

STORMWATER MANAGEMENT PLAN FOR PHASE I PROPERTIES



March 31, 2008 Updated March 2011

Port of Seattle Stormwater Management Program for Phase I Properties

Table of Contents

Introduction	1
Port Overview	1
Permit Overview	
Key Implementation Dates	
SWMP Organization	4
Public Education Program (S6.E.1)	5
Public Involvement and Participation (S6.E.2)	7
Illicit Discharge Detection and Elimination (S6.E.3)	
	10
Construction Site Runoff Control (S6.E.4)	12
Post-Construction Stormwater Management for New Development and	
Redevelopment (S6.E.5)	15
Operation and Maintenance Program (S6.E.6)	17
Source Control in Existing Developed Areas (S6.E.7)	
Total Maximum Daily Load Requirements (S7)	23
Monitoring (S8)	24
nomoring (00)	······ <i>4</i> T
Reporting (S9)	
Conclusion	20
Conclusion	

Port of Seattle Stormwater Management Program for Phase I Properties Updated March 2011

Introduction

The Port of Seattle Seaport and Real Estate properties in the City of the Seattle (the Port) division of the Port of Seattle have produced this Stormwater Management Program (SWMP) to demonstrate compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) *Phase I Municipal Stormwater Permit*, issued January 17, 2007 and updated June 17, 2009 by the Washington State Department of Ecology (Ecology). The Port's SWMP provides an overview of the Port's activities related to stormwater management on properties covered by the Phase I Municipal Stormwater Permit (Phase I Properties). The SWMP was first submitted to Ecology in March 2008, along with the Port's first *Phase I Municipal Stormwater Permit* Annual Report. Annual updates to the SWMP accompany each subsequent year's Annual Report.

Port Overview

Within the City of Seattle, the Port owns, operates, and maintains approximately 1,200 acres of marine terminals, marinas, parks, and shoreline public access areas, and manages aquatic areas adjacent to port facilities. The Port's water-dependent facilities and activities are a substantial base of economic activity and employment within the City of Seattle, the port district, and the State of Washington.

The Port is a publicly owned and operated municipal corporation authorized by state law to plan, construct, operate, and maintain harbor improvements within the port district. Specifically, the Port provides marine services and cargo and passenger terminals for large vessels, serving diverse marine transportation businesses. The Port also provides facilities for all elements of the fishing industry, other water-dependent and water-related commercial and industrial uses, and recreational boats, including improvements at Fishermen's Terminal, the Maritime Industrial Center, Harbor Island Marina, Shilshole Bay Marina and Bell Harbor Marina.

The Port implements significant environmental restoration, cleanup, and habitat enhancement as part of its capital improvement programs and ongoing operations and management of Port facilities. The Port has also created 20 public shoreline access points where residents and visitors can get a first hand look at the City's maritime environment and economy.

Permit Overview

The NPDES program is a requirement of the Federal Clean Water Act. The Environmental Protection Agency (EPA) has delegated NPDES administration authority in Washington State to the Department of Ecology (Ecology). On January 17, 2007, Ecology issued the *Phase I Municipal Stormwater Permit* which addresses discharges from Large and Medium Municipal Separate Storm Sewer Systems (MS4s). An updated permit was issued June 17, 2009. The Port of Seattle (excluding Seattle-Tacoma International Airport) has been designated as a Secondary Permittee with coverage under the *Phase I Municipal Stormwater Permit*.

The *Phase I Municipal Stormwater Permit* authorizes the discharge of stormwater from the MS4 to surface waters and ground waters of the state. To do so, the Port must develop and implement a Stormwater Management Program (SWMP) for the Phase I Properties that is designed to protect water quality and reduce the discharge of pollutants from the MS4 to the maximum extent practicable, as defined by the *Phase I Municipal Stormwater Permit*.

The *Phase I Municipal Stormwater Permit* requires the Port to prepare written documentation of the SWMP for Phase I Properties. The written SWMP is to be updated as significant portions of the program are implemented (i.e. annually). In addition, the Port is required to submit Annual Reports by March 31 of each year to document the progress toward implementing the SWMP components on Phase I Properties over the prior calendar year.

Key Implementation Dates

The *Phase I Municipal Stormwater Permit* was issued on January 17, 2007, became effective February 16, 2007 and expires February 15, 2012. An updated permit was issued June 17, 2009 with an effective dated of July 17, 2009. The Port's official effective date is March 9, 2007 – the date on which the Port submitted a Notice of Intent for Phase I Properties to comply with the *Phase I Municipal Stormwater Permit*. Ecology is expected to revise and reissue another multi-year permit in 2012.

The *Phase I Municipal Stormwater Permit* includes phased deadlines for many of the program components over the first several years of the permit term. Table 1 shows a general overview of the deadlines and implementation dates for program activities. All deadlines and required implementation dates for the Phase I Properties are based on the March 9, 2007 effective date.

Introduction Continued

Table I NPDES Phase I Permit Requirements Implementation Schedule

	I	2	3	4	5
	2007	2008	2009	20 0	20
5.6 SWM Program for Port of Seattle					
E.I Educational materials to tenants and staff					
E.2 Public notice, SWM plan available to public					
E.3 Licit discharge detection and elimination (IDDE)					
a. Comply/adopt City's rules 🚽	Immediately				
 Develop policies to prohibit (IDDE) 					
b. Develop and implement enhancement plan					
 Gather data/map (ouftails, land use, pipes) 					
 Inspect outfalls (1/3 in 24 months) 					
 Develop/implement spill response plan 					
f. Provide training					
E.4 Construction site runoff					
a, Comply/adopt City's rules					
b. Train staff on erosion control					
E.5 Post-construction SWM					
 Comply/adopt City's rules 					
E.6 O/M program					
 Develop standards/complete manual 					
b. Annual inspection and maintainance			ANNUALLY		
c. Train staff					
E.7 Source control in developed areas					
a. SWPP plans					
c. Non-structural BMPs		•	🔶 lmmediately upo	n SWPP completion	
 List SWPP sites/map (inspect 80% by end of permit) 					
S.7 Compliance with TMDL Activities					
F. Comply with TMDL activities	To be determined				
S.8 Monitoring					
G Develop monitoring program					
 Notice to Ecology regarding collaboration 					
b. Description of monitoring program and QAPPs					
d. Full implementation					
H. Reporting					
S.9 Reporting (annually by 3/31)	ANNUALLY	+	+		

