

**City of West Linn**

# **Stormwater Management Program Document**

National Pollutant Discharge Elimination System (NPDES)  
Municipal Separate Storm Sewer System (MS4) Discharge Permit

Permit Number: 101348



CITY OF  
**West  
Linn**

Submitted to:  
Oregon Department of Environmental Quality

December 1, 2022  
Last Update: December 1, 2023

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## List of Abbreviations

ACWA	Association of Clean Water Agencies	TMDL	Total Maximum Daily Load
BMP	Best Management Practice	TSS	Total Suspended Solids
CDC	Community Development Code	TVF&R	Tualatin Valley Fire and Rescue
CESCL	Certified Erosion and Sediment Control Lead	WLA	Waste Load Allocations
CWA	Clean Water Act	WLMC	West Linn Municipal Code
DEQ	Department of Environmental Quality	WPCF	Water Pollution Control Facility
DO	Dissolved Oxygen		
ESC	Erosion and Sediment Control		
ESD	Environmental Services Division		
EPA	Environmental Protection Agency		
IDDE	Illicit Discharge Detention and Elimination		
GI	Green Infrastructure		
I/C	Industrial and Commercial		
I&I	Infiltration and Inflow		
IPM	Integrated Pest Management		
LA	Load Allocations		
LID	Low Impact Development		
NPDES	National Pollutant Discharge Elimination System		
MEP	Maximum Extent Practicable		
MS4	Municipal Separate Storm Sewer System		
O&M	Operations and Maintenance		
PI	Public Involvement		
ROW	Right-of-Way		
SF	Square Feet		
SOP	Standard Operating Procedure		
SWMP	Stormwater Management Plan		
SWPPP	Stormwater Pollution Prevention Plan		
TB PAC	Tualatin Basin Public Awareness Committee		

# 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 West Linn (City) a renewed National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Phase I Permit, effective October 1, 2021.

This Stormwater Management Program Document (SWMP) describes activities related to implementation of the City's NPDES MS4 Permit. The SWMP contains best management practices (BMPs), which outline the specific tasks that the City will conduct to prevent and reduce stormwater pollution to the maximum extent practicable (MEP) to protect water quality and satisfy the requirements of the NPDES MS4 Permit and the CWA.

The City is a co-permittee on the Clackamas County NPDES MS4 Permit, along with 11 other agencies. The first permit (101348) was issued in 1995. A second permit was issued in 2005 after an appeal and a modification. A third permit was issued in 2012, expired in 2017 and went into administrative extension until a renewed permit was issued September 15, 2021, with an effective date of October 1, 2021.

This 2022 version of the City's SWMP was developed based on a review and evaluation of the City's stormwater management 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, if necessary, BMPs to achieve reductions in stormwater pollutants to the MEP. This SWMP update considers available technologies and practices; review of SWMP measurable goals and tracking measures; and evaluation of City resources available to implement programs.

The BMPs outlined in this plan will be evaluated annually during the preparation of the NPDES MS4 Annual Report. The annual reports will include the status of implementing each BMP and any proposed modifications or adaptations of the program. Any updates made to this 2022 SWMP are made in accordance with Schedule A.2.f of the NPDES MS4 Permit and documented in the change log provided as Appendix B.

## 1.2 Background

This section documents the permit coverage area and the relationship between the NPDES MS4 Permit, SWMP and Total Maximum Daily Load (TMDL) obligations.

### 1.2.1 Overview

The City of West Linn is located entirely in Clackamas County, approximately 12 miles southwest of the City of Portland. The City is bound on the north by the City of Lake Oswego; on the east by the Willamette River, which runs north-south along the City's boundary; on the south by the Tualatin River; and on the west by unincorporated communities in Clackamas County (see Figure 1).

West Linn provides water, sanitary sewer and surface water management services to approximately 27,000 residents and covers approximately 7.4 square miles. The City is primarily a residential community with three commercial centers: one along the Oregon Highway 43 corridor, one in the Willamette River area, and one referred to as Cascade Commercial Center, which is located on the top of Salamo hill off of Salamo Rd.

The City maintains an Intergovernmental Agreement (IGA) with Clackamas County for the joint application of the NPDES stormwater permit, initially executed in 1992.

### 1.2.2 Coverage Area

Approximately 13 percent of the City discharges to the Tualatin River, while the remaining 87 percent of the City discharges to the Willamette River. As Figure 1 illustrates, the City is located in both the Lower Willamette and Middle Willamette subbasins and includes 21 tributaries. Additional maps related to the City's stormwater system and stormwater program are included on the City's website.

There are a number of perennial streams within the City that drain to the Willamette and Tualatin Rivers. Tanner Creek, Bernert Creek, and Trillium Creek are the larger tributaries that discharge to the Willamette River in the City. Fritchie and Stevens Creek are the larger tributaries that discharge to the Tualatin River.

The BMPs described within this SWMP are applied throughout the entire City urban services boundary.

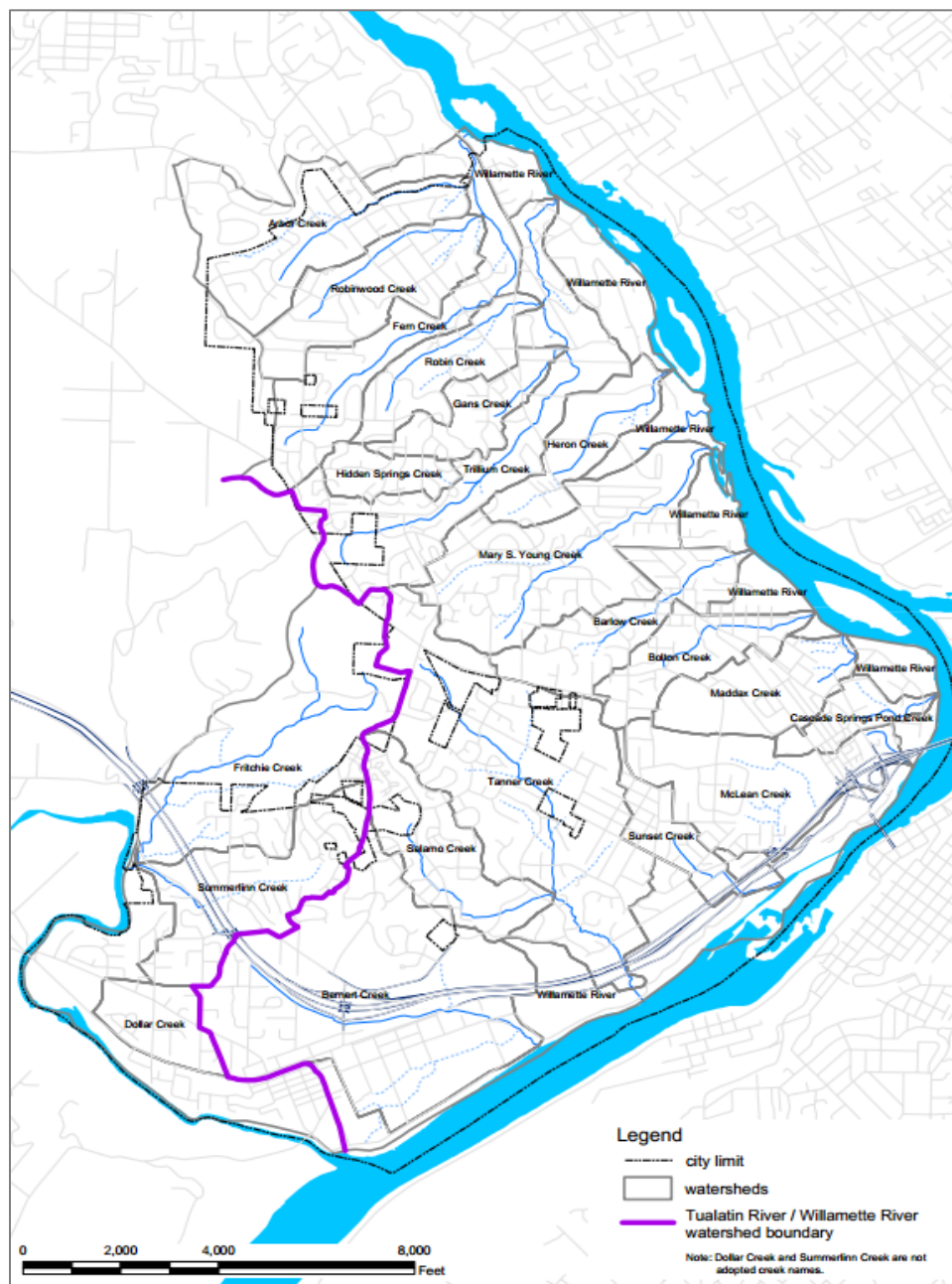


Figure 1. Map of the City of West Linn Watershed Boundaries

### 1.2.3 Relationship to TMDLs

In addition to the NPDES MS4 Permit requirements, the City is subject to TMDL regulations under the CWA. 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. These allowable loads are then allocated among dischargers which are referred to as Designated Management Agencies (DMA). In Oregon, DEQ assigns load allocations (LAs) for nonpoint sources of pollution and waste load allocations (WLAs) for point sources. Municipal stormwater discharges are regulated as point sources, and assigned WLAs, if they are covered by a NPDES MS4 permit.

The City is a DMA for the following TMDLs for municipal stormwater:

- Tualatin River: bacteria (*E. coli*), chlorophyll a (the surrogate is phosphorus) pH (the surrogate is phosphorus, dissolved oxygen (the surrogate is total suspended solids), and temperature.
- Willamette Basin (Lower and Middle Willamette Subbasins): mercury (the surrogate is total suspended solids), bacteria (*E. coli*), and temperature.

Point sources of pollutants and associated WLAs are regulated under the NPDES permitting program and nonpoint sources are managed by TMDL implementation Plans. As the City implements their NPDES MS4 Permit jurisdiction-wide, the NPDES MS4 Permit addresses the City's TMDL obligations 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..."*

Clackamas Group Phase I NPDES MS4 Permit, Schedule D.3.a

This SWMP is the City's plan to control pollutant runoff to address TMDL WLAs for bacteria and total mercury (TSS as a surrogate). Schedule D.3.b also requires the City to conduct and submit a mercury minimization assessment with the annual report due December 1, 2022. To facilitate addressing this requirement, BMPs outlined in this SWMP include reference to the targeted TMDL pollutants addressed with implementation of BMPs. In addition, Schedule D.3.c of the NPDES MS4 Permit 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.

Given the SWMP is implemented city-wide, it is used to cover both point and non-point sources of the TMDL pollutants listed above with the exception of temperature. As stated in the 2006 Willamette River TMDL, temperature is generally not considered to be a significant contributor to stormwater pollution and thus is not addressed through a stormwater permit. DMAs are expected to address temperature as a non-point source pollutant in a TMDL Implementation Plan. The City's TMDL Implementation Plan complements this SWMP.

## 1.3 Stormwater Program Overview

The activities outlined in this SWMP impact and are implemented by multiple City departments. This section provides an overview of the participating departments and the City's organizational structure as well as an outline of the SWMP organization in relation to the Phase I NPDES MS4 Permit requirements.

