

City of Newberg

Total Maximum Daily Load

(TMDL)

2023-2027 Implementation Plan

Annual Report Covering 2023 Activities

Submitted: March 22, 2024

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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

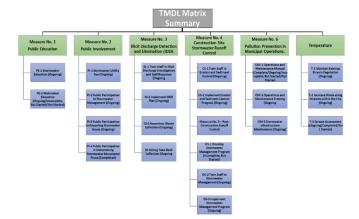
TMDL - Total Maximum Daily Load

YCSW - Yamhill County Solid Waste

Executive Summary

The City of Newberg entered its fourth 5-year Total Maximum Daily Load (TMDL) cycle in January 2023. The 5-year TMDL Matrix working plan was approved by the Oregon Department of Environmental Quality (DEQ). This report covers TMDL activities completed in the calendar year 2023. Progress was made towards our planned goals. The TMDL Matrix can be seen in Appendix A. The matrix consists of Best Management Practice Measures (BMPs), the following seven focus areas:

- 1. Public Education
- 2. Public Involvement
- 3. Illicit Discharge Detection and Elimination (IDDE)
- 4. Construction Site Stormwater Runoff Control
- Post-Construction Runoff Control
- 6. Pollution Prevention in Municipal Operations
- 7. Temperature



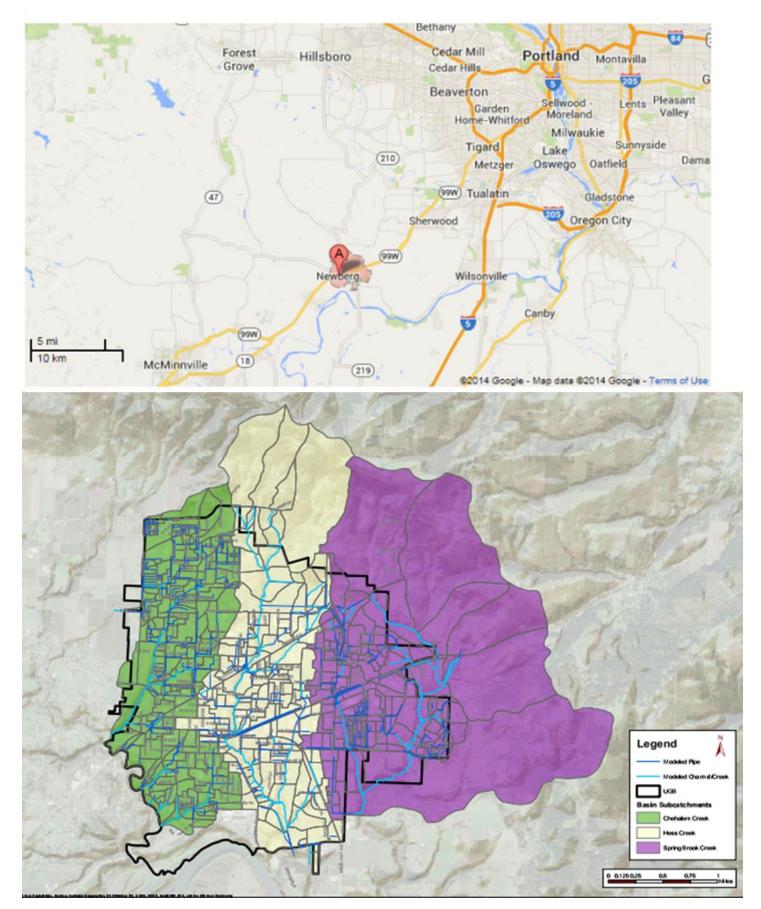
The first six focus areas are aligned with typical MS4 NPDES requirements, and the seventh focus area addresses stream temperature. Each area of focus has associated best management practices (BMP), strategies, and measurable goals. This 2023 annual report documents progress made toward achieving measurable goals.

The TMDL Matrix in Appendix A shows all the best management practices, strategies, and their related measurable goals. Each measurable goal has an associated 2023 status. The following status options and their definitions are listed 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.

2023 TMDL Matrix Summary

The City has a total of 54 measurable goals identified in the TMDL Matrix. At the end of 2023 the status for those goals is as follows: Complete (4), Ongoing (44), Incomplete, But Started (3), Not Started (3), and Delayed (0).



City of Newberg Drainage System and Study Area

Measure No. 1 – Public Education

The Public Education measure has two best management practices which include Stormwater Education and Watershed Education. These BMPs are comprised of five (5) strategies and seven (7) measurable goals which are listed below:

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Measure No. 1 -	- Public Educa	tion	
PE-1 Stormwater Education	Website Education	Supply 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 a 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).

2023 TMDL Activities Completed

Activities completed in 2023 for each measurable goal for Public Education are described below.

PE-1 Stormwater Education

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 20 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-ups of the City's

TMDL related webpages was done in 2023. You can find the City's TMDL related webpages here: Willamette

TMDL Implementation Plan | Newberg Oregon . Also,
The Green Scene in Newberg | Newberg Oregon

The City posted on social media via the City of Newberg and Public Works Department Facebook pages 17 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)

There were two Wastewater treatment plant tours for community and education groups, and nine Wastewater treatment plant tours for folks in the industry. The total number of participants on all the tours was approximately 61.