SWMP Organization

The Port intends to achieve compliance with the *Phase I Municipal Stormwater Permit* by implementing a suite of Best Management Practices (BMPs) on Phase I Properties over the next three to five years. A stormwater BMP is defined as any program, technology, process, siting criterion, operating method, measure, or device that controls, removes, or reduces pollution.

The current and proposed BMPs are grouped into the following program components organized according to the requirements in the *Phase I Municipal Stormwater Permit*:

- S6.E.1 Education Program (Section 1)
- S6.E.2 Public Involvement and Participation (Section 2)
- S6.E.3 Illicit Discharge Detection and Elimination (Section 3)
- S6.E.4 Construction Site Runoff Control (Section 4)
- S6.E.5 Post Construction Stormwater Management for New Development and Redevelopment (Section 5)
- S6.E.6 Operation and Maintenance Program (Section 6)
- S6.E.7 Source Control in Existing Developed Areas (Section 7)
- S7 Total Maximum Daily Load Requirements (Section 8)
- S8 Monitoring (Section 9)
- S9 Reporting (Section 10)

A detailed listing of the requirements and the proposed implementation plan relating to each program component are presented in the tables included in the remaining sections of this SWMP.

This updated SWMP documents BMPs implemented as of February 2011 and outlines a draft plan to meet permit deadlines and maintain compliance throughout the permit term. Note that this SWMP update (2011) does not include any changes to the proposed BMPs or implementation schedule of any program components. This update serves to document the progress to date in implementing the scheduled activities.

Section I—Public Education Program (S6.E.I)

Public Education Program (S6.E.I)

This section describes the permit requirements, programs, and planned activities related to Public Education.

Current activities in this area include:

- Brochure distributed to Seaport tenants and posted on Port of Seattle website.
- Stormwater management information posted on Port of Seattle website.
- Video shown to employees who attended HAZWOPER Training.
- Email distribution of Seaport Stormwater News Bulletin.
- Developed and published stormwater-related website specific to Seaport issues. Website includes *Phase I Municipal Stormwater Permit* information and a resource pages for tenants and the public to learn more about stormwater.

(http://www.dev.portseattle.org/community/environment-water/seaport/stormwater.shtml)

- Website update to expand educational information presented.
- Utilized a grant from Ecology to hire an education consultant to develop and implement tenant education program that is in addition to the Permit requirements. Activities performed by the education consultant include:
 - Prepared education outreach strategy.
 - Conducted site visits with tenants to educate them on their stormwater responsibilities, provides SWPPP templates for completion, and assists tenants in developing appropriate SWPPP documents.
 - Conducted stormwater understanding surveys to measure current tenant understanding of stormwater issues and responsibilities.
 - Published summary of work and results of stormwater understanding surveys for use in the Port's Targeted Stormwater Management Program Effectiveness Monitoring (S8.E).

The following table outlines the implementation plan to achieve the goals and objectives of the Public Education program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit*.

Section I—Public Education Program (S6.E.I) Continued

Permit Element S6.E.1	Education Program		
-	Purpose: Educate Port community about impacts to stormwater and importance of stormwater as an environmental resource. Reduce or eliminate behaviors and practices that cause or contribute adverse stormwater impacts.		
Applicability: Applies to Seapor	rt tenants and Port employees.		
Permit Requirement	Action Plan Schedule Notes		
S6.E.1.a Education Program			
Develop an education program aimed at tenants and Port employees. Make educational materials available to tenants and Port employees whose job duties could impact stormwater.	 Develop educational materials and conduct outreach activities Distribute educational materials Post distributed information on the Seaport website 	Due Date: September 2008 Status: Program developed; Implementation is ongoing.	

Section 2—Public Involvement and Participation (S6.E.2)

Public Involvement and Participation (S6.E.2)

This section describes the permit requirements, programs, and planned activities related to Public Involvement and Participation.

Current activities in this area include:

 Posted SWMP and Annual report on the Seaport's new stormwater website. (<u>http://www.dev.portseattle.org/community/environment-water/seaport/stormwater-municipalpermits.shtml</u>)

The following table outlines the implementation plan to achieve the goals and objectives of the Public Involvement and Participation program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit.*

Permit Element S6.E.2	Public Involvement and Participation		
Purpose: Solicit public review	of the SWMP for Phase I Properties.		
Applicability: Applies to Seap	port tenants and general public.		
Permit Requirement	Action Plan Schedule Notes		
S6.E.2.a Publish Notice	S6.E.2.a Publish Notice		
Publish a public notice in the local newspaper. Solicit public review of the SWMP.	 Publish public notice to solicit SWMP input in the newspaper Request SWMP input via the Port's Website Send request for comment notice to Port tenants and surrounding properties Collect and review comments on SWMP 	Due Date: September 2011 Status: Public notice and public review of SWMP planned for 2011.	
S6.E.2.B Post SWMP on Website			
Make the SWMP available to the public. Post the SWMP on the Port's Website.	Post SWMP on Port website	Due date: September 2011 Status: Completed.	