### 1.3.1 Stormwater Program Organization

Stormwater program activities in the City are implemented by staff in several departments and divisions. The Public Works Department, Environmental Services Division (ESD) is the lead group responsible for planning and tracking activities related to this SWMP. The following City departments and divisions participate in stormwater program operations and/or implementation:

- Public Works Department
  - Engineering Division
  - Environmental Services Division
  - Streets Division
- Parks Department
  - Maintenance Division
- Community Development Department
  - Planning Division

### 1.3.2 Stormwater Program Partners

As in previous permit terms, several activities related to meeting specific permit requirements are conducted by another jurisdiction on behalf of the City through IGAs. To clarify the City's permit responsibilities, areas of responsibility are outlined specific to each BMP.

### 1.3.3 SWMP Organization

The SWMP is organized into the major stormwater program categories listed in Table 1-1 below. The categories closely correspond to the Schedule A.3 control measures per the NPDES MS4 Permit. Within each stormwater program category, this SWMP outlines best management practices (BMPs) to address the NPDES MS4 Permit requirements. The BMPs are organized with numbering and titles based on the program categories. The BMPs listed in this summary are only those that address the explicit requirements of the SWMP as described in Schedule A.3 of the 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 on an annual basis. The reporting period is July 1 through June 30 of each year, with annual reports due to DEQ by December 1<sup>st</sup> each year.

Table 1-1. Stormwater Program Organizational Categories		
Category Title	NPDES MS4 Permit Requirement	BMP Naming Abbreviation
Public Education and Outreach	Schedule A.3.a	PEO
Public Involvement	Schedule A.3.b	PI
Illicit Discharge Detection and Elimination	Schedule A.3.c	ILL
Erosion and Sediment Control	Schedule A.3.d	EC
Post Construction	Schedule A.3.e	PC
Municipal Operations and Maintenance*	Schedule A.3.f	OM
Industrial and Commercial Program	Schedule A.3.g	IND

\*BMP OM-6 includes activities related to Schedule A.3.h.



### 1.3.4 SWMP Development

Since the City received its first NPDES MS4 Permit from DEQ in 1995, their SWMP has been through numerous iterations to align with consecutive reissuances of the NPDES MS4 permits and to 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 to propose changes to the BMP that enhance efficiency and 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 proposed SWMP changes (per their 2017 NPDES MS4 Permit renewal application) 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 the City's 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 also identified to accommodate new NPDES MS4 Permit requirements. Measurable goals and tracking measures were developed or adjusted (if needed) for each BMP.

## 1.4 SWMP Reference Library

Stormwater program implementation requires numerous codes, ordinances policies, procedures, guidance manuals, checklists, forms, mapping, and other related documents. Throughout this SWMP the relevant documents (reference documents) are noted within each program category or BMP. The referenced documents have been compiled into an MS4 Program Reference Library that can be found on the City's website. The Reference Library will also include this SWMP and associated annual reports. At the time of publication, the website location is: [MS4 Program Reference Library | City of West Linn Oregon Official Website](#).



## Section 2: SWMP Control Measures

The following sections detail the BMPs applicable to the Schedule A.3 Stormwater Management Program Control Measures. The control measures being addressed are separated into the following categories:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Site Runoff for New Development and Redevelopment
6. Pollution Prevention and Good Housekeeping for Municipal Operations
7. Industrial and Commercial Facilities

Tables 2A-2G, included in each respective category, identify which of the City's BMPs correspond to the individual components of the Schedule A.3 Permit requirements.

## 2.1 Public Education and Outreach

Public education and outreach activities are an integral component of a successful stormwater pollution prevention program. Increasing public knowledge on local water quality issues is key to obtaining public support and ownership for stormwater programs. The City partners with multiple agencies and non-profits to support public outreach and experiential education focused on stormwater, as well as maintains separate public outreach efforts targeted at issues that are significant in the community.

Table 2-1 outlines the City's BMPs to address the permit requirements for Schedule A.3.a.

Table 2-1. Public Education and Outreach					
Schedule A.3.a Permit Requirements	Applicable BMPs				
	PEO-1	PEO-2	PEO-3	PEO-4	EC-2
i. Education and Outreach Program	■	■	■	■	■
ii. Stormwater Education Activities	■	■			
iii. Priority Audiences and Topics	■		■	■	
iv. Tracking and Assessment	■	■	■	■	■

Each of the Public Education and Outreach centered BMPs are described in detail in the following BMP Category A table:

- PEO-1: Provide Public Education and Outreach Materials regarding Stormwater Management
- PEO-2: Implement a Pet Waste Program
- PEO-3: Ensure Staff Training for Pest Management
- PEO-4: Provide Staff Education Related to Environmentally Friendly Solutions

A supporting BMP that will also assist in meeting the requirements of this permit category is as follows:

- EC-2: Provide Educational Information to Construction Site Operators (**Section 2.4**)

The following Category A table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants (or surrogate) addressed for each public education and outreach 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.

Category A. Public Education and Outreach BMPs		
PEO-1: Provide Public Education and Outreach Materials regarding Stormwater Management	<b>BMP Number</b>	PEO-1
	<b>BMP Name</b>	Provide Public Education and Outreach Materials regarding Stormwater Management
	<b>BMP Implementation Responsibility</b>	<ul style="list-style-type: none"> <li>City of West Linn Public Works Department, Engineering Division</li> <li>City of West Linn Public Works Department, Environmental Services Division</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn continues to employ a public education strategy aimed at reducing the discharge of pollutants associated with a variety of activities including but not limited to:</p> <ol style="list-style-type: none"> <li>1. The application of pesticides, herbicides and fertilizers by citizens.</li> <li>2. Illicit discharges and dumping of waste materials into the storm drainage system.</li> <li>3. Disposal of waste oil and toxic materials.</li> </ol> <p>The City utilizes various educational and outreach materials that are distributed throughout the City via newsletter publications, brochures, bill inserts, the City web page, and radio advertisements. Newsletter articles typically include information on recycling locations, local disposal programs, and other coordinated efforts with METRO. Other educational topics include nature scaping and alternatives to using pesticides/fertilizers. Key audiences reflected in the public education strategy include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• General public (e.g., renters, homeowners, homeowner associations, youth, and other groups)</li> <li>• Local schools and students</li> <li>• Local elected officials, land use planners, engineers, developers, and/or employees of the co-permittees responsible for implementing the SWMP, as appropriate</li> <li>• Construction site operators</li> <li>• Businesses (including commercial facilities)</li> </ul> <p>Additionally, the City of West Linn coordinates with other local jurisdictions and organizations (i.e., ACWA, Regional Coalition for Clean Rivers and Streams) and makes monetary contributions to the Tualatin Basin Public Awareness Committee (TB PAC) to promote public awareness of water quality issues related to the above-mentioned practices.</p>
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>• Utilize newsletters, brochures, bill inserts, City web page, and radio advertisements to promote public awareness of stormwater quality issues and to provide information to encourage public reporting of illicit discharges.</li> <li>• Continue to make monetary contributions to TB PAC and other local organizations in support of public education and outreach efforts.</li> </ul>

Category A. Public Education and Outreach BMPs		
PEO-1	Tracking Measures	<ol style="list-style-type: none"><li>1. Track the number, types, and topics of public educational materials dispersed to the public annually.</li><li>2. Indicate any large-scale public educational campaigns initiated during a given year.</li><li>3. Track coordinated public outreach activities with local co-permittees.</li><li>4. Track amount donated to local organizations (e.g., TB PAC, others) each year.</li></ol>
	TMDL Pollutant (or surrogate) Addressed	<ul style="list-style-type: none"><li>• Bacteria (<i>E. coli</i>)</li><li>• Total Mercury</li><li>• Phosphorus (Chlorophyll a, pH)</li><li>• TSS (DO)</li></ul>

Category A . Public Education and Outreach BMPs		
PEO-2: Implement a Pet Waste Program	BMP Number	PEO-2
	BMP Name	Implement a Pet Waste Program
	BMP Implementation Responsibility	City of West Linn Parks Department, Maintenance Division
	Permit Year	Ongoing
	BMP Description	During maintenance activities on public property (i.e., parks), staff look for evidence of domestic animal waste. If problems are identified, signs are installed to educate citizens about the effects of animal waste on stormwater. Staff will also leave educational door hangers in the immediate area to make citizens aware of the problem, and they provide baggies and disposal areas for cleanup of domestic animal waste.
	Measurable Goals	<ul style="list-style-type: none"> <li>• If pet waste is observed as a problem upon routine maintenance activities at public property, install educational signs and distribute educational door hangers at homes in the immediate vicinity of the identified problem areas.</li> <li>• Continue to provide pet waste baggies and disposal areas in City parks for disposal of domestic animal waste.</li> </ul>
	Tracking Measures	1. Report on activities conducted annually.
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> </ul>

Category A. Public Education and Outreach BMPs		
PEO-3: Ensure Staff Training for Pest Management	<b>BMP Number</b>	PEO-3
	<b>BMP Name</b>	Ensure Staff Training for Pest Management
	<b>BMP Implementation Responsibility</b>	<ul style="list-style-type: none"> <li>City of West Linn Parks Department, Maintenance Division</li> <li>City of West Linn Public Works Department, Environmental Services Division</li> </ul>
	<b>Reference Document</b>	<ul style="list-style-type: none"> <li>Portland Integrated Pest Management Plan (2019)</li> <li>Appendix A: Municipal Staff MS4 Training Strategy</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	The City of West Linn informally follows the Portland Integrated Pest Management (IPM) Plan. In accordance with the program, crews from Public Works and the Parks Department are trained once every two years on proper pesticide and fertilizer application rates and techniques in conjunction with guidelines outlined in the IPM Plan (refer to Appendix A).
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>Provide training to Public Works and Parks department crews once every two years on proper pesticide and fertilizer application rates and techniques in conjunction with guidelines outlined in the IPM Plan.</li> </ul>
	<b>Tracking Measures</b>	1. Report on training conducted every year.
	<b>TMDL Pollutant Addressed</b>	N/A

Category A. Public Education and Outreach BMPs		
PEO-4: Provide Staff Education Related to Environmentally Friendly Solutions	<b>BMP Number</b>	PEO-4
	<b>BMP Name</b>	Provide Staff Education Related to Environmentally Friendly Solutions
	<b>BMP Implementation Responsibility</b>	<ul style="list-style-type: none"> <li>City of West Linn Public Works Department, Engineering Division</li> <li>City of West Linn Public Works Department, Environmental Services Division</li> </ul>
	<b>Reference Document</b>	Appendix A: Municipal Staff MS4 Training Strategy
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>A variety of training is provided to City staff associated with stormwater management in the City in accordance with the City's Municipal Staff MS4 Training Strategy (see Appendix A). Such trainings are conducted annually or every other year, depending on the number of employees requiring training. Training topics include:</p> <ul style="list-style-type: none"> <li>Public Education (IPM Program)</li> <li>Illicit Discharge Detection and Elimination</li> <li>Construction Site Runoff Control</li> <li>Post Construction Stormwater Management</li> <li>Operations and Maintenance of Stormwater Management Facilities</li> <li>Stormwater Pollution Prevention for Municipal Facilities and Operations</li> <li>Industrial and Commercial Facilities</li> </ul> <p>City of West Linn Operations and Engineering Staff also attend a variety of educational presentations and conferences throughout the year geared towards water resources and stormwater management. Such conference attendance includes ACWA, AIWA, and River Restoration NW. Staff also attends meetings and tours organized by ASCE-EWRG and Clackamas Community College Water Environment School. The City maintains a budget to allow for employee attendance at stormwater-related conferences.</p> <p>City staff participates in the Tualatin Basin Public Awareness Committee, Clackamas County Water Education Team (CCWET) and other professional meetings, seminars and conferences. The City of West Linn continues to coordinate with other local, Phase 1 NPDES MS4 jurisdictions including other Clackamas County co-permittees regarding regional water quality efforts. Areas for coordination include MS4 issues, education, public outreach and monitoring.</p>



