City of Salem Stormwater Management Program

November 2022

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DEQ-approved Document

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NPDES PHASE I
STORMWATER MANAGEMENT PROGRAM

Prepared for
City of Salem

NOVEMBER 1, 2022
BC Project No. 157669

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List of Abbreviations

ACWA	Oregon Association of Clean Water Agencies
BMP(s)	Best Management Practice(s)
CIP	Capital Improvement Program
City	City of Salem
CSI	Clean Streams Initiative
CWA	Clean Water Act
DEI	Diversity, Equity, and Inclusion
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
EPSC	Erosion Prevention and Sediment Control
ESC	Erosion and Sediment Control
GSI	Green Stormwater Infrastructure
IDDE	Illicit Discharge and Elimination
IGA(s)	Inter-governmental Agreements
LA(s)	Load Allocations
LID	Low Impact Development
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
O&M	Operations and Maintenance
ODOT	Oregon Department of Transportation
OPPP	Operation Pollution Prevention Plan
Permit	NPDES MS4 (Stormwater) Phase I Discharge Permit
SDC	System Development Charge
SKAPAC	Salem/Keizer Area Planning Advisory Committee
SOPs	Standard Operating Procedures
SRC	Salem Revised Code
SWMP	Stormwater Management Program Document
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UST	Underground Storage Tank
WLA(s)	Waste Load Allocation(s)

Section 1 SWMP Overview

1.1 Introduction

Under the federal Clean Water Act (CWA) and Oregon Revised Statute 468B.050, Oregon Department of Environmental Quality (DEQ) has issued the City of Salem (City) a renewed National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Phase I Discharge Permit, effective October 1, 2021.

This Stormwater Management Program (SWMP) document describes activities implemented to comply with the City's NPDES MS4 Permit. The SWMP outlines best management practices (BMPs) that the City will conduct to protect water quality and prevent and reduce stormwater pollution to the maximum extent practicable (MEP).

The City is a Phase I permittee, which means that it has a population of over 100,000 residents. The City's first NPDES MS4 Permit was issued in 1997. Subsequent permits were issued in 2004 and 2010. The 2010 permit expired in 2015 and went into administrative extension until a renewed permit was issued September 15, 2021, with an effective date of October 1, 2021 (Permit #101513).

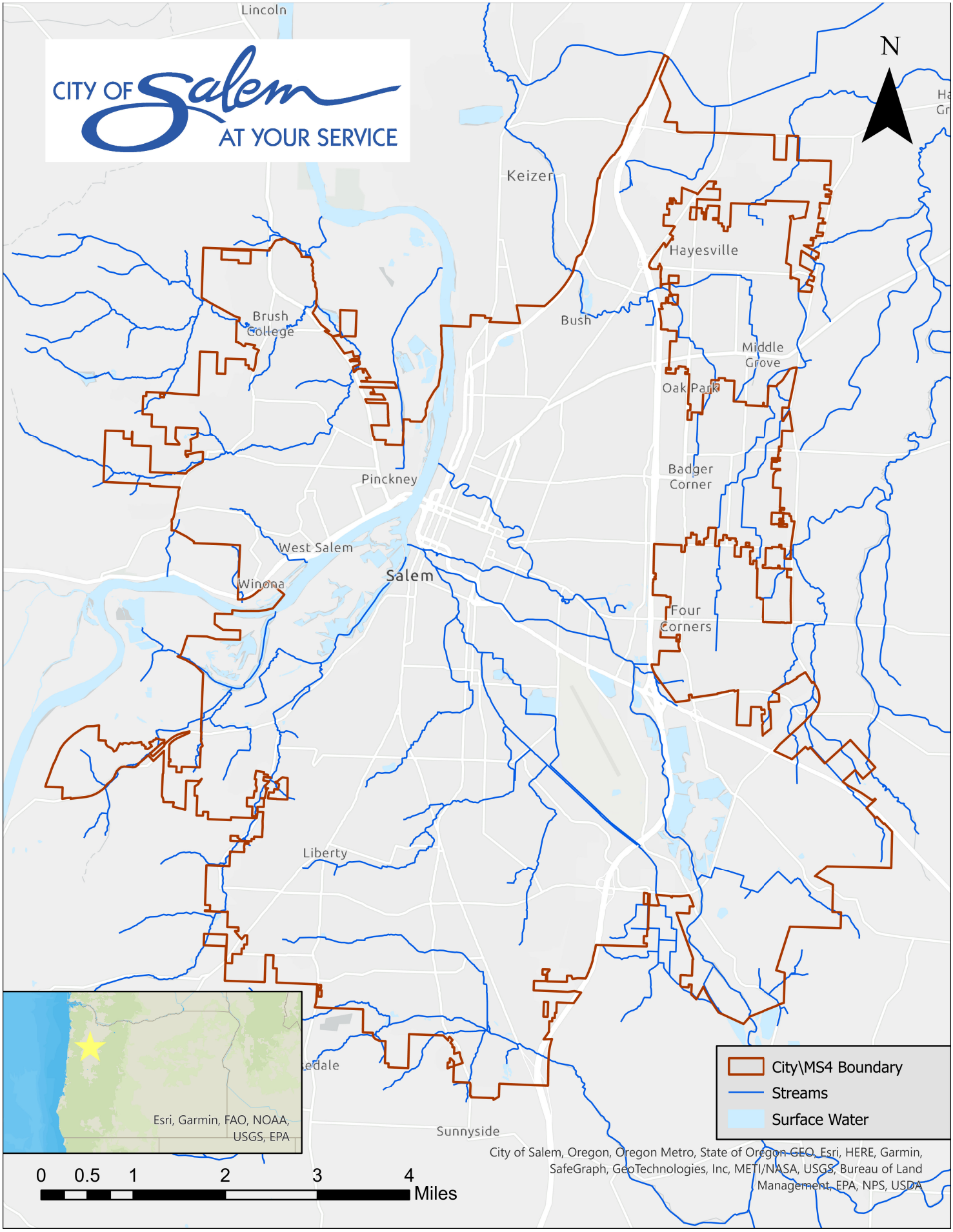
This 2022 version of the City's SWMP document was developed based on a review and evaluation of the City's stormwater program, including activities and accomplishments implemented during the previous permit term and during the administrative extension period. The City has used an adaptive management process to assess and modify BMPs to achieve reductions in stormwater pollutants to the MEP. This SWMP update was based on several key factors including an evaluation of available technologies and practices, a review of SWMP measurable goals and tracking measures, and an assessment of City resources available to implement programs.

The City's BMPs are evaluated annually during the preparation of the NPDES MS4 Annual Report. The Annual Report documents the status of implementing each BMP and identifies any proposed modifications or adaptations of the program.

1.2 Coverage Area

Salem is Oregon's capital city, encompassing approximately 47 square miles including significant areas of residential, commercial, industrial, and institutional land uses within the city, and 2,335 acres of park land. The Willamette River bisects the city between Marion County to the east and Polk County to the west. The 2020 census data estimates Salem's population at 177,723. Due to its location in the Middle Willamette River subbasin, runoff from Salem drains into several perennial streams that ultimately discharge into the Willamette River. These tributaries include Mill, Pringle, Glenn, and Claggett Creeks.

The map presented in Figure 1 illustrates the total area within the representative watersheds, as well as the surrounding jurisdictions. Additional maps related to the City's stormwater system and stormwater program are included on the City's SWMP website.


CITY OF Salem
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Badger Corner
West Salem
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Salem
Four Corners
Liberty
Sunnyside
Esri, Garmin, FAO, NOAA, USGS, EPA
City\MS4 Boundary
Streams
Surface Water
0 0.5 1 2 3 4
Miles
City of Salem, Oregon, Oregon Metro, State of Oregon GEO, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

The City's NPDES MS4 permit area or "service area" is defined as the area included within Salem city limits for which the City has responsibility for implementing its SWMP. Though local water bodies and waterways are the backbone of the City's stormwater system, they historically, have been excluded from the NPDES MS4 permit. In addition, areas operated by another NPDES MS4 permitted entity are also historically excluded.

The Oregon Department of Transportation (ODOT) has its own NPDES MS4 permit covering right-of-way (ROW) associated with state highways and freeways, thus the City's NPDES MS4 service area excludes ODOT ROW.

