

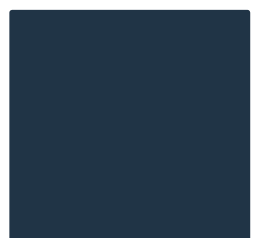


City of Oregon City, Oregon

National Pollutant Discharge Elimination System Phase I

Stormwater Management Program Document

November 2022



NPDES PHASE I
STORMWATER MANAGEMENT PROGRAM DOCUMENT

Prepared for
City of Oregon City
November 2022



BC Project No. 157230

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List of Abbreviations

BMP(s)	Best Management Practice(s)
City	City of Oregon City
CWA	Clean Water Act
DEQ	Department of Environmental Quality
EPSC	Erosion Prevention and Sediment Control
ESC	Erosion and Sediment Control
GI	Green Stormwater Infrastructure
IDDE	Illicit Discharge and Elimination
LA(s)	Load Allocation(s)
LID	Low Impact Development
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NSRR	Numeric Stormwater Retention Requirement
Permit	NPDES MS4 Phase I Discharge Permit
O&M	Operation and Maintenance
OCMC	Oregon City Municipal Code
ODOT	Oregon Department of Transportation
ROW	right-of-way
SOP(s)	Standard Operating Procedure(s)
SWGDS	Stormwater and Grading Design Standards
SWMP	Stormwater Management Program
TMDL	Total Maximum Daily Load
UST	underground storage tank
WLA(s)	Waste Load Allocation(s)

Section 1 SWMP Overview

1.1 Introduction

Under the federal Clean Water Act (CWA) and Oregon Revised Statute 468B.050, Oregon Department of Environmental Quality (DEQ) has issued the City of Oregon City (City) a renewed National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Phase I Discharge Permit No. 101348.

The City is a “Phase I” permittee; their first NPDES MS4 Permit was issued in 1997. Subsequent permits were issued in 2004 and 2010. The 2010 permit expired in 2015 and went into administrative extension until a renewed permit was issued September 15, 2021, with an effective date of October 1, 2021.

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

This 2022 version of the City’s SWMP Document 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 BMPs to achieve reductions in stormwater pollutants to the MEP. This SWMP update was based on an assessment of available technologies and practices, review of past measurable goals and tracking measures, and evaluation of City resources available to implement programs.

The City’s BMPs are evaluated annually during the preparation of the NPDES MS4 Annual Report. The annual report includes the status of implementing each BMP and any proposed modifications or adaptations of the program.

1.2 Coverage Area

The city of Oregon City is comprised of 11.92 square miles and is located approximately 13 miles south of Portland, Oregon. Stormwater drainage flows to many small tributaries that feed into Abernethy Creek, Beaver Creek, the Clackamas River, and the Willamette River. Oregon City is the oldest city in Oregon and takes pride in providing sustainable public infrastructure, protecting public health and safety, water quality, and natural resources, and promoting community values. The City has a population of approximately 37,000 residents (as of 2020). There are significant areas of residential, commercial, industrial, and institutional land uses within the city. Natural areas include numerous parks, Clackamette Cove, and the 236-acre Newell Canyon Nature Park, which includes land purchased by Metro for preservation. The City manages approximately 160 miles of piped stormwater infrastructure and 14 miles of roadside drainage ditches. Some of the underground stormwater piping is nearly 100 years old.

Figure 1 illustrates the total area within the representative watersheds, as well as the surrounding jurisdictions. Additional maps related to the City’s stormwater system and stormwater program are available on the City’s website.

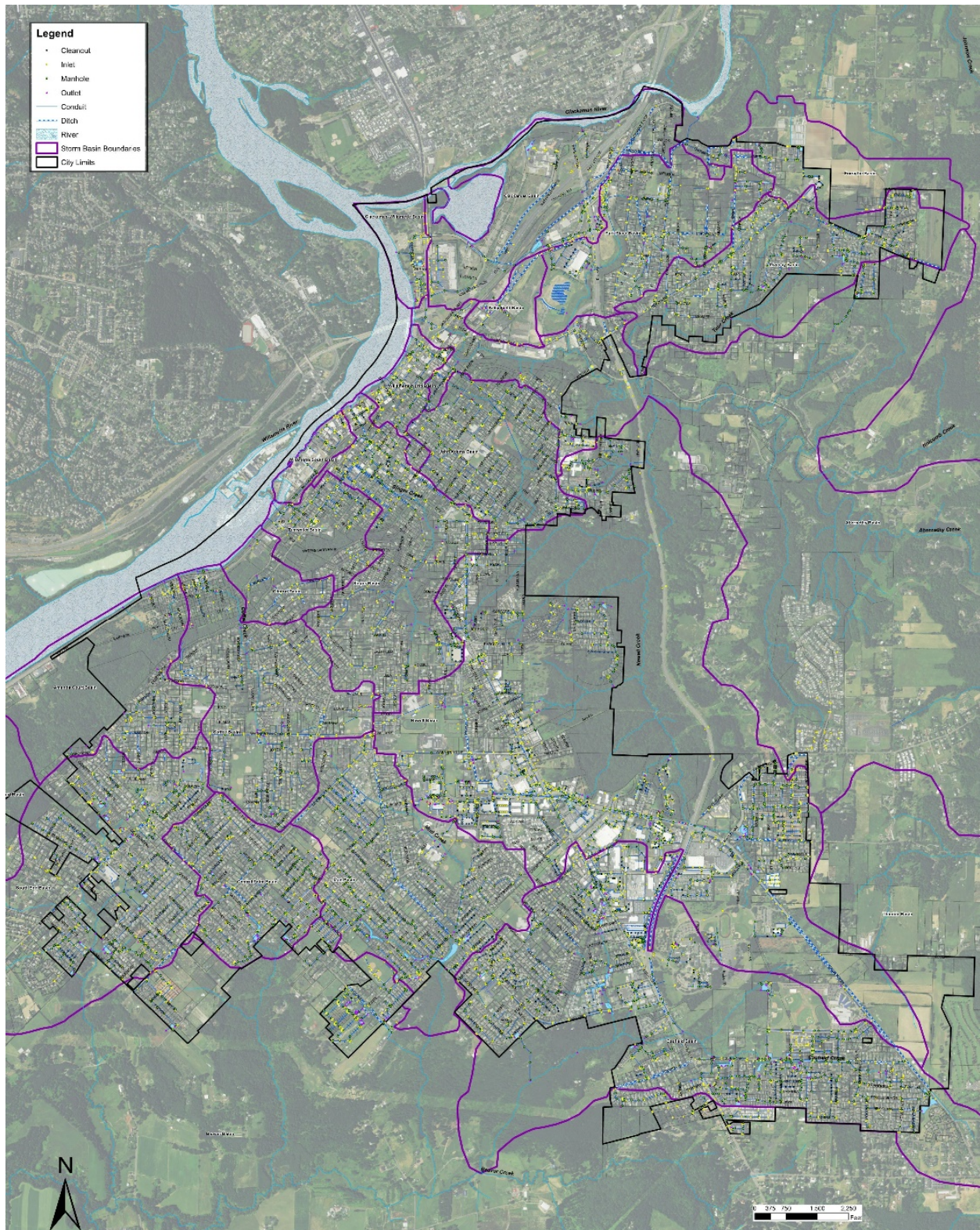


Figure 1: Oregon City Watersheds

The City's NPDES MS4 permit area, or "service area", is defined as the area included within the city limits for which the City has responsibility for implementing its stormwater management program. Historically, this area has excluded open bodies of water, waterways, and areas operated by another NPDES MS4 permitted entity.

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

As of the City's permit renewal application in 2017, Oregon City's NPDES MS4 service area was calculated to be 6,253 acres. The service area is expected to expand with annexations. However, as described in the City's 2017 permit renewal application, the expansion should not result in substantial increases in runoff intensity or pollutant loads.