Category A. Public Education and Outreach BMPs		
PEO-4	Measurable Goals	<ul style="list-style-type: none"> <li>• Conduct municipal training for employees associated with stormwater management in the City. Training is outlined in Appendix A: Municipal Staff MS4 Training Strategy by training type and frequency per permit requirement.</li> <li>• Continue to participate in and attend environmental and water quality related professional meetings and conferences.</li> <li>• Continue to maintain a budget for employee attendance of conferences.</li> <li>• Continue to coordinate with other local Phase 1 jurisdictions regarding regional water quality efforts.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>1. Track the number of employees receiving training in stormwater management annually.</li> <li>2. Track Operations and Engineering staff participation in professional organizations and attendance at relevant conferences.</li> </ol>
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Total Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>

## 2.2 Public Involvement and Participation

The public provides valuable input and assistance to the City's stormwater pollution prevention program. The goal of the public involvement is to effectively engage a diverse cross-section of people who can participate in stormwater pollution prevention activities. The City conducts a variety of public involvement programs to provide opportunities for the public to effectively participate in the development of the SWMP control measures. The public involvement efforts are also closely tied with the public education and outreach efforts.

Table 2-2 outlines the City's BMPs to address the permit requirements for Schedule A.3.b.

<b>Table 2-2. Public Involvement and Participation</b>	
<b>Schedule A.3.b Permit Requirements</b>	<b>Applicable BMPs</b>
	<b>PI-1</b>
<b>i. Publicly Accessible Website</b>	■
<b>ii. Stewardship Opportunity</b>	■
<b>iii. Tracking and Assessment</b>	■

The Public Involvement and Participation BMP is described in detail in the following BMP Category B Table:

- PI-1: Provide Public Participation and Stewardship Opportunities

The following Category B Table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants (or surrogate) addressed for each public involvement and participation BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future public involvement activities.

Category B. Public Involvement and Participation BMPs		
PI-1: Provide Public Participation and Stewardship Opportunities	BMP Number	PI-1
	BMP Name	Provide Public Participation and Stewardship Opportunities
	BMP Implementation Responsibility	<ul style="list-style-type: none"> <li>City of West Linn Public Works Department, Engineering Division</li> <li>City of West Linn Public Works Department, Environmental Services Division</li> </ul>
	Reference Document	City of West Linn <a href="#">NPDES MS4 Program website</a>
	Permit Year	Ongoing
	BMP Description	<p>Schedule A.3.b of the City's MS4 NPDES Permit requires the City to provide opportunities for public participation in the development and modification of the City's stormwater management program. This includes providing a 30-day comment period for the updated monitoring plan, which was due to DEQ December 1, 2022; a 30-day comment period for this SWMP, also due December 1, 2022, and the other strategy documents as required (i.e., Industrial and Commercial Facilities Strategy due December 1, 2023).</p> <p>The City's <a href="#">NPDES MS4 Program website</a> is a publicly accessible website that is used to make available applicable documentation for public review, as well as provides contact information, educational materials, and reporting requirements for illicit discharges.</p> <p>As part of the City's public education and public involvement efforts related to proper disposal of waste materials, the City of West Linn works with individuals and groups who volunteer to conduct catch basin stenciling. The Public Works Environmental Services Division (ESD) provides direction and materials to volunteers for catch basin stenciling efforts.</p>
	Measurable Goals	<ul style="list-style-type: none"> <li>Maintain a publicly accessible website with the SWMP, Monitoring Plan, annual reports, contact information, educational materials, reporting requirements for illicit discharges and the permit renewal package.</li> <li>Provide a 30-day public comment period, and consider comments received for updates to the Monitoring Plan, the SWMP, and other strategy documents as required.</li> <li>Continue participation with neighborhood volunteers in support of the catch basin stenciling efforts.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>Track comments/questions received from the public on documents submitted for 30-day public review.</li> <li>Track updates to the publicly accessible website annually and revise content and links as needed.</li> <li>Record the number and location of catch basins stenciled each year.</li> </ol>
	TMDL Pollutant Addressed	N/A

## 2.3 Illicit Discharge Detection and Elimination

An illicit discharge is defined in EPA's stormwater regulations as any discharge to an MS4 that is not composed entirely of stormwater unless specifically exempt by the permit. Stormwater runoff is defined as the portion of precipitation that does not 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 goal of the Illicit Discharge Detection and Elimination (IDDE) Program is to detect and eliminate illegal discharges and illicit connections to the storm drain system. The City accomplishes this goal through implementation of ordinances and enforcement procedures, MS4 mapping, a dry weather field screening program, a spill response program, and staff training.

Table 2-3 outlines the City's BMPs to address the permit requirements for Schedule A.3.c.

Table 2-3. Illicit Discharge Detection and Elimination						
Schedule A.3.c Permit Requirements	Applicable BMPs					
	ILL-1	ILL-2	ILL-3	OM-1	OM-5	PEO-4
i. MS4 Map		■		■		
ii. Ordinance and/or Other Regulatory Mechanisms	■					
iii. Enforcement Procedures	■					
iv. Program to Detect and Eliminate Illicit Discharges	■	■	■			
v. Dry Weather Screening Program		■			■	
vi. Illicit Discharge Detection and Elimination Training and Education*						■
vii. Tracking and Assessment	■	■	■	■	■	■

\*Appendix A: Municipal Staff MS4 Training Strategy provides specific information about training related to this permit requirement.

Each of the Illicit Discharge Detection and Elimination centered BMPs are described in detail in the following Category C BMP Table:

- ILL-1: Implement the Illicit Discharges Elimination Program
- ILL-2: Conduct Annual Dry Weather Field Screening
- ILL-3: Implement the Spill Response Program

Supporting BMPs that assist in meeting the requirements of this permit language can be found in the following section:

- OM -1: MS4 Mapping (**Section 2.6**)
- OM-5: Control Infiltration and Cross Connections to the Stormwater Conveyance System (**Section 2.6**)
- PEO-4: Provide Staff Education Related to Environmentally Friendly Solutions (**Section 2.1**)

Additional information related to the IDDE program can be found in the IDDE SOP (see MS4 SWMP Reference Library on the City's website), Spill and Illicit Discharge Enforcement Response Plan, Design and Construction Standards, and Rules and Regulations. The Category C Table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants (or surrogate) addressed for each IDDE 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.

Category C. Illicit Discharge Detection and Elimination BMPs		
ILL-1: Implement the Illicit Discharges Elimination Program	BMP Number	ILL-1
	BMP Name	Implement the Illicit Discharges Elimination Program
	BMP Implementation Responsibility	City of West Linn Public Works Department, Environmental Services Division
	Reference Documents	<ul style="list-style-type: none"> <li>• City of West Linn Illicit Discharge Detection and Elimination Standard Operating Procedure (IDDE SOP)</li> <li>• City of West Linn Municipal Code (WLMC)</li> <li>• City of West Linn Spill Response Program</li> <li>• City of West Linn Public Works Department Incident Report &amp; Citizen Inquiry for Illicit Discharge</li> <li>• Appendix A: Municipal Staff MS4 Training Strategy</li> </ul>
	Permit Year	Ongoing
	BMP Description	<p>The City of West Linn prohibits illicit discharges to their MS4 system in conjunction with their (City of West Linn Municipal Code, Chapter 4). The City has the authority to conduct appropriate response procedures and enforce against responsible parties per City of West Linn Municipal Code (Sections 4.063, 4.075, and 5.400-5.565).</p> <p>If an illicit discharge is discovered, the City conducts appropriate action to remove the illicit discharge in accordance with the City's Illicit Discharge Detection and Elimination Standard Operating Procedures (IDDE SOP) manual that was initially developed November 1, 2012 to comply with NPDES MS4 Permit requirements. Currently, illicit discharges suspected and/or identified by City staff (either independently or in conjunction with public reporting) are documented on the City of West Linn Public Works Department Incident Report &amp; Citizen Inquiry form. The form notes the date and time of the incident reporting to ensure responsive action is taken to address illicit discharges endangering human health or the environment within 24-hours. Incidents are also recorded in a tracking database on the City's internal server.</p> <p>Illicit Discharge Detection and Elimination specific training is outlined in Appendix A: Municipal Staff MS4 Training Strategy.</p>

Category C. Illicit Discharge Detection and Elimination BMPs		
ILL-1	Measurable Goals	<ul style="list-style-type: none"> <li>• Implement the City's IDDE program as outlined in the IDDE SOP.</li> <li>• For identified illicit discharges, conduct appropriate actions to remove the discharge in conjunction with time frames outlined in the City's MS4 NPDES Permit.</li> <li>• Track and record all identified illicit discharges and how such discharges were removed.</li> <li>• By December 1, 2023, review and update the City's IDDE SOP to clarify enforcement procedures and response timeframes in conjunction with the NPDES MS4 Permit.</li> <li>• Migrate the incident tracking database from the City's internal server to Lightship.</li> <li>• Integrate the City of West Linn Spill Response Program document into annual staff training.</li> </ul>
	Tracking Measures	1. Track the enforcement activities (number, location, etc.) related to any illicit discharge investigation conducted.
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Total Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>

Category C. Illicit Discharge Detection and Elimination BMPs		
ILL-2: Conduct Annual Dry Weather Field Screening	<b>BMP Number</b>	ILL-2
	<b>BMP Name</b>	Conduct Annual Dry Weather Field Screening
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Environmental Services Division
	<b>Reference Document</b>	IDDE SOP
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn conducts illicit discharge inspections, monitoring, and investigations annually during dry-weather conditions (between July and September) at all priority outfall locations. Priority outfall locations have been identified based on contributing land use and development activities within the watershed and are summarized in the City's IDDE SOP and posted on the City's West Linn Maps page for reference.</p> <p>Dry weather field screening involves the inspection of select outfalls during dry weather conditions to determine if discharge is occurring. If discharge is occurring, the next steps are to identify the source of the discharge, determine whether the discharge is allowable, and eliminate the discharge if it is unallowable or anticipated to add pollutants to the MS4. If flows are present during dry weather, source identification and discharge characterization generally involves the following stepwise process as needed:</p> <ol style="list-style-type: none"> <li>1. Visual observations and characterization (odor, color, turbidity, floatables).</li> <li>2. Field analysis (on-site analysis for pH and conductivity).</li> <li>3. Field tracking, or upstream system investigation to try and identify the pollutant source.</li> <li>4. Laboratory analysis (sample collection for off-site analysis).</li> </ol> <p>As described in the previous BMP: Implement the Illicit Discharges Program (ILL-1), these activities and procedures are documented in the City's IDDE SOP.</p> <p>The Public Works Director is notified of all positive identifications of illicit connections and the Environmental Services Department will take all necessary steps to eliminate them.</p> <p>If necessary, in accordance with the annual dry-weather inspection activities, the City updates their GIS files and IDDE SOP related to existing outfall locations and priority outfall locations.</p>