1.3 Relationship to Total Maximum Daily Loads

In addition to the NPDES MS4 permit requirements, the City addresses Total Maximum Daily Loads (TMDL) regulations under the Clean Water Act. TMDLs serve as plans for restoring impaired or polluted waters. They identify the maximum amount of a specific pollutant that a body of water can receive while still meeting water quality standards. In Oregon, the Department of Environmental Quality (DEQ) identifies load allocations (LAs) for nonpoint sources of pollution and waste load allocations (WLAs) for point sources. Municipal stormwater discharges are regulated as point sources if they are covered by a NPDES MS4 permit.

The City is a designated management agency for municipal stormwater for the following TMDLs:

- Total suspended solids (TSS) as a surrogate for legacy pesticides that are no longer in use (Molalla-Pudding Subbasin TMDL, 2008)
- Bacteria (Willamette Basin TMDL, 2006 and Molalla-Pudding Subbasin TMDL, 2008)
- Mercury (Willamette Basin, Water Quality Management Plan issued by the Environmental Protection Agency [EPA] on December 30, 2019, and reissued with modification on February 4, 2021)

Point sources of pollutants and associated WLAs are regulated under the NPDES permitting program, while nonpoint sources are managed by TMDL Implementation Plans. The NPDES MS4 permit addresses the City's TMDL obligations for TSS, bacteria, and mercury under Schedule D.3, which states:

> *DEQ incorporated performance measures in Schedule A.3.c, d, e, and f to address water quality impairments and EPA-approved or issued TMDL allocations issued to date. Compliance with the permit's terms and conditions is presumed to be in compliance with TMDL Waste Load Allocations (WLAs) issued before the effective date of this permit…*
>
> *Salem Phase I NPDES MS4 Permit, Schedule D.3.a*

This SWMP presents the City's plan to control pollutant runoff to address TMDL WLAs for TSS, bacteria and mercury. Schedule D.3.b also requires the City to conduct and submit a mercury minimization assessment with the Annual Report due November 1, 2022. To address this requirement, the BMPs outlined in this SWMP include references to the targeted TMDL pollutants addressed with implementation of BMPs. In addition, Schedule D.3.c requires the City to conduct a TMDL pollutant load reduction evaluation and Schedule D.3.d requires the City to establish pollution load reduction benchmarks for relevant TMDL pollutants in conjunction with the NPDES MS4 Permit renewal application.

The SWMP covers point sources of pollutants and associated WLAs. The City must also conduct activities to address temperature and any other nonpoint sources of TMDL pollutants. The City's TMDL Implementation Plan addresses pollution reduction strategies for nonpoint sources of pollutants. The TMDL Implementation Plan acts as a complement to the SWMP.

1.4 Stormwater Program Implementation

Stormwater program activities are implemented by City staff in many groups and departments, but the Public Works Department Stormwater Quality Group is the primary group responsible for coordinating planning and tracking activities related to this SWMP.

The following groups and departments also participate in stormwater program operations or implement programs that reduce pollutant sources before they can enter stormwater runoff.

- Engineering
- Planning
- Development Services
- Street Maintenance/Sweeping
- Parks and Natural Resource Planning
- Facilities Maintenance
- Wastewater
- Water
- Fleet/vehicle
- Fire/Emergency Services
- GIS
- Communications/Outreach
- Stormwater Operations and Maintenance
- Code Compliance

1.5 SWMP Development

Since 1996, the City's SWMP has undergone three iterations to bring it into alignment with the reissuance of the NPDES MS4 permits and meet the respective permit renewal requirements. With each iteration, the City conducts an evaluation to identify areas where modifications to the SWMP are appropriate. Existing BMPs are reviewed by those responsible for implementing the BMP(s) to propose changes to the BMP(s) that enhance effectiveness. BMP revisions are reviewed internally to ensure that commitments and activities are accurate and achievable.

In 2022, the City conducted a detailed evaluation of the existing SWMP using a gap analysis strategy to compare the City's 2011 SWMP to the 2021 NPDES MS4 permit requirements. The evaluation also included a review of the City's Annual Reports and considered input from City staff responsible for implementing each BMP. Based on City experience, some BMPs were streamlined to reflect work previously completed and other BMPs were adjusted to better reflect the way the City operates. New BMPs were identified to increase program effectiveness and accommodate new NPDES MS4 permit requirements. Measurable goals and tracking measures were developed or adjusted as needed for each BMP.

1.6 SWMP Document Library

SWMP Document implementation involves numerous codes, ordinances, policies, procedures, guidance manuals, checklists, forms, mapping, and other related documents. Throughout this SWMP Document, the relevant documents are noted within each program category or BMP. The referenced documents have been compiled into a SWMP Document Library located on the City's website.

At the time of publication, the website address is https://www.cityofsalem.net/government/shaping-salem-s-future/reports-studies/stormwater-permits-and-annual-reports.

As described in the previous section, in accordance with the NPDES MS4 permit requirements, the City also prepares a report of stormwater program activities each year. The Annual Reports will also be posted on the City's website for public access.

Section 2 SWMP Control Measures

This section of the SWMP document outlines the best management practices (BMPs) developed by the City of Salem (City) to address the NPDES MS4 Permit requirements to reduce the discharge of pollutants to the Maximum Extent Practicable. The BMPs detailed below are organized using numbering and titles based on categories which correspond closely to the Schedule A.3 requirements of the NPDES MS4 permit:

- **EO: Education and Outreach.** Activities related to NPDES MS4 Permit Schedule A.3.a to provide stormwater education to the community
- **PI: Public Involvement and Participation.** Activities related to NPDES MS4 Permit Schedule A.3.b to involve the public in stormwater program priorities
- **IL: Illicit Discharge Detection and Elimination (IDDE).** Activities related to NPDES MS4 Permit Schedule A.3.c to prevent, detect, and eliminate spills and illicit discharges
- **EC: Construction Site Runoff Control (EC).** Activities related to NPDES MS4 Permit Schedule A.3.d to manage construction site runoff
- **PC: Post-Construction Stormwater Management.** Activities related to NPDES MS4 Permit Schedule A.3.e to manage site runoff from new development and redevelopment
- **OM: Municipal Operations and Maintenance.** Activities related to NPDES MS4 Permit Schedule A.3.f for pollution prevention and good housekeeping programs in municipal operations
- **IC: Industrial and Commercial Facilities.** Activities related to NPDES MS4 Permit Schedule A.3.g to reduce pollution potential from industrial and commercial businesses
- **SP: Stormwater Program Implementation.** Program implementation-related activities as included in Schedule A.3.h, Schedule B.1, Schedule B.4, and Schedule D, as well as activities related to overall stormwater program planning and organization

A comprehensive table listing the City's NPDES permit requirements and corresponding BMPs is included in the BMP reference matrix provided in Appendix A to this SWMP document.

The BMPs described in this SWMP are primarily those that address the explicit requirements of the SWMP as detailed in the City's 2021 NPDES MS4 Permit. Additional activities within the City's stormwater program that do not specifically align with permit requirements may not be included in this document.

The BMPs include measurable goals and tracking measures that will be used to report progress to DEQ annually. The reporting period covers July 1 through June 30 of each year, with Annual Reports on activities due to DEQ by November 1.

2.1 Education and Outreach (EO)

Public education is an integral component of a successful stormwater pollution prevention program. Increasing knowledge of local water quality issues is key to obtaining public support and ownership for stormwater programs.

The objectives of the City's EO Program are to:

- Increase community understanding about stormwater issues, pollution sources, and impactful choices they can make to help keep pollution out of the stormwater runoff and local streams
- Provide training to City staff regarding stormwater pollution prevention strategies
- Educate local officials about stormwater programs and outcomes

The City conducts a wide variety of public education and outreach programs to address stormwater issues that are significant in the community. EO activities are focused on education for residents and people who do business in and around Salem, as well as education and training for municipal staff.

The City's NPDES permit requirements for education and outreach are listed in the BMP reference matrix in Appendix A.

Table 2-1 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each EO Program BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future education and outreach activities.

