is schedule to be complete in July 2019. Some work has been started, but the majority of the program development is expected to occur over the coming months.

Implement stream temperature monitoring program (Not Started)

The implementation of the stream temperature monitoring program is not scheduled to be completed in May 2020. No progress has been made on this goal.

Measure No. 1 – Public Education

PE-1 Stormwater Education (Ongoing)

The Stormwater Education best management practice consists of three strategies; Website Education, Citizen Group Education, and the Water Quality Report.

Website Education (Ongoing)

The City has 16 web pages related to stormwater covering information on erosion and sedimentation control, riparian vegetation, water quality, illicit discharge, public works standards, and the Total Maximum Daily Load (TMDL) program.

The City posted on social media via the City of Newberg and Public Works Department Facebook pages 35 times about stormwater activities including the catch basin cleaning, illicit discharge, compost, waste management hazardous materials collections, the drug takeback program, native plant sales, the rate review committee, and volunteer events.

The annual TMDL report is uploaded each year to the City's website after receiving and incorporating comments from DEQ.

Citizen Group Education (Ongoing)

Leadership Newberg attended a presentation at the Newberg Wastewater Treatment Plant in 2019 to learn about City programs such as volunteer opportunities, the Trees for Streams program, the watershed grant, the fats, oils, and grease (FOG) program, and City created Class A compost. Participants were also given a tour of the waste water treatment plant and its composting facilities.

In June 2019, the City held the annual Public Works Day event in the park across from the Chehalem Cultural Center. The Engineering Department provided water conveyance education as part of the event by building a water system out of clear tubing and giving kids the opportunity to see how impacts to the system like "clogging" a line with toothpicks or small balls can cause backups and flooding. The activity was very interactive with kids creating blockages and then pouring water down the tubing to see what happened. See *Figure 4* for water conveyance system activity.

Figure 4: Public Works Day Water System Conveyance Activity

Water Quality Report (Ongoing)

The Environmental Protection Agency (EPA) and the State of Oregon require the City of Newberg to distribute a Water Quality Report each year to all residences/customers. The majority of information in the report is required by the EPA and the report is mailed to residents/customers by June 30th each year. The 2018 Water Quality Report was mailed out in June 2019 and can be found on the City's website here: https://www.newbergoregon.gov/operations/page/water-quality-report

The report included the following TMDL related messages:

- Watershed Volunteer opportunities (PE-1 Citizen Group Education)
- City's Watershed Grant (PI-2 Public Participation in Stormwater Management)
- Illicit Discharge (Measure No. 3 – Illicit Discharge Detection and Elimination)
- Citizen Rate Review Committee (PI-1 Stormwater Utility Fee)
- Hazardous Waste Collection resources (ID-3 Hazardous Waste Collection)

PE-2 Watershed Education (Ongoing/Not Started)

The Watershed Education best management practice consists of two strategies; Public Signage and Student Education.

Public Signage (Ongoing/Not Started)

The Public Signage strategy consists of three measureable goals.

Develop a Public Infrastructure Signage Program (Not Started)

This work has not yet been started, the expected implementation timeline is December 2020.

Provide Signage at Stream Crossings or LIDA Infrastructure Facilities (Not Started)

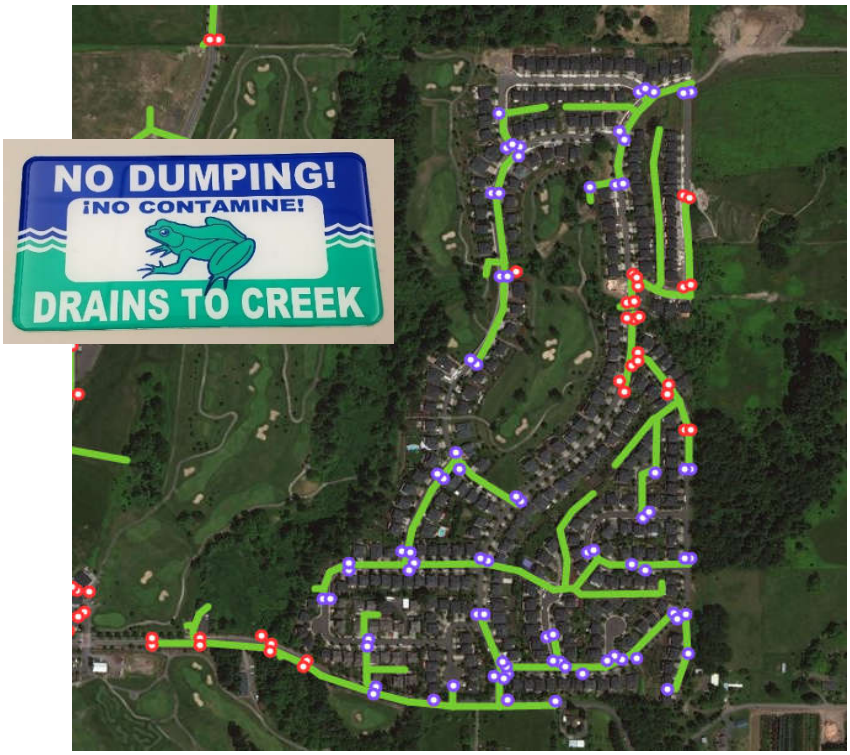
This work has not yet been started, the expected implementation timeline is December 2022.

