



ATTACHMENT A  
CITY OF SEATTLE

2009 NPDES PHASE I MUNICIPAL STORMWATER PERMIT  
STORMWATER MANAGEMENT PROGRAM

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March 31, 2009



CITY OF SEATTLE  
2009 NPDES STORM WATER MANAGEMENT PROGRAM

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**On the Cover: The NW 110<sup>th</sup> Street Cascade. This Green Stormwater Infrastructure project uses a series of shallow, rock-bottomed swales with check dam weirs to slow and filter stormwater while it is detained in each swale.**

This document was prepared by Seattle Public Utilities with technical support provided by Brown and Caldwell Environmental Engineers and Consultants, Seattle WA.



CITY OF SEATTLE  
2009 NPDES STORM WATER MANAGEMENT PROGRAM

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## I. SIGNATURE



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**CITY OF SEATTLE NPDES STORMWATER MANAGEMENT PROGRAM**

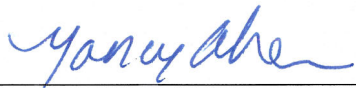
**Submitted to the Washington Department of Ecology in compliance with the  
2007 Phase I Municipal Stormwater National Pollutant Discharge Elimination  
System and State Discharge General Permit for discharges from Large and  
Medium Municipal Separate Storm Sewer Systems**

**WAR04-4503**

**City of Seattle  
Seattle Public Utilities  
Seattle, Washington**

**Date: March 31, 2009**

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.



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Nancy Ahern  
Deputy Director- Utility System Management  
Seattle Public Utilities



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## II. INTRODUCTION



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## II.1 Introduction

This document comprises the second-year compilation of the Stormwater Management Program (SWMP) for the City of Seattle (City) under the 2007 National Pollution Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit (Permit) (Ecology 2007a). This SWMP applies to the municipal separate storm sewers owned or operated by the City within the geographical boundaries established by the Permit. Existing City programs relevant to the SWMP are outlined with minimum performance requirements, principal responsibilities, information links and summaries of current status and upcoming work. This second-year compilation of the SWMP is Attachment A to the Annual Report Form, which addresses the activities that the Permit requires to be completed in the first, second and third year of the Permit (January 1, 2007 to December 31, 2009). This SWMP will be reviewed and updated annually according to the Permit requirement. This version of the SWMP has been updated to incorporate modifications to, or additional sets of actions, that have been implemented to comply with the required components listed in S5 of the permit.

Permit Condition S5 outlines the ten components of the SWMP that have required programs and activities, which include reporting and minimum performance measures. Section III of this document is organized to follow these Permit requirements in a parallel structure and describes the set of actions that the City is or will be implementing to comply with S5 of the permit. Many of these components involve existing programs conducted by the City's various departments and organizational structure. This SWMP compiles this information in a single document that will not only meet Permit requirements but will also aid the City's implementation of its NPDES stormwater management program. The acronyms and terms used in this document are defined in Section V.

There are six City departments primarily responsible for implementing the SWMP components and associated activities and projects. Seattle Public Utilities (SPU) has the designated lead role for managing stormwater, conducting water quality programs, and managing drainage-related capital projects. Other departments with major Permit-related responsibilities include the Department of Planning and Development (DPD), Seattle Parks and Recreation (Parks), Seattle Department of Fleets and Facilities (FFD), Seattle City Light (SCL), and Seattle Department of Transportation (SDOT). These departments and SPU have been implementing many of the Permit-required programs for many years and in some cases well before the first NPDES municipal separate storm sewer system (MS4) permit was issued in 1995.

### II.1.1 Background

The NPDES program is a key element of the Federal Clean Water Act<sup>1</sup> aimed at controlling and reducing waterborne pollutants discharged from point sources such as wastewater and stormwater. The Washington State Department of Ecology (Ecology) has jurisdiction for implementing the federal NPDES program in the State of Washington. In implementing this program, Ecology issues NPDES permits to cover individual facilities or groups of multiple entities with common activities under a general NPDES permit. These permits must meet federal minimum requirements. For regulated municipal stormwater discharges, the

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<sup>1</sup> Note: The "Clean Water Act" as a term refers to the body of law that includes: Federal Water Pollution Control Act (1972), Clean Water Act (1977), and the Water Quality Act (1987).



NPDES program requires permits for large, medium and small MS4s as defined in federal regulations. The Phase I regulations of the MS4 program went into effect in 1990 and apply to MS4s in municipalities with populations of more than 100,000 (medium and large MS4s).

The first Phase I MS4 permit was issued by Ecology in July 1995 to the cities of Seattle and Tacoma and counties of Clark, King, Pierce and Snohomish. The MS4s owned or operated by the Washington State Department of Transportation (WSDOT) located in these cities and counties were also regulated under the 1995 permits. To meet the requirements of the 1995 Permit, the City prepared and managed stormwater under a SWMP that was approved by Ecology in 1997. The City provided updates on stormwater management activities to Ecology in annual reports that were submitted from 1996 to 2005. The new format for SWMPs and Annual Reports pursuant to the 2007 Permit replaces the City's 1997 SWMP.

On January 17, 2007, Ecology re-issued the Phase I MS4 permit. The Permit became effective on February 16, 2007 and bears an expiration date five years later, February 15, 2012. (The Phase II MS4 permit was issued concurrently and applies to approximately 90 small cities and counties in Western Washington and approximately 30 cities and counties in Eastern Washington). The 2007 Phase I MS4 permit has 20 pages of text outlining the requirements for developing the SWMP and its ten components and associated programs, along with minimum performance measures and reporting requirements. The Phase I and II permit were appealed in 2007 by various interests, and the Washington State Pollution Control Hearings Board issued a series of rulings, which Ecology has indicated it will implement by permit modification. WSDOT was issued a separate and individual MS4 permit on February 4<sup>th</sup> 2009 with an effective date of March 4<sup>th</sup> 2009. The WSDOT permit has been appealed.

### II.1.2 City of Seattle Drainage

Drainage infrastructure in the City's system was developed with the primary purpose of conveying stormwater runoff in order to protect people and property. The City's drainage infrastructure now includes three different types: the separate storm sewer system, the partially separated system, and the combined sewer system (Figure II.1.1) each serving approximately one third of the geographical area of Seattle.

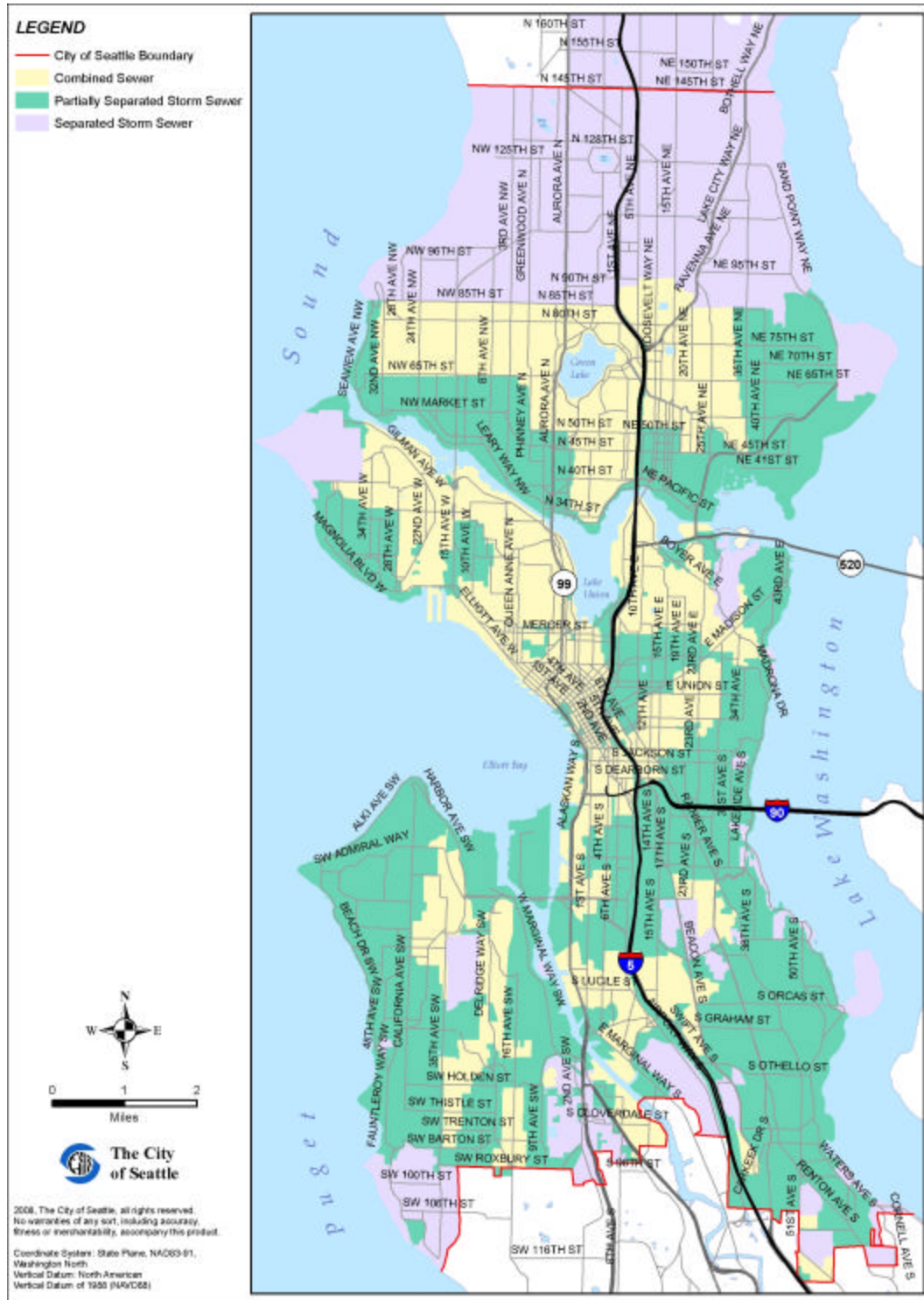
In the separate system, storm drainage is directed to a separate storm drain system, while wastewater goes to a sanitary sewer and on to the wastewater treatment plant before discharge. While parts of the City's separated drainage system are formal and piped, some parts of the separate stormwater runoff are managed primarily through an informal system of ditches and culverts, most of which drain to creeks or larger receiving waters. The area north of NE 85<sup>th</sup> Street, which the City annexed in 1954, is an example of an area still served primarily by ditch and culvert drainage systems.

In partially separated sewer areas of the City, all drainage once flowed in the combined system. During the 1960's, storm drain separation projects were built that diverted street runoff in pipes to the separate storm drainage system and receiving waters. Rooftop and other private property drainage continue to be directed to wastewater treatment plants.

The combined sewer system is a formal piped system that continues to carry both sanitary wastewater and stormwater runoff from some parts of the City to one of the area's wastewater treatment plants. Combined sewers are outside the NPDES municipal stormwater permit structure.



Figure II.1-1. Map of City Drainage Systems



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### III. NPDES STORMWATER MANAGEMENT PROGRAM





## III.1 Legal Authority-S5.C.1

### III.1.1 Requirements

The Permit (Section S5.C.1) requires the SWMP to demonstrate certain legal authorities for controlling stormwater discharges to the City's MS4. Section S5.C.1 of the Permit outlines these areas, but does not require specific products, submittals, reports or a schedule for completing required activities because this requirement has been in effect since the 1995 NPDES permit. Many of these legal authorities are expressed in the requirements of the other SWMP components, some of which have Permit-required products and completion schedules, including the authorities needed for controlling stormwater related to:

- Industrial activity
- Illicit discharges, spills and dumping
- Inter-jurisdictional agreements
- Development and redevelopment
- Construction inspections

### III.1.2 Program description

Legal authority enabling the City to control discharges to and from the MS4 is primarily established by Seattle Municipal Code (SMC), Stormwater, Grading and Drainage Control (SMC 22.800 – 22.808) (Stormwater Code) which was last comprehensively updated in 2000. The Directors of SPU and DPD share responsibility for issuance of notices of violation, stop work orders, and corrective actions for violation of the Stormwater Code. The Stormwater Code is designed to control, through regulation and ordinance, the contribution of pollutants to the MS4. It prohibits illicit discharges, spills and illegal dumping, and authorizes inspections, surveillance and monitoring to determine compliance and meet the ongoing Permit requirements.

The Side Sewer Ordinance (SMC 21.16) regulates side sewers and, for example, prohibits discharge of certain materials; requires maintenance of detention facilities; provides a right of entry for inspection; requires repair of inoperative or inadequate sewers, drains, or natural watercourses; and regulates the construction, alteration, repair, and connection of side sewers and service drains. The City's Regulations for Environmentally Critical Areas (Ch. 25.09 SMC) also provide protections and standards relevant to municipal stormwater.

### III.1.3 Responsible City Departments

The City Attorney's Office advises SPU and DPD regarding those departments' implementation of legal authority for SMC and Directors' Rules, further discussed in III.1.4, related to the management of stormwater.

### III.1.4 Completed Activities

In February 2008, the City submitted draft revisions of the Stormwater Code and associated Director's Rules to Ecology for review and determination of equivalency to Ecology's Stormwater Management Manual for



Western Washington (Ecology 2005). The purpose of this revised Stormwater Code and its associated Directors' Rules are to protect life, property, public health, and the environment from the adverse impacts of urban stormwater runoff. These adverse impacts can include flooding, pollution, landslides, and erosion. The revisions have been drafted to the Stormwater Code and its Directors' Rules in order to account for advances in urban stormwater runoff management practices since the Stormwater Code was last comprehensively updated in 2000 and to reflect the requirements of the 2007 Permit. Table III.1-1 lists the components of the Stormwater Code and Directors' Rules Drafts that were submitted to Ecology in February 2008. Subsequent to the February 2008 submittal, Ecology and the City have engaged in detailed discussions aimed at improving the draft Stormwater Code and Directors' Rules and achieving a determination of equivalency by Ecology. The latest draft Stormwater Code and Directors' Rules, dated March 16, 2009, has been determined to be equivalent to Ecology's 2005 Stormwater Management Manual for Western Washington (Ecology 2005) by Ecology.

Table III.1-1. Components of the Stormwater Code and Directors' Rules Drafts Submitted to Ecology in February 2008 and determined equivalent, pending public comments, on March 16, 2009.

Seattle Municipal Code	Effective Date	Revision Date	Directors' Rules		Title	Effective Date	Revision Date	Revision Title
			DPD	SPU				
22.800	7/5/00	3/16/09	17-2000	01-00	Volume 1, Source Control Technical Requirements Manual	07/05/00	3/16/09	Volume 1, Source Control Technical Requirements Manual
			16-2000	DPD Rule Only	Volume 2, Construction Stormwater Control Technical Requirements Manual	07/05/00		Volume 2, Construction Stormwater Control Technical Requirements Manual
			26-2000	03-00	Volume 3, Flow Control Technical Requirements Manual	01/01/01		Volume 3, Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual
			27-2000	04-00	Volume 4, Stormwater Treatment Technical Requirements Manual	01/01/01		

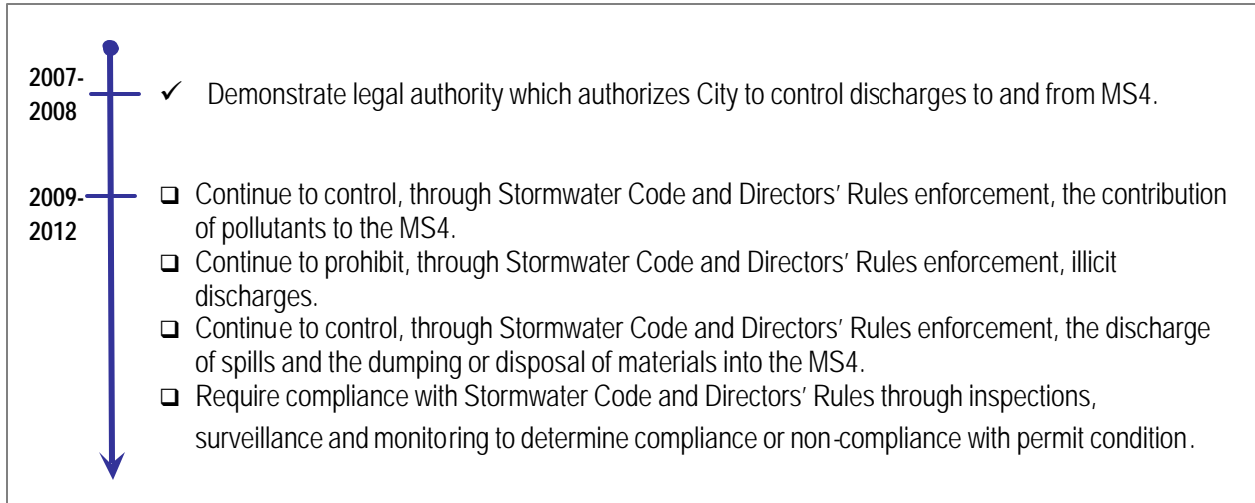
### III.1.5 Current and Planned Activities

Ecology has determined that the revised draft Stormwater Code and Directors' Rules dated March 16, 2009, are equivalent to Appendix 1 of the permit, Minimum Technical Requirements for New Development and Redevelopment. The determination of equivalency by Ecology indicates that the revised Stormwater Code is appropriate for implementation of the minimum requirements in Appendix 1, and will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy the state requirement under chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART).

Ecology is taking public comment in spring 2009 during a proposed permit modification public comment period and anticipates issuing the final revisions to the Phase I permit to incorporate local requirements, including Seattle's, as required by the Pollution Control Hearings Board ruling of August 2008, after it considers all public comments. Following the issuance of the final permit modifications by Ecology, SPU will prepare the approved draft Stormwater Code for public review and adoption by City Council and the associated Directors' Rules for adoption by SPU and DPD.

Figure III.1-1 describes the progress made in 2008, and the planned next steps in 2009 for meeting Permit requirements in 2009.

Figure III.1-1. Timeline Showing Progress and Next Steps



Legend:            ✓ Implemented            ☐ Planned

*For More Information*

- ❖ City of Seattle Attorney web site: <http://www.seattle.gov/law/>
- ❖ Stormwater, Grading and Drainage Code Revisions: [http://www.seattle.gov/dpd/Planning/Stormwater\\_Grading\\_and\\_Drainage\\_Code\\_Revisions/ProposedCodeRules/default.asp](http://www.seattle.gov/dpd/Planning/Stormwater_Grading_and_Drainage_Code_Revisions/ProposedCodeRules/default.asp)
- ❖ City Clerk web site for SMC and other information: <http://www.seattle.gov/leg/clerk/clerk.htm>
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.





## III.2 Mapping-S5.C.2

### III.2.1 Requirements

The Permit (Section S5.C.2) requires the City to:

- Map all known municipal separate storm sewer outfalls, receiving waters, and structural stormwater treatment and flow control Best Management Practices (BMPs) owned, operated or maintained by the City.
- Initiate a program to map connection points between municipal separate storm sewers owned or operated by the City and other municipalities or other public entities.
- Map the following attributes for all storm sewer outfalls with a 24-inch nominal diameter or larger or equivalent cross-section for non-pipe systems: land use, tributary conveyance (indicating type, material, and size where known), and associated drainage area.
- Initiate a program to develop and maintain a map of all connections to the municipal separate storm sewer authorized or allowed by the City after the Permit's effective date.
- Map existing, known connections over 8 inches to the municipal separate storm sewers tributary to all storm sewer outfalls with a 24-inch nominal diameter or larger or equivalent cross-section for non-pipe systems.
- Map geographic areas served by the City's MS4 that do not discharge stormwater to surface water.
- Make available to Ecology, Co-Permittees and Secondary Permittees maps depicting the Permit-required information, upon request.

### III.2.2 Ongoing Mapping Program

The City's mapping program provides the ongoing means to document and maintain the City-owned or operated municipal separate storm drainage system including connections, outfalls, drainage infrastructure, drainage areas, land uses, receiving waters, treatment and flow control BMPs and other elements. The City's drainage systems are described in Section II.1.2.

The history of Seattle's Geographic Information System (GIS) spans 18 years evolving from a small installation in the former Seattle Engineering Department to GIS capabilities that are now firmly integrated in the daily business functions of at least six City departments.

The City's GIS was originally built primarily to improve the way the City manages and operates its utility infrastructure. The City's GIS system has matured and can now support complex business functions in most of the City's departments. For example, GIS data and capabilities are used today at the City to inform decision makers and planners, help deliver services to the public, dispatch Police and Fire personnel, and manage City real property. The City's GIS system and data are and will continue to be an important tool for stormwater management.



