



**NATIONAL POLLUTION DISCHARGE ELIMINATION  
SYSTEM (NPDES) MUNICIPAL SEPARATE STORM  
SEWER SYSTEM (MS4) PERMIT**

**STORMWATER MANAGEMENT PLAN**

**Port of Portland  
7200 NE Airport Way  
Portland, OR 97218**

**September 20, 2010**

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## INTRODUCTION

The Oregon Department of Environmental Quality (DEQ) regulates stormwater from Port of Portland (Port) property through the National Pollution Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Discharge Permit No. 101314. This Stormwater Management Plan (SWMP) describes activities specifically related to implementation of the Port's MS4 permit.

The primary component of the SWMP is a program of Best Management Practices (BMPs). These BMPs are actions the Port will take to reduce the introduction of pollutants into waters of the state through the MS4, to the maximum extent practicable, in order to protect water quality and satisfy requirements of the Clean Water Act.

The bulk of the plan is included in Section 7.0, which includes summary tables of the Port's BMPs. The remaining sections of the plan are organized as follows: Section 2.0 includes a description of the Port's legal authority to implement stormwater management programs; Section 3.0 discusses the permit area and the co-permittees; Section 4.0 discusses the benchmarks for TMDL waste load allocations; Section 5.0 discusses SWMP revisions; Section 6.0 discusses the reporting requirements; and Section 8.0 presents a summary of the stormwater monitoring activities.

## LEGAL AUTHORITY TO IMPLEMENT THE PROGRAMS OUTLINED IN THE SWMP

The Port has authority to implement programs outlined in the SWMP through ordinance, permits, and contracts.

The Port has statutory authority to enact ordinances to regulate stormwater systems that it owns, operates, maintains, or controls. On March 11, 1992, the Port Commission adopted Ordinance No. 361, which provides the Port with legal authority over specific activities conducted by persons occupying land owned by the Port (i.e. tenants). Ordinance No. 361 prohibits such persons from making, causing, or allowing an illicit discharge into a storm sewer owned or operated by the Port. Section 4 of the Ordinance requires written permission from the Port before connecting to a Port storm sewer. Section 5 of the Ordinance authorizes the Port to inspect the land and storm sewers for violations of the Ordinance or applicable law that governs the conveyance or disposal of stormwater. In addition, the Ordinance provides the Port with authority to control the contribution of pollutants to storm sewers owned or operated by the Port; the quality of stormwater discharged from the sites of industrial activity on land owned by the Port; and the discharge to storm sewers owned or operated by the Port of pollutants from spills, dumping, or the disposal of materials other than stormwater.

In addition to the Ordinance, the Port has legal authority to control contribution of pollutants to the municipal storm sewer system through contracts with its tenants. The lease agreements require the lessees to comply with the Port's MS4 permit. Some properties also have industrial stormwater permits, with the Port and tenants as co-permittees. Through these regulatory and contractual mechanisms, the Port is working with tenants and users of Port facilities to implement and evaluate BMPs that will control the contribution of pollutants to the Port's MS4.

## DESCRIPTION OF THE PERMIT AREA AND CO-PERMITTEES

The Port is a co-permittee on the Portland MS4 permit with Multnomah County and the City of Portland (City). The City is the lead co-permittee. Each co-permittee must implement all applicable provisions in their specific SWMP and the associated Monitoring Program. Applicable provisions are those relating to requirements, programs, and operations of a MS4 permit over which the co-permittee has jurisdiction or control. This section provides description of the Port's portion of the permit area, Port permit responsibilities, and coordination with co-permittees.

### **3.1 Port of Portland Permit Area**

The Port owns and operates a portion of the MS4 within the City of Portland Urban Services Boundary (USB). With respect to the Port, the MS4 permit regulates the discharge of stormwater through the Port's MS4 within the Port MS4 permit area. The Port MS4 permit area includes all current, Port-owned properties within the USB. Port owned property includes three operating areas: 1) Portland International Airport (PDX); 2) four marine terminals; and 3) several industrial parks occupied by commercial and industrial tenants. Port owned property also includes undeveloped land.<sup>1</sup>

### **3.2 Summary of Port Permit Responsibility and Coordination with Co-Permittees**

The Port's MS4 permit responsibility is influenced by two factors. First, the City is the lead permittee on the MS4 permit. The City generally conducts activities on a City-wide basis with some activities overlapping with the Port's MS4 service area. The Port and City also coordinate permit requirements through an Intergovernmental Agreement (IGA). Second, the Port is unique in that the Port's land use is primarily industrial, with no residential area, and it encompasses large-scale parcels throughout the City. Some of the Port's operating areas (marine terminals, airport facilities, or industrial parks) are also regulated under NPDES general industrial stormwater permits (1200-Z or 1200-COLS permits) and the accompanying Stormwater Pollution Control Plans (SWPCP). In addition, DEQ regulates stormwater associated with Port construction activities on Port property pursuant to the Port's NPDES 1200-CA Permit. These permits and plans contain requirements that overlap with the MS4 permit requirements.

Because of this complex relationship between the Port's management of stormwater through the Port's MS4 within the City's USB, the City's overlapping stormwater management activities, and DEQ's regulation of stormwater on some Port property through industrial or construction stormwater permits, a table illustrating permit responsibilities (Table 3-1) was developed to show how MS4 permit requirements align with the City's activities and industrial stormwater permit requirements and stormwater management activities conducted by the Port or Port tenants.

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<sup>1</sup> For reference, all Port property within the City USB is included in the MS4 permit area; however, not all Port property currently discharges into the Port's MS4. Some properties do not have a stormwater system, i.e., stormwater infiltrates into the ground or flows to surface water via sheet flow, and some properties discharge to the City MS4.

Figure 3-1 illustrates the Port's permit areas with respect to the Port's MS4 permit area, industrial stormwater permit areas, tenant lease areas and tenant-managed industrial stormwater permit areas.

Table 3-1 lists the individual permit and SWMP requirements along the left hand column. Responsibility descriptions for each MS4 permit requirement are split into two categories: (1) Port MS4 permit service areas that do not have industrial stormwater permits (1200-Z or 1200-COLS permits), and (2) Port MS4 permit service areas where the Port or its tenant has a general industrial stormwater permit (1200-Z or 1200-COLS permits). The two responsibility categories are further split between tenants and Port operations. Port operations with industrial stormwater permits include operations at PDX and Terminal 2. The Port has recently signed a lease to turnover Terminal 6 operations to a tenant. Shortly after the facility is turned over, the 1200-Z and COLS permits associated with that facility will be held by the new operator. Terminal 6 is represented as "Tenant Operated" in Figure 3-1, since the change is imminent. Some tenants at PDX and the marine terminals also hold industrial stormwater permits based on the activities conducted on their leasehold.

Some of the requirements outlined in the general industrial stormwater permits, and hence the respective BMPs implemented pursuant to the required Stormwater Pollution Control Plans, are similar to requirements outlined in Schedule A of the MS4 permit, specifically for operations and maintenance activities, certain illicit discharge activities, spill response, and industrial monitoring. Therefore, for Port operating areas (Terminal 2 and PDX) and tenants with an industrial stormwater permit, some of the MS4 permit requirements related to the above activities are addressed through implementation of the industrial stormwater permits. MS4 permit requirements that are addressed through implementation of the industrial stormwater permit requirements are shaded gray in Table 3-1.

The Port's MS4 permit area lies entirely within the City of Portland USB; therefore, a number of activities that the City conducts to meet the MS4 permit requirements overlap with activities the Port would also conduct under the MS4 permit requirements. In addition, certain requirements are more effectively accomplished under jurisdiction of the City due to the City's broad legal authority city-wide implemented through the land use system. As a result, the Port and City coordinate certain activities to gain efficiencies and avoid duplication of effort. Specifically, planning and implementation of controls for new development, pretreatment inspections, and stormwater monitoring are generally conducted under the City's jurisdiction as opposed to the Port's. As a result, some permit requirements do not apply to the Port as they are covered by the City's activities. These requirements are also shaded in gray in Table 3-1. Areas left unshaded in Table 3-1 are addressed by BMPs in the Port's SWMP. The unshaded areas list the specific BMPs that meet the permit requirements.

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**TABLE 3-1. Port of Portland MS4 Permit Requirements and Responsibilities**

