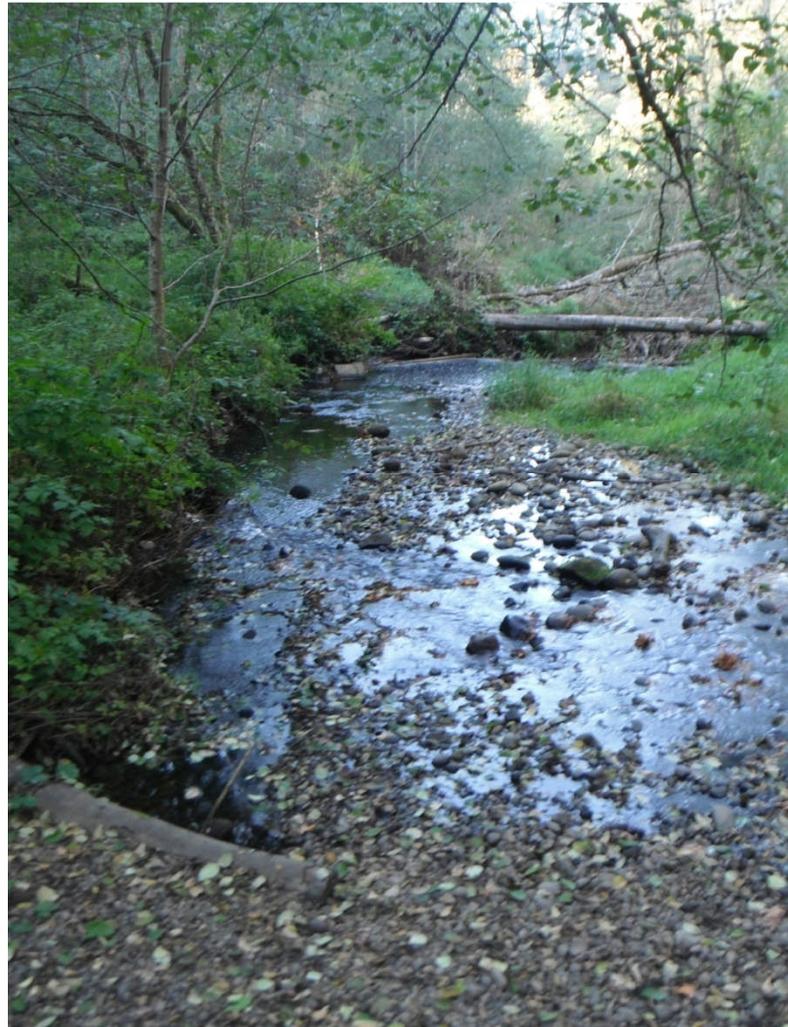




**2011**

# Stormwater Management Program Plan



Amy Pepper, PE  
City of Troutdale  
October 2011



# Stormwater Management Program Plan

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City of Troutdale

## 1. EXECUTIVE SUMMARY

The purpose of this Stormwater Management Program (SWMP) Plan is to guide activities that the City of Troutdale (City) proposes to undertake to comply with all local, state, and Federal laws related to stormwater collection, treatment, conveyance, and disposal.

The SWMP Plan has been revised and updated in October 2011 in accordance with National Pollutant Discharge Elimination System (NPDES) Permit #102910, which was issued May 3, 2007 by the Oregon Department of Environmental Quality (DEQ) and is set to expire April 30, 2012. This updated SWMP Plan represents the collaborative efforts of various Public Works Division managers evaluating the best use of City resources in reducing pollutants to the maximum extent practicable while providing efficient and effective services.

## 2. PURPOSE, GOALS, AND OBJECTIVES

### 2.1 Purpose

This SWMP Plan serves to guide the City in activities that will reduce pollutants to the maximum extent practicable in compliance with the City's NPDES Municipal Separate Storm Sewer System (MS4) permit ("the Permit"). In addition, this SWMP Plan serves areas that are not covered by the Permit, including those areas that drain to Underground Injection Control facilities which are governed by Oregon Administrative Rule (OAR) Chapter 340, Division 44. Due to similar requirements for development of a storm water management plan (SWMP) in both the City's Phase II NPDES MS4 permit and DEQ's UIC rules, the City has integrated its MS4 and UIC management efforts to produce one SWMP that addresses the storm water system in its entirety.

### 2.2 Goals

The goals of this management plan are to:

- 1) reduce the discharge of pollutants in storm water runoff to the maximum extent practicable (MEP);
- 2) protect and maintain the natural functions and values of the area's surface water, ground water, and natural resources; and,
- 3) protect, enhance and promote watershed health in the community.

Development of this management plan involves a comprehensive planning process of which public participation is an integral part.



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## 2.3 Objectives

Objectives of this management plan are to:

- Coordinate program activities with other agencies to best achieve the overall goals; and
- Protect ecological integrity of rivers, creeks, wetlands, and riparian corridors through the use of best management practices (i.e., BMPs) which focus on controlling runoff and pollution at the source; and
- Coordinate City resources to focus efforts on reduction of pollutants associated with storm water runoff; and
- Involve and educate the public regarding opportunities to improve surface and ground water quality and aquatic habitat in riparian areas to minimize impacts of non-point source pollution; and
- Ensure that each program element is within the financial capabilities of the City.

## 3. INTRODUCTION

### 3.1 City Demographics

Geographically, the City of Troutdale is bordered by the Sandy River to the east, the Columbia River to the north, the City of Gresham and unincorporated Multnomah County to the south, and the Cities of Gresham, Wood Village, and Fairview to the west. The City of Troutdale covers approximately 6 square miles within the eastern edge of the urban growth boundary (UGB) of the Portland metropolitan area. The 2010 US certified Census population figure for the City of Troutdale was 15,962. Land uses within the incorporated City limits of Troutdale are mixed, consisting of residential, commercial and industrial development, as well as undeveloped property and designated open space. Since the time of permit issuance in 2007, the City has annexed approximately 610 acres into the City, all of which were located within the City's Urban Planning Area (UPA). The UPA consists of unincorporated lands adjacent to the City and within the UGB that are designated for future annexation into the City.

### 3.2 Permit Area and Watersheds

The permit area for Troutdale includes the incorporated lands of the City of Troutdale (i.e. within the City limits), excluding Multnomah County and State of Oregon owned rights-of-ways and associated stormwater facilities; and stormwater facilities owned and operated by the Sandy Drainage Improvement Company.