Category C. Illicit Discharge Detection and Elimination BMPs		
ILL-2	Measurable Goals	<ul style="list-style-type: none"> <li>• Conduct dry weather, illicit discharge inspections annually at all priority outfall locations.</li> <li>• As necessary, update existing outfall mapping and priority dry weather field screening locations in accordance with field observations.</li> <li>• Review and update prioritization criteria associated with dry weather field screening locations by December 1, 2023, and update locations on mapping and in the IDDE SOP.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>1. Track the number and location of high priority outfalls inspected during dry weather illicit discharge inspection activities.</li> <li>2. Summarize inspection results and indicate outfalls requiring sampling and/or investigations.</li> <li>3. Indicate the outcome and resolution of any investigation activities conducted.</li> </ol>
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Total Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>

Category C. Illicit Discharge Detection and Elimination BMPs		
ILL-3: Implement the Spill Response Program	<b>BMP Number</b>	ILL-3
	<b>BMP Name</b>	Implement the Spill Response Program
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, in coordination with Tualatin Valley Fire and Rescue (TVF&R)
	<b>Reference Document</b>	<ul style="list-style-type: none"> <li>City of West Linn Spill Response Program</li> <li>City of West Linn Public Works Department Incident Report &amp; Citizen Inquiry for Illicit Discharge</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City publicizes their spill response program and associated phone numbers to report spills or illicit discharges on the City's website (under Stormwater contact information) and through the Spill Response Program document which specifies both a Public Works office number and an afterhours non-emergency number. Phone calls are directed initially to Public Works.</p> <p>The City of West Linn Environmental Services initially responds to all spills within the City limits in accordance with their Spill Response Program procedure. If the spill is minor, Environmental Services will address it in accordance with the following general procedure:</p> <ol style="list-style-type: none"> <li>1. Public Works Department is notified.</li> <li>2. West Linn GIS is used to determine storm drain locations.</li> <li>3. Spill is contained (i.e., install catch-basin covers and absorbent pads).</li> <li>4. Spill containment materials are disposed of in an approved manner.</li> <li>5. Public Works Staff will document applicable locations and quantities on the City of West Linn Public Works Department Incident Report &amp; Citizen Inquiry form and report accordingly.</li> </ol> <p>If the spill is not minor, TVF&amp;R will resolve it. Procedures for spill response are outlined in the Fire Departments "Emergency Operations Plan" and coordination efforts by the Fire Department are as follows:</p> <ol style="list-style-type: none"> <li>1. Contact the State Hazardous Materials Response Team (TVF&amp;R).</li> <li>2. Contact the State and National Emergency Response System if the condition requires.</li> <li>3. Contact the police department for traffic controls.</li> <li>4. Contact the Public Works Department for storm system information and containment. Public Works staff will install catch basin covers and absorbent pads and the City will complete internal documentation needs.</li> </ol> <p>The City will notify other agencies/jurisdictions, as needed, to inform agencies/jurisdictions if an illicit discharge originated from or discharged into their jurisdictional authority within one working day of the City becoming aware of the discharge.</p>

Category C. Illicit Discharge Detection and Elimination BMPs		
ILL-3	Measurable Goals	<ul style="list-style-type: none"> <li>Implement spill response procedures in accordance with the City's Spill Response Program.</li> <li>By December 1, 2023, update the Spill Response Program procedure for consistency with the enforcement provisions outlined in the IDDE SOP and notification requirements.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>Indicate the number of spills reported to the City of West Linn Environmental Services and/or TVFR.</li> <li>Indicate sources, causes, and types of discharges resulting from identified spill activities.</li> <li>Identify program documentation updates.</li> </ol>
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

## 2.4 Construction Site Runoff Control

Construction projects often involve the removal of vegetation and excavation of soils. When vegetation is removed the velocity of stormwater runoff typically increases and disturbed soils can be carried offsite to storm inlets or receiving waters. Soil particles can transport associated pollutants to waterways, contribute to increases in stream temperature, reduce channel capacity, and have negative impacts to aquatic habitat. Other potential pollutant causing activities conducted at construction sites, include materials storage, fueling, and vehicle and equipment use. Staging areas and equipment use can lead to soil compaction further increasing stormwater runoff from the site. A robust and enforceable construction site runoff control program is vital for reducing pollution in stormwater runoff.

The goal of the construction site runoff control program is to prevent sediment and other construction related materials from leaving construction sites through the implementation of properly selected and installed BMPs. The City maintains a 1200-CN Permit from DEQ. The program allows developers to meet DEQ 1200-C permitting requirements by complying with the City of West Linn's erosion control program. This only applies to construction sites up to 5-acres. For sites 5 acres and larger, developers are required to obtain both City and DEQ permits. The City implements the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual as well as provisions the City's Municipal Code and Design and Construction Standards. Education is provided for both municipal staff and members of the design/engineering/construction community. Construction site runoff controls are accomplished through regulatory requirements, plan review and permitting, construction site inspections, enforcement procedures, training, education, and tracking.

Table 2-4 outlines the City's BMPs to address the permit requirements for Schedule A.3.d.

Table 2-4. Construction Site Runoff Control			
Schedule A.3.d Permit Requirements	Applicable BMPs		
	EC-1	EC-2	EC-3
i. Ordinance and/or Other Regulatory Mechanisms	■		■
ii. Erosion and Sediment Control Plans (ESCPs)	■		■
iii. Erosion and Sediment Control Plans Review	■		
iv. Construction Site Inspections	■		■
v. Enforcement Procedures			■
vi. Construction Runoff Control and Training Education		■	
vii. Tracking and Assessment	■	■	■

Each of the Construction Site Runoff Control centered BMPs are described in detail in the following Category D BMP Table:

- EC-1: Implement the Erosion Control Manual
- EC-2: Provide Educational Information to Construction Site Operators
- EC-3: Conduct Erosion Control Inspections and Enforcement

The Category D Table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants (or surrogate) addressed for each construction site runoff control BMP. 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.

Category D. Construction Site Runoff Control BMPs		
EC-1: Implement the Erosion Control Manual	<b>BMP Number</b>	EC-1
	<b>BMP Name</b>	Implement the Erosion Control Manual
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Engineering Division
	<b>Reference Document</b>	<ul style="list-style-type: none"> <li>Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (2020)</li> <li>West Linn Erosion Control Guide</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn development standards require submission of an erosion control permit application and an erosion and sediment control plan for all sites with 1,000 ft<sup>2</sup> of disturbance or greater, consistent with requirements provided in the City of West Linn Public Works Design Standards (PWDS) 2.0060. As an agent for DEQ's 1200-CN program, the City is authorized to review and permit projects up to 5 acres of disturbance. For sites disturbing five acres or greater, a 1200-C Permit is also required, as issued by DEQ and consistent with the requirements of DEQ's 1200-C Guidance Manual. The City requests copies of all 1200-C permits issued from DEQ as well.</p> <p>The City recommends the use of the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (revised 2022) in preparing the erosion control plans and implementing the erosion control BMPs. This guidance document recommends various non-structural and structural techniques for erosion control and includes measures related to good housekeeping and non-stormwater related waste.</p> <p>During the plan review process, new and redevelopment will be assessed for compliance with the erosion control standards and provisions outlined in the West Linn Erosion Control Guide. Plans not in compliance will not be approved and will be required to implement appropriate erosion control techniques prior to approval.</p>
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>Require submission of erosion control plans for development resulting in land disturbance of greater than or equal to 1,000 ft<sup>2</sup>.</li> <li>Require a copy of all 1200-C Permit applications for development resulting in land disturbance of greater than or equal to five acres.</li> <li>Assess new and redevelopment applications for erosion control compliance during plan review. Require erosion and sediment control plans not in compliance to be amended prior to approval in conjunction with provisions outlined in the Clackamas County Erosion Prevention and Sediment Control Manual (2020).</li> </ul>

Category D. Construction Site Runoff Control BMPs		
EC-1	Tracking Measures	<ol style="list-style-type: none"> <li>1. Report any updates or modifications to the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (2020).</li> <li>2. Record the number of erosion control permit (City issued and DEQ issued) applications received.</li> <li>3. Track the number of erosion and sediment control plan reviews completed.</li> </ol>
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Total Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>

Category D. Construction Site Runoff Control BMPs		
EC-2: Provide Educational Information to Construction Site Operators	<b>BMP Number</b>	EC-2
	<b>BMP Name</b>	Provide Educational Information to Construction Site Operators
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Engineering Division
	<b>Reference Document(s)</b>	<ul style="list-style-type: none"> <li>• Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (2020)</li> <li>• Appendix A: Municipal Staff MS4 Training Strategy</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn makes the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (2020) available to engineers, contractors, and the public. Educational brochures are attached to building and grading permits.</p> <p>The City of West Linn publicizes (via brochures, flyers, and pamphlets on the City Hall bulletin board) a variety of educational opportunities pertaining to erosion prevention geared for construction site operators and the general public.</p> <p>Construction Site Runoff Control specific training is outlined in Appendix A: Municipal Staff MS4 Training Strategy.</p>
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>• Provide educational information to construction site operators and the public via brochures, flyers, pamphlets, and attachments to building and grading permit applications.</li> </ul>
	<b>Tracking Measures</b>	1. Track training conducted under this BMP.
	<b>TMDL Pollutant Addressed</b>	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Total Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>

Category D. Construction Site Runoff Control BMPs		
EC-3: Conduct Erosion Control Inspections and Enforcement	<b>BMP Number</b>	EC-3
	<b>BMP Name</b>	Conduct Erosion Control Inspections and Enforcement
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Engineering Division
	<b>Reference Document(s)</b>	<ul style="list-style-type: none"> <li>• Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual (2020)</li> <li>• Erosion Control Inspection Log and Inspection Checklist for Erosion Control (included in the Clackamas County EPSC Planning and Design Manual)</li> <li>• West Linn Erosion Control Guide</li> <li>• Appendix A: Municipal Staff MS4 Training Strategy</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn development standards require erosion control to be in place prior to issuance of a construction and/or building permit. All sites that include greater than or equal to 1,000 ft<sup>2</sup> of disturbance are required to have an erosion and sediment control plan on record and are inspected during construction activities.</p> <p>Developments are inspected for erosion control three (3) times, at a minimum. Inspections are scheduled and logged using the City's permit tracking software (Accela). Additional inspections are conducted if permit violations occur. Erosion control inspections are conducted using the erosion and sediment control inspection form found in the Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual. Erosion and sediment control enforcement procedures are outlined on the City's website and Erosion Control Guide as part of a three-step progression:</p> <ol style="list-style-type: none"> <li>1. For sites with an initial erosion control violation, a written notice of inspection findings and required corrections is issued. 24 hours is typically given to correct the initial problem.</li> <li>2. If not resolved, a notice of non-compliance will be issued with required corrections.</li> <li>3. Should the required corrections not be addressed, a stop work order will be issued and other penalties such as fines and suspension/withdrawal of development approvals may be imposed.</li> </ol> <p>Engineering or building inspections will also not be conducted while an erosion control violation exists. Before the final engineering or building inspection, all disturbed areas must be permanently stabilized or revegetated.</p> <p>Construction Site Runoff Control specific training is outlined in Appendix A: Municipal Staff MS4 Training Strategy.</p>