A public messaging video called "That Doesn't Go There" was released in Jun 2021, about items that should never be put down in the drain sink. And the City supply helps dispose of chemicals safely. You can find the video on the City's YouTube channel here: That Doesn't Go There - City of Newberg - YouTube

A public messaging video the City released 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 Where does your storm water go?-City of Newberg-YouTube

All the master plans are posted and available to the public. The Stormwater Master Plan last updated in 2021 after the Riverfront Master Plan was adopted in 2019. The plan was updated to reflect existing conditions, future conditions, and to identify stormwater projects. A Citizens Advisory Committee was established to provide feedback to the consultant and City staff. The Stormwater Master Plan was developed to provide a clear understanding of the existing stormwater system and to provide a capital improvement project (CIP) program to address shortcomings in the system. The main objects of the plan are:

- Update the City's stormwater system's hydrologic and hydraulic models to evaluate system capacity.
- Develop an integrated stormwater system capital improvement program to address storm system capacity needs and water quality.
- Evaluate stream channel conditions looking towards erosion and the impact future developments might have.
- Continue following water quality regulations.

- Review the City's stormwater management program and make recommendations on activities and staffing where applicable.
- Identify implementation priorities and impacts on the program's budget.
- Develop a Master Plan document that is useful and easy to read, reference, and update.

Master Plan update every 5 year - Next Update due in 2026. The Stormwater Master Plan can be found on the City's website here: <u>Stormwater Master Plan - Updated 2021 | Newberg Oregon</u>

In June 2023, the City held the annual Public Works Day event in the park across from the Chehalem Cultural Center. The Engineering Department provided educational posters about Newberg Watersheds, storm system GIS mapping, and stormwater public outreach and education to raise awareness about the costly impacts of polluted stormwater runoff under "Soak the Rain" with green infrastructure as part of the event. The event activities were very interactive and gave the public the opportunity to see and ask questions on how stormwater systems work. See Figure 1 for images from the event City of Newberg Watersheds and Streams Public Education Activity.



Figure 1: Public Works Day Water City of Newberg Watersheds and Streams Public Education 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. Most of the information in the report is required by the EPA and the report is mailed to residents/customers by June 30th each year. The 2023 Water Quality Report was mailed out in June 2023 and can be found on the City's website here:

The report included the following TMDL related messages:

Watershed Volunteer opportunities (PE-1 Citizen Group Education)

https://www.newbergoregon.gov/operations/page/water-quality-report

- 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

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

Public Signage

The Public Signage strategy consists of three measurable goals.

- o <u>Develop a Public Infrastructure Signage Program (Incomplete, but started)</u>
 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 2023.
 - o <u>Make progress providing signage at stream crossings or LIDA infrastructure facilities</u> consistent with signage program. (Not Started)

Tracking number of signs installed and associated messages, due to staffing constraints, the work was not started in 2023.

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

Marking storm drains helps raise awareness that what gets down a storm drain can get to our streams. This project helps to spread an important message - "No Dumping, Only Rain in Drain."

For best marking locations we installed the medallion on the top of curb in front of the grate location near the drain or on the gutter facing the road. See photos.

The City installed 20 metal medallion "No Dumping, Only Rain in Drain" catch basin markers throughout 2023 and will continue to install the signs around the stormwater facilities in The

Greens neighborhood near the Chehalem Glenn Golf Course on the eastern edge of the City. Catch basins 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 shows a



screen capture from Cartegraph OMS showing the location of the new markers that install in the red box and 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.

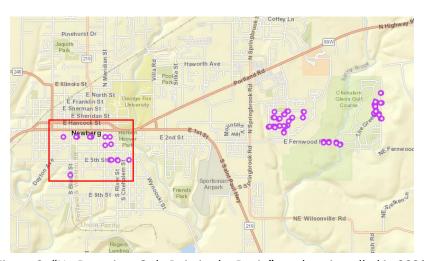


Figure 2: "No Dumping, Only Rain in the Drain" markers installed in 2023.

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. The focus of this organization is to encourage high school students to learn about the environment

 $^{1\,\}underline{\text{https://www.cprdnewberg.org/general/page/chehalem-valley-watershed-project-erects-wildlife-signage-and-birdhousestrails}$

through hands-on research, restoration work, and outreach events. No formal student education presentations occurred with the CVWP/Newberg High School in 2023.

The CVWP also supported the City of Newberg via collaborative social media posts about the City's educational surveys sent out in July 2023 as part of best management practice PI-4.

The City of Newberg completed a capital improvement project N Elliott Road near the Newberg High School.

2023 Adaptive Management

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

Looking Ahead - 2024 Activities

Under Measure No. 1, there are no measurable goals with completion dates in 2024. However, five of the seven measureable goals have a status of "ongoing" which means progress is made toward the goal each year via recurring activities. The remaining five measureable goals have a status of "ongoing" which means progress 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	Measurable 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 stormwaters, 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.

2023 TMDL Activities Completed

Activities completed in 2023 for each measurable goal for Public involvement are described below.

PI-1 Stormwater Utility Fee

Present stormwater funding needs to CRRC. (Ongoing)

The Citizen's Rate Review Committee (CRRC) 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. A meeting was held with CRRC on October 13, 2023, to discuss rate increases specifically for stormwater. New stormwater rates were effective January 1, 2023, and can be seen below in Table 1.

Table 1: Stormwater Utility Fee effective January 1, 2023

Municipal Services Statement Fees – Stormwater Service Charges			
Service Charge (\$/month) \$15.63 *			
Storm System Development Fee***			
Single Family – Equivalent Dwelling Unit (EDU)	\$438.28 flat fee**		
Other than Single Family	(Impervious Area/2877) x \$438.28		

^{*}Rate effective January 1, 2023.