### III.2.3 Responsible City Departments

GIS support for stormwater management is provided by SPU's GIS Section of the Information Technology Division (GIS Section). The GIS Section will continue to develop and maintain a map of all connections to the MS4 and is responsible for updating the drainage-related GIS layers with information obtained from City-led capital improvement projects and side sewer as-built drawings. Side sewer drawings are obtained from documentation supporting development permit applications submitted to DPD. All work that is conducted under permits issued by DPD is mapped by the Permittee by hand or other methods and is reviewed and approved by the DPD inspector. These side sewer site plans are scanned by DPD, and then sent to the GIS Section. The side sewer infrastructure plans are then digitized by the SPU GIS Section and placed into the working GIS directory for use by GIS users within the City.

### III.2.4 Current and Planned Mapping Activities

#### III.2.4.1 Mapping of known storm sewer outfalls, receiving waters and structural stormwater treatment and flow control BMPs.

The City has a project in place to map all known municipal separate storm sewer outfalls and structural stormwater treatment and flow control BMPs owned, operated or maintained by the City. This mapping continues as new outfalls are found and new BMPs are constructed that fit this description. As developed, these data are being incorporated into existing data sets and are being made available for use by GIS users within the City. For example, the illicit discharge, detection and elimination (IDDE) program can utilize the outfall data when planning the screening program for compliance with the permit requirements in S5.C.8.

#### III.2.4.2 Develop a program to map connection points between the City's MS4 and those owned and operated by other municipalities or other public entities

The City has a project in place to map connection points between the City's MS4 and those owned and operated by other municipalities or other public entities. Any new connections of this type must be permitted and will follow the methods outlined in III.2.4.3 below. The SPU GIS and Project Delivery sections are conducting research to determine if there are existing unknown connections between the City's MS4 and others. After discovery, the City will work with the other municipalities or other public entities to share data and update the City's GIS data set.

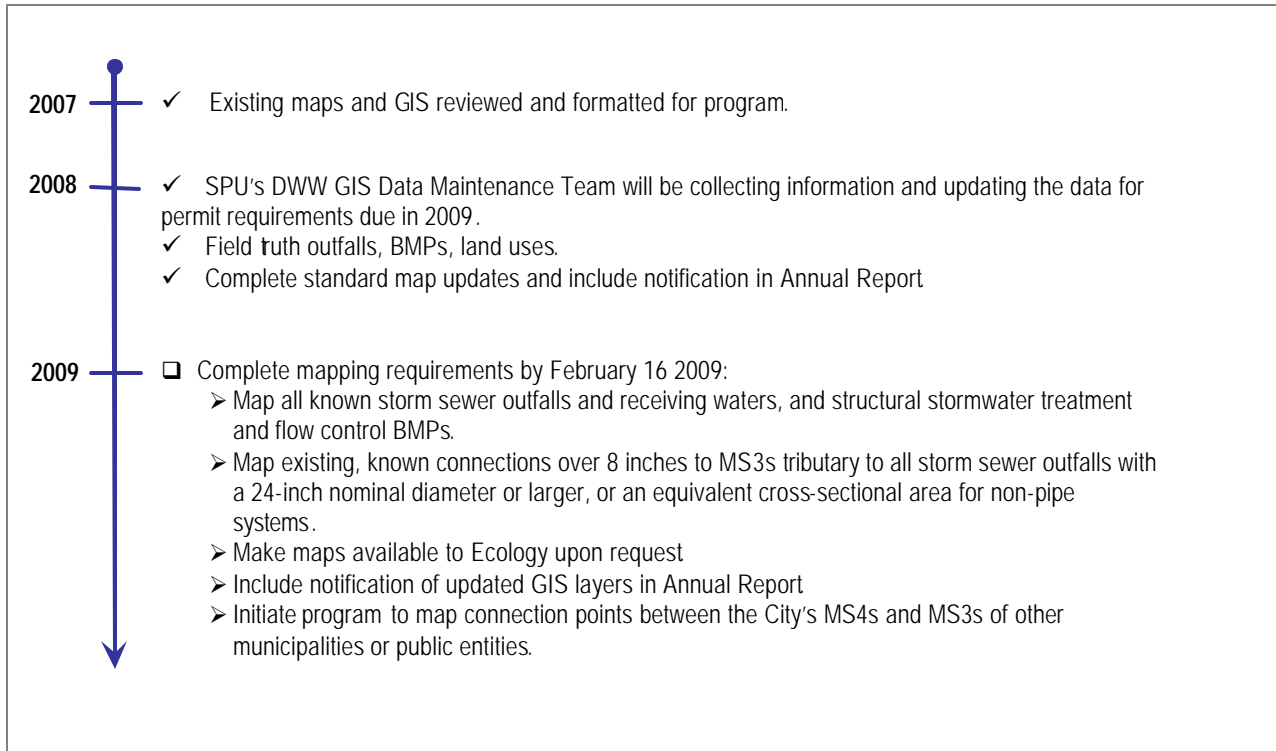
#### III.2.4.3 Map all known connections greater than 8 inches to storm sewer outfalls greater than 24 inches and map connections after Permit effective date

Existing, known connections greater than 8 inches to storm sewer outfalls greater than 24 inches are currently mapped in SPU's GIS system. The City also has a program to map all connections to the City MS3 authorized or allowed by the City after the effective date of the permit. DPD issues a side sewer permit for connections to the City's MS4 before work begins on a side sewer, including new installations, alterations, repairs, capping, relocations, removals, and conditional and temporary dewatering work. Applicants are required to submit a site plan during the planning stage and, later, an as-built plan which is reviewed by the site inspector. A permit cannot be finalized without as-built approval. Approved as-builts for side sewers are then circulated from DPD staff to SPU GIS staff for processing into and addition to SPU's GIS system.



Figure III.2-1 describes the progress made in 2008, and the planned next steps in 2009 for meeting Permit requirements in 2009.

Figure III.2-1. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      □ Planned

*For More Information*

- ❖ The Public may request map information in person at the Map Counter in the Public Resource Center, Seattle Municipal Tower 20<sup>th</sup> floor, or by phone at 206.684.0965 or via email at [gismap@seattle.gov](mailto:gismap@seattle.gov).
- ❖ The public can view standard GIS maps and find out more information at the web site: [http://www2.seattle.gov/GIS\\_Map/default.asp](http://www2.seattle.gov/GIS_Map/default.asp).
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.

Current Activities

Planning Ahead



## III.3 Coordination-S5.C.3

### III.3.1 Requirements

The Permit (Section S5.C.3) requires internal coordination of municipal stormwater activities among City departments and external coordination between the City and outside agencies. Minimum performance measures include:

- Developing and implementing a written internal coordination agreement or Executive Directive to facilitate compliance with the terms of the Permit.
- Establishing coordination mechanisms between physically interconnected municipal separate storm sewers (MS3s) of the City and any other Permittee covered by a municipal stormwater permit.
- Coordinating stormwater management activities for shared water bodies among other MS4 Permittees and Secondary Permittees to avoid conflicting plans, policies and regulations.
- Documenting the coordination efforts.

### III.3.2 Coordination Program

SPU is the lead department for coordinating Permit and municipal stormwater related activities among City departments, as designated by a mayoral Executive Order dated January 29, 2008 (Appendix 1). External coordination mechanisms and coordinating municipal stormwater activities were required by February 16, 2009. SPU has established external coordination mechanisms with King County, University of Washington and Seattle Public Schools (see Section III.3.4.3) and is coordinating with other Permittees and Secondary Permittees for shared waterbodies.

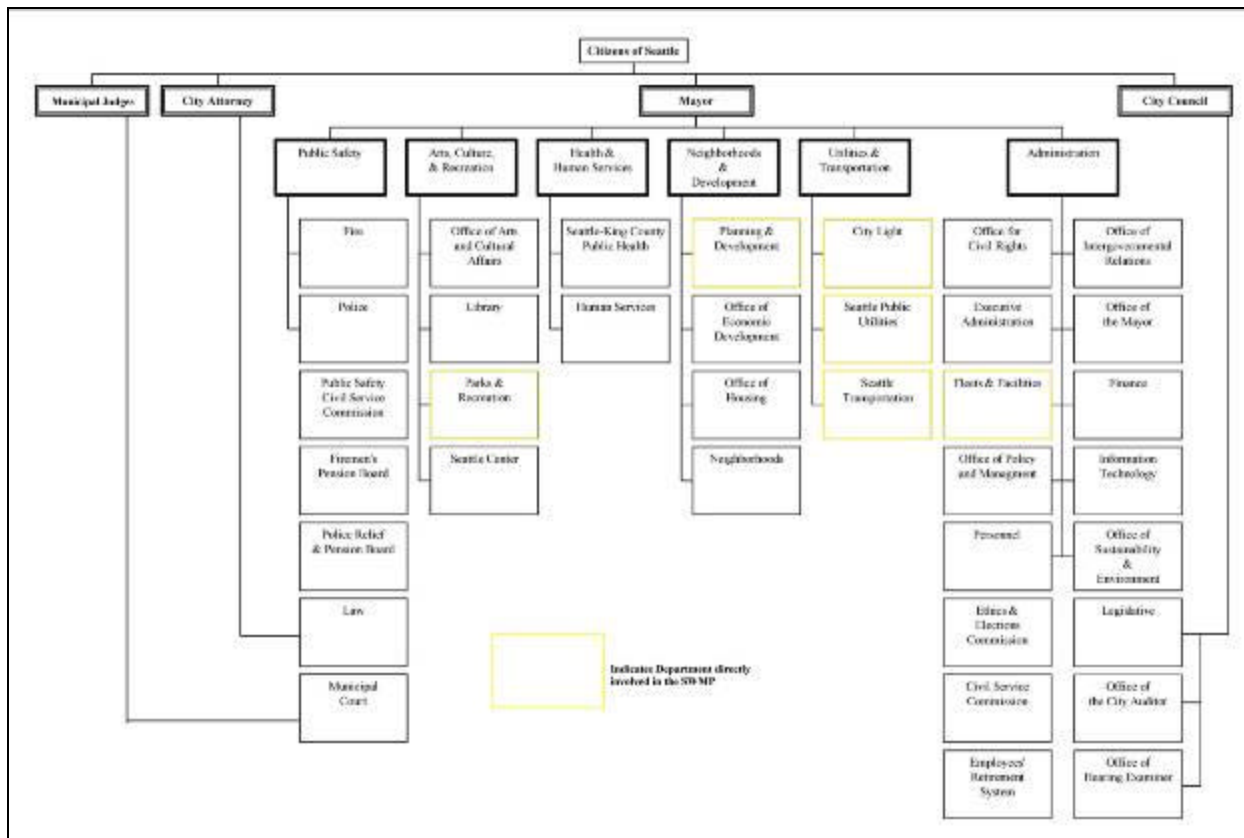
### III.3.3 Responsible City Departments

SPU is the lead City department for implementing Permit coordination requirements in the SWMP. Among the many City departments serving the residents of Seattle, there are six departments (highlighted on Figure III.3.1) primarily responsible for implementation of programs and projects for stormwater management within the City's MS4. These are SPU, DPD, Parks, FFD, SCL, and SDOT.





Figure III.3-1. City Organizational Chart



### III.3.3.1 Seattle Public Utilities

SPU is the City-designated lead department for managing municipal stormwater, including meeting Phase I Permit requirements, conducting water quality programs, and managing drainage-related capital projects. SPU conducts inspections, maintenance and repair of stormwater facilities in the right-of-way.

### III.3.3.2 Department of Planning and Development

DPD is the City department responsible for developing, administering, and enforcing development standards. DPD issues development permits as required under the Stormwater Code and other ordinances and inspects sites prior to and during construction. SPU and DPD share complaint response and enforcement (i.e., inspection and response) responsibilities. Both SPU and DPD have authority to issue notices of violation and initiate enforcement for drainage related issues. DPD manages customer complaints and inquiries related to current construction activities. SPU manages customer complaints and inquiries unrelated to development permits. All complaints and inquiries related to existing stormwater facilities are directed to SPU Customer Service.

### III.3.3.3 Seattle Parks and Recreation

Parks is responsible for several hundred parks and park facilities and plays a key role in environmental stewardship. Parks trains its staff in comprehensive BMPs for various maintenance activities, works in partnership with SPU on creek improvement projects, and is involved in programs designed to reduce pesticide use, remove invasive plants, and replant native species on property managed by Parks.

### III.3.3.4 Seattle Department of Fleets and Facilities

FFD manages most of the City's non-utility real estate portfolio, oversees the design, construction and occupancy of City facilities, maintains City buildings, and purchases, maintains and repairs the City's fleet of vehicles. FFD trains its staff in BMPs related to its business activities and works to reduce impacts on stormwater. FFD is responsible for implementation of the Stormwater Code at facilities under its management.

### III.3.3.5 Seattle City Light

Created by the citizens of Seattle in 1902, SCL provides customers with electricity and related services. SCL is dedicated to managing all of its activities in an environmentally responsible manner. SCL trains its staff in BMPs related to its business activities and works to reduce adverse impacts on stormwater. SCL is responsible for implementation of the Stormwater Code at facilities under its management.

### III.3.3.6 Seattle Department of Transportation

SDOT is responsible for the City's streets, bridges, sidewalks, bike paths, street trees, and traffic operations. SDOT performs such roadway maintenance activities as street sweeping and snow and ice control. The Capital Projects Division of SDOT oversees all aspects of Transportation Capital Improvement Programs (CIPs) and coordinates development and implementation of large-scale City projects. SPU works with SDOT during implementation of projects to design stormwater facilities in the right-of-way. At project completion, SPU takes over operation and maintenance of all stormwater facilities in the right-of-way.

## III.3.4 Current and Planned Coordination Activities

### III.3.4.1 Internal Coordination

SPU leads inter-departmental meetings to coordinate the City's stormwater management and Permit reporting efforts. These meetings are typically held bi-weekly, and have enabled the different departments to better coordinate stormwater-related policies, programs and projects.

#### III.3.4.1.1 Executive Directive

The Permit requires SPU to "establish, in writing...intra-governmental (internal) coordination agreement(s) or Executive Directive(s) to facilitate compliance with the terms of the permit." Executive Order # 01-08 (Appendix 1)(City of Seattle, 2008) was issued on January 29, 2008, by the Mayor of Seattle to meet this Permit requirement. The Executive Order prescribes the following responsibilities and orders all departments to coordinate all stormwater-related policies, programs, and projects:

- Each department director will be responsible for meeting the Permit requirements that apply to his or her respective department.
- SPU will serve as the lead department for overseeing City compliance with the Permit.
- SPU will provide each department with information, technical support, and a forum for inter-departmental coordination.



- All City departments must provide SPU with all necessary reporting elements and supporting material necessary to comply with the reporting requirements and associated deadlines of the Permit.

SPU will continue to coordinate with the various departments to facilitate the stormwater management program for the City. Figure III.3-2 outlines current and future coordination mechanisms.

#### III.3.4.2 Coordination between Secondary Permittees with physically interconnected MS3s

The University of Washington and Seattle Public Schools are currently the only entities in Seattle that have submitted notice of intent for coverage as a secondary Permittee under the 2007 NPDES Phase I Municipal Stormwater Permit. The City communicates with these entities about the control of pollutants, coordination of stormwater management activities for shared waterbodies and provides technical assistance when needed.

#### III.3.4.3 External Coordination

SPU represents the City at the Regional Permit Coordinators' Group, which meets to coordinate and discuss implementation of the Permit and coordination of stormwater management activities for shared waterbodies. In addition, the group discusses stormwater related issues, shares permit implementation information and identifies solutions and potential future issues.

#### III.3.4.4 King County as Co-Permittee

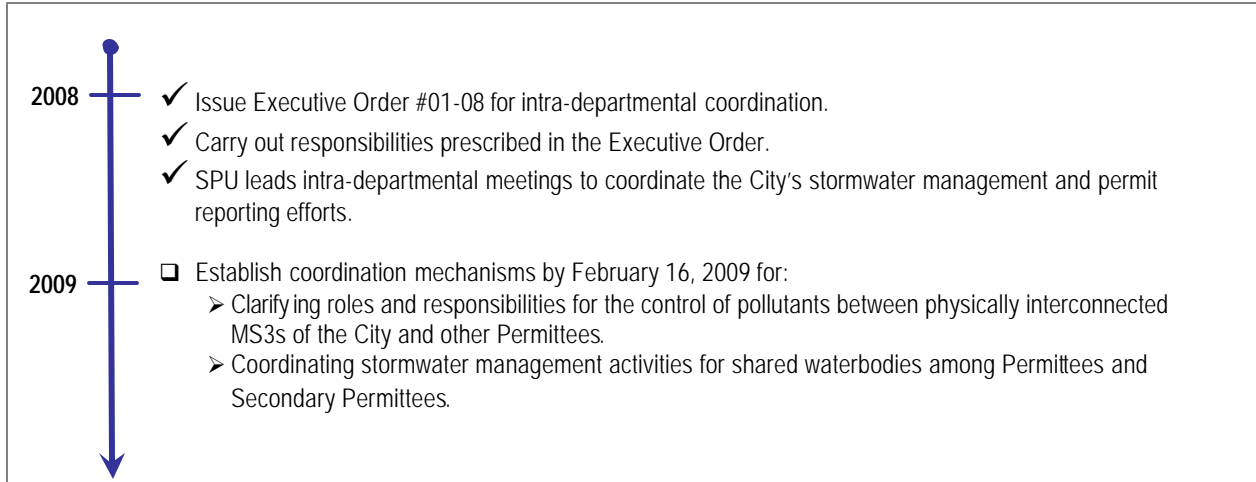
King County is listed as Co-Permittee with the City in S1.C of the Permit for discharges from outfalls that King County owns or operates within the City of Seattle. King County's activities as a Co-Permittee are further explained in S6.F which states: "King County, as a Co-Permittee with the City of Seattle for the discharges from outfalls King County owns or operates in the City, shall participate in the City of Seattle's Stormwater Management Program in accordance with the Joint Stormwater Management Program element of the Memorandum of Agreement between the City and County dated September 25, 1995. The apportionment of responsibilities for stormwater management within the City shall be governed solely by the MOA or its amendment, provided the City's stormwater management program, including King County participation, shall fully comply with Section S5 of this permit. Any amendments to the MOA shall be approved by Ecology before becoming effective."

There have been no amendments to the MOA between the City and King County. The City and King County have and will continue to meet and coordinate on King County's participation in SWMP activities in the Lander and Densmore basins per the MOA. The City has and will continue to implement the stormwater management activities detailed in this SWMP in the Lander and Densmore basins.



Figure III.2-1 describes the progress made in 2008, and the planned next steps in 2009 for meeting Permit requirements in 2009.

Figure III.3-2. Timeline Showing Progress and Next Steps



Legend:            ✓ Implemented            □ Planned

*For More Information*

- ❖ City of Seattle: <http://www.seattle.gov/>
- ❖ Seattle Public Utilities: <http://www.seattle.gov/util/services/>
- ❖ Department of Planning and Development: <http://www.seattle.gov/dpd/>
- ❖ Seattle Parks and Recreation: <http://www.seattle.gov/parks/>
- ❖ Fleets and Facilities Department: <http://www.seattle.gov/fleetsfacilities/>
- ❖ Seattle City Light: <http://www.seattle.gov/light/>
- ❖ Seattle Department of Transportation: <http://www.seattle.gov/transportation/>
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.

Current Activities

Planning Ahead



## III.4 Public Participation During SWMP Development – S5.C.4

### III.4.1 Requirements

The Permit (Section S5.C.4) requires the City to provide ongoing opportunities for public involvement in the SWMP and input on implementation priorities. The minimum performance measures include:

- Developing and implementing a public participation process for considering input on development, implementation and update of the SWMP.
- Making the SWMP, required SWMP documentation, and all Permit-required submittals available to the public on the City's web site or via electronic submittals for posting on Ecology's web site.

### III.4.2 Public Participation Program

Starting in February 2007 and continuing into the future, the City will provide a variety of opportunities for public involvement in the stormwater management program (e.g., neighborhood planning, watershed action plans and citizen advisory committees). Public comments on budget, Stormwater Codes and this SWMP also help to refine ongoing development of stormwater management activities.

### III.4.3 Responsible City Departments

SPU is the lead City department responsible for implementing the public involvement and participation program for the SWMP and Permit-related activities. The City Council provides opportunities for public participation in public hearings

### III.4.4 Current and Planned Public Participation Activities

The public has several means of participating in the SWMP development process and associated activities. As described below, these opportunities have been in place since early 2007.

