

CITY OF LAKEWOOD
2011 STORMWATER MANAGEMENT
PROGRAM (SWMP)

City of Lakewood, WA
March 2011



This page left intentionally blank

TABLE OF CONTENTS

LIST OF TABLES	IV
1. INTRODUCTION	1-1
1.1 Overview	1-1
1.2 The Stormwater Problem	1-1
1.3 Regulatory Background	1-1
1.4 City of Lakewood Regulated Area	1-2
1.5 SWMP Implementation Responsibilities	1-2
1.6 Total Maximum Daily Load (TMDL) Compliance	1-3
1.7 Document Organization	1-3
2. STORMWATER MANAGEMENT PROGRAM ADMINISTRATION	2-1
2.1 Permit Requirements	2-1
2.2 Current Activities	2-1
2.3 Planned Activities	2-1
3. PUBLIC EDUCATION AND OUTREACH	3-2
3.1 Permit Requirements	3-2
3.2 Current Activities	3-2
3.3 Planned Activities	3-2
4. PUBLIC INVOLVEMENT	4-1
4.1 Permit Requirements	4-1
4.2 Current Activities	4-1
4.3 Planned Activities	4-1
5. ILLICIT DISCHARGE DETECTION AND ELIMINATION	5-1
5.1 Permit Requirements	5-1
5.2 Current Activities	5-1
5.3 Planned Activities	5-2
6. CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT AND CONSTRUCTION SITES	6-1
6.1 Permit Requirements	6-1
6.2 Current Activities	6-1
6.3 Planned Activities	6-2
7. POLLUTION PREVENTION AND OPERATION AND MAINTENANCE FOR MUNICIPAL OPERATIONS	7-1
7.1 Summary of Requirements	7-1
7.2 Current Activities	7-1
7.3 Planned Actions	7-2
8. MONITORING	8-1
8.1 Permit Requirements	8-1
8.2 Current Compliance Activities	8-2

8.3 Planned Activities	8-2
APPENDIX A	1
Acronyms and Definitions	1

LIST OF TABLES

Table 3-1. 2011 Public Education and Outreach Work Plan	3-3
Table 4-1. 2011 Public Involvement Work Plan	4-2
Table 5-1. 2011 Illicit Discharge Detection and Elimination Work Plan	5-3
Table 6-1. 2011 New Development, Redevelopment, and Construction Sites Work Plan	6-2
Table 7-1. 2011 Pollution Prevention and Operation & Maintenance for Municipal Operations Work Plan	7-2
Table 8-1. 2011 Monitoring Work Plan	8-3

CITY OF LAKEWOOD STORMWATER MANAGEMENT PROGRAM

1. INTRODUCTION

1.1 Overview

This document presents the City of Lakewood's Stormwater Management Program (SWMP). Preparation and maintenance of this SWMP is required by the Washington State Department of Ecology (Ecology) as a condition of the Western Washington Phase II Municipal Stormwater Permit (the Phase II Permit). The Phase II permit covers discharges from regulated small municipal separate storm sewer systems (small MS4s). Based on criteria outlined in the Phase II Permit, Ecology considers the City of Lakewood an operator of a small MS4, and therefore required to obtain permit coverage.

Each municipality's permit for discharging stormwater is designed to reduce the discharge of pollutants, protect water quality, and meet the requirements of the federal Clean Water Act.

1.2 The Stormwater Problem

Stormwater is the leading contributor to water quality pollution in our urban waterways. As urban areas grow, stormwater is also Washington's fastest growing water quality problem. Pollutants in or resulting from stormwater can cause a wide range of impacts. Untreated stormwater is not safe for people to drink and is not recommended for swimming because it contains toxic metals, organic compounds and bacteria. Some pollutants such as metals, oil and grease, and organic toxins are toxic to aquatic organisms if concentrations are high enough. Sediments cause tissue abrasion and gill clogging in fish, they reduce light and impair algal growth, they smother fish spawning habitat and are transporters of other pollutants. Nutrients accelerate eutrophication (a process where water bodies receive excess nutrients that stimulate excessive plant growth) of lakes and ponds resulting in nuisance algal blooms, reduced clarity, odors and reduced drinking water quality. Temperature sensitive fish and invertebrates (animals without backbones, for example: insects, crustaceans, worms, snails, and clams) cannot survive in overly warm water bodies (Ecology, "NPDES General Permit Fact Sheet," 2006).

In addition, the large impervious surfaces in urban areas increase the quantity and peak flows of runoff, which in turn cause hydrologic impacts such as scoured streambed channels, in-stream sedimentation and loss of habitat. Furthermore, because of the enormous volume of runoff discharges, mass loads of pollutants in stormwater can be significant, causing water quality problems such as fish and other aquatic organism's disease and mortality, swimming beach and shellfish bed closures and contamination of wells (Ecology, "NPDES General Permit Fact Sheet," 2006).