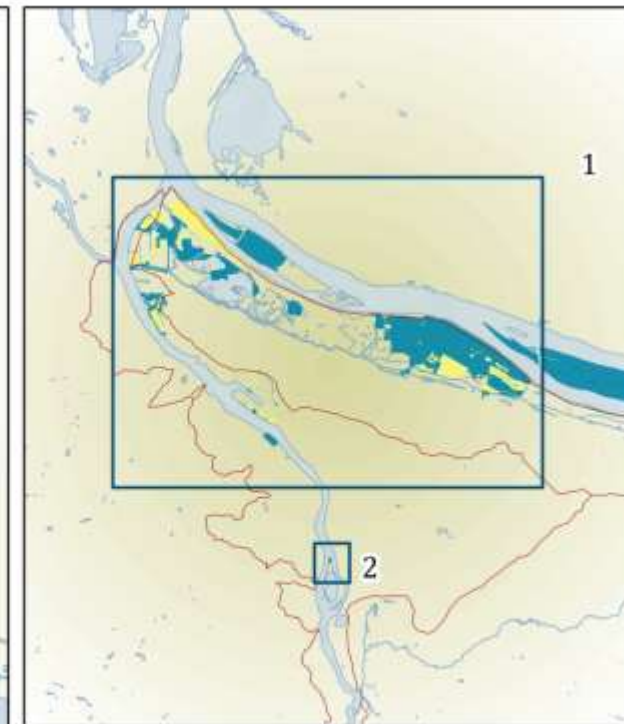
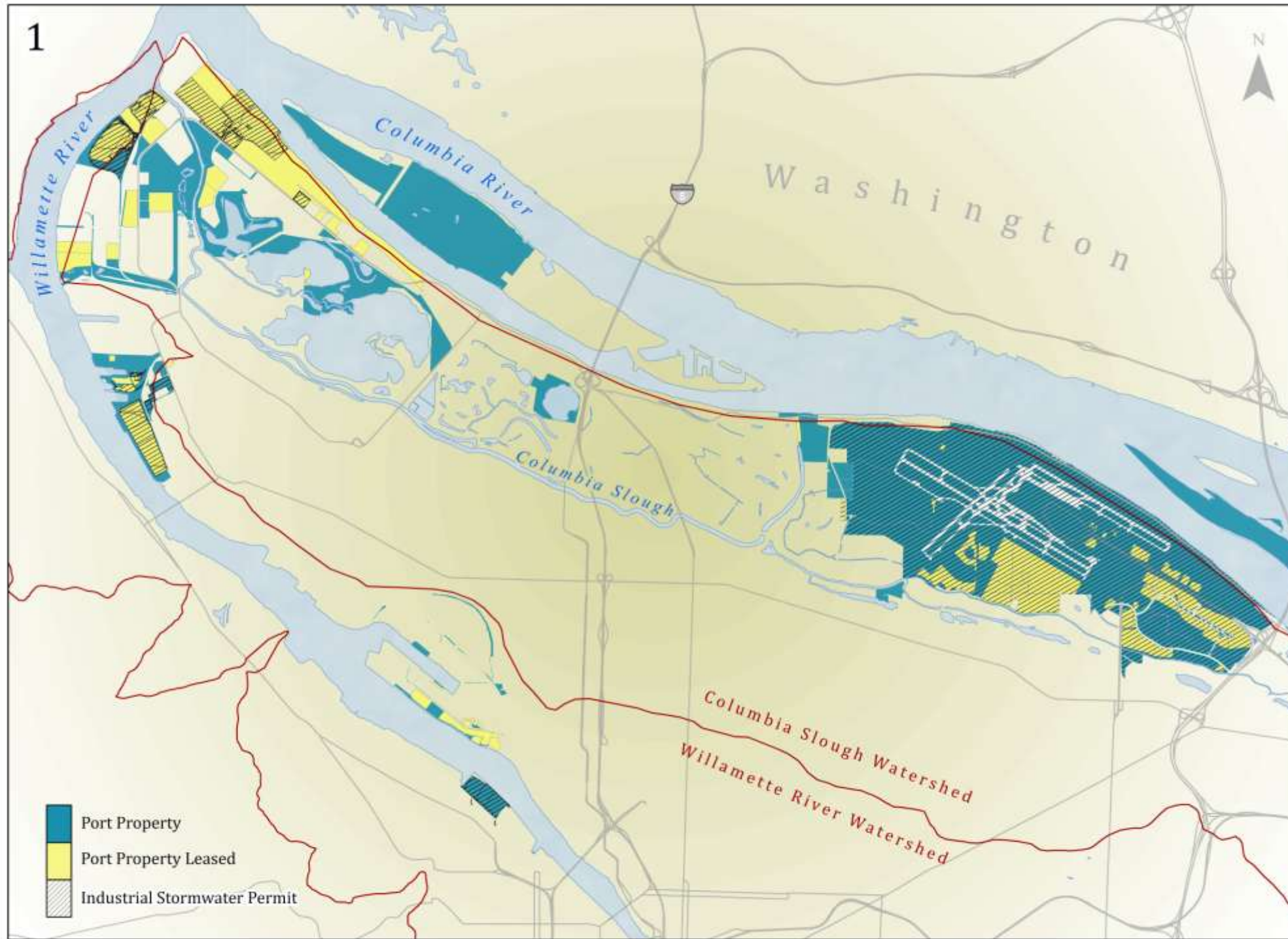
MS4 Permit SWMP Requirements	MS4 Service Areas Not Covered Under Industrial Stormwater Permits		MS4 Service Areas With Industrial Stormwater Permits	
	Tenants	Port Operations	Tenants	Port Operations
<b>Schedule A.4.a Illicit Discharge Detection and Elimination.</b>				
i. Prohibit, through ordinance or other regulatory mechanism, illicit discharges	BMP: Implement the Illicit Discharge Detection and Elimination Program.			
ii. Describe enforcement response procedures.	BMP: Implement the Illicit Discharge Detection and Elimination Program.			
iii. Develop pollutant parameter action levels	BMP: Conduct Dry-Weather Field Screening.			
iv. Conduct annual dry weather inspection activities including field screening	BMP: Conduct Dry-Weather Field Screening.			
v. Identify response procedures to investigate portions of the MS4 where relevant information indicates the likely presence of illicit discharges.	BMP: Conduct Dry-Weather Field Screening.			
vi. Maintain a system for documenting and procedures for responding to illicit discharges	BMP: Conduct Dry-Weather Field Screening.			
vii. Appropriate action for illicit discharge removal.	BMP: Implement the Illicit Discharge Detection and Elimination Program.		Spill response activities address employee reporting and are covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits	
			BMP: Implement the Illicit Discharge Detection and Elimination Program.	
viii. Spill prevention and response	BMP: Implement a Spill Response Program for Port Operated Property.		Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits – Schedule A.3.c.ii	
ix. Notify affected municipality of illicit discharge originating within the permittee's permit area	BMP: Implement the Illicit Discharge Detection and Elimination Program.			
x. Notify responsible municipality of illicit discharge affecting the permittee, originating outside of the permittee's permit area.	BMP: Implement the Illicit Discharge Detection and Elimination Program.			
xi. Maintain maps showing major MS4 outfalls	BMP: Conduct Dry-Weather Field Screening.			
xii. Unless identified as a significant source of pollutants, the following non-stormwater discharges are not considered illicit discharges (see Schedule A.4.a.xii)	BMP: Implement a Water Line Flushing Procedure			
<b>Schedule A.4.b Industrial and Commercial Facilities</b>				
i. Screen existing and new industrial facilities	BMP: Screen Existing and New Industrial Facilities		These areas are already covered by an industrial stormwater NPDES permit.	
ii. Notify DEQ and facility if subject to an industrial NPDES permit.	BMP: Screen Existing and New Industrial Facilities		These areas are already covered by an industrial stormwater NPDES permit.	
iii. Inspection of industrial or commercial areas identified as significant sources of pollutants.	BMP: Implement an Inspection Program for Significant Pollutant Source Areas			
<b>Schedule A.4.c Construction Site Runoff Control</b>				
i. Ordinance that requires erosion and sediment controls	Implemented through the City of Portland's erosion control ordinance; may also be covered under a 1200-C permit.	Implemented through the Port's 1200-CA Permit, the City of Portland's erosion control program and related contract specifications.	Implemented through the City of Portland's erosion control ordinance; may also be covered under a 1200-C permit.	Implemented through the Port's 1200-CA Permit and related contract specifications
ii. Require construction site operators to develop site plans and implement erosion and sediment control BMPs.				
iii. Require construction site operators to prevent/ control non-stormwater waste				
iv. Erosion control site plan review				
v. Perform on-site inspections				
vi. Maintain enforcement response procedures				

MS4 Permit SWMP Requirements	MS4 Service Areas Not Covered Under Industrial Stormwater Permits		MS4 Service Areas With Industrial Stormwater Permits	
	Tenants	Port Operations	Tenants	Port Operations
<b>Schedule A.4.d Education and Outreach</b>				
i. Implement a documented public education and outreach strategy	BMP: Implement Public Education Measures to Protect Stormwater Quality.			
ii. Provide educational material to the community or conduct equivalent outreach activities	BMP: Implement a Tenant Stormwater BMP Program.	N/A	BMP: Implement a Tenant Stormwater BMP Program.	N/A
	BMP: Implement Public Education Measures to Protect Stormwater Quality.			
iii. Provide public education on pesticide, herbicide, fertilizer, and other chemicals	BMP: Require Training and Licensing for Staff Conducting Pest Management Activities. BMP: Implement a Tenant Stormwater BMP Program.			
iv. Provide public education on proper operation and maintenance of privately-owned/ operated stormwater quality facilities	BMP: Implement a Tenant Stormwater BMP Program. BMP: Implement a Program for the Tracking and Maintenance of Private Structural Controls			
v. Provide notice to construction site operators regarding training for erosion and sediment control	BMP: Provide Erosion Prevention and Sediment Control Training for Construction Inspectors			
vi. Conduct/ participate in a public education effectiveness evaluation	BMP: Participate in a Public Education Effectiveness Evaluation			
vii. Include training for municipal employees involved in MS4 activities.	BMP: Implement a Spill Response Training Program. BMP: Implement a Municipal Staff Training Program for Stormwater Pollution Prevention BMP: Require Training and Licensing for Staff Conducting Pest Management Activities.		Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits – Schedule A.3.c.iv	
viii. Promote, publicize, and facilitate public reporting of illicit discharges.	BMP: Implement the Illicit Discharge Detection and Elimination Program			
<b>Schedule A.4.e Public Involvement and Participation</b>				
e. Implement a public participation process for receiving and considering comments on the SWMP and TMDL benchmarks	BMP: Provide for Public Participation with SWMP and Benchmark Submittals			
e. Implement a public participation approach that provides opportunities for the public to effectively participate in the implementation of the co-permittee's stormwater management program.	BMP: Implement a Public Participation Approach that Provides Opportunities for the Public to Effectively Participate in the Implementation of the Stormwater Management Program.			
<b>Schedule A.4.f Post-Construction Site Runoff</b>				
i. Implement a post-construction stormwater pollutant and runoff control program.	BMP: Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards			
ii. Identify, and where practicable, minimize or eliminate ordinance, code and development standard barriers.	BMP: Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards			
iii. Develop or reference an enforceable post-construction stormwater management manual	BMP: Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards			