PI-2 Public Participation in Stormwater Management

The Public Participation in Stormwater management provide Grant Funding for water Quality Improvement or Watershed Awareness Projects practice consists of one measurable goal.

Provide a minimum of \$2,000 in a grant program to fund non-profit projects that fulfill goals of the TMDL plan. (Ongoing)

Programs are available in the City to help residents and businesses be more sustainable, the programs and projects we're working on to reduce our footprint and make small changes that can have a big impact. More information can be found on the City's website here: Summer of Sustainability | Newberg Oregon

The Sustainability Programs for Community Members and businesses are:

- Watershed Grants.
- Water Efficiency Kits.
- Residential Sidewalk Grant and Loan Program
- Business Sidewalk Loan Program

^{**}Rate effective April 1, 2023.

^{***}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.

Private property owners can apply for grants to add erosion control, add native plants within 50ft of a stream, or create a rain garden or swale.

The City is in the process of revising the grant forms and selection criteria and will be making an effort in 2023 to do more public outreach about the Watershed Grant Program. We did not have public participation in the grant program in 2023.

In 2023 the City granted 10 Water Efficiency Kit Boxes for community members. The funds/resources serve customers who receive water from the City system. More information can be found on the City's website here: <u>Water Efficiency Kits | Newberg Oregon</u>

PI-3 Public Participation in Reporting Stormwater Issues

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

Provide Methods for Citizens to Report Stormwater Concerns (Ongoing)

In 2023, 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 2022 called SeeClickFix which provides residents with another way to report TMDL related issues around town. SeeClickFix is integrated with Cartegraph OMS for better data management.

https://www.newbergoregon.gov/maintenance/page/report-issue-newberg-seeclickfix

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 2023 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 by a resident, city staff works to keep that resident informed about the issue resolution.

Turnes of Company	Number of Concerns Received					Tatal
Types of Concerns	2023	2024	2025	2026	2027	Total
Illicit Discharge	1					1
Erosion Control	0					0
Flooding	1					1
Illegal Dumping	0					0

Table 2: Stormwater Concerns Received from the Public

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

The City conducted a survey titled "Test Your Knowledge" to aid in refining our educational messaging and guiding the future direction of the watershed/stormwater signage program. This best management practice was finalized in July 2023. With 50 responses, the survey illuminated educational gaps within our watershed. Notably, approximately 20% of respondents mistakenly believed that water entering storm drains undergoes treatment at the Wastewater Treatment Plant before being discharged into our creeks.

2023 Adaptive Management

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

Looking Ahead – 2024 Activities

Under Measure No. 2, we will be conducting a 2024 survey to enhance public education and knowledge regarding watershed and stormwater management, aiming to preserve water resources. One goal has been completed, and the remaining four of the five measurable 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. These BMPs are comprised of six (6) strategies and nine (9) measurable goals which are listed below. A status summary of the performance measures can be found in Appendix A:

Best Management Practice	Strategy	Measurable Goal	Performance Measure		
Measure No. 3 -	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	Field screen 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.		

Medication

2023 TMDL Activities Completed

Activities completed in 2023 for each measurable goal 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, illicit discharges were reported and responded to in 2023.

ID-2 Implement IDDE Plan

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

Conduct Illicit Discharge Inspections

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

Field screen Outfalls (Completed)

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

Investigate Outfalls for Illicit Discharges (Ongoing)

There were no events in 2023 that warranted samples being taken at an outfall location because of a known or suspected illicit discharge.

As part of the City's Stormwater Credit Program, one participant performs their own sampling and testing at discharge locations. The applicant keeps these records, and they coordinate directly with DEQ to meet the requirements of their 1200-Z permit.

An incident was documented regarding the discharge of wash racks and stormwater runoff at Stark Street Lawn and Garden. Notes were recorded on the discharge of wash racks and stormwater runoff, in accordance with Newberg's municipal code, Oregon Specialty Plumbing Code, and Oregon DEQ's recommendations for best management practices for washing activities. The City has mandated that Stark Street Lawn and Garden properly install a sand filter, correctly connected to the sanitary sewer system. Alternatively, the second option is to cease the use of the wash rack to prevent any further illicit discharges into the stormwater drainage system.

Respond to Illegal Dumps (Ongoing)

The City of Newberg had no reported illegal dumping occur in 2023.

Respond to Illicit Discharges/Spills

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

o <u>Fire Department Spill Response (Ongoing)</u>

The Fire Department, Tualatin Valley Fire & Rescue (TVF&R) responded to five (7) "spill" incidents in 2023 related to a motor vehicle crash. The spill was contained, and oils/petroleum were prevented from entering storm drains.

o Public Works Illicit Discharge/Spill Response (Ongoing)

Public Works Maintenance Division provided clean up response to two illicit discharges/spills within the City in 2023 which is as noted in Appendix B.

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

The City of Newberg has ten Spill Kits available on public works trucks. Public works also stores spill response supplies at PWM yard. Each maintenance employee receives an eight-hour hazard cart.