There are a number of pollution sources that contaminate stormwater, including land use activities, operation and maintenance activities, illicit discharges and spills, atmospheric deposition, and vehicular traffic conditions. Many of these sources are not under the direct control of the permittees that own or operate the storm sewers.

1.3 Regulatory Background

The National Pollutant Discharge Elimination System (NPDES) permit program is a requirement of the federal Clean Water Act, which is intended to protect and restore waters for "fishable, swimmable" uses. The federal Environmental Protection Agency (EPA) has delegated permit authority to state environmental

agencies. In Washington, the NPDES-delegated permit authority is the Washington State Department of Ecology (Ecology).

Municipalities with a population of over 100,000 (as of the 1990 census) have been designated as Phase I communities and must comply with Ecology's Phase I NPDES Municipal Stormwater Permit. With Lakewood's 1990 census falling below the 100,000 threshold, and the US Census Bureau's 2010 census reporting Lakewood's population to be 58,163, the City must comply with the Phase II Municipal Stormwater Permit. About 100 other municipalities in Washington must now comply with the Phase II Permit (Permit), along with Lakewood, as operators of small municipal separate storm sewer systems (MS4s).

The Permit allows municipalities to discharge stormwater runoff from municipal drainage systems into the State's water bodies (e.g., streams, rivers, lakes, wetlands) as long as municipalities implement programs to protect water quality by reducing the discharge of "non-point source" pollutants to the "maximum extent practicable" (MEP) through application of Permit-specified "best management practices" (BMPs). The practices specified in the Permit are collectively referred to as the Stormwater Management Program (SWMP) and grouped under the following Stormwater Management Program (Program) components:

- Public Education and Outreach
- Public Involvement
- Illicit Discharge Detection and Elimination
- Runoff Controls
- Pollution Prevention and Municipal Operations and Maintenance
- Monitoring

The Permit issued by Ecology became effective on February 16, 2007 and expires on February 15, 2012. The Permit requires the City to report annually (March 31st of each year) on progress in Program implementation for the prior year. The Permit also requires submittal of documentation that describes proposed Program activities for the coming year. Implementation of various Permit conditions is phased throughout the five-year Permit term from February 16, 2007 through February 15, 2012. The Permit will be revised and reissued at the end of this period.

1.4 City of Lakewood Regulated Area

The Phase II Permit applies to operators of regulated small MS4s that discharge stormwater to waters of Washington State located west of the crest of the Cascade Range (west of the eastern boundaries of Whatcom, Skagit, Snohomish, King, Pierce, Lewis and Skamania counties). For cities, the Permit requirements extend to the entire incorporated city. However, discharges to ground waters of the state through facilities regulated under the Underground Injection Control (UIC) program, Chapter 173-218 Washington Administrative Code (WAC), are not covered under the Phase II permit.

1.5 SWMP Implementation Responsibilities

The Permit requirements affect departments across the City organization. The primary entity responsible for administering the stormwater management program is the Surface Water Management Division of the Public Works Department. Other departments, including Parks, Finance, Human Resources, and Legal, will be responsible for certain tasks, and will fill a support role for other tasks. In each of the following sections of this document, specific departmental responsibilities are presented for the 2010 SWMP implementation tasks.

1.6 Total Maximum Daily Load (TMDL) Compliance

Stormwater discharges covered under this permit are required to implement actions necessary to achieve the pollutant reductions called for in applicable TMDLs. Applicable TMDLs are TMDLs which have been approved by the EPA before the issuance date of the permit or which have been approved by the EPA prior to the date the permittees application is received by Ecology. Information on Ecology's TMDL program is available on Ecology's website at www.ecy.wa.gov/programs/wq/tmdl.

All TMDLs approved by EPA before February 15, 2006, were reviewed by Ecology to determine whether stormwater including municipal stormwater sources were identified in the TMDL. When most of these TMDLs were developed, municipal stormwater was considered a subset of non-point discharges, rather than a permitted discharge. As a result, very few TMDLs statewide contain requirements for municipal stormwater sources. Few TMDLs completed to date have established load allocations (LAs) or waste load allocations (WLAs) for municipal stormwater discharges covered under this permit. Ecology is interpreting TMDL requirements as follows:

- For TMDLs where stormwater was not identified as a source of the pollutants of concern, or if all of the sources were defined in the TMDL, Ecology considers the MS4 not to be a significant contributor of pollutants.
- Where stormwater was identified as a source of pollutants and the TMDL or implementation plans developed to support the TMDL identified control measures were less than or equivalent to the requirements of this permit, Ecology sets a narrative effluent limit: "compliance with the permit constitutes compliance with the TMDL."
- If stormwater was identified as a source of pollutants and specific WLAs, LAs or control measures were established, Ecology must develop effluent limits in addition to the other requirements of the permit. These effluent limits may be narrative or numeric depending on the control measures set by the TMDL or implementation plans.

Where a TMDL or the detailed implementation plan developed for the TMDL identifies actions or activities beyond what is required by this permit, Ecology has identified the additional requirements in Appendix 2 of the Permit for all TMDLs approved by EPA prior to February 15, 2006. Appendix 2 of the Permit lists the cities and counties affected by the TMDL. The City of Lakewood has not been listed in Appendix 2.