Table 2-1. Education and Outreach BMPs				
BMP Name	**BMP Description**	**Measurable Goals**	**Annual Tracking Measures**	**TMDL Pollutants Addressed**
EO-1. MS4 Staff Training (Previously RC 1-4, RC1-8, RC 4-3, RC 4-4)	**Responsible Party:** Public Works Department **Implementation Schedule:** Ongoing **BMP Description:** The stormwater permit is a city-wide permit. Staff who perform stormwater-related functions should have knowledge of their position and how their work relates to the permit. Management should have an understanding of the permit as well. City staff will meet to coordinate efforts relating to stormwater training. Topics of the coordination meetings may include outreach activities, program reviews and documentation of maintenance protocols, annual reporting, monitoring, sharing of data, adaptive management, review/update of documents and procedures, training needs, use of the asset management database, the involvement of inspection, maintenance, and operations staff in plan review and program development, checklists, and erosion control. The Operations and Maintenance (O&M) workgroup will conduct safety and tailgate meetings to review and improve the O&M practices and training needs with regards to safety and protection of water quality. Staff training is offered and required in a variety of stormwater related topics. The City's NPDES MS4 Training plan outlines appropriate staff, training frequency, and potential training resources for each training topic. **Reference Document**: NPDES MS4 Training Plan (Appendix B)	• Conduct annual training of staff involved in MS4-related positions, in accordance with the NPDES MS4 Training Plan. • Stormwater supervisors will meet quarterly to coordinate training and adaptively manage programs.	• Training dates and number of staff attending • Dates of stormwater supervisor meetings	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

Table 2-1. Education and Outreach BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
EO-2. Public Education and Outreach (Previously RC1-5, RC5-1, RC5-2, RC5-3, ILL3-3, ILL3-4)	**Responsible Party:** Public Works Department **Implementation Schedule:** Ongoing **BMP Description:** Nearly 90 miles of streams flow through Salem providing character, beauty, wildlife habitat, recreation, and more to the community. The streams are the backbone of the City's stormwater system, and it takes a full community effort to keep them healthy. The City developed the Clean Streams Initiative (CSI) that is the umbrella for stormwater outreach, education, and involvement. The City's Clean Streams, Clear Choices Initiative was developed to educate the community on impactful choices they can make to keep pollution out of stormwater runoff and local streams. The webpage can be found at www.CleanStreamsSalem.org. The CSI has both general and select-audience outreach and many elements of the program are referenced in the public education and outreach strategy matrix (Appendix C). The matrix also identifies goals, pollutants of concern, priority audiences, education, and activities (messaging methods), topics, the entity or individual responsible for implementation, potential strategies, evaluation metrics, and potential partners. The City a coordinates with other agencies, NGOs, private environmental groups, and watershed councils. Based on the campaign's selected audience, translate stormwater program materials (brochures, flyers, manuals, guidelines, and website) into culturally relevant messages. **Reference Document**: Public Outreach Program Matrix (Appendix C)	• Create an annual education and outreach plan showing Priority audience, topic, messaging method. • Meet with City's DEI coordinator annually, during development of outreach and education plan. • Implement identified public outreach activities and campaigns. • Support Marion County in providing alternatives for household hazardous waste disposal, including mercury-containing items.	• Confirm development of annual education and outreach plan • Date of meeting with DEI coordinator • Create an annual report that details the outreach activities and includes an evaluation of at least one outreach event or program for adaptive management • Types of publicity for Marion County household hazardous waste program	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

2.2 Public Involvement and Participation (PI)

The public provides valuable input and assistance to the City's stormwater pollution prevention program. The goal of the PI Program is to effectively involve a diverse cross-section of people who can participate in stormwater pollution prevention activities. The City conducts a variety of PI programs to provide opportunities for the public to participate in the water quality stewardship and natural resource protections.

The City's NPDES permit requirements for public involvement and participation are listed in the BMP reference matrix in Appendix A of this SWMP document.

Table 2-2 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each PI Program BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future public involvement activities.

Table 2-2. Public Involvement and Participation BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
PI-1. Stormwater Program Website (New BMP)	**Responsible Parties:** Public Works Department (Stormwater Quality) **Implementation Schedule:** Annually **BMP Description:** Websites are a valuable tool for sharing an organization's information with the community. include required stormwater program information, updated SWMP, a SWMP Document Library, Annual Reports, and links to stormwater program ordinances and guidance documents. Highlight pollution prevention, spill reporting, illicit discharge complaint reporting, education and outreach messages, and stewardship opportunities. Add links to ordinances, policies and/or guidance documents related to construction, post-construction, and industrial/commercial programs, including education, training, licensing, and permitting.	• Update information on website in 2022 • At least annually review the webpages to check for accuracy, working links, staff changes, new documents, and policy updates	• Confirm website update in 2022 • Completion of annual website review checklist	
PI-2. Watershed Grants (Previously RC 8-1)	**Responsible Parties:** Public Works Department **Implementation Schedule:** Ongoing **BMP Description:** The City's watershed grants provide the community opportunity to be involved with enhancing local streams and watersheds. To be eligible, projects must be located inside the City's water/sewer customer service area. Exceptions may be made for projects that have a direct impact on the City's drinking water supply or water quality on streams flowing through Salem. The grant supports riparian restoration efforts, education, and/or stormwater-related improvements within the city, such as stormwater quantity reduction and/or stormwater quality/treatment.	• Fund $50,000 annually for the Watershed Protection and Preservation Grant for projects that enhance Salem's water resources • Promote the grant program.	• Annual inclusion of $50,000 in the budget • Number of approved Watershed Grants, their project category, and overall funds spent • Promotion mechanism and frequency	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature
PI-3 Adopt-a-Street Program (Previously ILL3-1)	**Responsible Parties:** Public Works Department (Signs and Sweeping) **Implementation Schedule:** Ongoing **BMP Description:** Continue to implement the Adopt-a-Street Program. The program is an effective way to get residents involved in keeping the community's streets and right-of-way clean, and consequently preventing trash and debris from entering the storm drainage system.	• Continue to implement the Adopt–a-Street Program.	• Miles of adoptable and adopted streets, number of participating groups/individuals, and pounds of litter collected	✓ Bacteria
PI-4 Adopt-a-Stream Program (Previously ILL3-3)	**Responsible Parties:** Public Works Department (Stormwater Quality) **Implementation Schedule:** Ongoing **BMP Description:** This program involves teachers and youth participating in stream stewardship opportunities with their classes through stream studies and restoration projects. This introduces young people to the importance of	• Continue to support the Adopt–a-Stream Program.	• Number of participating groups, and support provided	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

Table 2-2. Public Involvement and Participation BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
	water quality and encourages their involvement in further stewardship opportunities.			
PI-5 Storm Drain Marking Program	**Responsible Party:** Public Works Department (Stormwater Quality) **Implementation schedule:** June - September **BMP Description:** Provide storm drain marking program each summer. Volunteers work with City staff to mark storm drains. The messaging helps to spread the word that the trash and dirty water that enters a storm drain ends up in local streams where it creates water pollution and can harm wildlife.	• Provide marking to 100 storm drains per year.	• Number of drains marked	✓ TSS ✓ Bacteria ✓ Mercury
PI-6 Volunteer Green Infrastructure Cleaning Program	**Responsible Party:** Public Works Department (Stormwater Quality) **Implementation schedule:** 2024 **BMP Description:** As cities develop, Green Stormwater Infrastructure (GSI) facilities are constructed to help reduce the stormwater pollutant load that reaches local streams. These facilities require trash removal and landscape maintenance on a regular basis to function properly. With more stormwater facilities being built with GSI techniques, community members can help make a difference in their neighborhood by volunteering to assist in maintaining GSI facilities.	• Develop volunteer GSI cleaning program by June 30, 2024. • Implement program beginning July 1, 2024	• Progress towards program development of volunteer GSI cleaning program • Number of facilities cleaned by volunteers	✓ TSS ✓ Bacteria ✓ Mercury

2.3 Illicit Discharge Detection and Elimination (IL)

The goal of the IL Program is to detect and eliminate illegal discharges and illicit connections to the storm drain system. An illicit discharge is defined in EPA's stormwater regulations as any discharge to an MS4 that is not composed entirely of stormwater unless exempt by the permit. Stormwater is defined as the portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels, or pipes into a defined surface water channel or a constructed infiltration facility. Illegal discharges to the storm sewer from industrial facilities, commercial businesses, and residents can be a significant source of water pollution. Deteriorating piping in the sanitary sewer and storm drain systems may also be a source of pollution if sanitary sewage seeps into the stormwater system.