MS4 Permit SWMP Requirements	MS4 Service Areas Not Covered Under Industrial Stormwater Permits		MS4 Service Areas With Industrial Stormwater Permits	
	Tenants	Port Operations	Tenants	Port Operations
vi. Review, approve, and verify proper implementation of post-construction site plans.	BMP: Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards			
v. Require off-site stormwater management for locations limited in their ability for on-site stormwater capture and treatment or flow reduction.	BMP: Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards			
vi. Describe inspection and enforcement response procedures to address compliance issues with post-construction stormwater management performance standards.	BMP: Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards			
<b>Schedule A.4.g Pollution Prevention for Municipal Operations</b>				
i. Operate and maintain public streets, roads, and highways	The City of Portland is responsible for operation and maintenance of the public right-of-way.			
	BMP: Implement a Street and Vehicle Maneuvering Area Cleaning and Maintenance Program.			
ii. Implement a program to control the use and application of pesticides	BMP: Limit Landscape Maintenance Activities Impact on Stormwater. BMP: Require Appropriate Training and Licensing for Pest Management Activities. BMP: Implement a Tenant Stormwater BMP Program.			
iii. Inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal waste facilities not already covered by a 1200 series permit.	No tenant properties currently accommodate municipal facility waste.	BMP: Implement a Street and Vehicle Maneuvering Area Cleaning and Maintenance Program. BMP: Implement a Stormwater System Cleaning and Maintenance Program (These BMPs include tasks to decant water from municipal wastes and discharge wastewaters to the sanitary system.)	Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits <sup>1</sup> - Schedule A.3.c.i (1200-Z) and Schedule A.3.c.i (1200-COLS)	Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits - Schedule A.3.c.i (1200-Z) and Schedule A.3.c.i (1200-COLS)
iv. Implement controls to limit infiltration of seepage from the municipal sanitary system.	BMP: Implement a Program to limit infiltration from Port-owned sanitary sewer system to the MS4			
v. Implement a strategy to prevent or control the pollutant discharge from fire fighting training activities	The only fire fighting training facility is located at PDX, which is covered by a 1200-COLS permit.			
vi. Retrofitting flood control facilities.	The City of Portland manages water quality improvements on a master planning level.			
<b>Schedule A.4. h Structural Stormwater Controls Operations and Maintenance</b>				
i. Implement a program to verify structural control facilities and controls are inventoried, mapped, inspected, operated and maintained.	BMP: Implement a Stormwater System Cleaning and Maintenance Program BMP: Implement a Program for Tracking and Maintenance of Private Structural Controls		Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits <sup>1</sup> – Schedule A.3.c.iii (2-3)	Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits – Schedule A.3.c.iii (2-3)
ii. Develop and implement a plan or approach to guide the long-term maintenance and management of all publically-owned and privately owned stormwater facilities.	BMP: Implement a Stormwater System Cleaning and Maintenance Program BMP: Implement a Tenant Stormwater BMP Program.		Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits <sup>1</sup> - Schedule A.3.c.iii (2-3)	Covered under 1200-Z (7/1/2007) and COLS (9/1/2006) permits - Schedule A.3.c.iii (2-3)

MS4 Permit SWMP Requirements	MS4 Service Areas Not Covered Under Industrial Stormwater Permits		MS4 Service Areas With Industrial Stormwater Permits	
	Tenants	Port Operations	Tenants	Port Operations
<b>Schedule A.6.c Stormwater Retrofit Project</b>				
ii. Identify one stormwater quality improvement project, at a minimum, to be <u>initiated</u> constructed and/or implemented during the permit term.	BMP: Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards			
<b>Schedule B1-B4 Monitoring Component Requirements</b>				
The Port must assist with monitoring efforts in conjunction with requirements as stated in Table B-1, Schedule B(1)(b)	Pursuant to an IGA, the Port of Portland and the City of Portland have a joint monitoring program conducted by the City to meet the requirements specified under Schedule B.			





- Port Property
- Port Property Leased
- Industrial Stormwater Permit

Port of Portland geospatial data is gathered, maintained and primarily used for internal reference and analysis, and is only updated as resources permit. Geospatial data refers to data and information referenced to a location on the Earth's surface such as maps, charts, air photos, satellite images, cadastre and land and water surveys, in digital or hard copy form. Geospatial data may be gathered and maintained by more than one person or department within the Port, and data distributed by one person or department may not reflect the most recent data available from the Port or from other sources. Port geospatial data is not intended for survey or engineering purposes or to describe the authoritative or precise location of boundaries, fixed human works, or the shape and contour of the earth. The Port makes no warranty of any kind, expressed or implied, including any warranty of merchantability, fitness for a particular purpose, or any other matter with respect to its geospatial data. The Port is not responsible for possible errors, omissions, misuse, or misrepresentation of its geospatial data. Port geospatial data is not intended as a final determination of such features as existing or proposed infrastructure, conservation areas, or the boundaries of regulated areas such as wetlands, all of which are subject to surveying or delineation and may change over time. No representation is made concerning the legal status of any apparent route of access identified in geospatial data.

Notes:

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**Port of Portland**  
Portland, Oregon



Geographic Data Standards  
 Projected Coordinate System:  
 NAD 1983 HARN State Plane, Oregon N  
 Projection: Lambert Conformal Conic  
 Units: International Feet

File:  
 N:\Projects\GIS\_Program\Work\20100630\_MS4\_2010\_Bergr\MXD\MS4\_2010.mxd

Port of Portland Properties in the USB

**Figure 3-1. Port of Portland MS4 Permit Area**

Prepared By: C. Dettlaff Manager: S. Ogle Revised: August 4, 2010	Prepared for: Jamey Berg Dept: Environmental Affairs Manager: Dorothy Sperry	Map No. 1 Sheet: 1/1
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## BENCHMARKS FOR TMDL WASTE LOAD ALLOCATIONS

For receiving waters with an approved total maximum daily load (TMDL), the Port is required to establish new pollutant load reduction benchmarks and evaluate progress towards achieving previously developed benchmarks. Per the Port's 2005 MS4 NPDES permit, benchmarks are defined as a *“total pollutant load reduction estimate for each parameter or surrogate, where applicable, for which a [Waste Load Allocation] WLA is established at the time of permit issuance. A benchmark is used to measure the overall effectiveness of the storm water management plan in making progress toward the wasteload allocation...”*

The Port developed benchmarks for addressing the Columbia Slough TMDL WLAs as a requirement of the MS4 Permit Interim Evaluation Report submittal in 2006. At the time of the submittal, the Columbia Slough was the only watershed with an established TMDL applicable to Port property. Modeled parameters reflected those parameters with established WLAs: dissolved lead, total suspended solids (TSS; as a surrogate for organic compounds), biological oxygen demand (BOD), total phosphorus, and bacteria (*E. coli*). As part of the permit renewal application in 2008, benchmarks were again calculated for the Columbia Slough (Table 4-1). The purpose of the recalculation was to compare the previously predicted loads for 2009 conditions (provided in the 2006 Interim Evaluation Report) with current estimates of 2008 pollutant loads, given current land use and BMP coverage. DEQ issued TMDLs for the Willamette River in 2006. Therefore, the Port also developed benchmarks for the associated TMDL water quality parameter, *E. coli*.

Calculation of benchmarks involves the analysis of current land uses and areas where runoff is treated by stormwater quality best management practices (i.e., BMP treatment areas). This analysis is conducted in order to estimate current pollutant loadings for each water quality parameter and each watershed. Projected future land use and BMP treatment areas were used to predict future pollutant loadings for each parameter. Benchmarks are defined as the predicted pollutant load reduction in 2013 (future condition).

Table 4-1 summarizes the benchmarks established for the Port including the original Columbia Slough benchmarks calculated in 2006, representative of conditions in 2009; the new Columbia Slough benchmarks calculated in 2008, representative of conditions in 2013; and the new Willamette River benchmarks calculated in 2008, representative of conditions in 2013. These pollutant load reduction estimates represent the projected range in total loading from the Port's MS4 permit area following implementation of structural BMPs as described in the SWMP. Assumptions made to estimate pollutant loadings and pollutant load reductions were generally conservative (i.e., greater pollutant load reductions are likely to be achieved). Additional detail related to the modeling methods and the benchmarks are included in Section 6 of the Port's MS4 permit renewal application submittal (dated September 2, 2008).

**TABLE 4-1. Summary of the Port of Portland Benchmarks**

<b>TMDL Parameter or Surrogate</b>	<b>Previously Predicted Benchmarks (calculated in 2006 representing 2009 conditions)</b>	<b>Currently Predicted Benchmarks (calculated in 2008 and representing 2013 conditions)</b>
<b>Columbia Slough</b>		
Total Phosphorus	143-266 lbs./year	391-766 lbs./year
Biochemical Oxygen Demand	2,222-4,854 lbs./year	33,931-80,836 lbs./year
<i>E. Coli</i>	$3.1 \times 10^{11}$ - $1.7 \times 10^{12}$ colonies/year	$2.6 \times 10^{11}$ - $2.8 \times 10^{12}$ colonies/year
Total Suspended Solids	27,556 – 77,759 lbs./year	137,000 – 401,041 lbs./year
Dissolved Lead	0.6 – 2.0 lbs./year	1.7 – 5.1 lbs./year
<b>Lower Willamette River</b>		
<i>E. Coli</i>	N/A	$6.0 \times 10^{10}$ – $5.7 \times 10^{11}$ colonies/year

**SWMP REVISIONS**

Adaptive management is the process for assessing new opportunities for improving program effectiveness in controlling stormwater pollution to the maximum extent practicable. The Port’s SWMP has undergone and will continue to undergo periodic revisions in order to ensure continued reduction of pollutants to the maximum extent practicable. SWMP modifications will be made in accordance with an adaptive management process that is consistent with requirements in the permit.

**REPORTING REQUIREMENTS**

The status of implementing the components of the SWMP must be submitted to DEQ in an annual report due November 1 for the period July 1 through June 30. The annual report must include proposed changes to the SWMP developed as a result of adaptive management.

**STORMWATER MANAGEMENT PLAN BMPS**

The SWMP is organized into the eight major stormwater program elements listed below. The eight major elements correspond to those outlined in the MS4 NPDES permit (i.e., Schedule A(4)(a-h).

- Element #1: Illicit Discharge Detection and Elimination
- Element #2: Industrial and Commercial Facilities
- Element #3: Construction Site Runoff Control
- Element #4: Education and Outreach

Element #5:	Public Involvement and Participation
Element #6:	Post-construction Site Runoff
Element #7:	Pollution Prevention for Municipal Operations
Element #8:	Structural Stormwater Facilities and Controls Operations and Maintenance

## 7.1 Element #1 - Illicit Discharge Detection and Elimination

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #1 are outlined under Schedule A.4.a. The Port BMPs or other activities that are conducted to meet these permit requirements are listed below as well.

Table 7-1 provides a detailed description of each BMP, including responsibility, implementation tasks, and documentation.