1.7 Document Organization

The remainder of this document is organized as follows:

- **Section 2** addresses the Permit requirements for administration of the City's SWMP for 2011.
- **Section 3** addresses the Permit requirements for Public Education and Outreach for 2011.
- **Section 4** addresses the Permit requirements for Public Involvement and Participation for 2011.
- **Section 5** addresses the Permit requirements for Illicit Discharge Detection and Elimination for 2011.
- **Section 6** addresses the Permit requirements for Controlling Runoff from New Development, Redevelopment and Construction Sites for 2011.
- **Section 7** addresses the Permit requirements for Pollution Prevention and Operation and Maintenance for Municipal Operations for 2011.

- **Section 8** addresses the Permit requirements for the Water Quality Monitoring section of the Permit for 2011.

Each section includes a summary of the relevant Permit requirements, and a description of current and planned compliance activities. This document also includes the following attachments for easy reference:

- Appendix A - Acronyms and Definitions from the Permit.

The Western Washington Phase II Municipal Stormwater Permit and additional information can be found on Ecology's website:

<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIIww/wwphiipermit.html>.

CITY OF LAKEWOOD STORMWATER MANAGEMENT PROGRAM

2. STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

This Section describes Permit requirements related to overall Stormwater Management Program administration, and current and planned compliance activities.

2.1 Permit Requirements

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

- Develop and implement a Stormwater Management Program (SWMP) and prepare written documentation for submittal to Ecology on March 31, 2008; and update the SWMP annually thereafter. The purpose of the Program is to reduce the discharge of pollutants from the municipal stormwater system to the maximum extent practicable (MEP) thereby protecting water quality. The Program is to include the actions and activities described in Sections 3 through 8 of this SWMP.
- Beginning in 2008, submit annual reports (for the previous calendar year) to Ecology by March 31st that summarize SWMP implementation status and present information from assessment and evaluation activities conducted during the reporting period.
- Coordinate amongst other permittees on stormwater-related policies, programs, and projects within adjoining or shared areas.

2.2 Current Activities

The City currently has in place activities and programs that meet the Permit requirements. Current activities associated with the above Permit requirements include:

- The City is on track to comply with Ecology's requirements for submittal of the SWMP documentation by March 31, 2011. The Surface Water Management Division is currently leading the development of the future planned activities with input and support from several other departments.
- The City is on track to comply with Ecology's requirements for submittal of the 2010 Annual Report by March 31, 2011.
- The City created its NPDES departmental/divisional organization structure and identified and empowered NPDES leads.
- The City is coordinating with various other permittees on NPDES related activities including education and outreach planning and implementation and illicit discharges.
- The City is implementing cost accounting strategies to track NPDES permit related costs.

2.3 Planned Activities

The City has also positioned itself well to maintain compliance as Ecology phases in the future Permit deadlines. There are no new major administrative actions planned for 2011.

CITY OF LAKEWOOD STORMWATER MANAGEMENT PROGRAM

3. PUBLIC EDUCATION AND OUTREACH

This Section describes Permit requirements related to public education and outreach, and current and planned compliance activities.

3.1 Permit Requirements

The Permit (Section S5.C.1) requires the City to:

- Prioritize and target education and outreach activities to specified audiences, including general public, businesses, residents/homeowners, landscapers, property managers, engineers, contractors, developers, review staff and land use planners and other City employees to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.
- Have an outreach program that is designed to achieve measurable improvements in the target audience's understanding of the problem and what they can do to solve it.
- Track and maintain records of public education and outreach activities.

3.2 Current Activities

The City Education and Outreach Plan currently consists of educational brochures that focus on many audiences and activities of concern (e.g., charity car washes, vehicle repair facilities, and restaurants). City staff also provides stormwater pollution prevention education during business inspections. City staff meet regularly with several other permittees to review and share information about public education and outreach activities. The City also participated in other outreach efforts in 2010 including having a booth at a dog-a-thon at a City park (scoop the poop campaign), manning the Stream Team booth at the Puyallup Fair, and working with volunteers to install approximately 1000 storm drain markers throughout the city. A copy of the current Education and Outreach Plan is available upon request. The City has chartered a NPDES implementation team.

3.3 Planned Activities

Lakewood has a Public Education and Outreach Plan that meets the intent of the Permit requirements. Actions planned for 2011 include:

- Continue collaboration with other NPDES municipalities to identify appropriate Program evaluation techniques.
- Continue existing programs and activities noted above.
- Collaborate with other public agencies on the Puget Sound Starts Here campaign with placement of clean water themed drink coasters at local restaurants and bars.
- Work with Park Lodge Elementary School on a stormwater themed calendar using children's artwork in the calendar.
- Purchase car wash kits for use by local charities during car wash events (this will send wash water to the sanitary sewer for treatment instead of to the sites storm drainage systems).