The IDDE program involves many City departments to protect water quality. Salem Fire (SFD) and Environmental Services (ES) provide immediate response to reports of spills, illicit discharges or any unusual substances noticed by the public or City crews. SFD has the lead role for emergency response, structural fires, and all major vehicular accidents. ES staff provides assistance when requested by the on-scene incident commander. For small discharges, ES may provide first response for containment and cleanup, as necessary. ES leads source investigation efforts to bill responsible parties for clean-up costs if identified.

Dry weather field screening and associated water quality monitoring results may alert the City to high levels of pollutants that might be related to upstream spills or illicit discharges. Any unusual findings are investigated and tracked to identify the cause. Conveyance system maintenance inspections may reveal cross connections or non-stormwater discharges flowing in the piped system. Construction site inspections evaluate material storage and waste management strategies and aim to correct problems before they can create a downstream pollutant discharge.

Through the pre-treatment program, ES staff also perform inspections of the City's permitted wastewater users to verify the proper handling and disposal of both wastewater and stormwater.

The City's NPDES permit requirements for IDDE are listed in the BMP reference matrix in Appendix A.

Table 2-3 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each IL Program BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future IDDE priority areas and activities.

Table 2-3. Illicit Discharge Detection and Elimination BMPs				
BMP Name	**BMP Description**	**Measurable Goals**	**Annual Tracking Measures**	**TMDL Pollutants Addressed**
IL-1. Spill Prevention and Response (Previously ILL1-1, ILL1-2, ILL1-3)	**Responsible Parties**: Salem Fire Department and Public Works Department **Implementation Schedule**: Ongoing **BMP Description**: Spill prevention and response are the first lines of pollution prevention to guard stream health. Continue to implement the existing spill prevention and emergency response program to coordinate timely responses to, and clean-up of emergency response sites and structural fires. Coordinate activities among other relevant agencies and ODOT when appropriate. Update the City's Spill Response Plan, based on Salem Fire's Standard Operation Guideline (SOG) for spill response, containment, and protection of the MS4 during fire-fighting training activities and general maintenance and cleaning activities at the fire stations. **Reference Document**: Spill Response Plan	• Update the City's Spill Response Plan. Post it in the SWMP Document Library. • Continue to implement the spill prevention and emergency response program. • Conduct daily equipment inspections.	• Status of update to the Spill Response Plan • Number and category of spill events and responses	✓ TSS ✓ Bacteria ✓ Mercury
IL-2. Illicit Discharge Detection and Elimination Program (Previously ILL2-1, ILL2-2, ILL2-3, ILL3-2)	**Responsible Parties**: Public Works Department (Environmental Services, Wastewater Collections) **Implementation Schedule**: Ongoing **BMP Description**: This program works to keep illicit discharges from occurring. The City operates a 24-hour dispatch center to receive and respond to calls regarding illegal dumping, unusual discharges, suspicious water quality conditions, and other environmental issues. Staff work to identify sources/causes of illicit discharges and implement corrective actions in accordance with the City's IDDE Enforcement Response Plan. Operations staff work with Wastewater collections staff to identify and remedy cross-connections between the sanitary sewer and the stormwater system. **Reference Document**: IDDE Enforcement Response Plan	• Review, update, and post the City's IDDE Enforcement Response Plan in the SWMP Document Library. • Continue to operate the 24-hour Public Works Dispatch Reporting Center. • Respond to reports of illicit discharges and suspicious water quality conditions within the timelines identified in the IDDE Enforcement Response Plan. • Review stormwater and ambient stream monitoring data to identify possible cross-connection discharges into the stormwater system. • Take corrective action on any identified system cross-connection problems.	• Status of update to IDDE Enforcement Response Plan • Number of illicit discharge concerns reported • Number of confirmed illicit discharge problems and enforcement action taken • Number of cross-connections identified. • Number of cross-connections remedied	✓ TSS ✓ Bacteria ✓ Mercury

Table 2-3. Illicit Discharge Detection and Elimination BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
IL-3. Stream Crew Program (Dry Weather Screening and IDDE) (Previously ILL2-4, RC4-7)	**Responsible Party:** Public Works Department (Stormwater Quality) **Implementation Schedule**: Ongoing with updates to priorities in 2023 **BMP Description**: Dry weather screening is a field test method for inspecting storm water drainage areas to help locate and identify harmful and illegal discharges and improper connections to a municipal storm water system. The Summer Stream Crew walks and inspects stream segments. Using summer interns, inspect the riparian areas and streams, pick up litter and garbage, inspect for illicit discharges, address potential conveyance concerns, and evaluate areas for stream restoration. In 2023, update the Dry Weather Outfall and Illicit Discharge Screening Plan to identify new priority outfalls and stream segments. Include pollutant parameter action levels for field screening and SOPs for collecting water quality samples and conducting laboratory analyses in the event of an ongoing discharge. Implement updated Dry Weather Outfall and Illicit Discharge Screening Plan, with annual priorities for field inspections. Develop GIS geodatabase for storage and display of outfalls with observed dry weather discharges. Over time, this geodatabase will represent areas of chronic illicit discharges. **Reference Document**: Dry Weather Outfall and Illicit Discharge Screening Plan	• Conduct dry weather inspections for a minimum of 35 outfalls annually. • Develop GIS geodatabase for storage and display of observed dry weather flows and add observed dry weather flows to GIS geodatabase annually. • Update Dry Weather Outfall and Illicit Discharge Screening Plan in 2023 with updated priority areas, pollutant parameter actions levels, and water quality sampling SOPs. • Walk 50% of waterways within Salem each year for stream clean up and enhancement.	• Number of outfall inspections conducted and results of inspections including follow-up activities. • Number of outfalls with observed dry weather flows added to GIS geodatabase • Status of updating the Dry Weather Outfall and Illicit Discharge Screening Plan • Waterway miles walked and the amount of garbage/litter removed	✓ TSS ✓ Bacteria ✓ Mercury

2.4 Construction Site Runoff Control (EC)

Construction projects often involve the removal of vegetation and excavation of soils. When vegetation is removed, the velocity of stormwater runoff increases, and disturbed soils can be carried offsite to storm inlets or receiving waters. Soil particles can transport nutrients, mercury, and other metals to waterways, contribute to increases in stream temperature, reduce channel capacity, and have negative impacts to aquatic habitat. Construction sites include other potential pollutant causing activities including materials storage, fueling, and vehicle and equipment use. A robust and enforceable construction site runoff control program is a key aspect in reducing pollution in stormwater runoff.

The goal of the EC Program is to prevent sediment from leaving construction sites through the implementation of properly selected and installed BMPs. Requirements are outlined in the City's Erosion Prevention and Sediment Control Technical Guidance Handbook. Education is provided for both municipal staff and members of the design/engineering/construction community. Salem Revised Code (SRC) Chapter 75 provides the City with the legal authority to enforce erosion prevention and sediment control on construction sites. Construction site runoff controls are enforced through regulatory requirements, plan review and permitting, construction site inspections, enforcement procedures, and tracking mechanisms.

The City's NPDES permit requirements for construction site runoff control are listed in the BMP reference matrix in Appendix A.

Table 2-4 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each EC Program BMP. Additional information on the EC Program is provided in the City's Erosion and Sediment Control (ESC) Manual. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future construction site runoff control BMPs.