1.3 Relationship to TMDLs

In addition to the NPDES MS4 Permit requirements, the City is subject to Total Maximum Daily Load (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. In Oregon, DEQ identifies load allocations (LAs) for nonpoint sources of pollution and waste load allocations (WLAs) for point sources. Municipal stormwater discharges are regulated as point sources if they are covered by a NPDES MS4 permit.

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

- Bacteria (Willamette Basin TMDL, 2006)
- Mercury (Willamette Basin, Water Quality Management Plan issued by EPA on December 30, 2019, and reissued with modification on February 4, 2021).

Point sources of pollutants and associated WLAs are regulated under the NPDES permitting program and nonpoint sources are managed by TMDL implementation Plans. 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...

Oregon City Phase I NPDES MS4 Permit, Schedule D.3.a

This SWMP Document details the City's plan to control pollutant runoff to address TMDL WLAs for bacteria and mercury. 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 address this requirement, BMPs outlined in this SWMP Document include reference to the targeted TMDL pollutants addressed with implementation of BMPs. Schedule D.3.c requires the City to conduct a TMDL pollutant load reduction evaluation, and Schedule D.3.d requires the City to establish pollution load reduction benchmarks for relevant TMDL pollutants in conjunction with the next NPDES MS4 Permit renewal application.

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

1.4 Stormwater Program Implementation

The Public Works Department is the lead group responsible for planning and tracking activities related to the SWMP. The following departments and groups participate in stormwater program operations or implement programs that reduce pollutant sources before they can enter stormwater runoff.

- Engineering
- Planning
- Utilities/Conveyance
- Parks
- Natural Resources
- Code Compliance

1.5 SWMP Document Organization

The SWMP Document 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 listed in the NPDES MS4 permit. Within each category, this SWMP Document outlines best management practices (BMPs) to address the NPDES MS4 Permit requirements to reduce the discharge of pollutants to the maximum extent practicable. 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 on activities due to DEQ by December 1 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
Additional Program Elements	Schedule A.3.h and Various Others	AP

1.6 SWMP Development

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

In 2022, the City conducted a detailed evaluation of the existing SWMP using a gap analysis strategy to compare the City's 2012 SWMP Document to the 2021 NPDES MS4 permit requirements. The evaluation also included a review of the City's annual reports and considered input from City staff responsible for implementing each BMP. Based on City experience, some BMPs were streamlined to reflect work previously completed and other BMPs were adjusted to better reflect the way the City operates. New BMPs were identified to increase program effectiveness and accommodate new NPDES MS4 permit requirements. Measurable goals and tracking measures were developed or adjusted (if needed) for each BMP.

1.7 SWMP Document Library

Stormwater program implementation requires numerous codes, ordinances policies, procedures, guidance manuals, checklists, forms, mapping, and other related documents. Throughout this SWMP Document, the relevant documents are noted within each program category or BMP. The referenced documents have been compiled into a SWMP Document Library that can be found on the City's website. At the time of publication, the website location is:

<https://www.oregoncity.org/publicworks/swmp-document-library>

In accordance with the NPDES MS4 permit requirements, the City's annual reports of stormwater program activities will also be posted on the City's website for public access.

Section 2 SWMP Control Measures

The following subsections describe the best management practices (BMPs) applicable to the Schedule A.3 SWMP control measures. The control measures being addressed are organized into the following categories:

- A. Public Education and Outreach
- B. Public Involvement and Participation
- C. Illicit Discharge Detection and Elimination
- D. Construction Site Runoff Control
- E. Post-Construction Site Runoff for New Development and Redevelopment
- F. Pollution Prevention and Good Housekeeping for Municipal Operations
- G. Industrial and Commercial Facilities
- H. Additional Program Elements

Tables 2-1 through 2-8 (Categories A-H) below, included in each respective category, identify which of the City's BMPs correspond to the individual components of the Schedule A.3 permit requirements to meet the stormwater management program control measures.

2.1 Category A. Education and Outreach

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

The objectives of the City's education and outreach program are to:

- Develop an understanding of stormwater issues and pollution sources.
- Develop the knowledge and skills needed to reduce behaviors and practices that could have adverse impacts on receiving waters.
- Provide information to the community about the impacts of stormwater discharges on local water bodies and the steps that can be taken to reduce pollutants in stormwater runoff.

The City conducts a wide variety of public education and outreach programs to address stormwater issues that are significant in the community. Activities are focused on education for residents and people who do business in and around the City of Oregon City. Activities related to education and training for Municipal staff are described in BMP AP-1.

The City's NPDES permit requirements for Category A are listed below.

Table 2-1. Category A. Education and Outreach				
Permit Requirements	Applicable BMPs			
	EO-1. Public Education and Outreach	EO-2. Outreach to Elected Officials	EO-3. Translate Stormwater Program Materials	AP-1. MS4 Staff Training*
A.3.a.i Education and Outreach Program	■			
A.3.a.ii Stormwater Education Activities	■		■	■
A.3.a.iii Priority Audiences and Topics	■	■	■	
A.3.a.iv Tracking and Assessment	■	■	■	■

*BMP is part of a different category of control measure, described elsewhere in this document.

Table 2-2 provides a description, implementation schedule, measurable goals, annual tracking measures, and list of TMDL pollutants 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.

Table 2-2. Category A. Education and Outreach BMPs

BMP Name	BMP Description	Tracking Measures	TMDL Pollutants Addressed
EO-1. Public Education and Outreach	<p>Responsible Party: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Public Education and Outreach Strategy</p> <p>BMP Description: Provide Education and Outreach for Stormwater Management by providing educational stormwater materials to the community, providing an annual water quality report to OC citizens, installing signs near water quality structures and around OC promoting water quality partner with other agencies/jurisdictions/organizations to educate and promote watershed health and low impact development.</p> <p>Continue to implement the programs outlined in the Public Outreach Program Strategy document (Appendix A). The Public Outreach Program Strategy outlines goals, objectives, priority audiences and topics, messaging methods, and evaluation strategies to address stormwater issues of significance in the community.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Include a water quality related article in each City newsletter, distributed to citizens three times per year. • Periodically install signs near water quality structures and around the City promoting water quality. • Seek out opportunities to partner with other agencies/jurisdictions/organizations to educate and promote watershed health and low impact development. • Distribute an annual water quality report to Oregon City residents including stormwater educational information. • Target outreach efforts to encourage pet waste clean-up at City parks and recreational areas. 	<ul style="list-style-type: none"> • Number, types, and topics of public educational materials distributed to the public annually. • Report any large-scale public educational campaigns initiated during a given year • Track coordinated public outreach activities with other permittees 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
EO-2. Outreach to Elected Officials	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Public Education and Outreach Strategy</p> <p>BMP Description: Provide educational materials to City elected officials regarding the City's stormwater program, municipal stormwater pollution prevention activities, and best practices for residents to prevent stormwater pollution. Presentation could occur at a regularly scheduled council or commission meeting, work session, or planning retreat.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Provide one presentation annually to Oregon City Council at a council meeting, work session, or planning retreat. • Provide one presentation annually to Oregon City Planning Commission. 	<ul style="list-style-type: none"> • Dates of presentations 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
EO-3. Translate Stormwater Program Materials	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Starting in 2023</p> <p>BMP Description: Translate stormwater program materials (brochures, flyers, manuals, guidelines, and website) into Spanish.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Translate one stormwater educational material into Spanish each year. 	<ul style="list-style-type: none"> • Number and type of materials translated 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

2.2 Category B. 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 and participation program is to effectively involve a diverse cross-section of people in stormwater pollution prevention activities. The City conducts a variety of public involvement programs to provide opportunities for the public to participate in the water quality stewardship and natural resource protections.

The City's NPDES permit requirements for Category B are listed below.