ID-3 Hazardous Waste Collection (Ongoing)

Yamhill County Solid Waste (YCSW) continues to sponsor hazardous waste collection events for Newberg 2023 June 4th, @ Waste Management Transfer Station, 2904 Wynooski St, Newberg 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 event. Additionally, it should be noted that medication will no longer be collected at these events until July 2023, 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.

newberg hhw flyer 2022.pdf (newbergoregon.gov)

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

	City of Newberg Event (May)			City of McMir	nnville Event (October)
Year	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)	Hazardous Waste (pounds)	Paint (pounds)	Medications (pounds)
2023	26,051	15,785	*0	30,537	19,006	*0
2024						
2025						
2026						
2027						
Total	26,051	15,785	*0	30,537	19,006	*0

*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 Medication Disposal drop boxes available at the police station and hospital. 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. Medication Take Back Program | Newberg Oregon

This year the lobby where the drug collection bin is located had to be open to the public for several months and could not be relocated due to restrictions on bin placement. The amount collected in 2023 was 1,640 pounds more considerably compared to previous years. Annual totals from the Medication Take-Back Program can be seen in Table 4.

Year	Medication Collected
2023	*1,640 pounds
2024	
2025	
2026	
2027	
Total	1,640 pounds

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

2023 Adaptive Management

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

Looking Ahead – 2024 Activities

Under Measure No. 3, there is one measurable goal with completion dates in 2023. Eight of the nine measureable goals have a status of "ongoing" which means progress is made toward the goal each year via recurring activities.

^{*} Please be aware that as of August 2023, there has been a change in the management of the drug disposal program. We have transitioned to utilizing the services of Inmar for this purpose. They are responsible for collecting the sealed boxes on behalf of the City. Accordingly, our reporting will now include only the count of boxes without their respective weights.

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. These BMPs are comprised of two (2) strategies and four (4) measurable goals which are listed below, and. A status summary of the performance measures can be found in Appendix A:

Best Management Practice	Strategy	Measurable Goal	Performance Measure
Measure No. 4 -	Construction Site Sto	rmwater 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 a 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.

2023 TMDL Activities Completed

Activities completed in 2023 for each measurable goal are described below.

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

Each department and division within the City are accountable for conducting its own employee training. In 2023, specific ESC training sessions were attended, and the topic of ESC was also addressed in various trainings as outlined in best management practice DS-2: Train Staff in Stormwater Management. Additionally, a staff member from the Engineering Division holds the certification of Certified Erosion and Sedimentation Control Lead (CESCL).

CS-2 Implement Erosion and Sediment Control Program

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 must obtain DEQ 1200-C permits and recorded. Inspections of these permits are conducted by DEQ. The City had 11 construction projects in 2023 that were more than a single-family home and less than 1-acre. These projects required the City to be issued Erosion and Sediment Control Permits (see Appendix C). The remainder of the City issued Erosion and Sediment Control Permits in 2023, were issued for 49 single-family residential developments. The number of erosion control/unassigned permits in 2023 was 100.

In 2023 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)

In 2023 there were 233 inspection requests, 49 single-family residential ESC permits and inspections and 42 stormwater facility inspections throughout the City of Newberg. Also, the number of inspections for stormwater facility.

Enforce ECS Ordinances (Ongoing)

No warning letters or non-compliance citations were issued in 2023.

2023 Adaptive Management

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

Looking Ahead - 2024 Activities

Under Measure No. 4, All four measurable 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 These BMPs are comprised of five (5) strategies and eight (8) measurable goals which are listed below. A status summary of the performance's measures can be found in Appendix A:

Best Management Practice	Strategy	Measurable 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 a 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	Require Stormwater Management	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.		
Program De an Re	for Development and Redevelopment	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.		

2023 TMDL Activities Completed

Activities completed in 2023 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 and the Stormwater Design Standards in December 2021. As was noted in last 2022 TMDL 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 re-envisions the City's old mill site along the Willamette River. In order to align the stormwater Standard Drawing updates, updates to the Design and Construction Standards, and updates to the Stormwater Master Plan was occurred in a coordinated effort which completed in December 2023. It should be noted that the Standards Drawings and Design and Construction Standards update is independent from the Master Plan update process.

DS-2 Train Staff in Stormwater Management (Ongoing)

The following stormwater related trainings were attended in 2023:

- Two Engineering Division staff members attended in person of the APWA Conferences
- One Engineering Division staff member attended the APWA Webinar.
- Two Engineering Division staff members attended the Stormwater Summit 2023 sponsored by the Oregon Association of Clean Water Agencies (ACWA).
- One Engineering Division staff member attended the ACE Conference in May 2023.
- One Engineering Division staff member certified as CESL.

DS-3 Implement Stormwater Management Program

The best management practice DS-3, 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

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 five hundred 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 for development and redevelopment. The project type, size, and location are noted.

Additionally, the Engineering Division participated in 36 pre-application meetings in 2023 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 2023. 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 in 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 recorded 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 2023.

Improvement Watershed Management

The strategy Improve Watershed Management consists of two measurable goals.

<u>Evaluate stormwater projects for new treatment opportunities (Ongoing)</u>
 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) 2023-2024 project list include the following:

- Misc. Storm Drain Repairs/Annual Pipe Replacement Storm drainage issues will be addressed prior to the scheduled Pavement Rehabilitation projects. Annual pipe replacements for broken end of life pipes.
- N. Springbrook Road Storm: There are existing flooding problems along N Springbrook Road.
- West Franklin Storm (OR240/Railroad Tracks/Franklin: Study and Then Fix) Maintenance issues with the diagonal pipe that runs through the building contribute to flooding in the area. The inlet north of the building overflows during storm events. South of the area where the storm lines go under the building the pipe is too long for it to be cleaned with the City's current equipment. This pipe may also need to be upsized.
- 800 Block of Wynooski Street
 Correct a current pipe and outfall that is eroding an area east of Wynooski Street.