Table 2-4. Construction Site Runoff Control BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
EC-1. Erosion Control Requirements (Previously CON1-1, RC9-1, RC9-2, and RC9-3)	**Responsible Party:** Public Works Department (Engineering) **Implementation Schedule:** November 1, 2023 **BMP Description:** Erosion Prevention and Sediment Control requirements are outlined in SRC Chapter 75. The requirements include the submission of erosion prevention and sediment control plans with structural and nonstructural BMPs. Review the existing ordinance/code and design guidelines. Update the thresholds for erosion control requirements for consistency with the NPDES MS4 Permit (i.e., remove the exemption for projects under 25 cubic yards of disturbance). Review and update (if needed) structural and non-structural erosion control BMP requirements for consistency with industry standards, accepted practices, and new technologies. **Reference Documents:** ACWA Construction Site Stormwater Guide	• Update SRC Chapter 75 to update the threshold for erosion control requirements for consistency with NPDES MS4 permit by November 1, 2023.	• Status on updating SRC Chapter 75	✓ TSS ✓ Mercury
EC-2. ESC Plan Review (Previously CON1-3, CON1-5)	**Responsible Party:** Public Works Department (Engineering) **Implementation Schedule:** Ongoing **BMP Description:** Continue to require ESC Plans for developments that meet or exceed the threshold indicated in SRC Chapter 75. Conduct ESC Plan reviews and issue construction permits that require projects to have a site-specific ESC Plan that is maintained on site, reviewed, updated when needed, and made available to the City or DEQ upon request. Continue to coordinate with the City's 1200-CA Permit for City construction projects subject to its requirements. Compile resources and educational materials to support engineers and contractors in developing ESC plans. Post information and materials on a public-facing website that will serve as a resource for construction applicants. **Reference Documents:** The City's ESC Plan Review Procedures are included in the SWMP Document Library.	• Post the City's ESC Plan Review Procedures in the SWMP Document Library. • Perform ESC Plan reviews and issue construction permits. • Ensure requirements for 1200-CA compliance are incorporated into City construction plans, specifications, and contract documents. • Develop ESC Plan educational resource webpage.	• Number of erosion control plans reviewed, and permits issued • Status of renewal of the City's 1200-CA permit • Status of developing educational resource webpage	

Table 2-4. Construction Site Runoff Control BMPs				
BMP Name	**BMP Description**	**Measurable Goals**	**Annual Tracking Measures**	**TMDL Pollutants Addressed**
EC-3. Erosion Control Inspections (Previously CON1-3)	**Responsible Party:** Public Works Department (Engineering) **Implementation Schedule:** Ongoing **BMP Description:** Review and update construction site inspection procedures to incorporate requirements of Schedule A.3.d.iv. Set inspection frequencies based on project type to focus City inspections on sites with higher potential for erosion or sediment concerns. Continue to inspect construction sites in accordance with the City's Construction Site Inspection procedures. Site inspections include onsite meetings during pre-construction to highlight the importance of erosion prevention and proper BMP selection, installation, maintenance, and modification. Inspections during construction include evaluating onsite BMPs, checking onsite documentation and documenting potential erosion prevention or sediment/pollution control concerns. When concerns are noted, the City will follow escalating enforcement procedures. Enforcement begins with education and voluntary compliance and then follows the steps outlined in the City's Erosion Control Enforcement procedures. **Reference Documents:** Construction Site Inspection procedures and Erosion Control Enforcement procedures	• Maintain inventory of permitted construction sites with contact information, project size, date of approved plan, inspections, and complaints. • Make erosion prevention and sediment control key agenda items at all preconstruction conferences. • Include inspection of all site erosion prevention and sediment control measures as part of City projects. • Conduct construction site inspections in accordance with the City's documented Construction Site Inspection procedures. • Conduct enforcement in accordance with the City's documented Erosion Control Enforcement procedures. • Ensure the escalating enforcement procedure meets new permit requirements by Nov. 1, 2023.	• Number of preconstruction conferences that discuss erosion prevention and sediment control • Number of erosion control inspections performed • Number of enforcement actions and the outcome of the actions • Track number of 1200-CA inspections • Escalating enforcement procedures are documented and submitted by Nov 1, 2023, if needed.	✓ TSS ✓ Mercury
EC-4. Training for Construction Site Operators (Previously CON 1-2)	**Responsible Parties:** Public Works Department (Engineering, Stormwater Quality) **Implementation Schedule:** Ongoing **BMP Description:** The City's Public Works Department leads efforts to train private contractors about stormwater pollution at construction sites, with an emphasis on prevention and control BMPs. Notices are provided to construction site operators concerning where education and training to meet ESC requirements can be obtained.	• Provide annual erosion control training for private contractors.	• Number of training programs conducted, and number of contractors trained	✓ TSS ✓ Mercury

2.5 Post-Construction Stormwater Management (PC)

Stormwater runoff from new development and redevelopment of urban areas impacts the quality and quantity of stormwater discharges. Stormwater that flows through developed areas has the potential to carry pollutants such as sediment, nutrients, metals, hydrocarbons, and litter to water bodies degrading the water quality. Degraded water quality negatively impacts aquatic habitats and threatens human uses. Increases in impervious area associated with development decreases the amount of stormwater that can percolate into the ground which increases the flow rate and quantity of stormwater discharged to receiving waters. An increase to the quantity and flow rate of stormwater discharge can cause streambank scouring, channel incising, and downstream flooding, which could lead to a loss of aquatic habitats and damage to property.

The NPDES MS4 Permit requires that the City develop a site performance standard based on a numeric stormwater retention requirement (NSRR). The site performance standards should target natural surface or predevelopment hydrologic function and encourage a retention first approach to stormwater control designs. If onsite retention is not feasible for a given site, the City may establish alternative site performance standards that will result in treatment of a design storm representing at least 80 percent of average annual runoff. The permit requires the City to continue to prioritize Low Impact Development (LID) and GSI to reduce pollution by retaining and treating stormwater near where it falls. The City's codes and standards will be evaluated and updated as needed during the permit term to align with required performance standards.

Information on the City's current approach to managing stormwater from new and redevelopment is provided in the City's Stormwater Management Design Standards and SRC, Chapter 71. The standards require use of LID practices to the MEP for new and redevelopment activities that meet defined project thresholds. The standards require the use of infiltration where feasible and emphasize the use of GSI on small projects. Additional details about the City's LID/GSI strategy will be documented by November 1, 2023.

The City's NPDES permit requirements for the PC Program are primarily listed in Table 2-5. The NPDES MS4 Permit requires a robust program for long-term operations and maintenance (O&M) of stormwater management facilities and similar requirements are outlined in two sections of the NPDES MS4 Permit (Schedule A.3.e.vi and Schedule A.3.f.i). In this SWMP, the details of the stormwater management facility maintenance BMPs to address both Schedule A.3.e.vi and A.3.f.i are outlined in Section 2.6 (Municipal Operations and Maintenance [OM]) and Table 2-6.

The City's NPDES permit requirements for post-construction stormwater management are listed in the BMP reference matrix in Appendix A.

Table 2-5 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each PC BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the PC Program BMPs and to inform future new development and redevelopment management activities.

Table 2-5. Post-Construction Stormwater Management BMPs				
BMP Name	**BMP Description**	**Measurable Goals**	**Annual Tracking Measures**	**TMDL Pollutants Addressed**
PC-1. Post Construction Design Standards (Previously RC 3-1, RC 3-2, RC 9-2)	**Responsible Parties**: Public Works Department **Implementation Schedule**: Begin in 2023 for completion by Nov. 1, 2024. **BMP Description:** Review, update, and adopt revisions to SRC 71 and the Stormwater Management Design Standards to address NPDES MS4 Permit requirements. The revisions should adjust the large project threshold from 10,000 - 5,000 SF of impervious surface and identify the City's infiltration requirement as a Numeric Stormwater Retention Requirement. Review alternative stormwater mitigation options and consider incorporating a water quality benefit offset program in the updated standards for sites that cannot meet the NSRR or equivalent water quality standards. Review and update stormwater facility maintenance criteria, maintenance standards, easement and access requirements for private facilities, and submittal information for each type of stormwater management facility. The update should also incorporate the SRC requirements for peak flow matching for four storm events and improve clarity around infiltration testing requirements and determining infiltration feasibility. **Reference Documents:** Stormwater Management Design Standards	• Update SRC Chapter 71 by November 1, 2024. • Review and update the Stormwater Management Design Standards by November 1, 2024.	• Status on updating SRC Chapter 71 • Updates to the Stormwater Management Design Standards	✓ TSS ✓ Bacteria ✓ Mercury
PC-2. LID/GSI Strategy (New BMP)	**Responsible Parties:** Public Works Department (Development Services, Engineering) **Implementation Schedule:** November 1, 2023 **BMP Description:** Conduct an evaluation of the City's current Stormwater Management Design Standards to document the City's existing strategy to prioritize LID strategies in new development and redevelopment and GSI approaches to stormwater management. Identify recommended modifications to the SRC or Stormwater Design Management Standards to improve the City's strategy. Prepare a documentation memorandum to include in the 2023 Annual Report and post the documentation in the SWMP Documents Library. **Reference Documents:** LID/GSI Prioritization Strategy Document	• Prepare LID/GSI Prioritization Strategy document, submit with November 2023 Annual Report, and post to the SWMP Document Library.	• Status on developing LID/GSI Prioritization Strategy document	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