- Work with the Tacoma-Pierce County Health Department to put on Natural Yard Care seminars in Lakewood to teach property owners how to care for the lawns more naturally and with fewer chemicals.
- Summarize annual activities for "Public Education and Outreach" component of annual report; including any updates to the SWMP.

Table 3-1 is the work plan for 2011 SWMP public education and outreach activities.

Table 3-1. 2011 Public Education and Outreach Work Plan			
Task ID	Tasks	Responsible	Schedule Notes
EDUC-2	Continue Education and Outreach Program and supplement existing activities as needed (coordinate with IDDE program).		
EDUC-2.5	Distribute clean water themed drink coasters to Lakewood restaurants and bars	Surface Water Management Division	2011
EDUC-2.6	Create stormwater themed calendar with Park Lodge Elementary School students	Surface Water Management Division	2011
EDUC-2.7	Purchase car wash kits for use by charity car wash participants	Surface Water Management Division	2011
EDUC-2.8	Assist the Tacoma-Pierce County Health Dept. with putting on Natural Yard Care Seminars	Surface Water Management Division	2011
EDUC-3	Summarize annual activities for "Public Education and Outreach" component of annual report, identify updates to SWMP.	Surface Water Management Division	Submit by March 31, 2011.

CITY OF LAKEWOOD STORMWATER MANAGEMENT PROGRAM

4. PUBLIC INVOLVEMENT

This Section describes Permit requirements related to public involvement, and current and planned compliance activities.

4.1 Permit Requirements

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

- Provide ongoing opportunities for public involvement through advisory boards and commissions, watershed committees, public participation in developing rate structures and budgets, stewardship programs, environmental activities or other similar activities. The public must be able to participate in the decision-making processes involving the development, implementation and update of the Program.
- Make the SWMP document and annual report available to the public, including posting on the City's website. Make any other documents required to be submitted to Ecology in response to Permit conditions available to the public.

4.2 Current Activities

The City currently has activities and programs that meet many of the Permit requirements. The current compliance activities associated with the above Permit requirements include:

- The City will make the draft of the 2011 SWMP available to the public for comment before final completion and submission to Ecology.
- City staff attend monthly meetings of the local watershed group (Chambers-Clover Watershed Council) and provide opportunity for feedback on City Permit activities.
- The City made the 2010 SWMP document and the 2009 Annual Report available to the public by posting on the City website and invited the public to comment.

4.3 Planned Activities

Lakewood has a history of including the public and citizen committees in decision making. Major actions recommended for continued compliance include:

- Make 2011 SWMP document and 2010 Annual Report available to public by posting on the City website and invite the public to comment.
- Summarize annual activities for "Public Involvement and Participation" component of annual report; including any updates to the SWMP.

Table 4-1 is the work plan for 2011 SWMP public involvement activities.

Table 4-1. 2011 Public Involvement Work Plan			
Task ID	Tasks	Responsible	Schedule Notes
PUBL-2	Maintain website – Post 2011 SWMP and 2010 annual report.	Information Services, Surface Water Management Division	Ongoing.
PUBL-3	Summarize annual activities for "Public Involvement and Participation" component of annual report, identify updates to SWMP.	Surface Water Management Division	Submit by March 31, 2011.

CITY OF LAKEWOOD STORMWATER MANAGEMENT PROGRAM

5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

This Section describes Permit requirements related to illicit discharge detection and elimination, and current and planned compliance activities.

5.1 Permit Requirements

The Permit (Section S5.C.3) requires the City to:

- Implement an ongoing program to detect and remove illicit discharges, connections and improper disposal, including any spills into the municipal separate storm sewers owned or operated by the City. An illicit discharge means “any discharge to a municipal storm system that is not composed entirely of stormwater...” and illicit connection means “any man-made conveyance that is connected to a municipal storm system without a permit (excluding roof drains and other similar type connections) such as sanitary sewer connections, floor drains, etc.”
- Develop a storm sewer system map, have ordinances that prohibit illicit discharges, and create a program to detect and address illicit discharges.
- Publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. Track illicit discharge reports and actions taken in response through close-out, including enforcement actions.
- Train Program staff on proper IDDE response procedures and processes and to recognize and report illicit discharges.
- Summarize all illicit discharges and connections reported to the City and response actions taken, including enforcement actions, in the annual report; including any updates to the SWMP document.

5.2 Current Activities

The City currently implements activities and programs that meet many of the Permit requirements. The current compliance activities associated with the above Permit requirements include:

- The City currently has an Illicit Discharge Detection and Elimination (IDDE) program.
- All municipal separate storm sewer outfalls, bodies of water, and public catch basins are mapped.
- The City currently maintains a database of businesses in Permits Plus. City staff uses Permits Plus to review and prioritize the businesses for IDDE inspections. The City has inspected many of the businesses and the results of the inspections are documented.
- The City has a process for citizens to report any illicit discharges or illicit dumping.
- For emergency response to IDDE concerns, City staff maintains a list of emergency contacts. City staff also meets on occasion with a contact at Ecology to discuss potential violations that are not immediate threats.
- If an illicit discharge is detected, City of Lakewood Public Works Operations and Maintenance (O & M) Division acts as first responder. O & M acts immediately if the discharge appears to pose a threat to

human health. The City follows up with Ecology to pursue code enforcement and to assist with larger spills if necessary.