In 2021 the City completed updating the Stormwater Master Plan as part of a larger planning effort to incorporate planning outcomes from the Riverfront Master Plan.

o Implement stormwater projects for treatment opportunities (Ongoing)

Pavement Fixes/ Annual Pipe Replacement Program identified increased sustainability as priorities for Newberg. Along with responding to community goals the project will increase health and safety and reduce costs. There are storm drainage repairs that need to be accomplished in tandem. This project placeholder will allow storm drainage projects to occur ahead of or with adjacent pavement projects.

To strategize the best use of city funds as the Pavement Rehabilitation projects move forward, there are storm drainage repairs that need to be accomplished in tandem. This project placeholder will allow storm drainage projects to occur ahead of or with adjacent pavement projects.

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 2023/2024.

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 2023. The City of Newberg is redesigning the stormwater outfall just north of 740 Wynooski Road. The City is looking to bid on this project in early 2024 and construct it in summer during the in-water work period between July -September 2024.

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 2023 the following stormwater facilities were transferred from the private maintenance agreements to public stormwater maintenance:

- Friendsview 1001 Fulton St. (Flow through Planters), (Storm Filter Catch Basin)
- Friendsview 1301 Fulton St. (Flow through Planters)
- Meadow brook villas (infiltration planters)
- Harding School Wynooski Street. (infiltration planters)
- 1100 S. College St. (detention ponds)

- Friendsview Manor Providence Drive (2 detention ponds and a water quality flow through planter)
- The Wynooski subdivision/Harding School loft and apartments (Infiltration planters)
- King's Landing Ph 2, 3, 4 (2 regional stormwater ponds)
- Riverrun Subdivision Ph 1,2 (1 regional stormwater pond; serves all homes north of Weatherly Wy)

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.

2023 Adaptive Management

The City of Newberg is planning the completion date for the measureable goals listed under best management practice DS-1, updates to the stormwater Standard Drawings.

Looking Ahead - 2024 Activities

One goal under DS-1 and two goals under DS-3. All three goals are associated with the coordinated updates to the 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 in 2024.

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 BMPs are comprised of five (5) strategies and fourteen (14) measureable goals which are listed below. A status summary of the performance measures 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	Update O&M Policies	Review existing O&M practices.	Document current procedures in an O&M manual.			
and Maintenance (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	Maintain stormwater infrastructure	Clean catch basins.	Track number of catch basins cleaned per year.			
Infrastructure Maintenance		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.

2023 TMDL Activities Completed

Activities completed in 2023 for each measurable goal for the Pollution Prevention are described below.

OM-1 Operations and Maintenance Manual

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 measurable goals.

Review existing O&M practices (Completed)

The City developed an Operations and Maintenance Manual in 2023 to document current maintenance procedures for the stormwater utility system. The Manual was completed in early December and sent to DEQ to remark and review. The Manual covers stormwater workflow, 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.

o <u>Update O&M manual to optimize water quality (complete)</u>

The Operations and Maintenance Manual is scheduled to be reviewed and updated every three years. The manual is being reviewed and updated in 2023, and this work has been completed.

Update Infrastructure Procedures

The Update Infrastructure Procedures strategy consists of two measurable goals.

- O 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 readdressed. 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.
- 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

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 2023. The
 2023 Street Sweeping Program Document was 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

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) measurable goals.

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

 The Maintenance Division proactively trains new employees in 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.
- Train all staff in revised O&M procedures manual every three years (Ongoing)
 Ensuring all staff are proficient in the revised Operations and Maintenance (O&M)
 procedures manual is a critical aspect of our commitment to excellence. Therefore, it is mandatory for maintenance employees to undergo comprehensive training in the updated manual every three years. This training initiative serves to enhance staff ability, promote adherence to standardized procedures, and uphold the highest standards of operational efficiency and safety across our organization. By regularly equipping our

team with the latest protocols and best practices outlined in the manual, we not only mitigate potential risks but also optimize our operational performance, ultimately contributing to the overall success of our efforts.

OM-3 Stormwater Infrastructure Maintenance

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

- <u>Clean catch basins (Ongoing)</u>
 In 2023, there were 124 catch basins/grates cleaned, as is shown in Table 5.
- Place trash racks over major inlets (Ongoing)
 There was one trash racks installed in 2023, 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 2023 can be seen in Table 5. The Maintenance Division has committed to inspecting and cleaning all stormwater lines on a six-year rotation and is doing much of this work in coordination with the City's Pavement Preservation Project.
- o Inspect, repair, and replace culverts (Ongoing)

The amounts of culverts inspected, repaired, and replaced in 2023 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 2023 to 2027

Stormwater Maintenance Activity	2023	2024	2025	2026	2027
Catch Basin/Grates Cleaned	149				
Trash Racks Installed	1				
Stormline Inspected, feet	3,520				
Stormline Cleaned, feet	6,310				
Stormline Repaired, feet	0				
Stormline Replaced, feet	0				
Stormline Installed, feet*	1,140				
Ditch Cleaned, feet	0				
Culvert Inspected	1				
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.

o Inspect and repair public stormwater facilities (Ongoing)

The City inspects and repairs public stormwater facilities on an annual basis. Visual inspections of public stormwater facilities including detention areas, spillways, water quality swales, and bioretention ponds were done throughout 2023 to determine maintenance needs. Forty-nine public stormwater facilities were visually inspected and vegetative maintenance was performed at least once. 2023 activities can be seen in Table 6.