Section 3—Illicit Discharge Detection and Elimination (S6.E.3)

Illicit Discharge Detection and Elimination (S6.E.3)

This section describes the permit requirements, programs, and planned activities related to Illicit Discharge Detection and Elimination (IDDE).

Current activities in this area include:

- Field work to collect required mapping data.
- Office work to download collected data and create associated maps and reports.
- Developed and adopted an appropriate IDDE policy.
- Implementation of the City's relevant ordinances, rules and regulations that govern IDDE.
- Identified potential mechanisms to enforce the IDDE policy.
- Developed a spill response plan.
- Prepared IDDE Program Guidance Manual to document IDDE policies, enforcement mechanisms, field inspection procedures, and the spill response plan.
- Ongoing outfall inspections as weather and tides allow.
- Follow-up on suspected illicit discharge problem areas to determine if outflows are from receding tidal water, groundwater, or a legitimate illicit discharge.
- Worked through procedures to clean up and remove identified illicit discharges.
- Developed a Maximo database to track maintenance related activities.

The following table outlines the implementation plan to achieve the goals and objectives of the IDDE program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit.*

Permit Element S6.E.3	Illicit Discharge Detection and Elimination		
Purpose: Detect, remove, and the MS4.	d prevent illicit connections and illicit d	ischarges, including spills into	
Applicability: Applies to all an Port.	reas of the MS4 on Phase I Properties	owned or operated by the	
Permit Requirement S6.E.3 IDDE Program	Action Plan	Schedule Notes	
Include a program in the SWMP to detect, remove, and prevent illicit connections and illicit discharges, including spills, into the MS4 owned or operated by the Port.	 Prepare written documentation of the IDDE Program to document IDDE policies, enforcement mechanisms, field inspection procedures, and spill response plan. Implement the activities and BMPs listed in S6.E.3.a 	See below	

Section 3—Illicit Discharge Detection and Elimination (S6.E.3) Continued

	through S6.E.f.f.	
S6.E.3.a Compliance with Lo	ocal Jurisdiction	
Comply with all ordinances, rules, and regulations from the local jurisdiction that govern non-stormwater discharges.	 Verify that Port activities on Phase I Properties comply with City of Seattle ordinances, rules, and regulations. 	Due Date: Ongoing Status: Completed
S6.E.3.b IDDE Policy and En	forcement	
Develop and adopt appropriate policies prohibiting illicit discharges and illegal dumping. These policies shall address, at a minimum: illicit connections, non-stormwater discharges as defined in S6.E.3.b.i through S6.E.3.b.v, and spilling, dumping, or otherwise improperly disposing of hazardous materials, pet waste, and litter.	 Review City of Seattle policy and Phase I Permit requirements as background for Port policy. Prepare draft policy for review with legal council. Finalize policy and present to commission for adoption. 	Due Date: March 2008 Status: Completed
Identify possible enforcement mechanisms to ensure compliance with illicit discharge policies.	Identify and discuss enforcement mechanisms with legal council. Enforcement mechanisms include sending reminder notices to tenants and referring violations to the City of Seattle or Department of Ecology or an internal Port entity.	Due Date: March 2008 Status: Completed
Develop and implement and enforcement plan using these mechanisms to ensure compliance with illicit discharge policies.	 Outline enforcement mechanisms for inclusion in IDDE plan. 	Due Date: September 2008 Status: Completed

Section 3—Illicit Discharge Detection and Elimination (S6.E.3) Continued

S6.E.3.c Data Collection				
Include an ongoing program for gathering, maintaining, and using adequate information to conduct planning, priority setting, and program evaluation for Phase I Properties. The following information will be gathered and retained:				
Mapping of known MS4 outfalls and maps depicting land use for property owned by the Port, and all other properties served by the MS4 owned or operated by the Port.	 Collect field data on all existing known outfalls. Download data and create appropriate maps and reports in GIS to meet Ecology formatting requirements. Develop land use maps of Phase I Properties. 	Due Date: March 2009 Status: Completed		
Mapping of tributary conveyances and the associated drainage areas of the MS4 outfalls owned or operated by the Port with a 24 inch nominal diameter or larger or equivalent cross- sectional area.	 Collect field data on all existing known outfalls. Define drainage basin boundaries for tributary systems. Download data and create appropriate maps and reports in GIS to meet Ecology formatting requirements. Develop land use maps of Phase I Properties. 	Due Date: March 2009 Status: Completed		
To the extent consistent with national security laws and directives, make available to Ecology upon request, GIS data layers generated by the Port depicting outfall locations, land use, tributary conveyances, and associated drainage areas of outfalls owned or operated by the Port.	 Review Port security policies related to infrastructure information sharing. If allowable, make GIS data layers available to Ecology upon request. 	Due Date: As requested Status: No requests to date		
Document operation and maintenance records for stormwater facilities covered under this permit. The information shall be available for inspection by Ecology.	 Develop stormwater facility inventory based on construction plans, staff knowledge, and field visits. Enter inventory data in O&M database and track O&M actions. Create annual O&M reports. Make reports available to Ecology upon request. 	Due Date: March 2009 Status: Developed an O&M database to track stormwater related maintenance activities. Records are available to Ecology upon request.		