- City procedures for tracing sources of illicit discharges include visual inspections and smoke and dye tests. A private vendor also performs camera inspections of storm drain lines under contract with the City.
- The City funds the Pierce Conservation District (PCD) Stream Team who, along with citizen volunteers, monitors water quality in several lakes in Lakewood.
- The City has chartered an IDDE implementation team.
- The City has conducted field staff training on the identification and reporting of illicit discharges into the City storm sewer system.
- The City has updated its municipal code to include an illicit discharge section.
- The City has completed an outfall reconnaissance inventory to verify stormwater outfall locations and to detect any illicit discharges.
- Created a map which shows 24" or larger outfalls including associated conveyance systems, drainage areas and land uses.
- Created a map showing all private connections to the City-owned storm sewer system installed since the permit effective date.
- Created a map showing all geographic areas of the city that do not drain to the municipal storm sewer system.

5.3 Planned Activities

Lakewood has an IDDE program but will need to update current efforts in order to maintain compliance as Ecology phases in Permit requirements. Major actions recommended for continued compliance include:

- Summarize annual activities for "Illicit Discharge Detection and Elimination" component of annual report; including any updates to the SWMP document.
- Fully implement an IDDE program to detect and address non-stormwater discharges, including spills, and illicit connections into Lakewood's municipal separate storm sewer system.

Table 5-1 is the detailed work plan for 2011 SWMP IDDE activities.

Table 5-1. 2011 Illicit Discharge Detection and Elimination Work Plan			
Task ID	Tasks	Responsible	Schedule Notes
IDDE-3	Develop IDDE Program.	Surface Water Management Division	Ongoing.
IDDE-3.3	Fully implement an "Illicit Discharge Detection and Elimination" program.	Surface Water Management Division	By August 16, 2011.
IDDE-6	Summarize annual activities for "Illicit Discharge Detection and Elimination" component of annual report, identify updates to SWMP.	Surface Water Management Division	By March 31, 2011.

6. CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT AND CONSTRUCTION SITES

This Section describes Permit requirements related to controlling runoff from new development, redevelopment and construction sites, and current and planned compliance activities.

6.1 Permit Requirements

The Permit (Section S5.C.4) requires the City to:

- Develop, implement, and enforce a program to reduce pollutants in stormwater runoff to the municipal separate storm sewer system from new development, redevelopment and construction site activities. The program must apply to both private and public projects, including roads, and address all construction/development-associated pollutant sources.
- Adopt regulations (codes and standards) and implement plan review, inspection, and escalating enforcement processes and procedures necessary to implement the program in accordance with Permit conditions, including the minimum technical requirements in Appendix 1 of the Permit (i.e., 2005 Ecology Stormwater Management Manual for Western Washington, equivalent Phase I Manual or one of the Manual options with a Lakewood-specific basin-planning overlay).
- Provide provisions and (plan review, inspection and enforcement) processes and procedures to allow non-structural preventive actions and source reduction approaches such as Low Impact Development techniques (LID), measures to minimize the creation of impervious surfaces and measures to minimize the disturbance of native soils and vegetation.
- Adopt regulations (codes and standards) and provide provisions to verify adequate long-term operations and maintenance of new post-construction permanent stormwater facilities and best management practices (i.e., private drainage system inspections) in accordance with Permit conditions, including an annual inspection frequency and/or approved alternative inspection frequency and maintenance standards for private drainage systems as protective as those in Chapter IV of the 2005 Ecology Stormwater Management Manual for Western Washington.
- Provide training to staff on the new codes, standards, processes and procedures and create public outreach and education materials.
- Develop and define a process to record and maintain all inspections and enforcement actions by staff for inclusion in the annual report.
- Summarize annual activities for the “Controlling Runoff” component of the annual report; identify any update to Program document.

6.2 Current Activities

The City currently has activities and programs that meet many of the Permit requirements. The current compliance activities associated with the above Permit requirements include:

- The City of Lakewood Municipal Code (LMC) was updated in 2009 to bring it in line with NPDES permit requirements.

- Storm drainage provisions are covered in LMC Chapter 12A.11 – Stormwater Management. The City adopted the DOE manual as the primary manual but also allows the use of the Pierce County Stormwater Management and Site Development Manual and the WSDOT Highway Runoff Manual (current editions). LID measures are addressed in detail in the current (2008) Pierce County manual.
- LMC Section 12A.11.049 - Minimum Requirement #10: Operation and Maintenance, requires that developers provide maintenance covenants for private stormwater facilities. The City has a plat agreement available for use to provide for maintenance of stormwater facilities and to implement a pollution source control plan.
- Notices of Intent for compliance with Ecology’s Construction Stormwater General Permit are provided by the Public Works Department and at pre-application meetings as needed.
- LMC Chapter 12A.02, Organization and Enforcement, describes the City’s authority, what constitutes violations, enforcement measures, inspection procedures, and the like.
- The City has chartered a NPDES implementation team.