The City of Troutdale is comprised of two watersheds: the Columbia River and the Sandy River. Both of these watersheds cross more than one jurisdiction. Small tributaries/creeks of these watersheds within the City are listed below:



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## ▪ Columbia River Watershed

- Salmon Creek
- Arata Creek

## ▪ Sandy River Watershed

- Beaver Creek

### **Columbia River Watershed**

Approximately 40% of the City, or 2.5 square miles, is located within the Columbia River watershed, known locally as the North Troutdale Drainage Basin. Portions of the Cities of Troutdale, Wood Village and Fairview, and areas of unincorporated Multnomah County drain to the North Troutdale Drainage Basin. The Sandy Drainage Improvement Company (SDIC) is situated within this drainage basin and is responsible for managing flood control within the Columbia River floodplain. The SDIC maintains the Columbia River levee and operates the stormwater runoff pumping station to which most stormwater runoff generated within this basin is directed. A majority of this basin includes commercial and industrial development. This drainage basin was further analyzed and modeled in the February 2007 *North Troutdale Storm Drainage Master Plan (Otak)*.

### **Sandy River Watershed**

Approximately 60% of the City, or 3.5 square miles, is located within the Sandy River Watershed, known locally as the South Troutdale Drainage Basin. Portions of the City of Gresham and unincorporated Multnomah County drain to the South Troutdale drainage basin. Areas within the South Troutdale Drainage Basin drain to Beaver Creek, the Sandy River and Underground Injection Control Facilities (UICs). A majority of this basin includes commercial and residential development. This drainage basin was further analyzed in the May 1996 *South Troutdale Storm Drainage Master Plan (KCM and Associated Firms)*, which is currently being updated and revised.

## **3.3 Regulatory Framework**

This SWMP plan is intended to guide the City in activities it undertakes to comply with three primary regulatory issues related to stormwater: 1) The City's Phase II MS4 NPDES Permit; 2) the Sandy River TMDL; and 3) OAR 340, Division 44: UIC Rules.

### **Phase II MS4 Permit**

The Federal Water Pollution Control Act (also known as the Clean Water Act) regulates the protection of the Nation's surface waters. The 1972 amendments to this Federal law provide the basis for the National Pollutant Discharge Elimination System (NPDES) permit program and



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the basic structure for regulating the discharge of pollutants. The law also assigns enforcement responsibility to the Environmental Protection Agency (EPA), which may delegate some of its responsibilities to the states. In Oregon, those responsibilities have been delegated to the Department of Environmental Quality (DEQ).

In 1999, EPA published rules which require certain regulated small municipal separate storm sewer systems (including Troutdale) to obtain NPDES permit coverage. This is often referred to as Phase II of the NPDES Storm Water Program. (Phase I, which applied to larger municipalities, was covered by rules published in 1990.)

Under these Federal rules, Troutdale was required to submit an application for the NPDES permit by March of 2003 and develop a Stormwater Management Program (SWMP) plan by March of 2004 that formally addresses the six minimum control measures: 1) Public education and outreach on storm water impacts; 2) Public Involvement/Participation; 3) Illicit discharge detection and elimination; 4) Construction site storm water runoff control; 5) Post-construction storm water management in new development and redevelopment; and 6) Pollution prevention/good housekeeping for municipal operations.

In 2003 City staff organized a Task Force within the Public Works Department and conducted a public open house to develop the original SWMP plan. The City submitted the SWMP plan to DEQ in February 2004 for review and revised it in October 2005, based on DEQ comments. DEQ issued the City's first Phase II National Pollutant Discharge Elimination System (NPDES) Permit #102910 May 3, 2007. Ongoing implementation of the SWMP Plan has been conducted since permit issuance. The City's NPDES permit is set to expire April 30, 2012.

In the summer of 2011, City staff reconvened the Task Force that revised and updated the SWMP Plan in accordance with its NPDES permit. This updated SWMP Plan represents the collaborative efforts of various Public Works Division managers evaluating the best use of City resources, as well as input from the public, in reducing pollutants to the maximum extent practicable while providing efficient and effective public services.

### **Sandy River TMDL**

The Sandy River Watershed drains approximately 508 square miles (330,000 acres) in northwestern Oregon, originating from glaciers on the western slopes of Mt. Hood, traveling 56 miles before flowing into the Columbia River near the City of Troutdale. The Sandy River is the only major glacial river draining the western Cascades in Oregon. Glacially-derived fine particulate matter, known as "glacial flour" gives the Sandy its distinctive milky-gray color during the summer. Approximately 70% of the watershed is owned and managed by the US Forest Service, 22% is in private ownership, 4% is owned by the Bureau of Land Management, 2% is owned by the City of Portland and the remaining 2% is owned by State, local government,



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or Portland General Electric. Approximately 2,000 acres or 0.6% of the watershed is within the City of Troutdale.

The Sandy River is home to 19 native and 14 introduced fish species. Species of anadromous salmonids that use the Sandy River near Troutdale include Chinook salmon, Coho salmon, steelhead trout, and cutthroat trout.

Water quality monitoring data review by the Oregon Department of Environmental Quality (DEQ) indicated that portions of the Sandy River and tributaries failed to meet temperature, bacteria and dissolved oxygen water quality standards and several stream segments were included on the 2002 303(d) list. Section 303(d) of the Federal Clean Water Act (CWA) requires that a list of all impaired or threatened water within each state be developed. These water quality standards assure that beneficial uses of the rivers and creeks in Oregon, such as recreation, fish consumption and fish rearing, are protected. When water quality standards are not met, the federal Clean Water Act requires a Total Maximum Daily Load (TMDL) to be established. A TMDL specifies the quantity of a pollutant that can be added to the river without exceeding water quality standards.

On March 14, 2005, the Sandy River Basin TMDL was issued as an order by DEQ to address temperature and bacteria limitations and remove the lower Sandy River from the 303(d) list for dissolved oxygen. The final TMDL document, developed under Section 303(d) of the Clean Water Act, was submitted to the Environmental Protection Agency (EPA) for approval. As part of the Sandy River Basin TMDL, DEQ developed a Water Quality Management Plan (WQMP) to describe the overall framework for implementing the TMDL. The WQMP includes a description of activities, legal authorities, and other measures for which DEQ and other designated management agencies (DMA's) have regulatory responsibility. The City of Troutdale is identified as a DMA in this TMDL for the portion of the watershed within its jurisdiction.