Marking 50 Unmarked Catch Basins a Year with "No Dumping, Drains to Stream" Language (Ongoing)

The City installed 83 bi-lingual "No Dumping, Drains to Creek" catch basin markers in November 2019. This year catch basins in The Greens neighborhood near the Chehalem Glenn Golf Course on the eastern edge of the City were marked.

The City fully implemented the Cartegraph OMS asset management system in 2019. *Figure 5* shows a screen capture from Cartegraph OMS showing the location of the "No Dumping, Drains to Creek" markers installed in 2019. The green lines represent the stormwater conveyance system, the purple circles represent storm inlets marked with "No Dumping, Drains to Creek," and the red circles represent storm inlets not yet marked. Being able to track where catch basins have been marked around the City will help us to better target high risk areas and work to get full coverage across Newberg.

Figure 5: "No Dumping, Drains to Creek" markers installed in 2019



Student Education (Ongoing)

The City of Newberg has been working with a student led organization called Chehalem Valley Watershed Project (CVWP), which is comprised of students from Newberg High School.[1] The focus of this organization is to encourage high school students to learn about the environment through hands-on research, restoration work, and outreach events. The CVWP held a Chehalem Watershed Symposium event on Thursday April 18, 2019. The City of Newberg hosted a table at the event with a poster board focused on stream ordering, the City's street sweeping program, and provided general information about catch basins and manholes with a focus on the "No Dumping! Drains to Creek" educational messaging.

Measure No. 2 – Public Involvement

PI-1 Stormwater Utility Fee (Ongoing)

The Citizen's Rate Review Committee (CRRC) was started in 1992 and consists of volunteers from the public who meet every two years to review utility rates proposed by staff. After a discussion with the committee, the rates are presented by staff to the City Council for approval. New stormwater related rates were adopted on April 1, 2018 and can be seen below in

[1] Chehalem Valley Watershed Project https://sites.google.com/view/cvwp/home

Table *1*.

Table 9: Stormwater Utility Fee adopted April 1, 2018

Municipal Services Statement Fees – Stormwater Service Charges	
Service Charge ($/month)	$10.30
Storm System Development Fee*	
Single Family – Equivalent Dwelling Unit (EDU)	$358.64 flat fee
Other than Single Family	(Impervious Area/2877) x $358.64

*Revenues are used to maintain the City's Stormwater System. This fee is collected for each new development that connects to or otherwise uses the City's stormwater system and is determined by the square feet of impervious area. Impervious surface is the hard surface area which either prevents or retards entry of water into the soil mantel and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions. Impervious surface areas include, but are not limited to, rooftops, concrete or asphalt paving, walkways, patios, driveways, parking lots or storage areas and trafficked gravel or other surfaces which impede the natural infiltration or runoff of surface water. An equivalent dwelling unit (EDU) is equal to 2,877 square feet of impervious area.

The City of Newberg is currently going through the Rate Review update and the rate review meeting for the stormwater fund was held on November 21, 2019. It is anticipated that new rates will be adopted in April 2020. At the time of the stormwater fund presentation, there was a proposal for a 9% rate increase, ultimately City Council will make the final decision in April 2020.

PI-2 Public Participation in Stormwater Management (Ongoing)

The City is in the process of revising the grant forms and selection criteria and will be making an effort in 2020 to do more public outreach about the Watershed Grant Program.

PI-3 Public Participation in Reporting Stormwater Issues (Ongoing)

The Public Participation in Reporting Stormwater Issues best management practice consists of two measureable goals.

Provide Methods for Citizens to Report Stormwater Concerns (Ongoing)

In 2019, the City used its website to provide a phone number for the public to call about stormwater issues/concerns which are then logged in Cartegraph OMS, the City's asset management program, by the Maintenance Division. The City is anticipating rolling out a mobile app service in 2020 called SeeClickFix which would provide residents another way to report TMDL related issues around town. SeeClickFix will then integrate with Cartegraph OMS for better data management.

Respond to Public Concerns (Ongoing)

The City categorizes public concerns into four main categories which include illicit discharge, erosion control, flooding, and illegal dumping. Totals for each type of concern received in 2019 can be found in Table 2 and are inclusive of concerns received by both the maintenance division and code enforcement. More information concerning incident resolution for illicit discharge concerns can be found in Appendix B. Once a concern is logged, City staff works to keep that resident informed about the issue resolution.

Table 10: Stormwater Concerns Received from the Public

Types of Concerns	Number of Concerns Received					Total
	2018	2019	2020	2021	2022	
Illicit Discharge	1	8	-	-	-	9
Erosion Control	1	0	-	-	-	1
Flooding	7	1	-	-	-	8
Illegal Dumping	0	2	-	-	-	0

PI-4 Public Participation in Determining Stormwater Educational Focus (Incomplete, But Started)

This best management practice was scheduled for completion in June/July 2019. The Stormwater Survey has been developed and reviewed, and was ready to be published in summer 2019. However, in 2019 the City of Newberg went through a large 20-year horizon community visioning process called “A NewBERG Community Vision” led by the Community Development Department. As part of the community visioning work, there were several online survey opportunities for Newberg residents to provide comments. In order to avoid “survey fatigue” by the public, it was recommended that the developed Stormwater Survey be delayed for release until April 2020.