#### III.4.4.1 City Budget Process

The City budget process provides opportunities for public input on how monies are allocated for implementation of NPDES-related stormwater management. Adoption of the City Budget - one of the most important products of the work of City Council - always requires public hearings to be scheduled on two or more days. All meetings are held in Council Chambers unless otherwise noted. The public is encouraged to attend Council meetings, hear the debate, and offer public comment on issues. The City Council meeting schedule and methods for providing comments are listed on the City Council's web site.

#### III.4.4.2 Opportunities for Comments on Stormwater Code Revisions

Outreach to the public and other interested parties regarding the revised Stormwater Code has been conducted since late 2006. SPU personnel have spoken to groups that include: Master Builders Association, Associated General Contractors, Ballard-Interbay Northend Manufacturing and Industrial Center (BINMIC), American Council of Engineering Companies (ACEC), American Society of Civil Engineers (ASCE), Puget Soundkeeper Alliance, Side Sewer Contractors, King County, representatives from Creeks Watershed



Councils, Restore our Waters (external) and SPU's Creeks Drainage/Wastewater Advisory Committee (CDWAC). In December 2007 and January 2008, two open forums were held to discuss the proposed Stormwater Code revisions and take questions and comments. SPU has engaged Ecology regarding the equivalency of the City's revised Stormwater Code and Directors' Rules to the 2005 Stormwater Management Manual for Western Washington and has met with their staff on multiple occasions. Additional stakeholder meetings are scheduled for 2009.

In early January 2008, SPU posted the proposed draft Stormwater Code and Directors' Rules on DPD's web site to allow continued stakeholder involvement well in advance of the legislative public process. Following nearly ten months of discussions between Ecology and the City following the initial proposed drafts submitted in February 2008, Ecology has determined that the revised draft Stormwater Code and Directors' Rules dated March 16, 2009, are equivalent to Appendix 1 of the permit, Minimum Technical Requirements for New Development and Redevelopment. The determination of equivalency by Ecology indicates that the revised Stormwater Code is appropriate for implementation of the minimum requirements in Appendix 1, and will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy the state requirement under chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART).

Ecology is taking public comment in spring 2009 and then finalizing revisions to the Phase I permit to incorporate local requirements, including Seattle's, as required by the Pollution Control Hearings Board ruling of August 2008. During 2009, pending Ecology action, SPU will prepare the approved draft Stormwater Code for public review and adoption by City Council and the associated Directors' Rules for adoption by SPU and DPD.

#### III.4.4.3 Creeks Drainage/Wastewater Advisory Committee

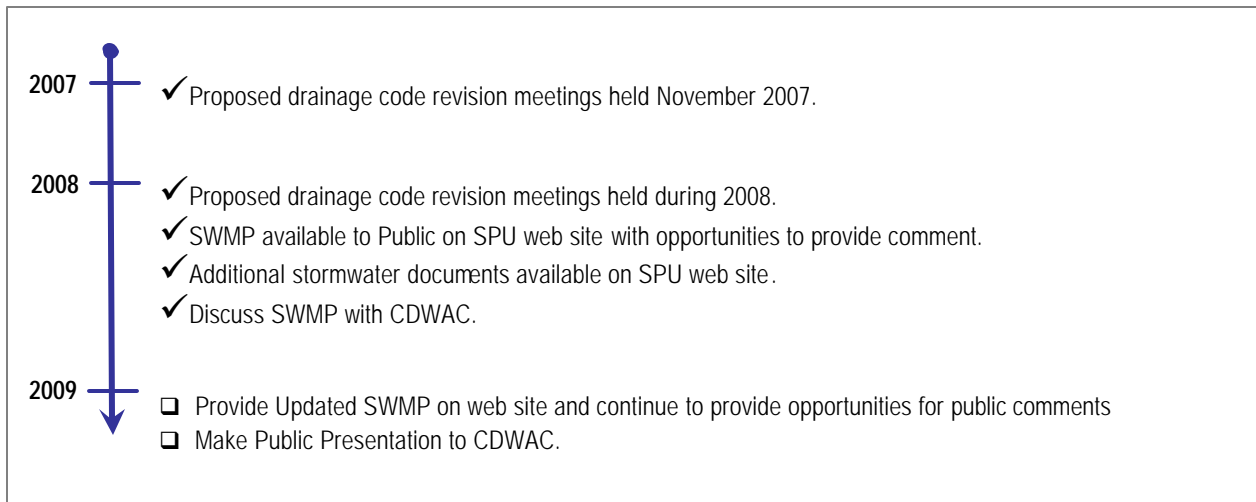
SPU facilitates several citizen advisory groups that provide an on-going opportunity for citizens to participate in planning and development of policies and programs and to advise SPU and other pertinent City entities of its findings and recommendations. While many groups are watershed specific (e.g., Pipers Creek Watershed Advisory Committee), CDWAC covers issues City-wide. CDWAC membership includes citizens with professional backgrounds in the subject area and representatives of relevant stakeholder groups to provide a diversity of viewpoints. SPU plans to continue to engage CDWAC for review and advice on developing and implementing the SWMP.

#### III.4.4.4 Public Participation during SWMP Development

To provide for additional public input beyond that provided by CDWAC, SPU has created a stormwater management web site to host an electronic version of the SWMP and other related stormwater management information and documents (see link in the "For More Information" box below). In addition, the web site provides contact information for citizens to provide comments and ask questions.



Figure III.4-1. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      □ Planned

*For More Information*

- ❖ City Council : <http://www.seattle.gov/council/councilcontact.htm> , or via email at: [budget@seattle.gov](mailto:budget@seattle.gov) , or call Council reception at (206) 684-8888
- ❖ Stormwater Code information on DPD web site: [http://www.seattle.gov/dpd/Planning/Stormwater\\_Grading\\_and\\_Drainage\\_Code\\_Revisions](http://www.seattle.gov/dpd/Planning/Stormwater_Grading_and_Drainage_Code_Revisions)
- ❖ Creeks, Drainage/Wastewater Advisory Committee: [http://www.seattle.gov/util/About\\_SPU/Management/CitizenAdvisoryCommittees/Creek\\_DrainageWastewaterAdvisoryCommittee/](http://www.seattle.gov/util/About_SPU/Management/CitizenAdvisoryCommittees/Creek_DrainageWastewaterAdvisoryCommittee/)
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit: [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.







## III.5 Controlling Runoff from New Development, Redevelopment and Construction Sites -S5.C.5

### III.5.1 Requirements

The Permit (Section S5.C.5) requires the City to develop, implement, and enforce a program to prevent and control the impacts of stormwater runoff from new development, redevelopment and construction site activities. The minimum performance measures include the following main areas with more detailed requirements included in the Permit text:

- Adopt enforceable regulations (codes, standards, or both) to meet or exceed the minimum technical requirements (thresholds) in Appendix 1 of the Permit, or equivalent as determined by Ecology.
- Implement a plan review process and a BMP selection and design process that meets maximum extent practicable (MEP) and all known, available and reasonable methods of prevention, control and treatment (AKART) conditions.
- Allow non-structural preventive actions and source reduction approaches such as Low Impact Development (LID) techniques.
- Adopt a local program that meets the requirements above (enforceable requirements, technical standards, and manual(s)). The program must be reviewed and approved by Ecology.
- Establish legal authority to inspect private stormwater facilities and enforce maintenance standards for all new development and redevelopment approved by the local program.
- A process of permits, plan review, inspections, enforcement capability and record keeping to meet permit conditions during and post construction for public and private new development and redevelopment.
- Make Ecology's Notice of Intent (NOI) documents for construction and industrial activities available to project proponents. Enforce local ordinances for these sites covered by other Ecology permits.
- Provide training to staff whose primary job duties are implementing the program to control runoff from new development, redevelopment and construction sites, and document the training. Training to include revisions to the Stormwater Code, and resulting new standards, processes and procedures.

### III.5.2 Development Standards Program

SMC Chapters 22.800 through 22.808 contains the City's Stormwater, Grading and Drainage Control Code (Stormwater Code), which is the City's primary means of implementing stormwater standards required by the Permit. The purpose of the Stormwater Code is to protect, to the greatest extent practicable, life, property, and the environment from loss, injury, and damage by pollution, erosion, flooding, landslides, and other adverse impacts from urban stormwater runoff. Seattle's Stormwater Code includes the following requirements: (1) to practice stormwater pollution prevention during construction; (2) to reduce the introduction of pollutants into stormwater runoff as close to the source as possible; and (3) to install flow control, stormwater treatment facilities, or both depending on the size and nature of a project. The Stormwater Code is implemented through the four Directors' Rules, promulgated jointly by the Director of SPU and the Director of DPD. These Directors' Rules provide specifications, guidelines, and additional



information needed for meeting the requirements of the Stormwater Code. The four Directors' Rules currently in place are:

- Construction Stormwater Control Technical Requirements Manual: DPD Director's Rule 16-2000
- Source Control Technical Requirements Manual: DPD Director's Rule 17-2000/SPU Director's Rule 01-00
- Flow Control Technical Requirements Manual: DPD Director's Rule 26-2000, SPU Director's Rule 03-00
- Stormwater Treatment Technical Requirements Manual: DPD Director's Rule 27-2000, SPU Director's Rule 04-00

The City's Side Sewer Code (Ch. 21.16 SMC) and Regulations for Environmentally Critical Areas (Ch. 25.09 SMC) also provide protections and standards relevant to municipal stormwater.

### III.5.3 Responsible City Departments

The DPD is the City department primarily responsible for developing, administering, and enforcing development standards. The DPD issues development permits as required under the Stormwater Code and other ordinances and inspects sites prior to and during construction. SPU and DPD share complaint response and enforcement (inspection and response) activities. Both SPU and DPD have authority to issue notices of violation and initiate enforcement for drainage related issues. DPD manages customer complaints and inquiries related to current construction activities. SPU manages customer complaints and inquiries unrelated to development permits. All complaints and inquiries related to existing public owned or operated stormwater facilities are directed to SPU Customer Service.

### III.5.4 Current and Planned Activities

The following sections outline completed or planned activities needed to meet the key Permit requirements.

#### III.5.4.1 Stormwater Code Revision Project

The City is currently engaged in a project to revise the Stormwater, Grading and Drainage Control Code (Stormwater Code) and associated Directors' Rules. This project is directed by SPU and is being conducted in close collaboration with DPD and other internal and external stakeholders. Both the Stormwater Code and the Directors' Rules are being revised to account for advances in BMPs for the control and management of stormwater runoff, and will be equivalent to the Stormwater Management Manual for Western Washington (Ecology, 2005). In addition, portions of the current Stormwater, Grading and Drainage Control Code are being relocated to a new, stand-alone Grading Code (SMC 22.170). The City's Stormwater Code draft revisions were submitted to Ecology in February 2008 for review and approval, as required by the Permit. Throughout 2008, the City and Ecology were involved in detailed discussions leading to Ecology's determination that the revised draft Stormwater Code and Directors' Rules dated March 16, 2009, are equivalent to Appendix 1 of the permit, Minimum Technical Requirements for New Development and Redevelopment. The determination of equivalency by Ecology indicates that the revised Stormwater Code is appropriate for implementation of the minimum requirements in Appendix 1, and will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy the state requirement under chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART).

In addition to revisions to the Stormwater Code, four new Joint SPU/DPD Directors' Rules will be promulgated to replace the current Rules, as listed under III.5.2. The new Directors' Rules will be:

- Volume 1: Source Control Technical Requirements Manual
- Volume 2: Construction Stormwater Control Manual Technical Requirements Manual
- Volume 3: Stormwater Flow Control and Water Quality Treatment Best Management Practices Technical Requirements Manual
- Volume 4: Stormwater Code Enforcement Manual

The multi-year project has involved a cross-departmental effort involving SPU, DPD, SDOT, Parks, FFD, Seattle City Attorney's Office, and other City departments. Beginning in late 2006, a series of briefings and public meetings were conducted to provide information to, and obtain feedback from, developers, builders, contractors, designers, engineers, consultants, public agencies, and representatives of environmental advocacy groups.

Ecology is taking public comment in spring 2009 and then finalizing revisions to the Phase I permit to incorporate local requirements, including Seattle's, as required by the Pollution Control Hearings Board ruling of August 2008. During 2009, pending Ecology action, SPU will prepare the approved draft Stormwater Code for public review and adoption by City Council and the associated Directors' Rules for adoption by SPU and DPD.

#### III.5.4.2 Authority to Inspect Private Facilities

Legal authority for inspection of private facilities for new and redevelopment is already established by SMC 22.802.090.B, which states:

“The Director of SPU may establish inspection programs to insure compliance with the requirements of this subtitle and accomplishment of its purposes. Inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the City's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other best management practices.”

Entry onto properties is subject to the requirements and limitations of local, state and federal laws.

#### III.5.4.3 Permitting Program

DPD is the City's department primarily responsible for issuance of permits for new development and redevelopment. Routine permitting procedures are outlined below:

##### III.5.4.3.1 Permit Application

- Step 1. The permitting process begins with an optional but recommended step of applicant coaching. In this step, a DPD land use planner, or permit leader, meets with the potential applicant to



identify unique or particular issues of the proposed project. Coaching helps to determine what is allowed on a piece of property, what development standards apply, what types of permits the project will require, and what the permit process will entail. If the project is a multifamily or commercial building and there are special circumstances or issues unresolved during coaching, the proponent will request a pre-submittal conference for project review.

- Step 2. The next step for an applicant is to research and prepare a preliminary site plan. The site plan describes where the structure(s) and BMPs will be located, the amount of new impervious surfaces that will result, the general topography of the site, and the existing level of street and alley improvements in the rights-of-way abutting the site.

For those projects that involve ground disturbance, DPD requires two separate on-site steps in the permitting process. First, a Pre-Application Site Visit (PASV) is performed by a DPD site inspector prior to permit intake. The PASV identifies existing site conditions, including steep slopes, sensitive areas, and erosion control issues that can be anticipated with the project due to site conditions. A PASV report is generated for the applicant and plan reviewer's use. Second, after a permit is issued for projects with ground disturbance, but prior to any ground disturbance, the applicant is required to schedule a first ground disturbance (FGD) inspection with a DPD Site Inspector. The FGD inspection requirement is codified in the Seattle Building Code (SMC 22.100 – 22.204). The purpose of the FGD inspection is for the applicant and inspector to identify potential erosion control issues that may be encountered during construction and map out BMPs that are acceptable to prevent sediment from leaving the site.

- Step 3. Prior to permit issuance on projects that have ground disturbance and a high likelihood of erosion control issues due to steep slopes, the applicant nominates a geotechnical special inspector. The geotechnical special inspector is charged with determining that adequate temporary and permanent erosion control measures are in place throughout the construction of the project.
- Step 4. The applicant submits an application to the DPD Applicant Services Center on the 20<sup>th</sup> Floor of the Seattle Municipal Tower, which will issue a building permit as appropriate.
- Step 5. The final step in the process is that plans are reviewed for compliance.

#### III.5.4.3.2 Inspections of Permitted Projects

After all required Pre-Application Site Visits (PASVs) are completed and a building permit is issued, a DPD inspector checks to make sure that work is done according to code. Customers with permits are responsible for arranging inspections.

There are five types of site inspections that can occur after a permit is issued.

1. FGD inspection - DPD inspectors conduct a site visit prior to ground disturbance to determine erosion potential and review and tailor temporary erosion and sediment control (TESC) measures to the site.
2. Pre-construction inspection – This inspection is conducted with DPD geotechnical and environmental scientists to establish a clear understanding of the project, DPD requirements, and point of contact for the permitted project.
3. Side sewer inspection - This is a key inspection to prevent cross-connections between side sewers and storm drains that have been partially or completely separated



4. Special inspection - This type of inspection is usually applied to structural work but may be required for special grading, excavation and filling involved with ground disturbance.
5. Final inspection - After successful completion of all inspections, the permittee is granted approval to occupy or certificate of occupancy.

#### III.5.4.3.3 Enforcement

DPD's Code Compliance staff enforces the Stormwater Code and Directors' Rules that govern construction, land use, and environmental protection. Enforcement can take the form of notices, fines and legal action.

#### III.5.4.4 Ecology Notice of Intent

DPD has made and will continue to make available copies of the Notice of Intent for Construction Activity (Ecology, 2007b), "Notice of Intent for Industrial Activity" (Ecology, 2007c), or both to City permit applicants in the Applicant Services Center.

#### III.5.4.5 Training

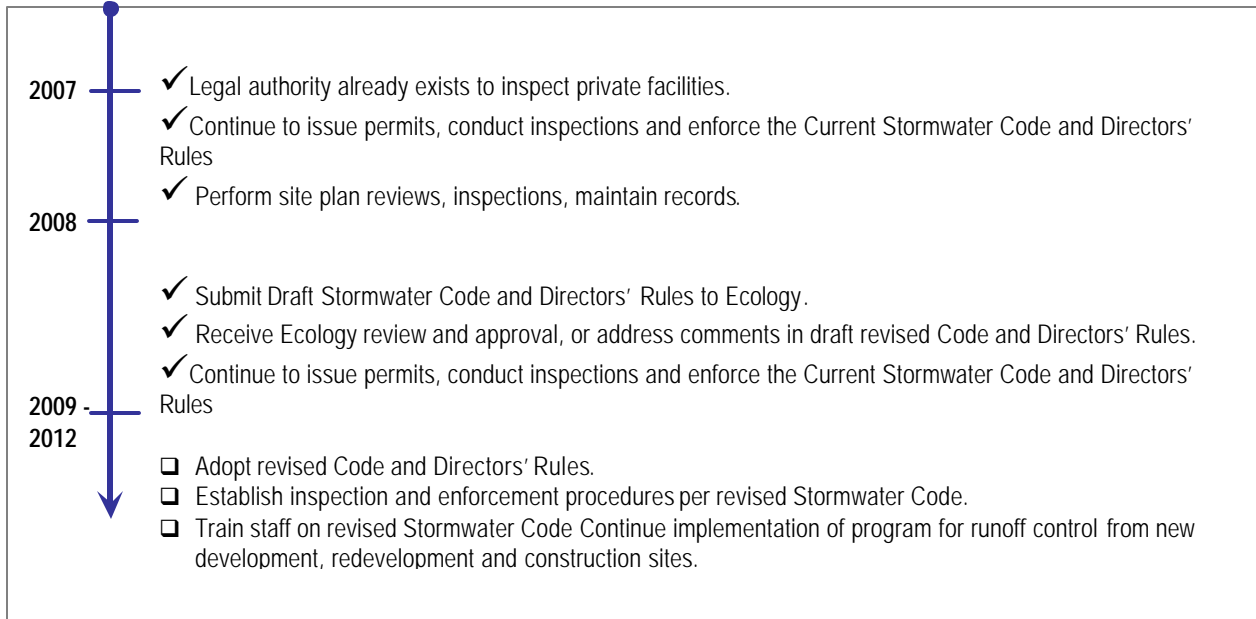
DPD will continue to educate applicants on the requirements and the importance of erosion and sediment control measures. DPD offers TESC workshops to the general public that emphasize TESC standard plans, review of environmental concerns, TESC inspection, and methods for applying TESC measures.

DPD conducts on the job and classroom training for all staff whose primary job duties relate to implementing the City's program to Control Stormwater Runoff from New Development, Redevelopment, and Construction Sites, which helps confirm that those individuals are properly trained. Training topics include permitting, plan review, construction site inspections, and enforcement procedures. After the revised Stormwater Code is adopted by City Council and rules are promulgated, SPU and DPD will be providing training to staff on the revised Stormwater Code and its associated Directors' Rules.

City staff who routinely conduct ground disturbing activities as part of their duties were trained during a City-wide training session occurring during spring 2008. The training consisted of classroom and field exercises that are designed to provide instruction on the requirements of the Stormwater Code and Directors' Rules, with a focus on BMPs for construction projects. On-going training on this subject is being developed so that existing employees can refresh their knowledge and new employees can be properly trained.



Figure III.5-1. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      ☐ Planned

*For More Information*

- ❖ Proposed revisions to the Stormwater Code and Draft Directors' Rules are available on the DPD web site at:  
[http:// www.seattle.gov/dpd/Planning/Stormwater Grading and Drainage Code Revisions](http://www.seattle.gov/dpd/Planning/Stormwater_Grading_and_Drainage_Code_Revisions)
- ❖ Information on the permitting process for new and redevelopment is available on the DPD web site at: [http://www.seattle.gov/dpd/Site\\_Development/Overview/default.asp](http://www.seattle.gov/dpd/Site_Development/Overview/default.asp)
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.