Temperature is considered to be a non-point source pollutant and is not associated with municipal stormwater. The City's wasteload allocation (WLA) for municipal stormwater is 86% reduction for bacteria. The City's March 2008 *Sandy River Basin TMDL Implementation Plan* identifies implementation of the SWMP Plan as the City's means by which it intends to meet the bacteria load allocation.

Schedule D(2) of the City's MS4 permit states the following:

*"2. Total Maximum Daily Load Requirements*

*The requirements of this section apply to MS4 discharges to receiving waters with established TMDLs and associated wasteload allocations as noted on the cover page of this permit or if the permittee becomes subject to an approved TMDL, and following notice of such by the Department. If the permittee reduces applicable pollutant discharges for the parameters listed in the TMDL to the maximum extent practicable,*



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*this reduction is deemed to be adequate progress toward achieving assigned TMDL wasteload allocations (WLAs).*

- a. Progress towards reducing TMDL pollutant loads will be evaluated, in subsequent permit terms, by the permittee through the use of performance measures and pollutant load reduction benchmarks developed and list in the SWMP.
  - 1) Performance measures are estimates of the effectiveness of various best management practices (BMPs) implemented by the permittee as per the SWMP; and are not numeric effluent limits. Performance measures must, where appropriate, be pollutant reduction estimates. If appropriate, the performance measures for the BMPs addressing TMDL pollutants may be based on the same metrics developed to determine progress towards measurable goals, as described in the SWMP.*
  - 2) A pollutant load reduction benchmark is an estimate for each parameter or surrogate, where applicable, for which a WLA is established. A benchmark is used to measure the overall effectiveness of the stormwater management program in making progress toward the WLA (this estimate will be related to statistical variability of the underlying data and may be stated as a range), and is intended to be a tool for guiding adaptive management activities. A benchmark is not a numeric effluent limit; rather it is a goal. The permittee must provide rationale for the proposed benchmark, which includes an explanation of the relationship between the benchmark and the TMDL wasteload allocations. Any limiting factors related to the development of a benchmark, such as data availability and data quality, must also be included in this rationale.**
- b. The permittee must use adaptive management, as described in condition A(3), to focus and refine SWMP elements to address TMDL wasteload allocation(s) over the course of this permit cycle.*
- c. If, at the time of permit issuance or within three (3) years of permit issuance, a TMDL establishes municipal stormwater wasteload allocations for pollutant parameters associated with the MS4's discharges, the permittee must develop and propose to the Department specific performance measures and pollutant load reduction benchmarks, as described in condition D(2)(a). Performance measures and pollutant load reduction benchmarks must be submitted to the Department as part of the permit renewal package described in condition B(3)."*

Appendix A of this SWMP Plan includes the City's benchmarking analysis in compliance with Schedule D of the City's NPDES permit.

### **OAR 340, Division 44: UIC Rules**

The Underground Injection Control (UIC) program was enacted in 1974, under the Safe Drinking Water Act (SDWA), and is administered under 40 Code of Federal Regulations (CFR) part 144. DEQ was delegated primacy by the EPA in 1984 and regulates this program under Oregon



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Administrative Rule 340, Division 44. There are five different classes of injection systems. The City owns, operates, and maintains 126 Class V injection systems, most of which are drywells.

OAR 340-044-00018(3)(b)(C) outlines the SWMP plan requirements for municipalities with greater than 50 stormwater injection systems. Specifically:

*“For municipalities or other governmental units with 50 or more stormwater injection systems the owner or operator shall (C): Prepare and implement, prior to construction of new injection systems or by July 1, 2002 for existing and previously registered injection system, a written stormwater management plan, based on current conditions and updated routinely, that includes the following:*

- (i) Stormwater system-wide assessment that includes the location and construction details of all injection systems and other stormwater management controls, an evaluation of the land use and activities in all areas draining into the stormwater injection system, and an identification based on available information of areas within the drainage catchment where hazardous substances and toxic materials are used, handled, or stored.*
- (ii) System controls that include best management practices for source control and treatment, and shall include measures to prevent stormwater drainage from areas where hazardous and toxic materials are used, handled or stored; a spill prevention and response plan; a maintenance plan and schedule; an employee and public education plan; and the identification of personnel or contractors responsible for implementing these plans. The maintenance plan shall specify the frequency of maintenance activities, including visual inspections and physical maintenance.”*

The December 2001 *City of Troutdale – Underground Injection Control Program* plan lists the specific details of the City’s UIC system, including information required for the system-wide assessment. Due to similar requirements for development of a SWMP plan in both DEQ’s UIC rules and the City’s Phase II NPDES permit, the City has integrated those efforts to produce one SWMP plan to address the storm water system in its entirety.

## 5. STORM SEWER SYSTEM

The City maintains a storm sewer system that drains approximately forty (40) road miles and adjacent land uses. The drainage system consists primarily of piped storm sewers with some natural drainage ways (open channels). One area drains primarily to drywells. A storm sewer system map is presented in **Appendix B**. Additional maps of the existing storm sewer system are contained in the *North Troutdale Storm Drainage Master Plan (2007)*, *South Troutdale Storm Drainage Master Plan (1996)*, and on as-built drawings maintained by the City Public Works Department.



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The City's existing storm water system is mapped and cataloged in a digital Geographic Information System (ArcGIS by ESRI). Facilities for new developments are added to the GIS as projects are completed and accepted into the City's fixed asset system.

## **5.1 Major Outfalls**

The City owns, operates and maintains nearly thirty-two (32) miles of storm sewer main. Eight (8) "Major" outfalls are owned and operated by the City. Publicly owned storm sewers which discharge to surface waters are divided into two categories: Major and Minor. The Environmental Protection Agency defines a Major outfall as:

"one that is a single pipe 36" in diameter or greater, **or** is a single conveyance other than a circular pipe serving a drainage area of more than 50 acres, **or** is a single pipe 12" in diameter or greater if the outfall also receives any drainage from lands zoned for industrial activity, **or** is a single conveyance other than a circular pipe which receives drainage from more than two acres of land zoned for industrial activity."

Minor outfalls are all other City-owned storm sewer outfalls which discharge to surface waters.

## **5.2 Underground Injection Control Facilities**

A small area in the southwest portion of the City is not connected to the MS4 system and either drains to surface infiltration facilities or Underground Injection Control facilities (UICs). The City owns, operates and maintains one hundred and twenty-six (126) UICs, most of which are drywells.

## **5.3 Major Structural Controls**

The City maintains detention facilities, pollution control manholes, filtration devices, bioswales, and other water quality facilities. A list of the facilities is kept on file and the facilities are mapped in GIS at the Engineering Division office at the Public Works Shop.