Table 2-5. Post-Construction Stormwater Management BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
PC-3. Development Review for Stormwater (Previously RC 3-3, RC 3-4)	**Responsible Parties:** Public Works Department (Engineering, Development Services) **Implementation Schedule:** Ongoing **BMP Description:** The City continues to review all residential, commercial, and industrial plans submitted for compliance with the City's Stormwater Management Design Standards. Public Works staff conducts inspections of completed stormwater facilities prior to the City's acceptance of those projects and project closeout to ensure work was done in accordance with approved plans. Staff continues to maintain a database of plans reviewed and final inspections conducted. Following updates to the post construction design standards (PC-1), review and update (if necessary) the stormwater submittal requirements checklist for land use and design submittals, outlining what content and supporting calculations are required at each level of submittal. The checklist guides applicants in providing the correct information, so that the City can evaluate the technical feasibility and site constraints related to onsite management of stormwater runoff. Following updates to the post construction design standards (PC-1), review and update (if necessary) the internal SOP for stormwater plan review that guides the review and approval of structural stormwater control plans. **Reference Documents:** Stormwater submittal requirements checklist and Internal Stormwater Plan Review SOP	• Review and update (if necessary) the stormwater submittal requirements checklist following updates to the post-construction design standards. • Review and update (if necessary) the internal stormwater plan review SOP following updates to the post-construction design standards. • Review all residential, commercial, and industrial plans submitted for City-issued permits for compliance with the Stormwater Management Design Standards and associated SRC provisions. • Review all Willamette Greenway Permits for compliance with the Stormwater Management Design Standards and associated SRC provisions. • Conduct inspections once construction is completed to ensure work was done in accordance with approved plans.	• Status of stormwater submittal requirements checklist • Status of internal stormwater plan review SOP • Number of plans reviewed and permits issued for compliance with the Public Works Design Standards • Number of plans reviewed for projects requiring Willamette Greenway Permits • Number of final inspections	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

2.6 Municipal Operations and Maintenance (OM)

The goal of the pollution prevention program is to reduce discharge of pollutants to receiving waters associated with municipal operations. The OM Program includes a wide variety of activities conducted to maintain City-owned properties and facilities such as parks, public streets, and the public storm drain system. These activities can lead to pollutants reaching the MS4 system and receiving waters such as sediments, chemicals from pesticide applications, nutrients from fertilizers, and litter. The City implements a variety of pollution prevention and good housekeeping BMPs to protect water quality during municipal operations.

The municipal operations program includes asset management to track stormwater infrastructure, stormwater management facility implementation and good housekeeping during operations and maintenance. During this permit term, the City will continue to develop written pollution prevention strategies and document the procedures that are already in place for many municipal operations. Data collected during operations and maintenance activities are used for annual reporting, evaluation, and modification of each activity.

The City also maintains separate NPDES discharge permits for several municipal facilities. These permits outline the specific actions and requirements to protect water quality at those facilities. At the time of this SWMP development, the City has discharge permits for the following municipal facilities:

- Wastewater Treatment Plant (NPDES Wastewater Discharge Permit)
- Salem Municipal Airport (NPDES 1200-Z Industrial Stormwater Discharge Permit)

The City's NPDES permit requirements for municipal operations maintenance are listed in the BMP reference matrix in Appendix A.

Table 2-6 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each BMP for pollution prevention in municipal operations. Measurable goals and tracking measures will be evaluated annually to assess the impact of OM Program BMPs and to inform future BMPs for pollution prevention in municipal operations.

Table 2-6. Municipal Operations and Maintenance BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
OM-1. Asset Management and Systemwide Mapping (Previously RC1-3, RC 7-1, RC 7-2)	**Responsible Parties:** IT Department (GIS Section), Technical Services **Implementation Schedule:** Ongoing **BMP Description:** Continue to update the Geographic Information System (GIS) database(s) so that the City's MS4 system maps, including open channels and piped systems are accurate, up to date, and can be relied upon for stormwater planning, preliminary project design, and program management. The GIS database contains information on the stormwater conveyance system, including piped systems, ditches, structural controls (public and private), and capital improvement projects. Continue to update GIS database with completed capital improvement projects, the addition of new stormwater facilities, and the refinement of data for the existing system. Continue to update the official "waterways" geodatabase for use by all City staff in applying various regulations and standards. This includes updates to the delineation of wetlands, perennial streams, waterways, and floodplain/floodway designations. Incorporate field verified information that warrants the revision of the designated waterways.	• Continue to perform routine maintenance and updates to the GIS database(s) annually. This includes the addition of new public and private BMP installations and drainage areas. • Continue to review and refine the database of maps and waterways.	• Record maintenance/updates made to the GIS database(s) • Track completion of additional ground-truthing activities and waterways map updates	
OM-2. Public Stormwater Facility Inspection and Maintenance (Previously RC 4-8, RC 4-9)	**Responsible Party:** Public Works Department (Stormwater Quality, Stormwater O&M) **Implementation Schedule:** Ongoing **BMP Description:** Continue to inventory all public stormwater facilities when constructed and map them in accordance with BMP OM-1. If possible, link as-builts and O&M plans to the stormwater management facility inventory. Develop a stormwater management facility inspection schedule with annual priorities and conduct identified inspections of public stormwater management facilities (water quality, detention, and green infrastructure facilities), with the goal of inspecting 100% of public stormwater management facilities within the permit cycle. Identify maintenance needs and issue maintenance work orders for public facilities. Continue to perform routine maintenance for public stormwater management facilities to maintain performance standards. Perform actions to address issues identified during facility inspections.	• Develop a stormwater management facility inspection schedule in 2023. • Add all newly constructed stormwater management facilities to the digital inventory when they come into public ownership and maintenance responsibility. • Inspect 100% of public stormwater management facilities within the permit cycle. • Generate work orders based on inspections and track progress toward completing work orders.	• Status of stormwater management facility inspection schedule • Number of public stormwater management facilities in the digital inventory • Percent of stormwater management facility inspections per year • Number of generated and completed maintenance work orders for public facilities	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

Table 2-6. Municipal Operations and Maintenance BMPs				
BMP Name	**BMP Description**	**Measurable Goals**	**Annual Tracking Measures**	**TMDL Pollutants Addressed**
OM-3. Private Stormwater Facility Inspection and Maintenance Program (Previously RC4-12)	**Responsible Party:** Public Works Department (Stormwater Quality) **Implementation Schedule:** Ongoing **BMP Description:** Continue to inventory all privately owned stormwater facilities when constructed and map them in accordance with BMP OM-1. Include location, facility type, ownership, contact/mailing information, and maintenance responsibility in inventory. If possible, link as-builts and O&M plans to the stormwater management facility inventory. Continue to require maintenance agreements for newly constructed private stormwater management facilities. Update maintenance education handout that outlines ownership and maintenance responsibilities for owners of private stormwater control facilities. Mail maintenance reminder letters with education handout to private facility owners with request to confirm maintenance inspections and actions (voluntary compliance). Continue to conduct inspections of private stormwater management facilities with the goal of inspecting 100% of private stormwater management facilities per permit term. Identify maintenance needs and send follow-up letters to private owners to document needed maintenance actions.	• Add all newly constructed private stormwater management facilities to the digital inventory with links to maintenance agreements. • Update maintenance education handout for private owners. • Mail annual maintenance reminders to inventoried private facility owners. • Inspect 100% of inventoried private stormwater management facilities during the permit term.	• Number of private stormwater management facilities in the digital inventory. • Status of maintenance education handout. • Number of maintenance reminder letters sent. • Percent of private facility inspections conducted per year and in relation to total.	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