## III.6 Structural SW Controls-S5C.6

### III.6.1 Requirements

The Permit (Section S5.C.6) requires the City to:

- Develop a Structural Stormwater Control Program (SSCP) that is designed to control stormwater impacts that are not adequately controlled by other required actions of the SWMP. The SSCP may also include a program designed to implement small scale projects that are not planned in advance.
- Describe the SSCP in the SWMP document, including goals, planning process, budgets, and public involvement.
- Provide a list of planned SSCP projects to be implemented during the term of the Permit; update the list annually.
- For each planned project, provide information on estimated pollution reduction, expected outcomes, environmental benefits, and planned or completed monitoring or evaluation.
- Include updated information on the SSCP in each annual report.

### III.6.2 Structural Stormwater Control Program

The key elements of the City's SSCP are described below under Current and Planned Activities. The SSCP includes water quality and flow control projects.

### III.6.3 Responsible City Departments

SPU is the lead City department for development and implementation of the SSCP.

### III.6.4 Current and Planned Activities

The following sections outline the goals of the City's SSCP, which is to implement projects that protect, and/or improve the beneficial uses of certain receiving water bodies, reflect asset management principles and are not otherwise required actions in the SWMP.

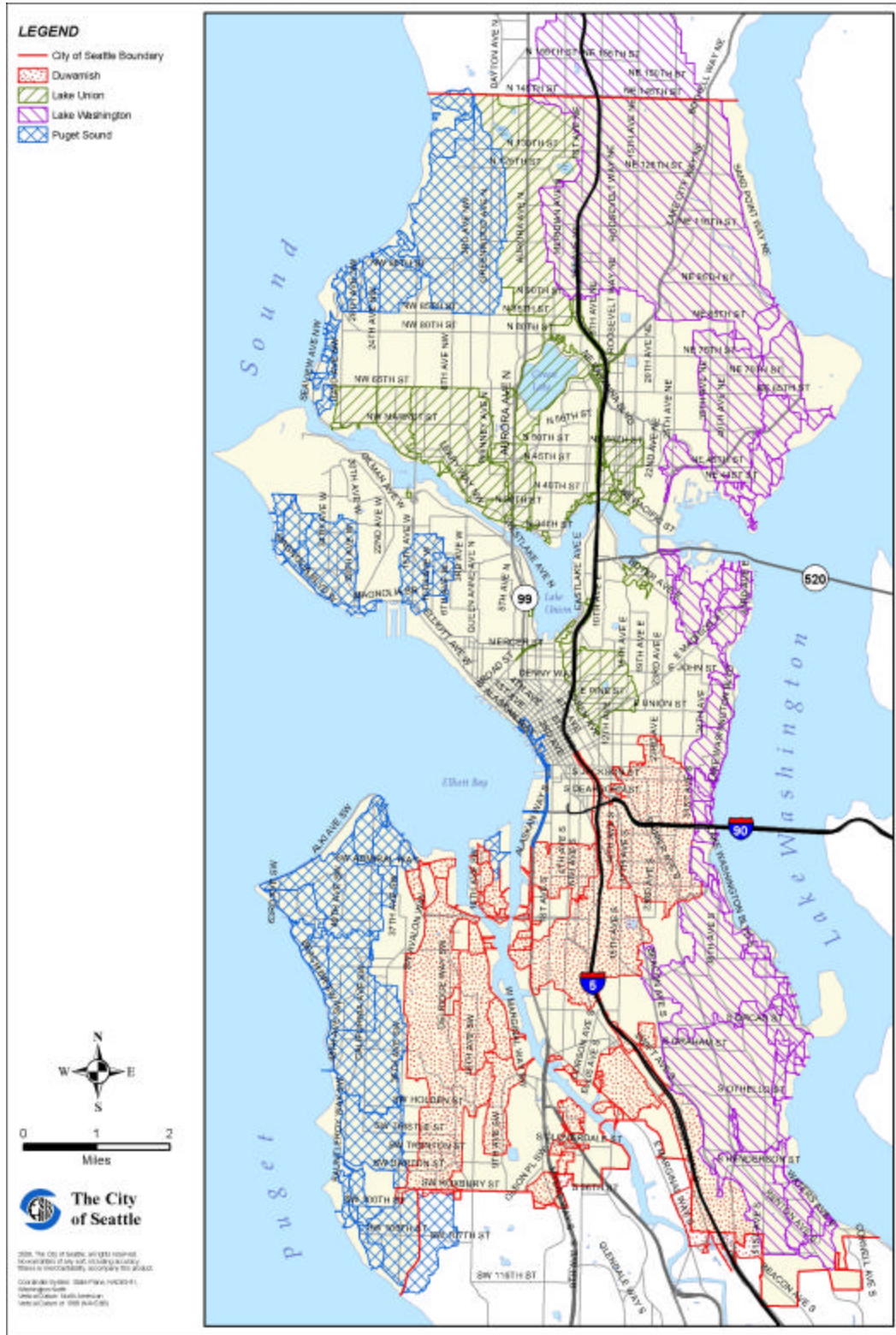
#### III.6.4.1 Planning Process and Considerations

A comprehensive planning process is in place to support the SSCP. The geographic scale of the program is the area served by the City's MS4 and the MS4-related receiving water bodies. This area is evaluated based on the watersheds of the four major receiving water bodies; Puget Sound, Lake Washington, Duwamish River, and the Ship Canal/Lake Union (Figure III.6-1). Regulations and issues considered during the SSCP development process included: 303 (d) listed and other impaired water bodies, TMDLs, Stormwater Code requirements, Superfund and MTCA sites, as well as opportunity, feasibility, and available funding.





Figure III.6-1. Major Receiving Water Bodies



The SSCP program develops and prioritizes projects by using asset management principles. Projects are prioritized by SPU staff based on an assessment of receiving water body conditions, anticipated benefits of the project, regulatory compliance needs, opportunity, and application of asset management principles that have been adopted by SPU under the guidance of the Asset Management Committee (AMC). Projects must pass through several AMC evaluation screens and funding allocation phases before they are formally approved by SPU management for implementation. Asset management is the process by which projects are evaluated for their whole-life cycle cost benefit including social, economic, and environmental factors (the triple bottom line). This rigorous process assures that the City's SSCP needs are being addressed with the most effective use of ratepayer dollars by the time a project breaks ground. Additionally, project implementation is dependent upon City Council budget approval.

The public involvement process related to SSCP development includes (as appropriate): Seattle City Council budget process, public review of the Comprehensive Drainage Plan (Seattle, 2005b), involvement of the CDWAC, State Environmental Policy Act (SEPA) review, and Joint Aquatic Resources Permit Application (JARPA) review.

#### III.6.4.2 Structural Project List

SSCP projects are summarized in Table III.6-1. The projects are grouped by status. SSCP projects currently in construction have a high probability of being constructed on the anticipated schedule. For those projects currently in preliminary engineering (PE) or design, there is greater uncertainty associated with technical issues, schedule, available funding, and other unforeseen items that may result in changes to the project.

For projects that are primarily intended to provide stormwater treatment, the estimated pollutant load reduction (total suspended solids [TSS] kg/year) is shown in Table III.6-1. The concentration of TSS is used to represent estimated pollutant load because it is the target pollutant for "basic" stormwater treatment (Ecology, 2005) and is often related to other particle-bound pollutants such as total metals, total phosphorus, and certain organic chemicals. For projects that are primarily intended to provide flow control, the expected outcome of the project is shown in Table III.6-1. For all projects, other expected environmental benefits are shown in Table III.6-1. Anticipated monitoring or evaluation and anticipated construction dates are shown in Table III.6-1. The estimated annual capital budget (2009 – 2012) for each project is presented in Table III.6-2. A brief summary of each project included in the SSCP is provided below.

Due to the current economic situation that the City and Country are experiencing, the Norfolk – MLK, Aurora Ave and 125<sup>th</sup> and the Capitol Hill Water Quality projects that were displayed last year have been postponed and removed from Table III.6-2.





Table III.6-1. Structural Stormwater Control Projects – Summary

Project	Stormwater Treatment Estimated median TSS Reduction (kg/year)	Flow Control Expected Outcome	Other Expected Environmental Benefits	Planned Monitoring or Evaluation?	Anticipated Construction
<b>Construction Phase</b>					
Thornton Creek Water Quality Channel	7,000 – 13,000		<ul style="list-style-type: none"> <li>Stormwater treatment of other pollutants (in addition to TSS)</li> <li>Increased green space</li> </ul>	Water Quality and Vegetation	Construction to be completed in 2009
<b>PE or Design Phase</b>					
South Park Water Quality	24,000 - 78,000		<ul style="list-style-type: none"> <li>Stormwater treatment of other pollutants</li> </ul>		2010 -2011

Table III.6-2. Structural Stormwater Control Projects – Estimated Budget Projections

Project	2009	2010	2011	2012
<b>Construction Phase</b>				
Thornton Creek Water Quality Channel	\$770,000			
<b>PE or Design Phase</b>				
South Park Water Quality	\$1,720,000	\$6,080,000	2,460,000	

Thornton Creek Water Quality Channel

The Thornton Creek Water Quality Channel (TCWQC) project is a regional stormwater treatment facility located just upstream of the South Branch of Thornton Creek. The project involves conversion of an 8 acre paved parking lot to a biofiltration facility along with other site improvements (Figure III.6-2 and III.6-3). Stormwater from a 680-acre drainage area will be diverted from the existing drainage pipe under the project site to a series of modified biofiltration swales planted with native vegetation. The modified swales are approximately 30-feet wide with a total length of approximately 200 feet. High flows exceeding the capacity of the biofiltration swales will be bypassed (i.e., remain in the existing drainage pipe). The TCWQC design also includes native landscaping and pedestrian pathways. SPU plans to monitor stormwater treatment performance and vegetation establishment post-construction. Construction is scheduled for completion in 2009.

Figure III.6-2. TCWQC Project Site (Pre-project)

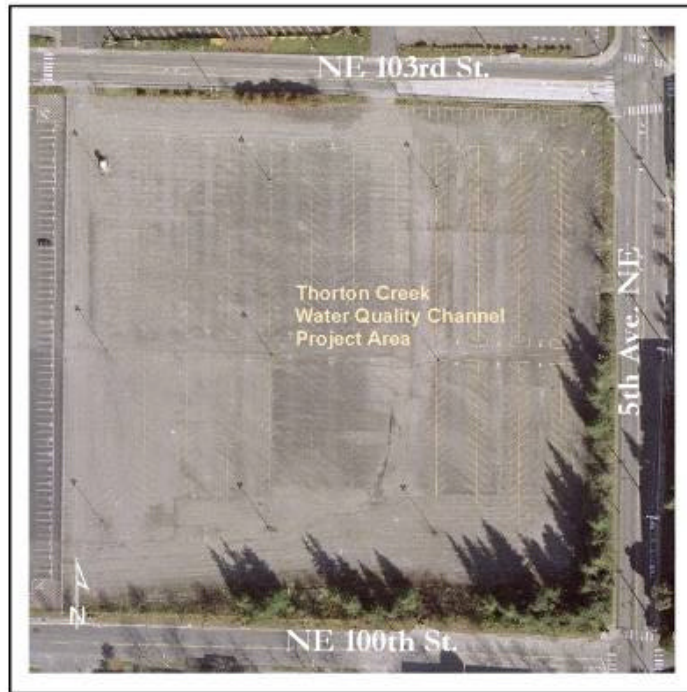


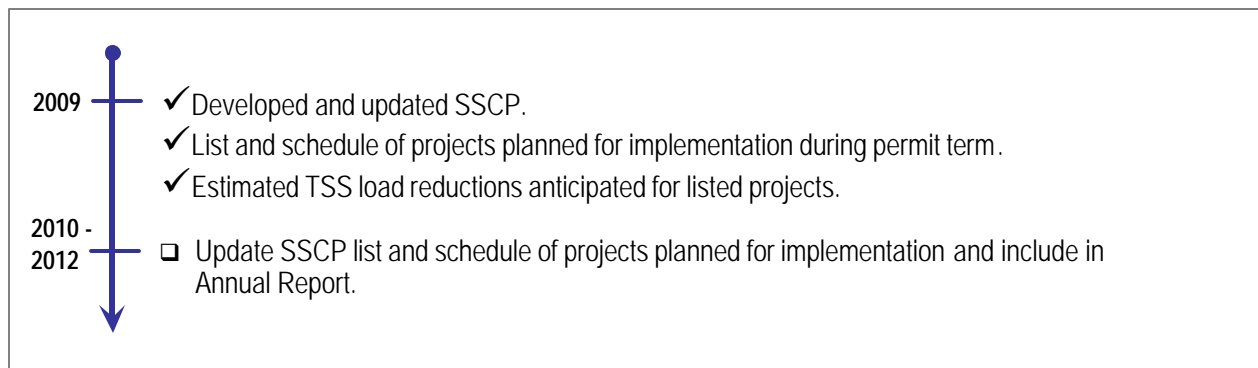
Figure III.6-3. TCWQC Project Site (Construction Phase)



### South Park Water Quality Project

The South Park Water Quality Project will be a regional water quality treatment facility located at the downstream end of the existing 7<sup>th</sup> Avenue South drainage basin (220 acres) which drains to the Duwamish River. Stormwater will be conveyed to the water quality facility by a new pump station which draws from just upstream of the drainage basin's existing outfall to the Duwamish Waterway. The South Park Water Quality Facility is intended to provide water quality treatment using Stormfilters® zeolite/perlite/granular activated carbon (ZPG) filter media cartridges in an above grade concrete structure measuring approximately 50-feet wide by 100-feet long by 12-feet high. Treated stormwater will mix with untreated flow from the high flow bypass and will gravity flow back to the existing outfall. The South Park Water Quality Project is currently in design. The South Park Water Quality Project is associated with other conveyance improvements in the 7<sup>th</sup> Avenue South basin.

Figure III.6-4. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      ☐ Planned

#### For More Information

- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.

Current Activities

Planning Ahead





## III.7 Source Control Program for Existing Development-S5C.7

### III.7.1 Requirements

The Permit (Section S5.C.7) requires the City to continue implementing an ongoing program to reduce pollutants in runoff from areas that drain to the municipal separate storm sewers owned or operated by the City. The minimum performance measures include these areas with more detailed requirements included in the Permit text:

- Adopt and begin enforcement of an ordinance, or other enforceable documents, requiring the application of source control BMPs for pollutant generating sources associated with existing land uses and activities as detailed in Appendix 8 of the Permit.
- Establish a program to identify land uses/businesses, based on Appendix 8 of the Permit, which are potentially pollution generating, update the inventory or list, and include a complaint-based response to identify other pollution generating sources such as mobile or home-based businesses.
- Implement an audit/inspection program for the identified land uses/businesses and provide information about activities that may generate pollutants and the source control requirements applicable to those activities. The program shall inspect 20% of the identified land uses/businesses annually to determine BMP effectiveness and compliance with source control requirements. Inspect all sites identified by legitimate complaints
- Implement a progressive enforcement policy to require sites to come into compliance with stormwater requirements within a reasonable time period.
- All staff whose primary job duties are implementing the source control program are trained to conduct these activities. Training shall cover legal authority, source control BMPs and their proper application, inspection protocols, and enforcement procedures. Follow-up training and documentation are required.

### III.7.2 Source Control Program

Source control is regulated by the Stormwater Code and associated Directors' Rules. The Stormwater Code regulates activities that have the potential to impact the quality and quantity of stormwater runoff and define the operational and structural BMPs for source control.

Following nearly ten months of discussions between Ecology and the City following the initial proposed drafts submitted in February 2008, Ecology has determined that the revised draft Stormwater Code and Directors' Rules dated March 16, 2009, are equivalent to Appendix 1 of the permit, Minimum Technical Requirements for New Development and Redevelopment. The determination of equivalency by Ecology indicates that the revised Stormwater Code is appropriate for implementation of the minimum requirements in Appendix 1, and will protect water quality, reduce the discharge of pollutants to the maximum extent



practicable, and satisfy the state requirement under chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART).

Ecology is taking public comment in spring 2009 and then finalizing revisions to the Phase I permit to incorporate local requirements, including Seattle's, as required by the Pollution Control Hearings Board ruling of August 2008. During 2009, pending Ecology action, SPU will prepare the approved draft Stormwater Code for public review and adoption by City Council and the associated Directors' Rules for adoption by SPU and DPD.

The current Volume 1 of the Directors' Rule identifies eight High Risk Pollution Generating Activity (HRPGA) categories and required businesses that conduct one or more of these activities to implement spill prevention and clean up measures (including a spill kit and spill plan), maintain drainage structures and identify and eliminate illicit connections, as well as implement operational source controls specific to their activity.

The revised Volume 1 Directors' Rule will identify 44 activities that require source control measures. With this change, the City will offer more specific guidance based on the actual activity (such as 'cleaning or washing of food service establishment equipment') occurring on site, rather than a more generic activity (such as 'vehicle, equipment and building washing and cleaning operations'). The revised draft Volume 1 Directors' Rule contains a worksheet for identifying applicable BMPs that can be provided to a business to help identify activities that may generate pollutants and the source control requirements applicable to those activities.

In addition to the activities outlined above, the City conducts education and outreach activities to the public on issues related to stormwater; specifically how individuals can adopt new behaviors or change existing behaviors to reduce their impacts on water quality. Examples of education and outreach activities related to source control include the publicly-listed Water Quality Hotline (206-684-7587) and the Resource Venture, a contracted consultant of SPU, that provides free site visits, spill kits and education to Seattle businesses to assist them with development of a spill prevention plan and proper clean up and disposal of spills.

Documentation on the City's proposed Source Control Program was submitted to Ecology on February 15, 2008 as required by S5.C.7.b.i. The Source Control Program will be updated following adoption of the revised Stormwater Code and Directors Rules.

### III.7.3 Responsible City Departments

SPU is the lead department for development and implementation of the City's Source Control Program

### III.7.4 Current and Planned Activities

The following sections outline completed or planned activities needed to meet the key Permit requirements.

#### III.7.4.1 Business Inspection Program

The Source Control and Monitoring (SCM) Team within SPU has been conducting and will continue to conduct business audit/inspections within areas of the City served by the MS4. SCM works with businesses and residents to reduce the risk of pollutants reaching surface waters. SCM conducts audits/inspections of businesses to help educate property managers and business owners about the requirement of the Stormwater Code and Directors' Rules and operational source control BMPs that are required to be implemented onsite. An enforcement process is in place to address non-compliance and egregious violations.

Education and technical assistance provided by SCM is delivered in person during site visits, inspections, or complaint investigations and also through outreach materials, such as BMP sheets. Enforcement is used when the education and technical assistance elements have failed to gain compliance voluntarily. The



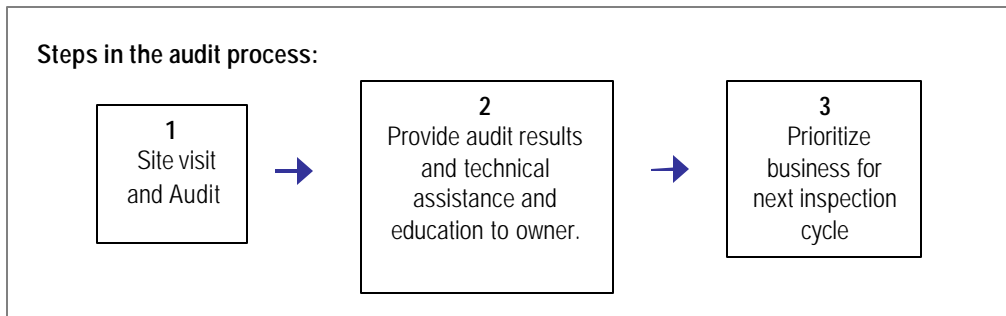


Resource Venture, a free resource conservation program for Seattle businesses that is currently being implemented by Cascadia Consulting under contract with SPU, provides outreach and education to the business community regarding stormwater pollution prevention. The Resource Venture also facilitates the Spill Kit Incentive Program (SKIP), which provides free spill kits and spill plans to Seattle businesses.

To meet the 2007 Permit requirements as defined in S5.C.7.b.ii and iii, SPU has established a program to identify sites which are potentially pollution generating and implementation of an audit/inspection program for identified sites that drain to the City’s MS3. SPU has compared a list of licensed businesses in Seattle against the SIC categories of land uses and businesses in Appendix 8 of the permit. The list of businesses to be audited/inspected was established as of August 2008 and was refined in February 2009 to reflect advances in GIS mapping capabilities. It is anticipated that the number of businesses on the list will change over time due to businesses economic shifts and discovery of businesses with pollution-generating activities that did not properly determine which standard industrial classification (SIC) they fall under.