## **6.0 STORM WATER MANAGEMENT PROGRAM**

The stormwater management program implemented by the City includes the incorporated limits of the City of Troutdale excluding:

- Multnomah County and State of Oregon owned facilities
- Stormwater facilities operated by the Sandy Drainage Improvement Company.



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The stormwater management program is funded through storm water utility user fees and stormwater system development charges. Best Management Practices (BMPs) are used to reduce discharge of pollutants to the maximum extent practicable (MEP).

The management program is in accordance with Schedule(A)(4), which requires the development of BMPs for the following groups:

- Public Education and Outreach on Stormwater Impacts (PE)
- Public Involvement and Participation (PI)
- Illicit Discharge Detection and Elimination (ID)
- Construction Site Stormwater Runoff Control (CS)
- Post-Construction Stormwater Management in New Development and Redevelopment (PC)
- Pollution Prevention in Municipal Operations (PP).

In February 2003 the City developed a Storm Water Task Force (Task Force) with the goal of developing a SWMP to address the six minimum control measures noted above. The Task Force consisted of five representatives of the City's Public Works Department; the Director, Chief Engineer, Environmental Specialist, Water & Streets Superintendent, and Wastewater Services Superintendent.

In the spring of 2011, the City re-convened the Task Force of the same representatives, except the Environmental Specialist, no longer a staffed position, was replaced by the Civil Engineer. In addition, the Water & Streets Superintendent duties have been expanded to include oversight of the Parks Division. The Task Force represents those positions that are responsible for implementation of the BMPs identified in the SWMP plan.

The following sections describe the BMPs that were developed by the Task Force and will be implemented by the City over the NPDES permit term. The following sections are designed to identify the specific permit condition applicable to the BMPs described in those sections, a rationale for the BMPs selected, the parties responsible for implementation, a summary of measurable goals, and a summary of the development and implementation schedule of the BMPs selected.



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## ***6.1 Public Education and Outreach on Stormwater Impacts (PE)***

### **6.1.1 NPDES Permit Requirements:**

#### *Schedule A(4)(a)*

“The permittee must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.”

### **6.1.2 Applicable City of Troutdale BMPs**

- PE #1 – Informative Pamphlets, Newsletter and Website Articles
- PE #2 – Catch basin labeling
- PE #3 – Stormwater Education Workshop(s)/Event(s)
- PE #4 – Cleanup Event(s)
- PE #5 – School-Based Education
- PE #6 – Replanting Event(s)
- PE #7 – Public Vegetated Water Quality Facility Signage (NEW)
- PE #8 – Targeted Outreach and Technical Assistance (NEW)
- PE #9 – Downspout Disconnect Program (NEW)

### **6.1.3 Rationale**

Troutdale selected the above BMPs in order to educate the public, businesses, and various other stakeholders on the impacts the City’s stormwater management program may have on water quality and steps they can take to improve stormwater quality. The BMPs were selected to balance Troutdale’s desire to involve the public in both passive (brochures, door hangers, signage, articles) and interactive (workshops, events) methods of education.

### **6.1.4 Responsible Parties**

Under the direction of the Public Works Director, the Engineering Division, the Parks Division, and the Water/Streets Division are responsible for development and implementation of the public education efforts.



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## 6.1.5 Summary of Measurable Goals

Staff will use the City newsletter (the *Troutdale Champion*); the City’s website; informative brochures; door hangers; signage; workshops and public events; and targeted outreach and technical assistance to educate the public about the City’s stormwater management program, water quality issues, and steps the public can take to improve water quality.

## 6.1.6 Development/Implementation Schedule Summary

BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PE1/ ID4	<b>Informative Pamphlets and Newsletter Articles</b>				
	Create and deliver messages to educate the public about the following, at a minimum: household hazardous material disposal; stream friendly home and yard care; concrete dumping; and illicit discharges utilizing pamphlets available in public buildings and attached to permits, articles in the City newsletter (the <i>Troutdale Champion</i> ) and on the City’s website, and door hangers.				
	<b>Performance trackers:</b> Number and types of pamphlets available; number of articles published each year.				
	Ongoing publication of articles in the City newsletter and on the City’s website. Update and review outreach materials and delivery and adaptively manage.	Ongoing publication of articles in the City newsletter and on the City’s website.	Ongoing publication of articles in the City newsletter and on the City’s website. Update and review outreach materials and delivery, and adaptively manage.	Ongoing publication of articles in the City newsletter and on the City’s website.	Ongoing publication of articles in the City newsletter and on the City’s website. Update and review outreach materials and delivery, and adaptively manage.
PE2/ ID5/ PP3	<b>Catch basin labeling</b>				
	Maintain catch basin label inventory of current and newly developed areas to ensure at least 95% of all catch basins are labeled.				
	<b>Performance tracker:</b> Number of labels installed relative to the number of catch basins.				
Continue to replace damaged thermoplastic labels with DAS button style labels. Install DAS button style labels on all new public catch basins. Maintain current inventory of catch basins/labels.					



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PE3	<b>Stormwater Education Workshop(s)/Event(s)</b>				
	Continue to partner with the East Multnomah Soil and Water Conservation District to host at least one water quality educational workshop annually as staffing and funding allows.				
	<b>Performance trackers:</b> Number of workshops held; number of citizens attending workshops; number of community events, if applicable.				
	Host at least one workshop; develop outreach event activities.	Host at least one workshop; participate in at least one community event; evaluate effectiveness of participation.	Host at least one workshop; participate in at least one community event, if deemed effective.	Host at least one workshop; participate in at least one community event, if deemed effective.	Host at least one workshop; participate in at least one community event, if deemed effective. Evaluate effectiveness of participation.
PE4/ PI3	<b>Cleanup Event(s)</b>				
	Sponsor at least one City-wide cleanup event for proper disposal of materials based on the needs of the citizens. Possible cleanup event materials may include yard debris, bulky waste, difficult-to-recycle material, and other such material the City finds appropriate.				
	<b>Performance trackers:</b> Number of events held; number of citizens participating; amount of material collected.				
	Host at least one City-wide cleanup event annually.				