6.3 Planned Activities

Lakewood has a program to help reduce stormwater runoff from new development and construction sites. Actions that will continue include:

- Summarize annual activities for "Controlling Runoff from New Development, Redevelopment, and Construction Sites" component of annual report (including the post-construction private drainage system inspection and maintenance requirements); including any updates to the SWMP document.

Table 6-1 is the detailed work plan for 2011 SWMP activities related to control of runoff from new development, redevelopment and construction sites.

Table 6-1. 2011 New Development, Redevelopment, and Construction Sites Work Plan			
Task ID	Tasks	Responsible	Schedule Notes
CTRL-6	Summarize annual activities for "Controlling Runoff from New Development, Redevelopment and Construction Sites" component of annual report, identify SWMP updates.	Surface Water Management Division	By March 31, 2011.

CITY OF LAKEWOOD STORMWATER MANAGEMENT PROGRAM

7. POLLUTION PREVENTION AND OPERATION AND MAINTENANCE FOR MUNICIPAL OPERATIONS

This Section describes Permit requirements related to pollution prevention and operation and maintenance for municipal operations, and current and planned compliance activities.

7.1 Summary of Requirements

The Permit (Section S5.C.5) requires the City to:

- Develop and implement an operations and maintenance (O&M) program with the ultimate goal of preventing or reducing pollutant runoff from the municipal separate stormwater system and municipal operations and maintenance activities.
- Establish maintenance standards for the municipal separate stormwater system that are at least as protective as those specified in the 2005 *Stormwater Management Manual for Western Washington*.
- Perform required inspection frequency of stormwater flow control and treatment facilities and catch basins, unless previous inspection data show that a reduced frequency is justified.
- Have processes and procedures in place 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 staff to implement the modified processes and procedures and document that training.
- Prepare Stormwater Pollution Prevention Plans (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the City.
- Summarize annual activities for the “Pollution Prevention and Operations and Maintenance for Municipal Operations” component of the annual report; including any updates to the SWMP document.

7.2 Current Activities

The City currently has activities and programs that meet many of the Permit requirements. The current compliance activities associated with the above Permit requirements include:

- All Lakewood catch basins are cleaned once every two years (more often if needed). The City has responsibility for numerous water quality vaults (e.g., StormFilter, Vortech, CDS); these are inspected annually and cleaned as needed.
- Vactoring and street sweeping are done by private contractors. The vactor contractor inspects storm lines and structures. The contractor records each structure cleaned, and provides maps to the City to document activities. The sweeping contractor provides maps and GPS logs (records date, time, vehicle speed, etc) of streets swept.
- The City performs spot checks of stormwater facilities after major storm events; inspectors clean drains at that time, if needed.
- The City is replacing old dry wells with UIC compliant dual catch basin systems that incorporate turned down elbows for spill capture, and discharge to gravel infiltration trenches.

- Work performed by City maintenance staff includes shoulder, ditch, and pond maintenance, vegetation management, infiltration system installation, sidewalk maintenance, asphalt patching, and snow and ice removal.
- The City contracts for fleet services. No vehicle maintenance or washing is done at municipal facilities (except Parks Department).
- The City Parks Department operates a maintenance shop where landscaping and other chemicals are stored, and some vehicle and equipment maintenance is performed. However, the shop area is not connected to the City's MS4. The City completed a Stormwater Pollution Prevention Plan (SWPPP) for the maintenance shop in 2010.
- The City also completed a SWPPP for the Police Station in 2010.
- The City has chartered a NPDES implementation team.
- The City has conducted staff training which covered topics including the of the importance of protecting water quality, operation and maintenance standards, ways to prevent or minimize impacts to water quality, and the like.
- The City has updated inspection, operation and maintenance SOPs for Lakewood-owned or operated stormwater catch basins and flow control and treatment facilities.
- The City adopted Ecology maintenance standards for City-performed maintenance activities.

7.3 Planned Actions

Lakewood already performs many activities to limit stormwater pollution potential related to its municipal operations and maintenance program. Actions planned for continued compliance include:

- Continue existing programs and activities noted above.
- Summarize annual activities for "Pollution Prevention and Operation and Maintenance" component of annual report; including any updates to the SWMP document.

Table 7-1 is the detailed work plan for 2011 SWMP activities related to pollution prevention and operations and maintenance activities.

Table 7-1. 2011 Pollution Prevention and Operation & Maintenance for Municipal Operations Work Plan			
Task ID	Tasks	Lead	Schedule Notes
PPOM-4	Summarize annual activities for "Pollution Prevention and Operation and Maintenance" component of annual report, identify SWMP updates.	Surface Water Management Division	By March 31, 2011.

8. MONITORING

This Section describes the Permit requirements related to water quality monitoring, and current and planned compliance activities.