- i. *Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.*

***BMP(s) to Address:***

- **Implement the Illicit Discharge Detection and Elimination Program**

- ii. *Describe in an enforcement response plan or similar document (by November 1, 2011) the enforcement response procedures the permittee will implement when an illicit discharge investigation identifies a responsible party.*

***BMP(s) to Address:***

- **Implement the Illicit Discharge Detection and Elimination Program**

- iii. *Develop or identify dry-weather field screening pollutant parameter action levels that will be used as part of the field analysis to identify the source of an illicit discharge or other type of discharge....by November 1, 2011.*

***BMP(s) to Address:***

- **Conduct Dry-Weather Field Screening**

- iv. *Conduct annual dry-weather inspection activities during the term of the permit. The dry-weather inspection activities must include annual field screening of all priority locations identified and documented by the co-permittee.... The dry-weather field screening activities must be documented and include:*

1. *General observation.*
2. *Field Screening.*
3. *Laboratory Analysis.*

***BMP(s) to Address:***

- **Conduct Dry-Weather Field Screening**



- v. *Identify response procedures to investigate of portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, indicates the presence of illicit discharges..*

***BMP(s) to Address:***

- **Conduct Dry Weather Field Screening**

- vi. *Maintain a system for documenting illicit discharge complaints or referrals, and suspected illicit discharge investigation activities.*

***BMP(s) to Address:***

- **Implement the Illicit Discharges Detection and Elimination Program**

- vii. *Take appropriate action to remove illicit discharges from the MS4 within 5 working days of detection. If it has been determined that removal of the illicit discharge will take more than 15 working days due to technical or other reasonable issues, the co-permittee must develop and implement an action plan to eliminate the illicit discharge in an expeditious manner. The action plan must be completed within 20 working days of determining the source of an illicit discharge..... The action plan must include a timeframe for elimination of the illicit discharge as soon as practicable.*

***BMP(s) to Address:***

- **Implement the Illicit Discharges Detection and Elimination Program**

- viii. *Describe and implement spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4....*

***BMP(s) to Address:***

- **Implement a Spill Response Program for Port Operated Property**

- ix. *In the case of a known illicit discharge that originates within the City's permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the City must notify the affected municipality as soon as practicable, but no longer than one working day.*

***BMP(s) to Address:***

- **Implement the Illicit Discharges Detection and Elimination Program**

- x. *In the case of a known illicit discharge that is identified within the City's permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the City must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.*

***BMP(s) to Address:***

- **Implement the Illicit Discharges Detection and Elimination Program**

- xi. *Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.*

***BMP(s) to Address:***

- **Conduct Dry Weather Field Screening**

- xii. *Unless identified as a significant source of pollutants to waters of the State by a co-permittee or the Department, the following non-stormwater discharges are not considered illicit discharges: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated groundwater infiltration; uncontaminated pumped ground water; discharges from potable water sources; start up flushing of groundwater wells; aquifer storage and recovery (ASR) wells; potable groundwater monitoring wells; draining and flushing of municipal potable water storage reservoirs; foundation drains; air conditioning condensate; irrigation water; springs; water from crawl space pumps; footing drains; lawn watering; individual residential car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash waters; discharges of treated water from investigation, removal and remedial actions selected or approved by the Department pursuant to Oregon Revised Statute (ORS) Chapter 465, the state's environmental cleanup law; and discharges or flows from emergency fire fighting activities where discharges or flows from fire fighting activities are identified as not a significant source of pollutants to waters of the state. If a non-stormwater discharge is identified as a significant source of pollutants, the co-permittees must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.*

***BMP(s) to Address:***

- **Implement a Water Line Flushing Procedure**

**Table 7-1. Illicit Discharge Detection and Elimination BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement the Illicit Discharge Detection and Elimination Program</b></p>	<p>Schedule A.4.a.i Schedule A.4.a.ii Schedule A.4.a.vii Schedule A.4.a.ix Schedule A.4.a.x Schedule A.4.d.viii</p>	<p><b>BMP Responsibility:</b> Aviation Environmental, Marine Environmental, MID Properties Maintenance, Marine Facilities Maintenance (MFM), PDX Maintenance, Environmental Affairs</p> <p><b>BMP Description:</b> Through Ordinance 361, the Port of Portland has the authority to eliminate illicit discharges throughout its property including those associated with tenants on Port property.</p> <p>PDX Environmental and Marine Environmental staff implement documented illicit discharge detection and elimination procedures. By November 1, 2012, the Port of Portland will update these procedures to include provisions consistent with the MS4 NPDES permit language related to enforcement and follow-up procedures.</p> <p>The Port of Portland encourages public reporting of potential illicit discharges by maintaining spill notification signs throughout Port property.</p> <p><b>BMP Implementation Task:</b></p> <ol style="list-style-type: none"> <li>1) Continue to implement documented illicit discharge detection and elimination procedures.</li> <li>2) Update the illicit discharge detection and elimination procedures by <b>November 1, 2011</b> per provisions consistent with the MS4 NPDES permit language. (Responsibility: Environmental Affairs)</li> <li>3) Implement a reporting program for potential illicit discharges by maintaining spill notification signs throughout Port property (Responsibility: MID Properties Maintenance, Marine Facilities Maintenance (MFM), and PDX Maintenance).</li> </ol>	<ul style="list-style-type: none"> <li>• Update the illicit discharge detection and elimination procedures by <b>November 1, 2011.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Track the status of updating the illicit discharge detection and elimination procedures.</li> <li>• Track the number, type, location and resolution of any illicit discharge investigations conducted</li> </ul>

**Table 7-1. Illicit Discharge Detection and Elimination BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Conduct Dry-Weather Field Screening</b></p>	<p>Schedule A.4.a.iii Schedule A.4.a.iv Schedule A.4.a.v Schedule A.4.a.vi Schedule A.4.a.xi</p>	<p><b>BMP Responsibility:</b> Aviation Environmental, Marine Environmental, Environmental Affairs</p> <p><b>BMP Description:</b> The Port of Portland conducts annual field screening activities during dry-weather conditions (between July and September) at all Port-owned priority outfall locations. Activities are conducted according to documented procedures.</p> <p>If necessary, in accordance with dry-weather field screening activities, the Port updates their GIS files annually related to existing outfall and priority outfall locations.</p> <p>Procedures for conducting annual, dry-weather field screening activities will be updated by <b>July 1, 2012</b> in accordance with provisions of the MS4 NPDES permit. As part of the update, pollutant parameter action levels will be developed to assist in the identification of non-permissible or illicit discharges.</p> <p><b>BMP Implementation Task:</b></p> <ol style="list-style-type: none"> <li>1) Conduct annual dry-weather field screening activities at all priority outfall locations.</li> <li>2) Annually, as necessary, update Port data files related to outfall locations in accordance with dry-weather field screening activities.</li> <li>3) Update the dry-weather field screening procedures by <b>June 30, 2012</b> to be in accordance with MS4 permit requirements. (Responsibility: Environmental Affairs)</li> </ol>	<ul style="list-style-type: none"> <li>• Update dry-weather field screening procedures in accordance with permit requirements by <b>July 1, 2012</b>.</li> <li>• Inspect priority outfalls annually.</li> </ul>	<ul style="list-style-type: none"> <li>• Track the number and location of priority outfalls inspected during dry-weather field screening activities.</li> <li>• Summarize dry-weather field screening inspection results and indicate outfalls requiring sampling or follow-up activities.</li> <li>• Indicate the outcome and resolution of inspection activities conducted.</li> </ul>

**Table 7-1. Illicit Discharge Detection and Elimination BMPs**

<b>BMP</b>	<b>Permit Requirement</b>	<b>BMP Implementation</b>	<b>Measurable Goals</b>	<b>Tracking Measures</b>
<p><b>Implement a Spill Response Program for Port Operated Property</b></p>	<p>Schedule A.4.a.viii</p>	<p><b>BMP Responsibility:</b> Marine Environmental</p> <p><b>BMP Description:</b> Spill prevention and response procedures for areas with an individual industrial stormwater permit are included in the facility’s Stormwater Pollution Control Plans, required as part of the NPDES 1200-Z or COLS permits. As a result, spill response activities for these areas are not reported under the MS4 permit.</p> <p>The Port also implements an independent Spill Response Program for all Port properties in accordance with provisions outlined in the Port’s Spill Response Procedures. In the event of a spill at industrial park properties and marine terminals, procedures require the spill to be reported to the 24- hour Marine Security Office. Security notifies Marine Environmental’s on-call staff who in turn dispatch an on-call emergency response contractor to cleanup and contain the spill. Port staff completes the necessary reporting requirements including notification of Oregon Emergency Response when appropriate.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Implement the Port’s spill response procedure and update as necessary (Responsibility: Marine Environmental).</li> <li>2) Participate in the City’s Spill Response Committee (Responsibility: Marine Environmental).</li> <li>3) Ensure trained Port staff members are available for on-call spill response, in addition to ensuring current contracts with on-call spill response contractors (Responsibility: Marine Environmental).</li> </ol>	<ul style="list-style-type: none"> <li>• Implement the Port’s Spill response procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Track the number of spills of a reportable quantity in which a spill response was conducted.</li> </ul>

**Table 7-1. Illicit Discharge Detection and Elimination BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement a Water Line Flushing Procedure</b></p>	<p>Schedule A 4.a.xii</p>	<p><b>BMP Responsibility:</b> Aviation Environmental, PDX Fire Department, Marine Environmental, Marine Facilities Maintenance (MFM)</p> <p><b>Note:</b> Of the listed allowable non-stormwater discharges provided in Schedule A.4.a.xii of the permit, the Port has identified water line flushing as a Port activity requiring a best management practice.</p> <p><b>BMP Description:</b> The Port conducts periodic hydrant and water line flushing at the marine terminals and PDX to ensure the quality of the water system.</p> <p>Depending on the size of the discharge and the capacity of the receiving stream, discharges from water line flushing could potentially have an impact on streams with respect to concentrations of chlorine. Chlorinated water may be discharged to a storm sewer if the travel time and /or dilution in the storm sewer system is a distance of 1,000 feet or more. When the travel time/dilution in the MS4 is insufficient, chlorinated water will be de-chlorinated when discharging to a stream that has a flow rate of 50 cfs or less.</p> <p><b>BMP Implementation Task:</b></p> <p>1) Implement a water line flushing procedures as described above to ensure appropriate disposal of chlorinated water.</p>	<ul style="list-style-type: none"> <li>• Implement waterline flushing consistent with guidelines described in this BMP description.</li> </ul>	<p>N/A</p>

## 7.2. Element #2 – Industrial and Commercial Facilities

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #2 are outlined under Schedule A.4.b. The Port BMPs or other activities that are conducted to meet these permit requirements are listed below as well.

Table 7-2 provides a detailed description of each BMP, including responsibility, implementation tasks, and documentation.