Section 3—Illicit Discharge Detection and Elimination (S6.E.3) Continued

To the extent consistent with national security laws and directives, mapping information and O&M records shall be provided to the City in which the Port is located.	 Review Port security policies related to infrastructure information sharing. If allowable, make data layers available to the City upon request. 	Due Date: Not specified Status: Records can be provided upon request.
S6.E.3.d Field Inspections		
Conduct field inspections and visually inspect for illicit discharges at all known outfalls that discharge to surface water. Keep records of inspections and follow-up activities.	 Develop inspection form to document field data. Conduct inspections as required. Refer problems to appropriate staff for follow-up. Maintain field inspection records. 	Due Date: Inspect 1/3 of outfalls each year beginning by March 2009. Status: Initial inspections of all outfalls were conducted as part of field data collection for mapping effort (S6.3.c). Inspections are on- going each summer as weather and tides allow.
Develop and implement procedures to identify and remove any illicit discharges.	 Document field inspection procedures in the IDDE Plan. 	Due Date: September 2008 Status: Completed.
S6.E.3.d Spill Response Pla	n	
Develop and implement a spill response plan that includes coordination with a qualified spill responder.	 Identify qualified spill responders. Document spill response procedures in IDDE plan. 	Due Date: September 2011 Status: Completed.
S6.E.3.f Staff Training		
Provide staff training or coordinate with existing training efforts to educate relevant staff on proper BMPs for preventing spills and illicit discharges.	 Coordinate with education efforts in S6.E.1 to train Port staff. 	Due Date: Not specified Status: Spill response training included in annual training program.

Section 4—Construction Site Runoff Control (S6.E.4)

Construction Site Runoff Control (S6.E.4)

This section describes the permit requirements, programs, and planned activities related to Construction Site Runoff Control.

Current activities in this area include:

- Seaport projects and tenant projects on Phase I Properties are subject to the City of Seattle development code.
- At this time, Seaport projects on Phase I Properties will be reviewed by Port staff and tenant projects on Phase I Properties will be submitted to the City for appropriate review.
- Seaport Master Spec (Section 02270) includes temporary erosion and sediment control guidelines for construction projects.
- Obtained NPDES Construction permits for applicable projects.
- Requires Certified Erosion and Sediment Control Lead (CESCL) training for contractors.
- Conducted CESCL training for Seaport staff.
- Implementation of the City's relevant ordinances, rules and regulations that govern construction site runoff.

The following table outlines the implementation plan to achieve the goals and objectives of the Construction Site Runoff Control program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit.*

Permit Element S6.E.4	Construction Site Runoff Control		
Purpose: Continue to reduce pollutants in stormwater runoff from construction activities. Applicability: Applies to construction activities on Phase I Properties under the functional control of the Seaport.			
Permit Requirement S6.E.4 Construction Runoff	Action Plan Schedule Notes Control Program		
Include a program in the SWMP to reduce pollutants in stormwater runoff from construction activities under functional control of the Seaport.	 Implement the activities and BMPs listed in S6.E.4.a through S6.E.4.e. 	See below	

Section 4—Construction Site Runoff Control (S6.E.4) Continued

S6.E.4.a Compliance with Local Jurisdiction				
Comply with all relevant rules and regulations of the local jurisdiction that govern construction stormwater. To the extent allowed by local ordinances, comply with the applicable minimum technical requirements for new development and redevelopment.	 Refer tenant new development and redevelopment projects to City of Seattle for design review. Prepare Project Design Guidance Manual to guide internal Seaport projects. 	Due Date: March 2008 Status: Project Design Guidance Manual is complete. Update anticipated in 2011.		
S6.E.4.b General Permit Cov	erage for Construction Activities			
When applicable, seek and obtain coverage under the General NPDES Permit for Stormwater Discharges Associated with Construction Activities.	 Apply for permit for projects on Phase I Properties prior to construction activity Refer tenant projects to City of Seattle and Dept. of Ecology for permit coverage 	Due Date: Ongoing Status: Continue activities in 2011.		
S6.E.4.c Compliance Coordination				
Coordinate with local jurisdiction regarding projects owned and operated by other entities that discharge into interconnected MS3s.	 Coordinate with City of Seattle as applicable. 	Due Date: Ongoing Status: Continue coordination on an as- needed basis.		
S6.E.4.d Staff Training				
Provide training or coordinate with existing training efforts to educate Port Staff responsible for implementing construction stormwater erosion and sediment control BMPs. OR: hire trained contractors to perform the work.	 Seaport staff or consultant staff representatives responsible for construction sites will obtain their CESEL certification from an Ecology approved resource. Require construction contractors responsible for erosion control to have CESEL certification 	Due Date: Not specified Status: Continue activities in 2011.		

Section 4—Construction Site Runoff Control (S6.E.4) Continued

S6.E.4.e Access Coordination				
Provide Ecology or the local jurisdiction access (as requested) for inspection of construction sites or land disturbances under the control of the Seaport during active grading and/or construction period.	 Review legal authority and potential mechanisms to allow inspections as required. Provide access as requested and legally allowable. 	Due Date: As requested Status: Access provided as requested.		

Section 5—Post-Construction Stormwater Management for New Development and Redevelopment (S6.E.5)

Post-Construction Stormwater Management for New Development and Redevelopment (S6.E.5)

This section describes the permit requirements, programs, and planned activities related to Post-Construction Stormwater Management for New development and Redevelopment.

Current activities in this area include:

- Seaport projects on Phase I Properties that connect to the City's drainage system and tenant projects comply with the City of Seattle development code.
- Seaport projects on Phase I Properties that connect to the City's drainage system and tenant projects submit to the City for appropriate review and permits.
- Completed Project Design Guidance Manual to guide internal Seaport projects.
- Implementation of relevant ordinances, rules and regulations that govern new development and redevelopment activities.

The following table outlines the implementation plan to achieve the goals and objectives of the Post-Construction Stormwater Management program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit*.