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PE5	<b>School-Based Education</b>				
	Continue to develop water quality presentations targeted to 4 <sup>th</sup> grade students.				
	Use informal evaluations and assessments with teachers and students to aid in program and activity development.				
	Provide presentations as requested and within budget and staffing constraints.				
	<b>Performance trackers:</b> Number of presentations; number of students participating				
	Offer presentation to schools. Provide presentations upon request.	Offer presentation to schools. Provide presentations upon request.	Offer presentation to schools. Provide presentations upon request. Update and review program, adaptively manage.	Offer presentation to schools. Provide presentations upon request.	Offer presentation to schools. Provide presentations upon request.
PE6/ PI4	<b>Replanting Event(s)</b>				
	Organize and host one replanting/invasive species removal/restoration volunteer event annually. Target streamside locations. Partner with groups as appropriate (SOLV; Friends of Beaver Creek; etc)				
	<b>Performance trackers:</b> Number of events held; number of volunteers; type of activity; groups/partners involved; area of coverage; location of project.				
	Host at least one event annually.				
PE7	<b>Public Vegetated Water Quality Facility Signage (NEW)</b>				
	Install signage at all vegetated water quality facilities within the permit cycle to inform and educate the public about the City's facilities utilized to treat or detain stormwater.				
	<b>Performance trackers:</b> Number of signs installed relative to the number of vegetated water quality facilities.				
	Install signage on 20% of the vegetated water quality facilities.	Install signage on 20% of the vegetated water quality facilities.	Install signage on 20% of the vegetated water quality facilities.	Install signage on 20% of the vegetated water quality facilities.	Install signage on 20% of the vegetated water quality facilities.



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PE8/ ID6	<b>Targeted Outreach and Technical Assistance (NEW)</b>				
	Provide targeted outreach and follow up technical assistance to the following groups: private water quality facility owners, fundraiser car wash groups, and streamside property owners.				
	<b>Performance trackers:</b> Number of letters sent relative to targeted audience; follow up activity associated with letters; number of car wash kits loaned out.				
	Send letter to all owners of private water quality facilities about the kind of facility owned, purpose of the facility and required maintenance; follow up as requested.	Continue follow up activity associated with letters sent. Acquire water quality friendly car wash kit(s) and advertise to fundraiser groups.	Send letter to 50% of streamside property owners about streamside protection, herbicide application, and bank protection; follow up as requested.	Send letter to 50% of streamside property owners about streamside protection, herbicide application, and bank protection; follow up as requested.	Continue follow up activity associated with letters sent.
PE9	<b>Downspout Disconnect Program (NEW)</b>				
	Explore the feasibility of creating a downspout disconnection program for the City. Factors to consider: program area of coverage, incentives for involvement, City resource requirements, grant/funding opportunities, implementation timeline.				
	<b>Performance Tracker:</b> To be determined.				
	Complete a technical memo on the feasibility of creating a downspout disconnect program by FY 2013/14.				

## 6.2 Public Involvement and Participation (PI)

### 6.2.1 NPDES Permit Requirements:

*Schedule A(4)(b)*

“The permittee must adopt a public participation process as part of their on-going stormwater management program. The public participation process must provide opportunities for members of the public to participate in program development and implementation.”



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## **6.2.2 Applicable City of Troutdale BMPs**

- PI #1 – Public Meeting(s)
- PI #2 – Website
- PI #3 – Cleanup Event(s)
- PI #4 – Replanting Event(s)

## **6.2.3 Rationale**

Troutdale selected the above BMPs in order to engage the public, businesses, and various other stakeholders on the development and implementation of the City's stormwater management program.

## **6.2.4 Responsible Parties**

Under the direction of the Public Works Director, the Engineering Division and the Parks Division are responsible for development and implementation of the public involvement and participation efforts.

## **6.2.5 Summary of Measurable Goals**

Staff will use City Council meetings, Open Houses, cleanup events and replanting events to actively engage the public, businesses, and various other stakeholders in the development and implementation of the City's stormwater management program.



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## 6.2.6 Development/Implementation Schedule Summary

BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PI1	<b>Public Meeting(s)</b>				
	Provide a public forum to discuss and take comments on the City's stormwater management program plan.				
	Hold public meetings as appropriate for changes to stormwater related ordinances.				
	<b>Performance trackers:</b> Number of open houses held; number of changes to stormwater related ordinances.				
	Public meeting with Council to discuss changes to the SWMP. Hold Open House for stormwater master planning effort.	Hold public meetings as appropriate for changes to stormwater related ordinances.	Hold public meetings as appropriate for changes to stormwater related ordinances.	Hold public meetings as appropriate for changes to stormwater related ordinances.	Hold public meetings as appropriate for changes to stormwater related ordinances.
PI2	<b>Website</b>				
	Ensure that the website is updated as appropriate with program changes, annual reports, permit changes, etc.				
	<b>Performance tracker:</b> Number of questions/comments; follow up action.				
	Post stormwater management program plan and proposed changes to the website for public feedback.	Provide ongoing question/comment section on the website for public feedback on program implementation.	Provide ongoing question/comment section on the website for public feedback on program implementation.	Provide ongoing question/comment section on the website for public feedback on program implementation.	Provide ongoing question/comment section on the website for public feedback on program implementation.



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PI3/ PE4	<b>Cleanup Event(s)</b>				
	Sponsor at least one City-wide cleanup event for proper disposal of materials based on the needs of the citizens. Possible cleanup event materials may include yard debris, bulky waste, difficult-to-recycle material, and other such material the City finds appropriate.				
	<b>Performance trackers:</b> Number of events held; number of citizens participating; amount of material collected.				
	Host at least one City-wide cleanup event annually.				
PI4/ PE6	<b>Replanting Event(s)</b>				
	Organize and host one replanting/invasive species removal/restoration event annually. Target streamside locations. Partner with groups as appropriate (SOLV; Friends of Beaver Creek; etc)				
	<b>Performance trackers:</b> Number of events held; number of volunteers; type of activity; groups/partners involved; area of coverage; location of project.				
	Host at least one event annually.				

### 6.3 Illicit Discharge Detection and Elimination (ID)

#### 6.3.1 NPDES Permit Requirements:

*Schedule A(4)(c)*

“The permittee must:

- i. Develop, implement and enforce a program to detect and eliminate illicit discharges into the permittee’s small MS4;
- ii. Develop, if not already completed, a storm sewer map, showing the locations of all outfalls and the names of all waterbodies that receive discharges from those outfalls;
- iii. To the extent allowable under State or local law, effectively prohibit, through ordinance or other regulatory mechanism, non-stormwater discharges into the permittee’s storm sewer system and implement appropriate enforcement procedures and actions;
- iv. Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping, to the permittee’s system;
- v. Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste; and
- vi. Develop a process to respond to and document complaints relating to illicit discharges.”