- i. *Screen existing and new industrial facilities to assess whether they have the potential to be subject to an industrial stormwater NPDES permit or have the potential to contribute a significant pollutant load to the MS4.*

***BMP(s) to Address:***

- **Screen Existing and New Industrial Facilities**

- ii. *Within 30 days after the facility is identified, notify the industrial facility and the Department that an industrial facility is potentially subject to an industrial stormwater NPDES permit.*

***BMP(s) to Address:***

- **Screen Existing and New Industrial Facilities**

- iii. *Implement a program that establishes the priorities and procedures for inspection of and implementation of stormwater control measures for discharges from industrial or commercial areas that have been identified as sources that contribute a significant pollutant load to the MS4.*

***BMP(s) to Address:***

- **Implement an Inspection Program for Significant Pollutant Source Areas**

**Table 7-2. Industrial and Commercial Facility BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Screen Existing and New Industrial Facilities</b></p>	<p><b>Schedule A.4.b.i</b> <b>Schedule A.4.b.ii</b></p>	<p><b>BMP Responsibility:</b> Environmental Affairs</p> <p><b>BMP Description:</b> Significant areas within the Port of Portland are already covered by an existing 1200 series NPDES industrial stormwater permit. Such areas include PDX, select Port-operated marine terminals, and select tenant properties. Screening of existing and new industrial facilities would primarily apply to existing and new tenants occupying property not otherwise subject to an industrial stormwater permit.</p> <p>The Port of Portland will coordinate with the City of Portland in order to identify facilities potentially subject to an industrial stormwater permit and notify the facility and DEQ of such finding. Such process for coordination will be established over the permit term.</p> <p><b>BMP Implementation Tasks:</b></p> <p>1) Coordinate with the City of Portland over the permit term to develop a process to screen industrial facilities (Responsibility: Environmental Affairs).</p>	<ul style="list-style-type: none"> <li>• Coordinate with the City of Portland on a process for screening industrial facilities over the permit term.</li> </ul>	<ul style="list-style-type: none"> <li>• Track leaseholds that have an industrial permit.</li> </ul>
<p><b>Implement an Inspection Program for Significant Pollutant Source Areas</b></p>	<p><b>Schedule A.4.b.iii</b></p>	<p><b>BMP Responsibility:</b> Marine Environmental, Aviation Environmental.</p> <p><b>BMP Description:</b> Port of Portland property includes a variety of industrial facilities both with and without industrial stormwater permits.</p> <p>The Port has a list that will be updated annually of facilities that have the potential to contribute substantial pollutant loading to the MS4 (i.e., priority facilities). Priority facilities are inspected annually based on an evaluation of several criteria outlined in the Port’s documented procedures.</p> <p>The City of Portland conducts inspections at facilities with 1200-Z NPDES permits.</p> <p><b>BMP Implementation Tasks:</b></p> <p>1) Conduct inspections of priority facilities annually, or more frequently if needed (Responsibility: Marine Environmental, Aviation Environmental).</p> <p>2) If inspections identify conditions needing improvements, coordinate with tenant and Port property manager to ensure appropriate control measures to minimize pollutant loading from priority facilities (Responsibility: Aviation Environmental, Marine Environmental).</p>	<ul style="list-style-type: none"> <li>• Conduct annual inspections at priority facilities.</li> <li>• Document the procedure and rationale for selection of “priority facilities”, by November 1, 2011.</li> </ul>	<ul style="list-style-type: none"> <li>• Track the number of facilities inspected annually.</li> <li>• Track improvements made to priority facilities as a result of inspections.</li> </ul>



### **7.3. Element #3 - Construction Site Runoff Control**

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #3 are outlined under Schedule A.4.c.

- i. Include ordinances or other enforceable regulatory mechanism that requires erosion and sediment controls designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State.*
- ii. Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.*
- iii. Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.*
- iv. Describe site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion and sediment control plans for sites disturbing one acre or greater must be developed in accordance with the State of Oregon's 1200-C permit requirements.*
- v. Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion and sediment control plan is properly implemented.... Inspections must be documented, including photographs and monitoring results as appropriate.*
- vi. Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.*

The Port complies with its NPDES 1200-CA Permit, NPDES 1200-C permits as required by DEQ, and the City of Portland's erosion control ordinance which address these requirements. In addition, these requirements are incorporated into contracts to the extent construction site operators are performing work for the Port. Therefore, control of construction site runoff is addressed independently from this SWMP and BMPs as outlined in Table 3-1.

## 7.4 Element #4 - Education and Outreach

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #4 are outlined under Schedule A.4.d. The Port BMPs or other activities that are conducted to meet these permit requirements are listed below as well.

Table 7-4 provides a detailed description of each BMP, including responsibility, implementation tasks, and documentation.

- i. *Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges....The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.*

***BMP(s) to Address:***

- **Implement Public Education Measures to Protect Stormwater Quality**

- ii. *Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.*

***BMP(s) to Address:***

- **Implement Public Education Measures to Protect Stormwater Quality**
- **Implement a Tenant BMP Program**

- iii. *Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals.*

***BMP(s) to Address:***

- **Require Training and Licensing for Staff Conducting Pest Management Activities**
- **Implement a Tenant BMP Program**

- iv. *Provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.*

***BMP(s) to Address:***

- **Implement a Program for Tracking and Maintenance of Private Structural Controls (see Table 7-8)**
- **Implement a Tenant BMP Program**

- v. *Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.*

***BMP(s) to Address:***

- **Provide Erosion Prevention and Sediment Control Training for Construction Inspectors.**

- vi. *Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program.*

***BMP(s) to Address:***

- **Participate in a Public Education Effectiveness Evaluation**

- vii. *Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks 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, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance.*

***BMP(s) to Address:***

- **Require Training and Licensing for Staff Conducting Pest Management Activities**
- **Implement a Spill Response Training Program**
- **Implement a Staff Training Program for Stormwater Pollution Prevention**

- viii. *Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.*

***BMP(s) to Address:***

- **Implement an Illicit Discharge Detection and Elimination Program (see Table 7-1)**

Table 7-4. Education and Outreach BMPs				
BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement Public Education Measures to Protect Stormwater Quality</b></p>	<p>Schedule A.4.d.i Schedule A.4.d.ii</p>	<p><b>BMP Responsibility:</b> Environmental Affairs, Marine Environmental, MID Properties Maintenance, MFM, PDX Maintenance, Aviation Environmental</p> <p><b>BMP Description:</b> The Port implements a public education strategy and conducts a variety of outreach activities to educate the public and employees on the protection of stormwater quality. Such educational measures include installation of catch basin decals and signage to prevent/report illicit discharges.</p> <p>Some of the City of Portland’s outreach activities are also applicable and target Port audiences.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) During inspections conducted under BMP – “Implement Inspections of Significant Pollutant Source Areas”, and BMP – “Implement a Stormwater System Cleaning and Maintenance Program”, identify catchbasins where it would be relevant and appropriate to apply “Dump No Waste, Drains to Stream” decals and apply decals (Responsibility: Aviation Environmental, Marine Environmental, MID Properties Maintenance, MFM, PDX Maintenance).</li> <li>2) Include stormwater education materials at Port sponsored outreach events. (Responsibility: Environmental Affairs)</li> </ol>	<ul style="list-style-type: none"> <li>● “Dump No Waste, Drains to Stream” decals will be applied to catch basins associated with all new Port construction annually (with the exception of FAA restricted areas).</li> <li>● Provide stormwater education materials at outreach events.</li> </ul>	<ul style="list-style-type: none"> <li>● Track the number of “Dump No Waste, Drains to Stream” decals applied to catch basins.</li> <li>● Track events where stormwater educational materials were made available.</li> </ul>

**Table 7-4. Education and Outreach BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement a Tenant Stormwater BMP Program</b></p>	<p>Schedule A.4.d.ii Schedule A.4.d.iii Schedule A.4.d.iv Schedule A.4.g.ii Schedule A.4.h.ii</p>	<p><b>BMP Responsibility:</b> Aviation Environmental, Marine Environmental, Environmental Affairs, Aviation and Marine and Industrial Development (MID) Properties Management <b>BMP Description:</b> Outreach efforts directed to tenants in MID and PDX can assist in the reduction of pollutant discharges from municipal separate storm sewers.</p> <p>Port staff will provide a variety of technical assistance to tenants on stormwater issues and BMPs as needed. Such documentation may include educational information on pesticide, herbicide, and fertilizer management and information related to appropriate spill response procedures.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Maintain an inventory of all tenants or lease holders (Responsibility: Environmental Affairs, Aviation and MID Properties Management).</li> <li>2) Provide technical assistance to the tenants regarding structural and non-structural/ source control stormwater BMPs (Responsibility: Marine Environmental, MID and Aviation Properties Management, Aviation Environmental).</li> <li>3) Maintain an active property management role by conducting inspections of property vacated by tenants to ensure proper disposal of waste materials (Responsibility: Marine Environmental, Aviation Environmental, Aviation and MID Properties Management).</li> </ol>	<ul style="list-style-type: none"> <li>• Compile/ update a leasehold inventory annually.</li> <li>• Provide technical information related to structural and non-structural/ source control BMPs to tenants over the permit term.</li> </ul>	<ul style="list-style-type: none"> <li>• Verify the completion and/ or update of a leasehold inventory.</li> <li>• Track technical assistance documentation provided to tenants.</li> <li>• Describe property management activities for lease termination inspections.</li> </ul>
<p><b>Require Training and Licensing for Staff Conducting Pest Management Activities</b></p>	<p>Schedule A.4.d.iii Schedule A.4.d.vii Schedule A.4.g.ii</p>	<p><b>BMP Responsibility:</b> MID Properties Maintenance, PDX Maintenance, Marine Facilities Maintenance (MFM)</p> <p><b>BMP Description:</b> The Port ensures that all employees (contractors and Port employees) performing pesticide application are trained and licensed by the Oregon Department of Agriculture (ODA).</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Require all pesticide applicators to obtain and maintain licenses issued by the Oregon Department of Agriculture.</li> </ol>	<ul style="list-style-type: none"> <li>• All pesticide applicators will be licensed by the ODA.</li> </ul>	<ul style="list-style-type: none"> <li>• Track the Port employees who are ODA-licensed pesticide applicators.</li> </ul>