Permit Element S6.E.5	Post-Construction Stormwater Management			
Purpose: Continue to establish controls to prevent or minimize water quality impacts from new development and redevelopment projects.				
Applicability: New developme	velopment and redevelopment projects on Phase I Properties.			
Permit Requirement	Action Plan Schedule Notes			
S6.E.5 Post Construction Ste	S6.E.5 Post Construction Stormwater Management			
Include a program in the SWMP to address post- construction stormwater runoff from new development and redevelopment projects.	 Implement the activities and BMPs listed in elements S6.E.5.a and S6.E.5.b 	See below		

Section 5—Post-Construction Stormwater Management for New Development and Redevelopment (S6.E.5) Continued

Comply with all relevant ordinances, rules and regulations of the local jurisdiction that govern post- construction stormwater pollution prevention (including operation and maintenance). To the extent allowed by local ordinances, comply with the applicable minimum technical requirements for new development and redevelopment.	 Prepare Project Design Guidance Manual to guide internal Seaport projects. Review internal Seaport projects that propose new development and redevelopment projects on Phase I Properties for compliance with the Project Design Guidance Manual. Refer tenant new development and redevelopment projects to City of Seattle for design review. Develop an operation and maintenance program as described in element S6.E.6. 	Due Date: March 2008 Status: Project Design Guidance Manual is complete. Update anticipated in 2011.
5.3 Compliance Coordinatio	n	
Coordinate with local jurisdiction regarding projects owned and operated by other entities that discharge into interconnected MS3s.	 Coordinate with City of Seattle as applicable. 	Due Date: Ongoing Status: Continue coordination as needed.

Section 6—Operation and Maintenance Program (S6.E.6)

Operation and Maintenance Program (S6.E.6)

This section describes the permit requirements, programs, and planned activities related to the Operation and Maintenance Program.

Current activities in this area include:

- Parking lot and street sweeping.
- Catch basin cleaning.
- Routine maintenance of stormwater treatment facilities and other structural BMPs.
- Inspection of suspected problems at stormwater treatment facilities and other structural BMPs.
- Prepared Operations and Maintenance Manual for stormwater infrastructure, including inspection schedules, maintenance standards, and required maintenance activities.
- Tracking maintenance activities in the Seaport's Maximo database.

The following table outlines the implementation plan to achieve the goals and objectives of the Operation and Maintenance Program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit*.

Permit Element S6.E.6	Operation and Maintenance Program		
Purpose: Ensure that all BMPs continue to function properly by developing an operation and maintenance program.			
Applicability: All stormwater treatment facilities, flow control facilities, and catch basins on Phase I Properties under functional control of the Seaport. ¹			
Permit Requirement	Action Plan	Schedule Notes	
S6.E.6 Operation and Mainte	S6.E.6 Operation and Maintenance Program		
Include an operation and maintenance program in the SWMP for all stormwater treatment and flow control facilities and catch basins.	 Implement the activities and BMPs listed in elements S6.E.6.a through S6.E.6.d. 	See below	

¹ The O&M Program does not apply to tenant-controlled properties. However, many tenant-controlled properties are subject to the source control requirements, including inspection and maintenance of stormwater facilities, outlined in Permit Element S6.E.7.

Section 6—Operation and Maintenance Program (S6.E.6) Continued

S6.E.6.a O&M Manual		
Prepare an O&M manual for all stormwater BMPs under the functional control of the Seaport. Retain a copy of the manual in the appropriate Seaport department.	 Document stormwater facilities on Phase I Properties under Seaport control. Review existing operation and maintenance practices. Prepare operation and maintenance manual. Retain copies of the manual at Seaport Maintenance and Environmental Department. 	Due Date: March 2009 Status: Complete.
Develop facility-specific maintenance standards that are as protective as those in the Ecology Manual to determine when maintenance is required.	 Review maintenance standards in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. Incorporate maintenance standards into the O&M manual. 	Due Date: March 2009 Status: Complete.
S6.E.6.b Annual BMP Inspec	ctions and Maintenance	
Manage maintenance activities to inspect all facilities listed in the O&M Manual annually.	 Establish an inspection schedule in the O&M Manual. Create a stormwater facility inspection checklist or report form. Train staff on facility inspection as part of element S6.E.6.c. Allocate staff resources to facility inspections. Prepare inspection reports to document all inspection activities as part of element S6.E.6.d. 	Due Date: Annually Status: Schedule and report forms are complete. Continue training and inspections in 2011.
Take appropriate maintenance action when the maintenance standard is exceeded. Maintenance shall be performed within the timeline identified in permit condition S6.E.6.b(ii).	 Prepare maintenance requests for facilities that exceed the maintenance standard. Conduct maintenance activities as needed. Prepare maintenance records as part of element S6.E.6.d. 	Due Date: As need is identified Status: Maintenance schedule depends on inspection results.

Section 6—Operation and Maintenance Program (S6.E.6) Continued

S6.E.6.c Staff Training		
Provide appropriate training for Port maintenance staff.	 Identify training courses. Send an appropriate percentage of maintenance staff to training each year. Establish resources for internal trainings – videos, webcasts, staff meetings, hiring an outside trainer, etc. 	Due Date: Not specified Status: Training activities are ongoing.
S6.E.6.d Record Keeping		
Maintain records of inspections and maintenance activities.	Maintain maintenance records in Maximo database.	Due Date: Ongoing Status: Continue activity in 2011.

Section 7—Source Control in Existing Developed Areas (S6.E.7)

Source Control in Existing Developed Areas (S6.E.7)

This section describes the permit requirements, programs, and planned activities related to Source Control in Existing Developed Areas.

Current activities in this area include:

- Phase I Properties with individual, industrial, or boat yard NPDES permits have prepared Stormwater Pollution Prevention Plans (SWPPPs).
- Phase I Properties with individual, industrial, or boat yard NPDES permits are implementing appropriate source controls.
- Implementation of the City of Seattle's relevant ordinances, rules and regulations that govern source control activities.
- Adoption of policies and activities to require pesticide-free and synthetic fertilizer-free landscaping.
- Distributed SWPPP templates to tenants required to develop SWPPPs.
- Provided technical assistance to tenants developing SWPPPs.
- Completed SWPPPs for Port-controlled Phase I Properties, including Maritime Industrial Center, Fisherman's Terminal, Shilshole Bay Marina, and Marine Maintenance Areas at Pier 2, Terminal 5, and Terminal 91.
- SWPPPs are complete or in progress for numerous Port-controlled Phase I Properties (piers and terminals) that house office space, parking, and moorage areas as well as vacant lands.