Table 2-3. Category B. Public Involvement and Participation			
Permit Requirement	Applicable BMPs		
	PI-1. Stormwater Program Website	PI-2. City Sponsored Community Stewardship Opportunity	PI-3. Stewardship Catch Basin Marking
A.3.b.i Publicly Accessible Website	■		
A.3.b.ii Stewardship Opportunity		■	■
A.3.b.iii Tracking and Assessment		■	■

**BMP description is in a different section of this document.*

Table 2-4 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants 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 public involvement activities.

Table 2-4. Category B. Public Involvement and Participation BMPs

BMP Name	BMP Description	Tracking Measures	TMDL Pollutants Addressed
PI-1. Stormwater Program Website	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: 2022 and Annually</p> <p>Reference: https://www.orcity.org/publicworks/npdes-documents-page</p> <p>BMP Description: Update the City's website to include required stormwater program information, updated SWMP Document, a SWMP Document Library, annual reports, and links to stormwater program ordinances and guidance documents. Highlight pollution prevention, spill reporting, illicit discharge complaint reporting, education and outreach messages, and stewardship opportunities. Add links to ordinances, policies and/or guidance documents related to construction, post construction, and industrial/commercial programs, including education, training, licensing, and permitting.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Update information on website in 2023. • Conduct an annual website review to check for accuracy, working links, staff changes, new documents, and policy updates. 	<ul style="list-style-type: none"> • Completion of annual website review checklist. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
PI-2. City Sponsored Community Stewardship Opportunity	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Public Involvement and Participation Approach</p> <p>BMP Description: Continue participate in the Regional Coalition for Clean Rivers and Streams (Coalition), a partnership of eight public agencies in the Portland/Vancouver metropolitan area. The coalition provides volunteer opportunities and education on water quality.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Sponsor at least one stewardship opportunity with the Coalition during the permit term. 	<ul style="list-style-type: none"> • Summary of the stewardship activities conducted with the Coalition. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
PI-3. Stewardship Catch Basin Marking	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule:</p> <p>Reference Document: Public Involvement and Participation Approach</p> <p>BMP Description: Sponsor volunteer catch basin marking to install decals with the message "Dump No Waste—Drains to Stream" "No Dumping, Drains to Waterway" or similar. Focus marking efforts in areas close to streams and locations where prior decals have faded or deteriorated over time. During the prior permit term, the City completed marking of most public catch basins, so new decals are now only needed when existing decals fade, detach, or deteriorate.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Install or replace catch basin decals on 5 percent of catch basins each year. • Sponsor at least one catch basin marking event for volunteers each year. 	<ul style="list-style-type: none"> • Number of catch basins decals installed or replaced. • Number of catch basin marking events sponsored. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

2.3 Category C. Illicit Discharge Detection and Elimination

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

The 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's NPDES permit requirements for Category C are listed below.

Table 2-5. Category C. Illicit Discharge Detection and Elimination						
Permit Requirements	Applicable BMPs					
	IL-1. MS4 Mapping	IL-2. IDDE Ordinance	IL-3. IDDE Program and Enforcement	IL-4. Dry Weather Field Screening	IL-5. Spill Response Program	AP-1. MS4 Staff Training*
A.3.c.i MS4 Map	■					
A.3.c.ii Ordinance and/or Other Regulatory Mechanisms**		■				
A.3.c.iii Enforcement Procedures		■	■			
A.3.c.iv Program to Detect and Eliminate Illicit Discharges			■		■	
A.3.c.v Dry Weather Screening Program				■		
A.3.c.vi Illicit Discharge Detection and Elimination Training and Education						■
A.3.c.vii Tracking and Assessment			■	■	■	■

*BMP description is in a different section of this document.

Table 2-6 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants 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.

Table 2-6. Category C. Illicit Discharge Detection and Elimination BMPs

BMP Name	BMP Description	Tracking Measures	TMDL Pollutants Addressed
IL-1. MS4 Mapping	<p>Responsible Parties: GIS Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference: https://maps.oregoncity.org/Html5Viewer_4_14_2/index.html?viewer=OCWebMaps.OCWebMaps</p> <p>BMP Description: Continue to update the MS4 map and digital GIS inventory to show locations of all outfalls and the names and locations of all streams that receive discharges from these outfalls. Include all municipal stormwater collections and conveyance systems, municipal structural stormwater controls (water quality facilities, detention facilities, green stormwater infrastructure), and chronic illicit discharges in the MS4 map.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Create tracking system for illicit discharges and identified dry weather flows to track repeat illicit discharges over time in the MS4 map. • Add municipal stormwater management facilities and privately owned stormwater management facilities to GIS database within one year of construction completion. 	<ul style="list-style-type: none"> • Number of municipal stormwater management facilities in the digital GIS inventory. • Number of privately owned stormwater management facilities in the digital GIS inventory. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
IL-2. IDDE Ordinance	<p>Responsible Parties: Public Works Department, Planning Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: OCMC and Spill Response Plan</p> <p>BMP Description: Prepare an illicit discharge ordinance that will update OCMC 8.08 to specifically prohibit illicit discharges (and allow or conditionally allow others), consistent with NPDES MS4 Permit Schedule A.1.d. Include escalating enforcement based on severity and intent of incident.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Review OCMC enforcement code and identify changes (if needed) to implement escalating enforcement actions. • Propose and adopt an IDDE ordinance to update OCMC 8.08 and the enforcement code that is consistent with the prohibitions and allowable discharges listed in Schedule A.1.d. 	<ul style="list-style-type: none"> • Progress on ordinance review and update. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
IL-3. IDDE Program and Enforcement	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference: IDDE SOP</p> <p>BMP Description: Maintain a spill hotline that citizens can call in to report suspected illicit discharges or connections. Continue to implement IDDE program, including responding to reports of spills or illicit discharges, investigating sources of illicit discharges, and conducting follow-up and enforcement actions. Conduct actions to remove identified illicit discharges in conjunction with timeframes outlined in the NPDES MS4 Permit. Issue illicit discharge notice of violation letters when violations are detected and follow escalating enforcement procedures.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Operate spill reporting hotline and document calls received. • Review, update, and implement updated Standard Operating Procedures (SOPs) for the (IDDE) Program for new permit requirements. • Respond to all illicit discharge reports within the permit specified timeframes. • Follow enforcement procedures for confirmed illicit discharges. 	<ul style="list-style-type: none"> • Status of documenting and updating the IDDE SOP. • Number of calls to spill reporting hotline. • Number, location, type of discharge, resolution, and enforcement action for any illicit discharge investigation conducted. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

Table 2-6. Category C. Illicit Discharge Detection and Elimination BMPs

BMP Name	BMP Description	Tracking Measures	TMDL Pollutants Addressed
IL- 4. Dry Weather Field Screening	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Update SOP in 2023; Ongoing screenings</p> <p>BMP Description: Continue to conduct dry weather outfall surveys to identify illicit discharges and/or potential illicit connections. Characterize dry weather flows as permissible, non-permissible or unknown. Conduct sampling, analysis, and investigations for non-permissible and unknown dry weather discharges.</p> <p>Update priority screening locations by December 1, 2023.</p> <p>Update dry weather screening program SOP to include protocols for testing, pollutant parameter action levels, and procedures for ongoing or recurrent problems (including sampling and laboratory analysis for unknown discharge sources).</p> <p>Reference Document: IDDE SOP.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Review and update dry weather field screening prioritization criteria and identify a new list of priority screening sites by December 1, 2023. 	<ul style="list-style-type: none"> Track the number and location of outfalls inspected annually. Summarize inspection results and track the number and location of outfalls requiring monitoring and/or investigations. Report the outcome and resolution of any investigation activities. Report the outcome and resolution of any code enforcement actions. Track the status of updating standard procedures. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
IL-5. Spill Response Program	<p>Responsible Parties: Clackamas Fire District #1 (Hazardous Materials Team) and Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Spill Response Plan</p> <p>BMP Description: Respond to reports of hazardous and non-hazardous spills and follow the OC Spill Response Plan. Report all hazardous and non-hazardous spills to DEQ as necessary.</p> <p>Measurable Goals</p> <ul style="list-style-type: none"> Investigate all spills and respond as necessary. Report all qualifying spills to DEQ. 	<ul style="list-style-type: none"> Number of spills reported to OCPW and DEQ. Responses to reported spills. Indicate sources, causes, and types of discharges resulting from spill activities. Any changes to the OC Spill Response Plan. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

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

The goal of the construction site runoff control program is to prevent sediment from leaving construction sites through the implementation of properly selected and installed BMPs, education on erosion prevention and sediment control principals for the design and construction communities, and inspections, enforcement, and tracking mechanisms. Construction site runoff controls are accomplished through regulatory requirements, plan review and permitting, construction site inspections, enforcement procedures, training, education, inspections, and tracking.