Category D. Construction Site Runoff Control BMPs		
EC-3	Measurable Goals	<ul style="list-style-type: none"> <li>• Conduct a minimum of three site inspections on all sites with an erosion control plan for appropriate erosion control.</li> <li>• As necessary, enforce appropriate erosion and sediment control in conjunction with the three-step progression as outlined on the City's website.</li> <li>• Require all disturbed areas to be permanently stabilized or revegetated prior to final engineering or building inspection.</li> <li>• Review and, if necessary, update enforcement response procedures and escalating enforcement specific to erosion and sediment control by December 1, 2023.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>1. Track the number of erosion control inspections conducted each year.</li> <li>2. Report the number of notices of non-compliance and stop work orders issued, and describe the measures used to resolve the issue.</li> </ol>
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Total Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>

## 2.5 Post-Construction Site Runoff for New Development and Redevelopment

Stormwater runoff from new development and redevelopment in 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, bacteria, 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 must require treatment of a design storm representing at least 80% of average annual runoff. The permit requires the City to continue to prioritize Low Impact Development (LID) and Green Stormwater Infrastructure (GI) 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.

Table 2-5 outlines the City's BMPs to address the permit requirements for Schedule A.3.e.

Table 2-5. Post-Construction Site Runoff for New Development and Redevelopment				
Schedule A.3.e Permit Requirements	Applicable BMPs			
	PC-1	OM-5	OM-9	OM-10
i. Ordinance and/or Other Regulatory Mechanisms	■			
ii. Prioritization of Low Impact Development & Green Infrastructure	■			
iii. Post-Construction Stormwater Management Requirements	■			
iv. Water Quality Benefit Offset Programs*	■			
v. Post-Construction Site Runoff Plan Review	■			
vi. Long-Term Operation and Maintenance (O&M)	■	■	■	■
vii. Training and Education	■			
viii. Tracking and Assessment	■	■	■	■

\* To be addressed by December 2024 in conjunction with the compliance deadlines in the permit.

The Post-Construction Site Runoff for New Development and Redevelopment BMP is described in detail in the following Category E BMP Table:

- PC-1: Implement Public Works Design and Construction Standards for Stormwater Treatment

Supporting BMPs that assist in meeting the requirements of this permit language can be found in the following sections:

- OM-5: Control Infiltration and Cross Connections to the Stormwater Conveyance System (**Section 2.6**)
- OM-9: Public Structural Control Facility Cleaning and Maintenance (**Section 2.6**)
- OM-10: Private Water Quality Facility Maintenance Program (**Section 2.6**)

The Category E Table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants (or surrogate) addressed for the post-construction site runoff for new development and redevelopment BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMP and to inform post construction and education/outreach activities.

Category E. Post-Construction Site Runoff for New Development and Redevelopment BMPs		
PC-1: Implement Public Works Design and Construction Standards for Stormwater Treatment	BMP Number	PC-1
	BMP Name	Implement Public Works Design and Construction Standards for Stormwater Treatment
	BMP Implementation Responsibility	<ul style="list-style-type: none"> <li>City of West Linn Community Development Department, Planning Division</li> <li>City of West Linn Public Works Department, Engineering Division</li> <li>City of West Linn Public Works Department, Environmental Services Division</li> </ul>
	Reference Document(s)	<ul style="list-style-type: none"> <li>City of West Linn Public Works Design and Construction Standards</li> <li>City of Portland Stormwater Management Manual (SMM)</li> <li>City of West Linn Community Development Code</li> <li>Rain Garden Guide</li> <li>City of West Linn Building Permit and Site Development Application Checklist</li> <li>Appendix A: Municipal Staff MS4 Training Strategy</li> </ul>
	Permit Year	Ongoing
	BMP Description	<p>The City of West Linn reviews development submittals for conformance with their Public Works Design and Construction Standards with regards to stormwater treatment and control (Chapter 2). Plan review activities include the review of PWDS and infeasibility criteria to confirm appropriate facility application and sizing.</p> <p>In accordance with their MS4 NPDES permit, the City implements an impervious area threshold of 1,000 ft<sup>2</sup>, which requires treatment for projects that develop, or for redevelop 1,000 ft<sup>2</sup> or more of new impervious surface.</p> <p>The City has adopted use of the current City of Portland Stormwater Management Manual (2020). Table 1-2 of the Portland Stormwater Management Manual details the pollution reduction required and flow control required for offsite discharge to the separated stormwater system. In an effort to promote low-impact development, the City currently has City-specific standard details for rain gardens.</p> <p>Section 2.0051 of the City's Public Works Design and Construction Standards outline development factors that limit use of an on-site stormwater treatment facility and outline the equivalent measures that a developer would have to implement if on-site treatment cannot be provided.</p> <p>The City's Community Development Code (CDC) also designates several overlay zones that protect stream channels by requiring vegetated buffers. The Willamette and Tualatin River Protection Area (CDC Chapter 28) sets habitat conservation areas adjacent to the major rivers, with associated building restrictions and setback requirements. The majority of the city's tributary streams are also covered by Water Resource Area Protection requirements (CDC Chapter 32). The City requires a vegetated buffer to be maintained adjacent to stream channels in these areas.</p> <p>Post-Construction Site Runoff for New Development and Redevelopment specific training is outlined in Appendix A: Municipal Staff MS4 Training Strategy.</p>

Category E. Post-Construction Site Runoff for New Development and Redevelopment BMPs		
PC-1	Measurable Goals	<ul style="list-style-type: none"> <li>Continue to require stormwater treatment in conjunction with provisions outlined in the City of Portland's Stormwater Management Manual.</li> <li>Create or document the City's LID/GI strategy by December 1, 2023. The strategy must require the use of LID/GI to the maximum extent feasible.</li> <li>By December 1, 2024, update the PWDS to specifically identify elements of the Portland manual relevant to City applications, including but not limited to fee-in-lieu or alternative compliance strategies to meet post construction requirements for the permit.</li> <li>Refine the City of West Linn Building Permit and Site Development Application checklist to include stormwater specific activities.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>Track status of completion of an LID/GI strategy and other post-construction updates per permit deadlines.</li> <li>Track the number of development applications reviewed for compliance with the current stormwater requirements for treatment.</li> <li>Track any modifications to the list of currently approved structural stormwater treatment facilities.</li> </ol>
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

## 2.6 Pollution Prevention and Good Housekeeping for Municipal Operations

The goal of the pollution prevention program is to reduce the discharge of pollutants to receiving waters by properly operating and maintaining City facilities using good housekeeping BMPs. Municipal operations include a wide variety of activities conducted to maintain City-owned and operated property and facilities. These activities can lead to pollutants-- such as sediment, chemicals from pesticides, nutrients from fertilizers, and litter-- reaching the MS4 system and receiving waters.

During this permit term, the City will work to develop/update written pollution prevention policies, strategies, and agreements to document the procedures that are already in place for many municipal operations.

Table 2-6 outlines the City's BMPs to address the permit requirements for Schedule A.3.f.

<b>Table 2-6. Pollution Prevention and Good Housekeeping for Municipal Operations</b>													
Schedule A.3.f Permit Requirements	Applicable BMPs												
	OM-1	OM-2	OM-3	OM-4	OM-5	OM-6	OM-7	OM-8	OM-9	OM-10	PEO-2	PEO-4	PC-1
i. Operation and Maintenance Strategy for Existing Controls					■		■	■	■	■			■
ii. Inspection, Maintenance, and Cleaning of the MS4					■		■	■	■	■			
iii. Pollution Prevention in Facilities and Operations	■	■	■	■	■		■	■	■	■			
iv. Co-permittee-owned NPDES Industrial Stormwater Permit Facilities	Not Applicable (No 1200-Z Facilities)												
v. Winter Operations and Maintenance Program*		■									■		
vi. Requirements for Pesticide and Fertilizer Applications			■										
vii. Litter Control*				■									
viii. Materials Disposal*											■		
ix. Flood Control, Transportation, and Other Infrastructure						■							
x. Operations & Maintenance Staff Training			■									■	
xi. Tracking and Assessment	■	■	■	■	■	■	■	■	■	■	■	■	■

\* Items are new permit requirements that have not historically been measured or tracked by the City.

Each of the Pollution Prevention and Good Housekeeping for Municipal Operations centered BMPs are described in detail in the following **Category F** BMP Table:

- OM-1: MS4 Mapping
- OM-2: Maintain Public Streets
- OM-3: Implement an Integrated Pest Management Program
- OM-4: Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities
- OM-5: Control Infiltration and Cross Connections to the Stormwater Conveyance System
- OM-6: Conduct Master Planning for Stormwater Quality Improvement
- OM-7: Conduct Stormwater Conveyance System Cleaning and Maintenance
- OM-8: Conduct Catch Basin Cleaning and Maintenance
- OM-9: Conduct Public Structural Control Facility Cleaning and Maintenance
- OM-10: Conduct Private Water Quality Facility Maintenance Program

Supporting BMPs that assist in meeting the requirements of this permit language can be found in the following sections:

- PEO-2: Implement a Pet Waste Program (**Section 2.1**)
- PEO-4: Provide Staff Education Related to Environmentally Friendly Solutions (**Section 2.1**)
- PC-1: Implement Public Works Design and Construction Standards for Stormwater Treatment (**Section 2.5**)

The Category F Table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants (or surrogate) addressed for each pollution prevention and good housekeeping for municipal operations BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future pollution prevention and good housekeeping BMPs.