George Fox University Serve Day occurred on Sept. 14, 2023. 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. 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 2023.

Table 6: Stormwater Facility Activities from 2023-2027

Stormwater Facili	2023	2024	2025	2026	2027	
Total Facilities (Detention Areas, Spillways, Water Quality Swales, and Bioretention Pond)		125				
Inspections		122				
	Detention Area	37				
Typo	Spillway	3				
Туре	Water Quality Swale	60				
	Bioretention Pond	3				
Condition	Excellent 90-100	67				
	Fair 80-90	35				
	Poor 70-80	20				
Facility Repairs		0				

o Sweep streets every 4-6 weeks (Ongoing)

The City cleans streets once a month. In 2023, 554 cubic yards of debris were removed while sweeping 1,104 curb miles Based on the success of the third-party pilot program for street sweeping in the downtown along State highways. 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 2023 to 2027

Street Sweeping Activities (Public and Private)	2023	2024	2025	2026	2027
Sweeping Debris (Cubic Yards)	554				
Street Sweeping Miles (curb miles)	1,104				
Cubic Yard per Mile Swept	0.5				
Contracted Sweeping Debris (Cubic Yards)	114.5				
Contracted Street Sweeping Miles	144				
Contracted Cubic Yard per Mile Swept	0.8				

^{*}A pilot program 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 swept twice a month.

2023 Adaptive Management

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

Looking Ahead – 2024 Activities

Of the 14 total measurable goals under Measure No. 6, three goals have been completed, and the remaining eleven measureable goals have a status of "ongoing" which means progress is made toward the goal each year via recurring activities.

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

Temperature

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

Best Management Practice	Strategy	Measureable Goal	Performance Measure
Temperature			
	Use Municipal Code and other	Update Municipal Code that can affect stream health.	Update ordinances that affect stream vegetation.
Stream Measures to Vegetation Maintain 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	Continued with established Trees for Streams Program. Provide incentives (free or reduced 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.

2023 TMDL Activities Completed

Activities completed in 2023 for each measurable goal are described below:

T-1 Maintain Existing Stream Vegetation

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 2023 that would impact stream health.

Update Stream Corridor Overlay (Ongoing)

There were no code changes or map changes to the Stream Corridor Overlay in 2023. There were three projects that went through the land-use process where the City's Stream Corridor Overlay code followed in 2023. 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:

- Crestview Green Planned Unit Development: Stream Corridor Impact Report application (MISC222-0004 Crestview Green Modifications Within the Stream Corridor)
- CPRD Ewing Young Park Footbridge 1201 S Blaine Street: pedestrian footbridge across Chehalem Creek application DR222-0014 / MIMD222-0006 / MIMD222-0007
- S Wynooski Stormwater Outfall Replacement: application MISC223-0001

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

The City continues to promote and facilitate the Trees for Streams Program in coordination with the Yamhill Soil & Water Conservation District. Planting native plants along a total of 0.3 miles of streams/tributaries positively impacted a total of 1.56 riparian acres within the City of Newberg. The City paid that fee, to pick up plants. In 2023, no request has been made in the Trees for Streams Program. For more information about the program visit City website: https://www.newbergoregon.gov/engineering/page/trees-streams-program-active-now

Table 8: Trees for Streams Program Native Plant Totals from 2023 to 2027

	2023	2024	2025	2026	2027	Total					
Chehalem Creek Watershed											
Trees											
Shrubs											
Groundcovers											
Hess Creek Watershed											
Trees	-										
Shrubs	-										
Groundcovers	-										
		Spring E	Brook Watersh	ed							
Trees	-										
Shrubs	-										
Groundcovers											
Total											

T-3 Stream Assessment

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)

The city's staff did a field walk and investigation of approximately 1.4 stream miles on the lower section of Hess Creek 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 captured during the spring/summer months so relative comparisons can be made. Currently the 2014, 2016, 2018,2020,2021, and 2022 aerials are available for viewing and comparison. This mapping was updated and evaluated to see the stream canopy coverage change over time comparing 2018 - 2022. The online mapping tool can be found here: Select the layer to appear within the spyglass.

https://newberg.maps.arcgis.com/apps/webappviewer/index.html?id=4a5f38bec812450fb0d9 1a54e37247bc.



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 the 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 established 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 seen here:

https://map-newberg.hub.arcgis.com/apps/d4c7cc5795894bdcaf5329153c6f4528/explore

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 E and will be used by all future staff members to ensure consistency with collecting data.

Implement stream temperature monitoring program (Ongoing)

The implementation of the stream temperature monitoring program was started in May 2023, progress has been made on this goal. On the best available information related to safety protocols and procedures related to staffing availability, the proximity of staff members needed to deploy water loggers by climbing into and out of streams and creeks. The water loggers have been deployed by following the procedures established in the Stream Temperature Monitoring Plan See Appendix F.

2023 Adaptive Management

The City of Newberg updated and purchased new loggers for the measurable goal of implementing the Stream Temperature Monitoring program under best management practice.