8.1 Permit Requirements

The Permit (Section S8) does not require municipalities to conduct water quality sampling or other testing during this Permit term, with the following exceptions:

- Any water quality monitoring required for compliance with TMDLs [total maximum daily pollutant loads, a.k.a., water quality clean up plans].
- Any sampling or testing required for characterizing illicit discharges pursuant to Program's Illicit Discharge Detection and Elimination conditions.
- Preparation for future, comprehensive, long-term water quality monitoring efforts consistent with current Phase I monitoring requirements. This program would include two components: general stormwater quality monitoring and targeted Stormwater Management Program effectiveness monitoring. The stormwater monitoring is intended to characterize stormwater runoff quantity and quality at a limited number of locations. This characterization would allow for analysis of pollutants and changes in conditions over time and across the City. The Stormwater Management Program effectiveness monitoring is intended to improve stormwater management efforts by evaluating various stormwater controls. Results of the monitoring will be used to support the adaptive management process for improving programs over time
- Specifically, by the end of this Permit term and with the 4th annual report, Lakewood is required to identify two outfalls where permanent stormwater sampling stations can be installed and operated for future monitoring. The two outfalls must represent commercial and high-density residential uses. The monitoring shall include plans for stormwater, sediment or receiving water monitoring of physical, chemical, and/or biological characteristics.
- The City will also need to identify two suitable questions and sites where targeted effectiveness monitoring can be conducted and develop a monitoring plan for these questions and sites. The proposed effectiveness monitoring should be prepared to answer the following types of questions:
 - How effective is a specific targeted action or a narrow suite of actions?
 - Is the Stormwater Management Program achieving a targeted environmental outcome?

In addition, the City is required to provide the following monitoring and/or assessment data in each annual report:

- A description of any stormwater monitoring or studies conducted by the City during the reporting period. If stormwater monitoring was conducted on behalf of the City, or if studies or investigations conducted by other entities were reported to the City, a brief description of the type of information gathered or received shall be included in the annual report.
- An assessment of the appropriateness of the best management practices identified by the City for each component of the Stormwater Management Program; and any changes made, or anticipated to be made,

to the practices that were previously selected to implement the Program and why those changes are desirable.

8.2 Current Compliance Activities

The City has mapped all municipal stormwater outfalls and has historically conducted monitoring related to lake water quality. The City has also chartered a NPDES implementation team.

In accordance with NPDES permit section S8.C.1.a the City has identified two outfalls for future, long term water quality monitoring. The first location is at 75th St. and Flett Creek in the 6200 block of 75th St. W. This site was selected because access to the outfall or the last structure before the outfall is good, and the area fronting the right-of-way that drains to the outfall is primarily commercial. The drainage area is approximately 5 acres. One drawback is the majority of contributing area is the public roadway, with a limited amount coming from private property.

The second location is near the south end of Lake Louise in the 300 block of Lake Louise Dr. SW. This site was selected because it drains mainly higher density residential area, and access for monitoring is good. The drainage area is approximately 30 acres.

In accordance with NPDES permit section S8.C.1.b the City has identified two suitable questions that our monitoring program will attempt to answer. The first question being “*Are our inspections of local businesses effective in improving the implementation of source control BMP’s at targeted businesses?*” This question relates to NPDES permit section **S5 C1. Public Education and Outreach**. Our first question is based around business inspections and how City interaction with the business operators/owners educates them in utilizing BMP’s to reduce and prevent water quality contamination. Our inspection reports can be utilized to quantify the change in behavior from the original inspections, several years ago in some cases, to current inspections.

The second question the city has identified is “*Does periodic stormwater system cleaning and street sweeping produce a measurable improvement in the quality of stormwater discharges?*” This question relates to NPDES permit section **S5 C5. Pollution Prevention and Operation and Maintenance for Municipal Operations**. This question is based on the City having hired outside contractors to clean city streets and the stormwater infrastructure, on a regular basis, and if these practices can show measurable improvement in the quality of stormwater discharges.

8.3 Planned Activities

Lakewood will need to create a Water Quality Monitoring Program to maintain compliance during the next Permit term. The City will:

- Develop the monitoring compliance strategy; including development of monitoring plans necessary to implement Permit monitoring requirements and activities.
- Participate in or track activities of regional monitoring work groups.
- Summarize annual monitoring activities for the annual report; including any updates to the SWMP document.

Table 8-1 is the detailed work plan for 2011 SWMP monitoring activities. These tasks were developed through an iterative process of interviews and workshops with staff from all affected City departments.

Table 8-1. 2011 Monitoring Work Plan			
Task ID	Tasks	Lead	Schedule Notes
MNTR-1	Develop monitoring compliance strategy	Surface Water Management Division	Ongoing.
MNTR-2	Keep informed via regional and state monitoring work groups.	Surface Water Management Division	Ongoing.
MNTR-3	Summarize annual monitoring activities for the annual report; identify SWMP updates.	Surface Water Management Division	By March 31, 2011.