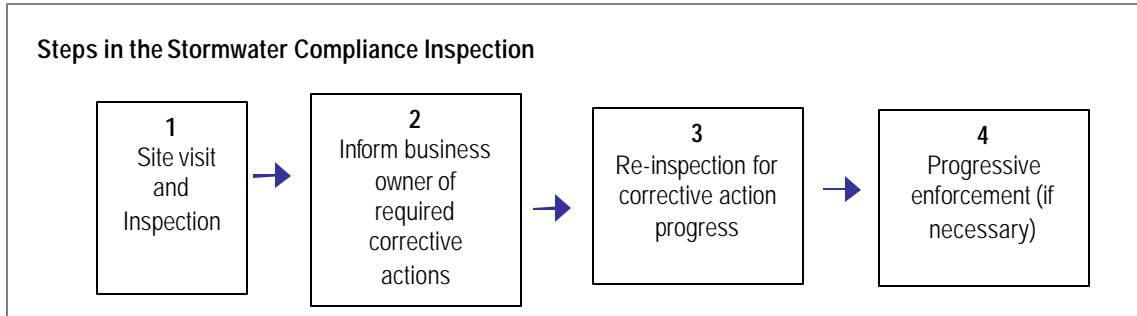
SPU uses various approaches to conducting inspections of business that drain to the City’s MS3 areas. The first is an “audit” inspection, whereby businesses will be visited by an SPU Inspector, informed of their requirements and relevant Code changes and informed of the results of the audit on site. The business will be ranked as High, Medium or Low priority based on their potential to pollute. The ranking established during the “audit” inspection will help develop a prioritization scheme and an inspection schedule that will be implemented to address the businesses overall potential to pollute. Businesses who are involved in a complaint reported to SCM, or a spill, or an IDDE event and businesses in the Superfund areas will continue to be inspected using the “stormwater compliance inspection” and Superfund business inspections described below.

Figure III.7-1. Audit Process



The second approach to business inspections is a “stormwater compliance inspection,” whereby businesses will be visited by an SPU Inspector and informed of the corrective actions necessary for their site to come into compliance with the City’s Stormwater Code. Inspectors will then follow up with the business after the compliance deadline to require that the necessary corrective actions have been implemented onsite and will proceed with progressive enforcement if necessary. The “stormwater compliance inspection” will be used for water quality complaint response at businesses or if an egregious violation is found during an “audit” inspection.

Figure III.7-2. Stormwater Compliance Inspection Process



The third approach to business inspections is directed at businesses that discharge to areas where the City is currently engaged in a comprehensive cleanup of the Lower Duwamish Waterway and the East Waterway in partnership with Ecology and the U.S. Environmental Protection Agency (EPA). Business inspections within the Superfund Cleanup areas focus on stormwater pollution prevention, as well as hazardous waste management and industrial waste management and follow the same process as the stormwater compliance inspection. If hazardous waste or industrial compliance issues are not resolved at the re-inspection, they are referred to other agencies for follow up.

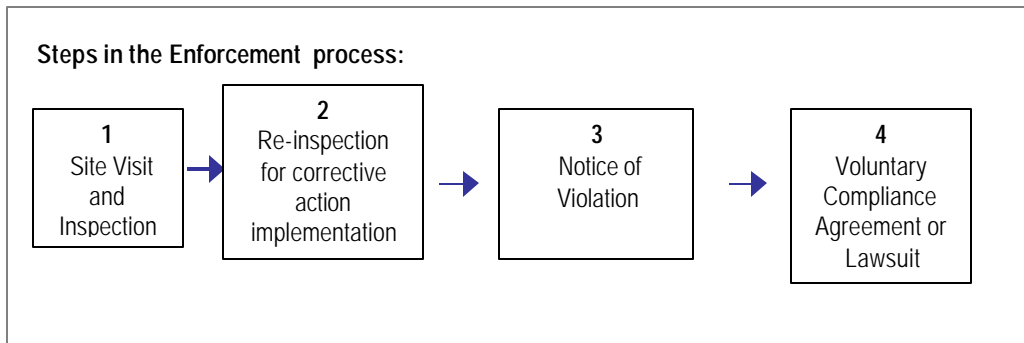
Mobile and home-based businesses that drain to the City's MS3 are included in this program in one of two ways. First, mobile and home-based businesses that are registered with the City as a business and have a SIC code are included in the business inspection program. The second way that these business types are included is if a call is made to the City's Water Quality Hotline (206-684-7587). Inspectors will respond to these calls and treat the mobile and home-based business in the same manner as other businesses.

#### III.7.4.2 Progressive Enforcement Program

SCM uses a progressive enforcement program to achieve source control objectives at inspected business locations. In general, SCM will start by prescribing operational BMPs for the regulated activity to solve issues unless the nature of the activity is such that a structural BMP is the most appropriate option. The current version of the Stormwater Code provides authority to require structural BMPs if follow-up inspections determine that the operational BMPs are not effective.

The enforcement process is closely linked to the inspection process. Figure III.7-1 summarizes the steps in the inspection process.

Figure III.7-3. Enforcement Process



#### III.7.4.3 Enforcement Criteria and Procedure

If a serious violation occurs, or if the corrective action process does not result in compliance, a Notice of Violation (NOV) will be considered and can be issued at any time for violations found during the business inspection process. An inspector who believes that a NOV is necessary to achieve compliance consults with the program lead to determine the merits of proceeding with enforcement and weighs it against established criteria. In some cases, cost recovery may be appropriate to pursue where the City has expended resources to terminate the polluting activity. .

##### III.7.4.3.1 Voluntary Compliance Agreement

As specified in the Stormwater Code, a Voluntary Compliance Agreement can be issued after a NOV in an effort to lay out specific compliance steps and deadlines. Another use of the Voluntary Compliance Agreement is to formalize compliance steps in an attempt to resolve a pollution issue before issuing a NOV.

A Voluntary Compliance Agreement may be appropriate in the following situations:

- when the property owner has significant financial or situational difficulty in achieving compliance and the pollution is not ongoing, or
- instances where the steps to achieve compliance are difficult or technically complex, or
- instances where obvious alternatives are not available.

SCM will work with the property owner at each of the steps in the agreement to require the business owner or property manager to meet milestones and make progress toward compliance. If the Voluntary Compliance Agreement target dates pass without compliance, a NOV may be issued.

##### III.7.4.3.2 Records Management

The Source Control Program tracks its inspection and enforcement records through a database and file management system. The inspection database is based in Microsoft Access and tracks information for both source control inspections and drainage system maintenance inspections. The database was developed in 2001 and records all site inspection information, generates corrective action letters, tracks compliance deadlines and reports inspections outcomes and other information. The database also has a QA/QC element built in to check data entry and reduce errors. In addition, all hard copy inspection records are kept in a filing system by address. In general, the file includes all previous inspection information, correspondence, maps





and other relevant site information. Records are managed in accordance with the state record keeping requirements.

#### III.7.4.3.3 Changes in Enforcement Process

In 2009, SPU will be revising its enforcement process to meet the requirements of the revised Stormwater Code in an effort to streamline enforcement and penalty assessment. Currently, the Stormwater Code only allows for penalties to be assessed by the Seattle municipal court. Using the revised Stormwater Code and the new process and matrix for assessing penalties (similar to Ecology's enforcement process), the penalties will be determined by the departments (either SPU or the DPD). Review by the director of the appropriate department must be requested before any appeal to Municipal Court. Through this expected change, the City will be able to consistently, fairly and efficiently assess and collect penalties tailored to the nature and severity of the violation.

### III.7.5 Training for Staff Involved in Source Control Program

The SCM group will use the following training methods and classes to ensure that all staff whose primary job duties are involved in implementation of the Source Control Program are knowledgeable of the current policies and procedures.

#### III.7.5.1 Basic Inspector Training

Each SCM staff member involved in inspections attends the EPA sponsored Basic Inspector Training course. The course provides an overview of all aspects of inspection preparation, conduct, and follow-up. The course also introduces various federal environmental laws and regulations. The policy is that all personnel hired by SCM whose primary job duties are implementing the source control program will attend this training.

#### III.7.5.2 On-the-job Training

All SCM staff that are responsible for implementing the source control program are trained in the use and application of the SCM Inspection Procedure Manual to help establish that the program is implemented in a consistent, repeatable manner and upholds technical and customer-driven principles.

#### III.7.5.3 Periodic Meetings

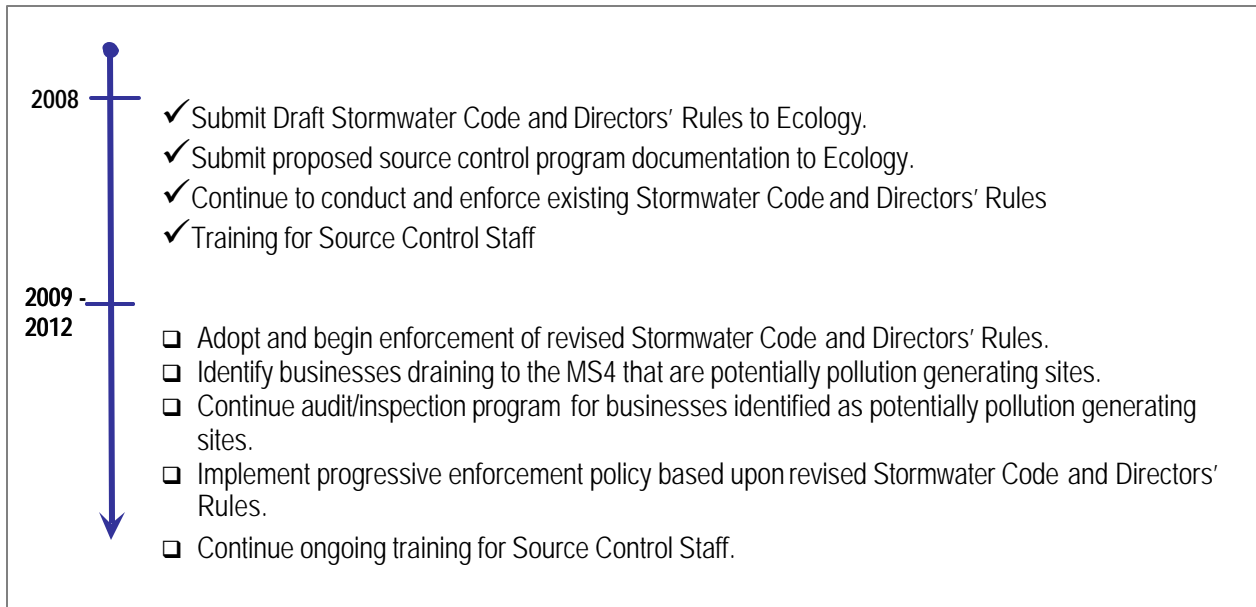
SCM staff hold meetings on a regular basis to present information and discuss issues, problems and lessons learned during field visits. Staff present and discuss investigations and assist each other with troubleshooting. Presentations on new information related to source control are included as appropriate.

#### III.7.5.4 Ongoing Training

As new inspection training opportunities arise, typically through Interagency Resource for Achieving Cooperation or the U.S. Environmental Protection Agency (EPA), inspectors take advantage of these opportunities. Such training topics include environmental chemistry and sampling protocol.



Figure III.7-1. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      □ Planned

*For More Information*

- ❖ **Business Inspection Program:**  
[http://www.seattle.gov/util/Services/Drainage\\_&\\_Sewer/Stormwater\\_Related\\_Inspections/Pollution\\_Control\\_Inspections/index.asp](http://www.seattle.gov/util/Services/Drainage_&_Sewer/Stormwater_Related_Inspections/Pollution_Control_Inspections/index.asp)
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.



## III.8 Illicit Connections and Illicit Discharge Detection and Elimination Program-S5C.8

### III.8.1 Requirements

The Permit (Section S5.C.8) requires the City to continue implementing an ongoing program to detect, remove and prevent illicit connections, illicit discharges, connections, including any spills, into the municipal separate storm sewers owned or operated by the City. The minimum performance measures include these nine main areas with more detailed requirements included in the Permit text:

- Continue implementing an ongoing IDDE program.
- Evaluate, and if necessary update, existing ordinances or other regulatory mechanisms to effectively prohibit non-stormwater illegal discharges and/or dumping into the City's MS4. Certain non-stormwater discharges are subject to meeting conditions stated in the Permit in order to be permissible and these must be addressed in the SWMP.
- Train all municipal field staff who are responsible for identification, investigation, termination, cleanup and reporting of illicit discharges, including spills, improper disposal and illicit connections to conduct these activities.
- Train all municipal field staff, which as part of their normal duties, may come into contact with or otherwise observe an illicit connection or illicit discharge to the storm sewer system, on identification and proper procedures for reporting and responding. Provide follow-up training as needed to address changes and maintain training records.
- Publicly list a hotline or other local telephone number for public reporting of spills and other illicit discharges.
- Conduct on-going screening to detect illicit connections, including field screening and source tracing. Prioritize conveyances and outfalls for screening, and screen at least 60 percent according to Permit terms.
- Upon discovery or receiving a report of a suspected illicit connection, initiate an investigation within 21 days to determine sources and the nature of the connection, and the responsible party.
- Upon confirmation of the illicit nature of a connection, use enforcement authority in a documented effort to eliminate the illicit connection within six months.
- Contact Ecology immediately upon discovering an illicit connection that presents a severe threat to human health or the environment.
- Participate in a regional emergency response program, or develop and implement procedures to respond to spills and improper disposal into the City's MS4.
- Track and maintain records of illicit discharge detection and elimination program, including documentation of inspections, complaint/spill response and other enforcement records.



### III.8.2 IDDE Program

The City continues to implement the Illicit Connection and Discharge Detection and Elimination (IDDE) Program developed under the previous Cedar/Green NPDES general permit issued by Ecology in 1995. SPU's Source Control and Monitoring group (SCM) is responsible for the development and implementation of the City's IDDE program. The IDDE program is focused on preventing and eliminating non-stormwater discharges to the City's MS3 (permissible non-stormwater discharges are described below). The IDDE program addresses the following illicit discharges:

- Illicit connections –any man-made conveyance that is connected to the City's municipal separate storm sewer without a permit, excluding roof drains and other similar type connections. An example is an industrial floor drain connected into the stormwater system instead of the separated or combined sanitary sewer system.
- Illegal dumping – discharge of solid or liquid waste into the City's MS3. Examples include trash or dumping used motor oil into a storm drain.
- Spills – an unintentional discharge of any size into the City's MS4. Examples include fluids released from a vehicle involved in an accident.

Reports of illicit discharges are received from a variety of sources such as the SPU Complaint Hotline, SPU Spill Response Program, as well as the SPU Business Inspection Program and SPU Private Drainage Facility Inspection Program. Each program is tracked using a database which documents each event and enforcement records. Two major components of the IDDE program are the publicly-listed, 24-hour citizen complaint telephone number (Water Quality Hotline 206-684-7587) and web form for reporting water quality complaints. In addition to citizen reports, the hotline is used to capture complaints from other departments and agencies.

### III.8.3 Responsible City Departments

SPU is the lead department for development and implementation of the IDDE Program.

### III.8.4 Current and Planned Activities

The following sections outline completed or planned activities needed to meet the key Permit requirements.

#### III.8.4.1 Field Screening and Source Tracing

SCM has developed a field screening and source tracing program for compliance with S5.C.8.b.vi based upon literature review and in consultation with other jurisdictions to determine appropriate methods for detection of illicit discharges. SCM has incorporated and modified the approaches from these various programs to develop procedures that will serve the urban setting.

The SPU program will use the following field screening elements designed to identify and characterize continuous dry-weather flows and identify suspect intermittent and transitory flows: prioritize the conveyance system, perform field characterization which may include water and sediment chemical screening at conveyance system locations, and use published flow chart and benchmark concentrations methods (Brown, Caraco & Pitt, 2004)(Pitt, 2001) in addition to the use of best professional judgment to trigger follow up investigations. In areas of the City under Superfund investigation, sediment sampling will be used to identify and source trace contaminants of concern.



Source tracing investigations will be triggered by exceedances of flow chart and benchmark concentration indicators or the use of best professional judgment. Follow up source tracing can include additional water or sediment sampling, visual tracing, side sewer research, dye testing, smoke testing, business inspections, stream walks, and closed circuit TV filming of piped systems. These investigations may require the participation of other City inspectors, operations and maintenance staff, and the participation of other agencies.

If and when an IDDE event is identified by field screening and source tracing, SCM will continue to use the SCM Inspection Procedure Manual to define procedures for conducting and documenting investigations, gaining rights of entry, conducting source tracing, collecting samples, pursuing enforcement measures and managing data. The manual also contains information and contacts for interagency cooperation. In addition to the inspection procedure manual, SCM currently uses decision and sampling guidance developed by the City as part of program implementation. This guidance will be expanded and modified based upon staff research and GIS data to prepare preliminary prioritization criteria for field screening the conveyance system and outfalls.

#### III.8.4.2 Stormwater Code Revisions and Permissible Non-stormwater Discharges

The City is engaged in revisions to the Stormwater Code and associated Directors' Rules. IDDE is covered in SMC 22.802.030 and 22.803.030 and in Volume 1, Source Control Technical Requirements Manual, of the Directors' Rules.

Following nearly ten months of discussions between Ecology and the City following the initial proposed drafts submitted in February 2008, Ecology has determined that the revised draft Stormwater Code and Directors' Rules dated March 16, 2009, are equivalent to Appendix 1 of the permit, Minimum Technical Requirements for New Development and Redevelopment. The determination of equivalency by Ecology indicates that the revised Stormwater Code is appropriate for implementation of the minimum requirements in Appendix 1, and will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy the state requirement under chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART).

Ecology is taking public comment in spring 2009 and then finalizing revisions to the Phase I permit to incorporate local requirements, including Seattle's, as required by the Pollution Control Hearings Board ruling of August 2008. During 2009, pending Ecology action, SPU will prepare the approved draft Stormwater Code for public review and adoption by City Council and the associated Directors' Rules for adoption by SPU and DPD.

The Stormwater Code and Directors' Rules have been proposed to be revised, and the draft dated March 16, 2009 has been approved by Ecology for equivalency, to prohibit non-stormwater discharges (Draft SMC 22.802.020), and to make the following non-stormwater discharges into the City's MS3 permissible when specific conditions are met, as is allowed by the Permit. (Draft SMC 22.802.030).

##### III.8.4.2.1 Potable Water Sources

As proposed, and Ecology-approved, discharges from potable water sources, including flushing of potable water lines, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water must meet the following conditions to be permissible. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the drainage system. (Draft SMC 22.802.030.A.1).

##### III.8.4.2.2 Lawn and Other Irrigation Runoff

The revised and Ecology-approved draft Stormwater Code allows discharges of runoff from lawn watering and discharges from irrigation runoff, including irrigation water from agricultural sources that is commingled



with urban stormwater (Draft SMC 22.802.030.A. 8 and 9). Education and outreach on these subjects are provided to the public, landscapers, and property owners by a variety of City programs and are explained in Section III.10 of this document. BMP 20 in the revised Volume I, Source Control Technical Requirements Manual, of the Directors' Rules addresses these types of discharges.

#### III.8.4.2.3 Swimming Pool Discharges

The revised and Ecology approved draft Stormwater Code allows discharges from swimming pools, hot tubs, fountains, or similar aquatic recreation facilities and constructed water features, are allowed provided the discharges have been dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the drainage control system (Draft SMC 22.802.030.A.13). BMP 39 in the revised Volume I, Source Control Technical Requirements Manual, of the Directors' Rules addresses this discharge.

#### III.8.4.2.4 Street and Sidewalk Wash Water

The revised and Ecology-approved draft Stormwater Code allows discharges of runoff from street and sidewalk wash-water that do not use detergents or chemical additives, water used to control dust, and water from routine external building washdown that does not use detergents or chemical additives (Draft SMC 22.802.030.A.14, 15 and 16). Education and outreach on these subjects are provided to the public, landscapers, and property owners by a variety of City programs and are explained in Section III.10 of this document. BMP 9 in the revised Volume I, Source Control Technical Requirements Manual, of the Directors' Rules addresses this discharge.