Looking Ahead - 2024 Activities

Of the seven total measurable goals under Temperature, one goal has been completed, one goal has not yet started, and the remaining five measurable 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 2023 to protect water quality and the environment within the City through seven focus areas. Looking forward to the 2024 plan year, the City will continue to make progress on the "ongoing" measurable goals, and has identified the following items to be completed in 2024-2027:

- **PE-2 Public Signage**: Develop a public infrastructure signage program to determine sign locations and messaging.
- **DS-3 Update the City's Stormwater Master Plan:** Update the City's Stormwater Master Plan and associated stormwater project lists.
- **T-3 Stream Assessment**: Develop stream temperature monitoring program, Implement stream temperature monitoring program. Document sampling locations, dates, and results.

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

Appendix Summary

Appendix A: Newberg TMDL Implementation Matrix 2023-2027

Appendix B: Illicit Discharge Investigations 2023-2027

Appendix C: Construction Site Stormwater Management 2023-2027

Appendix D: Post-Construction Stormwater Management 2023-2027

Appendix E - Stream Temperature Monitoring Program

Appendix F – City of Newberg Operations & Maintenance Manual

Appendix A Newberg TMDL Implementation Matrix 2023-2027

Appendix A: City of Newberg TMDL Implementation Matrix 2023-2027

Management Practice Measure No. 1 – P PE-1 Stormwater Education	Strategy	Measureable Goal	Performance Measure	Expected Implementation	2023 Status	Poll	ts	
Practice				Timeline		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	Х	х	Х
,	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	Х	Х	Х
	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	Х	х	Х
PE-2 Watershed Education	Public Signage	Develop public infrastructure signage program.	Develop public infrastructure signage program to determine sign locations and messaging.	December 2024	Not Started	Х	Х	Х
		Provide signage at stream crossings or LIDA infrastructure facilities.	Track number of signs installed and associated messages.	December 2024	Not Started	Х	Х	Х
		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	Х	Х	Х
	Student Education	Provide watershed education to students.	Track number of presentations, presentation messages, and number of participants (if available).	Ongoing	Ongoing	Х	Х	Х
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	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	Strategy	Measureable Goal	Im	Expected Implementation	2023 Status	Pollutants			
Practice				Timeline		Mercury	Bacteria	Temperature	
PI-3 Public Participation in Reporting Stormwater	Public Participation in Stormwater, Illicit Discharge, and Erosion Control	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	Х	х	Х	
Issues	Issues	Respond to public concerns.	Document number of stormwater, erosion control, and illicit discharge complaints reported by citizens and note resolutions.	Ongoing	Ongoing	х х	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 2023	Started	X	x	Х	
Measure No. 3 –	Illicit Discharged Detec	tion 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	Ongoing	Х	х	Х	
		Investigate outfalls for illicit discharges.	Document location, number and types of samples taken, date, cause, and resolution.	Ongoing	Ongoing	Х	Х	Х	
	Respond to Illegal Dumps	Clean up illegal dumps.	Track number of illegal dumps, citations issued, and resolution.	Ongoing	Ongoing	Х	Х	Х	
	Respond to Illicit Discharges/Spills Discharges/Spills 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	Ongoing	X	X	X			
		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	х	X	X	

Best Management	Strategy	Measureable Goal	Performance Measure	Expected Implementation	2023 Status	Pol	S	
Practice				Timeline		Mercury	Bacteria	Temperature
		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	х	Х	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	Х	X	Х
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	Х	X	X
Measure 4 – Cons	struction Site Stormwa	ter 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	ent ESC Conduct ESC plan review. Document location and type (commercial, Ongoing Ongo	Ongoing	X	Х	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	Х	Х	х
		Enforce ESC ordinances.	Report number of warning letters or non-compliance citations by project and resolution.	Ongoing	Ongoing	Х	Х	Х
Measure No. 5 –	Post-Construction Run	off 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.	Ongoing	Incomplete, But Started	X	X	X

Best Management	Strategy	Measureable Goal	Performance Measure	Expected Implementation	2023 Status	Poll	s	
Practice				Timeline		Mercury	Bacteria	Temperature
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	Х	Х	Х
DS-3 Implement Stormwater Management Program	Require Stormwater Management for Development and Redevelopment	Require stormwater plan submittals and conduct plan reviews.	plan reviews, project type (commercial, institutional, residential, etc.), size, and location.		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	Х	Х	Х
		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	Х	Х	Х
	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.	Ongoing	Ongoing	X	Х	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.	Ongoing	Ongoing	Х	Х	x
	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	х	х	х
Measure No. 6 –	Pollution Prevention in	Municipal Operations						
OM-1	Update O&M	Review existing O&M practices.	Document current procedures in an O&M manual.	June 2023	Completed	Х	Х	Х
Operations and Maintenance (O&M) Manual	Policies	Update O&M manual to optimize water quality.	Document modifications to manual.	June 2023	Completed	Х	Х	Х
		Review and evaluate the need to update the catch basin cleaning program.	Document current procedures and any modifications to optimize water quality.	June 2023	Completed	X	Х	Х