APPENDIX A

Acronyms and Definitions

The following definitions and acronyms are taken directly from the Phase II Permit and are reproduced here for the reader's convenience.

AKART means all known, available, and reasonable methods of prevention, control and treatment. **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.

Basin Plan is a surface water management process consisting of three parts: a scientific study of the basin's drainage features and their quality; developing actions and recommendations for resolving any deficiencies discovered during the study; and implementing the recommendations, followed by monitoring.

Best Management Practices ("BMPs") are the schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by the Department that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.

BMP means Best Management Practice.

Component or **Program Component** means an element of the Stormwater Management Program listed in S5 Stormwater Management Program for Cities, Towns, and Counties or S6 Stormwater Management Program for Secondary Permittees of this permit.

CWA means 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.

Discharge for the purpose of this permit means, unless indicated otherwise, any discharge from a MS4 owned or operated by the permittee.

Ecology's Western Washington Phase I Municipal Stormwater Permit regulates discharges from municipal separate storm sewers owned or operated by Clark, King, Pierce and Snohomish Counties, and the cities of Seattle and Tacoma.

Ecology's Western Washington Phase II Municipal Stormwater Permit covers certain "small" municipal separate stormwater sewer systems.

Entity means another governmental body, or public or private organization, such as another permittee, a conservation district, or volunteer organization.

Equivalent document means 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. The Department may conditionally approve manuals that do not include the Minimum Technical Requirements in Appendix 1; in general, the Best Management Practices (BMPs) included in those documents may be applied at new development and redevelopment sites, but the Minimum Technical Requirements in Appendix 1 must still be met.

Heavy equipment maintenance or storage yard means an uncovered 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.

Illicit connection means any man-made conveyance that is connected to a municipal separate storm sewer without a permit, excluding roof drains and other similar type connections. Examples include sanitary sewer connections, floor drains, channels, pipelines, conduits, inlets, or outlets that are connected directly to the municipal separate storm sewer system.

Illicit discharge means 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.

IDDE- Illicit discharge detection and elimination

Low Impact Development (LID) means 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.

Major Municipal Separate Storm Sewer Outfall means a municipal separate storm sewer outfall from a single pipe with an inside diameter of 36 inches or more, or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 12 acres or more).

Material Storage Facilities means an uncovered 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.

MEP means Maximum Extent Practicable.

MTRs means Minimum Technical Requirements.

Municipal Separate Storm Sewer System (MS4) means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

(i) 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 United States.

(ii) designed or used for collecting or conveying stormwater.

(iii) which is not a combined sewer; and (iv) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) means 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 (NOI) means the application for, or a request for coverage under this General Permit pursuant to WAC 173-226-200.

Outfall means 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 sewer systems, 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.

O&M- Operations and Maintenance

Permittee unless otherwise noted, the term “Permittee” includes Permittee, Co-Permittee, and Secondary Permittee, as defined below:

(i) A “Permittee” is a city, town, or county owning or operating a regulated small MS4 applying and receiving a permit as a single entity.

(ii) A “Co-Permittee” is any operator of a regulated small MS4 that is applying jointly with another applicant for coverage under this Permit. Co-Permittees own or operate a regulated small MS4 located within or adjacent to another regulated small MS4.

(iii) A “Secondary Permittee” is an operator of regulated small MS4 that is not a city, town or county.

Small Municipal Separate Storm Sewer System or Small MS4 is a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels and/or storm drains which is:

a. Owned or operated by a city, town, county, district, association or other public body created pursuant to State law having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer districts, flood control districts or drainage districts, or similar entity.

b. Designed or used for collecting or conveying stormwater.

c. Not a combined sewer system,

d. Not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

e. Not defined as “large” or “medium” pursuant to 40 CFR 122.26(b)(4) & (7) or designated under 40 CFR 122.26 (a)(1)(v).

Small MS4s include systems similar to separate storm sewer systems in municipalities such as: universities, large publicly owned hospitals, prison complexes, highways and other thoroughfares. Storm sewer systems in very discrete areas such as individual buildings do not require coverage under this Permit.

Small MS4s do *not* include storm drain systems operated by non-governmental entities such as: individual buildings, private schools, private colleges, private universities, and industrial and commercial entities.

Stormwater means runoff during and following precipitation and snowmelt events, including surface runoff and drainage.

Stormwater Associated with Industrial and Construction Activity means 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 and/or excavation, and is required to have an NPDES permit in accordance with 40 CFR 122.26.

Stormwater Management Manual for Western Washington means the 5-volume technical manual (Publication Nos. 99-11 through 15 for the 2001 version and Publication Nos. 05-10-029-033 for the 2005 version (The 2005 version replaces the 2001 version) prepared by Ecology for use by local governments that contains BMPs to prevent, control, or treat pollution in storm water.

Stormwater Management Program (SWMP) means 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

Vehicle Maintenance or Storage Facility means an uncovered area where any vehicles are regularly washed or maintained, or where at least 10 vehicles are stored.