The City's NPDES permit requirements for Category D are listed below.

Table 2-7. Category D. Construction Site Runoff Control Permit Requirements							
Schedule A.3.d Permit Requirements	Applicable BMPs						
	EC-1. Erosion Control Ordinances	EC-2. EPSC Manual	EC-3. EPSC Plan Review and Permitting	EC-4. Education for Construction	EC-5. Erosion Control Inspections	EC-6 EPSC Enforcement	AP-1. MS4 Staff Training*
A.3.d.i. Ordinance and/or Other Regulatory Mechanisms	■	■				■	
A.3.d ii. Erosion and Sediment Control Plans (ESCPs)		■	■				
A.3.d iii. Erosion and Sediment Control Plans Review	■	■	■				
A.3.d iv. Construction Site Inspections					■		
A.3.d v. Enforcement Procedures			■		■	■	
A.3.d vi. Construction Runoff Control and Training Education				■			■
A.3.d vii. Tracking and Assessment			■	■	■	■	

*BMP description is in a different section of this document.

Table 2-8 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants 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.

Table 2-8. Category D. Construction Site Runoff Control BMPs

BMP Name	BMP Description	Tracking Measures	TMDL Pollutants Addressed
EC-1. Erosion Control Ordinances	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: OCMC 17.47 Erosion and Sediment Control</p> <p>BMP Description: Review and update municipal codes (if necessary) to extend construction site runoff requirements to all qualifying sites, including public works and capital projects. Update ordinance to close any gaps between the City permit and DEQ 1200-C process. Include requirements for construction waste materials management.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Review OCMC 17.47 to determine if any updates are needed. • Propose and adopt EPSC code updates, if needed. 	<ul style="list-style-type: none"> • Status of reviewing and updating (if necessary) the EPSC related municipal code sections. 	✓ Mercury
EC-2. Erosion Prevention and Sediment Control (EPSC) Manual	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Clackamas County Erosion Prevention and Sediment Control Planning and Design and OC Addendum.</p> <p>BMP Description: Review the 2022 Clackamas County EPSC Manual and develop a city-specific addendum (if needed) to address all items listed in Schedule A.3.d.ii.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Adopt the updated Clackamas County EPSC manual with City-specific addendum. 	<ul style="list-style-type: none"> • Status on updates to EPSC Manual. 	✓ Mercury
EC-3. EPSC Plan Review and Permitting	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Oregon City EPSC Plan Review Checklist</p> <p>BMP Description: Develop a checklist for internal use in reviewing EPSC plans. Review construction site plans to determine compliance with EPSC requirements for all sites that exceed the site disturbance thresholds in the EPSC ordinance. Require erosion and sediment control plans not in compliance with standards to be amended and approved prior to construction. Issue construction permits for approved sites. Track the number of permit applications submitted, reviewed, and approved. Refer applicable sites to DEQ for 1200-C permitting process.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Develop EPSC Plan Review checklist and post it to the SWMP document library. • Review erosion control plans for all developments with greater than 1,000 square feet of land disturbance area for compliance with EPSC requirements. • Refer applicable sites to DEQ 1200-C permitting process. 	<ul style="list-style-type: none"> • Status on development of EPSC plan review checklist. • Number of applications submitted, reviewed, and approved for construction. • Number of sites referred for 1200-C permitting process. • Number of erosion control permits issued annually. 	✓ Mercury

Table 2-8. Category D. Construction Site Runoff Control BMPs

BMP Name	BMP Description	Tracking Measures	TMDL Pollutants Addressed
EC-4. Education for Construction Site Operators	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Clackamas County Erosion Prevention and Sediment Control Planning and Design Manual and OC Addendum.</p> <p>BMP Description: Provide educational material and information to construction site operators to promote compliance with EPSC requirements. Provide discounts on erosion control permit fees to encourage participation in erosion control certification programs.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Continue to provide OC's most currently adopted erosion control manual on the OC website. • Continue to offer discounts on erosion control permits to contractors completing erosion control certification programs. 	<ul style="list-style-type: none"> • Number of contractors receiving a discount on erosion control permit fees. 	✓ Mercury
EC-5. Erosion Control Inspections	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Oregon City EPSC Site Inspection Protocol</p> <p>BMP Description: Apply EPSC inspection protocol to qualifying construction sites. Inspect sites that have visible sediment and/or turbidity in stormwater discharges, have received complaints or reports, or meet other triggers of the City's inspection program. Develop or update a construction site inspection SOP and checklist to include all elements of Schedule A.3.d.iv.B. Track inspections and outcomes in digital tracking system.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Conduct a minimum of three erosion control inspections at each permitted site. • Conduct appropriate enforcement activities for erosion control violations. • Update and post the EPSC Site inspection protocol to the SWMP document library. 	<ul style="list-style-type: none"> • Status on updating the EPSC Site Inspection Protocol. • Number of erosion control inspections conducted annually. • Number of notices of non-compliance issued during inspections. 	✓ Mercury
EC-6 EPSC Enforcement	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: December 1, 2023</p> <p>Reference Document: OCMC 17.47 Erosion and Sediment Control</p> <p>BMP Description: Clarify and document the EPSC enforcement process in an SOP. The updated enforcement SOP should include guidance (a table, criteria list, or similar) to determine the appropriate penalties for violations. Continue to enforce EPSC ordinance and updated EPSC enforcement SOP/ordinance once available. Enforcement must include escalating enforcement and penalties that consider the type and severity of pollutant discharge and whether the discharge was intentional or accidental.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Develop/update EPSC Enforcement SOP. • Issue notice of violations and appropriate penalties for non-compliant construction sites. 	<ul style="list-style-type: none"> • Number of violations, follow-up inspections, and enforcement actions. • Outcome of enforcement actions. 	✓ Mercury

2.5 Category E. Post-Construction Stormwater Management

Stormwater runoff from new development and redevelopment of urban areas impacts the quality and quantity of stormwater discharges. Stormwater that flows through developed areas has the potential to carry pollutants such as sediment, nutrients, metals, hydrocarbons, and litter to bodies of water, 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 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 permit also requires that the City develop a site performance standard based on a numeric stormwater retention requirement (NSRR) with alternative site performance standards when onsite stormwater management is not feasible. The City's current stormwater and grading design standards include site performance standards that require the use of infiltration (where feasible) and design of stormwater management facilities that target predevelopment hydrologic function. The City has water quality treatment standards that target treatment of a design storm representing 80% of average annual runoff. The City's codes and standards will be evaluated during the permit term to verify that they align with the permit requirements.

The City's NPDES permit requirements for Category E are listed below.