Category F. Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-1: MS4 Mapping	BMP Number	OM-1
	BMP Name	MS4 Mapping
	BMP Implementation Responsibility	City of West Linn Public Works Department, Engineering Division
	Reference Document	<ul style="list-style-type: none"> <li>City of West Linn Maps webpage</li> </ul>
	Permit Year	Ongoing
	BMP Description	<p>In accordance with Schedule A.3.c., the City's GIS department maintains a publicly available asset inventory in on the City's <a href="#">West Linn Maps</a> website for stormwater, water, sanitary sewer, property boundaries and jurisdictions, planning information, and other geographic information. Applicable assets include:</p> <ul style="list-style-type: none"> <li>Stormwater conveyance system features (stormwater laterals and mains with unique identifiers and available asset details; catch basins, inlets, stormwater control manholes, outfalls each with a unique identifier)</li> <li>Public and private stormwater facilities (including a unique identifier, facility type, owner, and maintenance responsibility)</li> <li>Stormwater drainage basin delineation</li> <li>Dry-weather field priority screening locations</li> <li>Geographic information (such as street names, water body names, the Metro Urban Growth Boundary, park names, and contour layers)</li> </ul> <p>The City does not have any known chronic illicit discharges or industrial properties that would otherwise be required to reflect on mapping. Mapping is used to aid in facility inspections, maintenance activities, and enforcement response. If mapping discrepancies are observed, maps are updated accordingly.</p>
	Measurable Goals	<ul style="list-style-type: none"> <li>Continually maintain the online GIS mapping for public viewing to reflect updated stormwater system and new system assets within the boundaries of the City.</li> <li>Add municipal structural stormwater facilities to the online GIS mapping within one year of construction completion.</li> <li>As necessary, create a tracking system for repeat illicit discharges over time and integrate into the MS4 mapping.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>Track updates made to the online GIS mapping annually.</li> <li>Record the location and drainage area of new public and private water quality facilities added to the GIS system inventory annually as applicable.</li> <li>Track and update outfall inventory and GIS layer, as needed.</li> </ol>
	TMDL Pollutants Addressed	N/A



Category F - Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-2: Maintain Public Streets	<b>BMP Number</b>	OM-2
	<b>BMP Name</b>	Maintain Public Streets
	<b>BMP Implementation Responsibility</b>	<ul style="list-style-type: none"> <li>City of West Linn Public Works Department, Environmental Services Division</li> <li>City of West Linn Public Works Department, Streets Division</li> </ul>
	<b>Reference Document</b>	<ul style="list-style-type: none"> <li>City webpage: <a href="#">Inclement Weather Information – Snow and Ice Control Plans</a></li> <li>City of West Linn Snow and Ice Control Plan</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn Operations Department conducts street sweeping activities throughout the City. Each street in the City is swept approximately 3 - 6 times per year. Regenerative air sweeping techniques are employed to minimize wash water from entering the stormwater conveyance system.</p> <p>West Linn Refuse &amp; Recycling provides a weekly leaf and yard debris pick up service within City limits and urban growth properties.</p> <p>The City implements a Snow and Ice Control Plan (2021) during winter weather events, which is reviewed and updated regularly. The Snow and Ice Plan addresses how snow removal, sanding, and chemical application is implemented to meet specific service level priorities. Additional winter weather response includes:</p> <ul style="list-style-type: none"> <li>Maps identifying plowing and sanding routes throughout the city with a road map index for priority locations (schools, fire stations, etc.) and street names.</li> <li>Additional information about material application and procedures. A Deicing agent (Magnesium Chloride) is occasionally used during icy weather conditions at select locations within the City (bridges, steep slopes).</li> </ul>
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>Sweep each street between 3 and 6 times per year.</li> <li>Implement the Snow and Ice Control Plan as documented.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>Track the number of sweeps conducted annually.</li> <li>Track the volume of debris removed during sweeping activities.</li> <li>Track the number of winter weather events, material storage quantities and locations, and type of material used on City roads.</li> </ol>
	<b>TMDL Pollutants Addressed</b>	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

Category F. Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-3: Implement an Integrated Pest Management Program	BMP Number	OM-3
	BMP Name	Implement an Integrated Pest Management Program
	BMP Implementation Responsibility	City of West Linn Parks Department, Maintenance Division
	Reference Documents	<ul style="list-style-type: none"> <li>Portland Integrated Pest Management (IPM) Program</li> <li>Appendix A: Municipal Staff MS4 Training Strategy</li> </ul>
	Permit Year	Ongoing
	BMP Description	<p>As an informal guide, the City of West Linn refers to the <i>Portland Integrated Pest Management (IPM) Program</i>, which defines appropriate pesticide and fertilizer application procedures and protocols along roadways, within City parks, and around water quality facilities. Staff adheres to such guidelines during maintenance activities. Per the IPM program, the following activities are typically implemented:</p> <ul style="list-style-type: none"> <li>Application of chemicals is eliminated where possible;</li> <li>Regular removal of invasive plant species is conducted;</li> <li>Native plants are used for revegetation projects; and</li> <li>Only spot spraying is conducted for blackberry removal.</li> </ul> <p>In addition, any work conducted within public right-of-ways requires certified, licensed chemical applicators. Education measures and staff training related to pest management and control are outlined under Category A: Public Education and Outreach.</p> <p>Pollution Prevention and Good Housekeeping for Municipal Operations specific training is outlined in Appendix A: Municipal Staff MS4 Training Strategy.</p>
	Measurable Goals	<ul style="list-style-type: none"> <li>Use the <i>Portland Integrated Pest Management (IPM) Program</i> as a guide for appropriate pesticide and fertilizer application procedures along roadways, within City Parks, and around water quality facilities.</li> <li>Conduct work within the public right-of-way only with certified, licensed applicators.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>Track any updates or modifications to the referenced IPM procedures and protocols.</li> <li>Track the amount of money spent on pest management chemicals each year.</li> </ol>
	TMDL Pollutants Addressed	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

Category F. Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-4: Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities	<b>BMP Number</b>	OM-4
	<b>BMP Name</b>	Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Environmental Services Division
	<b>Reference Document</b>	<ul style="list-style-type: none"> <li>Stormwater Pollution Prevention Strategy for Municipal Facilities (2013)</li> <li>Spill Prevention, Control, and Countermeasure Plan (2014) (referenced in the Stormwater Pollution Prevention Strategy for Municipal Facilities)</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>In 2013, the City developed a stormwater pollution prevention plan (SWPPP) for the Public Works Yard. The SWPPP includes both source control measures and treatment measures. The City implements the SWPPP on an ongoing basis, and updates will be made with adjusted onsite activities.</p> <p>As referenced in the SWPPP, the City implements their Spill Prevention, Control, and Countermeasure (SPCC) Plan at the Public Works Yard. The City implements the SPCC on an ongoing basis.</p> <p>Over the permit term, the City will also develop standard language for event contracts to include provisions about litter control and waste management. Include revised standard language in new event contracts for events on public property.</p>
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>By December 1, 2024, review and update the SWPPP for consistency with current use and practices.</li> <li>Ensure litter control language is included in new event contracts and facility rental agreements.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>Track status of SWPPP implementation and any updates made to the SWPPP.</li> <li>Randomly selected one (1) rental facility after occupancy use to ensure that all litter control provisions are being complied with. If needed, revised the litter control language to include additional regulators or guidelines.</li> </ol>
	<b>TMDL Pollutants Addressed</b>	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

Category F. Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-5: Control Infiltration and Cross Connections to the Stormwater Conveyance System	<b>BMP Number</b>	OM-5
	<b>BMP Name</b>	Control Infiltration and Cross Connections to the Stormwater Conveyance System
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Environmental Services Division
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn implements an inflow and infiltration (I&amp;I) abatement program for the sanitary sewer system. Sanitary lines are inspected and tested via smoke-testing, T.V. techniques, and flow metering for any cracking or breakage that would possibly result in infiltration from the sanitary to the storm system. Repairs are made as necessary based on the results of the inspections.</p> <p>The City's Development Services Department reviews new and redevelopment plans for possible cross-connections. The City also implements an illicit discharge detection and elimination program that works to identify and remove any cross-connections encountered during dry-weather field screening activities.</p>
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>• Annually investigate a minimum of 5,000 linear feet of sanitary lines for cracking and breakage, and repair as necessary based on the results of the inspection</li> <li>• Review new and redevelopment plan submittals for possible cross-connections.</li> <li>• Remove any potential cross-connections encountered during dry weather field screening activities.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>1. Indicate whether any sanitary sewer cross-connections were identified during sanitary line testing, during the plan review process, or during dry-weather field screening activities on an annual basis.</li> <li>2. Describe any follow-up activities required for identified cross-connections.</li> </ol>
	<b>TMDL Pollutant Addressed</b>	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>

Category F. Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-6: Conduct Master Planning for Stormwater Quality Improvement	<b>BMP Number</b>	OM-6
	<b>BMP Name</b>	Develop Planning Documents in Support of Water Quality
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Engineering Division
	<b>Reference Document(s)</b>	<ul style="list-style-type: none"> <li>City of West Linn Storm Drainage Master Plan (2019)</li> <li>Stormwater Retrofit Plan for the City of West Linn (2015)</li> <li>Hydromodification Assessment for the City of West Linn (2015)</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	The City of West Linn last updated their Stormwater Master Plan in 2019. The updated plan included an evaluation of current hydraulic and regulatory conditions to provide future direction for the City's surface water system. The master planning efforts included the development of capital projects (CP), programs, and policies. The resulting capital improvement program included projects addressing water quality retrofits, identified hydromodification issues, and flood control/capacity. The Master Plan incorporated findings of the Stormwater Retrofit Plan (2015) and Hydromodification Assessment (2015) in the development of the capital improvement program. The City's 2019 Storm Drainage Master Plan was adopted in December 2019.
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>Assess outcomes of the 2019 Storm Drainage Master Plan related to the Hydromodification Assessment and Stormwater Retrofit Strategy reports developed for the previous permit term.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>Track the number of CP/retrofit projects implemented each year and discuss the added benefit (water quality, hydromodification, habitat restoration, etc.) of each.</li> <li>Map the location and drainage area of water quality CIPs/retrofits as they are constructed.</li> <li>Document and submit a summary of outcomes related to the creation of the City's Retrofit Strategy and Hydromodification Assessment by December 1, 2023.</li> </ol>
	<b>TMDL Pollutants Addressed</b>	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

Category F - Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-7: Conduct Stormwater Conveyance System Cleaning and Maintenance	<b>BMP Number</b>	OM-7
	<b>BMP Name</b>	Conduct Stormwater Conveyance System Cleaning and Maintenance
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Environmental Services Division
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	The City of West Linn annually inspects their stormwater conveyance system including manholes, sewer pipes, culverts, and ditches. System components requiring repair or replacement are maintained promptly following inspection.
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>Perform cleaning and repair promptly based on inspection results.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>Track the length of conveyance system inspected.</li> <li>Track the volume of debris removed during cleaning activities.</li> <li>Track repair activities conducted.</li> </ol>
	<b>TMDL Pollutant Addressed</b>	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

Category F. Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-8: Conduct Catch Basin Cleaning and Maintenance	<b>BMP Number</b>	OM-8
	<b>BMP Name</b>	Conduct Catch Basin Cleaning and Maintenance
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Environmental Services Division
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	The City of West Linn inspects all public catch basins at least once per year. Cleaning activities are conducted as needed based on inspection and primarily occur during the dry weather season. The City maintains a list of assets (with unique identifiers) through GIS to track maintenance activities. The GIS database is updated during each maintenance cycle and uploaded to the City's internal server to track annual operations. This system allows the City to better track catch basins requiring more frequent maintenance. Catch basins requiring repair or replacement are maintained promptly.
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>Inspect all public catch basins once per year, and clean if the accumulated sediment is 6" or greater, per inspection results.</li> <li>Repair or replace catch basins promptly based on inspection results.</li> <li>Update tracking database during each maintenance cycle.</li> <li>By December 1, 2023, update the City's internal Stormwater Operations Plan to include updated inspection guidelines for City assets.</li> <li>Migrate the asset system information from the City's internal server to Lightship.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>Track the number of catch basins inspected.</li> <li>Track the volume of debris removed during cleaning activities.</li> </ol>
	<b>TMDL Pollutant Addressed</b>	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