Measure No. 3 – Illicit Discharge Detection and Elimination (IDDE)

ID-1 Train Staff in Illicit Discharge Investigation and Spill Response (Ongoing)

All Public Works Maintenance staff members attended a presentation on the O&M Stormwater Procedures Manual in March 2019. A portion of the presentation covered what to do when an illicit discharge happens and who needs to be notified. As noted in *Table 2* and Appendix B, an increase number of illicit discharges were reported and responded to in 2019.

ID-2 Implement IDDE Plan (Ongoing)

The Implementation of the IDDE Plan consists of three strategies and six measurable goals.

Conduct Illicit Discharge Inspections (Ongoing)

The strategy for conducting illicit discharge inspections consists of two measurable goals.

Fieldscreen Outfalls (Ongoing)

The City screens outfalls during stormwater system maintenance and stream assessments. As maintenance performs work throughout the system, requests are made to the GIS department to update asset mapping.

Additionally, the City did a field walk/investigation of approximately 1.3 stream miles on the upper section of Hess Creek above OR99W in September 2019. During this field walk, outfalls were observed. No observations were made during the field walk/investigation that resulted in updates to the City's asset management system.

Investigate Outfalls for Illicit Discharges (Ongoing)

There were no events in 2019 that warranted samples being taken at an outfall location as a result of a known or suspected illicit discharge.

As part of the City's Stormwater Credit Program, one participant does perform its own sample testing at discharge locations. These records are kept by the applicant and they coordinate directly with DEQ to meet requirements of their 1200-Z permit.

Respond to Illegal Dumps (Ongoing)

The City of Newberg had two reported illegal dumps occur in 2019. One case was of a Christmas tree that was found abandon in a public street. The other case involved a renter who cut up the driveway of the home he was renting and dumped the asphalt/concrete into the adjacent wooded lot. When the renter was notified by code enforcement, the dumped debris was picked up and was removed and disposed of properly.

Respond to Illicit Discharges/Spills (Ongoing)

The strategy for responding to illicit discharges/spills consists of three measurable goals.

Fire Department Spill Response (Ongoing)

The Fire Department, Tualatin Valley Fire & Rescue (TVF&R) responded thirteen (13) "spill" incidents in 2019. In all cases the spills were either absorbed or contained and oils/petroleum were prevented from entering storm drains and/or permanently impacting streams. An Oregon Emergency Report System (OERS) report was filed with the State for one incident that occurred on October 24, 2019.

Public Works Illicit Discharge/Spill Response (Ongoing)

Public Works Maintenance Division responded to three illicit discharges/spills within the City in 2019 which are noted in Appendix B.

Spill Response Cards/Kits on Municipal Trucks and Sweepers (Ongoing)

The City of Newberg has PIG® Truck Spill Kits available on ten (10) public works vehicles. Maintenance staff are made aware of these spill kits and the associated instruction manual.

ID-3 Hazardous Waste Collection (Ongoing)

Yamhill County Solid Waste (YCSW) continues to sponsor hazardous waste collection events for Newberg in May and for McMinnville in October. Both events are open to all Yamhill County residents and it is an opportunity for residents to safely dispose of hazardous items for free. Annual totals from the hazardous waste collection events can be seen in

Table *3*.

Table 11: Yamhill County Solid Waste: Hazardous Waste Collection Events Summary

Year	City of Newberg Event (May)			City of McMinnville Event (October)		
	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)
2018	32,697	22,500	36.3	31,679	9,500	480
2019	40,334	22,500	167.5	37,449	22,250	230
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
2022	-	-	-	-	-	-
Total	73,031	45,000	203.8	69,128	31,750	710

ID-4 Drug Take-Back Collection (Ongoing)

The City of Newberg has a Medication Disposal Site which is located inside the lobby of the City's Public Safety Building. The safe drop box is for the public to dispose of unneeded or expired medications. Over the counter and pet medications are also accepted at the drop box location. Medications collected are incinerated so they do not end up in the garbage or flushed down the drain, avoiding contamination of soil and drinking water. Annual totals from the Medication Take-Back Program can be seen in Table 4.

Table 12: City of Newberg Medication Take-Back Program Summary

Year	Medication Collected (pounds)
2018	887.5
2019	887.2
2020	-
2021	-
2022	-
Total	1774.7

Measure No. 4 – Construction Site Stormwater Runoff Control

CS-1 Train Staff in Erosion and Sediment Control (Ongoing)

Two (2) engineering division staff members attended Certified Erosion and Sedimentation Control Lead Training in February 2019 and are now both certified CESCLs.

CS-2 Implement Erosion and Sediment Control Program (Ongoing)

The best management practice for implementing the ESC Program consists of three measureable goals.

Conduct ESC Plan Review (Ongoing)

Erosion and Sediment Control plans reviewed for major projects are listed in Appendix C. Projects exceeding 1-acre are required to obtain DEQ 1200-C permits and are noted, inspections of these permits are conducted by DEQ. The City had three construction projects in 2019 that were more than a single-family home and less than 1-acre that required City issued Erosion and Sediment Control Permits (see Appendix C). The remainder of the City issued Erosion and Sediment Control Permits in 2019, were reviewed and issued for 84 single-family residential developments.