#### III.8.4.2.5 Other Non-Stormwater Discharges

The revised and Ecology-approved draft Stormwater Code addresses discharges of runoff from other non-stormwater discharges, and discharges that are in compliance with the requirements of an approved stormwater pollution prevention plan (SWPPP) that addresses such discharges (Draft SMC 22.802.030 A.19). In addition to discharges addressed above, the following types of other non-stormwater discharges are permissible unless the City determines that the type of discharge is causing or contributing to a Permit violation or a water quality problem:

- Discharges from washing or rinsing of potable water storage reservoirs, dechlorinated as described in the Code, addressed above
- Discharges from surface waters, including diverted stream flows
- Discharges of uncontaminated groundwater, including uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(2)), uncontaminated pumped groundwater, and rising ground waters
- Discharges from foundation drains
- Discharges of air conditioning condensation
- Discharges from springs
- Discharges of uncontaminated water from crawl space pumps
- Discharges from riparian habitats and wetlands
- Discharges from approved footing drains and other subsurface drains or, where approval is not required, installed in compliance with this subtitle and rules promulgated pursuant to this subtitle
- Discharges that are in compliance with a separate individual or general NPDES permit





- Discharges that are from emergency fire fighting activities

#### III.8.4.3 Training for Staff Involved in the IDDE Program

The SCM group staff members are responsible for identification, investigation, termination, cleanup and reporting of illicit discharges, including spills, improper disposal and illicit connections. SCM will use the following training methods and classes to provide that Environmental Compliance Inspectors within SCM involved in identification, investigation, termination, cleanup and reporting associated with the IDDE program are knowledgeable of the current policies and procedures.

##### III.8.4.3.1 Basic Inspector Training

Each SCM staff member involved in inspections attends the EPA sponsored Basic Inspector Training course. The course provides an overview of all aspects of inspection preparation, conduct, and follow-up. The course also introduces various federal environmental laws and regulations.

##### III.8.4.3.2 Spill Training

Spill Training for SCM staff includes attending a course on oil spill response and 40-hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training. Staff attends an 8 hour HAZWOPER refresher as needed.

##### III.8.4.3.3 On-the-job Training

All SCM staff that are responsible for implementing the source control program are trained in the use and application of the SCM Inspection Procedure Manual to help establish that the program is implemented in a consistent manner and upholds technical and customer driven principles.

##### III.8.4.3.4 Periodic Meetings

SCM staff hold meetings on a regular basis to present information and discuss issues, problems and lessons learned during field visits. Staff present and discuss investigations and assist each other with troubleshooting. Presentations on new information related to Illicit Discharge Detection and Elimination (IDDE) are included as appropriate.

##### III.8.4.3.5 Ongoing Training

As new inspection training opportunities arise, typically through Interagency Resource for Achieving Cooperation or the U.S. Environmental Protection Agency (EPA), inspectors take advantage of these opportunities. Such training topics include environmental chemistry and sampling protocol.

##### III.8.4.3.6 City Staff Training

All municipal field staff, which as part of their normal job duties may come into contact with or otherwise observe an illicit connection or illicit discharge to the storm sewer system were trained during a City-wide Federal Permit Training session occurring spring 2008. The training consisted of classroom and field exercises designed to provide instruction on how to identify illicit discharges and connections and how to properly report and/or respond to them. On-going training on this subject is being developed so that existing employees can refresh their knowledge to added changes in procedures or techniques and so new employees can be properly trained. Training is tracked in a City-wide training data base.

#### III.8.4.4 Water Quality Hotline

The City provides a publicly listed Water Quality Hotline and web form (<http://www2.seattle.gov/util/forms/surfacewater/surfacewaterForm.asp>) for the public to report potential stormwater, illicit discharge and



other water quality related violations. This is part of the City's procedure to prioritize complaints to respond to illicit connections and to investigate and respond to spills and improper disposal into MS3s owned or operated by the City. The phone number is listed in the government section of the phone book and is available on the SPU web page. SPU maintains the hotline and responds to calls, which are left on a message system and set off a messaging system to alert responders. SCM also receives complaints directly from other City departments and agencies. A complaint call decision tree (Figure III.8-1) is used to prioritize calls and establish a response to problems judges to be urgent, severe or an emergency. SCM has a staff of Environmental Compliance Inspectors who respond to water quality complaints within Seattle City limits. The inspectors attempt to locate the source of the water quality problem and the responsible party, and then provide technical assistance including education on best management practices for pollution prevention and information on the Stormwater Code and Directors' Rules, and provide clean up assistance when necessary. If a spill is reported, the caller is directed by staff at the Water Quality Hotline to call the Operation Response Center (ORC) at 206-386-1800 to report the spill so that a Spill Coordinator can be dispatched immediately.

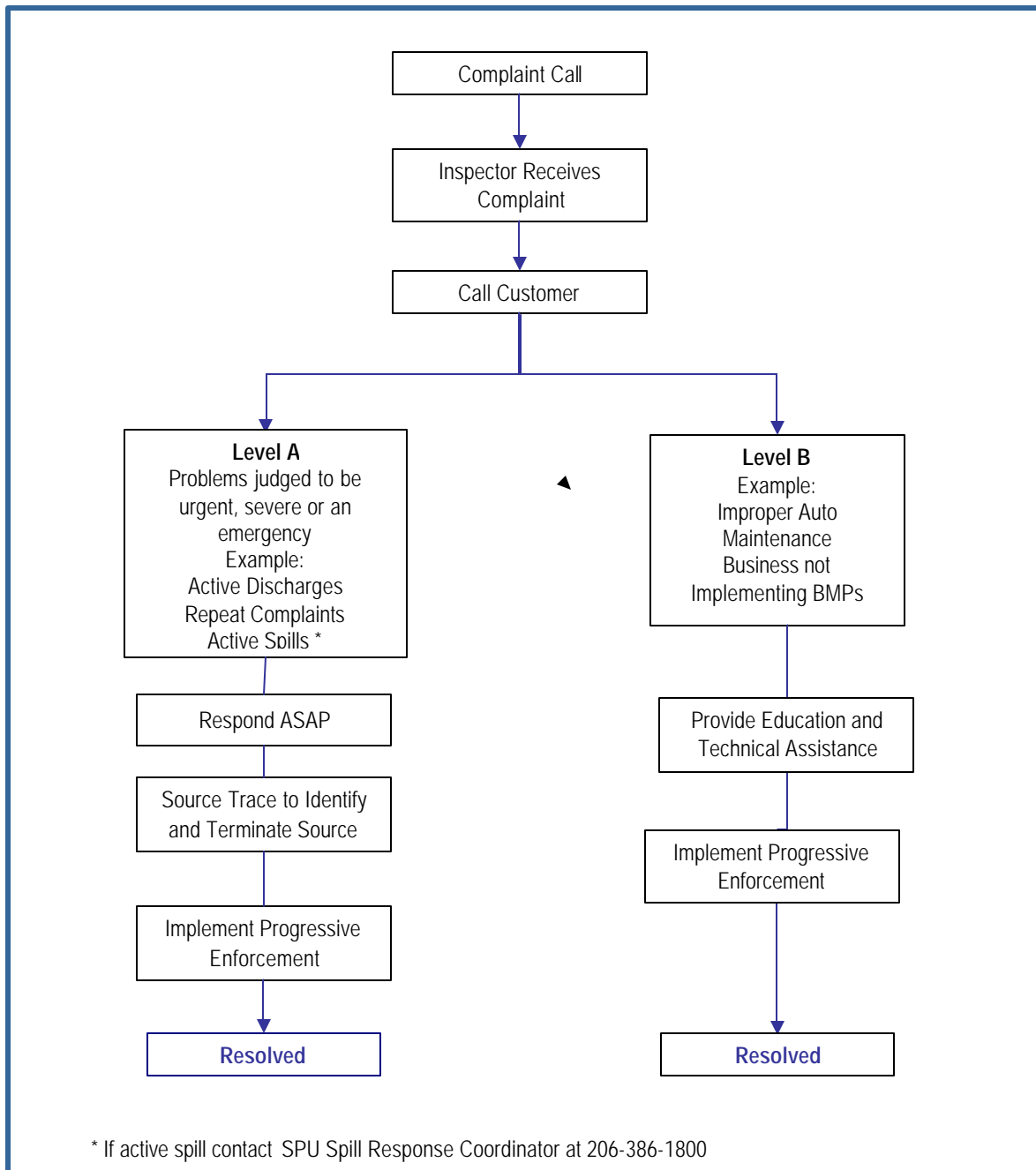
All of the complaints, regardless of the suspected cause, are responded to within three business days and in no case would SCM respond to a complaint more than 21 days after receiving the call. In all cases, the person reporting the potential violation is notified of investigation results if they leave contact information.

The SCM database was revised in 2007 to allow additional data entry, enhanced tracking, and analysis of the complaints that are received. A query of the SCM database reported that the Water Quality Hotline received 326 surface water quality complaints in 2008. This complaint hotline will continue through 2009 and beyond.





Figure III.8-1. Complaint Call Decision Tree



III.8.4.5 Response to Illicit Connections

Illicit connections are considered a top priority complaint and are most often responded to the same business day or within 24 hours. It is a SCM policy to notify Ecology within 24 hours an illicit connection has the

potential to reach a receiving water body, regardless of the threat potential. Ecology is contacted immediately if an illicit connection presents a severe threat to human health or the environment. The contact date, time and Environmental Response Tracking System (ERTS) number assigned are recorded on the SPU Complaint Inspection form and tracked in the SCM database. SCM implements the progressive enforcement process to document efforts at elimination of all illicit connections within 6 months.

#### III.8.4.6 Emergency Response

Spill response at the City is handled by a variety of departments dependent on the source and type of spill. This is part of the City's procedure to investigate and respond to spills and improper disposal in to MS3s owned or operated by the City. SPU is responsible for spills that have the potential to enter, or have entered the City's MS4. In cases where a City Department other than SPU responds and cleans up a spill, the Department's procedures direct them to notify SPU of all spills that enter or have the potential to enter the MS4.

The SPU Spill Response Program is staffed by a Senior Spill Coordinator and a network of on-call Spill Coordinators. Spill Coordinators work in 3- or 4-day on-call shifts and are available 24 hrs/ 7 days week. The Spill Coordinator is responsible for responding to the spill, coordinating cleanup and filing a report form to the Senior Spill Coordinator.

Spill response calls are dispatched through the SPU ORC and are received via a publicly available phone number (206-386-1800). If a citizen calls in to report an active spill, they are directed by the Water Quality Hotline to call the ORC to report the spill. Once a spill call is received, the Dispatcher contacts the SPU on-call Spill Coordinator and advises them of the situation.

Spill Coordinators follow written procedures for investigation, clean up and reporting to appropriate agencies. Spill Response Guidelines were established by SPU in 2000, revised in 2008, and cover spill classifications, training requirements, safety procedures, documentation, disposal, interagency cooperation and regulatory notification.

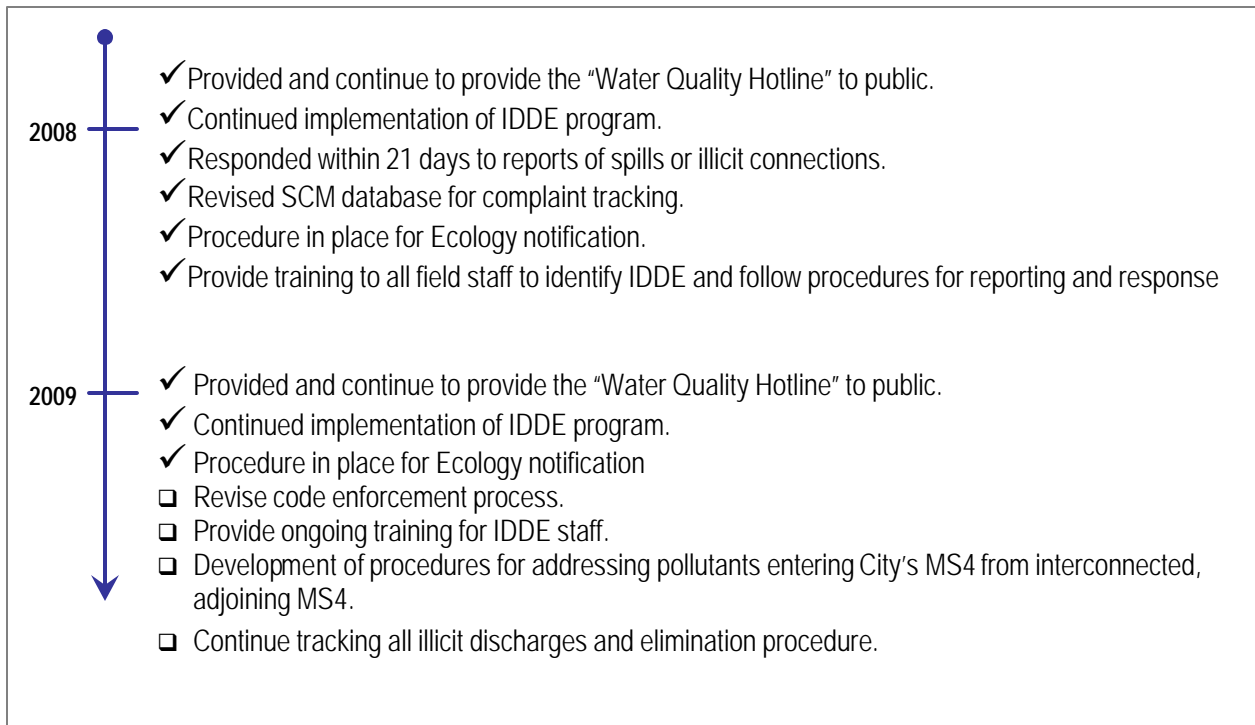
#### III.8.4.7 Record Tracking

Enforcement actions are tracked both in the SCM database and electronically in a separate folder on the City network. All enforcement documentation, inspection reports, warning letters, notices of violations, and other enforcement records are kept on file.

In 2009, SPU will be revising its enforcement process to meet the requirements of the revised Stormwater Code in an effort to streamline enforcement and penalty assessment. Currently, the Stormwater Code only allows for penalties to be assessed by the Seattle municipal court. Using the revised Stormwater Code and the new process and matrix for assessing penalties (similar to Ecology's enforcement process), the penalties will be determined by the departments (either SPU or the DPD). Review by the director of the appropriate department must be requested before any appeal to Municipal Court. Through this expected change, the City will be able to consistently, fairly and efficiently assess and collect penalties tailored to the nature and severity of the violation.



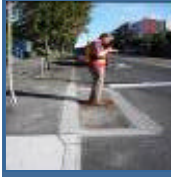
Figure III.8-2. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      □ Planned

*For More Information*

- ❖ Water Quality Hotline: 206-684-7587
- ❖ Report a Spill - SPU Operations Control Center: 206-386-1800
- ❖ Water Quality Hotline information and online form:  
[http://www.seattle.gov/util/Services/Drainage & Sewer/Keep Water Safe & Clean/COS\\_002180.asp](http://www.seattle.gov/util/Services/Drainage%20&%20Sewer/Keep%20Water%20Safe%20&%20Clean/COS_002180.asp)
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.



## III.9 Operation and Maintenance-S5C.9

### III.9.1 Requirements

The Permit (Section S5.C.9) requires the City to develop and implement an operations and maintenance (O&M) program to reduce stormwater impacts associated with the City's municipal separate stormwater system and regulate municipal operations and maintenance activities in areas served by the City's MS3. The minimum performance measures include the following areas with more detailed requirements included in the Permit text:

- Establish maintenance standards for facilities that are as protective, or more protective, of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington (Ecology, 2005).
- Evaluate and, if necessary, update existing ordinances or other enforceable documents to require maintenance of existing permanent stormwater facilities regulated by the City. Establish an initial and ongoing inspection program for stormwater facilities and catch basins regulated by the City.
- Develop and implement an initial inspection schedule for all known, permanent stormwater treatment and flow control facilities (other than catch basins) regulated by the City to inspect each facility at least once during the term of the Permit to enforce compliance with adopted maintenance standards as needed based on the inspection.
- Develop an on-going inspection schedule to annually inspect all stormwater treatment and flow control facilities (other than catch basins) regulated by the City.
- Manage maintenance activities to inspect all new permanent stormwater treatment and flow control facilities, including catch basins, in new residential development every 6 months during the period of heaviest construction to identify maintenance needs and enforce compliance.
- Require cleaning of catch basins regulated by the City if found to be out of compliance during source control or IDDE program activities or if part of treatment or flow control system inspected under this O&M program.
- Implement an inspection process for all permanent stormwater facilities owned or operated by the City. Conduct spot checks of potentially damaged stormwater facilities after storm events. Conduct repairs or maintenance actions in compliance with maintenance standards.
- Implement a program to annually inspect all catch basins and inlets owned or operated by the City.
- Maintain records of inspections and repair activities conducted by the City.
- Establish and implement processes and procedures to reduce stormwater impacts associated with runoff from municipal operation and maintenance activities including but not limited to streets, parking lots, roads or highways owned or maintained by the City, and to reduce pollutants in discharges from all lands owned or maintained by the City.



- Train employees who have primary construction, operations or maintenance job functions that could impact stormwater quality. Track and maintain training records.
- Develop and implement SWPPPs for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the City in areas covered by the Permit that are not covered by another Ecology-issued stormwater discharge permit.

### III.9.2 O&M Program

The City's municipal stormwater permit-related O&M program is comprised of the activities outlined below.

### III.9.3 Responsible City Departments

SPU is responsible for operation and maintenance of stormwater facilities owned, operated or maintained by the City and located in the right of way and for conducting inspections of private stormwater facilities to determine that those stormwater facilities meet operation and maintenance standards. Other City Departments, SDOT, FFD, Parks, and SCL are responsible for operation and maintenance of stormwater facilities and implementation of operation and maintenance policies and procedures specific to the properties they manage.

### III.9.4 Current and Planned Activities

The following sections outline completed or planned activities needed to meet the key Permit requirements.

#### III.9.4.1 Maintenance Standards

The City has a program based on maintenance standards in place to reduce stormwater impacts associated with runoff from impervious surfaces and operation and maintenance of stormwater facilities that discharge to the City's MS3. This program follows the current Stormwater Code and the current Director's Rule Volume 1, Source Control Technical Requirements Manual. The City is in the process of revising the Stormwater Code and the maintenance standards to be included in the revised 2009 Directors' Rule on Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual (Volume 3). The revised draft Directors' Rule outlines inspection, maintenance, and record keeping requirements for stormwater management facilities, both public and private, in the City. In some cases, the City owns or operates facilities with site-specific maintenance requirements that require facility-specific maintenance standards. In addition to maintenance standards, the City has procedural manuals in place that detail information such as the location and access restrictions of facilities, necessary equipment, safety procedures and maintenance procedures.

#### III.9.4.2 Maintenance Standards for Private Stormwater Facilities Regulated by the City

The SCM group at SPU is responsible for inspecting private facilities regulated by the City, based on maintenance standards established by the City and described above. During a facility inspection, all aspects of the system are inspected (e.g., flow control devices, and catch basins). When any part of that system (including catch basins) is found to be out of compliance with Stormwater Code requirements for maintenance, a corrective action letter is sent to the facility owner and the owner must certify that the work has been completed to correct the noncompliance.

SPU and other City departments will be revising the public and private facility maintenance programs to reflect the new requirement of the Permit and the expected revised Stormwater Code in 2009.



There are approximately 1,800 privately-owned water quality and flow control facilities regulated by the City (hereafter in this subsection, “facilities”) that drain to the City’s MS3s and up to 250 are added each year due to new development or redevelopment requirements. Maintenance standards for private stormwater facilities regulated by the City Stormwater Code are defined and described in proposed Appendix D of the revised 2009 Directors’ Rule on Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual (Volume 3). The Directors’ Rule will provides a summary of the maintenance requirements. The inspection and maintenance requirements include information about what features to inspect at each facility, when and how often these private systems should be inspected, and how to identify specific defects that warrant corrective action. Corrective actions are described that should be taken to maintain system performance.

#### III.9.4.3 Maintenance of Catch Basins Owned or Operated by the Permittee

SPU has continued its catch basin maintenance and inspection program that focuses on maintaining catch basins for public health, safety and property and by nature includes water quality benefits. Staff have implemented a catch basin inspection and maintenance program to meet new Permit requirements.

#### III.9.4.4 Inspection and Maintenance of Private Stormwater Facilities

The SCM group at SPU is responsible for inspection consistent with the Permit of private stormwater facilities that drain to the City’s MS3 to require the systems are properly maintained by responsible parties and are operating as designed. Inspectors inform the owner of the stormwater facility of the results of the inspection and the required maintenance necessary to bring the system into compliance. SCM uses the same progressive enforcement process detailed in Section III.7.4.2. SCM has developed and is implementing an initial inspection schedule designed to inspect such each private stormwater facility once during the final three years of the Permit. Facility owners self certify that the work needed for compliance has been completed by providing a signed copy of the corrective action letter with a copy of the work detail performed.

DPD is responsible for conducting inspections of private stormwater facilities in new residential developments during the period of heaviest construction to identify maintenance needs and enforcing compliance as needed. DPD is incorporating this requirement into the inspection process described in Section III.5.4.3.2.