Table 7-4. Education and Outreach BMPs				
BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<b>Provide Erosion Prevention and Sediment Control Training for Construction Inspectors</b>	Schedule A.4.d.v	<p><b>BMP Responsibility:</b> Aviation Environmental</p> <p><b>BMP Description:</b> The Port holds a NPDES 1200-CA Permit for construction activities on Port properties. Construction activities require specific erosion prevention and sediment control measures to meet the requirements of the 1200-CA Permit. The 1200-CA Permit requirements are detailed in Port construction specifications and provided to construction site operators as necessary.</p> <p>Aviation Environmental provides Port construction inspectors with annual erosion prevention and sediment control training which focuses on construction stormwater BMPs.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Provide annual erosion prevention and sediment control training for all Port construction inspectors.</li> </ol>	<ul style="list-style-type: none"> <li>• Erosion prevention and sediment control training will be conducted annually for Port construction inspectors.</li> </ul>	<ul style="list-style-type: none"> <li>• Track the number of employees receiving erosion and sediment control training.</li> </ul>
<b>Participate in a Public Education Effectiveness Evaluation</b>	Schedule A.4.d.vi	<p><b>BMP Responsibility:</b> Environmental Affairs</p> <p><b>BMP Description:</b> By 11/1/2014, the Port of Portland will coordinate with other local, Phase I jurisdictions to provide information related to an effectiveness evaluation. The effectiveness evaluation information will focus on assessing changes in targeted behaviors and will allow for additional information that can be used in adaptive management of the Port's education and outreach strategy.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Coordinate with other, local Phase I jurisdictions in providing/ compiling information regarding a public education effectiveness evaluation by 11/1/2014.</li> </ol>	<ul style="list-style-type: none"> <li>• Coordinate with other local, Phase I jurisdictions regarding a public education effectiveness evaluation by 11/1/2014.</li> </ul>	<ul style="list-style-type: none"> <li>• Track related efforts annually.</li> </ul>

Table 7-4. Education and Outreach BMPs				
BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<b>Implement a Spill Response Training Program</b>	Schedule A.4.d.vii	<p><b>BMP Responsibility:</b> Marine Environmental</p> <p><b>BMP Description:</b> Facilities on Port property with industrial stormwater permits are required to conduct spill training as part of their Stormwater Pollution Control Plans (SWPCP). In addition, the Navigation Facility implements a Spill Prevention, Control and Countermeasures (SPCC) Plan. This plan also includes spill training requirements for designated staff.</p> <p>Marine Environmental conducts annual spill prevention and response training for designated employees.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Distribute updated emergency contact information and spill response procedures to employees responsible for responding to spills.</li> <li>2) Conduct general spill response training annually for designated employees.</li> </ol>	<ul style="list-style-type: none"> <li>• Annually train designated Port employees on spill response.</li> <li>• Document the procedure to determine which employees will receive spill training, by November 1, 2011.</li> </ul>	<ul style="list-style-type: none"> <li>• Document spill response training activities.</li> </ul>

**Table 7-4. Education and Outreach BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement a Staff Training Program for Stormwater Pollution Prevention</b></p>	<p>Schedule A.4.d.vii</p>	<p><b>BMP Responsibility:</b> Environmental Affairs, MID Environmental, Aviation Environmental</p> <p><b>BMP Description:</b> The Port of Portland collectively conducts a variety of training related to stormwater pollution prevention, depending on the department. For those areas operating under a 1200-series industrial stormwater permit, staff training on stormwater pollutant prevention is required during the term of the permit. All new employees receive stormwater related training during orientation.</p> <p>Additionally, Port staff attend a variety of educational presentations and conferences throughout the year. The Port participates with state and local agencies and groups involved with a broad range of water quality issues including stormwater. Examples of organizations and groups the Port is involved with include the Clean River Cooperative, Harbor Safety Committee, Columbia Slough Watershed Council, Association of Clean Water Agencies, Bi-State task Force, and DEQ technical advisory committees. Such meetings and conference attendance allows for additional educational opportunities for staff.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Continue to conduct training for new employees during their orientation. (Responsible Party: Environmental Affairs)</li> <li>2) Provide targeted annual stormwater pollution prevention training for specific staff that conducts activities relevant to stormwater. (Responsible Party: MID Environmental, Aviation Environmental)</li> <li>3) Port staff to attend conferences and educational presentations. (Responsible Parties: MID Environmental, Aviation Environmental, Environmental Affairs)</li> </ol>	<ul style="list-style-type: none"> <li>• Participate in water quality organizations and stakeholder groups annually.</li> <li>• Conduct annual training.</li> <li>• Conduct new employee training.</li> </ul>	<ul style="list-style-type: none"> <li>• Document all staff training activities.</li> <li>• Document attendance at conferences.</li> </ul>



## **7.5 Element #5 - Public Involvement and Participation**

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, the language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #5 are outlined under Schedule A.4.e. The Port BMPs or other activities that are conducted to meet these permit requirements are listed below as well.

Table 7-5 provides a detailed description of each BMP, including responsibility, implementation tasks, and documentation.

*Co-permittees must implement a public participation approach that provides opportunities for the public to effectively participate in the development, implementation and modification of the co-permittee's stormwater management program. The approach must include provisions for receiving and considering public comments on the monitoring plan due to the Department June 1, 2011, annual reports, SWMP revisions, and the TMDL pollutant load reduction benchmark development.*

### ***BMP(s) to Address:***

- ***Provide for Public Participation with SWMP and Benchmark Submittals***
- ***Implement a public participation approach that provides opportunities for the public to effectively participate in the implementation of the stormwater management program.***

<b>Table 7-5. Public Involvement and Participation BMPs</b>				
<b>BMP</b>	<b>Permit Requirement</b>	<b>BMP Implementation</b>	<b>Measurable Goals</b>	<b>Tracking Measures</b>
<b>Provide for Public Participation in SWMP Updates and Benchmark Submittals</b>	<b>Schedule A.4.e.</b>	<p><b>BMP Responsibility:</b> Environmental Affairs</p> <p><b>BMP Description:</b> Schedule A.4.e of the Port’s MS4 NPDES permit requires the Port to provide opportunity for public participation in the development, implementation, and modification of the Port’s Stormwater Management Plan (SWMP) and pollutant load reduction benchmark development.</p> <p>SWMP revisions and pollutant load reduction benchmarks are required for submittal to DEQ at the permit renewal (180-days prior to permit expiration). Prior to submittal of these items, the Port will provide the public with an opportunity to comment on the revisions to the SWMP and proposed pollutant load reduction benchmarks for a minimum of 30 days. Comments on these documents will be collected and considered, and response to the comments will be publically provided.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Provide opportunities for public comment on the SWMP and pollutant load reductions benchmarks for a minimum of 30 days prior to submittal of the permit renewal to DEQ.</li> </ol>	<ul style="list-style-type: none"> <li>• Provide for public participation on the SWMP revisions and pollutant load reduction benchmarks.</li> <li>• Provide public access to the Port’s most current MS4 Annual Report via its public website.</li> </ul>	<ul style="list-style-type: none"> <li>• Report annually on public participation in these areas.</li> </ul>

**Table 7-5. Public Involvement and Participation BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement a public participation approach that provides opportunities for the public to effectively participate in the implementation of the stormwater management program.</b></p>	<p><b>Schedule A.4.e</b></p>	<p><b>BMP Responsibility: PDX Environmental, MID Environmental, Environmental/Community Affairs</b></p> <p><b>BMP Description: PDX Environmental, MID Environmental, and Environmental Affairs will work together to identify appropriate opportunities for the public to be involved in the implementation of the Port’s MS4 program and implement these projects over the permit term.</b></p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li><b>1) Determine what projects are appropriate for public involvement. (PDX Environmental, MID Environmental, Environmental/Community Affairs)</b></li> <li><b>2) Make the public aware of the selected involvement opportunities via the Port’s website, and the Columbia Slough Watershed Council. (Environmental/Community Affairs)</b></li> <li><b>3) Implement selected projects and document public involvement. (PDX Environmental, MID Environmental, Environmental/Community Affairs)</b></li> </ol>	<ul style="list-style-type: none"> <li>• Document what projects are identified as public involvement opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe any projects implemented where the public has opportunity to participate and the extent of public involvement for each.</li> </ul>

## 7.6 Element #6 – Post-Construction Site Runoff Control

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #6 are outlined under Schedule A.4.f.

*f. Post-Construction Site Runoff: Co-permittees must continue to implement their post-construction stormwater pollutant and runoff control program.*

- i. By January 1, 2014, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace 500 ft<sup>2</sup> of impervious surface must meet the following conditions:*
  - 1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable. The site-specific management practices should optimize on-site retention based on the site conditions;*
  - 2) Reduce site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4) to minimize hydrological and water quality impacts from impervious surfaces;*
  - 3) Prioritize and include implementation of Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches; and,*
  - 4) Capture and treat 80% of the annual average runoff volume, based on a documented local or regional rainfall frequency and intensity.*
- ii. Co-permittees must identify, and where practicable, minimize or eliminate code and development standard barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure), and have been identified by and are within the jurisdiction of the permittee. If the minimization or elimination of a code and development standard barrier conflicts with public and environmental health and safety standards, the co-permittee may modify the code and development standard accordingly to address such conflicts. Co-permittees must review code and development standards for minimization or elimination, and appropriately modify within three years of identification of the code or development standard as a barrier.*
- iii. To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the co-permittees must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by January 1, 2014 that, at a minimum, includes the following:*
  - 1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold;*
  - 2) A defined design storm that allows for identification of an acceptable continuous simulation method to address the capture and treatment of 80% of the annual average runoff volume*
  - 3) Applicable LID, GI or similar stormwater runoff reduction approaches, including the practical use of these approaches;*
  - 4) Conditions where the implementation of LID, GI or equivalent approaches may be impracticable; and,*
  - 5) BMPs, including a description of the following:*

- a. *Site-specific design requirements;*
- b. *Design requirements that do not inhibit maintenance;*
- c. *Conditions where the BMP applies;*

6) *Pollutant removal efficiency performance goals that maximize the reduction in discharge of pollutants.*

- iv. *Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section. The Port of Portland may address this permit requirement by documenting that all internal Port of Portland development projects meet the Post-Construction Site Runoff performance standards required in this subsection.*
- v. *Where a new development or redevelopment project site is characterized by factors limiting use of on-site stormwater management methods to achieve the post-construction site runoff performance standards, such as high water table, shallow bedrock, poorly-drained or low permeable soils, contaminated soils, steep slopes or other constraints, the Post-Construction Stormwater Management program must require equivalent measures, such as off-site stormwater quality management. Off-site stormwater quality management may include off-site mitigation, such as construction of a structural stormwater facility within the sub-watershed, a stormwater quality structural facility mitigation bank or a payment-in-lieu program.*
- vi. *A description of the enforcement response procedures the co-permittee will follow when addressing project compliance issues with the enforceable post-construction stormwater management performance standards.*

The Port has identified the need to develop Port-specific post-construction standards that consider facility and site-specific requirements and operations constraints for marine terminals and airports (including Federal Aviation Administration requirements). The Port will adopt its own Port facility-specific development standards. Until that time, Port development/redevelopment projects will meet the permit performance conditions through conformance with the City of Portland’s Stormwater Management Manual with the exception of the PDX airfield (due to operational constraints). PDX will be the focus for the first set of post-construction development standards.