In 2019 staff gave verbal reminders about best management practices to permit holders on the upcoming wet weather season and for specific storm events.

Conduct Site Inspections (Ongoing)

Staff reported that there were 84 single-family residential ESC permits with associated inspections in 2019 throughout the City of Newberg.

Enforce ECS Ordinances (Ongoing)

Staff reported no warning letters or non-compliance citations were issued in 2019.

Measure No. 5 – Post-Construction Runoff Control

DS-1 Develop Stormwater Management Program (Incomplete, But Started)

This best management practice included updates to standard drawings in December 2019, and updates to the stormwater design standards in December 2020 (target dates). Based on both staff feedback and feedback from the construction community, updates were made to the City's standard drawings to provide more clarity where necessary. However, due to staffing availability in 2019 this work was not fully completed. A new target date of December 2020 has been set for this goal of completing updates to the standard drawings.

DS-2 Train Staff in Stormwater Management (Ongoing)

The following stormwater related trainings were attended in 2019:

- One Engineering Division staff member attended the TMDL designated management agency (DMA) meetings to learn from other DMA coordinators throughout the Willamette basin.
- One Engineering Division staff member attended the 2019 APWA Oregon Chapter Spring Conference in April 2019.
- One Engineering Division staff member attended the 2019 APWA Oregon Chapter Fall Conference in October 2019.
- Two Engineering Division staff members attended Certified Erosion and Sedimentation Control Lead Training in February 2019.
- Several employees from both the Engineering Division and Maintenance Division attending the American Public Works Association (APWA) National Conference in Seattle in September 2019.
- One Maintenance Division staff member attended the Vactor Operation and Maintenance training in 2019.
- Five Maintenance Division staff members attended the APWA Spring Street Maintenance and Collections training in 2019.
- Five Maintenance Division staff members attended APWA Fall Street Maintenance and Collections training in 2019.

DS-3 Implement Stormwater Management Program (Ongoing)

The best management practice Implement Stormwater Management program consists of three strategies; Require Stormwater Management for Development and Redevelopment, Improve Watershed Management, and Optimize Water Quality.

Require Stormwater Management for Development and Redevelopment (Ongoing)

The strategy Require Stormwater Management for Development and Redevelopment consists of three measurable goals.

Require Stormwater Plan Submittals and Conduct Plan Reviews (Ongoing)

The City requires that all development/redevelopment projects that create a net new impervious surface area that exceeds 500 square feet of either public or private property must treat and detain stormwater.

The projects found in Appendix D represent construction plans received and reviewed for stormwater management in regards to development and redevelopment. The project type, size, and location are noted.

Additionally the Engineering Division participated in 31 pre-application meetings in 2019 where City stormwater requirements were discussed with applicants.

Require Stormwater Management per the Stormwater Development Manuals and Standard Details (Ongoing)

Appendix D notes the number and type of stormwater facilities constructed for each project that was either completed or started in 2019. Public stormwater facilities are then added to the City's GIS system once a development's as-builts are provided to the City.

Private stormwater facilities are required to have recorded Stormwater Maintenance Agreements with the City of Newberg which provide guidance on maintenance activities into perpetuity.

Conduct pre-construction conferences to inform contractors about stormwater requirements (Ongoing)

The City typically holds pre-construction conferences for all public improvement projects, and for larger private development projects within the City. Pre-construction meetings are noted in Appendix D. The City held eleven pre-construction meetings (six private development meetings and five meetings for public improvement projects) for projects that were either completed or started in 2019.

Improvement Watershed Management (Ongoing)

The strategy Improve Watershed Management consists of two measureable goals.

Evaluate stormwater projects for new treatment opportunities (Ongoing)

Each year the City establishes a 5-Year Capital Improvement Plan (CIP) that balances infrastructure needs based on a variety of sources including the Stormwater Master Plan, City Council goals, operational needs, and regulatory obligations.

The stormwater projects included in the fiscal year (FY) 2020-2021 project list include the following:

- **N Elliot Road** – There is currently no storm drainage in N Elliot Road resulting in frequent ponding alongside the roadway. This project would add an 18-inch storm pipe to the system as part of a larger roadway project.
- **N Springbrook Road** – There are existing gaps in the public storm drainage system in N Springbrook Road, improvements will be made as part of the larger street project.
- **800 Block of Wynooski Street** – Correct a current pipe and outfall that is eroding an area east of Wynooski Street.

- **Update Stormwater Master Plan** – The Riverfront Master Plan was recently adopted and will need to be incorporated into the Stormwater Master Plan, the current Stormwater Master Plan was adopted in 2014 and gets updated every five years.
- **Railroad Ditch; N College Street to N Meridian Street** – This area experiences flooding from a variety of contributing sources. This project will study the issues and develop a solution to be implemented in a future plan year.

These projects are scheduled for work to begin over the next fiscal year and are consistent with the City's stormwater infrastructure and planning needs. As projects move toward preliminary design, they will be reviewed for treatment opportunities based on the City's established stormwater facility hierarchy as noted in the Public Works Design and Construction Standards Section 4.6.8 Facility Selection Hierarchy.