The following table outlines the implementation plan to achieve the goals and objectives of the Source Control program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit*.

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Section 7—Source Control in Existing Developed Areas (S6.E.7) Continued

Permit Element S6.E.7	Source Co	ontrol
 Purpose: Identify and implement measures to prevent and control the contamination of discharges of stormwater to surface or ground water. Applicability: All Port-owned lands not covered by either a General Permit or an individual NPDES permit issued by Ecology that covers stormwater discharges. Note: SWPPPs will apply to 1. Heavy Equipment Maintenance, 2. Storage Yards, 3. Material Storage, and 4. Maintenance Areas.² 		
Permit Requirement	Action Plan	Status
S6.E.7.a Stormwater Pollutio	on Prevention Plans (SWPPPs)	
Develop and implement one or more SWPPPs to identify and implement measures to prevent and control the contamination of discharges of stormwater to surface or ground water.	 Identify sites already covered by a General Permit or an individual NPDES permit. Implement the activities and BMPs listed in elements S6.E.7.b through S6.E.7.g. 	Due Date: March 2009 Status: Identification complete. See below for implementation activities.
S6.E.7.b Facility Assessmen	it	
SWPPP(s) shall include a facility assessment with a site plan, identification of pollutant sources, and description of drainage system.	 Establish a list of sites that must be covered by a new SWPPP. Conduct site inspections to collect data for the facility assessment. Prepare facility assessment for each site including site plan, identification of pollutant sources, and description of drainage system. 	Due Date: March 2009 Status: Complete for Port- controlled Phase I Properties.

² These are the four land uses that require source control and SWPPPs as described in permittee and other secondary permittee sections of the NPDES Phase I Permit. The City of Seattle source control code and manual applies to "all Port lands" as well as all City properties. The Port will include City BMPs as part of the Stormwater Management Program to all applicable properties.

Section 7—Source Control in Existing Developed Areas (S6.E.7) Continued

S6.E.7.c BMP Identification		
Identify BMPs used or proposed for use. Implement non-structural BMPs immediately following plan development. Include schedule for implementing structural BMPs in the SWPPP.	 Identify structural and non- structural BMPs already in place. Identify additional source control BMPs. Develop an implementation schedule for structural BMPs. 	Due Date: March 2009 Status: Identification complete. Implementation to follow schedule in each SWPPP.
S6.E.7.d Inspections		
Maintain a list of sites covered by the SWPPP(s) required by this permit. Inspect at least 15 percent of listed sites annually and 80 percent of all listed properties within 180 days of the permit expiration.	 Maintain list of sites covered by a SWPPP. Establish legal authority to conduct site inspections for source controls. Develop an inspection schedule. Conduct site inspections to the extent allowed by local ordinances, rules, and regulations. 	Due Date: September 2011 Status: Inspections are ongoing.
S6.E.7.e Pesticide Policy		
Identify policies to reduce pollutants associated with pesticides, herbicides, and fertilizer.	 Review existing Seaport maintenance plan prohibiting the use of pesticides. Update policy if needed. 	Due Date: March 2009 Status: Complete.
S6.E.7.f Illicit Connections, I	Discharges and Spills	
Include measures to prevent, identify, and respond to illicit discharges, illicit connections, spills, and improper disposal. Notify the City or County and Ecology immediately upon becoming aware of a spill.	 Include reference to the Seaport's IDDE Program in SWPPPs. Implement Seaport IDDE Program on Phase I Properties. Notify City and Ecology of spills as needed. 	Due Date: March 2009 Status: Complete. See Section 3 (S6.E.3) for details.
S6.E.7.g Inspection and Maintenance		
Include a component related to inspection and maintenance of stormwater facilities and catch basins that is consistent with the Port's Operation and Maintenance Program.	 Include reference to the Seaport's O&M Manual in SWPPPs. Implement Seaport O&M Program on Phase I Properties. 	Due Date: March 2009. Status: Complete. See Section 6 (S6.E.6) for details.

Section 8—Total Maximum Daily Load Requirements (S7)

Total Maximum Daily Load Requirements (S7)

The Total Maximum Daily Load (TMDL) requirements only apply if a stormwater TMDL has been established for receiving waters that receive stormwater discharge from the stormwater system on Phase I Properties owned or operated by the Seaport. The applicable TMDLs that require additional compliance activities are listed in Appendix 2 of the *Phase I Municipal Stormwater Permit.* At this time, none of the TMDLs listed in Appendix 2 affect the Port. As such, no additional activities are required for compliance with TMDL conditions. The Port will continue to track the development of TMDLs and participate in their development and implementation when appropriate.

Section 9—Monitoring (S8)

Monitoring (S8)

This section describes the permit requirements, programs, and planned activities related to Monitoring.