Table 2-9. Category E. Post-Construction Site Runoff for New Development and Redevelopment						
Schedule A.3.e Permit Requirements	Applicable BMPs					
	PC-1. Stormwater Code Review	PC-2. Low Impact Development Code Review	PC-3. Post-Construction Plan Review and	PC-4. Private Facility Maintenance	PC-5. Public Facility Maintenance	AP-1. MS4 Staff Training*
A.3.e.i. Ordinance and/or Other Regulatory Mechanisms	■					
A.3.e. ii. Prioritization of Low Impact Development & Green Infrastructure		■				
A.3.e.iii. Post-Construction Stormwater Management Requirements	■					
A.3.e. iv. Water Quality Benefit Offset Programs	■					
A.3.e.v. Post-Construction Site Runoff Plan Review			■			
A.3.e .vi. Long-Term Operation and Maintenance (O&M)				■	■	
A.3.e.vii. Training and Education						■
viii. Tracking and Assessment		■	■	■	■	■

*BMP description is in a different section of this document.

Table 2-10 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each Post Construction BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future new development and redevelopment management activities.

Table 2-10. Category E. Post-Construction Site Runoff BMPs for New Development and Redevelopment BMPs

BMP Name	BMP Description	Annual Tracking Measures	TMDL Pollutants Addressed
PC-1. Stormwater Code Review	<p>Responsible Parties: OC Community Development</p> <p>Implementation Schedule: December 1, 2024</p> <p>Reference Documents: OCMC 13.12, Stormwater Management; Stormwater and Grading Design Standards (SWGDS) Manual.</p> <p>BMP Description: Review and document how the City's current stormwater codes and SWGDS meet permit requirements for NSRR (onsite retention of the 10-year design storm, when feasible), Alternative Site Performance Standards (water quality treatment and flow control when onsite retention is not feasible), and water quality offset programs (through fee-in-lieu program). If needed, modify standards to include additional water quality offset programs.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Review OC's current/planned stormwater treatment and detention standards for compliance with new NPDES MS4 permit language. Prepare a technical review memo to document findings. If needed, modify code and SWGDS to include additional water quality offset programs. 	<ul style="list-style-type: none"> Status on developing technical review memo. Track any code/standards modifications made by ordinance. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
PC-2. Low Impact Development Code Review	<p>Responsible Parties:</p> <p>Implementation Schedule: December 1, 2023</p> <p>Reference Documents: N/A</p> <p>BMP Description: Conduct a code evaluation to identify current barriers to using low impact development and green infrastructure as strategies for stormwater management. Develop a technical review memo to document findings and recommendation. If barriers are identified, modify development code and/or development standards to remove identified barriers to LID/GI strategies.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Conduct LID Development Code Review and document findings in a technical review memo. 	<ul style="list-style-type: none"> Status on LID Development Code Review technical memo. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
PC-3. Post-Construction Plan Review and Permitting	<p>Responsible Parties:</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Documents: Stormwater Management Plan Review checklist.</p> <p>BMP Description: Develop a checklist for internal use in reviewing stormwater development plans and tracking of the number of permit applications submitted, reviewed, and approved. Conduct stormwater development plan reviews according to the plan review checklist. Enforce standards for post-construction stormwater management structural BMPs.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Review all new development and applicable redevelopment for conformance with current city stormwater standards and ordinances. Continue to enforce stormwater management standards in the OCMC and SWGDS. 	<ul style="list-style-type: none"> Number of development applications reviewed and approved for compliance with stormwater regulations. Number, type, and drainage area of treatment facilities constructed annually. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

Table 2-10. Category E. Post-Construction Site Runoff BMPs for New Development and Redevelopment BMPs

BMP Name	BMP Description	Annual Tracking Measures	TMDL Pollutants Addressed
PC- 4.. Private Facility Maintenance	<p>Responsible Parties:</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Documents: OCMC 13.12 Stormwater Management., SWGDS.</p> <p>BMP Description: Continue to update the digital inventory of privately owned stormwater treatment and management facilities. Include location, facility type, ownership, contact/ mailing information, and maintenance responsibility in inventory. If available, link as-builts and O&M plans to the stormwater facility inventory.</p> <p>Continue to require maintenance agreements for newly constructed private stormwater management facilities. Continue to mail maintenance reminder letters to private facility owners with request to confirm maintenance inspections and actions. Conduct annual inspections of private stormwater management facilities. Identify maintenance needs and send follow-up letters to private owners to document needed maintenance actions.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Require new private stormwater facilities to submit maintenance agreements to OC. • Add all newly constructed private stormwater management facilities to the digital inventory with links to maintenance agreements. • Mail annual maintenance reminders to inventoried private facility owners. <p>Conduct annual inspections of 20 percent of private stormwater management facilities and send follow-up letters to private owners about required maintenance.</p>	<ul style="list-style-type: none"> • Number of maintenance agreements submitted to OC each year. • Number of private stormwater management facilities in the digital inventory. • Number of maintenance reminder letters mailed and returned each year. • Number of private facility maintenance inspections performed each year. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
PC-5. Public Facility Maintenance	<p>Responsible Parties:</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Documents: OCMC 13.12 Stormwater Management., SWGDS.</p> <p>BMP Description: Conduct annual inspections of public stormwater management facilities. Identify maintenance needs and issue work orders. Perform maintenance actions to maintain stormwater management facility performance.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Inspect 25% of public stormwater management facilities annually to identify maintenance needs. • Maintain public structural control facilities in accordance with documented frequencies and procedures. • Update the public structural control facility inventory as needed. 	<ul style="list-style-type: none"> • Number of public stormwater management facilities in the digital inventory. • Number of public structural facilities inspected and maintained. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

2.6 Category F. Pollution Prevention for Municipal Operations

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

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

- DEQ also issues NPDES discharge permits for private and municipal facilities that fall under industrial activity categories. Those permits outline specific actions and requirements to protect water quality at those facilities. At the time of this SWMP Document development, the City does not have any municipal NPDES permitted facilities. However, private owners and other public agencies (ODOT, Clackamas County) may be operating facilities that with individual NPDES permits for either stormwater or wastewater discharges.

The City's NPDES permit requirements for Category F are listed below.

Table 2-11. Category F. Pollution Prevention and Good Housekeeping for Municipal Operations

Schedule A.3.f Permit Requirements	Applicable BMPs							
	OM-1. Catch Basin Maintenance	OM-2. Municipal Operations SOP	OM-3. Winter Road Maintenance	OM-4. Litter Control	OM-5. Pesticide and Fertilizer Controls	PC-4. Private Facility Maintenance	PC-5. Public Facility Maintenance	AP-1. MS4 Staff Training*
A.3.f.i. Operation and Maintenance Strategy for Existing Controls						■	■	
A.3.f. ii. Inspection, Maintenance, and Cleaning of the MS4	■							
A.3.f.iii. Pollution Prevention in Facilities and Operations		■						
A.3.f. iv. Co-permittee-owned NPDES Industrial Stormwater Permit Facilities	Not applicable.							
A.3.f.v. Winter Operations and Maintenance Program			■					
A.3.f.vi. Requirements for Pesticide and Fertilizer Applications					■			
A.3.f.vii. Litter Control				■				
A.3.f. viii. Materials Disposal		■	■					
A.3.f.ix. Flood Control, Transportation, and Other Infrastructure								
x. Operations & Maintenance Staff Training								■
xi. Tracking and Assessment	■		■			■	■	■

*BMP description is in a different section of this document.

Table 2-12 provides a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants 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.