Implement stormwater projects for treatment opportunities (Ongoing)

The N Elliot Road project was identified as a high priority project because it provides direct access to the high school. Areas of N Elliot Road were also identified as having drainage problems in the Stormwater Master Plan. As the roadway design develops, both new and existing stormwater will be treated and detained within the system.

The N Springbrook Road project identified in 2020/2021 is an exploratory analysis of the existing conditions to determine what steps can be taken to correct storm drainage issues in advance of a larger million dollar project in 2022/2024.

The 800 Block of Wynooski Street project was started in 2018 with the support of the George Fox University engineering program under the guidance of the City's Public Works Director. An engineering consultant was then brought on board in 2019 to finish the design and get the package ready for bid. The Joint Permit Applicant for the work occurring in both jurisdictional waters of the state and wetland was received by the State in late-February 2020 and the City is hopeful the work can be completed by the end of 2020.

Optimize Water Quality (Ongoing)

The City requires a two-year maintenance agreement for all private development of public stormwater facilities. As an example, if a subdivision is built and requires a detention pond to mitigate stormwater, the development enters into a two-year maintenance agreement with the City to maintain that stormwater facility through the establishment phase. When the two year maintenance agreement is coming to an end, a final inspection is scheduled and completed to allow for the developer to correct any problems before the stormwater facility becomes the responsibility of the City.

In 2019 the following stormwater facility was transferred from the private maintenance agreements to public stormwater maintenance:

- Columbia Estates (Detention Pond)

This facilities has been added to the City's asset management program (both GIS and Cartegraph OMS), and as-builts are available for review through an internal staff portal.

Measure No. 6 – Pollution Prevention in Municipal Operations

OM-1 Operations and Maintenance Manual (Complete/Ongoing/Incomplete, But Started/Not Started)

The Operations and Maintenance Manual best management practice consists of three strategies; Update O&M Policies, Update Infrastructure Procedures, and Update Street Sweeping Procedures.

Update O&M Policies (Completed/Not Started)

The Update O&M Policies strategy consists of two measureable goals.

Review existing O&M practices (Completed)

The City developed an Operations and Maintenance Manual in 2018 to document current maintenance procedures as they relate to stormwater. The Manual was completed in early December and sent to DEQ on December 10, 2018. The Manual covers stormwater work flow, public participation in reporting stormwater issues, stormwater inspection and cleaning, stormwater repair and replacement, illicit discharge investigation and spill response, the catch basin cleaning program, the street sweeping program, and the newly deployed operations management program called Cartegraph OMS.

Update O&M manual to optimize water quality (Not Started)

The Operations and Maintenance Manual is scheduled to be reviewed and updated every three years. The manual is scheduled for a review and update in December 2022, and this work has not yet been started.

Update Infrastructure Procedures (Ongoing/Incomplete, But Started)

The Update Infrastructure Procedures strategy consists of two measurable goals.

Review and evaluate the need to update the catch basin cleaning program (Incomplete, But Started)

As part of developing the Stormwater Operations and Maintenance Manual and the implementation of the City's new operations management program called Cartegraph OMS, the existing catch basin cleaning program was discussed. Attribute tables for catch basins inside of the Cartegraph OMS system were modified to capture the data most relevant to our maintenance division and to support reporting as part of the TMDL plan. Due to staffing availability, a draft catch basin cleaning program document was drafted in December 2019, but has not yet been through final review and approval. It is anticipated that this work can be completed by July 2020 and will be rolled into the existing Stormwater Operations and Maintenance Manual.

Implement revised catch basin cleaning program (Ongoing)

The City continues to implement the existing catch basin cleaning program annually, and as the program is revised/updated in July 2020 will follow any proposed modifications. Information

regarding catch basins cleaned annually can be found in section OM-3 Stormwater Infrastructure Maintenance.

Update Street Sweeping Procedures (Ongoing/Not Started)

The Update Street Sweeping Procedures strategy consists of two measurable goals.

Review and evaluate the need to update the street sweeping program (Not Started)

The City is scheduled to review and evaluate the need to update the street sweeping program in July 2020. As such, this task has not yet been started.

Implement revised street sweeping program (Ongoing)

The City continues to implement the existing street sweeping program annually, and as the program is revised/updated in July 2020 will follow any modifications made.

OM-2 Operations and Maintenance Training (Ongoing)

The Operations and Maintenance Training best management practice has one strategy which is to train staff in infrastructure and street sweeping procedures that optimize water quality. The strategy has two (2) measureable goals.

Train new staff in stormwater maintenance duties in O&M procedures manual (Ongoing)

The Maintenance Division proactively trains new employees on the day to day tasks associated with stormwater maintenance duties. Much of this training is "on-the-job" and is taught through the experience of completing tasks like cleaning catch basins or stormwater lines. Additionally the following training was attended by the Maintenance Division staff members:

- A presentation was given in March 2019 to the Maintenance Division about the recently completed Operations and Maintenance Manual, which documents current maintenance procedures as they relate to stormwater.
- One Maintenance Division staff member attended the Vactor Operation and Maintenance training in 2019.
- Five Maintenance Division staff members attended the APWA Spring Street Maintenance and Collections training in 2019.
- Five Maintenance Division staff members attended APWA Fall Street Maintenance and Collections training in 2019.