Table 2-6. Municipal Operations and Maintenance BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
OM-4. Conveyance System Inspection and Cleaning (Previously RC 4-6, RC 4-10, RC 4-11)	**Responsible Parties:** Public Works Department **Implementation Schedule:** Ongoing **BMP Description:** Maintenance activities associated with the stormwater conveyance system and components include regular TV inspection, cleaning of storm drains and catch basins, and ditch maintenance. Inspections are focused on areas with historical problems and high potential for debris. Maintenance is performed to collect and remove sediment and pollutants before they can travel downstream. Stormwater staff conduct routine cleaning and TV inspection of the public storm conveyance system on a schedule developed during the previous permit term. Based on data collected during the previous permit term, the City plans to inspect 50% of catch basins per year, in a rotating schedule, based on geography. Catch basins will be cleaned to remove sediment and debris when inspections identity a 30% sediment accumulation level. Ditch maintenance is performed by Stormwater Services to assure adequate conveyance, and includes three primary activities: 1. Roadside Ditch Cleaning: consists of removal of sediment in the bottom of roadside ditches only as needed for proper conveyance, with limited vegetation disturbance and the use of straw wattles to reduce sedimentation and erosion within the ditch. 2. Roadside Ditch Mowing: maintains vegetation for improved conveyance. 3. Drainage Ditch Mowing: typically conducted by Adults in Custody (AIC) crews using handheld equipment. Vegetation cutting facilitates conveyance and reduces the risk of potential fires in summer months.	• Inspect 120,000 LF of stormwater conveyance pipe annually to identify maintenance and repair needs. • Clean a minimum of 300,000 LF of stormwater conveyance pipe annually. • Inspect 50% of catch basins annually. • Clean any catch basin that meets a 30 percent sediment accumulation threshold during the inspection. • Regularly inspect and maintain 100% of City ditches using appropriate water quality BMPs.	• Length of conveyance system inspected. • Length of conveyance system cleaned. • Number of catch basins inspected • Number of catch basins cleaned and amount of sediment removed. • Length of ditch maintenance performed (cleaning and mowing) and sediment removed.	✓ TSS ✓ Bacteria ✓ Mercury

Table 2-6. Municipal Operations and Maintenance BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
OM-5. Street Sweeping and Debris Control (Previously RC4-1, ILL3-5)	**Responsible Parties:** Public Works Department (Signs and Sweeping, Streets Maintenance) **Implementation Schedule:** Ongoing **BMP Description:** Conduct sweeping in conjunction with the existing street sweeping schedule (see measurable goals). Maintain a daily log of routes swept and an annual record of the amount of material collected. The information that is collected assists staff in making recommendations for modified methods, schedules, and for annual reporting and overall program evaluation. Review and update the protocols for the City's stormwater waste processing facility (decant facility) to include expanded pollution prevention and good housekeeping strategies. Incorporate the updated protocols in the Operations Pollution Plan (OM-8). Continue to support the annual Fall Leaf Haul. City event agreements have litter control requirements and a clause to allow City to perform clean-up with cost reimbursement from the event operator. **Reference Documents:** The stormwater waste processing material disposal protocols will be included in the Operations Pollution Prevention Plan [OPPP] (OM-8)	• Review street sweeping program annually for effectiveness and any necessary revisions to sweeping schedules. • Continue sweeping City streets on a four-zone schedule, sweeping the heaviest zone 13 times per year and the lightest zone 6 times per year. • Continue sweeping City-owned parking lots as needed. • Update waste processing facility disposal protocols and include in OPPP. • Continue to support the Fall Leaf Haul effort.	• Provide information on changes • Number of curb-miles of streets swept • Status of the update to waste disposal protocols • Fall Leaf Haul dates and collection amounts	✓ TSS ✓ Bacteria ✓ Mercury
OM-6. Winter Road Maintenance (Previously RC4-2)	**Responsible Parties:** Public Works Department (Signs and Sweeping, Streets Maintenance) **Implementation Schedule:** Ongoing **BMP Description:** Both sanding and de-icing chemicals are used to treat roadways for ice and snow. Continue to perform deicing operations in a way that minimizes stormwater pollution. Conduct annual inspections and training to ensure proper operation of the deicing chemical storage facility. Use the covered and contained storage area for sanding rock material storage. Sweep and dispose of sand material as soon as possible following the return to safe driving conditions. When possible, collect and reuse sand for landfill "daily cover" or other appropriate uses. Use GIS-based tracking of winter road maintenance actions. Develop a SOP for the City's Winter Road Maintenance Strategy to document material selection, storage, proper application (timing and rates), collection and reuse opportunities. **Reference Documents:** Winter Road Maintenance Strategy	• Continue current deicing operations to prevent stormwater pollution. • Continue to research potential cost-effective reuse opportunities for deicing sand materials.	• Dates of annual inspections and training related to deicing • Deicing quantities applied annually including number of events and general locations	✓ TSS ✓ Mercury

Table 2-6. Municipal Operations and Maintenance BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
OM-7. Integrated Pest Management Procedures (Previously RC 4-5)	**Responsible Parties:** Public Works Department (Integrated Pest Management Committee) **Implementation Schedule:** Ongoing **BMP Description:** The City will continue to implement a program for careful monitoring and management of pesticides, herbicides, and fertilizers. This includes practices for proper handling and storage of chemicals. Over the permit term, staff will review and refine the City's Integrated Pest Management (IPM) Plan and create a Policy and associated Operational Plan.	• Create and adopt citywide IPM Policy by June 2023. • Once IPM Policy is adopted, update and implement the Operational Plan by December 2025. • Conduct routine inspections of storage facilities for proper storage of materials and chemicals.	• Progress on adoption of policy • Progress on updating and implementing the Operational Plan • Number of inspections of chemical storage facilities	
OM-8. Pollution Prevention for Operations (Previously ILL1-4)	**Responsible Parties:** Public Works Department (Stormwater Quality, Operations) **Implementation Schedule:** Ongoing **BMP Description:** The City's OPPP provides strategies to reduce the impact of stormwater runoff from the City's municipal properties that store and manage vehicles, materials, and waste. The plan needs to be expanded to include additional properties to incorporate SOPs for stormwater pollution prevention during municipal field operations. Expand the OPPP to include: • Updated list of facilities (properties) and activities where the pollution prevention strategies apply. • Guidelines for pesticide, herbicide, and fertilizers (in conjunction with OM-7). • Strategies for campsite clean-up, including trash disposal and stormwater pollution prevention during pressure washing • Pollution prevention strategies during bridge cleaning and maintenance activities. • Expanded pollution prevention and good housekeeping strategies that incorporate new technologies and industry best practices. In conjunction with EO-1, provide training to municipal staff on the updated OPPP. Consider extending the pollution prevention training opportunity to staff from franchise utilities and other agencies that perform field work in the City. **Reference Documents:** Operations Pollution Prevention Plan	• Expand and update the OPPP. • Provide at least one training per year for municipal staff on the updated OPPP.	• Updates/revisions to the OPPP • Number of trainings provided and number of attendees	✓ TSS ✓ Bacteria ✓ Mercury

2.7 Industrial and Commercial Facilities (IC)

Environmental Services (ES) manages the Wastewater Industrial Pretreatment Program, under SRC Chapter 74, that involves permitting of industries to meet local discharge limits set by the EPA, DEQ, and the City. The wastewater pretreatment program provides the framework for the industrial and commercial facility stormwater pollution prevention program.

ES works with DEQ to coordinate the permitting and compliance processes for industrial users in the Salem area, including DEQ-issued 1200-Z permitted sources, underground storage tank (UST) removal, and site remediation permits issued by DEQ for sources/sites within the City. Coordination efforts include receiving information on proposed 1200-Z permits, commenting on proposed permits, and meeting periodically with DEQ on coordination efforts.

In addition, surveys are sent to applicable business classes (restaurants, metal finishers/platers, radiator shops, dry cleaners, printing shops, photo processors, etc.) as part of the industrial pretreatment program for wastewater. Customers are surveyed regarding major onsite activities to identify potential locations for public education, future sampling, and tracking down illicit discharges.

ES continues to communicate with the City's industrial users through a variety of materials and means. This activity is principally associated with the City's wastewater Pretreatment Program but is used as a vehicle to address stormwater-related issues as well.