#### III.9.4.5 Inspection and Maintenance of City-Owned Stormwater Facilities

SPU has asset managers that schedule and coordinate inspection and maintenance of conventional and innovative (e.g., Green Stormwater Infrastructure) stormwater facilities owned or operated by the City on an annual basis and following 10 year 24 hour storm events. The Field Operations and Maintenance Department (FOM) at SPU are responsible for the actual inspection and maintenance of stormwater facilities located in the right-of-way and owned, operated or maintained SPU. Stormwater facilities owned by the City, but located outside of the right-of-way, are inspected and maintained by the City Department that manages the property.

SPU and the other City Departments have developed and begun to implemented an inspection program to annually inspect all permanent stormwater facilities owned or operated by the City. The program is designed to determine if maintenance is needed and implement the needed maintenance in accordance to the Directors’ Rules or a facility specific maintenance standard.



### III.9.4.6 Records of Inspections, Maintenance, or Repair

#### III.9.4.6.1 Private Stormwater Facilities

The SCM group tracks private facility inspection and enforcement records through a Microsoft Access database and file management system. The database tracks information for both source control inspections and drainage system maintenance inspections. Records are managed in accordance with the State record keeping requirements. Enforcement actions are tracked both in the database and electronically in a separate folder on the City network. Any enforcement paperwork is kept with the file.

#### III.9.4.6.2 City-Owned Stormwater Facilities

SPU has asset managers that oversee inspection and maintenance of conventional and innovative (e.g., NDS) facilities owned, operated or maintained by the City. The asset managers track inspection data and facilitate maintenance as needed following the applicable maintenance standard.

Inspection and maintenance of stormwater facilities owned, operated or maintained by the City are tracked by the computer program MAXIMO at SPU. This program is used to generate work orders for facility inspections and maintenance and to record the results of these activities. The other City Departments use a variety of methods to record inspections and maintenance results.

### III.9.4.7 Stormwater Practices to Reduce Impacts Associated with Parking Lots, Streets, and Roads

The City's existing Stormwater Code and Chapter 2 of Director's Rule 17-2000, Volume 1 Source Control Technical Requirements Manual and the revised draft Stormwater Code and Volume 1 and 2 of the Directors' Rules dated March 16, 2009 establish practices to reduce the stormwater impacts associated with parking lots, streets and roads owned or operated by the City and that drain to the City's MS3s.

In addition to the Stormwater Code, the SDOT has established and has implemented practices to reduce stormwater impacts associated with runoff from City road maintenance activities through the use of Maintenance Management System Performance Sheets that reference BMPs and elements of the Regional Road Maintenance initiative.

Parks, FFD and SCL follow the current Stormwater Codes and Directors' Rules in place for management of stormwater from roads and parking lots under their departments' management outside the City rights of way. The departments follow the Stormwater Code and use appropriate BMPs when they conduct construction and maintenance activities on or near streets, parking lots and roads. City managed capital projects are inspected for Stormwater Code compliance and BMPs by the responsible department. The individual City Departments have implemented and will continue to implement a spill program and provide training on spill and source control.

### III.9.4.8 Policies and Procedures to Reduce Pollutants from City-Owned or Maintained Lands

The revised draft Stormwater Code and Volume 1, 2 and 3 of the Directors' Rules dated March 16, 2009 establishes policies and procedures to reduce pollutants in discharges from lands owned or maintained by the City that drain to the City's MS3s. All City departments will be implementing the policies and procedures established in the revised draft Stormwater Code and Volume 1, 2 and 3 of the Directors' Rules dated March 16, 2009.

The Office of Sustainability and Environment (OSE) collaborates with City agencies to protect and enhance Seattle's distinctive environmental quality and livability. For example OSE has established a Pesticide Reduction Program for the City. This program has two main goals: (1) to eliminate the use of the most





potentially hazardous herbicides and insecticides and (2) to achieve a 30 percent reduction in overall pesticide use by City departments.

The following policies and procedures have been established by OSE and are implemented by the City Departments.

#### Environmental Management Program Chemical Use Policy

The purpose of this policy is to establish a chemical use program to provide for consistent evaluation of hazardous materials used by City employees, to phase out products that pose human health or environmental risks, and to promote the use of non-hazardous alternatives by the City that are protective of human health and the environment (Seattle, 2008e).

#### Landscape and Grounds Management Policy

The purpose of this policy is to establish that City landscapes are designed, constructed, and maintained in a manner that protects and enhances our region's natural resources and public health; that City landscapes are models of environmental stewardship in the eyes of the public; that the City establishes a leadership role in developing both aesthetically pleasing and ecologically sensitive landscapes; and that there is a consistent standard of environmental stewardship observed by City departments managing landscapes and other grounds (Seattle, 2008e).

#### Landscape and Grounds Management Guidelines

The guidelines are intended to provide a framework for environmental responsibility in how the City plans, designs, constructs, commissions, manages, and maintains parks, rights of way, and other landscaped areas. The focus of the guidelines is on environmental stewardship of City-owned lands.

The SDOT's Street Use and Urban Forestry Division limit the use of fertilizers, pesticides and herbicides in accordance with City policies and procedures. This division also has policies and procedure in place to address erosion and sediment control, landscape maintenance, and vegetation disposal on lands owned and maintained by SDOT. Urban Forestry uses Resource-efficient Natural Landscaping: Design – Build – Maintain (Seattle, 2007a), as a BMP reference. These practices will continue during 2009 and into the future.

Parks operates under City regulations, policies and procedures including but not limited to the Stormwater Code, Parks BMPs for Landscape Horticulture and Forestry (Seattle, 2000a) and the Seattle Biological Evaluation BMPs (Seattle, 2007b). Parks has an active Integrated Pest Management program to control and reduce pesticide use. Parks has been maintaining 14 parks without the use of any pesticides since 2001. The program is expanding to include eight more parks and about 25 more acres, for a total of 22 parks and about 50 acres.

#### III.9.4.9 Training Program

The City has developed and implemented the "Water Rules!" Federal and State permit training, for workers who work on projects that may impact water bodies, which includes employees of the City who have primary construction, operations or maintenance job functions that could impact stormwater quality. This training includes information on BMPs for construction and operation and maintenance projects. DPD provides training to City Staff on temporary erosion and sediment control (TESC). In addition, SPU, SDOT, Parks, FFD and SCL all have spill prevention training and source control training in place. These departments are evaluating their existing training and updating as needed to comply with the Permit.

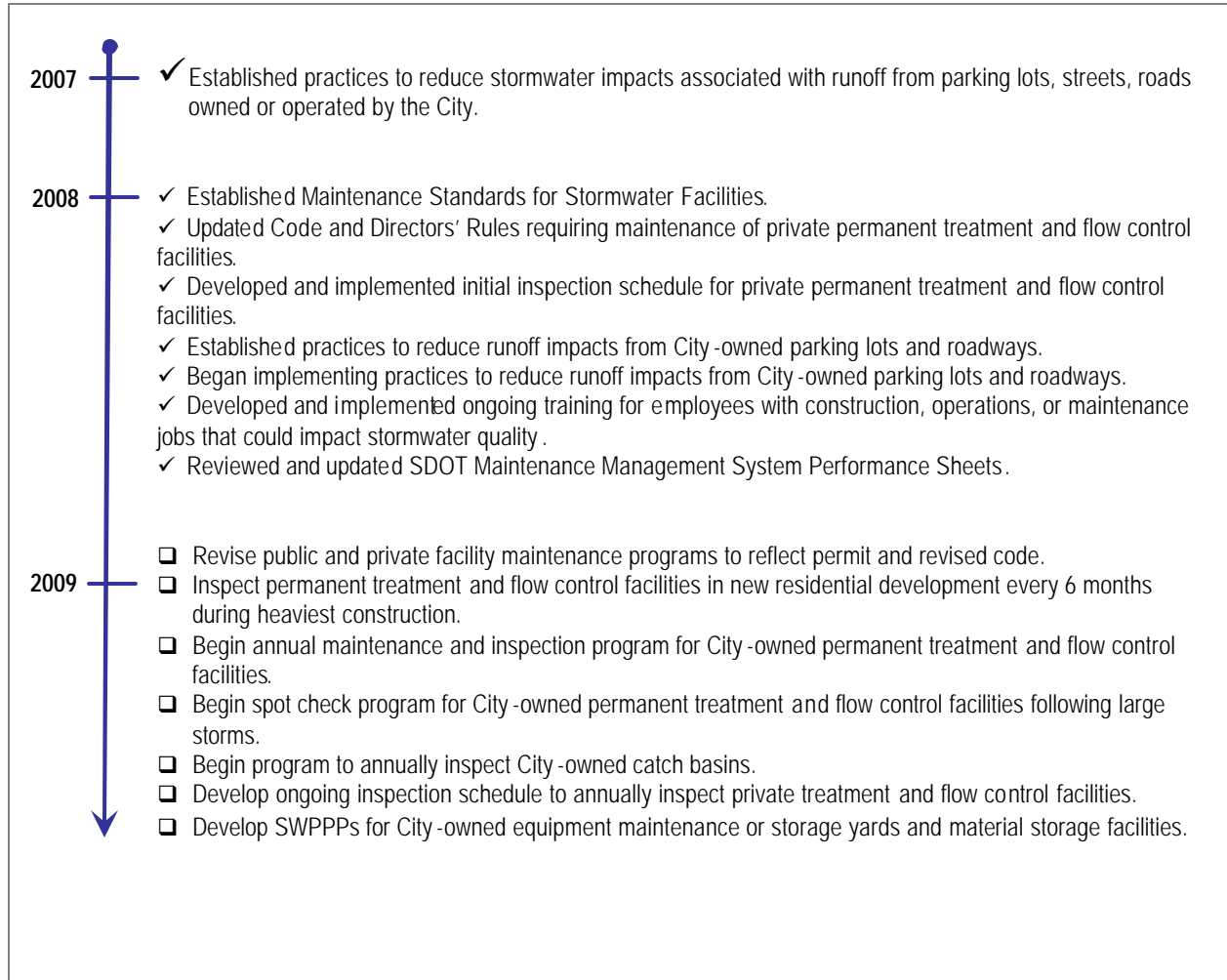




### III.9.4.10 Stormwater Pollution Prevention Plans

In 2008, the City was in the process of developing SWPPPs for all City-owned or operated heavy equipment maintenance or storage yards and material storage facilities by early 2009. A generic SWPPP template that includes operational BMPs that meet the Stormwater Code and Directors' Rules was being developed and then customized for each facility to include site specific requirements and structural BMPs.

Figure III.9-1. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      ☐ Planned

Current Activities

Planning Ahead



*For More Information*

- ❖ **Private Stormwater Facility Inspections:**  
[http://www.seattle.gov/util/Services/Drainage & Sewer/Stormwater Related Inspections/Maintenance Inspections/index.asp](http://www.seattle.gov/util/Services/Drainage_%20&%20Sewer/Stormwater_Related_Inspections/Maintenance_Inspections/index.asp)
- ❖ **Office of Sustainability and Environment:** <http://www.seattle.gov/environment/>
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.





## III.10 Education and Outreach-S5C.10

### III.10.1 Requirements

The Permit (Section S5.C.10) requires the City to perform the following minimum performance measures:

- Implement or participate in an education and outreach program that uses a variety of methods to target audiences to educate them to help reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.
- Have program elements designed to measure understanding and adoption of the targeted behaviors by the targeted audience. Use this information to direct education and outreach resources most effectively and evaluate changes in adoption of targeted behaviors.
- Track and maintain records of public education and outreach activities.

### III.10.2 Education and Outreach Program

The City is using a variety of educational programs (Table III.10-1) to engage the citizens of Seattle in source control and stormwater management. These programs provide educational materials, instruction or designs that citizens can use at their home, business or in the community at large. The City a variety of methods including community based social marketing approaches (CBSM) to evaluate the audiences' understanding of how their actions can have negative impacts on stormwater and how they can take an active role in the improvement of stormwater quality. The evaluations are used to direct education and outreach programs most effectively and to evaluate changes in the audiences' adoption of the target behavior.

### III.10.3 Education and Outreach Tracking

Each of the programs in place or being developed for the Education and Outreach requirements of the permit has or will have a mechanism in place to track and maintain records of the City's public education activities.

### III.10.4 Responsible City Departments

SPU is the lead department for implementation of the education and outreach programs for Permit compliance. Several programs have cooperative elements in other departments.

### III.10.5 Current and Planned Activities

The City has conducted and will be conducting the activities outlined in Table III.10-1 and described in the following sections for each target audience.



Table III.10-1 – Education and Outreach Activities

Audience	Target Behavior/Practice	City Education and Outreach Program	
General Public	General Impacts of Stormwater	Urban Watershed Schools Program	
	Impacts of Impervious Surfaces		
	Source Control BMPs	Pet Waste	Doo Diligence - Pet Waste Program
		Vehicle Maintenance	Auto Maintenance Program (AMP)
		Landscaping/Buffers	RainWise
General Public and Businesses including Mobile	Chemical Storage BMPs	Spills	Spill kits
		Car Wash Soap	AMP
		Cleaning Supplies	Environmental Justice Network in Action (EJNA)
		Automotive Products	AMP and Spill Kits
		Illicit Discharges	Water Quality Hotline
Homeowners, Landscapers and Property Managers	Yard care Techniques	Green Gardening Program and Natural Yard Care Neighbors	
	BMPs for Storage of Pesticides and Fertilizers		
	BMPs for Carpet Care	Resource Venture	
	BMPs for Auto Repair and Maintenance	AMP	
	Low Impact Development	RainWise	
	Stormwater Treatment and Flow Control		
Engineers, Contractors, Developers, Review Staff, and Land Use Planners	Technical Standards for Stormwater Site and Erosion Control Plans	Temporary Erosion and Sediment Control Plans, City Wide Training Integrated Federal Permit Training (IFPT), and On-The-Job (OJT) Training	
	Stormwater Treatment and Flow Control BMPs		
	Low Impact Development	Natural Landscaping Professional Development	



III.10.5.1 Audience: General Public

**III.10.5.1.1 The Urban Watershed School Programs**

The school programs at Seattle’s Piper’s Creek educate the general public about the general impacts of storm water flows into surface waters and the impacts associated with impervious surfaces. This program is conducted via a partnership between SPU, Parks and Seattle Public Schools. The program is linked closely with school science curriculum and consists of a two-hour long class field trip to a local urban stream. Outcomes are measured through teacher evaluations, and a take home two-way interview to assess student learning from the field trip and educate adults in their home. This program reaches a diverse geographic audience in the City and engages the public in hands-on learning with a take home message to share with others. SPU pays for program costs and bus transportation to the sites.

**III.10.5.1.2 Doo Diligence Pet Waste Program**

Doo Diligence is implemented in public places city-wide and is used to educate and engage the public on the topic of source control BMPs and environmental stewardship actions and opportunities in the area of pet waste disposal. Signage in public places and on the web explains the impacts of bacteria from pet waste on water quality. A new interpretive sign is being developed for creek and beach access points. For 2009, the Doo Diligence program is being expanded to include more neighborhood locations. This new program initiative is following community-based social marketing principles by recruiting existing community groups to be an integral part of the program. In addition, new program elements in 2009 will include: a new brochure, and new mechanisms to provide enhanced information about program performance.



### III.10.5.1.3 Auto Maintenance Program (AMP)

In 2008 SPU developed a new education outreach program to target the general public about BMPs for source control and storage of products related to vehicle maintenance. Based on research, outreach and survey information the program is expanding. Educational posters targeting knowledge gaps identified in the 2008 survey will be created and distributed throughout all partnership locations. A new partnership with Jiffy Lube will add the identification of oil leaks to their regular inspection program and notify customers of the presence of an oil leak. SPU will be working to link educational messages and incentives with this customer feed-back tool and to develop a mechanism to collect information on behaviors and barriers related to this BMP. In 2009 SPU will also explore new partnerships to provide free or low cost leak repair services to low-income Seattle residents. In 2009 SPU staff will explore and evaluate strategies for educating the public about car wash soaps. The car wash kit program will continue at the 2008 level in 2009.

### III.10.5.1.4 RainWise

To meet the requirement to educate general public, homeowners, landscapers and property managers about low impact development techniques, including site design, pervious paving, retention of forests and mature trees the City has implemented the RainWise program. This program provides education and outreach on how to slow, spread, filter and permeate stormwater. The program will implement the following educational/technical elements to raise awareness about Green Stormwater Infrastructure (including stormwater treatment and flow control).

For the general public, homeowners and property managers: Pilot rain garden demonstration sites (Streetside Raingardens, bioretention systems and cisterns) in targeted neighborhoods on city right of way. Free rain garden classes for public (in cooperation with Stewardship Partners), information and brochures (web and hard copy) and ProjectDX, an internet-based education, recruitment, tracking and marketplace outreach tool. To reach landscapers and contractors SPU will hold rain garden construction training and workshops to build capacity in the landscape contractor community to construct rain gardens.

## III.10.5.2 Audience: General Public and Business

### III.10.5.2.1 Resource Venture

To supplement inspections and provide outreach to small businesses, SPU funds Resource Venture, a free resource conservation program for Seattle businesses, currently being implemented by Cascadia Consulting, under contract with SPU<sup>1</sup>. Under this contract, Resource Venture provides supplemental site specific technical assistance to businesses, develops targeted outreach materials in multiple languages, organizes and hosts industry-specific stormwater pollution prevention workshops, and implements SPU's Spill Kit Incentive Program, which provides free spill kits and assistance in developing a spill plan. Since its inception in 2005, SPU and Resource Venture have reached over 900 Seattle businesses that have created spill plans and received free spill kits. The spill kit program is promoted on the web and during inspections.

Resource Venture also lends free car wash kits to the general public and organizations. The car wash kits capture car wash water and direct it to the sanitary system rather than allowing the wash water to flow into the MS4. Resources and information on use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials are provided directly to the general public and business

<sup>1</sup> The Resource Venture contract is administered by Cascadia Consulting, but also subcontracts to ECOSS (Environmental Coalition of South Seattle) and Herrera Consulting as sub-contractors of the contract. The utilization of these 3 companies is available through the Resource Venture Contract.





owners to help reduce behaviors that cause or contribute to adverse stormwater impacts. Car Wash kits are advertised on an RV web site, in Camp Long and Carkeek Park seasonal program brochures, and on the Parks' web site. Business visits, participation, and use of Car Wash kits are tracked to measure adoption. Additional measures to track understanding of these BMP will be implemented in 2008.

#### **III.10.5.2.2 Auto Maintenance Program (AMP)**

Please see description for this program in Section III.10.5.1.3

#### **III.10.5.2.3 Environmental Justice Network in Action (EJNA)**

Although survey work in 2008 indicated that both property managers and general public are knowledgeable about stormwater and are using the appropriate BMPs for cleaning supplies, the City will continue education and outreach activities that include BMPs for use storage and disposal of cleaning supplies through the EJNA program. The EJNA program targets immigrant and refugee populations and community based organizations. The program supports the City's Race and Social Justice Initiative by engaging the public and small business owners. In 2009 EJNA activities will focus on the City's new garbage and recycling rules. Integral to that outreach will be BMPs for household hazards, special wastes and the new oil recycling program. The EJNA Outreach Team will include staff from eight different community organizations. They will be trained to disseminate information to the target audience by holding community meetings. The Outreach Team will be trained through a program that includes five classes and two fieldtrips and makes linkages to water, energy conservation and stormwater.

#### **III.10.5.2.4 Water Quality Hotline**

The City staffs a 24-hour Water Quality Hotline to allow citizens and businesses to report illicit discharges, illegal dumping, and spills into the MS4. Violators receive education and technical assistance to help address violations voluntarily; non-compliance can potentially result in legal action. This BMP provides a mechanism for the public to take an active role in stormwater pollution prevention and help the City increase awareness of activities that have negative impacts on stormwater. The Water Quality Hotline is promoted mainly to residents. Outreach to the public includes stickers, magnets and creek-watershed newsletters. Calls are tracked and resolution information is recorded to evaluate changes in program performance.

### **III.10.5.3 Audience: Homeowners, Landscapers, and Property Managers**

#### **III.10.5.3.1 Green Gardening Program**

The Green Gardening Program specifically targets landscapers as well as horticulture students in training. This program uses multiple languages broadening the audience and incorporating the City's goals for RSJL. The program promotes environmentally sensitive landscaping practices, with particular emphasis on reducing pesticide use, conserving water, and reusing/recycling landscaping materials. Green Gardening activities include slide show presentations and brochures for homeowners, professional training and resources for landscapers and nursery staff, and garden tours. Understanding is tracked through in class evaluation.