Train all staff in revised O&M procedures manual every three years (Ongoing)

The City developed an Operations and Maintenance Manual to document current maintenance procedures as they relate to stormwater. The Manual was completed in December 2018 and sent to DEQ on December 10, 2018. A presentation of the manual was given to the entire Maintenance Division on March 14, 2019. Two hard copies of the manual were provided (one for each maintenance building), and all staff members were sent an email with the location of the digital copy. This presentation will then be given every three years in coordination with the manual update.

OM-3 Stormwater Infrastructure Maintenance (Ongoing)

The Stormwater Infrastructure Maintenance best management practice has one strategy which is to maintain stormwater infrastructure. The strategy has six (6) measurable goals.

Clean catch basins (Ongoing)

There were 86 catch basins/grates cleaned in 2019, as is shown in Table 5.

Place trash racks over major inlets (Ongoing)

There were no trash racks installed in 2019, as is shown in Table 5.

Inspect, clean, repair, replace, and install stormline (Ongoing)

The amounts of stormline inspected, cleaned, repaired, replaced, and installed in 2019 can be seen in Table 5. It should be noted that a large increase in inspections and cleanings took place. The Maintenance Division has committed to inspecting and cleaning all stormwater lines on a six-year rotation and are doing much of this work in coordination with the City's Pavement Preservation Project. Both storm and sewer lines are inspected and cleaned prior to new pavement treatments being installed on the roadway surfaces.

Inspect, repair, and replace culverts (Ongoing)

The amounts of culverts inspected, repaired, and replaced in 2019 can be seen in Table 5. The City recognizes that storm culverts and storm pipe can be perceived as the same thing and in some instances information logged in our asset management system may not be fully capturing the work accomplished. As an example, if a length of storm pipe has a culvert in it, the storm pipe gets noted as cleaned but information may not get added to the culvert asset. This will be a point of focus in the coming year to modify our asset management system appropriately to capture the data accordingly.

Table 13: Stormwater Infrastructure Maintenance Activities from 2018 to 2022

Stormwater Maintenance Activity	2018	2019	2020	2021	2022
Catch Basin/Grates Cleaned	75	86	-	-	-
Trash Racks Installed	0	0	-	-	-
Stormline Inspected, feet	2,089	32,707	-	-	-
Stormline Cleaned, feet	4,390	33,121	-	-	-
Stormline Repaired, feet	0	13	-	-	-
Stormline Replaced, feet	0	12	-	-	-
Stormline Installed, feet*	0	0	-	-	-
Ditch Cleaned, feet	125	0	-	-	-
Culvert Inspected	0	0	-	-	-
Culvert Repaired	0	0	-	-	-
Culvert Replaced	0	0	-	-	-

*This value represents stormline installed by the City's Maintenance Division only, and is not inclusive of new development within the City.

Inspect and repair public stormwater facilities (Ongoing)

The City inspects and repairs public stormwater facilities on an annual basis, 2019 activities can be seen in Table 6. In 2019, visual inspections of public stormwater facilities including detention areas, spillways, and water quality swales was done in August 2019. Seventeen public stormwater facilities were visually inspected and rated.

Two facilities were identified in poor condition in 2019. The Highland 3 subdivision stormwater facility (STS H1301) is still under the developer's warrant period and received maintenance in November 2019, and the Shellie Park subdivision stormwater facility (STS G1103) received maintenance in September 2019 as part of the George Fox University Serve Day. George Fox students also cleaned the stormwater facilities located on the south side of Worth Boulevard (STS J1202) and E Edgewood Drive (STS G0801) during the Serve Day event.

The City of Newberg also has a contract in place with Yamhill County to utilize Yamhill County Jail Work Crews to do some maintenance of stormwater facilities. Staff is currently putting together tailored maintenance plans for stormwater facilities.

Table 14: Stormwater Facility Activities from 2018-2022

Stormwater Facility Activities		2018	2019	2020	2021	2022
Total Facilities (Detention Areas, Spillways, and Water Quality Swales)		83	93	-	-	-
Inspections		26	17	-	-	-
Type	Detention Area	21	8	-	-	-
	Spillway	2	1	-	-	-
	Water Quality Swale	3	8	-	-	-
Condition	Excellent	4	3	-	-	-
	Fair	18	12	-	-	-
	Poor	4	2	-	-	-
Facility Repairs		4	2	-	-	-

Sweep streets every 4-6 weeks (Ongoing)

The City cleans streets approximately once each month. In 2019, 943 cubic yards of debris were removed while sweeping 1,797 curb miles. Based on the success of the third-party pilot program for street sweeping in the downtown along State highways, the City decided to fully implement this third-party approach. Information regarding both the City's street sweeping activities and the contracted street sweeping activities can be found in *Table 7*.