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## **6.3.2 Applicable City of Troutdale BMPs**

- ID #1 – Mapping
- ID #2 – Code Enforcement
- ID #3 – Dry Weather Flow Monitoring
- ID #4 – Informative Pamphlets and Articles
- ID #5 – Catch basin labeling
- ID #6 – Targeted Outreach and Technical Assistance (NEW)
- ID #7 – CCTV New Storm Sewer Pipes (NEW)

## **6.3.3 Rationale**

Troutdale selected the above BMPs in order to identify, track, and map illicit discharges to the City's storm sewer system.

## **6.3.4 Responsible Parties**

Under the direction of the Public Works Director, the Engineering Division and Water/Streets Division are responsible for development and implementation of the illicit discharge, detection, and elimination efforts.

## **6.3.5 Summary of Measurable Goals**

Staff will use the City newsletter (the *Troutdale Champion*); the City's website; informative brochures; door hangers; and catch basin labels to educate the public about illicit discharges to the storm system. In addition, staff will continue to update and maintain its storm sewer map, improve upon the dry weather flow monitoring program; and enforce Chapter 12.06 of the Troutdale Municipal Code to deter illicit discharges.



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## 6.3.6 Development/Implementation Schedule Summary

BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
ID1	<b>Mapping</b>				
	Maintain up-to-date storm sewer map that denotes the location of all outfalls and waterways.				
	Incorporate 100% of new storm sewer system components into the GIS.				
	<b>Performance trackers:</b> % of storm main added to the system; % of catch basins added to the system; % of surface water bodies added; % of water quality facilities added to the system.				
	Incorporate new storm sewer system components. Incorporate any missing streams ID'd by aerial LIDAR.	Incorporate new storm sewer system components.			
ID2	<b>Code Enforcement</b>				
	Enforce Chapter 12.06 of the Troutdale Municipal Code to effectively deter illicit discharges.				
	<b>Performance tracker:</b> Number of enforcement actions; related follow up.				
	Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.
ID3	<b>Dry Weather Flow Monitoring</b>				
	Inspect 100% of all City owned outfalls annually for dry weather flows. Follow up as deemed appropriate.				
	<b>Performance trackers:</b> % of outfalls inspected.				
	Perform dry weather flow screening. Develop protocols for field screening where dry weather flows are witnessed.	Perform dry weather flow monitoring and field screening.	Perform dry weather flow monitoring and field screening.	Perform dry weather flow monitoring and field screening.	Perform dry weather flow monitoring and field screening. Review adequacy of dry weather flow monitoring/field screening.



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
ID4/ PE1	<b>Informative Pamphlets and Newsletter Articles</b>				
	Create and deliver messages to educate the public about the following, at a minimum: household hazardous material disposal; stream friendly home and yard care; concrete dumping; and illicit discharges utilizing pamphlets available in public buildings and attached to permits, articles in the City newsletter (the <i>Troutdale Champion</i> ) and on the City's website, and door hangers.				
	<b>Performance trackers:</b> Number and types of pamphlets available; number of articles published each year.				
	Ongoing publication of articles in the City newsletter and on the City's website. Update and review outreach materials and delivery and adaptively manage.	Ongoing publication of articles in the City newsletter and on the City's website. Update and review outreach materials and delivery and adaptively manage.	Ongoing publication of articles in the City newsletter and on the City's website. Update and review outreach materials and delivery and adaptively manage.	Ongoing publication of articles in the City newsletter and on the City's website. Update and review outreach materials and delivery and adaptively manage.	Ongoing publication of articles in the City newsletter and on the City's website. Update and review outreach materials and delivery and adaptively manage.
ID5/ PE2/ PP3	<b>Catch basin labeling</b>				
	Maintain catch basin label inventory of current and newly developed areas. Ensure 95% of all catch basins are labeled. Maintain current inventory of catch basins/labels.				
	<b>Performance tracker:</b> Number of labels installed relative to the number of catch basins.				
	Continue to replace damaged thermoplastic labels with DAS button style labels. Install DAS button style labels on all new public catch basins. Maintain current inventory of catch basins/labels.				



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
ID6/ PE8	<b>Targeted Outreach and Technical Assistance (NEW)</b>				
	Provide targeted outreach and follow up technical assistance to the following groups: private water quality facility owners, fundraiser car wash groups, and streamside property owners.				
	<b>Performance trackers:</b> Number of letters sent relative to targeted audience; follow up activity associated with letters; number of car wash kits loaned out.				
	Send letter to all owners of private water quality facilities about the kind of facility owned, purpose of the facility and required maintenance; follow up as requested.	Continue follow up activity associated with letters sent. Acquire water quality friendly car wash kit(s) and advertise to fundraiser groups.	Send letter to 50% of streamside property owners about streamside protection, herbicide application, and bank protection; follow up as requested.	Send letter to 50% of streamside property owners about streamside protection, herbicide application, and bank protection; follow up as requested.	Continue follow up activity associated with letters sent.
ID7	<b>CCTV New Storm Sewer Pipes (NEW)</b>				
	Require that all new storm sewer pipes have closed-circuit television (CCTV) inspection prior to project acceptance by the City.				
	<b>Performance Tracker:</b> Linear footage of storm sewer pipe inspected as a percentage of the total linear footage of storm sewer pipes installed.				
	Update the <i>Construction Standards for Public Works Facilities</i> to require that all new storm sewer pipes have CCTV inspection prior to project acceptance by the City.	CCTV 100% of all the new storm sewer pipes installed in the City.	CCTV 100% of all the new storm sewer pipes installed in the City.	CCTV 100% of all the new storm sewer pipes installed in the City.	CCTV 100% of all the new storm sewer pipes installed in the City.



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## 6.4 Construction Site Storm Water Runoff Control (CS)

### 6.4.1 NPDES Permit Requirements:

#### *Schedule A(4)(d)*

“The permittee must develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to the permittee’s small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the permittee’s program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The permittee’s program must include the development and implementation of, at a minimum:

- i. An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law;
- ii. Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;
- iii. Requirements for construction site operators to prevent or control waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site;
- iv. Procedures for site plan review that incorporate measures to prevent or control potential water quality impacts;
- v. Procedures for receipt and consideration of information submitted by the public; and
- vi. Procedures for site inspection and enforcement of control measures.”