***BMP(s) to address:***

- **Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards**

Table 7-6. Post Construction Site Runoff BMPs				
BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards	Schedule A.4.f. Schedule A.6.c	<p><b>BMP Responsibility:</b> Environmental Affairs, Marine Environmental, Aviation Environmental, Engineering</p> <p><b>BMP Description:</b> Schedule A.4.f of the Port’s MS4 NPDES permit requires the Port to implement a post-construction storm water pollutant and runoff control program. Port development/redevelopment projects meet the permit performance conditions through conformance with the City of Portland’s Stormwater Management Manual with the exception of the PDX airfield (due to operational constraints). The Port will continue to conform with the City’s standard for all but the PDX airfield until the Port has adopted Port facility-specific development standards.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>2) By <b>January 1, 2014</b>, adopt and implement Port-wide post-construction standards for development and redevelopment. Airport specific standards will be consistent with FAA and airport operations requirements.</li> <li>3) By <b>December 2012</b>, update Intergovernmental Agreement (IGA) with the City of Portland to clarify responsibilities so that one set of post-construction standards are applied to the Port’s MS4, avoiding duplication and conflicting requirements.</li> <li>4) By <b>end of permit term</b>, design and initiate construction on a stormwater capital improvement retrofit to address at least one applicable TMDL pollutant of concern.</li> </ol>	<ul style="list-style-type: none"> <li>• Adopt Port-wide post-construction development/redevelopment standards by <b>January 1, 2014</b>.</li> <li>• Update IGA with the City of Portland by <b>December 2012</b></li> <li>• Design and initiate construction on a stormwater retrofit project to address a TMDL pollutant of concern.</li> </ul>	<ul style="list-style-type: none"> <li>• Document the design, construction, and rationale for the retrofit project addressing a TMDL pollutant of concern.</li> </ul>

## 7.7 Element #7 – Pollution Prevention for Municipal Operations

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #7 are outlined under Schedule A.4.g. The Port BMPs or other activities that are conducted to meet these permit requirements are listed below as well.

Table 7-7 provides a detailed description of each BMP, including responsibility, implementation tasks, and documentation.

- i. *Operate and maintain public streets, roads and highways for which the permittee has authority in a manner designed to minimize the discharge of stormwater pollutants to the MS4, including pollutants discharged as a result of deicing activities;*

***BMP(s) to Address:***

- **Implement a Street and Vehicle Maneuvering Area Cleaning and Maintenance Program**

- ii. *Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;*

***BMP(s) to Address:***

- **Limit Landscape Maintenance Activities Impact on Stormwater**
- **Require Training and Licensing for Staff Conducting Pest Management Activities (see Table 7-4)**
- **Implement a Tenant BMP Program (see Table 7-4)**

- iii. *Inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit;*

- **Implement a Street and Vehicle Maneuvering Area Cleaning and Maintenance Program**
- **Implement a Stormwater System Cleaning and Maintenance Program (this BMP is provided under Element #8 of the SWMP)**

- iv. *Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary;*

***BMP(s) to Address:***

**Implement a Program to Limit Infiltration from Port-Owned Sanitary Sewer System to the MS4**

- v. *Implement a strategy to prevent or control the release of materials related to fire-fighting training activities; and,*

***BMP(s) to Address:***

- **The only fire fighting training facility is located at PDX, which operates under a 1200-COLS permit.**

- vi. *Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;*

***BMP(s) to Address:***

- **The City of Portland manages water quality improvements on a master planning level.**



Table 7-7. Pollution Prevention for Municipal Operation BMPs				
BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement a Street and Vehicle Maneuvering Area Cleaning and Maintenance Program</b></p>	<p><b>Schedule A.4.g.i</b></p>	<p><b>BMP Responsibility:</b> Marine Facilities Maintenance (MFM), Marine Environmental, MID Properties Maintenance, PDX Maintenance</p> <p><b>BMP Description:</b> The Port has limited responsibility with regard to roadway maintenance, as the City conducts activities affecting the right-of-way throughout the City boundary, including some Port operating areas.</p> <p>PDX Maintenance conducts roadway maintenance on specific Port-managed areas including Frontage Road, Airport Way, PDX employee parking lots, sections of 82<sup>nd</sup> Avenue and Airtrans Way. MFM conducts pavement maintenance throughout the Port-managed areas and select leaseholds of the marine terminals. MID Properties Maintenance contracts pavement repair for Port-managed areas of the industrial parks. The Port conducts sweeping and deicing activities as needed to maintain safe operations at Port-managed locations throughout Port property.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Sweep the McCarthy Park (Swan Island) parking lot annually. (Responsibility: MID Properties Maintenance).</li> <li>2) Sweep Port-managed areas of the marine terminals annually. If additional sweeping is needed, Marine Environmental will coordinate with MFM staff (Responsibility: Marine Environmental, MFM).</li> <li>3) Sweep Airport Way, Frontage Road and PDX employee parking lots twice per week in winter and once per week in summer (Responsibility: PDX Maintenance).</li> <li>4) Maintain and repair roadway areas to minimize pollutant impacts to stormwater as needed (Responsibility: MFM, PDX Maintenance).</li> <li>5) Follow manufacturer’s recommendation for application of deicing products (Responsibility: MFM, PDX Maintenance, MID Properties Maintenance).</li> </ol>	<ul style="list-style-type: none"> <li>• Sweep McCarthy Park parking lot annually.</li> <li>• Sweep Port-managed, accessible areas of the marine terminals annually.</li> <li>• Sweep Airport Way, Frontage Road, and the PDX employee parking lots a minimum of once per week.</li> </ul>	<ul style="list-style-type: none"> <li>• Track sweeping frequency at McCarthy Park.</li> <li>• Track sweeping frequency at the marine terminals.</li> <li>• Track sweeping frequency at Airport Way, Frontage Road and the PDX employee parking lots.</li> <li>• Report amount of materials removed. Materials will include those collected from catchbasins and other structural devices (see</li> </ul>

<b>Table 7-7. Pollution Prevention for Municipal Operation BMPs</b>				
<b>BMP</b>	<b>Permit Requirement</b>	<b>BMP Implementation</b>	<b>Measurable Goals</b>	<b>Tracking Measures</b>
		6) As necessary, decant street sweeping wastes in covered, water-tight drop boxes (Decant Water Collection Boxes) that drain to an approved sanitary sewer discharge point.		BMP: Implement a Stormwater System Cleaning and Maintenance Program).
<b>Limit Landscape Maintenance Activities Impact on Stormwater</b>	<b>Schedule A.4.g.ii</b>	<p><b>BMP Responsibility:</b> MID Properties Maintenance, Marine Facilities Maintenance (MFM), PDX Maintenance, Environmental Affairs</p> <p><b>BMP Description:</b> The Port has a program to control the use and application of pesticides, herbicides and fertilizers on Port property (with the exception of the airfield). This program includes responsibilities for MID Properties Maintenance, MFM, and PDX Maintenance regarding landscape activities. As necessary, the program will be updated to meet permit requirements.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Apply pesticides and fertilizers, using an Integrated Pest Management approach to minimize impacts to stormwater (Responsibility: MID Properties Maintenance, PDX Maintenance, MFM).</li> <li>2) Review the Port’s program to control pesticides, herbicides and fertilizers annually, and update as appropriate. (Responsibility: Environmental Affairs, MFM, PDX Maintenance).</li> <li>3) Maintain an inventory of pesticides used on Port property and update annually (Responsibility: Environmental Affairs).</li> </ol>	<ul style="list-style-type: none"> <li>• Annually update the Port’s pesticide use inventory.</li> </ul>	<ul style="list-style-type: none"> <li>• Document the annual pesticide use update.</li> </ul>

**Table 7-7. Pollution Prevention for Municipal Operation BMPs**

BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement a Program to Limit Infiltration from Port-Owned Sanitary Sewer System to the MS4</b></p>	<p><b>Schedule A.4.g.iv</b></p>	<p><b>BMP Responsibility:</b> PDX Maintenance, MFM, PDX Business/Properties, and Aviation Facilities Maintenance.</p> <p><b>BMP Description:</b> The Port owns a portion of the sanitary sewer system at Portland International Airport as well as at several marine terminals. These systems are maintained on a regular basis by Port of Portland staff to ensure proper operation and limit the potential for infiltration or overflow into the Port’s MS4. The Port’s maintenance program includes the following elements (listed as implementation tasks below).</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Monitor pump stations electronically to ensure proper function of Aviation pump stations. (PDX Maintenance)</li> <li>2) Monitor pump stations through weekly inspections and audible/visual alarms to ensure proper function of MID pump stations. (MFM)</li> <li>3) Conduct annual pump station maintenance, including flushing, float and alarm testing, and debris removal for all pump stations. (PDX Maintenance, MFM)</li> <li>3) Clean Port-owned grease interceptor vaults at PDX on an annual basis. (Aviation Facilities Maintenance)</li> <li>4) Continue to implement the tenant FOG (fats/oils/grease) program to ensure proper handling of these materials at PDX. (PDX Business/Properties)</li> </ol>	<ul style="list-style-type: none"> <li>• Document completion of implementation tasks (2-4) associated with this BMP (with PDX Maintenance, Aviation Facilities Maintenance, MFM, and PDX Business/Properties)</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain a list of Port tenants implementing the FOG program.</li> </ul>

## 7.8 Element #8 – Structural Stormwater Controls Operations and Maintenance

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to Element #8 are outlined under Schedule A.4.h. The Port BMPs or other activities that are conducted to meet these permit requirements are listed below as well.

Table 7-8 provides a detailed description of each BMP, including responsibility, implementation tasks, and documentation.