Table 15: Street Sweeping Activities from 2018 to 2022

Street Sweeping Activities (Public and Private)	2018	2019	2020	2021	2022
Sweeping Debris (Cubic Yards)	1,009	943	-	-	-
Street Sweeping Miles (curb miles)	2,016	1,797	-	-	-
Cubic Yard per Mile Swept	0.50	0.52	-	-	-
Contracted Sweeping Debris (Cubic Yards)	95*	158**	-	-	-
Contracted Street Sweeping Miles	64*	216**	-	-	-
Contracted Cubic Yard per Mile Swept	1.5*	0.73**	-	-	-

*A pilot program was started in September 2019 to have OR99W swept between the western city limits and Villa Road using a third party contractor. That section of OR99W is swept twice a month.

**The City has fully implemented a permanent third-part street sweeping contract for services along State highways in the downtown. The downtown is swept twice a month.

Temperature

T-1 Maintain Existing Stream Vegetation (Ongoing)

The best management practice Maintain Existing Stream Vegetation has one strategy which is to use the Municipal Code and other measures to maintain stream vegetation. The strategy has two (2) measureable goals.

Update Municipal Code that can affect stream health (Ongoing)

The City had no ordinances adopted in 2019 that would affect stream health.

Update Stream Corridor Overlay (Ongoing)

There were no code changes or map changes to the Stream Corridor Overlay in 2019. There were a few different projects that went through the land-use process where the City's Stream Corridor Overlay code was followed. Those projects are listed below:

- 1904 Birch Lane – Single Family Residential Home: Stream Corridor Impact Report – variance application (MISC318-0003)
- NE Chehalem Drive Water Line and Wastewater Line Extension: Utility extension (MISC119-0079)

T-2 Increase Shade along Streams within the City (Ongoing)

The City continues to promote and facilitate a Trees for Streams Program in coordination with the Northwest Oregon Restoration Partnership (NORP). Native plant materials are purchased at a reduced cost from NORP in exchange for City volunteer hours each year; in 2019 the City's

plant invoice was $116.00. The City then provides native plant materials for free to interested property owners who live within the city limits and whose properties abut Chehalem Creek, Hess Creek, Spring Brook or tributaries to these stream systems. This program gives the City an opportunity to build relationships with private land owners who own the majority of the property along the City's stream systems, and to stabilize stream temperatures within the City by increasing the amount of shade. Native plant materials provided to residents in 2019 can be seen in *Figure 3* and *Table 8*.

In 2019, five Newberg community members participated in the Trees for Streams Program and plants were distributed through all three watersheds. These land owners planted native plants along a total of 0.3 miles of streams/tributaries and positively impacted a total of 1.56 riparian acres within the City of Newberg.

Figure 6: 2019 Plants received from NORP and distributed to Newberg Residents

Table 16: Trees for Streams Program Native Plant Totals from 2018 to 2022

	2018	2019	2020	2021	2022	Total
Chehalem Creek Watershed						
Trees	16	19	-	-	-	19
Shrubs	49	24	-	-	-	24
Groundcovers	20	5	-	-	-	5
Hess Creek Watershed						
Trees	-	5	-	-	-	5
Shrubs	-	12	-	-	-	12
Groundcovers	-	8	-	-	-	8
Spring Brook Watershed						
Trees	-	5	-	-	-	5
Shrubs	-	38	-	-	-	38
Groundcovers	-	0				0
Total	85	116	-	-	-	116

T-3 Stream Assessment (Ongoing/Completed/Not Started)

The best management practice Stream Assessment has one strategy to Assess Stream Health and Canopy Coverage. The strategy has four (4) measureable goals.