Table 2-12. Category F. Pollution Prevention for Municipal Operations BMPs

BMP Name	BMP Description	Annual Tracking Measures	TMDL Pollutants Addressed
OM-1. Catch Basin Maintenance	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: SOP for Inspection & Maintenance of Stormwater Infrastructure.</p> <p>BMP Description: Conduct inspections and assessments for catch basins and manhole structures. Identify and document maintenance needs for stormwater conveyance structures.</p> <p>Perform identified maintenance to remove sediment from catch basins when sediment accumulation exceeds acceptable levels. Track and document catch basin inspections and cleaning.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Inspect at least 33% of the public catch basins annually. Schedule the repair, and replacement of catch basins as needed, based on inspections. Update the stormwater system map when discrepancies are found. 	<ul style="list-style-type: none"> Percentage of total public catch basins inspected and/or maintained annually. Number of catch basin replacements annually. Number of public catch basins in OC's catch basin inventory. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
OM-2. Municipal Operations SOP	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>BMP Description: Develop, review and/or update municipal operations pollution prevention plan/SOPs to address any new operations-related activities. Expand plan to include:</p> <ul style="list-style-type: none"> Updated list of facilities and activities where the pollution prevention strategies apply. Operation, repair, and maintenance of bridges or other over-water infrastructure. Guidelines around pesticide, herbicide, and fertilizers. Strategies for campsite clean-up, including trash disposal and stormwater pollution prevention during pressure washing. Expanded pollution prevention and good housekeeping strategies. Materials disposal and waste management protocols. <p>Measurable Goals:</p> <ul style="list-style-type: none"> Complete SOP development and implementation. 	<ul style="list-style-type: none"> Status on the updated SOP development and implementation. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
OM-3. Winter Road Maintenance	<p>Responsible Parties: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Winter maintenance SOP and map</p> <p>BMP Description: Both sanding and de-icing chemicals are used to treat roadways for ice and snow. Continue to perform deicing operations in a way that minimizes stormwater pollution. Conduct annual inspections and training to ensure proper operation of the deicing chemical storage facility. Utilize the expanded covered storage area for deicing material storage. Sweep and dispose of sand material as soon as possible following the return to safe driving conditions. Develop a SOP for the City's Winter Road Maintenance Strategy to document material selection, storage, proper application (timing and rates), collection and reuse opportunities.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Continue current deicing operations to prevent stormwater pollution. Continue to research potential cost-effective reuse opportunities for deicing sand materials. Complete SOP development and implementation. 	<ul style="list-style-type: none"> Dates of annual inspections and training related to deicing. Deicing quantities applied annually including number of events and general locations. 	<ul style="list-style-type: none"> ✓ Mercury

Table 2-12. Category F. Pollution Prevention for Municipal Operations BMPs

BMP Name	BMP Description	Annual Tracking Measures	TMDL Pollutants Addressed
OM-4. Litter Control	<p>Responsible Parties: Public Works Department, Parks Department</p> <p>Implementation Schedule: February 28, 2024</p> <p>BMP Description: Develop SOP that outlines pollution prevention measures when cleaning-up abandon campsites in public areas. SOP may be added to larger Municipal Operations SOP (BMP OM-X).</p> <p>Develop standard language for event contracts that includes provisions about litter control and waste management. Include revised standard language in new event contracts for events on public property.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Develop SOP for clean-up of abandon campsites in public areas. • Add standard litter control language to new event contracts and facility rental agreements. 	<ul style="list-style-type: none"> • Status of SOP for pollution prevention during campsite cleanup. • Status of updated litter control contract language. 	✓ Bacteria
OM-5. Pesticide and Fertilizer Controls	<p>Responsible Parties: Public Works Department, Parks Department</p> <p>Implementation Schedule: February 28, 2024</p> <p>Reference Document: Integrated Pest Management SOP</p> <p>BMP Description: Develop an SOP for pesticide and fertilizer storage, application, and disposal. (SOP may be added to Municipal Operations SOP in OM-X. Revise standard language for maintenance and landscaping contracts to include provisions and restrictions for pesticide and fertilizer application.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Develop SOP for pesticide and fertilizer storage, application, and disposal. • Include SOP in new contracts for landscape maintenance. 	<ul style="list-style-type: none"> • Status of developing pesticide and fertilizer SOP. 	✓ Bacteria

2.7 Category G. Industrial and Commercial Facilities

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

Through the development code, new development and redevelopment projects are required to install source controls to prevent stormwater pollution from higher risk site uses. In addition, the City reviews business licenses on an annual basis to identify new industrial and commercial businesses with a higher potential for stormwater pollution prevention.

During this permit term, the City will update the Industrial/Commercial facilities strategy to identify new priority businesses for site inspections and focus site visits on educating owners and site operators on stormwater pollution prevention.

The City's NPDES permit requirements for Category G are listed below.

Table 2-13. Category G. Industrial and Commercial Facilities			
Schedule A.3.g Permit Requirements	Applicable BMPs		
	IC-1. Industrial and Commercial Strategy	IC-2. Industrial and Commercial Inspections	AP-1. MS4 Staff Training*
A.3.g.i. Screening for Industrial Stormwater Permitting	■		
A.3.g. ii. Strategy to Reduce Pollutants from Industrial and Commercial Facilities	■	■	
A.3.g.iii. Commercial & Industrial Facility Inspection Staff Training			■
A.3.g. iv. Tracking and Assessment	■	■	■

*BMP description is in a different section of this document.

Table 2-14 provides a description, implementation schedule, measurable goals, annual tracking measures, and TMDL pollutants 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 BMPs for the industrial and commercial facilities program.

Table 2-14. Category G. Industrial and Commercial Facility BMPs

BMP Name	BMP Description	Annual Tracking Measures	TMDL Pollutants Addressed
IC-1. Industrial and Commercial Strategy	<p>Responsible Party: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>BMP Description: 2023</p> <p>Review and update the Industrial/Commercial Facilities strategy to include a revised process to review new businesses during plan review, building permit applications, and through annual review of business licenses.</p> <p>Include an updated list of high priority facilities for inspection, procedures for site inspections, documentation, site operator education, and follow-up processes.</p> <p>Following the strategy, conduct the reviews to identify facilities that could be subject to the 1200-Z industrial stormwater general permit and other facilities that have the potential to contribute a significant pollutant load to the MS4.</p> <p>Notify facility owners and DEQ of 1200-Z permit potential.</p> <p>Maintain a database of industrial and commercial facilities with the potential for increased stormwater pollution based on the activities at the specific facility.</p> <p>Reference Documents: Industrial/Commercial Facilities Strategy</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Update Industrial/Commercial Facilities strategy with revised facility screening strategy, inspection processes, and documentation procedures. • Develop database of industrial and commercial facilities with the potential for increased stormwater pollution. 	<ul style="list-style-type: none"> • Status of updated Industrial/Commercial Facilities Strategy. • Number of facilities referred for 1200-Z permits. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
IC-2. Industrial and Commercial Inspection Program	<p>Responsible Party: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>BMP Description: Conduct inspections of high priority businesses identified through the industrial/commercial facility screening program. During site inspections, review onsite stormwater systems, pollution prevention measures, material transport and storage, and waste disposal.</p> <p>Document facility inspections using the procedures in the Industrial/Commercial Facilities Strategy. Meet with site operators to discuss findings from the inspections, provide site operator education, require corrective actions (if needed) and schedule follow-up inspections (if needed) to review corrections.</p> <p>Reference Documents: Industrial/Commercial Facilities Strategy</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Investigate 20 percent of high priority businesses each year and document inspection results and follow-up actions. 	<ul style="list-style-type: none"> • Number of inspections conducted. • Inspection results and follow up actions. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

2.8 Category H. Additional Program Elements

The activities in Category H are those that impact the City's overall stormwater program implementation and compliance with the NPDES MS4 Permit. The City has numerous personnel that work on programs and activities related to stormwater. This element includes BMPs for staff training and intergovernmental coordination. Coordination currently occurs informally across departments, divisions, and sections as needed to share information and resources.

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

The City's NPDES permit requirements addressed by Category H are provided below.