### 6.4.2 Applicable City of Troutdale BMPs

- CS #1 – Permitting
- CS #2 – Code Enforcement

### 6.4.3 Rationale

Troutdale selected the above BMPs in order to manage and control stormwater discharges from construction sites. Troutdale has had an active erosion control program for many years, including acting as an agent for DEQ in the NPDES 1200C permit program. The erosion control program includes plan review, permit issuance, on-going inspection, and enforcement, as necessary.



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## 6.4.4 Responsible Parties

Under the direction of the Public Works Director, the Engineering Division is responsible for implementation of the erosion control program.

## 6.4.5 Summary of Measurable Goals

Staff will use permitting and code enforcement to implement the erosion control program.

## 6.4.6 Development/Implementation Schedule Summary

BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
CS1	<b>Permitting</b>				
	Continue to act as an agent for NPDES 1200C permitting, including plan review, permit issuance, on-going inspection, and enforcement action, as necessary, for sites greater than one acre in size.				
	Continue to act as an agent for NPDES 1200CN permitting, including plan review, permit issuance, on-going inspection, and enforcement action, as necessary, for sites less than one acre in size that are part of a common plan of development.				
	Continue to implement Chapter 5.06 of the Troutdale Development Code, including plan review, Site Development Permit issuance, on-going inspection, and enforcement action, as necessary, for sites less than one acre in size that are not part of a common plan of development.				
	<b>Performance trackers:</b> Number and type of permits issued.				
	Update Site Development permit.	Update the <i>Construction Standards for Public Works Facilities</i> for erosion control, as appropriate.	No scheduled action.	No scheduled action.	Work with DEQ as appropriate to update the NPDES 1200C and 1200CN permits.



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
CS2	<b>Code Enforcement</b>				
	Implement and enforce Chapter 17 of the Troutdale Municipal Code to ensure that all sites are inspected as appropriate and erosion control violations are addressed as appropriate.				
	<b>Performance tracker:</b> Number of inspections; number of enforcement actions; related follow up.				
	Develop Enforcement Response Plan. Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.	Investigate and enforce any potential violations identified.

## 6.5 Post Construction Runoff Control for New and Redevelopment (PC)

### 6.5.1 NPDES Permit Requirements:

*Schedule A(4)(e)*

“The permittee must:

- i. Develop, implement, and enforce a program to address pollutants in stormwater runoff from new development and redevelopment projects that disturb one acre or more, or less than one acre if they are part of a larger common plan of development or sale, and discharge into the permittee’s small MS4. The permittee’s program must ensure that controls are in place that would prevent or minimize water quality impacts.
- ii. Development and implement strategies that include a combination of structural or non-structural BMPs appropriate for the permittee’s community, and
  - a. Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law;
  - b. Ensure adequate long-term operation and maintenance of BMPs; and
  - c. Ensure adequate enforcement of ordinance or alternative regulatory program.”

### 6.5.2 Applicable City of Troutdale BMPs

- PC #1 – Water Quality/Quantity Standards
- PC #2 – Master Planning
- PC #3 – Retrofitting (NEW)



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- PC #4 – Targeted Outreach and Technical Assistance (NEW)
- PC #5 – Urban Forestry Program (NEW)

## **6.5.3 Rationale**

Troutdale selected the above BMPs in order to develop and implement standards, plans, and programs to address pollutants in post-construction stormwater runoff from new development and redevelopment projects to the maximum extent practicable.

## **6.5.4 Responsible Parties**

Under the direction of the Public Works Director, the Engineering Division and the Parks Division are responsible for development and implementation of water quality and water quantity standards, master planning efforts, and development of a retrofitting program.

## **6.5.5 Summary of Measurable Goals**

Staff will use the Troutdale Development Code and the *Construction Standards for Public Works Facilities* to set standards for the installation and on-going maintenance of water quality and quantity control facilities. In addition, the City's master planning efforts ensure the orderly provision of stormwater conveyance, treatment and disposal. During this permit cycle, the City will develop a Capital Improvement Plan program for retrofitting.



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## 6.5.6 Development/Implementation Schedule Summary

BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PC1	<b>Water Quality/Quantity Standards</b>				
	Ensure new and redevelopment projects which create new impervious areas of substantial impact provide water quality/quantity treatment.				
	Ensure new and redevelopment projects submit Operations and Maintenance plans for the ongoing maintenance of water quality/quantity treatment facilities.				
	Ensure new and redevelopment projects which propose disposal to an Underground Injection Control (UIC) facility meet the requirements of DEQ's UIC rules.				
	<b>Performance trackers:</b> Number of type of water quality/quantity treatment facilities installed; acreage and land use discharging to treatment facilities; number of Operations and Maintenance Plans accepted by the City; number and type of new and redevelopment projects proposing discharge to UIC.				
	Apply City's current water quality design standards to new development and redevelopment.	Review standards for compliance with new permit requirements. Apply City's water quality design standards to new development and redevelopment.	Apply City's current water quality design standards to new development and redevelopment.	Apply City's current water quality design standards to new development and redevelopment.	Apply City's current water quality design standards to new development and redevelopment.
PC2	<b>Master Planning</b>				
	Plan for the orderly provision of storm drainage, stormwater treatment, and flood protection throughout the City.				
	<b>Performance tracker:</b>				
	Evaluate the need to amend the existing master plans for compliance with new permit requirements.	No scheduled action.	No scheduled action.	No scheduled action.	No scheduled action.



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PC3	<b>Retrofitting (NEW)</b>				
	Develop a Capital Improvement Plan (CIP) program that will help mimic the natural hydrologic cycle and reduce or treat stormwater pollutants and promote stream protection and enhancement.				
	<b>Performance tracker:</b> Track the number, type, watershed location, and total drainage areas of CIPs constructed.				
	Develop a CIP program during the permit term.				
PC4/ PE8/ ID6	<b>Targeted Outreach and Technical Assistance (NEW)</b>				
	Provide targeted outreach and follow up technical assistance to the following groups: private water quality facility owners, fundraiser car wash groups, and streamside property owners.				
	<b>Performance trackers:</b> Number of letters sent relative to targeted audience; follow up activity associated with letters; number of car wash kits loaned out.				
	Send letter to all owners of private water quality facilities about the kind of facility owned, purpose of the facility and required maintenance; follow up as requested.	Continue follow up activity associated with letters sent. Acquire water quality friendly car wash kit(s) and advertise to fundraiser groups.	Send letter to 50% of streamside property owners about streamside protection, herbicide application, and bank protection; follow up as requested.	Send letter to 50% of streamside property owners about streamside protection, herbicide application, and bank protection; follow up as requested.	Continue follow up activity associated with letters sent.
PC5	<b>Urban Forestry Program (NEW)</b>				
	Create a tree manual to formalize the City's existing tree program. Factors to consider: urban forestry goals of the City, criteria for allowing existing tree removal, standards for tree planting and replacement, City resource requirements, grant/funding opportunities.				
	<b>Performance Tracker:</b> To be determined.				
	Complete tree manual by FY 2014/15.				