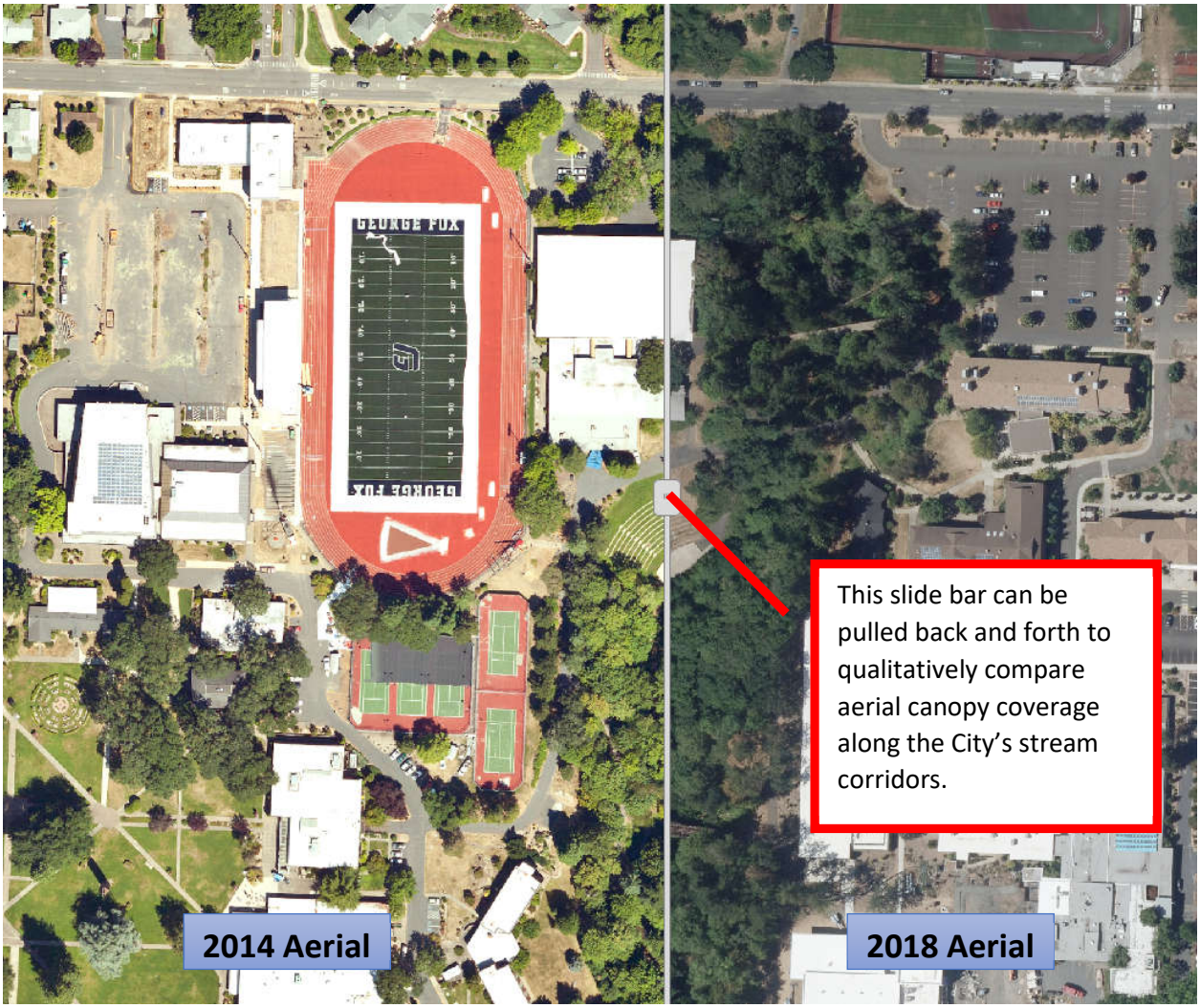
Assess at least one stream mile annually for vegetative ground cover, stream channel configuration, and canopy coverage (Ongoing)

In September 2019, the City did a field walk and investigation of approximately 1.3 stream miles on the upper section of Hess Creek above OR99W. This work was done in advance of having all of the manholes along the Hess Creek alignment surveyed for a future capital improvement project. This stream walk was done in coordination with the Engineering Division and the Maintenance Division and was used to evaluate both the stream corridor and the City's wastewater infrastructure which follows the Hess Creek alignment. Qualitative assessments were done concerning vegetative ground cover, stream channel configuration, and canopy coverage.

Additionally in order to better evaluate stream canopy coverage, web mapping was developed to compare aerial imaging over time. The City of Newberg generally obtains a new aerial image of the City every two years as part of the GIS mapping program. These images can then be compared to evaluate stream canopy coverage over time. Images are typically capture during the spring/summer months so relative comparisons can be made and currently the 2014, 2016, and 2018 aerials are available for viewing comparison. The online mapping tool can be found

here: https://newberg.maps.arcgis.com/apps/webappviewer/index.html?id=99e5d269a8a84b74bb7e79f4dc8f37ba.

Figure 7: Stream Corridor Aerial Imaging Canopy Coverage Comparison



Complete a wetland inventory that encompasses the Urban Reserve areas. Update wetland inventory when Department of Land Conservation and Development (DLCD) provides funding for City's comprehensive plan periodic review (Ongoing)

The City of Newberg completed an update to the Water Management and Conservation Plan in 2019 and as part of the correspondence with the Department of State Lands, it was noted that the City has not yet completed a Local Wetlands Inventory (LWI) for Goal 5. The City was made aware that the State now has some funding resources available to facilitate this process through the Department of Land Conservation and Development (DLCD) Community Technical Assistance Grant. Internal discussions have begun to plan for this future effort.

As a proxy to a Local Wetland Inventory map, the City of Newberg does have a Stream Corridor Overlay Subdistrict with regulations about activities that can and cannot occur within the established boundary. Based on evaluation of the National Wetlands Inventory (NWI) online mapping tool, it appears that most areas with high wetland probability are located within the City's establish Stream Corridor Overlay Subdistrict. The regulations around activities within this subdistrict can be read in Newberg Municipal Code (NMC) *Chapter 13.342 Stream Corridor Overlay (SC) Subdistrict*. The City also has an online interactive planning map where the Stream Corridor Overlay can be see here: https://www.arcgis.com/home/webmap/viewer.html?webmap=1de60af01cb64885af90c5eb94d565b4&extent=-123.0064,45.3093,-122.9906,45.3159.

Develop stream temperature monitoring program (Completed)

The development of Stream Temperature Monitoring Program was done in coordination with the Greater Yamhill Watershed Council and online resources from DEQ and the Oregon Watershed Enhancement Board (OWEB). Procedures were developed based on both best practices and field experience deploying exploratory water loggers over the last few years. The completed Stream Temperature Monitoring Program document can be found in Appendix F and will be used by all future staff members to insure consistency with collecting data.

Implement stream temperature monitoring program (Not Started)

The implementation of the stream temperature monitoring program is scheduled to start in May 2020. When water loggers are deployed, deployment will follow the procedures established in the Stream Temperature Monitoring Plan.