The City's NPDES permit requirements for the IC Program are listed in the BMP reference matrix in Appendix A.

The following table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants addressed for each IC Program BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future BMPs for the industrial and commercial facilities program.

Table 2-7. Industrial and Commercial Facilities BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
IC-1. Industrial and Commercial Strategy (Previously IND1-1, IND1-2, IND1-3, IND1-4)	**Responsible Party:** Public Works Department (Environmental Services) **Implementation Schedule:** 2023 **BMP Description:** The Industrial/Commercial Facilities strategy has been updated as part of this SWMP update. The strategy includes a revised process to review new and existing businesses to identify those with increased stormwater pollution potential. The strategy includes procedures for site inspections, documentation, site operator education, and follow-up processes. Conduct reviews to identify facilities that could be subject to the 1200-Z industrial stormwater general permit and other facilities that have the potential to contribute a significant pollutant load to the MS4. Notify facility owners and DEQ of 1200-Z permit potential. Maintain a database of industrial and commercial facilities with the potential for increased stormwater pollution based on the activities at the specific facility. **Reference Documents:** Industrial/Commercial Facilities Strategy	• Update Industrial/Commercial Facilities strategy with revised facility screening strategy, inspection processes, and documentation procedures by November 1, 2023. • Develop database of industrial and commercial facilities with the potential for increased stormwater pollution.	• Status of updated Industrial/Commercial Facilities Strategy. • Number of facilities referred for 1200-Z permits.	✓ TSS ✓ Mercury
IC-2. Industrial and Commercial Site Inspections (Previously IND1-1, IND1-2)	**Responsible Party:** Public Works Department (Environmental Services) **Implementation Schedule:** Ongoing **BMP Description:** Conduct inspections of high priority businesses identified through the industrial/commercial facility screening program. During site inspections, review onsite stormwater systems, pollution prevention measures, material transport and storage, and waste disposal. Document facility inspections using the procedures in the Industrial/Commercial Facilities Strategy. Meet with site operators to discuss findings from the inspections, provide site operator education, require corrective actions (if needed) and schedule follow-up inspections (if needed) to review corrections. **Reference Documents:** Industrial/Commercial Facilities Strategy	• Inspect stormwater systems during inspections of City-permitted wastewater users. • Document facility inspections, site operator meetings, and corrective actions.	• Number of industrial/commercial stormwater inspections. • Number of corrective actions identified through industrial and commercial site inspections.	✓ TSS ✓ Mercury

2.8 Stormwater Program Implementation (SP)

Stormwater Program Implementation Program (SP Program) activities are those that impact the City's overall stormwater program planning, organization and compliance with the NPDES MS4 permit. The City has numerous personnel that work on programs and activities related to stormwater. The SP Program includes BMPs for staff training and intergovernmental coordination. Coordination currently occurs informally across departments, divisions, and sections as needed to share information and resources.

Stormwater program implementation also includes the activities conducted to assess the City's progress in pollution prevention and water quality treatment. This includes BMPs for long term planning of stormwater capital projects, assessment of retrofit and hydromodification plans, and stormwater monitoring.

SP Program funding is currently received through a stormwater utility, revenue bonds, grants, and a Stormwater System Development Charge (SDC). The City reviews the SDC methodology and utility funding in conjunction with stormwater master planning efforts. In addition, the City continues to identify and pursue external grant opportunities for program development and stormwater capitol projects, including potential retrofit and LID project opportunities.

The BMPs for SP program implementation relate to a wide range of NPDES permit requirements, as shown in the BMP reference matrix in Appendix A to this SWMP document.

The City's planning-related BMPs are outlined in Table 2-8. This table includes a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each SP Program BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future training and planning activities.

Table 2-8. Stormwater Program Implementation BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
SP-1. Intergovernmental Coordination (Previously RC1-6, RC1-8)	**Responsible Party:** Public Works Department **Implementation Schedule:** Ongoing **BMP Description:** Work with Marion and Polk Counties and the City of Keizer (Salem/Keizer Area Planning Advisory Committee or SKAPAC) to coordinate stormwater management programs and activities within the greater Salem-Keizer urban growth boundary. Continue to be an active member of the Oregon Association of Clean Water Agencies (ACWA) and share materials with other members to assist with stormwater program implementation.	• Continue participation with SKAPAC based on current group coordination level. • Attend ACWA committee meetings and workshops as scheduled.	• Report on updates to SKAPAC Agreement and other inter governmental agreements (IGAs) • Document participation in ACWA committee meetings	
SP-2. Retrofit Progress Report (New BMP)	**Responsible Party:** Public Works Department (Stormwater Quality, Engineering) **Implementation Schedule:** 2023 **BMP Description:** Document projects from the City's 2014 Stormwater Retrofit Plan that have been completed since the report publication. Document additional structural stormwater projects that have incorporated elements to retrofit the stormwater system for increased water quality treatment. Calculate total drainage area with increased water quality treatment from retrofit projects. Identify new goals, tools, priorities, or potential projects. Prepare a written assessment of the City's retrofit progress and outcomes and submit to DEQ.	• Complete Retrofit Progress Report by November 1, 2023.	• Status of completing Retrofit Progress Report	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature
SP-3. Hydromodification Progress Report (New BMP)	**Responsible Party:** Public Works Department (Stormwater Quality, Engineering, Development Services) **Implementation Schedule:** 2023 **BMP Description:** Develop a Hydromodification Progress Report to document projects and actions from the City's Hydromodification Assessment Report that have been started or completed since the report publication. Identify new goals, tools, priorities, or potential projects to address hydromodification. Prepare a written assessment of the City's hydromodification progress and outcomes and submit to DEQ.	• Complete Hydromodification Progress Report by November 1, 2023.	• Status of completing Hydromodification Progress Report	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature

Table 2-8. Stormwater Program Implementation BMPs

BMP Name	BMP Description	Measurable Goals	Annual Tracking Measures	TMDL Pollutants Addressed
SP-4. Permit Renewal Package (New BMP)	**Responsible Party:** Public Works Department (Stormwater Quality) **Implementation Schedule:** Due by March 30, 2025 **BMP Description:** NPDES MS4 permits extend over a 5-year period, unless the permit is administratively extended by DEQ. Each permit builds off the work accomplished in the previous permit cycle as well as providing specific items to address. Prior to the permit expiration, the City develops a permit renewal application. The application includes each of the elements listed in permit Schedule B.4, including: • 303(d) evaluation • TMDL Pollutant Load Reduction Evaluation • Proposed TMDL Benchmarks • Proposed changes to the monitoring program • Documentation of service area expansions in 2025 • A fiscal evaluation in 2025 • Updated MS4 maps in 2025	• Develop and submit permit renewal application to DEQ by March 30, 2025 (or alternate date determined by DEQ)	• Status of completing permit renewal application	✓
SP-5. Implement Stormwater CIP (Previously RC 1-7, RC 2-1, RC 2-2, RC 2-3)	**Responsible Parties:** Public Works Department (Engineering) **Implementation Schedule:** Ongoing **BMP Description: The Capital Improvement Plan (CIP) is a five-year forecast that identifies major (capital) projects requiring the use of public funds over and above routine annual operating expenses. A CIP creates, improves, replaces, repairs or permanently adds to City assets including utility improvements.** Basin Plans identify integrated water quality capital improvement projects including on-site facilities, stream restoration projects, and other specific smaller scale improvements. In addition, the 2014 Retrofit Plan identified water quality projects in conjunction with scheduled capital improvement projects in the current Capital Improvement Program (CIP). The City will continue to implement stormwater projects (including stormwater conveyance, quantity, quality, and stream/habitat improvements) based on priorities established under the current CIP, the Retrofit Plan, and Basin Plans consistent with available funding. During implementation, the City will continue to acquire resource permitting and physical access/easements for public and private stormwater facilities.	• Review, prioritize, and budget for identified capital improvement projects annually. • Implement capital improvement projects based on prioritization and available funding.	• Confirm stormwater capital projects included in annual CIP budget • Number and description of completed capital improvement projects related to stormwater and water quality	✓ TSS ✓ Bacteria ✓ Mercury ✓ Temperature