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## 6.6 Pollution Prevention/Good Housekeeping for Municipal Operations (PP)

### 6.6.1 NPDES Permit Requirements:

#### *Schedule A(4)(f)*

- i. “The permittee must develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations; and
- ii. Using training materials that are available from the Department, EPA, or other organizations, the program must include employee training to prevent and reduce stormwater pollution from activities including, but not limited to, park and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, and stormwater system maintenance.”

### 6.6.2 Applicable City of Troutdale BMPs

- PP #1 – Street Sweeping
- PP #2 – Storm System Cleaning
- PP #3 – Catch Basin Labeling
- PP #4 – Debris Management
- PP #5 – Vehicle/Equipment Maintenance
- PP #6 – Spill Response
- PP #7 – Hazardous Material Storage
- PP #8 – Water Quality Facility Maintenance
- PP #9 – Integrated Pest Management
- PP #10 – Employee Training Program

### 6.6.3 Rationale

Troutdale selected the above BMPs to assist the City staff in its operations to responsibly maintain its storm sewer system and conduct City activities responsibly to protect water quality to the maximum extent practicable within the City’s available resources.



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## 6.6.4 Responsible Parties

Under the direction of the Public Works Director, the Engineering Division, the Water/Streets Division, the Parks Division the Wastewater Services Division, and the Building Safety & Facilities Maintenance Department are responsible for ongoing operation and maintenance activities designed to responsibly manage and protect water quality to the maximum extent practicable within the City’s available resources.

## 6.6.5 Summary of Measurable Goals

Staff will further refine and implement its operation and maintenance program to prevent or reduce stormwater pollution associated with municipal operations. One component of the operations and maintenance program will be on-going employee training about the storm system, potential sources of contamination, and ways to minimize the impact of municipal activities.

## 6.6.6 Development/Implementation Schedule Summary

BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PP1	<b>Street Sweeping</b>				
	Routine removal of debris prior to entry into the storm system.				
	<b>Performance trackers:</b> Number of street sweeps; curb miles swept; yards of debris disposed.				
	Sweep streets six times annually.				
PP2	<b>Storm System Cleaning</b>				
	Removal of debris that collects within the storm system.				
	<b>Performance tracker:</b> Number of catch basins cleaned; number of UICs inspected/cleaned; pipe miles cleaned/inspected; number of structures inspected/repared; yards of debris disposed.				
	Clean all catch basins annually.				
	Inspect all UICs annually; clean as necessary.				
	Clean/inspect 10% of storm sewer mains annually (~3 miles per year).				
Clean sedimentation and flow control manholes annually. Inspect detention pipes for deficiencies and cleaning needs annually.					



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PP3/ PE2/ ID5	<b>Catch Basin Labeling</b>				
	Maintain catch basin label inventory of current and newly developed areas to ensure at least 95% of all catch basins are labeled.				
	<b>Performance tracker:</b> Number of labels installed relative to the number of catch basins.				
	Continue to replace damaged thermoplastic labels with DAS button style labels. Install DAS button style labels on all new public catch basins. Maintain current inventory of catch basins/labels.				
PP4	<b>Debris Management</b>				
	Manage all debris collected so that all storm drains downstream of temporary stockpiles managed by the City are protected and dispose of materials in accordance with applicable solid waste regulations.				
	<b>Performance tracker:</b> Number of stockpile inspections; yards of debris collected; yards of debris disposed.				
	Perform twice monthly inspections of stockpiles located at the Public Works Shop and at other City facilities, as applicable.				
	Track yards of debris collected and disposed for various maintenance activities including storm system cleaning and street sweeping.				
PP5	<b>Vehicle/Equipment Maintenance</b>				
	Routine inspection and maintenance of vehicles and equipment will help prolong the life and minimize leaks of hazardous materials.				
	<b>Performance tracker:</b> Number of services per year per vehicle or piece of equipment.				
	Inspect and maintain vehicles and equipment in accordance with the manufacturer's recommendations.				
PP6	<b>Spill Response</b>				
	Intercept and clean up spills originated by City forces prior to entry into the storm sewer system.				
	<b>Performance tracker:</b> Number of spills reported; associated response.				
PP7	Respond to 100% of reported or observed spills originating from City forces within 15 minutes.				
	<b>Hazardous Material Storage</b>				
	Use covered and/or secondarily contained storage areas for hazardous materials to eliminate inadvertent discharge of hazardous materials.				
	<b>Performance tracker:</b> Number of storage areas covered/contained. Number of spills/leaks reported; associated response.				
Inspect covered and/or secondarily contained storage areas monthly.					



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BMP#	FISCAL YEAR (FY)				
	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
PP8	<b>Water Quality Facility Maintenance</b>				
	Routine inspection and maintenance of water quality facilities help to ensure proper functioning.				
	<b>Performance tracker:</b> Number of facilities inspected; maintenance activities performed.				
	Inspect all water quality facilities annually; perform maintenance as necessary.				
PP9	<b>Integrated Pest Management</b>				
	Apply herbicide in compliance with state law in a manner that minimizes impact to storm water.				
	Adopt an Integrated Pest Management Program during this permit cycle.				
	<b>Performance tracker:</b> Number of license herbicide applicators; gallons of concentrate herbicide applied annually.				
	Staff "Integrated Pest Management" program oversight team to determine the goals and objectives of program.	Identify common pests and current pest management strategies.	Research alternative pest management strategies and develop a preferred hierarchy.	Adopt Integrated Pest Management program.	Adaptively manage program.
PP10	<b>Employee Training Program</b>				
	Educate employees about the storm system, potential sources of contamination, and ways to minimize the water quality impact of municipal activities. Possible topics include: storm system mapping; proper facility maintenance; spill response; leak detection; herbicide application; rules and regulations; erosion control.				
	<b>Performance tracker:</b> Number of training sessions provided; number of attendees.				
	Ensure all Public Works employees receive annual training related to stormwater.				
	Work with Division managers to identify targeted training needs for employees. Develop training "modules."				