Category F. Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-9: Public Structural Control Facility Cleaning and Maintenance	<b>BMP Number</b>	OM-9
	<b>BMP Name</b>	Public Structural Control Facility Cleaning and Maintenance
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Environmental Services Division
	<b>Reference Document</b>	City of West Linn Water Quality Facility Inspection Guidance Manual (2023)
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>The City of West Linn owns and operates approximately 200 public structural water quality facilities. Such public structural facilities currently include ponds, swales, detention tanks, rain gardens, and pollution control manholes.</p> <p>Following construction of such public structural control facilities, as-built information is provided to the City's GIS department where the facility location and associated drainage areas are mapped.</p> <p>Public structural control facilities are currently inspected annually and cleaned and maintained per inspection results. The City's Water Quality Facility Inspector's Guidance Manual includes criteria and guidance to inform the inspections. Inspections are completed using stormwater inspection forms by facility type, outlined in the City's Water Quality Facility Inspection Guidance Manual as:</p> <ul style="list-style-type: none"> <li>• Open System Vegetated Facilities</li> <li>• Water Quality Pre-Treatment Devices / Water Quality Structures</li> <li>• Flow Control Structures</li> </ul> <p>After the inspection, field inspection sheets are added to the digital file with any maps or additional field notes. The record of inspections is logged in the City's internal server.</p>
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>• Inspect public structural water quality facilities annually and maintain based on inspection results.</li> <li>• Migrate the asset system information from the City's internal server to Lightship.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>1. Track the number and frequency of structural facilities inspected and maintained.</li> <li>2. Track the volume of debris removed during cleaning activities.</li> </ol>
	<b>TMDL Pollutant Addressed</b>	<ul style="list-style-type: none"> <li>• Bacteria (<i>E. coli</i>)</li> <li>• Total Mercury</li> <li>• Phosphorus (Chlorophyll a, pH)</li> <li>• TSS (DO)</li> </ul>



Category F - Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-10: Private Water Quality Facility Maintenance Program	<b>BMP Number</b>	OM-10
	<b>BMP Name</b>	Private Water Quality Facility Maintenance Program
	<b>BMP Implementation Responsibility</b>	<ul style="list-style-type: none"> <li>City of West Linn Public Works Department, Engineering Division</li> <li>City of West Linn Public Works Department, Environmental Services Division</li> </ul>
	<b>Reference Documents</b>	<ul style="list-style-type: none"> <li>West Linn Municipal Code Sections 4.070</li> <li>Public Works Design Standards Section 2.0000</li> <li>City of West Linn Water Quality Facility Inspection Guidance Manual (2023)</li> <li>Stormwater Maintenance Agreement for Single Property Owner</li> <li>Stormwater Maintenance Agreement for Two Property Owners</li> </ul>
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	<p>There are currently a significant number (approximately 150) of private structural water quality facilities in West Linn. The City of West Linn has provisions in its Municipal Code and Public Works Standards requiring private facility owners to submit a Stormwater Maintenance Agreement for Single or Two Property Owners (Maintenance Agreements) to the City to ensure ongoing maintenance of these private water quality facilities. Such private water quality facilities tracked by the City include rain gardens, swales, ponds pollution control manholes, filters, and detention tanks. The City provides the Water Quality Facility Inspection Guidance Manual that provides an overview, application and limitations, design factors, maintenance needs, and Operations and Maintenance Plan for various facility types.</p> <p>The Maintenance Agreements require the owner to provide an annual report summarizing inspection and maintenance activities regarding the water quality facility. As Maintenance Agreements are submitted to the City, the City maps the facility location and contributing drainage area.</p> <p>Whether the owner inspects their facility or not, the City has a goal of inspecting approximately 25% of the facilities per year. For these facilities, an inspection report is drafted and sent to the owners. In this report, any actions the owner needs to implement to maintain the health and function of their facility are included.</p> <p>The City is also working to collect annual reports of inspection and maintenance activities for existing water quality facilities that do not currently have Maintenance Agreements. The City mails letters annually to all private water quality facility owners, regardless of whether they have a Maintenance Agreement with the City, requesting annual inspection and maintenance reports for the facilities. Annual reports are maintained on file at the City.</p>

Category F - Pollution Prevention and Good Housekeeping for Municipal Operations BMPs		
OM-10	Measurable Goals	<ul style="list-style-type: none"> <li>Require new private water quality facilities to submit maintenance agreements to the City.</li> <li>Require submittal of annual reports related to inspection and maintenance activities for private water quality facilities with existing maintenance agreements.</li> <li>Conduct inspections of a minimum of 40 private facilities annually, and conduct follow up communication with the owner.</li> <li>By May 2023, update the City of West Linn Private Water Quality Maintenance Program document to be included with new maintenance agreements and mailings to owners with no recorded maintenance agreements.</li> </ul>
	Tracking Measures	<ol style="list-style-type: none"> <li>Track number of maintenance agreements submitted to the City each year.</li> <li>Track number of annual maintenance reports received each year.</li> <li>Track the number of private facilities inspected by the City each year.</li> <li>Track private BMPs that are implemented and their type and associated drainage areas.</li> </ol>
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

## 2.7 Industrial and Commercial Facilities

The City's stormwater management program tracks industrial and commercial facilities to reduce pollutants in stormwater discharges to the MS4. These facilities include sites subject to the DEQ-issued 1200-Z industrial stormwater NPDES general permits, as well as commercial and industrial properties that potentially contribute pollutants to the MS4. The City does not have any hazardous waste treatment, disposal and recovery facilities; industrial facilities subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986; or facilities subject to Section 313 of the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. 11023.

Table 2-7 outlines the City's BMPs to address the permit requirements for Schedule A.3.g.

Table 2-7. Industrial and Commercial Facilities		
Schedule A.3.g Permit Requirements	Applicable BMPs	
	IND-1	IND-2
i. Screening for Industrial Stormwater Permitting	■	
ii. Strategy to Reduce Pollutants from Industrial and Commercial Facilities	■	■
iii. Commercial & Industrial Facility Inspection Staff Training	■	
iv. Tracking and Assessment	■	■

Each of the Industrial and Commercial Facilities centered BMPs are described in detail in the following **Category G BMP Table**:

- IND-1: Screen Existing and New Industrial/Commercial Facilities
- IND-2: Conduct Commercial Facility Inspections

The following Category G Table provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants (or surrogate) addressed for each industrial and commercial facilities BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future industrial and commercial facilities requirements and training.

Category G. Industrial and Commercial Facilities BMPs		
IND-1: Screen Existing and New Industrial Facilities	BMP Number	IND-1
	BMP Name	Screen Existing and New Industrial/Commercial Facilities
	BMP Implementation Responsibility	<ul style="list-style-type: none"> <li>City of West Linn Public Works Department, Engineering Division</li> <li>City of West Linn Public Works Department, Environmental Services Division</li> </ul>
	Reference Document	<ul style="list-style-type: none"> <li>City of West Linn Industrial/Commercial Facility Strategy</li> <li>Appendix A: Municipal Staff MS4 Training Strategy</li> </ul>
	Permit Year	Ongoing
	BMP Description	<p>Currently (2022), the City of West Linn does not have any 1200-Z permittees.</p> <p>Annually, the City of West Linn will review their existing business license inventory and new industrial development applications to determine whether any existing or new facilities would be subject to an industrial stormwater NPDES permit. This determination will occur based on a review of the facility(ies) proposed activities and the applicable SIC codes related to the 1200-series NPDES permit. If a facility is identified that would be subject to an industrial stormwater NPDES Permit, the facility and DEQ will be notified within 30 days.</p> <p>During the review of the existing business license inventory and new industrial development applications, the City will also consider whether any facilities (industrial or commercial) have been identified that have the potential to contribute significant pollutant load to the MS4 and include such facility in a priority facility inventory which would be included as part of the industrial and commercial facilities inspection program (see IND-2).</p> <p>Industrial and Commercial Facilities specific training is outlined in Appendix A: Municipal Staff MS4 Training Strategy.</p>
	Measurable Goals	<ul style="list-style-type: none"> <li>Notify DEQ of any existing or new industrial facilities within the City of West Linn jurisdiction that may potentially be subject to an industrial stormwater NPDES 1200-Z Permit.</li> </ul>
	Tracking Measures	1. Track the number of existing or new facilities subject to a stormwater industrial NPDES Permit during the permit term.
	TMDL Pollutant Addressed	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

Category G. Industrial and Commercial Facilities BMPs		
IND-2: Conduct Commercial Facility Inspections	<b>BMP Number</b>	IND-2
	<b>BMP Name</b>	Conduct Commercial Facility Inspections
	<b>BMP Implementation Responsibility</b>	City of West Linn Public Works Department, Environmental Services Division
	<b>Reference Document</b>	City of West Linn Industrial/Commercial Facility Strategy
	<b>Permit Year</b>	Ongoing
	<b>BMP Description</b>	In conjunction with the BMP to conduct private water quality facility maintenance, the City will take the opportunity to inspect housekeeping practices on commercial sites. Housekeeping practices and activities that are reviewed are discussed in the City's Industrial/Commercial Facility Strategy document and include vehicle operations, outdoor storage of materials, waste management, etc.
	<b>Measurable Goals</b>	<ul style="list-style-type: none"> <li>Place emphasis on priority commercial inspections on a yearly basis.</li> <li>Update the Industrial/Commercial Facility Strategy document to meet permit requirements by December 1, 2023. Post on the City's website for 30 days and consider public comments prior to submission to DEQ.</li> <li>Update the Water Quality Facility Management facility inspection checklist.</li> </ul>
	<b>Tracking Measures</b>	<ol style="list-style-type: none"> <li>Track the number and outcome of commercial facility inspections.</li> <li>Track updates to the Industrial/Commercial Facility Inspection Program documentation.</li> </ol>
	<b>TMDL Pollutant Addressed</b>	<ul style="list-style-type: none"> <li>Bacteria (<i>E. coli</i>)</li> <li>Total Mercury</li> <li>Phosphorus (Chlorophyll a, pH)</li> <li>TSS (DO)</li> </ul>

## 2.8 Monitoring and Reporting

The City is required to conduct monitoring that includes the collection and analysis of stormwater, instream surface water and macroinvertebrate samples. The monitoring requirements and objectives are outlined in Schedule B of the MS4 Permit. The City participates in a joint monitoring plan with other Clackamas co-permittees. This joint monitoring plan (i.e., the Comprehensive Clackamas County NPDES MS4 Stormwater Monitoring Plan or CCCSMP) was updated to address the 2021 Permit requirements and submitted to DEQ as required with the submittal of this SWMP (December 1, 2022). The new Monitoring Plan describes monitoring objectives, strategy, and procedures for the collection and analysis of stormwater, instream, and macroinvertebrate samples. Objectives of the monitoring program include the evaluation of pollution sources, characterization of stormwater runoff quality, assessment of water quality trends, and assessment of the effectiveness of our stormwater programs. The Monitoring Plan strategy includes both new and existing monitoring locations, sampling frequencies, updated pollutant parameters, analytical methods, quality control procedures, staffing resources, and a summary of field operating procedures. Monitoring data will be submitted to DEQ annually on December 1.