Table 2-15. Category H. Additional Program Elements

Permit Requirement	Applicable BMPs					
	AP-1. MS4 Staff Training*	AP-2. Retrofit Progress Report	AP-3. Hydromodification Progress Report	AP-4. Hydromodification Tracking Site Visits	AP-5. Permit Renewal Package	AP-6. Stormwater Monitoring Program
A.3.h Infrastructure Retrofit and Hydromodification Assessment Update		■	■	■		
B.1 Monitoring Program						■
B.4 Permit Renewal Package					■	
D.2 303(d) Evaluation					■	
D.3 Total Maximum Daily Loads					■	

* This staff training BMP comprehensively addresses staff training requirements included throughout Schedule A of the permit, specifically, Schedules A.3.c, A.3.d., A.3.e., A.3.f., and A.3.g.

The City's planning related BMPs are outlined in Table 2-16, with a description, implementation schedule, measurable goals, annual tracking measures, and a list of TMDL pollutants addressed for each BMP. Measurable goals and tracking measures will be evaluated annually to assess the impact of the BMPs and to inform future training and planning activities.

Table 2-16. Category H. Additional Program BMPs

BMP Name	BMP Description	Annual Tracking Measures	TMDL Pollutants Addressed
AP-1. MS4 Staff Training	<p>Responsible Party: Public Works Department</p> <p>Implementation Schedule: Ongoing</p> <p>BMP Description: Training will be conducted for staff according to the City's NPDES MS4 Training Plan which is included in Appendix A.</p> <p>Reference Document: The City's NPDES MS4 Training Plan is included in Appendix B.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Conduct municipal training for employees associated with stormwater management in OC. • Coordinate with other Clackamas County co-permittees regarding regional water quality efforts. • Participate in training and advisory committee opportunities available through state and local agencies and groups. • Conduct regular stormwater staff meetings once or twice a year. 	<ul style="list-style-type: none"> • Track the number of employees receiving training in stormwater management annually. • Track OC staff participation in groups, committees, and organizations relevant to stormwater quality management. • Track regular stormwater staff meetings and staff attendance at those meetings. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
AP-2. Retrofit Progress Report	<p>Responsible Party: Public Works Engineering Department</p> <p>Implementation Schedule: Due by November 1, 2023</p> <p>BMP Description: Document projects from the City's 2015 Stormwater Retrofit Plan that have been completed since the report publication. Document additional structural stormwater projects that have incorporated elements to retrofit the stormwater system for increased water quality treatment. Calculate total drainage area with increased water quality treatment from retrofit projects. Identify new goals, tools, priorities, or potential projects. Prepare a written assessment of the City's retrofit progress and outcomes and submit to DEQ.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Complete Retrofit Progress Report by November 1, 2023. 	<ul style="list-style-type: none"> • Status of completing Retrofit Progress Report. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
AP-3. Hydromodification Progress Report	<p>Responsible Party: Public Works Department (Stormwater Services)</p> <p>Implementation Schedule: Due to DEQ by November 1, 2023</p> <p>BMP Description: Document projects and actions from the City's 2015 Hydromodification Assessment Report that have started or completed since the report publication. Identify new goals, tools, priorities, or potential projects to address hydromodification. Prepare a written assessment of the City's hydromodification progress and outcomes and submit to DEQ.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Complete Hydromodification Progress Report by November 1, 2023. 	<ul style="list-style-type: none"> • Status of completing Hydromodification Progress Report. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

Table 2-16. Category H. Additional Program BMPs

BMP Name	BMP Description	Annual Tracking Measures	TMDL Pollutants Addressed
AP-4. Hydromodification Tracking Site Visits	<p>Responsible Party: Public Works Department (Stormwater Services)</p> <p>Implementation Schedule: Ongoing</p> <p>BMP Description: Conduct annual site visits to hydromodification tracking sites. These are stream locations throughout the City, as identified in the City's 2015 Hydromodification Assessment Report. Document and photograph the condition of the stream, banks, and riparian areas, using the form provided in the hydromodification assessment report. Compare photos and stream condition reports to prior years to assess changes over time and report any locations with significant hydromodification impacts.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Conduct site visits to hydromodification tracking sites and document with photos and tracking form each year. 	<ul style="list-style-type: none"> Number of hydromodification tracking site visits conducted each year. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
AP-5. Permit Renewal Package	<p>Responsible Party: Public Works Department</p> <p>Implementation Schedule: Due by March 30, 2025</p> <p>BMP Description: Develop a permit renewal application that includes each of the elements listed in permit Schedule B.4, including an assessment of program effectiveness, TMDL pollutant load reduction benchmarks, TMDL pollutant load reduction evaluation, 303(d) pollutant evaluation, total pollutant loads for applicable TMDL pollutants, proposed changes to the monitoring program, service area expansions, fiscal evaluation, and updated MS4 maps. Submit permit renewal to DEQ through approved online systems.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Complete 303(d) evaluation (due with permit renewal). Complete TMDL Pollutant Load Reduction Evaluation (due with permit renewal). Develop TMDL Benchmarks (due with permit renewal). Outline proposed changes to the monitoring program (due with permit renewal). Document service area expansions in 2025. Prepare a fiscal evaluation in 2025. Prepare updated MS4 maps in 2025. Submit permit renewal application to DEQ by March 30, 2025 (or alternate date determined by DEQ). 	<ul style="list-style-type: none"> Status of completing permit renewal application. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury
AP-6. Stormwater Monitoring Program	<p>Responsible Party: Public Works Department (Stormwater Services)</p> <p>Implementation Schedule: Ongoing</p> <p>Reference Document: Stormwater Monitoring Plan</p> <p>BMP Description: An update to the City's Stormwater Monitoring Plan is due to DEQ at the same time as this SWMP Document. Updates to the plan include the monitoring program objectives, requirements (type, number of sites, locations, frequency, and pollutant parameters), and monitoring plan elements from NPDES MS4 Permit Schedule B.1.</p> <p>Implement the Stormwater Monitoring Plan on approval from DEQ.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Conduct monitoring in accordance with updated plan and report results annually. 	<ul style="list-style-type: none"> Status of DEQ approval of the City's updated Stormwater Monitoring Plan. Monitoring results. 	<ul style="list-style-type: none"> ✓ Bacteria ✓ Mercury

Appendix A: Public Education and Outreach Strategy

Included in SWMP Document and posted in SWMP Document Library



Stormwater Public Education and Outreach Strategy

NPDES MS4 Permit Schedule A.3.a

May 3, 2012

Updated September 2, 2016

Updated August 25, 2022

Purpose – to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges, as required by Oregon City’s NPDES MS4 Discharge Permit, Number 101348, updated October 1, 2021.

This strategy will incorporate cooperative efforts with other MS4 regulated permittees and efforts by other groups or organizations. Public education and outreach efforts will be tracked and reported in the NPDES Annual Report and made available on the City of Oregon City website.

General Information – Educational messages or activities may include printed materials (e.g., brochures or newsletters); electronic materials (e.g., social media, websites, or e-newsletters); mass media (e.g., utility bill inserts, transit advertisements or signage in highly trafficked corridors, newspaper articles or public service announcements); workshops, or other educational events or formats.

Oregon City will continue to partner with other organizations, including, but not limited to: Clackamas County Water Environment Services, Clackamas River Water Providers, Clackamas Community College, the Regional Coalition of Clean Rivers and Streams, Clackamas River Basin Council, Greater Oregon City Watershed Council, KPTV “Water...Do Your Part” campaign, and our MS4 co-permittees.

Oregon City will consider adding digital access codes (website links and QR Codes) to printed materials, to connect the public to the City’s stormwater website and other online educational information.