Best Management	Strategy	Measureable Goal	Performance Measure	Expected Implementation	2023 Status	Pollutants				
Practice				Timeline		Mercury	Bacteria	Temperature		
	Update Infrastructure Procedures	Implement revised catch basin cleaning program.	Track progress.	Ongoing	Ongoing	Х	Х	Х		
	Update Street Sweeping	Review and evaluate the need to update the street sweeping program.	Document current procedures and any modifications to optimize water quality	June 2023	Completed	Х	Х	Х		
	Procedures	Implement revised street sweeping program.	Track progress.	Ongoing	Ongoing	Х	Х	Х		
OM-2 Operations and Maintenance Training	erations and infrastructure and street sweeping procedures that ontimize water and street sweeping procedures that one street	Ongoing	Ongoing	Х	Х	Х				
		•	on-the-job, etc.), number of employees trained, and the training subject (inspections, maintenance,	Ongoing	Ongoing	x x	Х	Х		
OM-3	Maintain	Clean catch basins.	Track number of catch basins cleaned per year.	Ongoing	Ongoing	Х	Х	Х		
OM-3 Stormwater Infrastructure Maintenance	stormwater infrastructure	Place trash racks over major inlets.	Track number and percentage of major inlets installed with trash racks.	Ongoing	Ongoing	Х	Х	Х		
		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.	Ongoing	Ongoing	X	X	X		
		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	х	Х	Х		
		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	Х	Х		
		Sweep streets every 4-6 weeks.	Track curb miles swept and debris collected per curb mile each year. Document disposal method.	Ongoing	Ongoing	Х	Х	Х		
Temperature										
	Use Municipal Code and other Measures	Update Municipal Code that can affect stream health.	Update ordinances that affect stream vegetation.	Ongoing	Ongoing	Х	Х	Х		

Best Management	Strategy	egy Measureable Goal P	Performance Measure	Expected Implementation	2023 Status	Poll	S	
Practice				Timeline		X	Bacteria	Temperature
T-1 Maintain Existing Stream Vegetation	to Maintain Stream Vegetation	Update Stream Corridor Overlay.	Document changes to the Stream Corridor Overlay map and code based on wetland inventory and property annexation.	Ongoing	Ongoing	Х	Х	Х
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	Х	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	Х	Х	Х
		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.	Ongoing	Started	Х	Х	х
		Implement stream temperature monitoring program.	Document sampling locations, dates, and results.	Ongoing	Started	Х	Х	Х

Appendix B Illicit Discharge Investigations 2023-2027

Appendix B: Illicit Discharge Investigations 2023-2027

Date	Cause	Watershed	Resolution
3/19/2023	Hazardous condition	Chehalem	dispatched by Newberg PD to bag of fungicide on the side of the road. Police were worried as ERG stated possible inhalation hazard and cars were driving over dry product. Consulted with HM lead and MSDS for the product Ziram 76DF. The bulk of product was swept up and disposed of rest of product in road was rinsed to reduce further spread by vehicles.
11/13/ 2023	Discharging wash racks	Chehalem	Recommend best management practices for washing activities documents. request that Stark Street lawn and garden have a sand filter installed. With it correctly connected to the sanitary sewer system. Option two is to stop using the wash rack by preventing any further illicit discharges to the stormwater drainage system

Appendix C

Construction Site Stormwater Management 2023-2027

Appendix C: Construction Site Stormwater Management 2023-2027

Project Name	Location	Watershed	1200-C	ESC Ins	spection	S			Completed
			Permit (Yes/No)	2023	2024	2025	2026	2027	
E Crestview Drive Improvement	Chehalem Drive	Spring Brook	Yes	87					
Crestview Crossing 99W Frontage Improvements	99W frontage	Spring Brook	Yes	105					
Crestview Crossing Offsite Sewer Extension	Parcel Numbers 1100	Spring Brook	Yes	75					
Crestview Crossing PH2 Planting Plans	Parcel Numbers: 3216AC	Spring Brook	Yes	12					
Crestview Crossing PH1A Planting Plans	Parcel Numbers: 13800	Spring Brook	Yes	12					
Crestview Crossing PUD Phase 1	4505 e Portland rd.	Spring Brook	Yes	200					
Meadow Brook Villas Phase 1	1306 N Springbrook Rd	Spring Brook	Yes	90					
New PV System 399 kWp City of Newberg WWTP	2301 NE Wynooski rd.	Hess Creek	Yes						
S River St Storm	E 10th St & S River St	Chehalem Creek	Yes	5					
South College Commons	1100 South College Street	Chehalem Creek	Yes	60					
Virginia Garcia Memorial Hospital Center	2251 E. Hancock Street	Hess Creek	Yes	25					

Appendix D Post-Construction Stormwater Management 2023-2027

Appendix D: Post-Construction Stormwater Management 2023-2027

Project Name	Location	Acres	Project Type- Zoning	Pre- Construction Meeting	Project	Stormwater Facility	Completed
Crestview Crossing Commercial	4505 E Portland Road (Highway 99W)	4.2(1200-C)	Commercial	Yes	250-lot Subdivision	3 stormwater ponds, 14 flow through planters, 1 off-site water quality swale	2023
Friendsview Residential Care Facility	1301 Fulton Street	16.4(1200-C)	Residential	Yes	14-duplexes	4 detention ponds and a water quality flow through planter	2023
Rourke Development Subdivision	4016 N College Street	2.16 (1200-C)	Residential	Yes	12 single- family homes	stormwater planters, underground detention, flow control manhole	2023
University Village Phase II	1001 Fulton Street	1.98 (1200-C)	Institutional	Yes		stormwater planters, underground detention, flow control manhole	2023

Appendix E Stream Temperature Monitoring Program

Appendix F City of Newberg Operations & Maintenance Manual