#### **III.10.5.3.2 Natural Yard Care Neighbors**

This program is targeted at homeowners and property managers. It focuses on reducing water and pesticide use on lawns and gardens. The program holds up to four workshops each year in different neighborhoods which are selected using SPU and City priorities with a focus on RSJL. This BMP provides information and resources to the public that inform them on how to change their behaviors to reduce the impact of their yard on stormwater quality. Attendance is monitored, and attendees have been contacted for follow up surveys to track adoption and understanding of the BMP. In 2009 workshop teachers will be asked to emphasize stormwater elements in class to emphasize the importance of behavior change to the target audience



### III.10.5.3.3 Resource Venture

To supplement inspections and provide outreach to small businesses, SPU funds Resource Venture, a free resource conservation program for Seattle businesses, currently being implemented by Cascadia Consulting, under contract with SPU<sup>2</sup>. Under this contract, Resource Venture provides supplemental site specific technical assistance to businesses, develops targeted outreach materials in multiple languages, organizes and hosts industry-specific stormwater pollution prevention workshops. Resources and information on use and storage of chemicals, hazardous cleaning supplies and other hazardous materials are provided directly to the general public and property managers to help reduce behaviors that cause or contribute to adverse stormwater impacts.

### III.10.5.3.4 Auto Maintenance

Please see description for this program in Section III.10.5.1.3

### III.10.5.3.5 RainWise

Please see description for this program in Section III.10.5.1.4.

### III.10.5.3.6 Natural Landscaping Professional Development

This program is a series of well attended professional workshops focused on LID techniques including: sustainable site design, soil BMPs and retention of native vegetation, plant selection and maintenance options that reduce pesticide and fertilizer use, and Natural Drainage/LID strategies for on-site stormwater management, stormwater treatment and flow control. These workshops specifically target engineers, design professionals, landscape contractors (including Spanish-speakers), developers, builders, and land use planners. The program is built on extensive barriers and opportunities surveys and focus group work with these professionals and customers. Participants fill out in-class evaluations to measure their understanding, and identify (pledge) the actions they intend to take as a result of the training. The program is funded by SPU's stormwater, solid waste, and water funds, as well as the LHWMP, and integrates messages from across those programs.

III.10.5.4 Audience: Engineers, Contractors, Developers, Review Staff and Land Use Planners.

#### III.10.5.4.1 Temporary Erosion and Sediment Control

DPD provides short courses to engineers, contractors, and developers on appropriate BMPs for temporary erosion and sediment control related to new development and redevelopment sites. This training exposes professionals to Stormwater Code requirements and is an appropriate BMP for the control of sediment and erosion. Starting in 2009, course participants will fill out an in class evaluation and an implementation plan for an upcoming job.

#### III.10.5.4.2 City Wide Training

The City trained staff who are engineers, review staff and land use planners at a City wide training held in spring 2008. City Staff received training on the revised draft Stormwater Code and Directors' Rules including, technical standards for stormwater site and erosion control plans, LID techniques, and stormwater

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<sup>2</sup> The Resource Venture contract is administered by Cascadia Consulting, but also subcontracts to ECOSS (Environmental Coalition of South Seattle) and Herrera Consulting as sub-contractors of the contract. The utilization of these 3 companies is available through the Resource Venture Contract.





and flow control BMPs. On-going training on this subject is being developed so that existing employees can refresh their knowledge and new employees can be properly trained. A strategy to track understanding and adoption of this training will be implemented in 2010.

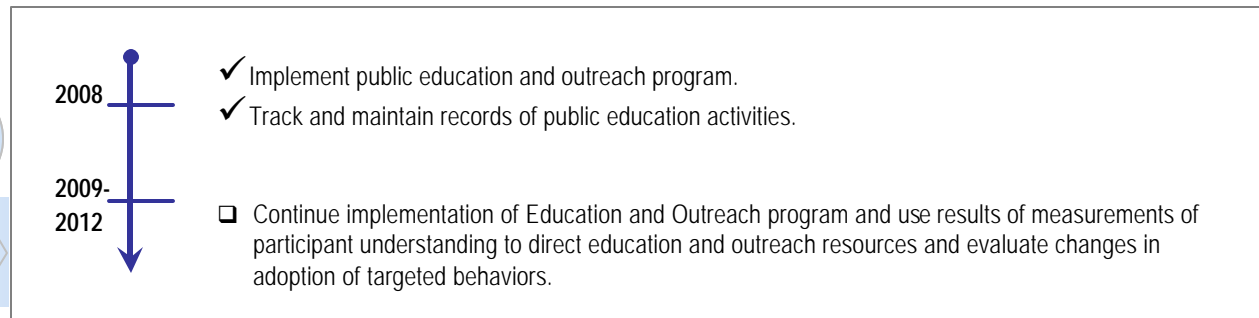
**III.10.5.4.3 On the Job Training**

All Departments within the City engage in on the job training to insure that staff members are current on policies, procedures, rules and requirements related to the management of stormwater. This training can take the form of classroom, informal meeting, and tailgate session. In addition, the City encourages employees to attend professional development training related to their business area. A strategy to track understanding and adoption of these trainings will be implemented in 2010.

**III.10.5.4.4 Natural Landscaping Professional Development**

Please see description for this program in Section III.10.5.3.6.

Figure III.10-1. Timeline Showing Progress and Next Steps



Legend:      ✓ Implemented      □ Planned

Current Activities

Planning Ahead

*For More Information*

- ❖ For more information on the Resource Venture, a free resource conservation program for Seattle businesses, visit [www.resourceventure.org](http://www.resourceventure.org).
- ❖ For general questions about this SWMP or more information about this section, email [swmp@seattle.gov](mailto:swmp@seattle.gov) or visit [www.seattle.gov/util](http://www.seattle.gov/util) **keywords:** Stormwater Management Plan.

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Seattle, City of. 2008d. SPU & DPD Directors' Rules for Seattle Municipal Code, Chapter 22.800 Stormwater and Drainage Control Code, Volume 3: Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual, Draft. February 15, 2008.

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## V. LIST OF DEFINITIONS AND ACRONYMS



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# V.1 Definitions and Acronyms

All of the definitions listed in the table below are directly from the 2007 NPDES Phase I Permit. Acronyms in the Table of Acronyms that are specific to SPU that were added beyond what was listed in the Permit are denoted with an asterisk.

**Table V.1-1. Definitions**

Term	Definition
40 CFR	Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.
AKART	All Known, Available and Reasonable methods of prevention, control and treatment. See also State Water Pollution Control Act, Chapter 90.48.010 and 90.48.520 RCW. "All Known, Available and Reasonable methods of prevention, control and treatment" refers to the State Water Pollution Control Act, Chapter 90.48.010 and 90.48.520 RCW.
Applicable TMDL	A TMDL which has been approved by EPA on or before the date permit coverage is granted.
Beneficial Uses	Uses of waters of the state, which include but are not limited to: use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state.
Best Management Practices	The schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.
Bypass	The diversion of stormwater from any portion of a stormwater treatment facility.
Clean Water Act	The federal Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. (6-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.
Component or Program Component	The elements of the stormwater management program listed in Special Condition S5 Stormwater Management Program for Permittees or S6 Stormwater Management Program for Co-Permittees and Secondary Permittees.
Co-Permittee	An owner or operator of a municipal separate storm sewer that has co-applied for permit coverage with another permittee, and that is only responsible for permit conditions relating to the discharge for which it is operator. See also 40 CFR 122.26(b)(1).
Director	The Director of the Washington State Department of Ecology, or an authorized representative.
Discharge	For the purpose of this permit, unless indicated otherwise, refers to discharges from municipal separate storm sewers of the Permittees. See also 40 CFR 122.2
Ecology	The Washington State Department of Ecology
Entity	A governmental body or a public or private organization.
Equivalent document	A technical stormwater management manual developed by a state agency, local government or other entity that includes the Minimum Technical Requirements in Appendix 1 of this permit and BMPs approved by Ecology.
General Permit	Permit which covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger.
Ground water	Water in a saturated zone or stratum beneath the surface of the land or below a surface water body.
Heavy equipment maintenance or storage yard	An area where any heavy equipment, such as mowing equipment, excavators, dump trucks, backhoes, or bulldozers are washed or maintained, or where at least five pieces of heavy equipment are stored on a long term basis.
Hyperchlorinated	Water that contains more than 10 mg/Liter chlorine.





Term	Definition
Illicit connection	An Illicit Connection is the discharge of pollutants or non-storm water materials into a storm sewer system via a pipe or other direct connection. Sources of illicit connections may include sanitary sewer taps, wash water from laundromats or carwashes, and other similar sources
Illicit discharge	Any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.
Industrial or Construction Activity	Manufacturing, processing or raw materials storage areas at an industrial plant; or clearing, grading and/or excavation. These activities are required to have NPDES permit coverage in accordance with 40 CFR 122.26.
Integrated Pest Management	<p>A coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet agency programmatic pest management objectives. The elements of integrated pest management include:</p> <ul style="list-style-type: none"> <li>(a) Preventing pest problems;</li> <li>(b) Monitoring for the presence of pests and pest damage;</li> <li>(c) Establishing the density of the pest population, that may be set at zero, that can be tolerated or correlated with a damage level sufficient to warrant treatment of the problem based on health, public safety, economic, or aesthetic thresholds;</li> <li>(d) Treating pest problems to reduce populations below those levels established by damage thresholds using strategies that may include biological, cultural, mechanical, and chemical control methods and that must consider human health, ecological impact, feasibility, and cost-effectiveness; and</li> <li>(e) Evaluating the effects and efficacy of pest treatments.</li> </ul>
Low Impact Development (LID)	A stormwater management and land development strategy applied at the parcel and subdivision scale that emphasizes conservation and use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely mimic pre-development hydrologic functions.
Material Storage Facilities	An area where bulk materials (liquid, solid, granular, etc.) are stored in piles, barrels, tanks, bins, crates, or other means.
Maximum Extent Practicable (MEP)	Refers to paragraph 402(p)(3)(B)(iii) of the federal Clean Water Act which reads as follows: Permits for discharges from municipal storm sewers shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system, design, and engineering methods, and other such provisions as the Administrator or the State determines appropriate for the control of such pollutants.
Municipal Separate Storm Sewer (MS3)	<p>A conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):</p> <ul style="list-style-type: none"> <li>- owned or operated by a state, city, town borough, county parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, storm water, or other wastes including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the U.S.</li> <li>- designed or used for collecting or conveying stormwater</li> <li>- which is not a combined sewer; and</li> <li>- which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.</li> </ul>
Municipal separate storm sewer system (MS4)	All separate storm sewers that are defined as large" or "medium" or "small" municipal separate storm sewer systems. See also 40 CFR 122.26(b)(18).
National Pollutant Discharge Elimination System (NPDES)	The national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.
Notice of Intent	The application for, or a request for coverage under a General NPDES Permit pursuant to WAC 173-226-200.
Outfall	Point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the State and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the State and are used to convey waters of the State.



Term	Definition
Permittee	Any Primary Permittee, Co-Permittee, or Secondary Permittee unless specifically stated otherwise for a particular section of this permit.
Pest	But is not limited to, any insect, rodent, nematode, snail, slug, weed, and any form of plant or animal life or virus, bacteria, or other microorganisms on or in a living person or other animal or in or on processed food or beverages or pharmaceuticals, which is normally considered to be a pest, or which the director of the department of agriculture may declare to be a pest.
Physically Interconnected	One municipal separate storm sewer is connected to a second municipal separate storm sewer in such a way that it allows for direct discharges to the second system. For example, the roads with drainage systems and municipal streets of one entity are physically connected directly to a municipal separate storm sewer belonging to another entity.
Qualified Personnel	Staff members or contractors who have had professional training in the aspects of stormwater management for which they are responsible and are under the functional control of the Permittee.
Runoff	Water that travels across the land surface, or laterally through the soil near the land surface, and discharges to water bodies either directly or through a collection and conveyance system. Runoff includes stormwater and water from other sources that travels across the land surface. See also "Stormwater."
Secondary Permittee	An operator of municipal separate storm sewer which is not a city, town or county. Secondary Permittees include special purpose districts and other public entities identified in S1.D which operate municipal separate storm sewers.
Shared Waterbodies	Waterbodies, including downstream segments, lakes and estuaries, that receive discharges from more than one permittee.
Stormwater	Runoff during and following precipitation and snowmelt events, including surface runoff, drainage, and interflow.
Stormwater Associated with Industrial and Construction Activity	The discharge from any conveyance which is used for collecting and conveying stormwater, which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant, or associated with clearing grading, excavation, or both is required to have an NPDES permit in accordance with 40 CFR 122.26.
Stormwater facilities regulated by the Permittee	Permanent stormwater treatment and flow control BMPs located in the geographic area covered by the permit and which are not owned by the Permittee, and are known by the permittee to discharge into municipal separate storm sewers owned or operated by the Permittee.
Stormwater Management Manual for Western Washington	The 5-volume technical manual (Publication Nos. 05-10-029 through 05-10-033) published by Ecology in February 2005.
Stormwater Management Program (SWMP)	A set of actions and activities designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable and to protect water quality, and comprising the components listed in S5 or S6 of this Permit and any additional actions necessary to meet the requirements of applicable TMDLs.
Total Maximum Daily Load (TMDL)	A water cleanup plan. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The calculation must include a margin of safety to make certain that the water body can be used for the purposes the state has designated. The calculation must also account for seasonable variation in water quality. Water quality standards are set by states, territories, and tribes. They identify the uses for each water body, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. The Clean Water Act, section 303, establishes the water quality standards and TMDL programs.
Urban/higher density rural sub-basins	All areas within or proposed to be within the urban growth area (UGA), or any sub-basin outside the UGA with 50 percent or more area comprised of lots less than 5 acres.
Vehicle Maintenance or Storage Facility	An uncovered area where any vehicles are regularly washed or maintained, or where at least 10 vehicles are stored.
Water Quality Standards	Surface Water Quality Standards, Chapter 173-201A WAC, Ground Water Quality Standards, Chapter 173-200 WAC, and Sediment Management Standards, Chapter 173-204 WAC.
Waters of the state	Includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the state" as defined in Chapter 90.48 RCW which includes lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.



Table V.1-2. Acronyms

Acronym	Definition
ACEC*	American Council of Engineering Companies
ASCE*	American Society of Civil Engineers
AKART	All known, available and reasonable methods of prevention, control and treatment (See definition in definitions table.)
AMC*	Asset Management Committee
BINMIC*	Ballard-Interbay Northend Manufacturing and Industrial Center
BMP	Best Management Practice (See definition in definitions table.)
CDWAC*	Creeks, Drainage Water and Wastewater Authority Committee
CIP*	Capital Improvements Program
DPD*	Department of Planning and Development
DWU*	Drainage and Wastewater Utility, a department within the SPU Engineering Department
DWW*	Drainage and Waste Water, a division within USM of SPU
Ecology*	Washington State Department of Ecology
EJNA*	Environmental Justice Network in Action
EPA*	U.S. Environmental Protection Agency
ERTS*	Environmental Response Tracking System
FFD*	Department of Fleets and Facilities, a department within SPU
FGD*	first ground disturbance
GIS*	Geographic Information System
HAZWOPER*	Hazardous Waste Operations and Emergency Response
HRPGA*	High risk pollution generating activity
HRPGB*	High risk pollutant generating business
IDDE	Illicit Connection and Discharge Detection and Elimination
IDP*	Integrated Drainage Plan
IFPT*	Integrated Federal Permit Training
JARPA*	Joint Aquatic Resources Permit Application
LHWMP*	Local Hazardous Waste Management Program
LID	Low Impact Development (See definition in definitions table.)
MEP	Maximum Extent Practicable (See definition in definitions table.)
MLK*	Martin Luther King
MS3	Municipal separate storm sewer (See definition in definitions table.)
MS4	Municipal separate storm sewer system (See definition in definitions table.)
MTCA*	Model Toxics Control Act
NDS*	Natural Drainage System
NOI*	Notice of Intent (See definition in definitions table.)
NOV*	Notice of Violation
NPDES	National Pollutant Discharge Elimination System (See definition in definitions table.)
O&M*	operations and maintenance
ORC*	Operations Response Center
OSE*	Office of Sustainability and Environment
Parks*	Seattle Parks and Recreation
PASV*	Pre-Application Site Visit
PCHB*	Pollution Control Hearings Board
PE*	preliminary engineering
Permit*	NPDES Phase I Municipal Stormwater Permit



Acronym	Definition
QA/QC*	quality assurance/quality control
RCW	Revised Code of Washington State
RSJI*	Race and Justice Initiative
SCL*	Seattle City of Light
SCM*	Source Control and Monitoring
SDOT*	Seattle Department of Transportation
SEPA*	State Environmental Policy Act
SIC*	standard industrial classification
SKIP*	Spill Kit Incentive Program
SMC*	Seattle Municipal Code
SPU*	Seattle Public Utilities
SSCP*	Structural Stormwater Control Program
Stormwater Code*	Seattle Municipal Code, Chapter 22.800 – 22.808, <i>The Stormwater, Grading and Drainage Control Code</i>
SWMP	Stormwater Management Program (See definition in table.)
SWPPP*	Stormwater Pollution Prevention Plan
TCWQC*	Thornton Creek Water Quality Channel
TESC*	Temporary erosion and sediment control
TMDL	Total Maximum Daily Load (See definition in table.)
TSS*	total suspended solids
USM*	Utility System Management, an organization within SPU
WSDOT*	Washington State Department of Transportation
ZPG*	zeolite/perlite/granular activated carbon, a trademarked term by CONTECH Stormwater Solutions, Inc.

\* Acronyms that are specific to SPU that were added beyond what was listed in the Permit.



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## APPENDIX 1

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### Mayor's Executive Order



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**Office of the Mayor**  
**City of Seattle**  
Gregory J. Nickels, Mayor

**Executive Order: 01-08**  
**NPDES Municipal Stormwater Permit**

*An Executive Order directing all City Departments to coordinate together to comply with the requirements of the City's National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit, which has been issued to the City of Seattle by the Washington State Department of Ecology under the provisions of the federal Clean Water Act.*

WHEREAS, the City of Seattle has long prided itself on its commitment to the environment;

WHEREAS, the Mayor's Executive Order 03-04 directs City departments with responsibilities for and connections to water quality and aquatic habitat issues to develop a shared, broad-based strategy know as 'Restore our Waters' to better protect and restore water quality and aquatic habitat within the City;

WHEREAS, managing municipal stormwater runoff is a critical component of any strategy to meet the City of Seattle's long-standing objective to protect, improve, and enhance the City's lakes, creeks, bays, rivers, and other surface and ground waters;

WHEREAS, the Washington State Department of Ecology has issued to the City a permit under the National Pollutant Discharge Elimination System (NPDES) of the federal Clean Water Act that contains a suite of conditions and requirements for managing municipal stormwater runoff;

WHEREAS, compliance with the City's NPDES Municipal Stormwater Permit is a responsibility of the entire city and all City departments;

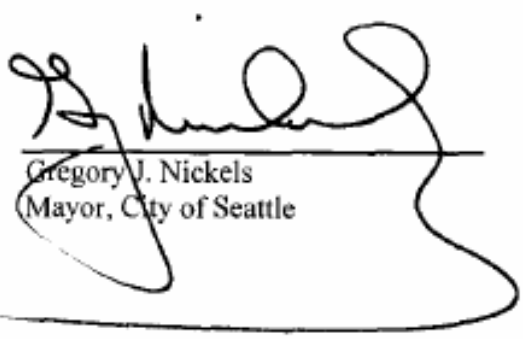
WHEREAS, the City's NPDES Municipal Stormwater Permit contains a specific requirement to establish in writing an Executive Directive requiring internal coordination among all departments affected by the permit;

FURTHERMORE, Seattle Public Utilities is directed to compile information received from other departments, and to prepare and submit on my behalf all reports to Ecology under the terms of the permit.

FURTHERMORE, the City of Seattle, is required by the permit to certify that all reports submitted to Ecology are true, accurate and complete. And the City of Seattle can be subject to penalties for submitting false information. Therefore, each department must ensure that documents and all attachments prepared in compliance with this permit are true, accurate, and complete before submitting them to Seattle Public Utilities. Seattle Public Utilities may issue additional direction to departments to ensure compliance with this requirement.

Questions regarding this Executive Order should be directed to Trish Rhay at 206-386-1832 (SPU), Darla Inglis, Ph.D. 206-233-7160 (SPU), and Robert D. Chandler, Ph.D., P.E., 206-386-4576 (SPU).

Dated this 29<sup>th</sup> day of January, 2008



Gregory J. Nickels  
Mayor, City of Seattle

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