The permit requires the development of monitoring programs with three components:

- Stormwater Runoff Monitoring
- Targeted SWMP Effectiveness Monitoring (two practices)
- BMP Evaluation Monitoring

Current activities in this area include:

- Selected outfall for stormwater monitoring.
- Prepared and submitted draft Stormwater Monitoring Program Quality Assurance Project Plan (QAPP). Received and incorporated Ecology comments on the Stormwater Monitoring QAPP.
- Finalized approved Stormwater Monitoring QAPP.
- Began stormwater monitoring program.
- Identified targeted action, environmental outcome, and related hypotheses for Targeted SWMP Effectiveness monitoring.
- Prepared and submitted draft SWMP Effectiveness monitoring QAPP. Received and incorporated Ecology comments on the SWMP Effectiveness QAPP.
- Finalized approved SWMP Effectiveness QAPP.
- Began SWMP Effectiveness monitoring activities.
- Identified site for BMP Evaluation monitoring.
- Prepared and submitted draft BMP Evaluation monitoring QAPP.
- Received and incorporated Ecology comments on the BMP Evaluation QAPP. Submitted revised BMP Evaluation plan for Ecology review and received verbal approval of revised plan.
- Continued work on baseline monitoring to support BMP Evaluation monitoring. Baseline data will be used to determine tidal influence and contribute to development of finalized BMP Evaluation QAPP.

The following table outlines the implementation plan to achieve the goals and objectives of the three part Monitoring program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit*. Because the permit language is extensive in this area, the requirements have been summarized in the implementation table below. See the *Phase I Municipal Stormwater Permit* (Section S8) for the complete Monitoring program requirements language.

Section 9—Monitoring (S8) Continued

Permit Element S8	Monito	ring	
	Purpose: Develop and implement a long term monitoring program to characterize stormwater runoff quantity and quality, evaluate stormwater management program effectiveness, and evaluate BMP effectiveness.		
Applicability: Phase I Proper	ties at the Port of Seattle and Port of	Tacoma	
Permit Requirement	Action Plan	Schedule Notes	
S8.C.1 Long Term Monitorin	ng Program		
Develop and implement a long term monitoring program with three components: Stormwater Monitoring, Targeted SWMP Effectiveness Monitoring, and BMP Evaluation Monitoring.	 Develop a monitoring plan as described below. Implement monitoring as part of elements S8.D through S8.F. 	Due Date: Varies (see below) Status: Monitoring program status should be included in each annual report.	
S8.C.2 Quality Assurance P	roject Plan (QAPP)		
Each of the components of the monitoring program shall include a QAPP prepared in accordance with Ecology's QAPP guidelines. The monitoring program shall be developed by qualified staff or contractors with experience in applying Ecology's or EPA's QAPP Guidelines.	 Hire qualified contractor to develop QAPP. Coordinate with the Port of Tacoma on joint monitoring efforts. Prepare QAPP for each monitoring component. Submit to Ecology for review and approval prior to conducting monitoring activities. 	Due Date: March 2008 for draft Stormwater and Targeted SWMP Effectiveness QAPPs. September 2008 for final Stormwater and Targeted SWMP Effectiveness QAPPs and draft BMP Evaluation QAPP. March 2009 for final BMP Evaluation QAPP. March 2009 for final BMP Evaluation QAPP. Status: Stormwater and Targeted SWMP Effectiveness QAPPs are complete and approved. Revised plan for BMP Evaluation program has been approved (verbally) by Ecology. Revised BMP Evaluation QAPP will be submitted following baseline data collection.	

Section 9—Monitoring (S8) Continued

S8.D Stormwater Monitoring		
Select one outfall or conveyance for monitoring. Stormwater monitoring sites shall have the tributary conveyance system and drainage area mapped, and shall be suitable for permanent installation and operation of flow-weighted composite sampling equipment.	 Review Phase I Properties and identify potential sites meeting site selection criteria. Document basin sizes, land use types, and contributing drainage areas. Select monitoring site. Document site selection criteria and justification in QAPP. 	Due Date: March 2008 Status: included in QAPP.
Sample the stormwater monitoring site according to the frequency outlined in permit condition S8.D.2.a.	 Outline sampling procedures in the QAPP. Develop system to track storm events, identify qualifying storms, and mobilize staff to collect samples. OR Hire consultant to track storm events, identify qualifying storm events, and collecting samples at appropriate times. 	Due Date: March 2008 for Draft QAPP; September 2008 for Final QAPP. Status: QAPP approved; Sampling activities are underway.
Sample storm events using flow weighted composite sampling and conduct laboratory analysis as outlined in permit conditions S8.D.2.b and S8.D.2.c.	 Purchase sampling equipment. Identify lab for sample analysis and submit samples for analysis following qualifying storm events. 	Due Date: March 2009 Status: Ongoing
Annually test the seasonal first-flush for toxicity as outlined in permit condition S8.D.2.d.	 Outline sampling and testing procedures in the QAPP. Identify lab for sample analysis and submit samples annually. 	Due Date: March 2009 Status: Ongoing
Collect grab samples to test for TPH and Fecal coliform bacteria as outlined in permit condition S8.D.2.e.	 Outline sampling and testing procedures in the QAPP. Identify lab for sample analysis and submit samples annually. 	Due Date: March 2009 Status: Ongoing
Collect annual sediment samples at the monitoring site as outlined in permit condition S8.D.2.f.	 Outline sampling and testing procedures in the QAPP. Identify lab for sample analysis and submit samples annually. 	Due Date: March 2009 Status: Ongoing

Section 9—Monitoring (S8)