General Expectations

Pollutants of Concern	Priority Audience	Specific Education Activity	Responsible Party for Implementation
Impacts of illicit discharges on receiving waters and how to report them	General public, Construction Operators, Businesses, Elected Officials, City staff	Explain impacts from untreated stormwater (AWWA IDDE brochures – Trail News, mailings to new businesses, table top events for students); promote ways to reduce pollution (Pesticide take back programs, promote trash and recycling programs, Scoop the poop); promote public reporting of illegal	OCPW staff; collaboration with partners and co-permittees

Pollutants of Concern	Priority Audience	Specific Education Activity	Responsible Party for Implementation
		dumping, etc. (signage, public forms on website, promote in Trail News and other news outlets)	
Appropriate practices or techniques to avoid adverse water quality impacts due to impervious surfaces	Construction Operators, Land use Planners, Engineers, Developers	Hold an informational training session for local engineers, planners and construction operators about LID and the City's Stormwater and Grading Design Standards	OC Staff
BMPs for proper use, application, storage, and disposal of pesticides, herbicides, fertilizers, and other household chemicals	General public, Businesses, City staff	City to complete IPM strategy and brochures encourage limited use of chemicals and proper disposal; chemical take back programs; promote organic landscaping and IPM.	OCPW staff; collaboration with partners and co-permittees
BMPs to avoid or reduce discharge of litter and trash to MS4 or surface waters, recycling programs	General public, Businesses	Encourage proper disposal of litter, trash, and recycling to proper containers via Trail News and Utility Billing inserts	OCPW staff; collaboration with partners and co-permittees
BMPs to avoid discharges from power washing, carpet cleaning, and auto repair and maintenance	General public, Construction Operators, Businesses	Distribute ACWA IDDE brochures through mailings to new businesses and table top events for students	OCPW staff; collaboration with partners and co-permittees
Low-impact development and green infrastructure approaches	Construction Operators, Land use Planners, Engineers, Developers	Promote LID and the City's Stormwater and Grading Design Standards	OCPW staff
Watershed awareness education, including how storm drains lead to local creeks and rivers, and potential impacts to fish and other wildlife	General public, Construction Operators, Businesses	Support educational programs from Preschool to adult continuing education through the City's partnership and sponsorship with the Environmental Learning Center at CCC; CCWET events	OCPW staff; collaboration with partners and co-permittees
Operation & Maintenance practices for privately owned stormwater quality management facilities	Owners of Private Water Quality Facilities	Provide owners of PWQFs with O&M packet with specific facility information, annual inspection forms and inspection reports	OCPW staff
Construction site control measures and BMPs, including information on where in-depth training on	Land use Planners, Developers, Construction Operators	Hold an informational training session about the Erosion Control Manual; erosion control plan review; enforcement actions; discounts for those	Certified Erosion Control Specialists Lead

Pollutants of Concern	Priority Audience	Specific Education Activity	Responsible Party for Implementation
erosion prevention and sediment control can be obtained		completing Erosion Control Certification Program	
Bacteria and Temperature (TMDL items)	Oregon City residents and businesses	Through media outlets and the GOCWC, encourage activities that reduce bacterial pollution; promote planting streamside vegetation	OC Staff

Appendix B: MS4 Staff Training Plan

Included in SWMP Document and posted in SWMP Document Library

Municipal Staff MS4 Training Strategy

City of Oregon City



Prepared: July 2022

Last Update: August 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
- Erosion and sediment control for construction sites
- 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.

Municipal Staff MS4 Training Strategy

Table 1. Municipal Staff Training Strategy

Category	NPDES MS4 Permit Reference	Stormwater Training Topic	Target Groups	Frequency/ Years for Training	Potential Resources	Notes
Illicit Discharge Detection and Elimination	A.3.c.vi	Identifying and reporting illicit discharges (including procedures for enforcement and follow-up actions)	Municipal field staff Staff that respond to illicit discharges Code enforcement	Annually	Online training Internal training based on City's IDDE response SOP Spill Response Plan and Tracking Form	Field staff to review IDDE videos and review City's IDDE SOP before conducting dry weather field screening Field staff and code enforcement review City's IDDE SOP and Spill Response Plan City IDDE SOP and Spill Response Plan and Tracking Form lives on SWMP webpage
		Dry weather screening procedures, documentation, reporting, and follow-up actions	Staff that conduct dry weather screenings	Annually	Online training Internal training based on City's IDDE response SOP Spill Response Plan and Tracking Form	Provide training each spring or summer, prior to commencing the dry weather screening program when required Water Quality staff to review IDDE videos and review City's IDDE SOP before conducting dry weather screening City IDDE SOP lives on SWMP webpage
Erosion and Sediment Control	A.3.d.vi	Best practices and new technologies for erosion prevention and sediment control	Engineering staff ESC site inspectors	Once in permit term	Online training Vendor provided training	CESCL training is conducted every three 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)	ESC site inspectors	Annually	Internal training based on City's ESC process SOP or inspection checklist	May be combined with post-construction site inspection training.
Post Construction Stormwater Management	A.3.e.vii	Proposed or adopted changes to stormwater design standards and	Engineering staff	Once in permit term, if changes are proposed to the stormwater design standards	Internal training	Training should be conducted during development (or following adoption) of new or updated stormwater design

Table 1. Municipal Staff Training Strategy

Category	NPDES MS4 Permit Reference	Stormwater Training Topic	Target Groups	Frequency/ Years for Training	Potential Resources	Notes
		stormwater related land use policies.	Development Services Staff involved with plan review and approval Planning/Community Development staff involved with land use reviews and approvals Site inspectors Field operations staff responsible for maintaining stormwater management facilities	or stormwater related land use policies		standards or stormwater related land use policies
		City site inspection processes and documentation procedures (including violations enforcement processes)	Site inspectors	Annually	Internal training based on City's site inspection SOP or inspection checklist	May be combined with ESC site inspection training.
Operations and Maintenance of Stormwater Management Facilities	A.3.e.vii A.3.f.x	Operation and maintenance best practices for stormwater management facilities	Field operations staff responsible for maintaining stormwater management facilities Private facility inspectors Public facility inspectors Engineering staff Development Services Staff involved with plan review and approval	Once in permit term – either CCC or PCC class for Engineering Staff and Development Services Staff Once in permit term – both CCC and PCC courses for inspectors Once in permit term – other available trainings	Online training Joint agency workshop or professional group presentation Vendor training CCC – Vegetative Stormwater Maintenance Course PCC/CWS – vegetative stormwater maintenance course	Training is required under two different permit elements. CCC Course offered annually PCC Course offered as online module and/or in person (recommended every 3 years)
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)	Field operations staff	Once in permit term	Internal training based on City's SOP and schedule for MS4 maintenance	Training should be conducted after development of the revised CB inspection and cleaning schedule

Table 1. Municipal Staff Training Strategy

Category	NPDES MS4 Permit Reference	Stormwater Training Topic	Target Groups	Frequency/ Years for Training	Potential Resources	Notes
						All new hires required to receive training and review SOP as part of onboard training
		Stormwater pollution prevention and good housekeeping practices for field operations	Field operations staff Facility inspectors Parks landscaping staff Facility landscaping staff Site inspectors ESC site inspectors Engineering staff Development services staff Maintenance staff	Once in permit term	Internal training based on City's municipal pollution prevention plan or SOPs	Conduct in 2024, after update to municipal pollution prevention plan Opportunity to offer training for staff from franchise utilities or other groups that conduct field operations in the City
		OCPW and Parks stormwater pollution prevention plan and best practices	OCPW and Parks staff	Once in permit term	Internal training based on the City's SWPPP	Pertinent staff will review SWPPS SOP once during permit term unless additional locations are added
		Integrated pest management and proper application of pesticides and fertilizers	OCPW and Parks landscaping staff Facilities landscaping staff Field operations staff	Once in permit term	Online training External training	Licensed pesticide applicators will complete required continuing education credits for license renewal
Industrial and Commercial Facilities		Industrial/Commercial facility inspection procedures (including	Staff responsible for inspecting and evaluating industrial facilities	Once in permit term Annually if inspections are scheduled	Internal training based on the City's Industrial and Commercial Facilities Strategy	Training should be conducted after the City reviews and updates the Industrial and Commercial Facilities Strategy