In accordance with the NPDES MS4 Permit requirements, the City also submits annual reports to DEQ to evaluate the City's progress towards implementing the SWMP control measures and associated BMPs. Beginning in 2023, the annual reports will be compiled using the annual report form provided by DEQ. The tracking measures outlined in each BMP table will be used to assess the effectiveness of the BMPs and inform future priorities and actions.

Records of data and information used in the development and implementation of the SWMP will be retained by the City for 5 years or for the permit term, whichever is longer. Annual reports are posted on the City's website and are made available to the public and to DEQ upon request.

## **Appendix A: Municipal Staff MS4 Training Strategy**

# Municipal Staff MS4 Training Strategy

## City of West Linn



Prepared: September 2022

Last Update: September 2022

## Overview

This document presents the City's multi-year and multi-topic training strategy to address stormwater education for municipal staff. The City's 2021 NPDES MS4 Permit requires training for municipal staff in several stormwater-related areas. In general, new staff will be trained in the duties of their position upon hire. Existing staff will be trained in the duties of their position on an annual basis. All staff will be trained on updated or changed procedures throughout the permit term, as those changes or updates occur.

This strategy covers training in the following categories:

- Illicit discharge detection and elimination
- Construction site runoff control
- Post construction stormwater management
- Operations and maintenance of stormwater management facilities
- Stormwater pollution prevention for municipal facilities and operations
- Industrial and commercial facilities

The following table outlines the City's strategy for conducting the required stormwater training for municipal staff. This strategy is specific to NPDES MS4 Permit requirements. City staff participate in trainings for topics and programs beyond those listed in this strategy, including field safety training and equipment training.



City of West Linn Municipal Staff MS4 Training Strategy						
Category	NPDES MS4 Permit Reference	Stormwater Training Topic	Target Groups	Frequency for Training	Potential Resources	Notes
Illicit Discharge Detection and Elimination Training and Education	A.3.c.vi	Identifying and reporting illicit discharges (including procedures for enforcement and follow-up actions)	<ul style="list-style-type: none"><li>Water Quality</li><li>Staff that respond to illicit discharges and spills</li></ul>	Annually	<ul style="list-style-type: none"><li>Online training</li><li>Internal training based on City's IDDE response SOP</li><li>Spill Response Plan</li><li>TVFR</li></ul>	<ul style="list-style-type: none"><li>Field staff to review IDDE videos and review City's IDDE SOP.</li><li>Field staff will review the Spill Response Plan.</li><li>Field staff will coordinate with TVFR for spill response training.</li></ul>
		Dry weather screening procedures, documentation, reporting, and follow-up actions	<ul style="list-style-type: none"><li>Staff that conduct dry weather screenings</li></ul>	Annually	<ul style="list-style-type: none"><li>Internal training based on City's IDDE SOP</li><li>Online training</li></ul>	<ul style="list-style-type: none"><li>Provide training each spring or summer, prior to commencing the dry weather screening program</li><li>Water Quality staff to review IDDE videos and review City's IDDE SOP before conducting dry weather screening</li></ul>
Construction Site Runoff Control Training and Education	A.3.d.vi	Best practices and new technologies for erosion prevention and sediment control	<ul style="list-style-type: none"><li>Engineering staff</li><li>Site inspectors</li></ul>	Once in permit term	<ul style="list-style-type: none"><li>Online training</li><li>Vendor provided training</li></ul>	Certified Erosion and Sediment Control Lead (CESCL) training is conducted every three (3) years to renew certification and for new employees who will have ESC responsibilities.
		Construction site ESC inspection processes and documentation procedures (including violations enforcement processes)	<ul style="list-style-type: none"><li>Site inspectors</li></ul>	Once per permit term, or as standards change	<ul style="list-style-type: none"><li>Internal training based on City's ESC process SOP and/or inspection checklist</li></ul>	May be combined with post-construction site inspection training.
Post-Construction Site Runoff for New Development and Redevelopment Training and Education	A.3.e.vii	Proposed or adopted changes to stormwater design standards and site plan reviews.	<ul style="list-style-type: none"><li>Engineering staff</li><li>Development Services Staff involved with plan review and approval</li><li>Planning/Community Development staff involved with land use reviews and approvals</li><li>Site inspectors</li><li>Field operations staff responsible for maintaining stormwater management facilities</li></ul>	Once in permit term, if changes are proposed to the stormwater design standards or stormwater related land use policies	<ul style="list-style-type: none"><li>Internal training</li></ul>	Training should be conducted during development (or following adoption) of new or updated stormwater design standards and site plan reviews.
		City site inspection processes and documentation procedures (including violations enforcement processes)	<ul style="list-style-type: none"><li>Site inspectors</li></ul>	Once in permit term	<ul style="list-style-type: none"><li>Internal training based on City's site inspection SOP and/or inspection checklist</li></ul>	
Operations and Maintenance of Stormwater Management Facilities	A.3.e.vii A.3.f.x	Operation and maintenance best practices for stormwater management facilities	<ul style="list-style-type: none"><li>Field operations staff responsible for maintaining storm water management facilities</li><li>Private facility inspectors</li><li>Public facility inspectors</li><li>Site Inspectors</li><li>Engineering staff</li><li>Development Services Staff involved with plan review and approval</li></ul>	<ul style="list-style-type: none"><li>Once in permit term- Clackamas Community College (CCC) course</li><li>Annually - Winter maintenance activities</li></ul>	<ul style="list-style-type: none"><li>Online training</li><li>Joint agency workshop or professional group presentation</li><li>Vendor training</li><li>Snow and Ice Control Plan</li></ul>	<ul style="list-style-type: none"><li>The CCC course is offered annually.</li><li>Field staff to review the Snow and Ice Control Plan annually.</li></ul>

City of West Linn Municipal Staff MS4 Training Strategy						
Category	NPDES MS4 Permit Reference	Stormwater Training Topic	Target Groups	Frequency for Training	Potential Resources	Notes
Stormwater Pollution Prevention for Municipal Facilities and Operations	A.3.f.x	Inspection, cleaning, and documentation/tracking procedures for MS4 related structures (catch basins, storm drains inlets, pipes)	<ul style="list-style-type: none"><li>Field operations staff</li></ul>	Once in permit term	<ul style="list-style-type: none"><li>Internal training based on City's SOP and schedule for MS4 maintenance</li></ul>	<ul style="list-style-type: none"><li>Catch basin inspection and cleaning schedule is reviewed once a year before the annual cleaning is conducted.</li><li>All new hires are required to receive training and review the City's SOP as part of onboard training.</li></ul>
		Storm water pollution prevention and good housekeeping practices for field operations	<ul style="list-style-type: none"><li>Field operations staff</li><li>Facility inspectors</li><li>Parks landscaping staff</li><li>Facility landscaping staff</li><li>Site inspectors</li><li>ESC site inspectors</li><li>Engineering staff</li><li>Development services staff</li></ul>	Once in permit term	<ul style="list-style-type: none"><li>Internal training based on City's municipal pollution prevention plan and/or SOPs</li></ul>	<ul style="list-style-type: none"><li>Conduct in 2024, after update to municipal pollution prevention plan.</li><li>Opportunity to offer training for staff from franchise utilities or other groups that conduct field operations in the City.</li></ul>
		PW Yard Facility stormwater pollution prevention plan and best practices	<ul style="list-style-type: none"><li>Facility staff</li></ul>	Once in permit term	<ul style="list-style-type: none"><li>Internal training based on the City's SWPPP</li></ul>	Training would include reference to the SWPPP as well as Spill Response plan for the PW Yard.
		Integrated pest management and proper application of pesticides and fertilizers	<ul style="list-style-type: none"><li>Parks landscaping staff</li><li>Road maintenance staff</li></ul>	Once in permit term	<ul style="list-style-type: none"><li>Online training</li><li>External training</li></ul>	Licensed pesticide applicators will complete required continuing education credits for license renewal.
Commercial & Industrial Facility Inspection Staff Training	A.3.g.iii	Industrial/Commercial facility inspection procedures (including	<ul style="list-style-type: none"><li>Staff responsible for inspecting and evaluating industrial facilities</li></ul>	Once in permit term	<ul style="list-style-type: none"><li>Internal training</li><li>Online training</li></ul>	Training should be conducted after the City reviews and updates the Industrial and Commercial Facilities Strategy.

## **Appendix B: Change Log**

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**Table B-1. Change Log – City of West Linn 2022 SWMP**

Revision Date	Relevant Permit Requirement	Revision Description	An analysis of why the new action is an appropriate alternative from the standpoint of effectiveness, feasibility and/or cost (Schedule A.2.f.ii.(A))	Expectations on the effectiveness of the replacement action or activity (Schedule A.2.f.ii.(B))
December 1, 2023	Schedule A.2.f Review and Modification of the SWMP Document	<p>Added a new SWMP Document date to the cover to reflect the December 1 updates.</p> <p>Added a sentence to the end of Section 1.1 to introduce the addition of a revisions log to track SWMP Document revisions.</p> <p>Updated the link to the MS4 Program Reference Library in Section 1.4.</p> <p>Included a SWMP Document Revisions Log as Appendix B for tracking revisions to the 2022 SWMP Document moving forward.</p>	N/A	N/A
December 1, 2023	Schedule A.3.d	Updated reference in EC-1 and EC-3 to the City's Erosion Control Guide and added the Guide as a reference document for inclusion in the document library.	N/A	N/A
December 1, 2023	Schedule A.3.e.vi	Updated reference in OM-9 and OM-10 to the City's Water Quality Facility Inspection Guidance Manual, which was	N/A	N/A

Table B-1. Change Log – City of West Linn 2022 SWMP				
Revision Date	Relevant Permit Requirement	Revision Description	An analysis of why the new action is an appropriate alternative from the standpoint of effectiveness, feasibility and/or cost (Schedule A.2.f.ii.(A))	Expectations on the effectiveness of the replacement action or activity (Schedule A.2.f.ii.(B))
		updated in May 2023 and consolidates inspection and maintenance requirements previously documented in multiple sources.		
December 1, 2023	Schedule A.3.e.vi	<p>Updated reference to the newly (as of December 2023) updated Industrial/ Commercial Facility Strategy document in IND-1 and IND-2 and added the Strategy document as a reference document for inclusion in the document library.</p> <p>Refined (increased) the frequency of screening activities from once over the permit term to annually in accordance with the Strategy document.</p>	N/A	N/A

*Note: This Revision Log documents adaptive management modifications to the SWMP in accordance with Schedule A.2.f. of the NPDES MS4 Permit. Information included in the last two columns is not required for modifications that add elements to the approved SWMP Document. Information is required in these columns for modifications to delete, adjust, or replace elements in the approved SWMP Document with an alternate action or activity.*