Continued

Calculate the Event Mean Concentrations, total annual pollutant load, and the seasonal pollutant load for the wet and dry seasons as outlined in permit condition S8.D.2.g. S8.E Targeted SWMP Effect	 Outline evaluation procedures in the QAPP. Collect and maintain records of laboratory analysis as completed. Analyze data and track analysis results. iveness Monitoring 	Due Date: As data is collected Status: Ongoing
Develop a monitoring program to evaluate the effectiveness of a targeted action (or suite of actions) as outlined in permit condition S8.E.	 Identify the targeted action: Increasing knowledge and changing behaviors of tenants through stormwater education. Formulate a hypothesis about the action that can be tested using before and after surveys. Outline a monitoring program with the elements listed in S8.E.3 and submit to Ecology for review. Identify appropriate survey questions and methods for distributing and collecting surveys. Begin initial surveys once Ecology has approved monitoring plan. Conduct public education campaign outlined in S6.E.1. Conduct follow-up surveys to evaluate knowledge and behavior changes. 	Due Date: March 2008 for monitoring. March 2009 for starting surveys. Status: QAPP approved; initial surveys and education program are complete;
Develop a monitoring program to evaluate the effectiveness of achieving a targeted environmental outcome as outlined in permit condition S8.E.	 Identify the environmental outcome to be evaluated. Formulate a hypothesis about the outcome that can be tested using monitoring data. Identify the parameters to be measured and methods for collecting/testing the data. Hire a consultant to prepare a QAPP outlining the procedures for conducting targeted environmental outcome monitoring. 	Due Date: March 2008 for draft QAPP. September 2008 for final QAPP. March 2009 for program implementation. Status: QAPP approved; monitoring program is underway.

Section 9—Monitoring (S8) Continued

	 Submit QAPP to Ecology for review and finalize QAPP. Begin collecting and analyzing data once QAPP has been approved. 	
S8.E BMP Evaluation Monito	-	L
Identify at least one treatment BMP (no less than two sites) for full scale field monitoring as outlined in permit conditions S8.F.1, S8.F.2 and S8.F.3.	 Identify potential BMPs and applicable sites on Phase I Properties for monitoring. Coordinate with Ecology to receive approval for the proposed monitoring sites. Document site selection criteria and justification in QAPP. 	Due Date: September 2008 Status: included with QAPP.
Use appropriate sections of Ecology's guidance for preparing, implementing, and reporting on the results of the BMP evaluation program.	• Hire a consultant to prepare a QAPP for the BMP monitoring that follows Ecology's "Evaluation of Stormwater Treatment Technologies" document.	Due Date: Final QAPP due 90 days after receiving Ecology comments. Status: Draft QAPP submitted to Ecology; comments received; revised monitoring plan submitted; verbal approval received; baseline monitoring underway to determine QAPP modifications.
Monitor whole water and sediment parameters as outlined in permit conditions S8.F.5 and S8.F.6.	 Outline monitoring procedures and parameters to be tested in the QAPP. Hire a consultant to collect and analyze monitoring data according to the procedures outlined in the QAPP. Collect and maintain records of laboratory analysis as completed. Analyze data and track analysis results. 	Due Date: To be determined based on QAPP review schedule. Status: Baseline monitoring to support QAPP development is underway; Full monitoring will begin after approval of final QAPP.

Section 9—Monitoring (S8) Continued

S8.H Monitoring Program Reporting Requirements		
Submit the stormwater monitoring report each year with the annual report beginning in 2009 for independent monitoring and 2010 for collaborative monitoring. Reports shall include the information outlined in permit condition S8.H.1.	 Analyze and review collected data as part of elements S8.D through S8.F. Summarize and format data annually to meet reporting requirements. Prepare QA/QC report for each part of the monitoring program. Prepare and submit annual monitoring report. 	Due Date: March 2009. Status: Complete for inclusion with the annual report.

Section 10—Reporting (S9)

Reporting (S9)

This section describes the permit requirements, programs, and planned activities related to Reporting.

Current activities in this area include:

- Submitted 2007, 2008, and 2009 Annual Reports and accompanying SWMP documents prior to the March 31 permit deadlines.
- Preparing 2010 Annual Report for submittal to Ecology.
- Preparing updated SWMP document to reflect activities completed in 2010 and planned for 2011.
- Ongoing record keeping of SWMP activities.

The following table outlines the implementation plan to achieve the goals and objectives of the Reporting program and meet the compliance deadlines in the *Phase I Municipal Stormwater Permit.*

Program Element S9	Reporti	ing	
Ecology.	Applicability: All Seaport stormwater program activities on Phase I Properties related to NPDES		
Permit Requirement	Action Plan	Schedule Notes	
S9.A, B, and G Annual Repo	rt		
Prepare and submit an annual report to Ecology covering the previous calendar year. The annual report shall include the information outlined in permit condition S9.G.	 Prepare SWMP document including implementation schedules and plan for meeting permit deadlines. Update SWMP annually. Complete Ecology provided annual report form (permit Appendix 3). Prepare stormwater monitoring report as part of S8.H beginning in 2009. Identify and document jurisdictional boundary changes as applicable. Obtain necessary signatures and submit to Ecology on an annual basis. 	Due Date: March 31 each Year Status: Annual reports for 2007, 2008, and 2009 are complete. Annual report for 2010 is in development.	

Section 10—Reporting (S9) Continued

S9.C Maintain Records		
Keep all records related to the permit and the SWMP for at least five years. Except as required in permit condition S9.G, records need to be submitted to Ecology only upon request.	 Identify Seaport staff responsible for recording SWMP activities. Develop procedures or develop database for collecting and consolidating SWMP records. Review records annually as part of annual report development. 	Due Date: Ongoing Status: in progress
S9.D Public Access		
Make records related to this permit and the Permittee's SWMP available to the public at reasonable times during business hours. Provide a copy of the most recent annual report to any individual entity, upon request.	 Identify locations for storing permit and SWMP documents. Post documents or information about document availability on the Seaport website. Copy records or annual reports as requested. 	Due Date: Not specified Status: records are available upon request.

Conclusion

Conclusion

This Stormwater Management Plan has been prepared to demonstrate compliance with the requirements of the NPDES *Phase I Municipal Stormwater Permit*. The implementation tables indicate current and planned activities on Phase I Properties as of February 2011. The Stormwater Management Plan for Phase I Properties is a living document that will be updated annually to document progress in implementing the stormwater management programs required for compliance with the *Phase I Municipal Stormwater Permit*.