- i. *Co-permittees must implement a program by January 1, 2013 to verify that stormwater structural facilities and controls are inventoried, mapped, inspected, operated and maintained for effective pollutant removal, infiltration and/or flow control. At a minimum, the program must include the following: 1) Legal authority to inspect and require effective operation and maintenance; 2) A program to inventory and map public and private stormwater treatment facilities as provided under Schedule A.4.h.ii.; and, 3) Public and private stormwater facility inspection and maintenance requirements for stormwater facilities that have been inventoried and mapped as provided under Schedule A.4.h.ii.*

### ***BMP(s) to Address:***

- **Implement a Stormwater System Cleaning and Maintenance Program**
  - **Implement a Program for the Tracking and Maintenance of Private Structural Controls**
- ii. *As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a plan or approach that guides the long-term maintenance and management of all publicly-owned and identified privately-owned stormwater structural facilities and controls. At a minimum, the plan or approach must describe the following:*
    1. *Publicly-owned or operated stormwater quality facilities inventory and mapping process, inspection and maintenance schedule, inspection, operation and maintenance criteria and priorities, description of inspector type and staff position or title, and, inspection and maintenance tracking mechanisms; and*
    2. *Privately-owned or operated stormwater quality facilities procedures for and types of stormwater facilities that will be inventoried and mapped, inspection criteria, rationale, priorities, inspection frequency and procedures, required training or qualifications to inspect private stormwater facilities, reporting requirements, and, inspection and maintenance tracking mechanism. At a minimum, the inventory and mapping must include the following:*
      - (i) *Private stormwater management facilities for new development and redevelopment projects constructed under the co-permittee's post-construction management manual or equivalent document after February 1, 2011.;*
      - (ii) *Private stormwater management facilities identified by the co-permittee and used to estimate the pollutant load reduction as part of the TMDL benchmark evaluation; and,*
      - (iii) *Any major private stormwater management facilities or structural controls.*

### ***BMP(s) to Address:***

- **Implement a Stormwater System Cleaning and Maintenance Program**
- **Implement a Tenant BMP Program (see Table 7-4)**

<b>BMP</b>	<b>Permit Requirement</b>	<b>BMP Implementation</b>	<b>Measurable Goals</b>	<b>Tracking Measures</b>
<b>Implement a Stormwater System Cleaning and Maintenance Program</b>	<b>Schedule A.4.h.i</b> <b>Schedule A.4.h.ii</b>	<p><b>BMP Responsibility:</b> Marine Environmental, Marine Facilities Maintenance (MFM), Properties, Environmental Affairs</p> <p><b>BMP Description:</b> The Port owns and operates stormwater system features within the Port’s MS4 permit boundary. Stormwater system features include pipes, catch basins, and Port-owned and operated structural controls such as sedimentation manholes, oil/water separators, hydrodynamic devices, filters, and swales. Stormwater system features are currently mapped in GIS.</p> <p>The Port implements a stormwater system inspection and maintenance program per provisions outlined in Ordinance 361, which provides the Port with authority to control the contribution of pollutants to storm sewers owned or operated by the Port for areas not covered by a 1200-series industrial stormwater permit. The Port has documented inspection and maintenance procedures.</p> <p>By <b>June 30, 2012</b>, the Port will review the existing inspection and maintenance procedures in accordance with requirements outlined in the Port’s MS4 NPDES permit.</p> <p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Continue to implement a stormwater system feature inspection and maintenance program. (Responsibility: Marine Environmental, MFM, Properties Maintenance).</li> <li>2) Inspect and clean catch basins (as necessary) annually in Port-managed areas of Marine and Industrial Development (Responsibility: Marine Environmental, MFM).</li> <li>3) Conduct litter pickup and vegetation management activities to ensure adequate access and performance of all stormwater</li> </ol>	<ul style="list-style-type: none"> <li>• Inspect and clean all catch basins within the Port-managed areas not otherwise covered by a 1200-series industrial stormwater permit annually.</li> <li>• Inspect and maintain all Port-owned and operated structural controls within the Port-managed areas not otherwise covered by a 1200-series industrial stormwater permit annually.</li> </ul>	<ul style="list-style-type: none"> <li>• Track number of catch basins cleaned annually.</li> <li>• Track cleaning frequency for the Port owned and operated structural stormwater controls by facility type.</li> <li>• Track storm sewer system pipe cleaning activities annually.</li> <li>• Track updates to the stormwater system features maps.</li> <li>• Report amount of materials removed. Materials will include those collected from street sweeping (see BMP: Implement a</li> </ul>

<b>Table 7-8. Structural Stormwater Control Operation and Maintenance BMPs</b>				
<b>BMP</b>	<b>Permit Requirement</b>	<b>BMP Implementation</b>	<b>Measurable Goals</b>	<b>Tracking Measures</b>
		<p>system features as needed. (Responsibility: Marine Environmental, MFM, Properties Maintenance)</p> <p>4) Coordinate updates of storm sewer system maps to include updated stormwater conveyance system features and Port-owned and operated structural controls (Responsibility: Marine Environmental, Environmental Affairs).</p> <p>5) By <b>June 30, 2012</b>, review and update the existing inspection and maintenance procedures for structural stormwater controls in accordance with requirements outlined in the Port's MS4 NPDES permit.</p> <p>6) As necessary, decant storm system and catchbasin cleaning wastes in covered, water-tight drop boxes (Decant Water Collection Boxes) that drain to an approved sanitary sewer discharge point.</p>		Street and Vehicle Maneuvering Area Cleaning and Maintenance Program).

Table 7-8. Structural Stormwater Control Operation and Maintenance BMPs				
BMP	Permit Requirement	BMP Implementation	Measurable Goals	Tracking Measures
<p><b>Implement a Program for the Tracking and Maintenance of Private Structural Controls</b></p>	<p>Schedule A.4.h.i Schedule A.4.d.iv</p>	<p><b>BMP Responsibility:</b> Marine Environmental, Environmental Affairs</p> <p><b>BMP Description:</b> For new and re-development activities, the City of Portland requires the implementation of stormwater management facilities. Every permitted project with at least one stormwater management facility is required to submit an operations and maintenance form and plan. The O&amp;M plan must address in detail, the procedures necessary to maintain each facility type in good working condition. The development of Port properties is regulated by the City of Portland through their plan review process. Therefore, maintenance of resulting facilities is regulated by the City of Portland.</p> <p>In accordance with the BMP: Implement a Tenant BMP Program (see Table 7-4), over the permit term, Port staff will coordinate with the City of Portland to develop an inventory and mechanism for tracking private structural control facility installations on tenant properties. Such inventory and tracking mechanism shall include provisions for the mapping of these private structural controls.</p> <p>The Port currently implements an inspection and maintenance program for Port-owned structural stormwater controls per established procedures. By <b>June 30, 2012</b> the Port will review the existing inspection and maintenance procedures in accordance with requirements outlined in the Port's MS4 NPDES permit. In conjunction with this program, Port staff will provide information to tenants related to proper inspection and maintenance activities for such private structural control facilities.</p>	<ul style="list-style-type: none"> <li>• Develop an inventory and mechanism for tracking of private structural controls on tenant properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Track the number of existing and new private structural control facilities installed on Port-properties.</li> </ul>

<b>Table 7-8. Structural Stormwater Control Operation and Maintenance BMPs</b>				
<b>BMP</b>	<b>Permit Requirement</b>	<b>BMP Implementation</b>	<b>Measurable Goals</b>	<b>Tracking Measures</b>
		<p><b>BMP Implementation Tasks:</b></p> <ol style="list-style-type: none"> <li>1) Work with the City of Portland to establish and maintain an inventory of existing private structural control facilities on tenant properties by December 31, 2012. (Responsible Party: Marine Environmental, MID Properties Management, Environmental Affairs)</li> <li>2) Develop a program in conjunction with the City of Portland to track private structural control facilities on tenant properties over the <b>permit term</b>. (Responsible Party: MID Environmental, Environmental Affairs)</li> <li>3) By <b>June 30, 2012</b>, develop an updated inspection and maintenance procedure for structural stormwater controls for distribution to owners of private structural control facilities. (Responsible Party: MID Environmental, Environmental Affairs)</li> </ol>		



## 7.9 Stormwater Retrofit Project and Monitoring Component Requirements

The MS4 permit includes the following permit requirements listed in the italicized text below. In some cases, language for the listed permit requirements has been condensed. Applicable MS4 NPDES permit provisions related to the stormwater retrofit project and monitoring component requirements are outlined under Schedule A.6.c and B-1 through B-4. The Port BMPs or other activities that are conducted to meet these permit requirements are listed below as well.

Permit requirement (Schedule A.6.c):

- c. Identify one stormwater quality improvement project, at a minimum, to be initiated, constructed or implemented during the permit term. The project must target the reduction of applicable TMDL pollutant parameters and be associated with a Capital Improvement Project or other municipal retrofit project or strategy.*

***BMP(s) to Address:***

- **Develop, Adopt, and Implement New Port-Specific Post-Construction Runoff Control Standards.**

(Schedule B-1 through B-4):

*The Port must assist with monitoring efforts in conjunction with requirements as stated in Table B-1, Schedule B(1)(b).*

***BMP(s) to Address:***

- **Pursuant to an IGA, the Port of Portland and the City of Portland have a joint monitoring program conducted by the City to meet the requirements specified under Schedule B.**

## 8.0 SUMMARY OF THE PORT OF PORTLAND'S STORMWATER MONITORING ACTIVITIES

As part of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit requirements, permittees are required to develop and implement a stormwater monitoring program.

The NPDES stormwater monitoring program requires two components. The first component is program monitoring, which involves the tracking and assessment of programmatic activities, as described in the individual permittees Stormwater Management Plans (SWMP). The tracking and assessment is conducted through the use of measurable goals and tracking measures. The second component is environmental monitoring which includes the actual collection and analysis of stormwater/ surface water samples.

Six specific monitoring objectives are outlined in the Port's MS4 NPDES permit that should be addressed with the City's monitoring program. The six objectives are:

1. Evaluate the source(s) of the 2004/ 2006 303(d) listed pollutants applicable to the co-permittee's permit area.
2. Evaluate the effectiveness of Best Management Practices (BMPs) in order to help determine BMP implementation priorities;
3. Characterize MS4 runoff discharges based on land use type, seasonality, geography or other catchment characteristics;
4. Evaluate status and trends in receiving waters associated with MS4 stormwater discharges;
5. Assess the chemical, biological, and physical effects of MS4 discharges on receiving waters; and,
6. Assess progress towards meeting TMDL pollutant load reduction benchmarks.

The Port of Portland conducts a variety of programmatic monitoring activities that address specific monitoring objectives from this list. Additionally, the Port coordinates on environmental monitoring activities with the City of Portland via an intergovernmental agreement (IGA).